Customer Relationship Management

Crm

CRM Core Administrator Guide

Version 14.1

Aurea

Unlimited Possibility

Stop.

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Preface

For details, see the following topics:

- About this documentation
- Notation conventions
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About this documentation

This guide is part of the documentation set for Aurea CRM.

Notation conventions

This document uses the following notation conventions:

Convention	Meaning
`Fixed-width`	`Fixed-width` font indicates code, path names, file names, environment variable names, parameter names, command names, machine names, URLs.
`Bold Fixed-width`	**`Bold Fixed-width`** font is used to indicate user input or to emphasize certain lines of code.
Italic Fixed-width	*Italic Fixed-width* font indicates a placeholder for which you must supply a value.
Bold Sans serif	**Bold sans serif** typeface indicates the names of graphic user interface elements such as dialog boxes, buttons, and fields.
Italic serif	In text, *italic serif* typeface indicates the first use of an important term. The term is defined in the glossary.
Underlined	Underlined text in command lines and parameter descriptions indicate that you only have to enter the underlined part of the command or parameter name. For example, if you use the `-LOGFILE` parameter in a command, you only need to enter `-LOGF`.
[ ]	Brackets enclose optional arguments.
{ *a* | *b* | *c* }	Braces enclose two or more items. You can specify only one of the enclosed items. Vertical bars represent OR separators. For example, you can specify a or b or c.

Convention	Meaning
…	Three consecutive periods indicate that you can repeat the immediately previous item. In code examples, they can be horizontal or vertical to indicate omissions.
Menu > Choice	An angle bracket between two menu items indicates that you should choose an item from a menu. For example, the notation **File** > > **Exit** means: "Open the **File** menu and choose **Exit**."
>>	Links to related information in other chapters or documents are indicated using the **>>** symbol.

Aurea global support

If you encounter a problem while using an Aurea product or require assistance with downloading the software or upgrading a product release, please open a ticket on Aurea Support Central. Preferably, search the articles on the Aurea Knowledge Base for solutions to your issues before opening a ticket.

Information about the support organization is available on Support Central. The product documentation is available athttps://help.aurea.com/crm/#.

For information about purchasing an upgrade or professional services, contact your account executive. If you do not know who your account executive is, or for other queries, contact us through our website.

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Introduction

This manual is intended for administrators of Aurea CRM products.

It describes administrative tasks, tools and functions relevant for all Aurea CRM products.

The "core" of Aurea CRM consists in a set of DLLs that are used by all Aurea CRM products. Core features and functionalities cover administrative settings and configurations applicable for all products, e.g. access rights definition, triggers, texts in the data model as well as modifications and extensions to the data model. In addition, business logic functionality (e.g. price calculations in offer management) is also provided by the core and therefore the same for all products using the core components.

This manual covers the following:

- Setting up stations, adding users and defining access rights, see Rights Module on page 97.

- Maintaining the Aurea CRM data model and data stored within Aurea CRM, see Maintenance Module on page 265.

- Configuration settings, see Configuration on page 10.

- CRM.server, see CRM.server on page 438.

- CRM.translation tool used to manage the translation of customized texts, see CRM.translation tool on page 474.

- database structure, command line parameters, number ranges etc., see Appendix.

- functions supporting the development of Industry Solutions, see Industry Solution Configuration on page 523.

- migration of data and formats of an existing customer solution into another Aurea CRM environment, see Migrating Data on page 407.

Additional information is provided in the following manuals:

- For details on installing Aurea CRM products, refer to the respective Technical & *Installation Guide*.

- For information on the administration of specific Aurea CRM products, refer to the respective Administrator Guide.

- For information on the Aurea CRM win user interface and basic functions (conditions, formats etc.), refer to the *Aurea CRM win User Manual*.

- For information on the Aurea CRM Business Logic, refer to the *Business Logic Manual* for your vertical.

- For details on the meaning and functionality of individual database fields, refer to the field help, see Field Help on page 380.

Information on the structure of the Aurea CRM database (tables, fields, indices etc.) can be found in the **Data Model**, see Data Model on page 280. You can also output the database structure as text or XML files, see mmba.exe Parameters on page 13.

All available documentation can be found on the Aurea CRM support page at https://support.aurea.com.

If not mentioned otherwise, all examples in this manual apply to the BTB vertical.

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Configuration

Here you learn to configure info areas and connection settings.

Aurea CRM Parameters

Learn about the Aurea CRM's functions that can be accessed via the command line.

Many of Aurea CRM's functions can be accessed via the command line.

Use the following syntax:

```
<Module> -<Parameter> <Value ,Value ...> -<Parameter2> <Value,Value...> ...
```

Example:

```
mmco.exe -u com -k o ,101
```

Use the following syntax for parameters with mode than one character:

```
<Module> --<Long Parameter> <Value ,Value ...> ...
```

Example:

```
mmba.exe -u su --xml Turnover-Report
```

Enclose values and paths containing spaces in **double quotes**:

mmba.exe -u "John Smith"

```
mmim.exe -f "Company Import" -d "c:\My Documents\companies_csv"
```

Note: Single quotes are not supported.

Use **\"** to specify quotes within a value:

```
mmim.exe -e -u imp -f "Export \"A-Customers\""
```

Note: The following are case sensitive:

• - Format names

• - Passwords, if the **PW must contain upper and lower case** option is enabled in the station configuration, see Password Security.

General Aurea CRM Parameters

Learn about the general Aurea CRM parameters.

-?

Displays information on the parameters supported by an Aurea CRM module.

-u

Specifies an Aurea CRM user name.

```
mmba.exe -u "John Smith"
```

-p

Specifies the password used to log on.

```
mmri.exe -u su -p 123
```

-l

Specifies the language the module should be started with, see Language IDs on page 389.

```
mmba.exe -u su -p <Password> -l 1
```

Logs on to the main module in English as SU.

--db

Specifies the database type (MS SQL or Oracle) the module should be started with, see mmdb.ini and mmodbc.ini Files on page 71.

```
mmim.exe -u su -p <Password> --db mss
```

or

```
mmim.exe -u su -p <Password> --db ora
```

-v

If you have installed Aurea CRM with separate program and data directories, you need to specify the data directory using the parameter -v, see Additional Options in the *Aurea CRM win Installation Guide*.

```
mmba.exe -v c:\u7data
```

--role

Specifies the role(s) that the user is logged on with, see Rep Roles on page 123.

```
mmba.exe -u "John Smith" -p johns --role "Support Admin" "Sales Admin"
```

-q:<Value>,<Value>,...

Starts a module with the following functions:

- `selout`: Logs SELECT statements executed by selections in the file <USER NAME>.<Link to Info Area> (FI, KP or OJ (BTB only)) in the `\system\db` directory.

- `errorlog`: Logs database errors to the `mmcom.log` file in the `\system\db` directory.

- `stmtlog`: Logs SQL statements to the module's log file (e.g. `SU_1.log`) in the `\system\db` directory, see Logs and Error Messages on page 506.

- `stmttune`: (for Oracle databases): If you start `mmba.exe` with parameters, all combinations of tables and indices are tested and sensible `TUNE_STMT_REL` combinations are determined. The settings are displayed in a prompt. Click on **Yes** to write the settings to the `mmdb.ini` file, see Optimizing Access on page 89.

--writeprocesslist

If you start an Aurea CRM module with this parameter, the file `u8ProcessList_<Module no.>.txt` containing a list of all levels ("processes") available in this module is written to the `\system\db` directory, see Module Numbers on page 390. The module is then closed automatically.

The file contains:

- **Id:** ID of the level.
- **Class:** Class the level belongs to (for example, levels containing the **Activity** info area belong to class 11000), see Level Properties in the *Aurea CRM win Administrator Guide*.
- **Name:** Name of the level in the current language.
- **Type:** Level type
  - **core :** Levels available in all verticals.
  - **BB/BC/FS:** Levels only available in specific verticals.
  - **gen :** User-defined levels, see Defining New Levels in the *Aurea CRM win Administrator Guide*
- **Modules:** Name of the module in the current language.
- **Infoareas:** The info areas contained in the level.

This parameter is supported by the main module as well as the **Rights, Maintenance, Communication, Print, Analysis, Import** and **Export** modules.

--quiet

If you start an Aurea CRM function using this parameter, no messages are displayed if errors occur. Use this parameter for sessions that should run in the background.

```
mmim.exe -u <user name> -p <password> -f "Company Import" --quiet

mmba.exe -u <user name> -p <password> --xml "Revenue 2008" --quiet
```

--exit

Automatically closes `an update.CRM module`:

```
mmba.exe -u <User> -p <Password> --writedbstr --exit
```

Note: When executing `mmba.exe` the `--exit` parameter only works in combination with the `--write*` parameters, see .

You can use `echo %errorlevel%` and `--quiet --exit` during batch processing to return . (Example: `mmco.exe -u no_user --quiet --exit` returns error code 105.)

mmba.exe Parameters

Learn about the mmba.exe parameters.

-a

Use this parameter to generate automatic selections, see Automatic Selections in the *Aurea CRM win User Manual*.

```
mmba.exe -u <User> -p <Password> -a sl ,c
```

- `sl`: Generates selections.
- `os`: Generates property selections (BTB only).
- `c`: Determines that Aurea CRM's main module remains open after executing the automatic selection.

--auto-sl and --auto-os

Use these parameters to generate certain automatic selections by specifying the format name. The selections are generated irrespective of whether the **Autom.** is enabled for the selection and irrespective of the frequency entered for generating the selection.

```
mmba.exe --auto-sl <Format 1> <Format 2> ... <Format n>
```

```
mmba.exe --auto-os <Format 1> <Format 2> ... <Format n> -a c
```

- `--auto-sl`: Generates the specified selections
- `--auto-os`: Generates the specified property selections (BTB only)
- `-a c`: Optional parameter, determines that Aurea CRM should remain open after executing the selection.

Enclose format names containing spaces with quotation marks, e.g. "My Format". If the format name includes quotation marks, add a backslash before the quotation marks, e.g. "\"German\" Customers".

--cleanup

Use this parameter to cleanup invalid processes.

```
mmba.exe --cleanup
```

Note: Note: You can also use the Repair feature to cleanup invalid processes, >> Repairing Processes.

Possible Values: D1, D2 (for the Document (D1) and Customer Document (D2) info areas): --doc-mimetype

Use this parameter to automatically enter data in the **MIME Type** and **Encrypted f**ields in document records added prior to Service Pack 6.

```
mmba.exe -u <User> -p <Password> --doc-mimetype D1
```

Possible Values: D1, D2 (for the **Document** (D1) and **Customer Document** (D2) info areas)

Note: From version 7.06, values are automatically entered in these fields when adding document records or generating a single letter.

--genextkey

Creates external keys for existing catalog values (in variable catalogs), see Unique System-wide Identification of Catalog Values.

```
mmba.exe -u <user name> -p <Password> --genextkey
```

This parameter only functions on the catalog maintenance station.

Existing external keys **are not** overwritten.

If an external key is already present in the database as the external key of another catalog value, **no** key is created for the current catalog value. In this case, the following message is written to the active module's log file: `Catalogs ;Warning ;Generated external key already exists: '1_18_2'`. In this case, you need to enter the external key manually, see Editing Variable Catalogs on page 273.

-m

Creates the file `mm_index_<Language>.*` and `model.*` in the current user's user directory in the selected format and current language.

```
mmba.exe -u <User> -p <Password> -m 1
```

- 0: ASCII
- 1: XML
- 2: TXT

If you do not specify a format, the file is created in ASCII format.

The file `mm_index_<Language>.*` contains a list of all indices for each info area.

The file `model.*` contains the primary links for each info area. This corresponds to the structure in the table used to define access rights, for example.

--migd3link

When upgrading from version 7.04 to 7.05 (or higher): Start `mmba.exe` with this parameter to enter data in the new key fields in the **Document Link** (D3) info area:

```
mmba.exe -u <User> -p <Password> --migd3link FI
```

Possible Values: FI, KP, MA, TD

-q

Starts the SQL Tool, see SQL Tool on page 469.

-r

Starts the **Rebuild** module, see Rebuild module on page 468.

-f

Use this parameter to rebuild the tables from the command line:

```
mmba.exe -r -u <User> -p <Password> -f fi ,kp,ma
```

Possible values are info area codes (separated by a comma) or `all` to rebuild all tables.

-w

Use this parameter to remove duplicate catalog values. Specify the catalog number to start the function for individual catalogs:

```
mmba.exe -u <User> -p <Password> -w 1,2,3,4
```

--writedatetime

Creates the file `mm_dbDateTime.txt` in the `\system\db` containing a list of all combined date and time fields (database fields of the type "date,time") for each info area. The number of the associated date or time field is enclosed in square brackets.

55 ; Last Output Date; ComAusDatum_DT; **date** ; 10 ; ; ; [**56**];

56 ; Last Output Time; ComAusDatum_DT; **time** ; 11 ; ; ; [**55**];

--writedbstr

Writes information on the currently active data model to the `\system\db` directory. The following files are created:

- `mm_catno.txt`: List of all variable catalogs
- `mm_config.txt`: List of all available entries in the **Configuration** info area
- `mm_dbfnr_base.txt`: List of all info areas containing core fields, including core field numbers, see Vertical-independent Configuration on page 528.
- `mm_dbstr.txt`: List of all info areas and fields in Aurea CRM with the user-defined texts in the current language and the IDs of the **Text** info area.

- `mm_noPrimaryKey.txt`: List of all info areas whose primary key is not numeric, i.e where the ID column is not generated from one or more field values of the record.
- `mm_rel_base.txt`: List of all info areas that are identical in all verticals, see Vertical-independent Configuration on page 528.
- `mm_relh.txt`: List of all child info areas of the **Company, Person in Company** and **Property** (BTB only) info areas.
- `mm_relStLn.txt`: List of all info areas whose primary key is composed of station number plus serial number. Generic links can only be used with these info areas, see Link on page 305.

--writedbstrfid

Creates the file `mmdbstr.txt` in the `system\db` directory with the internal field IDs output as the field numbers. The order and numbering of fields corresponds to the order and numbering in the data model.

--writeres

Creates the following files in the `\system\db` directory:

- `mm_ResDialog_xxx.txt`: List of all dialogs
- `mm_ResMenu_xxx.txt`: List of all menus
- `mm_ResText_xxx.txt`: List of all texts in the user interface
- `mm_BefTable.txt`: List of button texts with resource IDs
- `mm_dbfnrid.txt`: List of all field text and original field text resource IDs
- `mm_fixcatno.txt`: List of all fixed catalog values
- `mm_fixcatno_custom.txt`: Lists all fixed catalog values (including user-defined values) with the user-defined texts in the current language and the IDs of the **Text** info area. Locked catalog values are not output.

Where `xxx` is the language that `mmba.exe` was started with.

--writeresfnr

Creates the following files in the `\system\db` directory (see above for descriptions):

- `mm_BefTable.txt`
- `mm_dbfnrid.txt`
- `mm_fixcatno.txt`
- `mm_fixcatno_custom.txt`

--writexmldef

If you start `mmba.exe` as SU in English, this parameter creates the following files in the `..\system\xml` directory (in this example for BTB):

- `BTBi80.xml`: The current data model with the following information:
  - `<alltables>`: All info areas, fields and field properties
  - `<allrelationships>`: All relationships and dependencies between info areas
  - `<allindexes>`: All indices

- `BTBi80.txt`: List of all fields
- `BTBi80_catalogs.xml`: List of all variable catalogs

Note: When generating XML files (using `--writexmldef`) you can specify the following additional options in the `[Option]` section of the `mm.ini` file (see mm.ini File on page 70):

- `xml_lang=1`: The files are created in the language you start `mmba.exe` with (`-l` parameter, see General Aurea CRM Parameters on page 11).
- `xml_unique_filename=1`: The corresponding language abbreviation is included in the name of the XML file (e.g. `BTBi80_ger.xml`).
- `xml_user=1`: If this option is enabled, users other than the SU can use the `--writexmldef` parameter.
- The user and language are written to the header information of the generated XML files.

--allcatalogs

Use this parameter to output variable and fixed catalogs in XML format. Variable catalogs are output in the languages assigned to the station, fixed catalogs in all languages. This parameter is used in conjunction with the following parameter:

- `--writexmldef`

`mmba.exe -u SU -l 1 --writexmldef --allcatalogs`

This creates the following files in the `.. \system\xml` directory (in this example for BTB):

- `BTBi80.xml`: The current data model with the following information:
  - `<languages>`: The current language and the catalog base language
  - `<alltables>`: All info areas, fields and field properties
  - `<allcatalogues>`:
    - `< catalogues >`: All catalog values from all variable catalogs. Locked values are output with a `locked="1"` attribute.
    - `< fixcatalogues >`: All catalog values from all fixed catalogs. Locked catalog values are not output. Custom fixed catalogs are only output if they are actually used in an info area.

- `<allrelationships>`: All relationships and dependencies between info areas
- `<allindexes>`: All indices

- `BTBi80_catalogs.xml`: List of all variable catalogs

Prerequisite for the output of fixed catalogs is that the respective language `dll` files are available.

--CheckRights

Only outputs those fields that the current user is permitted to access according to their access rights to files containing information on the data model (e.g. `mm_db-str.txt`). This parameter can be used in conjunction with the following parameters:

- `--writedbstr`
- `--writedbstrfid`
- `--writeresfnr`
- `--writedatetime`

--infoAreaColumn

Outputs info areas in their own column (instead of as a header) to those files containing info area names (e.g. `mm_dbstr.txt`). This parameter can be used in conjunction with the following parameters:

- `--writedbstr`
- `--writedbstrfid`
- `--writeresfnr`
- `--writedatetime`

--xmlFieldNames

Use this parameter to output XML field names (as additional column in the file `mm_dbstr.txt`). This parameter is used in conjunction with the following parameter:

- `--writedbstr`

--xml

Use this parameter to create XML reports, see Reports in the *Aurea CRM win User Manual*.

```
mmba.exe -u <User> -p <Password> --xml "Revenue 2008"
```

--xfile

To create several reports, create a text file (ASCII, Unicode, UTF8) which contains a report format on each line, and use the parameter `--xfile`:

```
mmba.exe -u <User> -p <Password> --xfile c:\reports.txt
```

mmcfg.exe Parameters

Use this parameter for silent setup.

-s

Use this parameter to suppress the message at the end of an automatic client installation, >> *Silent Setup* in the Installation Guide.

mmri.exe Parameters

Learn about the use of mmri.exe parameters.

-w

`mmri.exe -w` starts the **Maintenance** module, see Maintenance Module on page 265.

mmServer.exe Parameters

Learn about the use of mmserver.exe parameters.

Use the following parameters to register or remove instances of update.seven server, see Configuring update.seven server on page 460.

-n

Name of the CRM.server instance.

--install

Registers a CRM.server instance:

```
mmserver.exe --install -n <Service> -u <User> -p <Password>
```

--remove

Removes a CRM.server instance:

```
mmserver.exe --remove -n <Service>
```

update.server.exe Parameters

Learn about the use of update.server.exe parameters.

Use the following parameters to register, start, stop and remove instances of CRM.server, see Configuring the Service on page 439.

-i | --install

Installs CRM.server as a service:

```
update.server.exe --install [-n <servicename>]
```

-n | --name

Specifies the name of the service. If undefined, the service is installed as "update.server".

--start

Starts the service:

```
update.server.exe --start [-n <servicename>]
```

--stop

Stops the service.

-u | --uninstall

Removes an instance of CRM.server:

```
update.server.exe --uninstall [-n <servicename>]
```

```
-v | -- verbose[ =<value>]
```

Specifies the log level for the command line output. Available values: Debug, Info, Warning, Error.

The default is `Warning`. If you do not provide a value, `Info` is used.

Configuration Info Area

The **Configuration** info area is used to configure Aurea CRM system settings.

The settings are grouped into various categories, each containing a number of options. The **Configuration** info area can be accessed in both the main and **Rights** modules (**Info > Configuration**).

Note: Make sure that you deny access to the **Configuration** info area (in the **Rights** module) for users. Otherwise, all users have access to the configuration settings.

There are three basic types of options: Boolean (logical), numeric and text.

- Boolean options can be either enabled or disabled
- Numeric options can be set to a numeric value
- Text options can be set to a text value

Certain options are global options and apply to all Aurea CRM users. Other options can be defined for individual reps, rep groups or stations. If no rep, group or station is specified, the setting applies globally.

Note: To see an overview of the configuration settings for the current user, select **Help > About Aurea CRM** from the menu and click on **Configuration**.

Note: The configuration options in the **Configuration** info area used to be specified in the mm.ini file (up to and including marketing.manager 6). Whilst some settings are still entered in the mm.ini file, most options are now configured from this info area. For details on the options configured in the mm.ini file, see mm.ini File on page 70.

Changes to the **Configuration** info area are refreshed at the interval entered in the **Cat. refresh frq.** field in the **Station Configuration** info area, see Station Configuration on page 233.

As with data in other info areas, configuration settings can be communicated to other stations.

Adding a Configuration Entry

Learn how to add a configuration entry.

To add a new configuration entry:

1. Click the **New** button.

2. A dialog box is displayed, containing a list of all the available categories under **Category**.
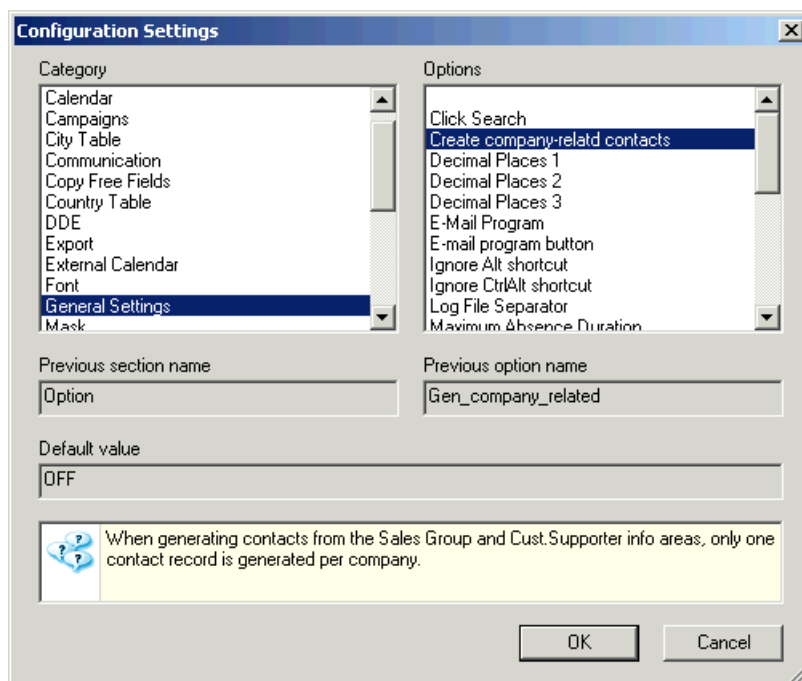
3. Select the category from the list.

   A list of the options in the category is displayed under **Options**.

---

4. Select the desired option.

   The names of the category and option that were previously included in the mm.ini file (up to version 6) are displayed under **Previous section name** and **Previous option name**.

   The option's default value is displayed under **Default value**, if applicable.

5. Click **OK**.
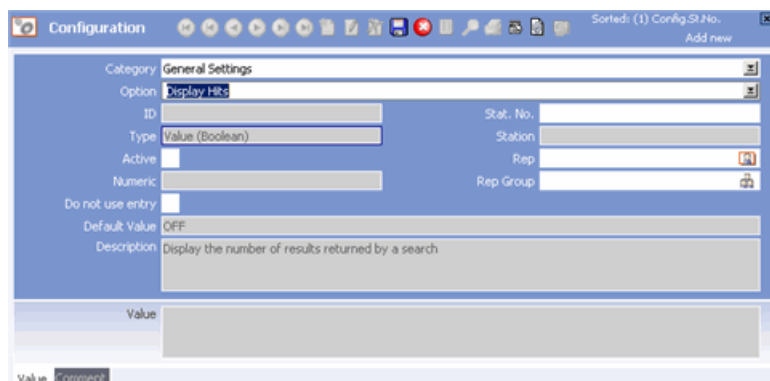
6. Enter the value for the option in the corresponding field in the **Configuration** info area; i.e. enter text values in the text field etc.

   You can select **Add/edit value, Test value** and **Load value** from the context menu for some options.

7. Assign the setting to a station, user or group of users, if desired and applicable. Enter the station number, or select the rep or group by clicking on the icon in the corresponding field. If no user, group or station is specified, the setting applies to all users.

Note: To disable a configuration entry, enable the **Do not use entry** field.

Configuration Settings

Here you can learn to perform the core configurations settings for aurea CRM.

Below is a list of the configuration options available, grouped by category:

Analyses

Learn how to generate analysis report and graphically display it.

Use the following configuration entries to configure the appearance and functionality of analyses in Aurea CRM win:

General bar chart template/General pie chart template

Use these options to specify an XML file to use as a template for the layout of the analyses. The template is used if no template is specified in an analysis format.

Select **Add/edit value** from the context menu to select the XML file. Select **Load value** from the context menu to choose a document stored in the **Document** info area.

These settings only apply to the ComponentArt graphics.

Detailed information on the XML format can be obtained from Aurea's support.

Bar chart template/Pie chart template

Use this option to define multiple layouts for analysis graphics (distinguished by their **ID**). The layout can be specified in the analysis format when defining an analysis.

These settings are applied globally and only affect the ComponentArt graphics.

Quick output

Use this option to enable ComponentArt's quick rendering algorithm for analyses.

Transfer field type

Use this option to transfer field types to Microsoft Excel when transferring analyses. This ensures that Excel processes the fields correctly.

Use ComponentArt graphics

ComponentArt's graphics are used if:

- This configuration entry has either not been defined or is set as **Active**
- and Aurea CRM is started locally
- and .NET Framework 4.5 is installed.

Otherwise the Aurea CRM graphics are used instead.

Add this configuration entry and leave the **Active** field disabled to use the Aurea CRM graphics.

Affiliations

The Affiliation View allows users to view data linked to a set of companies and/or persons

For example - All insurance policies taken out by the members of a family). The child records are read via indirect links (via PB) with link IDs 26000-27999, see Link IDs on page 394.

Note: The Affiliation View is not available in Aurea CRM win.

Applies to the following info areas

Use this configuration entry to specify the info areas (linked to FI, PE or KP) from which data should be displayed in the Affiliation View. Specify the info area IDs separated by semicolon, e.g. `MA;MB;KM`.

> **Note:** This setting is applied globally.
>
> If you want to display activity records (MA) in the Affiliation View, make sure you enter the **Activity Participants** info area (MB) in this parameter as well.

To enable the Affiliation View you also need to activate CRM process 1.4.1.4.7. "Affiliations".

For information on the business logic involved, see *Affiliation View* in the *Business Logic Manual*.

For information on the Affiliation View in Aurea CRM web and CRM.designer, see Affiliation View in the *Aurea CRM web Administrator Guide*.

Business Solutions

Use this option to specify info areas from which records created on a station with station number >= 10000 may be deleted on stations with station number < 10000.

For more information, see Station Number Ranges on page 526.

Allow deletion of the following data

This option is only available on stations with station number >=10000, see Industry Solution Configuration on page 523.

Enter the desired info area IDs separated by semicolon.

This setting is applied globally.

Calendar

Learn to configure calendar for holidays and appointments.

Holidays

Use this option to determine the holidays that are displayed in the calendar. You can either use/edit the existing country calendars or define your own, see Predefined Calendars on page 25 and XML Definition of Calendars on page 26.

To define a **Holidays** configuration entry:

1. Create a new **Holidays** configuration entry.
2. Enter the **ID** of the desired country calendar (1 or higher). The ID must correlate with a catalog value ID of the fixed catalog "Calendar" (e.g. 1 = Austria, 2 = Germany etc.).

   The XML files containing the default calendar definitions are located at `..\system\xml\Calendars`.

3. Import an XML file into the **Value** field:

   a. Click on the **Value** field.

   b. Select **Add/edit value** from the context menu.

   c. Select an XML file.

4. Edit the XML code in the **Value** field or enter new data, see XML Definition of Calendars on page 26.

5. Save.

6. Select **Test value** from the context menu.

   If the XML code contains any errors, you receive a corresponding error message. Correct any errors and save the record again.

7. The small calendar is opened. Test that your settings are correct.

Each **Holidays** configuration entry you define results in the respective country calendar entry for the users to choose from:

- Aurea CRM win: **Calendar** drop-down list in **Extras** > **Other Options**. If no selection is made, the international calendar is used by default.
- Aurea CRM web: **Holiday Calendar** drop-down list in **Settings** > **User Configuration** > **Date&Time**. (You need to define the available entries as values of the `Calendar.HolidayCalendarID` Web Configuration parameter.)

Use the **Calendar** field in the **Country** and **Rep** info areas, to assign specific calendars to countries or reps.

In addition, you can use the **Calendar Definition** info are (CD) e.g. to define holidays which do not occur every year, see Calendar Definition Info Area on page 94.

Holidays are highlighted in the small calendar and the **Calendar** and **Daily Overview** views. In the BTB and OTC versions you can also determine that sales group appointments are not generated on holidays.

The calendar for the currently active user is determined as follows:

1. The calendar selected by the user (Aurea CRM win: **Extras** > **Other Options** > **Calendar** | Aurea CRM web: **Settings** > **User Configuration** > **Date&Time** > **Holiday Calendar**).

2. The calendar entered in the user's **Rep** record.

3. The calendar entered in the **Country** record of the country entered in the user's **Rep** record.

4. If no value is found, the default calendar "International" (3) is used as a fallback.

Maximum lines for all day-appointments

Use this option to determine how many lines are available by default for all-day appointments in the calendar in Aurea CRM win.

This setting is applied globally.

Predefined Calendars

Table for predefined country calendars.

The following predefined country calendars (XML files) are available (in `.. \sys-tem\xml\Calendars`):

Country	ID	File Name	Country	ID	File Name
Austria	1	`Austria.xml`	Belgium	13	`Belgium.xml`
Germany	2	`Germany.xml`	Netherlands	14	`Netherlands.xml`
International	3	`International.xml`	Italy	15	`Italy.xml`
Czech Republic	4	`CzechRepublic.xml`	Russia	16	`Russia.xml`
Switzerland	5	`Switzerland.xml`	Poland	17	`Poland.xml`
Denmark	6	`Denmark.xml`	Slovakia	18	`Slovakia.xml`
Spain	7	`Spain.xml`	Brazil	24	`Brazil.xml`
USA	8	`Usa.xml`	Greece	33	`Greece.xml`
Slovenia	9	`Slovenia.xml`	Hungary	34	`Hungary.xml`
France	10	`France.xml`	Mexico	47	`Mexico.xml`
Portugal	11	`Portugal.xml`	Romania	50	`Romania.xml`
United Kingdom	12	`UnitedKingdom.xml`			

XML Definition of Calendars

Learn how to define your own country calendars.

To define your own country calendars use the following syntax:

Notes

Notes are included in the xml files in the `<!-- -->` element.

```
<!-- ID is 10 -->
```

<calendar> and <holiday> Elements

Holidays are defined within the `<calendar>` element. A `<holiday>` element is defined for each holiday.

```
< calendar >

<holiday m= '1' d ='1' />

</calendar>
```

Calendar Name

Use the `<text>` element to determine the name of the calendar in all the available languages:

```
<calendar>

<text  lang ='0'>Mein Kalender</text>

<text  lang ='1'>My Calendar</text>

<holiday m= '1' d ='1' />

</calendar>
```

If you do not define a name, the catalog text for the selected calendar ID is used as name (fixed catalog "Calendar").

Fixed Holidays

Fixed holidays are defined using the `base='fixed'` attribute. This attribute is the default value and need not be specified. `m={1,2,...,12}` defines the month; `d={1,2,...,31}` defines the day.

Examples:

```
<holiday m= '1' d ='1' />
```

The 1st of January is a holiday.

```
<holiday base='fixed' m= '12' d ='25' />
```

The 25th of December is a holiday.

Variable Holidays

Use the attribute `base='easter'` to define holidays relative to Easter Sunday. Determine the number of days before or after Easter Sunday using `diff ={ n}`. A positive value for n means n days after Easter Sunday; a negative value means n days before Easter Sunday.

Example:

```
<holiday base='easter' diff='39' />
```

The 39th day after Easter Sunday is a holiday.

Naming Holidays

The names of holidays are displayed in the calendar in the header in the daily view, in the small calendar and in the daily and working week views as tooltips.

Enter the name of the holiday in all available languages using the text element within the holiday element.

All text must be entered in an XML compatible format; i.e. special characters may need to be coded (e.g. use '&' to enter an ampersand).

Example:

```
<holiday m= '1' d ='1'>

<text  lang ='0'>Neujahr</text>

<text  lang ='2'>Jour de l'An</text>

<text  lang ='-1'>New Year's Day</text>

</holiday>
```

`lang ='#'` determines the language, see Language IDs on page 389. If no name has been defined for a language, the default value (-1) is used.

Abbreviations for weekdays

Weekdays are abbreviated as follows:

Mo, Tu, We, Th, Fr, Sa, Su

Rescheduling Holidays that Fall on a Weekend

If a holiday falls on a specific day, the holiday can be rescheduled.

Example:

```
<holiday m="9" d="1" day="Sa" subst="+2"/>
```

If the 1st of September is a Saturday, the holiday is rescheduled for the following Monday (2 days later).

Fixed Weekdays

The attribute **weekday** and **last** are used to determine a weekday within a month. In this case the **d** attribute determines the day.

Example:

```
<holiday m="9" d="2" weekday="Mo" />
```

The second Monday in September is a holiday

```
<holiday m="9" d="1" last="Mo" />
```

The last Monday in September is a holiday.

Holidays that do not Occur Annually

The **every** attribute determine that a holiday does not take place annually but every 'n' years. The intervals are counted from the year 2000.

```
<holiday m="4" d="8" every="5" />
```

The 4th of August is a holiday every 5 years (2005, 2005 etc.)

Campaigns

Learn about the configurations required for campaigns.

Blind Copy E-Mail

Enter an e-mail address to which all e-mails generated in the course of campaign management are sent as BCC.

Do not transfer label fields

Enable this option to prevent label fields from being transferred to control files.

E-mail address order

Use this option to determine which e-mail address is used when executing activities. For information on the default order, see Defining the Activity Format in the *Aurea CRM win User Manual*.

Select **Add/edit value** from the context menu to determine the order for company and then for person e-mail addresses in the **Company, Person in Company** and **Additional Address** info areas.

You can also enter the fields directly in the **Value** field using the following syntax:

Example: FI-FI,20,19;KP-KP,28,29;ZA,18;FI,20;19

Company (FI) addresses are searched for in fields 20 and 19 of the **Company** (FI) info area; person (KP) addresses are searched for in fields 28 and 29 of the **Person in Company** (KP) info area, then in field 18 of the **Additional Address** (ZA) info area and then in fields 20 and 19 of the **Company** (FI) info area. The first address found by the search is used to send the e-mail.

You can define multiple configuration entries (with different values in the **ID** field). Users can then select one of the configurations from the **E-mail address order** field in the **Execution (Marketing Activity)** info area.

Error message in generic text field

In order to use this option, a generic text field needs to be added to the **Target Group (Marketing Activity)** info area using the **Data Model** info area (**Maintenance module**), see Data Model on page 280.

Field used to cancel the execution for marketing activities

Enter the number of a Boolean field in the **Execution (Marketing Activity)** info area. This field can then be enabled to abort the execution of an activity by CRM.server, see Aborting the Execution of a Marketing Activity.

When executing the activity, CRM.server polls the status of this field in regular intervals. The default polling interval is 5 seconds. To change the interval, enter "Interval=n" (where n is the number of seconds) in the **Comment** field.

Generate message on error

If an error occurs when sending an e-mail, the corresponding target group record is linked to a message containing the corresponding error code and other information, see Error Codes for Marketing Activities on page 514. If no target group is present, target groups are added for those records that caused an error.

This message is created for the executing rep by the current rep. If no executing rep has been entered, the message is also created for the current user.

Suppress Warnings

Use this entry to suppress warnings when executing campaigns. Error messages are still output.

Catalogs

Learn about the configurations required for catalogs.

Automatically enter external keys

If this option is enabled, an external key is automatically entered for the entry in the catalog base language when adding new catalog values, see Unique System-wide Identification of Catalog Values.

The external key is of the format:

`< station >_<catno>_<code>`

or

`< station >_<catno>_<code (parent)>_<code>`

This setting is applied globally.

If an external key is already present in the database as the external key of another catalog value, **no** key is created for the current catalog value. In this case, the following message is written to the active module's log file: `Catalogs;Warning;Generated external key already exists: '1_18_2'`. In this case, you need to enter the external key manually, see Editing Variable Catalogs on page 273.

Check Blacklist/Whitelist

Learn about the Blacklist/Whitelist configurations settings.

The options of this category allow you to specify an external application that is used to check new records against entries in an external blacklist or whitelist.

City Table

Use this entry to remove the link between fields in info areas and fields in the city table (**City** info area in the **Maintenance** module).

Disconnect Fields from City Table

Enter the info area's abbreviation and the affected field's number, e.g. (BTB) "FI = 6,14". In this case, the links between the **City** table and fields 6 (**County**) and 14 (**Area Code**) in the **Company** (FI) info area are removed and data is no longer transferred automatically.

If you enter "FI=8" (**City** field), no fields are transferred from the **City** table.

Note: This setting can only be defined globally or per station for all Aurea CRM applications apart from Aurea CRM win.

Communication

Learn about the configuration required for communication between stations.

These settings affect communication between stations.

Attachment Name

Executable files cannot be sent or opened in MS Outlook, unless Outlook is configured accordingly. You can therefore specify a file name used by all attachments sent from within Aurea CRM. The file name may not contain any special characters apart from underscore (_), and the file extension cannot exceed 3 characters. You need to enter the same attachment name on each communicating station to ensure that the file is recognized correctly.

Enter the file name in the **Text** field.

Benchmark

For testing purposes only.

Maximum Record Size

This parameter accelerates the output of data under SQL Server and Oracle.

Generally, only records' primary keys are transferred and stored in a temporary file. Once all the keys necessary for communication have been written, each record is read from the database using the keys in the temporary file.

If you enter a value, all records under the specified size (in bytes) are written directly to the temporary file and then later transferred to the communication file without needing to access the database a second time.

The size of a record is determined by the sum of the field lengths in the record. For example, to determine the length of fields in the **Company** (FI) info area:

SQL Server:

```
select  sum(length) from syscolumns where id in (select id from sysobjects where name='INV_FI')
```

Oracle:

```
select  sum(data_length) from all_tab_columns where table_name='INV_FI';
```

Note: The bigger the value, the more space required during output (in the COM user's directory).

No Inventory

Enable this option to suppress the verification of stock-relevant data when synchronizing stations. If this configuration entry is active, data affecting stocks are deleted on branch offices when synchronizing (e.g. orders that have not been included in stocktaking).

This setting **must** be assigned per station.

Alternatively, you can completely disable stock management by locking the "Inventory Management" process (see CRM Process Configuration on page 98). This is the approach recommended by Aurea.

Update priority

When communicating, the access rights defined in the **Rights** module are ignored, see Rights and Communication. When inputting records, records from the source station are matched up with existing records based on the primary key. If a record with an identical key is found, the records are merged. Aurea CRM saves the modification date and time for each record and uses this information and the settings in the communication format to determine which data to retain, see Communication Format in the *Aurea CRM win Administrator Guide*. Use the **Update priority** configuration entry to prevent field contents in records from being changed by communication on the target station (this function corresponds to conditional field access rights). This allows you to prevent data that is synchronized with external systems from being overwritten by data communicated from branch offices.

Changes to data in the fields on the source station are ignored and the contents of the record on the target station are output for the source station (synchronization).

If both the records on the target and source stations are affected by a configuration entry, the data in the station higher up the hierarchy (i.e. the station closest to the main office according to the existing communication connections) takes precedence. All corresponding connection records (**Communication** info area) must be present on the target station for this to take effect.

Enter conditions to be applied to the fields that should be locked in the **Value** field using the following syntax:

[FI: " F26<>'' " 2,5]

[FI: " F35='A' OR F79>='100' AND F79<='500' " 4,10,25]

[ID: " F9='#1' AND F27()'update.com' " 6,102]

Expressions are delimited as follows:

- Enclose definitions for an info areas in square brackets: **[FI:]**

- Enclose conditions in quotation marks: " **F35= 'A ' OR F79>='100' AND F79<='500'** ". (You can use 📄 (**Copy Condition**) in the **Define Conditions** dialog to copy conditions to the clipboard.)

- Enclose comparison values in single quotation marks: **F9='#1'**

Enter the fields that should be locked after the condition, separated by commas, e.g. **2 ,5**

If the syntax is invalid, a warning is displayed when saving the configuration entry. If an entry using invalid syntax is used during communication, nothing is input from the affected info areas and the warning is displayed and written to the log file.

This configuration entry can be defined globally or per station.

Copy Fields (BTB, OTC)

The options in this category determine which fields are copied between info areas using the **Copy to ...** context menu entry.

Example (BTB): The **Copy to Offer** entry in the context menu in the **Service Contract** info area: Use the **Copy Offer to Offer** option to define which custom fields are copied to a new offer when using the **Copy to Offer** entry in the context menu.

Select an entry and select **Add/edit value** from the context menu to enter values. Select the desired fields in the **Copy Fields** dialog box. The selected field numbers are automatically entered in the **Value** field.

When copying data, the settings are applied in the following order:

1. Aurea CRM's internal business logic

2. The options in the **Copy Free Fields** category

3. The options in the **Copy Fields** category

Note: System fields cannot be copied, see System Fields on page 392.

Copy Free Fields (BTB)

The options in this category allow you to define which custom fields are copied when the **Copy to Order** (from an offer) or **Copy to Installed Base** (from an order) options are selected.

You need to specify the field numbers in the source info area that should be transferred. Separate field numbers using a semicolon.

Example: 59;62;...

The free fields with numbers 59, 62 etc. are transferred in this case. Field numbers can be viewed either in the `mm_dbstr.txt` file or by double-clicking with the right mouse button on the header when viewing all fields in the mask (**View > All Mask Fields**), see mmba.exe Parameters on page 13 and Displaying all Fields in a Mask on page 388.

Transferring Catalog Fields

Free catalog fields can be copied by entering the catalogs field numbers under the corresponding option:

The **FreeC(Head)1**, **FreeC(Head)2** and **FreeC(Head)3** catalog fields are copied from offers to orders and from orders to installed bases.

The **FreeC(Pos.)1**, **FreeC(Pos.)2** and **FreeC(Pos.)3** catalog fields are copied from offer lines to order items and from order items to components.

Special fields when copying

As there are large number of free fields per info area, it sometimes makes sense to **exclude** those fields that should not be copied. If **Copy Defined** is enabled, those fields that are listed are transferred. If **Copy Defined** is disabled, those fields that are listed are excluded from the transfer, and all other fields are transferred.

Country Table

Use this entry to remove the link between fields in info areas and fields in the country table (**Country** info area in the **Maintenance** module).

Disconnect Fields from Country Table

Enter the info area's abbreviation and the affected field's number, e.g. (BTB) "FI =21". In this case, the link between the **City** table and Field 21 (**Label**) in the **Company** (FI) info area is removed and is no longer transferred automatically.

If you enter "FI=5" (**Country** field), no fields are transferred from the **City** table.

Note: This setting can only be defined globally or per station for all Aurea CRM applications apart from Aurea CRM win.

Data Model

Learn about the configuration for data models.

No deletion of Person records when a Company is deleted

By default, a person (PE) record with only one linked CP record is handled as follows: If the related company record is deleted, the PE record is deleted as well, see Adding, Editing and Deleting Persons on page 434.

Activate this option if you want to retain these PE records.

This setting is applied globally.

Reference Text

Use this option to define texts for references in the data model.

In Aurea CRM win you can also define references in the desktop settings. The desktop settings take precedence over the settings in the **Configuration** info area.

Select **Add/edit value** from the context menu after selecting the appropriate entry. The **Properties** dialog box is displayed. Further information on the **References** tab can be found in the Desktop chapter under Reference Tab in the *Aurea CRM win Administrator Guide.* In contrast to the desktop settings, you cannot define a target level in the **Configuration** info area.

DDE

The DDE settings affect the exchange of dynamic data.

Below are the DDE settings:

DDE Server - backwards compatible field encoding

As of version 7.0, field numbers are transferred to the DDE server using 5 digits by default. Virtual document fields start from 25050.

Enable this option to revert to the settings used in version 6.0: field numbers are transferred with 3 digits, and virtual document fields start at 950. This allows you to use interfaces defined for version 6.0 without needing to edit them. However, you cannot then use the functions provided by the dynamic data model.

Label Address Fields

When transferring field data using DDE transfer formats, field names are displayed in the language in which the format was defined, irrespective of the language in which Aurea CRM is running.

To display the names of fields in a label in a different language, enter the name of the address field in the desired language; for example "Addr" for English. Note that the numbers 0 to 9 are appended automatically.

Label Salutation

When transferring field data using DDE transfer formats, field names are displayed in the language in which the format was defined, irrespective of the language in which Aurea CRM is running.

To display the name of the form of address field in a different language, enter the name of the form of address field in the desired language; for example "Salutation" for English.

Microsoft Word (Office 97)

Enable this option if you are using Word for Office 97 with Aurea CRM's DDE functionality.

Microsoft Works for Windows 97

Enable this option to use Aurea CRM's DDE functionality with Works for Windows 97. This entry is required in order to be able to open documents.

Suppress Blank Lines

Enable this option to prevent blank lines from being transferred to Word.

Documents

Learn about the document configurations.

Allow multiple file uploads / drag&drop

Enabling this option enables the following behavior:

- **Aurea CRM win:** Documents can be uploaded using drag&drop, see Assigning Documents with the Mouse in the *Aurea CRM win User Manual*. This works in all levels that contain a **Document overview** button.
- **Aurea CRM web:** Multiple documents can be uploaded/linked to a record, see *Saving Documents in the Database* in the *Business Logic Manual*. (If the option is disabled, only one document can be uploaded at a time.)

Note: Users need sufficient access rights for D1 and D3 in order to be able to upload documents.

Company document link in person

Enable this option to determine that adding a document link to a person results in a document link also being added to the company.

Document class used for drag&drop

Note: This setting applies to Aurea CRM win only.

Use this option to automatically enter a value in the **Doc.Class** field of the document record based on the MIME type when adding documents using drag&drop. Enter the MIME type in the **ID** field (e.g. "application/msword") and select **Load value** from the context menu to determine the desired document class (entered in the catalog base language).

Requirements: The option **Allow multiple file uploads / drag&drop** must be enabled.

For information on MIME types, see http://www.iana.org/assignments/media-types. Aurea has tested the following document types: .doc, .docx, .xls, .xlsx, .csv, .pdf, .xml, .bmp, .gif, .jpg, .tiff, .png, .ppt, .pps.

No company fields/No person fields

Enable these options to prevent document fields in the **Company** or **Person in Company** info areas from being offered as targets when saving documents.

File types to be retained

By default, Aurea CRM deleted temporary files immediately after they have been accessed. Use this option to prevent certain files (e.g. .zip) saved in Aurea CRM's document management from being deleted upon opening.

Enter the file extensions in the value field separated by semicolons.

No document link for companies

Enable this option to prevent document links from being added to company records when adding a document link from a company-dependent info area.

No document link for persons

Enable this option to prevent document links from being added to person records when adding a document link from a person-dependent info area.

Note: If you wish to completely disable the automatic creation of document links, you need to deny access to the Document Link info area (D3) in the **Rights** module, see Rights on page 136.

Export

Learn about export configuration.

Company Separator

This option is used to determine the separator used to separate company names that span multiple lines.

External Address Search

The options of this category allow you to specify an external application to be used for the address search and define the options to use.

These options can be defined globally or for each station.

Note: .NET Framework 4.5 must be installed to use the match-up features provided by the external application.

External Calendar

Learn about the settings for external calendars.

Below options are used to determine the settings for external calendars:

Category

Aurea CRM supports the German version of Outlook by default. If you are using a different language version of Outlook, enter the name of the categories in Outlook, e.g. "Categories" for the English version. This option is used when synchronizing activities/ absences/ tasks that have already been transferred to Outlook.

External Calendar

Determine the external calendar here. Either "Lotus Notes" or "Outlook" can be entered.

If neither of these programs is used, deactivate the **External Calendar** entry if present.

Export Activities

By default, activities that have been added using an external calendar can be imported and exported. Disable this option to prevent activities from being exported.

Export Tasks

By default, tasks that have been added using an external calendar can be imported and exported. Disable this option to prevent tasks from being exported.

Export Absences

By default, absences that have been added using an external calendar can be imported and exported. Disable this option to prevent absences from being exported.

Export Default Fields for Activities/Tasks/Absences

The default fields are automatically transferred along with any fields you define in your own export formats. If you only want to transfer the fields in your export format, disable this option. The export formats are specified under **Export Format for Activities/Tasks/Absences**.

The following fields are exported by default. The **Export / Import** column indicates whether the field is used for export and/or import:

Aurea CRM	Outlook	Export / Import
Activity (info area)		
Subject	Subject	Export + Import
Text	Body	Export + Import
Rep	Required Attendees	Export
Task (info area)		
Subject	Body	Export + Import
Rep	Owner	Export + Import
Absence (info area)		
Subject	Subject	Export + Import

Aurea CRM	Outlook	Export / Import
Text	Body	Export + Import
Rep	Required Atten-dees	Export

The following fields in activities, tasks and absences are always transferred to the external calendar, irrespective of the configuration settings:

• **Start Date, Start Time** (tasks and absences); **Date** and **Time** (activities)

• **End Date, End Time**

• **Updated at**

• **Completed on, Completed at** (tasks only)

• **Reminder Duration, Reminder Unit**

• **Status, Private**

Export Format for Activities/Tasks/Absences

Select **Load value** from the context menu to select the export format for activities, tasks and absences.

Export formats are defined by selecting **Extras** > **Define Transfer Fields** from the menu. You need to enter the name of the corresponding field in the external calendar in your transfer format (**Field Text** entry in the **Fields** tab).

Note: Fields that contain [,], _ or # in the field name are not recognized by Outlook.

Outlook Form for Activities/Tasks/Absences

When transferring data to Outlook, the standard Outlook form is used by default. To define a different Outlook form for activities, tasks or absences, enter the name of the Outlook form here.

Import Activities

This option determines whether activity records are imported from the external calendar. Disable this option to prevent activities from being imported.

Import Tasks

This option determines whether task records are imported from the external calendar. Disable this option to prevent tasks from being imported.

Import Absences

This option determines whether absence records are imported from the external calendar. Disable this option to prevent absences from being imported.

Import Default fields for Activities/Tasks/Absences

The default fields are automatically imported along with any fields you define in your own transfer formats (see the table above for a list of the default fields). If you only want to transfer the fields in your transfer format, disable this option for the format. The import formats are specified under **Import Format for Activities/Tasks/Absences**.

Note: You can use the same format for exporting and importing records of the same type.

Import Format for Activities/Tasks/Absences

Enter the name of the import format(s) here.

You need to enter the name of the corresponding field in the external calendar in your transfer format (**Field Text** entry in the **Fields** tab). Import formats are defined by selecting **Extras** > **Define Transfer Fields** from the menu.

External Match-up

The options of this category allow you to specify an external application and options used to match up data.

These options can be defined globally or for individual stations.

Note: .NET Framework 4.5 must be installed in order to match up data using an external application.

Font

Types of font configuration.

Printer Font

Enter the font to be used when printing data from Aurea CRM (e.g. "Courier").

Screen Font

Enter the font to be used to display data in Aurea CRM (e.g. "Courier").

Minimum Font Size

Use this option to determine the smallest font size displayed. This option only takes effect if you have selected a font under **Printer Font** or **Screen Font.**

General Settings

General settings configurations.

Change hierarchy codes immediately

If this option is not configured, changes to the hierarchy code in a rep records are immediately applied to all info areas. When working with large volumes of data, this can lead to long waiting times for users when saving the rep record.

Enter the abbreviations of those info areas to which changes to the hierarchy code should be applied immediately. All other info areas are updated in the background, to reduce the delay to a minimum.

This option is not applied to changes made in the **Hierarchy Change** info area; these changes are immediately applied to all info areas.

Company Match-up Length

Enter the minimum length of the match-up key when adding new companies to properties. You can enter a value between 2 and 20.

Company Match-up Length %

Enter the minimum length of the match-up key as a percentage of the total length when adding new companies to properties.

Connection settings for SMTP

Use this option to save the connection settings for sending e-mails via SMTP in the database. You can define the settings globally, or for individual stations, groups and reps, depending on your requirements:

1. Select **Add/edit value** from the context menu.
2. The **Connection Settings** dialog is displayed. If a suitable smtp.cfg file is present, the settings in the file are entered as default values in the dialog.
3. Enter the connection settings as described in SMTP Connection Settings on page 92 for the `smtp.cfg` file.
4. Click on **OK**.
5. Save the configuration record.

   The settings are saved in encrypted form in the **Value** field.

Note: In order to be able to use SMTP, you also need to configure SMTP as the e-mail client using the **E-Mail Client** configuration entry in the **General Settings** (see above).

Decimal Places n

These entries allow you to enter the number of decimal fields displayed by fields containing floating point numbers. Up to a maximum of 7 decimal places can be displayed.

You need to enter the number of decimal places and the field's info area (using the abbreviation), followed by the number(s) of the field(s) in the info area separated by commas. Entries are separated using a semicolon.

Spaces are ignored, and repeated field numbers from the same info area are also ignored.

Examples:

`3 ;MA,89,90 ;5,91;BR,23`

- 3 decimal places for fields 89 and 90 of the **Activity** (MA) info area
- 5 decimal places for field 91 of the **Activity** info area, and field 23 of the **Mailing** (BR) info area

`MA;6,89;5,90;4,91;BR,23;7,22;0,24`

- 6 decimal places for field 89 of the **Activity** info area
- 5 decimal places for field 90 of the **Activity** info area
- 4 decimal places for field 91 of the **Activity** info area, and field 23 of the **Mailing** info area
- 7 decimal places for field 22 of the **Mailing** info area
- 0 decimal places for field 24 of the **Mailing** info area

Disable Language Independent Text Overrides Native

Enable this option to allow native language text of the CRM user to be displayed instead of the language independent text. By default, the language independent text is always displayed.

For more information on Language Texts, see

Disable pop-ups

Enter the IDs of the info area for which pop-ups should not be displayed in the **Value** field:

- MD: **Messages**
- ER: **Reminders**
- MD;ER: For both info areas

This option disables the **Enable due reminders/messages pop-up** and **Popup reminders/messages** options (**Extras > Other Options**), see Reminders and Messages in the *Aurea CRM win User Manual*.

Display Currencies with 3 Decimal Places

Enable this option to display currency values to 3 decimal places instead of 2.

Disable offer valid to date auto calculation

Enable this option to prevent automatic calculation of the **Valid To** date field based on the **Valid Days** field and the **Offer Date**.

Disable Variable Conditions by Default

Enable this option to determine that all lines in a condition are disabled by default when activating a variable condition. The user can activate these lines.

Display Hits

Enable this option to display the number of hits returned by the search.

Do not log lead status changes (BTB and FS)

Enable this option to determine that changes to the **Lead Status** field (in company, person and sales group records) are not logged whenever the **Lead Status** field is edited or a new record is added.

This setting can be applied globally or to a single station.

Drag&Drop in Tree View

Enable this option to allow users to move records and merge companies and persons) in the tree view using drag&drop. This setting can be overridden for each info area in the desktop settings, >> *Tree View Tab* in the *Aurea CRM win Administrator Guide*.

E-mail Client

You need to specify the client used to send e-mails, or you can choose to send e-mails via SMTP. The following entries can be made in this field:

- Lotus Notes
- Outlook
- SMTP

Note: You need to define the connection settings in order to be able to send e-mails using SMTP, see SMTP Connection Settings on page 92 and **Connection Settings for SMTP** above.

By default, e-mails are sent as text e-mails by Aurea CRM (exception: **Edit -> Send Record as Link to**). To send e-mails as HTML e-mails, use the following syntax: <e-mail client>;HTML (e.g. `Outlook;HTML`). This setting takes precedence over the setting in your e-mail client, the SMTP connection settings and the **Send as** settings in transfer formats used by to generate single e-mails (single letter e-mails).

Generate Company Activities

If this option is enabled, **one visit is generated per company** from the **Account Manager** and **Sales Group** info areas (based on the visit frequency and data from the **Account Manager** info area).

If this option is disabled, activities are generated for **all persons in the company**.

Generate sequence numbers without year

By default, serial numbers in e.g. the **Offer** info area are generated including the year. Enable this option to generate serial numbers without year.

Use this feature to avoid integer overflows which may occur if such numbers are copied to a field of type "short int (4 Byte)" by a workflow or trigger, see Aurea CRM Field Types.

Serial numbers in the following info areas are affected:

* **BTB:** AU, PR
* **OTC:** AU, BV, KK, MU, PR, PS, VG

The serial numbers are created as follows:

* **Generate sequence numbers without year** = YES
    * the highest available number < 880,000,000 is used
    * if a record with serial number 779,999,999 exists, the highest number < 1,000,000,000 is used
    * if a record with serial number 999,999,999 exists, the highest number < $2^{32}-1$ is used

* **Generate sequence numbers without year** = NO
    * **Stock Control** (BV) info area (OTC): If a serial number > $2^{31}-1$ (signed integer) is created, this number is reset to 0 upon copying it to another info area such as AU or PR.
    * All other info areas: default behavior as described above.

This setting is applied globally.

Log automatic selections

Enable this option to log the execution of automatic selections, see Logs and Error Messages on page 506.

Log File Separator

Enter the character used to separate entries in the access log files. A semicolon is used by default. Further details on logging can be found under Logging Read and Write Access on page 245.

Mail Client Button

Enable this button to display the button used to access the mail client in the **Calendar** and Daily Overview. You need to have entered a mail client under **External Calendar** for this setting to take effect.

No digit grouping symbol

Enable this option to prevent numeric values from being displayed with a digit grouping symbol, e.g. 10000 instead of 10,000. This settings overrules the server's locale settings.

This setting can be defined globally or per station.

Note: In Aurea CRM web this setting is only applied if the `Locale.Number.DecimalSeparator` Web Configuration parameter is set to "Server" (default).

No input for completed tasks

If this option is enabled, messages are generated when tasks are completing without requiring any input from the user.

If this option is not enabled, the message is displayed and the user needs to save it.

Own appointments only

If this option is enabled, appointments (activities and tasks) are not displayed in the calendar for reps only entered in the **Participants** field.

Own activities/tasks only

If this option is enabled, activities or tasks are not displayed in the calendar for reps only entered in the **Participants** field.

Note: The **Own tasks/activities/appointments only** settings are applied globally.

Open Last Windows

Enable this option if the windows that were opened when Aurea CRM was last closed should be opened again the next time the system is started.

Person Search as Default

Enable this option to set the person search as the default search in the calendar or when clicking on the search button in the level header in the **Company + Person** level.

Phonetic Search

Note: This setting applies to Aurea CRM win only.

This option enables or disables the phonetic search function.

Prompt to save Attachments

If this option is enabled, users are asked to confirm that attachments should be saved when importing activities from their mail client. If this option is disabled, attachments are saved automatically.

RepOff

Storing a rep in Aurea CRM involves four linked field, **Rep**, **Rep ID**, **Rep Grp.** and **Rep Grp. ID**.

Enable the **RepOff** option if denying access to one of these rep fields should deny access to all four rep fields.

Search on Click

Enable this option if you only want the search to start when the search button is clicked; i.e. not when a user exits a field in the search mask.

Signature

Enable this option to include the current rep's signature (entered in the **Signature** field in the **Rep** info area) when sending e-mails from Aurea CRM win.

Note: The signature is not included in e-mails in RTF format.

SMS Settings

Use this option to save the connection settings for sending SMS (via trigger or within the scope of marketing activities) in the database instead of using `mmsms.ini` files. You can define the settings globally, or for individual stations, groups and reps.

1. Enter the settings (i.e. the content of the `mmsms.ini` file) into the **Value** field.

   Or select **Add/edit value** from the context menu to load an existing `mmsms.ini` file.

For information on all required settings, see *mmsms.ini File* in the *Business Logic Manual*.

If this setting is not defined, the `mmsms.ini` file is used instead.

Start of Fiscal Year

Enter the month that your fiscal year starts in, e.g. "4" for April. Valid entries are all months at the start of a quarter (4,7 and 10). If you do not enter a value, the fiscal year starts on January 1.

Note: The setting is ignored when calculating in the **Potential** info area.

This setting applies to a single station in Aurea CRM win and globally to all other Aurea CRM applications.

Suppress Shortcuts (Alt)

Note: This setting applies to Aurea CRM win only.

Enable this option to suppress the shortcuts (Alt + Letter) used to access tabs or info areas when in edit or new mode.

Suppress Shortcuts (Alt Gr)

Note: This setting applies to Aurea CRM win only.

Enable this option to suppress the shortcuts (Alt Gr + Letter) used to access tabs or info areas when in edit or new mode.

Title bar

Enter the text to be displayed in Aurea CRM win's title bar. The following placeholders are available:

Placeholder	Description
<module>	Current module
<rep>	Name of the current rep
<repid>	ID of the current rep
<alias>	Alias of the current rep
<login>	Login of the current rep
<station>	Current station number
<tenant>	Current tenant number
Aurea CRM	Aurea CRM
<version>	Current version number
<data-source>	Name of the data source on the server
<database>	Name of the database
<tableprefix>	Table prefix
<role>	Name(s) of the active role(s)

A placeholder can only be included in the title bar once.

Use Default Dashboards

Use this option to determine whether the standard dashboards delivered with Aurea CRM win are used.

These standard dashboards require a resolution of at least 1024 x 768.

Variable default values for conditions

Use this option to define fields in the **Station, Rep** and **Rep Addnal Info** (OTC only) info areas that can be used when defining variable conditions in addition to the default options.

Select **Add/edit value** from the context menu to select the info areas and fields. You can save the selected fields as **Field Formats**.

The selected fields can be used in the following functions in Aurea CRM:

- When defining conditions (see Defining Variable Conditions in the *Aurea CRM win User Manual*), in particular for access rights and communication, see Rights on page 136 and Applying Variable Conditions to the Target Station in the *Aurea CRM win Administrator Guide*.
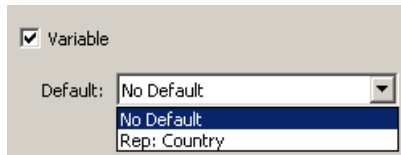
- As variables in triggers, see User-defined Variables on page 182.
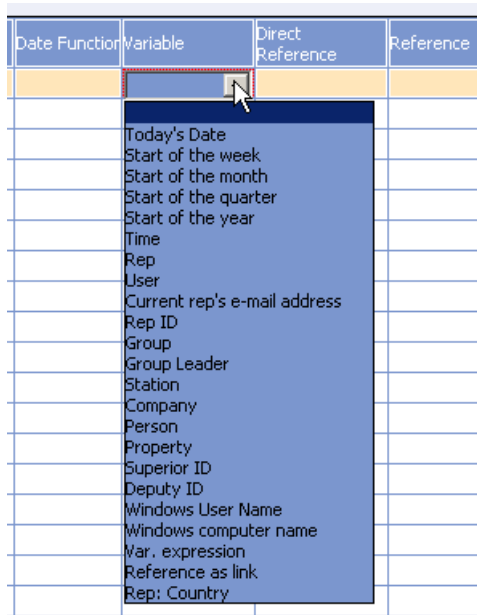
- As variables in workflows, see *Aurea CRM automator Manual*.

Note: This option is not supported for defining conditions in Aurea CRM web. Use `$ cur( ID,<fieldId>)` instead, e.g. define a filter `select from (FI) where (Country='$cur(ID,13)')` to get only companies from the country of the currently logged-in rep.

Rights and triggers containing conditions using this MC entry are however evaluated correctly in Aurea CRM web and all other Aurea CRM products.

Version number field

Upon starting an Aurea CRM module, the station's Aurea CRM version number is written to the **Version** field in the **Station** info area.

To use a different field in the **Station** info area, enter the number of the desired field in the **Numeric** field.

This setting is applied globally.

Geo-Coordinates

Address data in Aurea CRM records can be "geo-encoded" using an external application, i.e. the external application calculates the geographic coordinates e.g. of a company based on the company's address.

The coordinates can be used e.g. to display a record on a map panel in Aurea CRM web.

Use the options of this category to configure the handling and display of geographic coordinates in records.

Use Geo-coordinates

Enable this option to activate server-side geo-coding of addresses. If disabled, all geo-coordinates settings are ignored. (The client-side display of maps in Aurea CRM web is not affected by this setting.)

Use the following options to customize the limits for batch-geocoding (see Batch-Geocoding on page 456):

Maximum number of addresses per batch request

Determines the maximum number of geo-coded records per batch (default: 200,000).

Maximum number of batch requests per day

Determines the maximum number of batches per day (default: 5).

Maximum number of addresses in batch requests per year

Determines the maximum number of geo-coded records per year (default: 10,000,000).

Enter the desired values in the **Numeric** field. These settings are applied globally.

Note: If you have obtained a Bing license key from Aurea, the limits you specify here may not exceed the limits defined by MS Bing Maps, see http://www.microsoft.com/maps/product/terms.html.

For general information on performing geo-coding in the background using CRM.server, see Background Geo-Coding on page 455.

Import

Enable this option to limit the match-up of installed bases by **Host No.** to those within the same company.

Match-up by Host No. within company

If this option is disabled, the **Host No.** is matched up across the entire database.

Inventory

This setting can be defined globally or per station.

Take inventory

By default, stocktaking (**Stocktaking** and **Reset** options) is only available on the main office. To allow stocktaking on other stations:

1. Enable the **Take inventory** option end enter the desired **Stat. No.** and possible a **Rep Group** or **Rep**.

Lots without quantities (OTC only)

Use this configuration entry to determine that no quantities are displayed when selecting lots (**Lot/Quantity** field in the **Order Item, Stock Control Item, Sample, Refunding Item** and **Promotional Material** info areas). This allows you to prevent users from seeing the quantities stored in the system (**Quantity Unit**).

Links

In order to send links to records in Aurea CRM applications other than Aurea CRM win (using **Edit > Send Record as Link to**), you need to specify the address of the server and the corresponding parameters.

This setting can be defined globally or per station.

web URL

Enter the address of the Aurea CRM web page responsible for processing the query: `http://<server name>/<application path>/crm/view`

Example: `http://mywebserver/update.crm.web/bb/crm/view`

This setting is also used to output links in reports if they are accessed in Aurea CRM web, see Defining Report Formats in the *Aurea CRM win User Manual*.

Formatting for web

Enter the parameters for the link to Aurea CRM web. If no parameters are specified, the following default string is used: `uid=$R_ID;$RECID`

Possible placeholders:

$R_ID: info area code

$R_IDX: info area number

$KEY: contents of the key fields in the record, separated by '-'

$RECID: record ID

The following link is inserted in the e-mail:

<a href='http://<servername>/aurea.crm.web/bb/view?uid=FI;x0000000100000001'>aurea.web: Company: Aurea software AG

Listing (OTC)

Listing configurations.

Switch to Prio

Note: This setting applies to Aurea CRM win only.

This entry defines a fallback for the **Listing** display option. If this option is enabled, the **Prio** view is enabled automatically in the quick add levels for **Offer, Order, POS** and **Refunding** if the area is opened by default using the **Listing** option and no suitable items are found, see Quick Add in the *Business Logic Manual* OTC.

This setting is applied globally.

External System

Listings can be inherited using the external company key. Enter the external system assigned to external company keys that are used to inherit listings.

For further information on listings, see Listing in the Business Logic OTC manual.

The **External System** option is ignored if you use one of the following options:

Inheritance

Define the type of relationship via which listings can be inherited between companies when manually adding items.

Enter the relationship type in the catalog base language in the **Value** field.

Inheritance - Quick Add

Define the type of relationship used to inherit information in listing for quick add configurations.

You can enter several types of relationships in the catalog base language, e.g. Corporate;Wholesaler.

Users can then select the desired relationship type using the **Inheritance** drop-down list.

Lists (OTC)

Lists configuration.

Note: This setting applies to Aurea CRM win only.

Entry
[Lists]
Column1= <Name of condition defined for company>,<Name of condition defined for person>, heading of column 1 in the list
Column2= <Name of condition defined for company>,<Name of condition defined for person>, heading of column 2 in the list
Column3= <Name of condition defined for company>,<Name of condition defined for person>, heading of column 3 in the list
…
Column10= <Name of condition defined for company>,<Name of condition defined for person>, heading of column 10 in the list.

Load at start (OTC)

These settings are used to specify that data from the item master and catalogs are loaded into memory when Aurea CRM is started.

This allows data to be accessed quicker.

Note: These settings apply to Aurea CRM win only.

You need to determine the info areas and catalogs that should be loaded.

Catalog numbers can be viewed either in the `mm_dbstr.txt` file (generated by starting `mmba.exe` with the `--writedbstr` parameter) or by double-clicking with the right mouse button on the header of the window containing the fields in the info area when viewing all fields in the mask (**View > All Mask Fields**).

FILE_AR

Enable this option to load the catalogs in the item master info area (AR).

Catalog No.

You need to specify the catalogs that should be loaded using their field numbers. Separate catalogs with a comma. For example, to load the product group (10) and product category catalog (358) enter "10,358"

For performance reasons, only load the following fields from the item master into main memory for the first quick add or search action:

No.	Field	No.	Field	No.	Field
0	Item No.	6	Grade	31	SI - Free Samples
1	Item Name	27	SI - POS	32	SI - Competition
3	Segment	28	SI - Order	33	SI - Refunding
4	Prod.Cat.	29	Prio.Order	34	Prio.Cred.Note
5	Brand	30	SI - Listing	35	SI - Stock Control

All other fields must be reloaded with each new search or quick add action, which can be time-consuming.

Mask

Learn about mask configurations.

Note: These settings apply to Aurea CRM win only.

Citrix

Enter 1 if you are working in a Citrix environment. This prevents the contents of the currently selected field from being deleted when switching between applications.

ToolTips Duration

Determine how long ToolTips should be displayed for text fields (in milliseconds), see Text Fields for Descriptions in the *Aurea CRM win Administrator Guide*.

This setting is applied globally.

Editable table columns

Enter a color in RGB format (e.g. "0,255,0" for green). This color is used to indicate cells in tables that can be edited.

Header for editable table columns

Enter a color in RGB format (e.g. "0,255,0"). Column headers are displayed in this color if you can click on the column header to edit all the cells in the column.

No Inventory (OTC)

Enable this option (in the **Communication** category) to suppress the verification of inventory-relevant data when synchronizing stations.

This allows booking entries that affect the inventory to be deleted on branch offices.

This setting must be specified per station.

Participants (BTB, OTC)

They determine when a participant record linked to ticket, service contract or installed base with a defined role is automatically created.

The options in this category are applied globally.

The participant record is created if the value of the respective field in KM/WR/IB is entered or changed.

The following options are available:

• **Billing Address (KM)**

• **Billing Address (WR)** (BTB only)

• **Contact Partner (KM)**

• **End Customer (KM)**

• **Location (IB)**

• **Service Contractor (WR)** (BTB only)

Example:

• If a participant is added to a ticket with the role "contact person" and the **Inactive** check box is disabled (i.e. the participant is enabled), the participant is automatically entered in the **Contact Person/Company** field.

• If you select a company or person in the **Contact Person/Company** field in the ticket record, a new participant record is added and set as active. If another company/person was active in this role, the corresponding participant record is set to inactive.

To configure the function described in the above example:

1. Select the **Contact Partner (KM)** option in the **Configuration** info area.

2. Select **Load Value** from the context menu in the **Configuration** info area.

3. Select the catalog value that the function should access: "contact person".

> **Note:** The selected value is automatically translated to the entry in the catalog base language.

4. Define the catalog value for the **Role** catalog in the **Maintenance** module (**Catalog** info area), see Editing Variable Catalogs on page 273.

POS (OTC)

Learn about the POS configuration settings.

Last POS

This setting is applied globally.

> **Note:** This setting applies to Aurea CRM win only.

If the setting is enabled, new POS records are added so that the last three records (by date) are marked in the **Last POS** field with 1, 2, 3 whereby 1 indicates the most recent POS record for the company.

This numbering is used during analysis and allows the latest situation on the customer side to be ascertained quickly. For more information, see Point of Sale in the *Business Logic OTC manual*.

Reports

Learn about report configuration settings.

Do not cache stylesheets

> **Note:** This setting applies to Aurea CRM win only.

Enable this option to determine that style sheets used by reports should not be stored in the cache.

By default, style sheets are stored in the cache, which improves performance. However, Aurea CRM needs to be restarted if a cached style sheet is changed.

Document Types

> **Note:** This setting applies to Aurea CRM win reports only (regardless of whether they are called from Aurea CRM win or Aurea CRM web).

Enter the assembly and class used to convert reports to the desired document type here (document type, class name, assembly name), e.g.

```
application/pdf,update.PlugIns.Reporting.Pdf.CorePlugIn,update.PlugIns.Re-
porting.Pdf
```

(This setting calls Aurea CRM's standard plug-in. It is used as a fallback if **Document Types** is undefined.)

Enter a unique value in the **ID** field in order to differentiate multiple entries from one another.

For information on the default settings for PDF reports, see the article "How to use the reporting PDF plug-in" at https://support.aurea.com.

Resources

Learn about resources configurations settings.

Dispatching

Use the **Dispatching** option to determine which reps are displayed in the resource view of the Dispatching Dashboard. You can define any number of conditions for the ticket and for the reps thus determining which reps are available for a specific ticket.

Example: By defining a condition on **Problem Group** for the **Ticket** info area and a condition on **Problem Group** for the **Skill** info area you can display only reps with a skill matching the selected ticket's problem group.

If no **Dispatching** options are defined,

- only the current rep is displayed in Aurea CRM win

- no reps are displayed in Aurea CRM web when **Ticket-Related Reps** is checked.

To define **Dispatching** options:

1. Select **Add/edit value** from the context menu.

2. Click on 🖹 (**New**) in the **Ticket** pane and define a condition for the ticket.

3. Enter a name for the condition.

4. Conditions are displayed for three info areas in the **Rep** pane: **Rep**, **Skill** and **Group Allocation**.

   Click on 🔽 or 📝 (**Edit**) to edit the conditions that the rep must meet.

   Disable the **Active** check box to disable a condition.

Note: Skill and group allocation records are defined in the **Rights** module, see Skills on page 124 and Assigning Reps to a Group on page 126.

---

5. Click **OK** and save the configuration entry.

   When the resource view is accessed from a ticket that meets the condition defined under **Ticket**, those reps that meet the conditions defined under **Rep** are displayed.

Special Cases:

- If a ticket does not meet any of the conditions defined for tickets, no reps are displayed for the ticket in the resource view.
- If a ticket meets a ticket condition, but no conditions are defined for reps, all reps are displayed.
- If a ticket meets several conditions, all conditions are taken into account.
- If you define conditions for a rep group, all reps are displayed whose group meets the condition.

Sales (OTC)

Enable this option to assign item records to sales drives by date and business area.

Sales Drive by Date

If this option is enabled, item records (PP, UP, VP, WM, MU, AP, MA, AF) are automatically linked to the appropriate sales drive record (VR).

Sales Funnel (BTB)

Learn about sales funnel configuration settings.

The settings for the sales funnel in Aurea CRM win can be defined here, see *Configuring the Sales Funnel* in the BTB manual.

Note: These settings apply to Aurea CRM win only.

Interval n

These options are used to define intervals. Enter the number of time units in each interval and the unit type separated by a semicolon.

The following unit types are available:

1=Day, 2=Week, 3=Month, 4=Year, 5=Decade.

For example, enter 30;1 for 30 days.

If no intervals are entered, the scale automatically begins with the current date in intervals of 30/60/90 days.

The following provide default values for the sales funnel:

Others

Enter "1" to include information on all records that do not fall within the intervals defined.

Date

Enter a date from which opportunities are calculated.

Today

Enter "1" to begin the calculation from today's date. This option takes precedence over the value specified under **Date**.

Weight

Enter "1" to include the weighting of offers in the calculation.

All Countries

Enter "1" to include all countries in the calculation.

All Areas

Enter "1" to include all areas in the calculation.

All Products

Enter "1" to include all products in the calculation.

Sales Statistics and Revenue Statistics (BTB)

You can use the table in the **Sales Statistics** and **Revenue Statistics** info areas to store other data in tabular form.

However, seeing as several columns and fields have intrinsic functions associated with them (for example the difference in revenue between years is calculated automatically), you can remove these calculations from the columns and fields. These fields are not editable by default; however by removing the associated business logic, you can use them as you would use any numeric field.

Furthermore, you can determine that those fields that otherwise display percentages are displayed as standard numerical fields. In practice, it makes little sense to change the field type unless you also allow these fields to be edited.

Do not determine prices/discounts

This option is used to remove the connection between a field or column and the associated business logic. You need to enter the numbers corresponding to the fields or columns separated by a semicolon. For example, entering "1" would prevent the deviation from the previous year from being calculated as a percentage and the fields in the column can be edited.

Value	Sales Statistics	Revenue Statistics
1	Qty.Dev.%	Rev.Dev.%
2	Qty.Dev.Abs.	Rev.Dev.Abs.
3	Act. Qty. Cum.	Act.Rev.Cum.

Value	Sales Statistics	Revenue Statistics
4	Qty.PY.Cum.	Rev.PY Cum.
5	Qty.Dev.Cum.%	Rev.Dev.Cum.%
6	Qty.Dev.Cum.Abs.	Rev.Dev.Cum.Abs.
7	Prev.Qty.Date	Rev.Plan Date
8	Tot. Act. Qty.	Tot. Act. Rev.
9	Tot.Qty.PY	Total Rev.PY
10	Tot.Qty.Dev.%	Total Rev.Dev.%
11	Tot.Qty.Dev.Abs.	Total Rev.Dev.Abs.
12	Qty. Act. Plan	Act. Rev. Plan.
13	Qty.Plan PY	Rev.Plan PY
14	Qty.Targ.Perf. %	Act. Rev. Targ. %
15	Qty.Targ.PY %	Rev.Targ.Perf.PY %

Numeric Field

This option is used to define percentage fields as a numeric fields. The values in the field are then no longer displayed with a percent sign.

The following values are used by the **Numeric Field** option:

1	Qty.Dev.%	Rev.Dev.%
Value	Sales Statistics	Revenue Statistics
2	Tot.Qty.Dev.%	Total Rev.Dev.%
3	Qty.Targ.Perf. %	Rev.Targ.Perf.Curr %
4	Qty.Targ.PY %	Rev.Targ.Perf.PY %

Sales Territory Management (BTB, FS)

Learn about sales territory management configurations.

The options in this category are applied globally.

Disable sales groups from the Allocation table (BTB only)

Enable this option to determine that the **Rep 1-10** and **Area** fields are not transferred from the **Allocation** table when adding new records in the **Sales Group** info area.

Variable Copied Fields

Use this option to determine additional fields in the **Sales Territory Management** info area that are transferred to sales groups or property management (BTB only) records.

Enter the desired combination in the **Value** field using the following syntax:

```
Info area, target field ID, source field ID; Info area, target field ID,
source field ID ;...
```

Example:

```
SB ,10,12 ;...
```

In the above example, field 12 in the **Sales Territory Management** info area is copied to field 10 in the **Sales Group** info area.

Alternatively, select **Add/edit value** from the context menu to access the **Copy Fields** dialog:

1. Click on ![icon] (**New**).

2. Select the field to be transferred from the **Sales Territory Management** info area.

3. Click on **OK**.

4. Select the target info area (**Sales Group, Property Management** (BTB only)

   Only fields of the same type as the source field are displayed.

5. Select the desired target field and click **OK**.

   The selected combinations are displayed in the **Copy Fields** dialog, and can be edited from there.

6. Click **OK**.

   The selected combinations are transferred to the **Value** field.

Variable Criteria

Use this option to define additional criteria used to allocate reps or account managers.

Enter the desired combinations in the **Value** field using the following syntax:

```
Info area ID, source field ID, target field ID; Info area ID, source field
ID, target field ID ;...
```

Example:

`FI ,12,7000 ;...`

In the above example, field 12 in the **Company** info area is compared to the value in (the user-defined) field 7000 in the **Sales Territory Management** info area

Alternatively, select **Add/edit value** from the context menu to open the **Copy Fields** dialog:

1. Click on ▣ (**New**).
2. Select the desired field in one of the available info areas (**Company, Person, Person in Company, Property** (BTB only)).
3. Click on **OK**.

   Only fields in the **Sales Territory Management** info area of the same type as the source field are displayed in the **Field Selection** dialog.
4. Select the desired field and confirm with **OK**.
5. The selected combinations are displayed in the **Copy Fields** dialog and can be edited from there.
6. Click **OK**.
7. The selected combinations are transferred to the **Value** field.

Sample (OTC)

Learn about the Sample configurations settings.

The options in this category are applied globally.

Date-based quota

Enable this option to determine that quota periods last one year from the end of the introductory phase rather than until the end of the calendar year.

Quota after initial distribution

Enter the number of years over which samples may be distributed and the number of samples that may be distributed per year. Separate the values using a semicolon.

Quotas based on calendar years, e.g. where 2 years are divided into 3 parts, can be depicted. In order to enable this function, "C;" needs to be entered at the start of the entry in the **Value** field.

Example: `C ;2 ;2`

Quota exceeded

Enable this option to allow sample records to be added even if the quota is exceeded as a result. For further details, refer to *Sample* in the OTC *Business Logic Manual*.

This setting is applied globally.

Search

Learn about search configurations settings.

Note: These settings apply to Aurea CRM win only.

Identical characters

Use this entry to define that certain (combinations of) letters are treated as identical characters.

Example: "ä=ae" allows users without umlauts to enter "ae" instead.

The settings are used in the search (company, person, property in the BTB version) and during match up. The settings are applied recursively (e.g. ä=ae ae=a). You can also use this setting to determine that certain strings are ignored (Ltd. = ''').

Separate multiple entries using a comma.

You need to rebuild the indices before the settings take effect.

Output message if no hits

Enable this option to display a message if no hits are found in the company, person or property search.

Synonym without wildcard

Use this option to determine that users need not enter a wildcard (*) in the **Synonym** field.

Security

Learn about security configurations settings.

Certificate

This entry currently has no function.

Login Filter

You can add an additional stage to the login procedure for Aurea CRM win if authentication by another system is required. To do so, you can configure a so-called login filter. After successfully logging in (either via single sign-on or explicitly logging in), the login filter is called.

A login filter requires a specific interface in order to be called from Aurea CRM. Login filters can be called exclusively from the Aurea CRM win main module, but not from the administrative modules. A detailed description can be found in the technical white paper "login filter" available from https://support.aurea.com.

Password Blacklist

The **PW may not be in blacklist** option in the **Station Configuration** info area determines whether passwords can be blacklisted. The blacklist is defined here.

Enter the words (separated by a semi-colon) in the value field, or select **Add/edit value** from the context menu to load a text file containing the blacklist.

The blacklist is not case-sensitive.

The comparison is always performed for the entire string, not for a part of the string.

Leading and trailing blanks are stripped before comparison, e.g. if the blacklist contains the word "God", the user is not allowed to change his password to " God", "God ", "God" or " God ".

Single Letter

You can define security settings used to digitally sign and/or encrypt single letters. Aurea CRM users cannot read encrypted documents - they require the certificate's private key to be decrypted.

Prerequisites:

*   Encrypting single letters requires a digital certificate (available from an official source like Verisign). For testing purposes, you can create a certificate using MS .NET Framework SDK (`makecert.exe`).

    For Aurea CRM web, the certificate must be installed in the "Machine Certificate Store" on the web server. The server runs as a service (without user context).

*   To digitally sign a document, add one or more signature lines to the document template. For more information, refer to your Microsoft Word documentation. For details, see the <property> tag description under >> XML Code for Signing/Encryption Settings on page 64.

The **Single Letter** entry can only be defined globally. If you do not define any single letter security settings, the **Encrypt/Sign** check box in the **Connection with Word Processor** dialog box is unavailable to users.

You can define several option, each with a different **ID**. When defining single letter formats, these names are displayed in the **Security Settings** drop-down list in the **Connection with Word Processor** dialog box, >> *Defining Transfer Formats* in the *Aurea CRM win User Manual*.

Enter the XML code defining the security settings in the **Value** field, >> XML Code for Signing/Encryption Settings on page 64.

You can use CRM.cryptographic tool to decrypt multiple documents at once, >> CRM.cryptographic tool on page 472.

XML Code for Signing/Encryption Settings

Example code for win and web for Signing/Encryption Settings.

Example (Aurea CRM win):

```
<SecurityOptions>
<Sign method='Microsoft/Office'>
<SignatureLine name='Rep'>
<Property name='Name' relationName='$currentRep' fieldId='3'/>
<Property name='Title' xml:space='preserve'>update Software AG</Property>
<Property name='Email' relationName='$currentRep' fieldId='27'/>
</SignatureLine>
<SignatureLine name='Customer'>
<Property name='Name' rel='MA' fieldId='108'/>
<Property name='Title' rel='KP' fieldId='65'/>
<Property name='Email' rel='FI' tableCaptionName='$reference'/>
</SignatureLine>
</Sign>
<Encrypt method='Update/Server'>
<CertificateReference>u7.test</CertificateReference>
</Encrypt>
</SecurityOptions>
```

Example (Aurea CRM web):

```
<SecurityOptions>
<Sign method='Microsoft/Office'>
<SignatureLine name='Rep'>
<Property name='Name' relationName='$CurrentRep' tableCaptionName='ID' />
<Property name='Title' relationName='$CurrentRep' fieldId='Title' />
<Property name='Email' relationName='$CurrentRep' fieldId='E-mail1' />
</SignatureLine>
<SignatureLine name='Customer'>
<Property name='Name' relationName='$Link[FI]' tableCaptionName='FI' />
<Property name='Title' xml:space='preserve'> </Property>
<Property name='Email' relationName='$Link[FI]' tableCaptionName='FI.Email' />
</SignatureLine>
</Sign>
<Encrypt method='Update/Server'>
<CertificateReference>u7.test</CertificateReference>
</Encrypt>
</SecurityOptions>
```

The following XML elements are available for defining signature and encryption settings:

- `<SecurityOptions>`: Contains the security options used to digitally sign and encrypt documents.

- `<Sign method="Microsoft/Office">`: Only required when digitally signing documents. Contains one or more `<SignatureLine>` tags.

- `signatureLineDelayMillis` (optional, default = "1000") defines the delay (in milliseconds) with which placeholders are replaced. If problems occur when replacing placeholders, increase this value.

- `<SignatureLine name="NameofLine">`: Defines the properties of a signature line.

  The `name` attribute is mandatory and must be unique.

- `<Property>`: Defines the contents of a signature line (a field value of the record used to create the single letter).

  A unique name must be assigned to the <Property> tag using the `name` attribute.

The following attributes are optional:

- `rel`:

  Aurea CRM win only: Refers to the info area via its table code.

- `relationName`:

  Aurea CRM web only: Defines the relation to the record that contains the value of the property. If not specified, the record used to create the single letter is used.

  Aurea CRM win and Aurea CRM web: `$currentRep` refers to the current rep.

- `tableCaptionName`:

  Aurea CRM web only: Contains the table caption used to format the value.

  Aurea CRM win and Aurea CRM web: If `$Reference` is specified, the reference text defined in Aurea CRM is used.

- `fieldId`:

  Aurea CRM web only: Field ID or XML field name of the value.

  Aurea CRM win only: Field number.

  If both the `tableCaptionName` and `fieldId` are specified, `fieldId` is used. If neither `tableCaptionName` nor `fieldId` are defined, the contents of the `<Property>` tag is used:

  ```
  <Property name='Title' xml:space='preserve'>Aurea Software</Property>
  ```

- `xml: space='preserve'`: Determines that white space is retained. Without this option, white space is trimmed.

  Define the Signature line properties in Microsoft Word in the **Signature Setup** dialog:
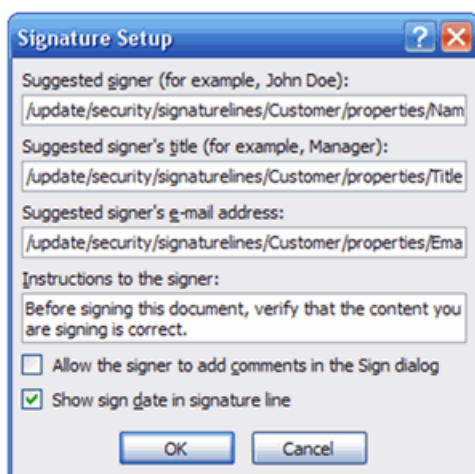
  Each field in this dialog must be formatted as follows:

  ```
  /update/security/signaturelines/[NameofSignatureLine]/properties/[Name-
  OfProperty]
  ```

  where [`NameofSignatureLine`] is the name attribute of the `<SignatureLine>` tag and [`NameOfProperty`] is the name attribute of the `<Property>` tag.

The placeholders are then replaced by the contents defined in the `<Property>` tag of a `<SignatureLine>` element.

- `<Encrypt method='Update/Server'>`: Only for encryption. Defines that the document should be encrypted before it is saved. The document is encrypted using the digital certificate. Encrypted documents are given the file extension `.p7m`, following Public Key Cryptographic Standard (PKCS #7).

- `<CertificateReference>[Value]</CertificateReference>`: Contains the reference to the certificate, where `[Value]` is the certificate's subject.

- `<UseInformationRightsManagement>`: By default, this option is enabled. If you do not have IRM installed in your system, set this attribute to `False` to disable the **InformationRightsManagement** feature.

Telephone Number/E-Mail Search

Learn about the Telephone Number/E-Mail Search configurations.

Display Person (PE/CP)

This option determines which person records are considered as a result if in telephone number or e-mail search a hit is found in the **Person** info area (PE).

Default: Contact persons (CP) that are linked to the PE record are displayed instead of the person (PE). If there are no linked CP records, the PE record is displayed.

To change the default, use one of the following values:

- PE_NO_CP: No contact persons (CP) are determined for the person (PE). The search result contains only the PE record.

Note: If there's a hit found directly in a CP record, this record is also part of the search result.

- PE_WITH_CP: Contact persons (CP) are displayed in addition to the person (PE). If there are no linked CP records, only the PE record is in the search result.

Display Person (PE/CP)

This option determines which person records are considered as a result if in telephone number or e-mail search a hit is found in the **Person** info area (PE).

Default: Contact persons (CP) that are linked to the PE record are displayed instead of the person (PE). If there are no linked CP records, the PE record is displayed.

To change the default, use one of the following values:

- PE_NO_CP: No contact persons (CP) are determined for the person (PE). The search result contains only the PE record.

> **Note:** If there's a hit found directly in a CP record, this record is also part of the search result.

- PE_WITH_CP: Contact persons (CP) are displayed in addition to the person (PE). If there are no linked CP records, only the PE record is in the search result.

TransferFields

If this option is enabled, field names in transfer fields formats beginning with a number retain the leading digits.

Leading Digits

If this option is disabled, leading digits are truncated from field names in transfer fields formats that begin with a number.

> **Note:** This parameter solves problems arising during migration: The behavior of marketing.manager 5.x corresponds to enabling **Leading Digits**. From version 6.0 onwards, **Leading Digits** is disabled by default.

Triggers

Learn how to configure trigger settings.

Below are the available trigger configurations:

Do not add activity when sending e-mail via a trigger

Enable this option to prevent activity records from being added automatically when sending e-mails from triggers. This setting can be defined globally, or per station, group or rep.

Log triggers

Enable this option to log the execution of triggers, see Logs and Error Messages on page 506.

Enter "only call" in the Comment field to limit the information written to the log file to the following:

- the time the trigger is initiated
- the time the trigger begins executing
- the time the trigger finishes executing

You can also determine the recursion depth when processing stacks using this configuration entry, see Recursion Depth.

To do so, enter `RECURSION-DEPTH=<0-100>` in the **Comment** field. (You can use `RE-CURSION-DEPTH` / `RECURSIONDEPTH` / `RECURSION_DEPTH`)

Note: The **Log triggers** option does not need to be active for the recursion depth to be applied.

You can define this setting globally or for each station.

MSSQL

Learn to configure MSSQL setting.

COLLATION

Determine the sort order assigned to users or their user groups.

Enter the sort order in the **Value** field and select a user of group. For further information, see Multi-language Sort.

ORACLE

Learn to configure ORACLE configuration settings.

NLS_SORT

Determine the sort order assigned to users or their user groups.

Enter the sort order in the **Value** field and select a user of group. For further information, see Multi-language Sort.

Word Processor

Learn how to configure Word Processor settings.

Do not add activities when sending e-mails

Enable this option to prevent activity records from being added automatically when sending single letters by e-mail. This setting can be defined globally, or per station, group or rep.

Document Types

Use this option to define the document types that are available when saving single letters, see Defining Transfer Formats in the *Aurea CRM win User Manual*.

Depending on your version of Microsoft Word, you can use the following values (format: 'Text;MIME Type'):

Text;MIME Type	Explanation	Comments
application/msword	MS Word document (*.doc)	
application/vnd.openxml-formats -officedocumentwordpro-cessingml.document	MS Word document (*.docx)	

Text;MIME Type	Explanation	Comments
application/pdf	PDF document	
text/html	HTML document	
application/rtf	Document in Rich Text Format	
text/plain	Plain text document (*.txt)	
application/vnd.ms-xps-document	XPS document (XML Paper Specification)	MS Office 2010 and higher, requires a plug-in

You can download the necessary plug-ins from Microsoft's web page.

Workflow

Enable this option to log the execution of workflows.

For further details, see

Log Workflows

As this option has an impact on performance, use it only for testing purposes.

Enter "only call" in the **Comment** field to limit the logged information to the following:

• the time the workflow is initiated

• the time the workflow begins executing

• the time the workflow finishes executing

Note: The above option of limiting the logged information works only when the **Active** checkbox is not selected, see the screenshot below:

mm.ini File

The `mm.ini` file is used to determine system settings that need to be specified before Aurea CRM is loaded.

The `mm.ini` file is located in each user's directory and in the `..` `\system\sys` directories of your Aurea CRM win and Aurea CRM web installations (for global settings).

Note: Many of the settings that used to be configured in the `mm.ini` file (up to and including version 6) are now configured from the **Configuration** info area, see Configuration Info Area on page 20.

Entries in the `mm.ini` file are grouped in sections, specified by square brackets.

[Option]

`ID_72=off`

Use this option to allow reps to be entered as their own superior in the **Superior** field.

`CatalogLockOnBaseLanguage=off`

Use this option to determine that a lock applied to the catalog base language is **not** applied to all other languages. This setting also affects validity periods defined for a value in the catalog base language, see Editing Variable Catalogs on page 273 and Behavior of Lock and Validity with Hierarchical Languages.

mmdb.ini and mmodbc.ini Files

The `mmdb.ini` and `mmodbc.ini` files contain Aurea CRM's database settings.

They consist of sections, designated by square brackets.

The entries in the `mmdb.ini` file for Oracle databases are different from those for MS SQL databases and are therefore described separately.

The [General] section in the `mmdb.ini` file determines the type of database:

[General]

MMDB=mss

or

MMDB=ora

If this option has not been configured, the system checks whether the `mmdb.ini` file contains either the `[MM ORA]` or `[MM ODBC MSS]` section, in order to determine the database type. If both sections are present, Aurea CRM checks whether the file `mmora.dll` or `mmmss.dll` is present. If both files are present, you can select the database type from a dialog box when the application is starts.

You can determine which database type is used via command line parameter (`--db`), see General Aurea CRM Parameters on page 11.

The `mmodbc.ini` file applies to MS SQL databases only.

The `mmdb.ini` and `mmodbc.ini` files are located in the …\system\sys directory.

mmdb.ini file for MS SQL databases

MS SQL databases settings for Aurea CRM.

Below are some of the mmdb.ini file for MS SQL database:

[MM SQL]

MULTIDBS=ON

If this entry is set to "ON", the parameters are first read from this section and applied. Otherwise, the parameters are read from the [MM ODBC MSS] section.

[MM ODBC MSS]

LOGINID=MM

This entry contains the name of the database user.

PASSWORD=MM

This entry contains the password of the database user. You can use `MM_PWD_FILE` or `PWD_TO_ENCRYPT` to encrypt this password (see below).

```
DATASOURCE=MMDB
```

This entry contains the name of the data source on the server.

```
DATABASE=UPDATE7
```

Assign the name of the MS SQL database used to add Aurea CRM tables to this parameter. This setting overwrites the default database in the ODBC definition. If the database entered in this parameter is not present on the MS SQL sever, the default database is used.

```
CONNECTION=Driver=SQL Server ;Server =mmdb;Database=UPDATE7;UID=mm;PWD=MM;
```

Use this parameter to specify the database connection as an ODBC connection string (maximum length: 1024 characters).

Use `CONNECTION instead of`

```
LOGINID=mm
```

```
PASSWORD=MM
```

```
DATASOURCE=MMDB
```

```
DATABASE=UPDATE7
```

Any installed ODBC driver can be specified as the driver, e.g.

`Driver=SQL Server Native Client 10.0` for MS SQL Server 2008.

Use `PWD_TO_ENCRYPT` to encrypt the password (see below).

```
MM_PWD_FILE=OFF
```

If this entry is set to "OFF", Aurea CRM uses the password specified using the `PASSWORD` parameter. If the entry is set to "ON", a temporary password file is created in the `.. \system\sys` directory.

```
PWD_TO_ENCRYPT=<plain pwd>
```

Use this entry to store the database password in encrypted form: enter the password in plain text. The next time Aurea CRM is started, the password is encrypted and written to the `PWD _ENCRYPTED` entry. The `PWD_TO_ENCRYPT` entry is deleted automatically.

Each time Aurea CRM is started, the system checks whether the file `mmdb.ini` contains an encrypted password. If this is the case, the password is used.

You need to use Aurea CRM win to encrypt passwords using `PWD_TO_ENCRYPT` for other Aurea CRM products.

```
TABLE_PREFIX=MMDB
```

This entry specifies the prefix for the Aurea CRM tables. There is no default value; you therefore need to assign a value to this parameter.

`SCHEMA=`<schema name> (e. g.: `SCHEMA=dbo`)

As of MS SQ L2005, this parameter is set automatically.

Use this entry to specify the name of the database schema. If the Aurea CRM login ID does not correspond to the MS SQL default schema assigned to the database user, you need to enter SCHEMA=<ms sql default schema> in order to use all database functions.

If you use a reserved name (e.g. UPDATE) as a schema name, you need to place the entry in square brackets for all functions to work correctly.

```
TIMEZONE=110
```

This parameter specifies the time zone used by the database. The value is determine using the system settings and may not be edited.

```
SEGMENT_DAT=MMDAT
```

If the database has been split (e.g. over several hard disks), the "Filegroup" for Aurea CRM's database tables is defined in this entry.

If the database has not been split, this entry should be set to "NONE".

```
SEGMENT_IDX=MMIDX
```

If the database has been split (e.g. over several hard disks), the "Filegroup" for Aurea CRM's indices is defined in this entry.

If the database has not been split, this entry should be set to "NONE".

```
SEGMENT_SELDAT=MMSELDAT
```

If the database has been split (e.g. over several hard disks), the "Filegroup" for Aurea CRM's selection tables is defined in this entry.

If the database has not been split, this entry should be set to "NONE".

```
SEGMENT_SELIDX=MMSELIDX
```

If the database has been split (e.g. over several hard disks), the "Filegroup" for Aurea CRM's selection indices is defined in this entry.

If the database has not been split, this entry should be set to "NONE".

```
CASE_SENSITIVE=ON
```

If the database was installed on the server as case-insensitive, then this parameter should be used, as it can increase performance (set to "ON").

```
NDEX_MANDNR=ON
```

This entry causes each generated index to include the tenant number (only applicable to info areas that include the **<xx>-TenNo** field). As a result, access time is improved for large tables that include non-uniform tenant distribution.

The default value is "OFF"

```
MM_PACKET_SIZE=4096
```

This entry defines the network packet size (in bytes) for ODBC access.

```
JOIN_ID=OFF
```

In SQL queries including conditions applied to "fiid" and "kpid" but sorted according to an mmKey field, the optimiser accesses the mmKey field using an index. This can impact negatively on performance. By setting JOIN_ID=OFF, the condition also accesses the mmKey fields. The optimized SQL query would look like the following:

```
SELECT ... FROM table WHERE keyxxx LIKE '...' ORDER BY keyxxx
```

```
SELECT_LEFTOUTERJOIN=OFF
```

Disables the use of "left outer join" when reading records using a transfer fields format. The default setting is ON.

`SELECT_INNERJOIN=OFF`

Disables the use of "inner join" when reading records using a transfer fields format. The default setting is `ON`.

`COLLATION = German_phonebook_CI_AS, Czech_CI_AS ,…`

This entry is used to define the possible sorts applied to the MS SQL database during the current session. This parameter should only be assigned a value if multiple languages are used to sort, see Multi-language Sort.

`CACHE_READ_CURSOR=OFF, CACHE_WRITE_CURSOR=OFF, CACHE_CURSOR=OFF`

Use these entries to turn cursor sharing on or off. The default value for all entries is "ON".

The CACHE_CURSOR entry turns both modes (read and write) either on or off.

`ERRORnn=<Error Message>`

Use this setting to translate SQL error messages (e.g. "Cursor was not closed"), if you are using an operating system in another language.

Examples:

Error20=Cursor was not closed.

Error20_1=Der Cursor wurde nicht geschlossen.

Error20_2=…

…

Error21=Connection is busy with results for another hstmt.

Error21_1=Die Verbindung ist mit Ergebnissen von einem anderen hstmt belegt.

Error21_2=…

…

`NOLOCK_HINT=ON`

Use this entry to generate Select statements using the hint NOLOCK.

Example: `SELECT columnA FROM tableA WITH (NOLOCK)`

This allows queries to be run on tables that are being updated, which improves the system's performance.

`SELECT_INNER_JOIN=ON`

This entry determines that the **INNER JOIN** parameter is used when creating a selection from a base selection. This improves performance. The default value is **OFF**.

`SQL_UPDATE_SELECTIONSTATISTICS=n`

If the number of records found in a selection is equal to or greater than the number entered here, the selection statistics are updated.

`AGGREGATE_CURRENCY=ON`

This entry ensures that sorting by sum total fields works correctly when using multiple currencies. The default setting is `OFF`.

`NO_CURRENCY=ON`

This entry ensures that sorting by sum total fields works correctly if you are not using multiple currencies. The default setting is `OFF`.

`COLLATE=OFF`

If different sort orders (collations) are defined in the **Configuration** info area (see MSSQL on page 68) and database, the sort order defined in the **Configuration** info area is used when evaluating conditions applied to string fields. Set `COLLATE=OFF` to use the database's sort order.

`ORDER_CATALOG_FUNCTION=OFF`

By default, when sorting records by catalog fields (e.g. "select Firma,Land,Ort from FI order by Land") Aurea CRM generates a more or less complex SQL statement without accessing the **Catalog** info area.

Set `ORDER_CATALOG_FUNCTION=ON` to use the SQL function `"prefix"_ CatText()` instead. However, this sorting method is much slower because the function accesses the **Catalog** info area.

[STATIC CURSOR]

Use this section to disable static database cursors. This can solve problems with performance when reading large volumes of data (e.g. when exporting).

To disable static cursors for individual info areas, specify the info area using the info area ID, e.g.:

`MA=off`

To disable static cursors for all tables:
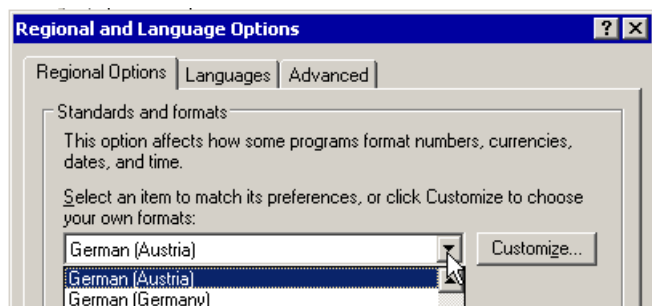
`AllTables=off`

Multi-language Sort

Aurea CRM supports unicode character sets and therefore the input of data using different codepages. Using multi-language sorts, each user can determine their own language-specific sort settings.

Types of Sort

- Data is sorted by field
  - by selecting **Data > Sort** from the menu
  - by clicking on the column header in a list
  - in the dialog box used to select catalog values

  The sort order for text fields is based on the Windows regional settings (**Start > Settings > Control Panel > Regional and Language Options**).

- Data is sorted by index
  - by selecting **Data > Sort** from the menu
  - when sorting in selections

  The sort order used for indices is defined in the index itself. The index is constructed using the sort order used by the MS SQL database. This allows all users to access the same sort independent of their regional settings.

In order to allow users of an MS SQL database to use a language-specific sort order for indices, define the following sort order:

1. Enter all the sort orders you require additionally in the mmdb.ini file. These options need to be supported by MS SQL server (see MS SQL documentation on "Collations"):

   Example: Aurea CRM installation using the "SQL_Latin1_General_CP1_CI_AS" sort order on a central database with users in three countries (Austria, the Czech Republic and Russia).

   ```
   [MM ODBC MSS]

   COLLATION= German_phonebook_CI_AS, Czech_CI_AS, Cyrillic_General_CI_AS
   ```

Note: Each new index impacts negatively on the performance of the database. Consider whether using a "Multilingual Linguistic Sort" would also meet your requirements (see Oracle documentation). If you do need to add language-specific sorts, only add those that you definitely require.

---

2. When starting one of Aurea CRM's modules, a message is displayed informing you that the necessary indices need to be added ("ADD").
3. Switch to the SQL tool and click on the **Rebuild NLS_SORT-Indexes** to add the indices for the selected info area, see SQL Tool on page 469. Click on **Rebuild ALL NLS_SORT-Indexes** to add indices for all info areas.

Note: Aurea recommends always using the **Rebuild ALL NLS_SORT Indexes** option.

Only those indices are affected that access text fields.

Note: To remove an index that is no longer required, delete the corresponding value from the MM_NLS_SORT parameter. When starting one of Aurea CRM's modules, a message is displayed informing you that the indices need to be deleted

---

("REMOVE"). Click on either the **Rebuild NLS_SORT-Indexes** or **Rebuild ALL NLS_SORT-Indexes** buttons in the SQL tool.

4. Assign a sort order to users and rights groups in the **Configuration** info area in the **Rights** module:

Field	Contents
Category	MSSQL
Option	COLLATION
Text	<Sort order>, e. g. ENGLISH
Rep/Group	Enter the desired rep or group

Note: If different sort orders (collations) are defined in the **Configuration** info area (see MSSQL on page 68) and database, the sort order defined in the **Configuration** info area is used when evaluating conditions applied to string fields. Enter COLLATE=OFF in the mmdb.ini file (see [MM ODBC MSS]) to use the sort order defined in the database.

mmdb.ini File for Oracle Databases

Oracle databases settings for Aurea CRM.

Below are some of the mmdb.ini file for MS SQL database:

[MM SQL]

MULTIDBS=ON

If this entry is set to ON, the parameters are first read from this section and applied. Otherwise, the parameters are read from the [MM ORA] section.

[MM ORA]

- MM_PWD_FILE=OFF

  If this entry is set to OFF, Aurea CRM uses the string entered under PASSWORD as the default value. If this entry is set to ON, a temporary password file is generated in the .. \system\sys directory.

- ID=MM

  This entry contains the name of the database user.

- PASSWORD=MM

  This entry contains the password of the database user.

- `HOSTSTRING=MMDB`

  This entry contains the name of the data source on the server. The maximum length is 127 characters.

- `TABLESPACE_DBS=MMDAT`

  This entry defines the Oracle table space for the data tables in Aurea CRM.

- `TABLESPACE_IDX=MMIDX`

  This entry defines the Oracle table space for the indices in Aurea CRM.

- `TABLESPACE_SEL=MMSELDAT`

  This entry defines the Oracle table space for the selection tables in Aurea CRM.

- `TABLESPACE_SELIDX=MMSELIDX`

  This entry defines the Oracle table space for the selection indices in Aurea CRM.

- `TABLESPACE_RBS=RBS`

  This entry defines the Oracle table space for rollback segments in Aurea CRM.

- `TABLE_PREFIX=MMDB`

  This entry contains the table prefix for the Aurea CRM tables.

Note: This value must be in upper case and numbers must not be entered at the beginning. There is no default value, so this entry must contain a value.

- `TIMEZONE=110`

  This entry specifies the time zone used by the database. Transferred from the system and may not be changed.

- `MM_NLS_LANGUAGE=AMERICAN`

  This entry contains the Oracle database language information.

- `MM_NLS_TERRITORY=AMERICA`

  This entry contains the Oracle database country information.

- `MM_NLS_CHARSET=WE8ISO8859P1`

  This entry contains the character set information for the Oracle database. This value must correspond with the character set used by the Aurea CRM database and with the Oracle client's registry entry.

- `MM_NLS_SORT=BINARY,GERMAN,CZECH,...`

  This entry defines the Oracle database's available sort order(s) for the current session.

  The first value determines the default value and must always be specified. Additional values (such as `GERMAN` and `CZECH` in the example above) should only be entered if multi-language sorting is used, see Multi-language Sort.

- `USE_NLSSORT=on`

Add this entry to Aurea CRM web's `mmdb.ini` file to enable linguistic sort (e.g. `MM_NLS_SORT=GERMAN`) for Aurea CRM web.

- `USER_ROLLBACK_SIZE=100`

  This entry defines the number of database blocks used by the selection rollback segment. If this value is set to "0", no user rollback segments are used.

- `CASE_INSENSITIVE=ON`

  If the database was installed on the server as case-insensitive, then this parameter should be used. Otherwise problems can occur when communicating data if the entries are stored in both upper and lower case. Additionally, the entry can lead to a performance increase as well (set to "ON").

- `OPTIMIZER_GOAL=RULE/CHOOSE/ALL_ROWS/FIRST_ROWS`

  `OPTIMIZER_MODE = ALL_ROWS/FIRST_ROWS/ FIRST_ROWS_n`

  This entry activates the optimizer for the current session. `OPTIMIZER_MODE` is used as the standard optimizer, see Optimizing Access on page 89.

- `INDEX_MANDNR=ON`

  This entry causes each generated index to include the tenant number (only applicable to info areas that include the **<xx>-TenNo** field).

  The default value is `OFF`.

- `CACHE_READ_CURSOR=ON`

  `CACHE_WRITE_CURSOR=ON`

  `CACHE_CURSOR=ON`

  Use these entries to enable cursor sharing. The default value for all three entries is `OFF`.

  `CACHE_CURSOR` toggles both modes (read and write).

- `EXT_SELECTION_OLD=on`

  Use this entry to interpret AND links in extended selection conditions as in earlier versions of marketing.manager.

  Behavior up to Version 6.0 Service Pack 5: If sub-criteria defined for a dependent info area are linked with a logical AND, the condition is only met, if at least one independent record meets the first sub-criteria, and at least one record meets the second sub-criteria.

  Current behavior (default setting): Without brackets, the condition is evaluated as before. However, if brackets are used, at least one dependent record needs to meet **both** sub-criteria.

- `SELECT_INNER_JOIN=ON`

  This entry determines that the `INNER JOIN` parameter is used when creating a selection from a base selection. This improves performance. The default value is `OFF`.

- `SELECT_LEFTOUTERJOIN=OFF`

Disables the use of "left outer join" when reading records using a transfer fields format. The default setting is `ON`.

- `SELECT_INNERJOIN=OFF`

  Disables the use of `INNER JOIN` when reading records using a transfer fields format. The default setting is `ON`.

- `AGGREGATE_CURRENCY=ON`

  This entry ensures that sorting by sum total fields works correctly when using multiple currencies. The default setting is `OFF`.

- `NO_CURRENCY=ON`

  This entry ensures that sorting by sum total fields works correctly if you are not using multiple currencies. The default setting is `OFF`.

- `COLLATE=OFF`

  If different sort orders (collations) are defined in the database and configuration see ORACLE on page 68), the sort order entered in the configuration is used when evaluating conditions applied to string fields. Set `COLLATE=OFF` to use the database's sort order.

- `ORDER_CATALOG_FUNCTION=OFF`

  By default, when sorting records by catalog fields (e.g. "select Firma,Land,Ort from FI order by Land") Aurea CRM generates a more or less complex SQL statement without accessing the **Catalog** info area.

  Set `ORDER_CATALOG_FUNCTION=ON` to use the SQL function `"prefix"_CatText()` instead. However, this sorting method is much slower because the function accesses the **Catalog** info area.

- `ORACLE_NO_DECODE=1`

  By default (`ORACLE_NO_DECODE` undefined or `0`), when sorting data via indices and in descending order a `DECODE(dummy,...)` command is added to the SQL statement to allow for a correct result when additional sorting is used. This method impacts performance since a full table scan is executed.

  Add `ORACLE_NO_DECODE=1` to Aurea CRM web's `mmdb.ini` file to prevent the generation of the `DECODE(dummy,...)` command. Please note that the query result may be incomplete and/or sorted incorrectly if this setting is active.

- `ORACLE_NO_ROWNUM=1`

  By default (`ORACLE_NO_ROWNUM` undefined or `0`) query results displayed in lists may be sorted incorrectly. As documented by Oracle, Oracle applies the ROWNUM clause before the sorting, i.e. first the number of rows is limited and only the resulting rows are sorted.

  If you add `ORACLE_NO_ROWNUM=1` to Aurea CRM web's `mmdb.ini` file the statement is generated without the ROWNUM clause. This ensures correct sorting of lists but leads to considerable performance loss.

> **Note:** Both `NO_DECODE` and `NO_ROWNUM` can be activated globally (in Aurea CRM web's `mmdb.ini` file) and per cursor (`noOracleRownNum` and `NoOracleDecode`).Activating `NO_ROWNUM` automatically activates `NO_DECODE` as well.

[Communication]

`TimezoneTransformation=OFF`

If this entry is set to "OFF", combined date and time fields (type: "date,time") are not converted to the target station's time zone when communicating between stations in different time zones.

The time stamps (modification date and time) are **always** converted to the target station's time zone when inputting communication data.

> **Note:** This entry needs to be added on all communicating stations to prevent times from being converted.

This setting only affects the input process. It has no effect on Aurea CRM web (conversion between the server and client).

Multi-language Sort

Aurea CRM supports unicode character sets and therefore the input of data using different codepages. Using multi-language sorts, each user can determine their own language-specific sort settings.

Types of Sort

- Data is sorted by field
  - by selecting **Data > Sort** from the menu
  - by clicking on the column header in a list
  - in the dialog box used to select catalog values

  The sort order for text fields is based on the Windows regional settings (**Start > Settings > Control Panel > Regional and Language Options**).

- Data is sorted by index
  - by selecting **Data > Sort** from the menu
  - when sorting in selections

The sort order used for indices is defined in the index itself. The Oracle database parameter MM_NLS_SORT entered in the `mmdb.ini` file is used to construct the index. This allows all users to access the same sort independent of their regional settings.

In order to allow users of an Oracle database to use a language-specific sort order for indices, define the following sort order:

1. Enter all the sort orders you require additionally in the `mmdb.ini` file. These need to be "Linguistic Sorts" defined by Oracle (>> Oracle documentation). The first value must always be present and is used as the default value.

    Example: Aurea CRM installation using a central database with users in three countries (Austria, the Czech Republic and Russia).

    ```
    [MM ORA]

    MM_NLS_SORT=BINARY,CZECH,RUSSIAN,GERMAN
    ```

    Note: Each new index impacts negatively on the performance of the database. Consider whether using a "Multilingual Linguistic Sort" would also meet your requirements (see Oracle documentation). If you do need to add language-specific sorts, only add those that you definitely require.

2. When starting one of Aurea CRM's modules, a message is displayed informing you that the necessary indices need to be added ("ADD").

3. Switch to the SQL tool and click on the **Rebuild NLS_SORT-Indexes** to add the indices for the selected info area, see SQL Tool on page 469. Click on **Rebuild ALL NLS_SORT-Indexes** to add indices for all info areas.

    Note: Aurea recommends always using the **Rebuild ALL NLS_SORT Indexes** option.

    Only those indices are affected that access text fields.

    Note: To remove an index that is no longer required, delete the corresponding value from the MM_NLS_SORT parameter. When starting one of Aurea CRM's modules, a message is displayed informing you that the indices need to be deleted ("REMOVE"). Click on either the **Rebuild NLS_SORT-Indexes** or **Rebuild ALL NLS_SORT-Indexes** buttons in the SQL tool.

4. Assign a sort order to users and rights groups in the **Configuration** info area in the **Rights** module:

Field	Contents
Category	ORACLE
Option	NLS_SORT

Field	Contents
Text	<Sort order>, e. g. ENGLISH
Rep/Group	Enter the desired rep or group

You cannot assign the sort order to a station in the **Configuration** info area. In order to assign a sort order to a station, define the MM_NLS_SORT parameter when adding the tables.

If no sort order has been assigned to a user (neither individually nor for the user's group or station), the default value is used (i.e. the first value entered under MM_NLS_SORT).

If a user is assigned a sort order for which no index exists, an error message is displayed when Aurea CRM is started. The user can proceed, but uses the default value instead.

Note: If different sort orders (collation) are defined in the **Configuration** info area (see ORACLE on page 68) and database, the sort order defined in the **Configuration** info area is used when evaluating conditions applied to string fields. Enter COL-LATE=OFF in the mmdb.ini file (see [MM ORA]) to use the sort order defined in the database.

Replacing NLS_SORT With a Custom Function

To replace all references to the built-in NLS_SORT function in Oracle with a custom function in the database:

1. Define your function externally. (The function is not part of Aurea CRM.)

2. To activate the function add the following entry to mmdb.ini file ([MM ORA] section):

NLS_FUNCTION=...functionname<col>...<len>

Replace functionname with the name of the external function.

<col> is placeholder for the affected column(s)

<len> is the (optional) placeholder for the column length

Example:

NLS_FUNCTION =cast(german_lower(<col>) as varchar2(<len>))

3. Make sure the following entry is present in the mmdb.ini file ([MM ORA] section):

NLS_SORT=BINARY

4. Recreate all indexes via SQL Tool (**Drop All Indexes**, **Create All Indexes**).

The statement

(NLSSORT(UPPER(Firma),'NLS_SORT=GERMAN')

is replaced with

```
cast(german_lower(Firma) as varchar2(120))
```

[STORAGE PARAMETERS]

- `STORAGE_DAT= storage( initial 1M next 1M minextents 1 maxextents unlimited pctincrease 0)`

  This entry defines the extents' dimensions for new Oracle objects (tables, indices). It refers to objects in the table space that correspond to the value under `TABLESPACE_DBS`.

- `STORAGE_IDX= storage( initial 100k next 100k minextents 1 maxextents unlimited pctincrease 0)`

  This entry defines the extents' dimensions for new Oracle objects (tables, indices). It refers to objects in the table space that correspond to the value under `TABLESPACE_IDX`.

- `STORAGE_SELDAT= storage( initial 100k next 1M minextents 1 maxextents unlimited pctincrease 0)`

  This entry defines the extents' dimensions for new Oracle objects (tables, indices). It refers to objects in the table space that correspond to the value under `TABLESPACE_SELDAT`.

- `STORAGE_SELIDX= storage( initial 100k next 1M minextents 1 maxextents unlimited pctincrease 0)`

  This entry defines the extents' dimensions for new Oracle objects (tables, indices). It refers to objects in the table space that correspond to the value under `TABLESPACE_SELIDX`.

- `STORAGE_PCT_DAT=PCTFREE 20 PCTUSED 60`

  These two parameters define the filling of the blocks in the table space that correspond with the value under `TABLESPACE_DBS`.

- `STORAGE_PCT_IDX=PCTFREE 10`

  These parameters define the filling of the blocks in the table space that correspond to the value under `TABLESPACE_IDX`.

- `STORAGE_PCT_SELDAT=PCTFREE 5 PCTUSED 80`

  These two parameters define the filling of the blocks in the table space that correspond with the value under `TABLESPACE_SELDAT`.

- `STORAGE_PCT_SELIDX=PCTFREE 5`

  These parameters define the filling of the blocks in the table space that correspond with the value under `TABLESPACE_SELIDX`.

[STORAGE]

- `INITIAL=1M`

This entry concerns the dimensions of the extents for temporary rollback segments (selections, rebuilds). The initial size of the first extent is defined here.

- `NEXT=1M`

  This entry concerns the dimensions of the extents for temporary rollback segments (selections, rebuilds). The size of the subsequent extents is defined here.

- `MINEXTENTS=10`

  This entry concerns the dimensions of the extents for temporary rollback segments (selections, rebuilds). The minimum number of extents is defined here.

- `MAXEXTENTS=UNLIMITED`

  This entry concerns the dimensions of the extents for temporary rollback segments (selections, rebuilds). The maximum number of extents is defined here.

- `PCTINCREASE=0`

  This entry concerns the dimensions of the extents for temporary rollback segments (selections, rebuilds). The increase in size of the extents is defined here.

[LOCAL INDEX]

- **Local Indexes**

    Use the `[LOCAL INDEX]` section to determine which indices should be used.

    Syntax: `<Info area code> =( <Field number>)`

    If the specified fields are contained in a `Select` statement, no index hint and ROWNUM statement are generated, and the optimizer can choose the index itself.

    You can use either the sequential field numbers or field IDs, see ID, Name, Type, Reference on page 340.

    You can specify up to 8 fields. If you specify multiple fields, all fields must be included in the statement for the index hint to be disabled.

    ```
    [LOCAL INDEX]

    PR =( 24,25)
    ```

    If fields 24 (**Sales Rep ID**) and 25 (**Rep ID**) in the PR (**Offer**) info area are included in the `Select` statement (e.g. `Select [...] from xxx_PR where Sales Rep ID=1234 and Rep ID=123456`), the index hint is disabled.

    A line defined for an info area in the `mmdb.ini` file can be up to 1024 characters long.

Note: If the ID of a linked info area is used to access data, an index hint is always generated, e.g. `from xxx_KP where ID_FI=:1` (all persons in a company).

- **Disabling Hints**

  You can disable the Oracle hints in Aurea CRM if you are suffering problems with performance.

  Note: SQL statements without hints also do not include ROWNUM statement. As a result, processing the SQL statement can take longer (depending on the data volume).

  Note: Disabling hints can cause performance problems when applying conditions to tables without additional indices.

  - `AllTables=off`

    Disables hints in all tables.

  - `AllTables=web_off`

    Disables hints in all tables for Aurea CRM web, CRM.interface and CRM.server.

  - `FI=off`

    Disables hints in the **Company** (FI) table.

  - `MA =( off,8)`

    Disables hints in the **Activity** (MA) table if field 8 is included in the condition.

  - `FI =( off,5,6)`

    Disables hints in the **Company** (FI) table if fields 5 and 6 are included in the condition.

  - `FI =( off,126)(off,127)`

    Disables hints in the **Company** (FI) table if field 126 or field 127 is included in the condition.

  - `AllTables=off`

    `NO=on`

    Disables hints for all tables apart from the **Note** (NO) table.

  - `MA =( on,index_11,4)`

    Generates a hint for a custom index with the number 11 in the **Activity** (MA) table, if field 4 is contained in the condition.

  Note: You can only define hints for indices created in the **Maintenance** module (and not for indices created directly in the database).

Explanation of Oracle Parameters

Explaining extents, space usage and optimizing access for oracle database.

Extents

Learn about using the extents oracle parameters.

Initial:

This parameter determines the size of the first extent of an object. The minimum value corresponds with the size of one database block, the standard value with the size of five database blocks.

Next:

This parameter determines the size of the next extent assigned to an object. The minimum value corresponds with the size of one database block, the standard value with the size of five database blocks.

Pctincrease:

This parameter contains the value as a percentage by which each extent (from the second one) grows in comparison to the previous one. The default value for this parameter is "50", i.e. each subsequent extent is 50% bigger than the previous one.

Minextents:

This parameter determines the number of extents assigned immediately the segment is added. The default value is "1", for rollback segments "2".

Maxextents:

This parameter determines the total number of extents (including the first one) that an Oracle database can assign to an object. The values "unlimited" and "value" can be used.

- Unlimited: This option allows any number of extents to be generated. They are restricted only by the free space available to a table space.

- Value: This option is used to define the maximum number of extents. If no value is entered, the default value is used. The default value depends on the size of the database block. You can enter any integer > 0. For rollback and temporary segments, the value "unlimited" should be used in order to prevent a restriction on growth.

Data block:

Database blocks represent the smallest storage unit administrated by Oracle. The size of the database blocks can only be defined using the initialization parameter "db_block_size" when the database is created.

Space Usage

Space usage oracle parameters can be used to define free space and setting limit for the capacity of database blocks.

Pctfree:

This parameter is used to define the free space (as a percentage) in each database block of an object reserved for future updates. You can enter a value between "0" and "99". The default value for this parameter is "10".

Pctused:

This parameter is used to set a limit for the capacity of the database blocks, allowing the block to be further filled if the capacity is not used up. You can enter a value between "0" and "99". The default value is "40" (%). This parameter cannot be used for indices.

Optimizing Access

Central instances, or optimizers, can be used to optimize database access.

Optimizers can be used in two ways and are configured on different levels.

The old method of rule-based optimization selects access operations based on fixed, predefined rules.

The cost-based method uses previously generated statistics.

The optimizer is activated for the current session using the entry `OPTIMIZER_GOAL`. Four values are used to activate the optimizer:

- `ALL_ROWS`: This value enables cost-based optimization and optimizes the entire throughput.

- `FIRST_ROWS`: This value also enables cost-based optimization and optimizes response times, i.e. the first rows are output as quickly as possible.

- `RULE`: This value enables rule-based optimization.

- `CHOOSE`: This value enables cost-based optimization if statistics are available, otherwise it enables rule-based optimization. `CHOOSE` is the default value.

The `OPTIMIZER_GOAL` parameter is no longer supported by Oracle 10g and must be replaced with the `OPTIMIZER_MODE` parameter (`OPTIMIZER_MODE` was also supported prior to Oracle version 9i). The following settings can apply to the optimizer:

- `ALL_ROWS`: enables the statistical optimization for the entire throughput.

- `FIRST_ROWS`: also works based on statistical information and optimizes for the optimum response time; i.e. the onus is on outputting the first rows as quickly as possible.

- `FIRST_ROWS_n`

- `RULE`: no longer supported

- `CHOOSE`: no longer supported

Statistics

Statistics, such as the number of rows per table or the distribution of values in a table's column provide the optimizer with valuable core values that allow decisions on the access strategy to be made according to a concrete situation and not based on general rules.

Tuning

You can use the following parameters in the `[MM ORA]` section to influence the formation of statements:

`TUNE_STMT_ORDER=on`

All statements receive an order by clause.

`TUNE_STMT=<flags>`

The following flags are available:

1: All statements receive an ORDER BY clause (corresponds to `TUNE_STMT_ORDER=on`).

2: The ROWNUM clause is nested for readfirst/readlast (safe, but slow method).

4: The ROWNUM clause is nested for readgreater/readless (safe, but slow method).

7: The ROWNUM clause is applied outside of the order statement. You can use the settings in the `[LOCAL INDEX]` section to disable index hints in the subselect statement, >> [LOCAL INDEX].

128: An index hint is generated in the statement that includes the keyword "Rule". This causes the Oracle optimizer to process this statement as rule-based. This flag only works up to Oracle version 9.x. As of version 10g, there is no rule-based optimizer, and the hint is ignored.

Flags can be combined. `TUNE_STMT=6` would mean that flags 2 und 4 are set.

`TUNE_STMT_REL=TABLE_INDEX_flagAllgemein_FirstFlag_ GreaterFlag ; ...`

Transfers all table index combinations with special flags, e.g. FI_1_1_F2_G4.

If you start `mmba.exe` with the parameter `-q stmttune`, suitable `TUNE_STMT_REL` settings are determined automatically, >> Aurea CRM Parameters on page 10.

Secure Login

How to login to Aurea CRM database securely.

A separate administration program is available that allows you to generate SQL source code for Microsoft SQL or Oracle database, in order to configure secure logins for your Aurea CRM database.

1. Contact support@aurea.com to obtain the necessary `key_admin.exe` and `mmkey2.dll` files.

2. Copy these files to the `\system\exe directory`.

3. Enter the following command line:

   `key_admin [mss|ora] [-prefix:TABLE_PREFIX]`

   `mss|ora` is the database in use (MS SQL oder Oracle)

   `TABLE_PREFIX` is the desired table prefix

> **Note:** `key_admin.exe` writes to `stderr.` Append `2>file.txt` to the command line to pipe the output to file.

4. Enter the desired database user's login and password. This user requires full access to the database.

5. Create the stored procedure and table in the database using this user name.

6. Enter the generated record in the tables.

7. Assign access to only this stored procedure (i.e. not to all tables in the database) to users in the `mmdb.ini` file.

8. To use the stored procedure, enter the following in the `mmdb.ini` file:

   ```
   [secure_login]
   ```

   ```
   sl=1
   ```

> **Note:** Other values of `sl` disable the secure login.

mmodbc.ini File for ODBC MS SQL Database Access

This topic contains the placeholders' system names in statements, used by ODBC access to MS SQL Server.

Below are the placeholders' system names in statements, that are used by ODBC access to MS SQL Server:

- `ALL_TABLES=sysobjects`

- `TABLE_NAME=name`

- `ALL_INDEXES=sysindexes`

- `INDEX_NAME=name`

- `ALL_SEQUENCES=none`

- `SEQUENCE_NAME=none`

- `SEQUENCES=FALSE`

- `PROCEDURES=TRUE`

- `FIXCHAR= CHAR( %d)`

- `VARCHAR= VARCHAR( %d)`

- `SMALLINT=INTEGER`

- `INTEGER=INTEGER`

- `FLOAT=FLOAT`

- `DOUBLE=FLOAT`

- `BINARY= BINARY( %d)`

- `VARBINARY= VARBINARY( %d)`

- `TEXT=TEXT`

- `IMAGE=IMAGE`

- `ID=INTEGER`

- `MAXVARLEN=255`

SMTP Connection Settings

Learn to configure SMTP Connection settings to be able to send e-mails from within Aurea CRM.

In order to be able to send e-mails from within Aurea CRM via SMTP, you need to determine the connection settings. The settings are used:

- to send e-mails in Aurea CRM win

  - by clicking on an e-mail address in a database field

  - by selecting **File > E-Mail** from the menu, see *Sending E-mails via SMTP* in the *Aurea CRM win User Manual*

  - by selecting **File > Single Letter** from the menu, see *Single Letters* in the *Aurea CRM win User Manual*

- to send mass mailings within the scope of marketing activities, see *Planning and Preparing Marketing Activities* in the *Aurea CRM win User Manual*

- to send mass mailings via CRM.server, see Automatically Executing Marketing Activities on page 466.

- to send e-mails via triggers, see E-Mail on page 208.

Note: You need to configure SMTP as the E-mail Client in order to send e-mails via SMTP, see General Settings on page 41.

Note: Note: To send email in a language other than the default languages, you should use UTF-16 encoding for the template document. For example, to send a mail in Cyrillic, encode the HTML template document in UTF-16.

You can define the SMTP settings for Aurea CRM users as follows:

Using the Configuration Entry

Use the **Connection Settings** for SMTP configuration entry to specify the connection settings. You can define settings globally or for individual stations, groups and reps, see General Settings on page 41. These settings are saved in the database and can be distributed using Aurea CRM's communication mechanisms.

Using the smtp.cfg File

The `smtp.cfg` file can be used to define the connections globally or for individual users:

1. Select **File > E-Mail** from the menu in the main module.

   The following dialog is displayed the first time an e-mail is sent via SMTP:

Note: You can open the **Connection Settings** dialog at any time by holding down Shift while selecting **File > E-Mail** from the menu.

Enter the desired connection settings:

- **Sender:** Your name
- **E-Mail:** Your e-mail address
- **User name:** Your SMTP user name
- **Password:** Your SMTP password
- **Authentication method** (optional)**:** the login authentication method; possible options: AUTH_NONE, AUTH_CRAM_MD5, AUTH_LOGIN, AUTH_PLAIN, AUTH_NTLM
- **Server / IP:** Name or IP address of the SMTP server

- **SMTP Port:** The SMTP port; default is 25
- **SSL:** Enable the **SSL** check box to encrypt your e-mails using SSL. Click on **Flags** to configure the settings used to verify the validity of the certificate.
- **Format:** E-mail format (TEXT or HTML)
- **Priority:** The priority with which the e-mail should be sent

2. Enable the **Store credentials** check box to save the settings in the `smtp.cfg` file.

3. Click on **OK**.

   The settings are saved in encrypted form in the `smtp.cfg` file in the current user's directory, see [\<user name>](#) in the *Aurea CRM win Administrator Guide*. Copy the `smtp.cfg` file to the `\system\sys` directories (of Aurea CRM win and Aurea CRM web) to use the settings for all users for whom no individual connection settings are defined.

Using the mm.ini File

You can use the `mm.ini` file to define SMTP settings for Aurea CRM win globally or for individual users, depending on whether the file is located in the `\system\sys` or user directory, see [[SMTP]](#) in the *Aurea CRM win Administrator Guide*.

The SMTP settings in the `mm.ini` file are used as default values the first time an e-mail is sent using the **File** > **E-Mail** menu option and as long is the **Store credentials** check box is not enabled.

These connection settings are used by Aurea CRM win when sending mass mailings and e-mails via triggers if no suitable configuration entry is present and no suitable `smtp.cfg` file can be found.

When sending e-mails via SMTP, the system searches for valid connection settings for the current user in the following **order**:

1. In the `smtp.cfg` file in the user directory (Aurea CRM win only)
2. In a configuration entry (first searching for an entry for the current rep, then the rep's group, then the station, and finally the global entry)
3. In the `smtp.cfg` file in the `\system\sys` directories of Aurea CRM win and Aurea CRM web
4. In the `mm.ini` file (Aurea CRM win only) (first searching for an entry for the current rep, then for a global entry)

Calendar Definition Info Area

Learn how to create calendar definition and holidays using CD info area.

Use the **Calendar Definition** info area (CD) to:

- create records for each day of a calendar definition containing attributes for weekday, workday and holiday. You can use these records in read-engine formats,

queries and conditions to create reports, analyses and workflows, e.g. for call planning or to create a work performance report for each user.

• define extra holidays for specific dates, e.g. holidays that do not occur every year or company-specific holidays. These holidays are displayed as holidays in the calendar in addition to the holidays defined by the **Holidays** configuration entry (MC).

Note: To display **Calendar Definition** records defining holidays (= **Workday** unchecked) in the user's calendar, a calendar with the selected ID must be defined in the **Configuration** info area (MC), see Calendar on page 24.

To create records in the **Calendar Definition** info area you can:

• create records manually, e.g. to just create a company-specific holiday for the next year

• create a to-do that generates records for a large number of days, i.e. one or more years.

To generate records via a to-do:

1. Create a to-do record of **To-Do Type** "Calculate" e.g. with the following text:
   ```
   17;2013-09-01,2013-12-31,1,2,10
   ```

   This creates **Calendar Definition** records for the specified time span (max. 10 years) for the calendars 1, 2 and 10. The IDs must correspond to catalog value IDs of the fixed catalog "Calendar". If no catalog value exists for the specified ID, no records are created. For more details, see To-Do Types on page 444.

2. If the to-do record is assigned to the current user, it is executed immediately upon saving the record. Otherwise it is executed by CRM.server.

   The to-do is executed with the rights of the user who created the to-do.

   After completing the to-do, the Calendar Definition info are contains a record for each day and calendar as specified in the to-do:

Disable check for mandatory field in company conditions

Learn how to disable check for mandatory field in company conditions.

The configuration setting `Disable check for mandatory field in company conditions` is located in **Right Module > Configuration**.

When enabled, this configuration setting becomes active during price calculation, taking into account the volume scales in company condition, even when the fields **Discount vol. in kind** or **bulk discount (%)** are empty.

3

Using CRM Core

CRM.Core is easy to use and offers numerous features to facilitate your daily activities.

Rights Module

Here you can learn about the CRM process and the core settings for the Aurea CRM.

Use the **Rights** module to:

- Define which CRM processes are available across the entire system, see CRM Process Configuration on page 98

- Define roles used by your company's employees to log on to the system, see Login Roles on page 106

- Define languages and stations, see Languages on page 109 and Station on page 111.

- Depict your company's internal structure by defining reps, groups and resources, see Rep on page 114

- Define data access rights for stations, groups and users, see Rights on page 136

- Log data access and changes, see Tracking on page 242, Logging Read and Write Access on page 245 and History on page 258

- Define new functions and processes, see Triggers on page 169.

- Separate data by tenants, see Tenants on page 221

To prevent concurrent changes of the same format (e.g. a rights definition or a trigger), each time a format is opened a check is performed if this format is currently being edited by another user. In this case a message is displayed and the current user can only view the format but not change anything.

This applies to the following formats:

- CRM Process Configuration

- CRM Process Configuration (login role)

- Rights

- Trigger

- Tenant Rights

CRM Process Configuration

You can use the **CRM Process Configuration** level to define which CRM processes and functions are available across the entire system (i.e. on all stations).

For further details, see Configuring CRM Processes on page 98.

"CRM Processes" in this sense refer to business processes depicted in Aurea CRM.

You can also configure access to CRM processes for individual roles, providing you with a greater level of granularity, see Login Roles on page 106 and CRM Process Configuration for Login Roles on page 108.

Note: You can only configure system-wide CRM processes on the main office. By default, only the administrator (SU) can make any changes.

By default, some CRM processes are locked for all users apart from the administrator (SU), e.g. "Data Model", "System Lock" etc. You can grant access to these CRM processes using role-specific configurations, in order to delegate individual administrative tasks without needing to share the SU password.

The administrator (SU) always has access to all areas in the database and all Aurea CRM functions, irrespective of the current CRM process configuration.

Configuring CRM Processes

Learn how to configure CRM process.

To configure CRM processes across the entire system:

1. Start the **Rights** module on the main office, see *Starting Modules* in the *Aurea CRM win Administrator Guide*.

2. Switch to the **CRM Process Configuration** level using the **Info** menu or icon bar.
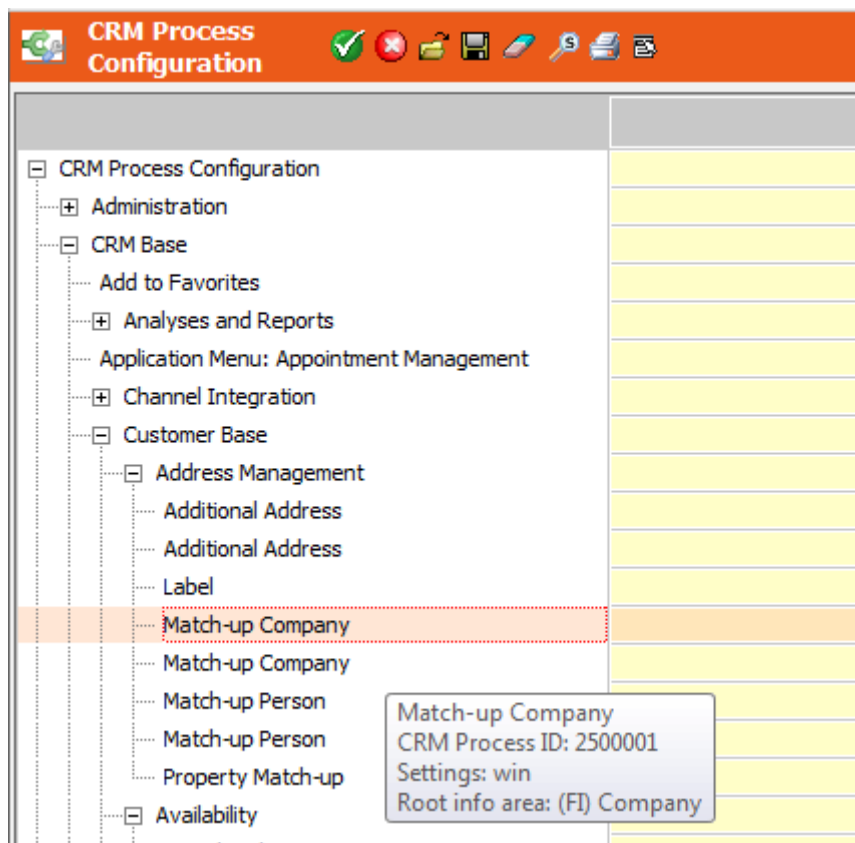
All CRM processes are displayed in a hierarchy. Use the **Lock** column to lock (or grant access to) individual CRM processes, sub-processes and functions.

Information on the individual CRM processes is displayed in Tooltips, see CRM Process Information on page 101. Click on (**Find**) to search for a CRM process in the tree, see Searching for CRM Processes on page 102. Use the context menu to determine how information is displayed and edit the CRM process tree, see Context Menu Entries on page 103.

3. Select either **Deny (overridable)** or **Allow** in the **Lock** column of the root element ("CRM Process Configuration") to define the general behavior of the CRM process configuration:

- Select **Deny (overridable)** if you wish to deny access to CRM processes by default, and only grant access to certain CRM processes to various login roles in a targeted manner.

- Select **Allow** if all CRM processes should be available to all users by default, and you only wish to lock certain CRM processes for certain login roles.

4. You can configure access to further CRM processes, sub-processes and functions. Each setting affects the CRM process itself and all child processes. The following options are available:

- **Deny (overridable):** Access to the CRM process (and all child processes) is denied. You can grant access to child processes by selecting **Allow** in the **Lock** cell of the sub-process.

   Note: Variable locks can also be overridden in role-specific CRM process configurations, see CRM Process Configuration for Login Roles on page 108.

- **Deny:** Access to the CRM process (and all child processes) is denied. The lock cannot be overridden by sub-processes.

- **Allow:** Overrides a lock (applied to a parent process) for the selected sub-process.

- **Deny all (overridable):** Access to the CRM process (and all child processes) is denied. You can grant access to child process by selecting **Allow** in the **Lock** cell of the sub-process. This setting is context-independent; if the CRM process appears in the tree in various places, all instances of the CRM process (identical CRM process ID) are locked using this option.

- **Deny all:** This setting is context-independent and locks the CRM process. The lock cannot be overridden.

Note: The **all** options apply to all CRM processes with the same ID.

If a CRM process ID contains wildcards (*, ?), the settings are applied to all sub-processes with matching IDs, see Adding New CRM Processes on page 103.

To change the default setting for an existing core process (**Deny** vs. **Deny overridable**): Select the process in the tree, select **New** from the context menu and clear the **No.** field: This disables all fields except the **Lock** and **Overridable Lock** fields, allowing you to set a new default lock.

Locked CRM processes are displayed in gray. The corresponding levels, pages and functions (menu options and buttons) are not displayed on the user interface.

5. Click on ✅ (**OK**) to apply the selected settings to the system-wide CRM process configuration. The CRM process configuration is automatically saved as a nameless format of the type "CRM Process configuration".

   Click on ❌ (**Cancel**) and answer the prompt with **No** to exit the **CRM Process Configuration** level without saving your changes.

   Click on 🖌 (**Delete**) to remove all settings from the **Lock** column.

Click on (**Save**) to save the process configuration under a name of your choice (see *Saving, Loading and Deleting Formats* in the Aurea CRM win User Manual) in order to use the settings later.

Click on (**Load**) to load a previously saved CRM process configuration. The format name is displayed in the header ("Last used format").

Note: Settings you have confirmed by clicking on (**OK**) are **always** applied, irrespective of the formats you have loaded or saved.

CRM Process Information

Learn about CRM process information.

The following information is displayed in Tooltips for the individual CRM processes:

- The name of the CRM process

- The **Vertical** the CRM process is used by. If no vertical is specified, the process is used by all verticals ("Base")

- The **CRM Process ID**, which identifies the CRM process:

  - Level ID (e.g. **11001** for the **Activity** level) in Aurea CRM win. Wildcards (*, ?) are used for CRM processes that contain several sub-processes (e.g. **1200?** for the "Mailing" process affects the levels **Mailing** (12001) and **Edit Mailing** (12002)), see Level Properties in the *Aurea CRM win Administrator Guide*.

  - CRM Process ID in Aurea CRM web (menu options, direct buttons).

  - Button or context menu option IDs in Aurea CRM win (e.g. B_1088 (Function) for the **Tel ./ E-Mail** button in the **Company+Person** level).

  - Aurea CRM win menu option ID (e.g. M_78 (Menu Command) for **Load List Format**).

- **Settings: <win/web>** indicates whether the CRM process is used in Aurea CRM win or one of the web products (Aurea CRM web, CRM.pad) and whether it can be locked.

- **Available from version** is only relevant for user-defined CRM processes. You can enter the version that the CRM process is available from in the corresponding field in the **CRM Process** info area (just for info, no functionality), see Adding New CRM Processes on page 103.

- **Root info area:** Displays the root info area used by the CRM process.

- **Further info areas:** Displays further info areas used by the CRM process.

Note: If all CRM processes that reference a particular info area are locked in the system-wide CRM process configuration (visible under **Root info area** and **Further info areas**), access is denied to this info area and all child info areas.
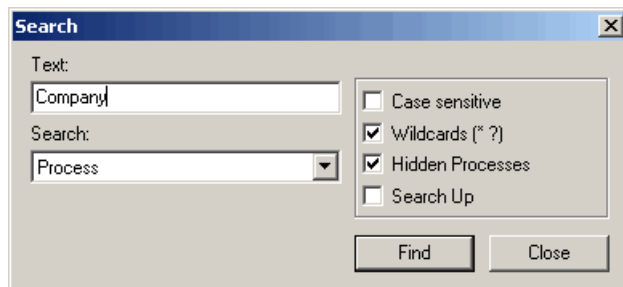
Links to this info area are also no longer displayed. This behavior corresponds to enabling the **Deny Access** option in the access rights, see Defining Rights at the Info Area level on page 140.

Searching for CRM Processes

Learn how to search for CRM processes.

To search for a process in the **CRM Process Configuration** level:

1. Click on (**Find**).

2. Enter a search term in the **Text** field.

3. Determine whether to search for a CRM Process name or CRM Process ID using the **Search** drop-down list.

4. The following search options are available:

   - **Case sensitive:** Enable this option to use a case-sensitive search.

   - **Wildcards (* ?):** Enable this options to use wildcards in the search (* for multiple characters, ? for a single character).

     Note: Note: You can use literal character values of '*' and '?' using the escape sequences '*' and '\\?'.

   - **Hidden Processes:** Enable this option to search the contents of process groups even if the sub-processes are hidden.

   - **Search Up:** Enable this option to change the search direction: The system searches upwards from the current cursor position.

5. Click on **Find** to start the search.

6. Click on **Close** to exit the search.

Context Menu Entries

Learn about context menu entries.

The context menu in the **CRM Process Configuration** level contains the following options:

- **Sort alphabetically:** Sorts entries alphabetically within groups. Select this option again to revert to the original sort order.
- **Show number:** Displays the numbers of entries in the CRM process tree. Select this option again to hide the numbers.
- **win/web :** Use these options to hide or show all Aurea CRM win or Aurea CRM web CRM processes.
- **Select user group:** Use this option to determine the number ranges used when adding user-defined processes: **Update** (400-599), **Partner** (600-799) and **Customer** (800-999), see Adding New CRM Processes on page 103. A password is required to use the **update** and **Partner** options.
- **New:** Select this option to add a new CRM process to the process tree, see Adding New CRM Processes on page 103.
- **Edit:** Select this option to edit the selected user-defined CRM process in the **CRM Process** info area.
- **Delete:** Select this option to remove a user-defined CRM process from the process tree.
- **Expand/Collapse all:** Select this option to expand or collapse all entries below the currently selected entry.
- **<-/->:** Use these options to navigate to the previous/next entry in the tree where an option has been selected in the **Lock** cell.
- **Transfer to Spreadsheet:** Select this option to output information on all CRM processes as an .xls file.

Adding New CRM Processes

Learn how to add new CRM processes.

You can define additional CRM processes and functions in order to extend Aurea CRM's functionality and tailor the application to meet your individual needs. In Aurea CRM win, you need to define new levels and integrate them in a desktop format, see Desktop in the *Aurea CRM win Administrator Guide*. In Aurea CRM web, the CRM processes are defined as menu options and direct buttons, see *Aurea CRM web Administrator Guide*. You can also enable or disable triggers and workflows (that have been assigned in the rights definition) in the process tree by referencing a format.

You can add these user-defined CRM processes to the CRM process configuration in order to control access to these processes:

1. Click on the new process's parent in the **CRM Process Configuration** level.

Select **Select user group** from the context menu to determine the number ranges used by user-defined CRM processes: **update** (200-599), **Partner** (600-799) and **Customer** (800-999). You require a password for the **update** and **Partner** options. For the **update** user group, the process tree displays all processes including those currently without children (displayed in red).

If you do not select a user group, the CRM process number is assigned according to the current station number, >> Number Ranges in Aurea CRM on page 398.

2. Select **New** from the context menu.

The **CRM Process** info area is opened.

3. Enter a name for the CRM process in the **CRM Process** field. This name is displayed in the **CRM Process Configuration** level. This field accesses a variable catalog, allowing you to enter CRM process names in multiple languages, see Catalogs on page 270.

4. Select the **Format Type** ("empty", Trigger, Workflow).

5. Enter the desired ID in the **CRM Process ID** and/or **Web CRM process ID** fields:

- The level IDs can be determined in the level settings, or you can output a list of all available levels and their IDs in a module using the `--writeprocesslist` parameter, see Defining New Levels in the *Aurea CRM win Administrator Guide* and General Aurea CRM Parameters on page 11.

  You can use wildcards (*, ?) to define a CRM process that affects several levels in Aurea CRM win. You can also enter predecessor levels for such CRM processes (using the syntax "Level;Parent1;Parent2" or "Level;Parent1;*") if the settings should only apply to a particular constellation.

If a CRM process ID contains wildcards, access settings are applied to all sub-processes with matching IDs. **Exception:** If the lock is overridden for one of these sub-processes in a role, the sub-process is accessible, irrespective of the **Priority** entered in the role, see Login Roles on page 106.

- **Button** IDs must be specified using the syntax B_<ID>. Button IDs can be determined in the mask generator, see Button Properties in the *Aurea CRM win Administrator Guide.* User-defined context menu entries cannot be integrated in the process tree.

- IDs for new **Aurea CRM web CRM processes** can be freely defined. After transferring the CRM process configuration to Aurea CRM web, you need to assign the CRM process ID to the corresponding functions in CRM.designer (menu options, direct buttons), see Roles & CRM Processes in the *Aurea CRM web Administrator Guide.*

Note: Use the **Web CRM Process ID** field for CRM processes that should only be used in Aurea CRM web or that have a different ID in Aurea CRM web and Aurea CRM win.

- If you have selected a **trigger** or **workflow**, select the desired format in the **CRM Process ID** field or use wildcards (*, ?) to define a CRM process that affects several trigger/workflow formats.

6. Select the **Root info area** used by the CRM process. Select the other info areas used by the CRM process in the **Further info areas** field.

Note: If all CRM processes that reference a particular info area are locked in the system-wide CRM process configuration (visible under **Root info area** and **Further info areas**), access is denied to this info area and all child info areas. Links to this info area are also no longer displayed. This behavior corresponds to enabling the **Deny Access** option in the access rights, see Defining Rights at the Info Area level on page 140.

7. Use the **win** and **web** check boxes to determine whether access can be denied to the CRM process in Aurea CRM win and/or web products (Aurea CRM web, CRM.pad). Only CRM processes for which the **web** check box is enabled are transferred to CRM.designer along with the process configuration.

8. Use the **Overridable Lock** and **Lock** check boxes to define the process as either variable of fix by default in the CRM process configuration, see CRM Process Configuration on page 98.

9. Click on 🖫 (**Save**).

You are returned to the **CRM Process Configuration** level.

Select **Edit** from the context menu to edit the currently selected user-defined CRM process in the **CRM Process** info area.

Select **Delete** from the context menu to remove the currently selected user-defined CRM processes from the CRM process tree.

Note: Aurea recommends that new CRM processes are only added on the main office, see Defining a Station on page 112.
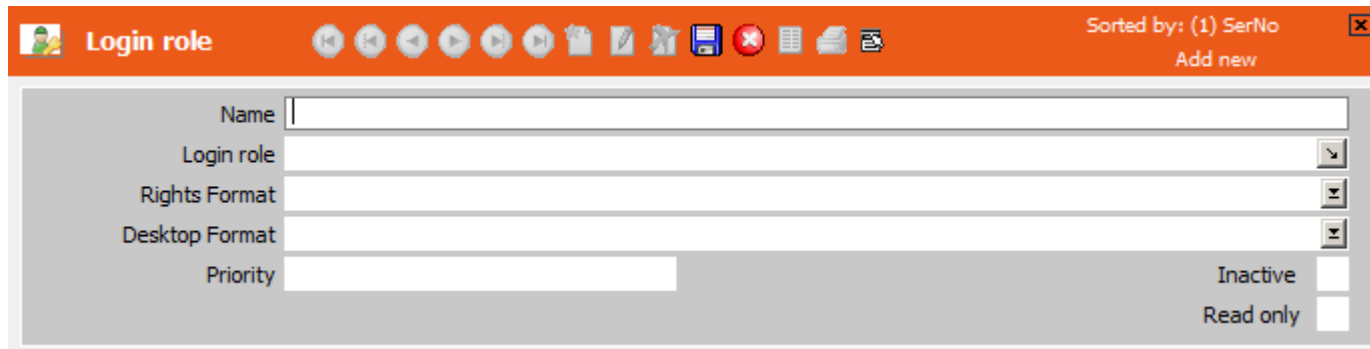

Login Roles

Depending on their current tasks, employees often operate in various roles, e.g. in some cases as a sales rep, in other situations as a support agent. Some employees may occasionally undertake administrative tasks in the system.

The **Login Role** info area allows you to define roles for these various situations. You can define a separate CRM process configuration for each role, restricting the CRM processes to only those immediately necessary. This requires a valid system-wide CRM process configuration, see Configuring CRM Processes on page 98.

You can assign up to 16 roles to Aurea CRM users, and users can select a role when logging on to the system, see Rep Roles on page 123. Each role can be assigned different access rights, desktop formats and CRM process configurations.

To define a login role:

1. Switch to the **Login Role** level in the **Rights** module (using the **Info** menu or icon bar).

2. Click on ![icon] (**New**).

3. Enter a **Name** for the role. This name must be specified when using the `--role` parameter, see General Aurea CRM Parameters on page 11.

4. Enter a name for the login role in the **Login role** field. This field accesses a variable catalog, allowing you to enter role names in multiple languages, see Catalogs on page 270. The login role name is displayed when selecting a role at logon, see *Logging on to Aurea CRM* in the *Aurea CRM win User Manual*.

> **Note:** Each catalog value in the **Login role** catalog can only be used by a single login role record.

5. Use the **Rights Format** field to assign an access rights format to the login role, see Rights on page 136.

6. Use the **Desktop Format** field to assign a desktop format to the login role, see *Desktop* in the *Aurea CRM win Administrator Guide*.

7. Enter an integer value in the **Priority** field. The priority determines the order in which rights, desktop formats and CRM process configurations are applied if a rep logs on using several roles at once.

8. Enable the **Inactive** check box to disable a login role without deleting the record. Inactive login roles are not loaded or displayed for selection when logging in.

9. Use the **Read only** check box to define a role that only grants read access to the available CRM processes (i.e. those processes for which **Allow** is selected in the **Lock** field).

   For more information on read only roles in Aurea CRM web, see *Aurea CRM web Administrator Guide*.

10. Save the record.

11. Select **CRM Process configuration (login role)** from the context menu to assign a specific CRM process configuration to the role, see CRM Process Configuration for Login Roles on page 108.

The login roles defined here must be assigned to the desired reps in the **Rep Role** info area, see Rep Roles on page 123.

If a rep logs on to Aurea CRM using one or more roles, the settings in the system-wide CRM process configuration are combined with the CRM process configuration(s) assigned to the selected role(s): The system-wide CRM process configuration has the highest priority, followed by role-specific CRM process configurations according to the **Priority** entered in the login role records. **Exception:** If access is granted to a CRM process for a role (**Allow** option), access can only be denied to the CRM process using the **Deny** option in a child role (higher **Priority**). Overridable locks are ignored in this case.

The access rights and desktop formats assigned to roles are also combined with the access rights and desktop formats assigned to stations, groups and reps, see Rights Hierarchy and Extended Desktops in the *Aurea CRM win Administrator Guide*.

The roles cache (i.e. the **login role** records) is refreshed every 60 seconds.

CRM Process Configuration for Login Roles

You can define a CRM process configuration for each login role, which only includes the CRM processes required by that role.

For example, a rep in the role of a support agent does not require access to marketing processes.

To define the CRM process configuration for a login role:

1. Switch to the **Login Role** level in the **Rights** module (using the **Info** menu or icon bar).

2. Switch to the login role that you wish to define the CRM process configuration for.

3. Select **CRM Process configuration (login role)** from the context menu.

   The **CRM Process configuration (login role)** level is displayed. The current system-wide CRM process configuration's settings are transferred, i.e. CRM processes that have been locked in the system-wide CRM process configuration are grayed out.

4. Define the role-specific CRM process configuration as you did the system-wide CRM process configuration, see CRM Process Configuration on page 98.

   Overridable locks defined in the system-wide CRM process configuration (**Deny (overridable)** or **Deny all (overridable)** in the **Lock** column) can be overridden in the role-specific CRM configuration using the **Allow** option. The **Deny** and **Deny all** locks cannot be overridden.If access is granted to a CRM process for a role, access can only be denied to the CRM process using the **Deny** option in a child role (higher **Priority**).

5. Click on ✅ (**OK**) to apply the current settings and return to the **Login Role** level.

   Click on 🛇 (**Cancel**) and answer the prompt with **No** to exit the **CRM Process configuration (login role)** level without saving your changes.

   Click on 📝 (**Delete**) to remove all settings from the **Lock** column (except those inherited from the system-wide CRM process configuration).

   Click on 💾 (**Save**) to save the CRM process configuration under a name of your choice (see Saving, Loading and Deleting Formats in the *Aurea CRM win User Manual*) in order to use the settings later.

   Click on 📁 (**Load**) to load a previously saved CRM process configuration.

Languages

You need to define all languages used by Aurea CRM in the **Language** info area and assign all stations the necessary languages.

For further details, see Defining Languages on page 109 and Assigning Languages on page 113.

You can:

- Manage catalogs and texts in formats (field names, messages etc.) in multiple languages, see Catalog Info Area on page 271 and Text Info Area on page 368.
- "Derive" languages from existing languages (e.g. to depict different variants of English), see Defining Language Variants on page 110.
- Assign a language to each rep. Aurea CRM is then started in this language by default, see Defining Reps on page 114
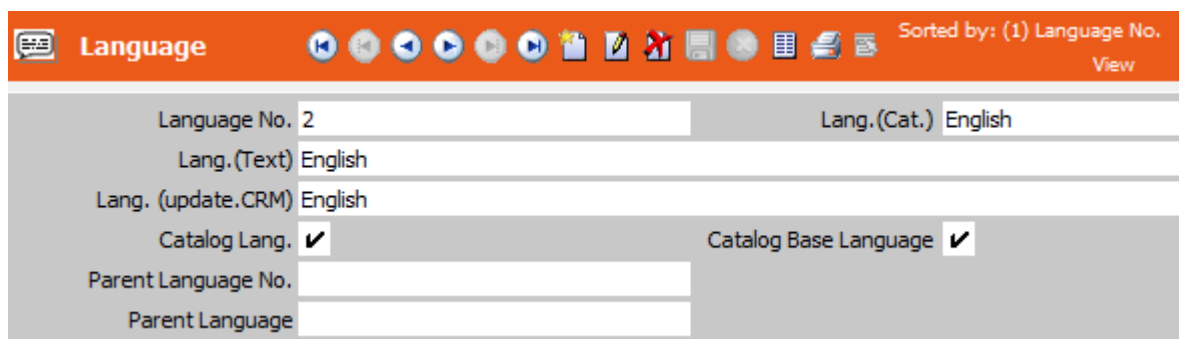
Use CRM.translation tool to translate custom texts, see CRM.translation tool on page 474.

Defining Languages

Learn how to define languages.

To define a language:

1. Switch to the **Language** info area.

2. Click 🗋 (**New**).

3. Enter a number for the language in the **Language No.** field. This number uniquely identifies the language record. If you do not enter a number, a number is assigned automatically. This number is used to assign languages to reps, groups and stations, see Assigning Languages on page 113 and Defining Reps on page 114.

Note: This number has no connection with the Aurea CRM's internal language IDs, see Language IDs on page 389.

Number ranges are available for languages (but not automatically used), see Number Ranges in Aurea CRM on page 398.

4. Enter the name of the language in the **Lang .(Text)** field. This name is displayed in when entering (multi-language) catalog values and texts.

5. Assign the language to a language in the language catalog using the **Lang .(Cat.)** field. This entry is used to determine the catalog language for labels used in word processor formats with language transformation (see Word Processor in the *Aurea CRM win User Manual*) and for multilingual item master texts in the BTB vertical, see Item Master in the *BTB Business Logic Manual*.)

6. Assign the language to an Aurea CRM language in the **Lang .(Aurea.CRM)** field.

Note: Language numbers can be relevant when determining the login language: If a user logs on with a language assigned to another Aurea CRM language than his default language (as defined in the **Rep** record), the language with the highest **Language No.** defined for this Aurea CRM language is used.

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7. Enable the **Catalog Base Language** field to define the language as the catalog base language (for variable catalogs). The catalog base language forms the basis for translations of catalog values to other languages, see Catalog Info Area on page 271.

Note: Only enable this field for a **single** language and do not change this setting once defined. Irrespective of the language number you have assigned to the catalog base language in this info area, the catalog base language always uses language number 0 in the **Catalog** info area.

---

8. Enable the **Catalog Lang.** check box if the language should be used as a catalog language. Catalog values can then be entered and displayed in this language.

   Disable the **Catalog Lang.** check box to use the catalog base language for **variable** catalogs and the Aurea CRM language for **fixed** catalogs.

9. Save the record.

Defining Language Variants

You can define language variants, e.g. to depict US and UK English.

To define language variant:

1. Define the language as described in Defining Languages on page 109.

2. Enter the number of the language that the variant is derived from in the **Parent Language No.** field.

3. Save the record.

Defining language variants has the following effects:

- If no translation of variable catalog values or texts is entered for the variant, the text defined for the parent language is used.

- If no translation is entered in the parent language for variable catalog values, the value in the catalog base language is used.

- If no translation is entered for a text in the parent language, the language-independent text is used, see Data Model on page 280 and Text Info Area on page 368.

Note: Texts and catalog values are searched for in the parent language, the parent language's parent language and so on. The parent language(s) must be assigned to the current station. Up to 16 levels can be present in this hierarchy (including the base language).

Catalog settings (e.g. the **Sort Order**) inherit values from the parent language or catalog base language, see Editing Variable Catalogs on page 273.

Station

A station in Aurea CRM is the equivalent of a database.

Each station is assigned a station number, which is used to track the source of data and coordinate communication between stations. Information such as the station number, location, position in the communication system and settings for communication cycles is stored in the **Station** info area, see Communication in the *Aurea CRM win Administrator Guide*.

The **Station** info area is present in both the Aurea CRM win **Rights** and **Communication** modules, see Station in the *Aurea CRM win Administrator Guide*.

You can define station-specific system locks, tracking and password settings, and blocking mechanisms in the **Station configuration** info area, see Station Configuration on page 233.

You can define locks for each station in the **System Lock** info area, see System Locks on page 236.

Defining a Station

Learn how to define a station.

To define a station:

1. Switch to the **Station** info area.

2. Click 📋 (**New**).

3. Enter the number of the station in the **Stat.No.** field.

Each station is assigned a unique station number, either during installation (in the **Configuration** module) or when inputting a data stock download, see *Base Configuration* and Data Stock Download in the *Aurea CRM win Administrator Guide*. The station number in the station record must be identical to the station number in the **Configuration** module.

The station number uniquely identifies the station. It is used to track which data was added on which station, see Communication in the *Aurea CRM win Administrator Guide*.

Note: Never assign a station the number 0 (zero)!

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4. Enter a name used to identify the station in the **Stat. Name** field; e.g. "London main office", "Plymouth branch office", "Smith laptop" etc.

5. Use the **Main Office** check box to identify the central station where all data is stored and maintained. The data model can only be edited on the main office.

6. Enable **Aut.Cat.Maintenance** on the station that should be used to maintain variable catalogs (in many cases, this is also the main office). This option must be enabled in order for the **Catalog Maintenance** info area to be updated, see Catalogs on page 270.

> **Note:** The **Main Office** and **Aut.Cat.Maintenance** flags cannot be changed on client installations, i.e. without a serial number.

7. Assign **Station Access Rights** to the station, see Rights on page 136.

   The station access rights apply to all users logging on to this station.

8. Assign a **Default Telephone Profile** to the station, see CRM.phone on page 261.

9. Enter information on the location of the station on the **Address** tab. The remaining tabs are described in conjunction with the communication settings, see *Station* in the *Aurea CRM win Administrator Guide.*

10. Save the record.

Assigning Languages

You can assign languages to stations.

You need to assign all available languages to the main station. The languages assigned to a station determine the following:

- languages in which catalog values and user-defined texts are displayed
- languages for which fixed catalogs are available
- languages for which new variable catalog values and user-defined texts can be defined.

To assign a language to a station:

1. Switch to the **Station** info area.

2. Select **Languages** from the context menu.

   The **Station Language** info area is displayed.

3. Click (**New**).

4. Enter the number of the language you wish to assign to the station in the **Language No.** field.

5. Click (**Save**).

Alternatively, select **Languages** from the context menu in the **Station** info area a second time while the **Station Language** info area is open. A dialog box is displayed listing all languages defined in the **Language** info area. Enable the check boxes next to the languages you wish to assign to the station, or enable **Select All** to select all the languages.

Rep

Use the **Rep** info area to manage and depict your internal company structure (employees, groups, resources).

You can:

- Define reps, see
- Configure Aurea CRM logins, see
- Assign roles to reps based on their tasks, see
- Add groups and resources, see
- Assign access rights to reps and groups, see

Defining Reps

Learn how to define reps.

To define a rep:

1. Open the **Rights** module and switch to the **Rep** Info area.

2. Click ☐ (**New**).

3. A unique ID number is generated in the **Rep/Group ID** field (composed of the station number and a serial number). This number is used to link the rep to the login name and to the specified access rights. The ID cannot be changed.

4. Select "Employee" from the **Type** drop-down list.

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5. Enter the **Name** of the rep. The rep's name is displayed in the rep list, see *Rep List* in the *Aurea CRM win User Manual.*

6. Enter the **Rights Format** you wish to assign to the rep, see Rights on page 136.

7. Select a **Desktop Format** to assign to the rep. This desktop format is loaded when Aurea CRM is started, see *Desktop* in the *Aurea CRM win Administrator Guide.*

   Note: If desktop formats have also been assigned to the rep's group or station, the desktop format assigned to the rep takes precedence over the group and station settings; group settings take precedence over station settings, see *Assigning Desktops* in the *Aurea CRM win Administrator Guide.*

8. Enter the **Rights Group** that the rep belongs to. The access rights defined for this group are applied to the rep.

9. Enter the organizational group the rep belongs to in the **Org. Group** field. Reps are grouped accordingly in the rep list. Whenever a rep is entered in a record (e.g. an activity), the **Org. Group** and **Org Group ID** are automatically entered in the corresponding group fields.

   The variable condition "Rep's extended group" is applied to the group entered in this field and groups directly allocated to the group in the **Group Allocation** area, see Defining Variable Conditions in the *Aurea CRM win User Guide* and Assigning Reps to a Group on page 126.

   Note: Groups are also defined in the **Rep** info area, see Defining Groups on page 125.

10. If necessary, select the language to be assigned to the rep in the **Language** field (select **View > All Mask Fields**). Aurea CRM is then started in this language when the rep logs on.

11. Enter the **ID-TenNo** to assign tenant rights to the rep, see Tenants on page 221.

12. Enter further information (for details on the fields, refer to the online field help).

13. Save the record.

14. Define a login for the rep, see Configuring Logins on page 115.

15. You can assign one or more login roles to the rep, see Login Roles on page 106.

Configuring Logins

Learn how to configure logins.

Select **Configure Login** from the context menu in the **Rep** info area to link a rep record to an Aurea CRM login for the current station. Use the **Central Login Configuration** info area to define logins for other stations, see Central Login Configuration on page 120.

Note: The **Configure Login** entry in the context menu is only available for the SU and for users who have access to the **Configuration** module (`mmcfg.exe`), see Configuration Module in the *Aurea CRM win Administrator Guide*.

By default, the **Configure Login** context menu entry is only available for a user's own rep record (except for the SU), i.e. a user can only create/update/delete his own login (US) record. (Only the **Password** (US:38) and **Encrypted Password** (US:47) fields can be updated.)

Access to **all** US records is controlled via the CRM process 1.5.2.2.1.6. "Manage Logins" (CRM process ID 70000310).

The "Manage Logins" CRM process is disabled by default.

However, access to the **Configuration** module (`mmcfg.exe`) needs to be controlled via module access rights.

To configure the Aurea CRM login for a rep:

1. Switch to the desired record in the **Rep** info area.

2. Select **Configure Login** from the context menu.

Configure Login

User name	SU
Password	
Domain	
Windows User Name	
Alias	

Frq. PW Update in days	0	☐ PW Update next login
Passwords in History	0	☐ Ignore PW Settings
		☐ Deactivate Password
Max. no. of failed login attempts	0	☐ Ignore max.no. of failed login attempts
No. of failed login attempts	0	Date Open . . 00:00:00:000

☐ Lock Windows modules   ☐ Process Tracking
☐ Lock Web modules   ☑ Ignore system lock
☐ No multiple access to Windows modules   ☐ Ignore system lock date
                            ☐ Ignore daily system lock

Module Access Rights:

☑ Configuration   ☑ web   ☑ mobile
☑ update.CRM win   ☑ interface
☑ Rebuild   ☑ connectLive
☑ Import   ☑ cockpit
☑ Rights   ☑ web services
☑ Print   ☑ groupware connector
☑ Export   ☑ server
☑ Maintenance   ☑ pad
☑ Communication
☑ Analysis

Save   Delete   Close

3. Enter the **Name** used to log on to Aurea CRM (login name).

   The name is limited to a maximum of eight characters and may not contain spaces or special characters. You may not use reserved device names (COM2, LTP1 etc.) as login names.

4. Enter a login password for the user in the **Password** field.

   The maximum password length is 128 characters. The password is saved as it is entered (i.e. case-sensitive).

   Passwords entered in the **Password** field (US:38) are encrypted upon saving the record. To import an already encrypted password, use the **Encrypted Password** field (US:47).

For more information on password security, see Password Security.

5. Enter the desired password settings, see Password Settings on page 118.

6. Assign the desired module access rights and configure lock and process tracking settings, see Module Access Rights, System Locks and Process Tracking on page 120.

7. Click **Save**.

A user directory (and the corresponding sub-directories) is added with the same name as the user's login name. The user settings are saved in the **Login** (US) info area.

8. Click **Close** to return to the **Rep** info area.

When deleting a rep record (ID), all linked US records are deleted as well (except for the SU). The SL and OS (BTB only) tables are deleted as well. The respective user directory is not deleted.

Password Settings

Learn how to set password in the configuration settings.

You can configure the following password settings in the **Configuration** module or the **Configure Login** dialog box:

- Enter the user's Windows user name and Windows domain in the **Domain** and **Windows User Name** fields to allow the user to log on to Aurea CRM from their computer without needing to enter their Aurea CRM user name and password (single sign-on). Users can still log on using their Aurea CRM login when working on a different machine. If you do not wish users to be able to log on from other machines, enter an Aurea CRM password that is unknown to the user.

  You can specify multiple domains (separated by a semicolon), provided the user has the same user name in all domains.

- Enter an **Alias** to prevent users from logging on using their user name (8 characters). Users need to use their alias to log on instead.

  The alias can be up to 64 characters long and may not contain any special characters. This option provides added security at login.

  Although users cannot log on using their user name, the user name is still used internally, e.g. as the name of the user directory.

  Note: The alias cannot be used in conjunction with single sign-on.

- Enter a value in the **Frq. PW Update in days** field to determine that the user must change their password at the interval specified.

- Enable the **PW Update next login** check box to determine that the user must change their password the next time they log on to Aurea CRM. This option is automatically disabled once the password has been changed.

> **Note:** If you are entering (initial) passwords for your users, the **PW Update next login** check box is deactivated upon saving. Make sure to re-check it, if you want a user to change the password at the next login.

- Use the **Passwords in History** field to determine the number of different passwords stored in the password history. A user cannot reuse a password still stored in the history (maximum: 10).

- Enable the **Ignore PW Settings** check box to determine that the settings defined in the **Configuration** module and in the **Station configuration** info area do not apply to this user, see Station Configuration on page 233.

- Enable **Deactivate Password** to deactivate the password. The user can then log on to Aurea CRM without a password, and can enter a new password by enabling the **Change password** check box in the expanded login prompt.

  Disable the **Deactivate Password** check box once the password has been changed.

- Use the **Max no. of failed login attempts** field to determine the maximum number of failed login attempts before a user is blocked from logging on by the system. To use this function, you also need to enable the **Max. Blocking** check box in the **Station configuration** info area, see System Blocking.

- The **No. of failed login attempts** field stores the number of failed login attempts. Set the value in the **No. of failed login attempts** field to "0" (zero), to unblock a user who has exceeded the maximum number of login attempts.

- Enable the **Ignore max. no . of failed login attempt**s check box to ignore the value specified in the **No. of failed login attempts** field. The user is exempted from the blocking mechanism.

- The **Date Open** field stores the date and time when a user can use the system again if they are blocked by the exponential blocking mechanism.

> **Note:** The **Frq. PW Update in days** and **Passwords in History** settings are also available in the **Station configuration** info area, see Password Security.
>
> The **Max no. of failed login attempts** can be defined per station in the **Station configuration** info area, see System Blocking.
>
> User-specific settings take precedence over station-specific settings.

Module Access Rights, System Locks and Process Tracking

Learn how to perform settings in configuration module.

You can configure the following settings in the **Configuration** module or the **Configure Login** dialog box:

- Enable the check boxes under **Module Access Rights** to determine which modules (e.g. **Import**) and products (e.g. Aurea CRM web) a user can access.

  Note: Be restrictive when assigning module access rights. For security reasons, users should only be able to access those modules they require to complete their work.

- Enable the **Lock Windows modules** and **Lock Web modules** check boxes to deny the user access to all Windows modules (see *Aurea CRM win Modules* in the *Aurea CRM win Administrator Guide*) and all other Aurea CRM products.
- If the **No multiple access to Windows modules** check box is enabled, a user may only log on to a Aurea CRM win module once at a time. If the check box is disabled, the user can log on any number of times.

  Note: If **No multiple access to Windows modules** is enabled for the SU, the setting is applied to **all** users.

- Enable the **Process tracking** check box to activate process tracking for individual users, see Process Tracking on page 243.
- The **Ignore system lock, Ignore system lock date**, and **Ignore daily system lock** check boxes are used to exempt users (e.g. communication or import users) from system locks, see System Locks on page 236.

Central Login Configuration

Use the **Central Login Configuration** (ES) info area to create and manage logins for all stations.

Logins are included in the data stock download generated when first setting up a station, see Data Stock Download in the *Aurea CRM win Administrator Guide*. Configure the logins for the branch offices on the main office before outputting the data stock downloads. For more information on communicating logins, see Communicating System Tables in the *Aurea CRM win Administrator Guide*

You can:

- either add a separate record for each station that a login is valid for, or use the login on the current station as a template for all stations, see Configuring Logins Centrally on page 121.

> **Note:** Use templates if users require logins for several stations. This allows changes to be communicated between the stations, allowing the logins to be synchronized. If password changes should also be communicated, enable the **Manage password globally** check box as well.

- delegate the administration of logins using the **Central Login Configuration** info area; in large installation (e.g. involving multiple head offices in various countries), "local" administrators can manage logins for the stations they are responsible for without requiring access to the **Configuration** module or **Login** info area, see Configuring Logins without mmcfg.exe Access on page 122.

For details on deleting logins configured centrally, see Deleting Logins on Branch Offices in the *Aurea CRM win Administrator Guide*.

Configuring Logins Centrally

Learn how to configure logins centrally.

To configure a login centrally:

1. Select the desired rep in the **Rep** info area in the **Rights** module.

2. Select **Central Login Configuration** from the context menu.

3. Click on (**New**).

4. Enter the number of the station that the login applies to in the **Stat. No** field or click (**Search**) to search for the desired station.

   If you wish to define a login that is valid for **all** stations (e.g. for administrative users such as COM, WWW, IMP etc.), leave this field empty.

5. If a login has been configured for a user on the current station and you wish to use this login on all stations, enter the number of the current station in the **Template (Station No.)** field. The user's login data (from the **Login** (US) info area) is then transferred to the **Central Login Configuration** (ES) record.

If you do not want to use templates, you can define individual logins for individual stations, see

6. Enable **Manage password globally** to manage the password centrally; any changes to the password in the template login record are communicated to all other stations that this login is present on. If you do not enable the **Manage password globally** option, all changes **except** the password are communicated.

Note: This function is only available if you are using a template.

---

7. If you are not using a template, you can configure a login for a specific branch office:

   a. Enter the user's login name in the **Name** field.

   b. Enter further login details (as described in)

   c. Switch to the **Module** tab and select the modules the user should be granted access to.

   d. Switch to the **Password** tab and enter the password settings.

8. Save the record.

Once the login has been communicated, the user can log on to the corresponding station(s).

Configuring Logins without mmcfg.exe Access

The **Central Login Configuration** can be used by reps without access to the **Configuration** module (and consequently the **Login** (US) info area) to define and manage logins.

This allows you to delegate the administration of logins and passwords for individual user groups to "local" administrators. You can further restrict access to the **Central Login Configuration** info area using access rights, if necessary, see

To configure logins in the **Central Login Configuration** info area using a template:

1. Add a central login configuration record for the current station (see above).

2. Enter the number of the current station in the **Template (Station No.)** field as well.

3. Enable **Manage password globally** to manage the password centrally; any changes to the password in the template login record are communicated to all other stations that this login is present on. If you do not enable the **Manage password globally** option, all changes **except** the password are communicated.

4. Save the record.

5. Add a central login record for the desired branch office.

If you wish to define a login that is valid for **all** stations, leave the **Station No.** field empty.

6. Enter the template number (i.e. the current station number) in the **Template (Station No.)** field.

7. Enable the **Manage password globally** option.

8. Save the record.

Once the login has been communicated, the user can log on to the corresponding station(s).

Rep Roles

Use the **Rep role** info area to assign up to 16 login roles (including associated access rights and desktop formats) to reps.

For further details, see Login Roles on page 106.

The login roles only contain the CRM process required for a specific role, see CRM Process Configuration for Login Roles on page 108.

You can assign the same roles to reps in different departments and with different job descriptions.

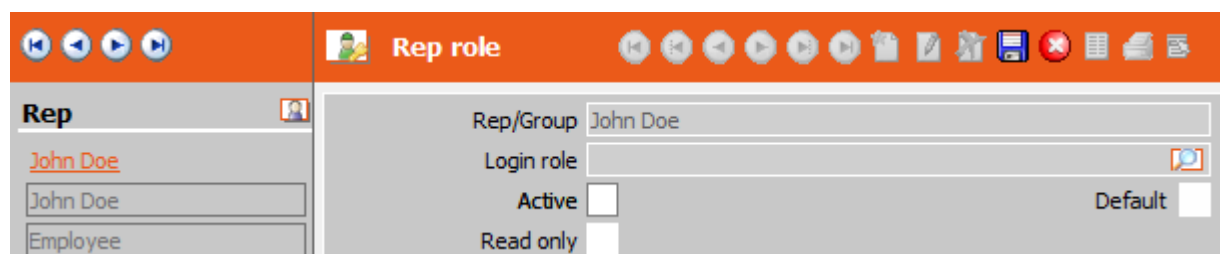Depending on the role(s) selected by a user when logging on to Aurea CRM:

• Different CRM processes are available

• Different access rights are applied

• The desktop format is configured differently

To assign roles to reps:

1. Switch to the desired rep record.

2. Select **Rep role** from the context menu.

    The **Rep Role** info area is displayed.

3. Click on (**New**).

4. Click on the (**Search**) in the **Login role** field.

5. Search for the desired login role, see Executing the Search in the *Aurea CRM win User Manual*.

6. Click on **OK**.

   The role is transferred to the rep role record.

7. You can determine whether the role is fixed or whether the role can be selected when logging on to the system:

   • Enable the **Active** check box to determine that the role is permanently assigned to the rep: When logging on to Aurea CRM, the rep is automatically logged on in this role.

     If you do not enable the **Active** check box, the user can select the role when logging on, see Logging on to Aurea CRM in the *Aurea CRM win User Manual*.

   • If you enable the **Default** check box, the role is enabled by default when selecting roles at login. The rep can however choose to disable the role.

   • If you enable both the **Active** and **Default** check boxes, the role is permanently assigned to the user and is displayed as active when selecting roles. The role cannot be disabled.

8. Enable the **Read only** check box to restrict access to the available CRM processes to read only for the current login role.

9. Save.

If a rep logs on to Aurea CRM using one or more roles, the settings in the system-wide CRM process configuration are combined with the CRM process configuration(s) assigned to the selected role(s): The system-wide CRM process configuration has the highest priority, followed by role-specific CRM process configurations according to the **Priority** defined in the login role records.

The access rights and desktop formats assigned to roles are also combined with the access rights and desktop formats assigned to stations, groups and reps.

You can also assign login roles to organizational groups, see Defining Groups on page 125. If a rep assigned to this group logs on to Aurea CRM, the group roles are combined with the rep-specific roles based on the roles' priorities. If the same login role is assigned to both a rep and the rep's group, the role settings (e.g. **Read only**) defined for the rep in the rep role record are applied.

Skills

Use the **Skill** info area to define a rep's special skills.

You can define any number of skills for a rep (e.g. foreign languages, fields of specialization, knowledge of products etc.). These skills can be taken into account when dispatching service tasks, see *Customer Service* in the *Business Logic Manual*.

To add a rep's skills:

1. Navigate to the desired record in the **Rep** info area.

2. Select **Skill** from the context menu.

3. Enter the data.

4. Save the record.

You can define conditions in the **Configuration** info area which determine which reps are available from the resource view when dispatching service tasks, see Resources on page 56. When allocating tickets to reps, only those reps with the appropriate skills are then displayed in the resource view.

Setting a Rep as Inactive

Learn how to set a Rep as inactive.

If a rep leaves the company, you can continue using the rep's data but set the rep as inactive. This prevents further data from being linked to the rep, while ensuring that important customer related information is retained. Inactive reps can no longer log on to Aurea CRM.

To set a rep to inactive:

1. Switch to the desired record in the **Rep** info area.

2. Enable the **Inactive** check box.

3. Save the record.

If you set a rep as inactive, the data linked to the rep is still displayed by the system. However, the rep is no longer displayed in the rep list. Exception: when defining conditions, inactive reps are also available as a comparison value.

Enter a deputy for the rep, to prevent his tasks and data from being ignored until a replacement can be found or customers have been allocated to different employees, see Deputy and Superior on page 127.

Defining Groups

Learn how to define groups.

You can group reps according to their department or duties in the **Rep** info area. You can assign desktop formats and access rights to groups, as well as assigning entire groups to an activity or task. You can also filter and distribute appointments by group in the calendar, see Managing Appointments in the *Aurea CRM win User Manual*.

To define a group:

1. Open the **Rights** module and switch to the **Rep** Info area.

2. Click (**New**).

3. A unique ID number for the group is generated in the **Rep/Group ID** field. The ID cannot be changed.

4. Select "Group" from the **Type** drop-down list.

5. Enter the **Name** of the group. This name is displayed in the rep list, see Rep List in the *Aurea CRM win User Manual*.

6. Enter the Group Leader (select **View > All Mask Fields** to access this field)

7. Enter the group's **Rights Format**, see Rights on page 136.

8. Assign a **Desktop Format** to the group. This desktop format is loaded whenever group members log on to Aurea CRM (provided no user desktop format has been defined), see *Desktop* in the *Aurea CRM win Administrator Guide*.

9. Enter a **ID-TenNo**, if desired, to assign tenant rights to the group, see Tenants on page 221.

10. Enter further information (for details on the fields, refer to the online field help).

11. Save the record.

Assigning Reps to a Group

Learn how to assign Reps to a group.

You can assign reps to the following groups:

- Rights groups (using the **Rights Group** field in the **Rep** info area), see Defining Reps on page 114.

- Organizational groups (using the **Org. Group** field in the **Rep** info area), see Defining Reps on page 114.

- One or more (temporary) project groups (using the **Group Allocation** info area).

To assign a rep to a project group:

1. Switch to the desire record in the **Rep** info area.

2. Select **Group Allocation** from the context menu.

   The **Group Allocation** info area is displayed.

3. Click (**New**).

4. Select the **Group** you wish to assign the rep to.

5. Enter the time period the rep should be assigned to this group for in the **From** and **To** fields.

6. Save the record.

   In the rep list, reps are available from both their organizational groups and all groups they are currently assigned to in the **Group Allocation** info area. Reps can view their own appointments and those of their group members in the calendar by enabling the **Group** option in the **Appointment Settings**, see Managing Appointments in the *Aurea CRM win User Manual*.

Groups can also be allocated to groups in the **Group Allocation** area (e.g. allocate "Call Center Agents" and "Service Technicians" to the "Support" group). The "Rep's extended group" variable condition is applied to the group entered in the **Org. Group** field in the **Rep** info area, and to all that group's immediate sub-groups, see Defining Variable Conditions in the *Aurea CRM win User Guide* and Defining Reps on page 114.

Public Reps and Groups

Public reps and groups are visible to all users, even if individual users only have been granted access to their own group.

To define a rep or group as public:

1. Switch to the desired record in the **Rep** info area.

2. Enable the **Public** field (select **View > All Mask Fields** from the menu).

3. Save the record.

Deputy and Superior

Learn how to assign a deputy or a superior to a rep.

You can enter a deputy for each rep. The deputy can view activities, tasks and To-Do records belonging to this rep, despite logging on to Aurea CRM with their own login, >> *Managing Appointments* in the *Aurea CRM win User Manual*.

You can also enter a deputy for resources. In this case the deputy is the rep responsible for administrating the resource, see Adding Resources on page 130.

Each rep can also be assigned a superior, see Rep Hierarchy on page 127.

To assign a superior or deputy to a rep:

1. Switch to the desired record in the **Rep** info area.

2. Click on 🖼 (**Rep**) in the **Deputy** or **Superior** field (select **View > All Mask Fields** from the menu).

3. Select the desired deputy or superior. Click **OK**.

4. Save the record.

Rep Hierarchy

The rep hierarchy is displayed as a tree on the left. Each rep's hierarchy code is displayed on the right. Reps whose hierarchy code does not correspond to their current superior are displayed in red.

Select **Rep hierarchy** from the context menu or icon bar in the **Rep** info area to open the rep hierarchy.

If a new rep is added (in the **Rep** info area), the rep is assigned the next free hierarchy code:

• When added without a superior: on the top-most level

• When added with a superior: on the level below the superior

Note: Superiors cannot be defined for groups and resources.

You can move reps within the hierarchy to assign a new superior.

You can add a hierarchy code field to any info area in the data model containing rep fields (**Type** "hierarchy code"), see Adding New Fields on page 317.

The following options are available from the context menu in the **Rep hierarchy** info area:

• **Generate Code:** Recalculates the hierarchy code for all reps that are not up to date. This option is only available if at least one hierarchy code is outdated.

• **Count References:** Counts the number of records containing the currently selected rep's hierarchy code.

• **Count Incorrect References:** Counts the number of records containing incorrect hierarchy codes (for all reps).

- **Correct References:** Updates all incorrect hierarchy codes for all reps in all records.

- **Hierarchy Change**: Opens the **Hierarchy Change** info area, see Hierarchy Changes on page 129.

Hierarchy Changes

The **Hierarchy Change** info area logs all changes to the rep hierarchy.

You can also add hierarchy change records manually and then apply the changes manually or automatically.

Manual Changes

1. Add a new hierarchy change record and select the new superior in the **Superior ID** field.

2. Select **Apply Hierarchy Changes** or **Apply all open Hierarchy Changes** from the context menu to carry out the following for the selected record or all open hierarchy change records:

   - Recalculate the rep's hierarchy code
   - Recalculate the hierarchy code of all directly and indirectly subordinate reps
   - Update the changed hierarchy codes in all records containing the old code

The **Error No.** field in the hierarchy change record stores any errors that occur during the process, see General Error Codes on page 508.

Automatic Changes

Hierarchy codes are automatically updated by CRM.server, see CRM.server on page 438.

Applying Conditions to Hierarchy Codes

Learn how to apply conditions to hierarchy codes.

You can apply conditions to hierarchy codes, for example in access rights and selections. When defining a condition applied to a hierarchy code field, you can determine how two codes are compared with each other.

- Enable the **Ignore hierarchy** option to carry out the comparison exactly.

  Example: The condition "= 4.3.2" is only met by hierarchy code 4.3.2.

- If you leave the **Ignore hierarchy** option disabled, the condition is met by the specified hierarchy code and all its children.

  Example: The condition "= 1.2" is met by hierarchy codes 1.2, 1.2.1, 1.2.2, 1.2.3 etc. and all subordinate hierarchy codes.

- If you enable the **Variable** check box and select **Report Hierarchy** from the drop-down list, the condition is met by all of the current rep's direct or indirect superiors.

Example: The current rep's hierarchy code is "1.3.2.1". The condition is met by hierarchy codes 1, 1.3 and 1.3.2.

- If you enable the **Variable** check box and select **Superior** from the drop-down list, the condition is met by all of the current rep's superior and all the superior's subordinates.

    Example: The current rep's hierarchy code is "1.3.3". The condition is met by hierarchy codes 1.3, 1.3.1 and 1.3.2, 1.3.3, 1.3.4 etc. and all "subordinate" hierarchy codes.

- The condition "=" is met by empty hierarchy code fields.

For information on defining variable conditions, see *Defining Variable Conditions* in the *Aurea CRM win User Manual*.

Adding Resources

You can add resources from the **Rep** info area, e.g. meeting rooms or equipment used for events.

Resources can be reserved for appointments, see Adding Reps and Resources to an Activity/Task in the *Aurea CRM win User Manual*. Enter a deputy for the resource. The deputy is responsible for administrating the resource, see Deputy and Superior on page 127. Activity and To-Do records relating to the booking of this resource are displayed for this rep.

To add a resource:

1. Switch to the **Rep** info area.
2. Click (**New**).
3. Select "Resource" from the **Type** drop-down list.
4. Enter the name of the resource into the **Name** field.
5. Enter the rep you wish to administrate the resource in the **Deputy** field (select **View > All Mask Fields** from the menu).
6. Save the record.

Aurea CRM License

Your Aurea CRM license enables you to use Aurea CRM products.

The serial number is used to identify a server installation, i.e. if you have e.g. a development, a testing and a productive system, you need three serial numbers. If you copy an Aurea CRM database to a different server, you need to request a new serial number: Contact your Aurea representative.

Serial number and license type (Server, Client, Demo) are displayed in the **Configuration** module and in the About box of all Aurea CRM win modules.

For information on activating a server installation, see *Aurea CRM win Installation Guide*.

Maximum number of concurrent users per Aurea CRM win module:

- Server license: unlimited (9999)
- Client license: only one user per module (except **Communication**: 99 users)

  For both server and client licenses the concurrent use of the **Configuration** and **Rebuild** modules is restricted to 1.

  To avoid that simultaneously logged in users overwrite each other's data, the following items (i.e. formats) can only be edited by one user at a time (additional users have read-only access):

  - **Maintenance** module: Data Model
  - **Rights** module: CRM Process Configuration (global and per role), Rights, Triggers, Tenant Rights

    Each time a format is opened, a check is performed if this format has already been opened by another user.

Additional information about your installation (used Aurea CRM products, number of users etc.) is collected by the license report, see License Report on page 131. You need to submit the license report either by sending it to Aurea or via the licensing portal https://licenseportal.update.com/.

License Report

As licensor, Aurea has the right to determine the used Aurea CRM products and languages and the number of users per module/product etc. in regular intervals.

On May 1st and November 1st, the SU is prompted to start the license report (for each server installation) upon logging on to an Aurea CRM module (except the **Import** and **Export** modules). The prompt continues to be displayed until the license report has been submitted.

Note: You can only create the license report on the main office and with the SU user.

To determine when the next license report is due:

1. Select **Help > About Aurea.CRM** from the menu.

The month the next license report is due is displayed after the version number ("May" or "Nov."); "Nb" is displayed on client installations.

The license report is generated as an XML file. It contains the following information:

- Number of users who were logged on to an Aurea CRM module/product during the last six months
- Languages used by these users
- Number of stations which have communicated with the server (station with flag **Main Office**)
- Industry solution version if applicable

To view the current license information, select **Help > About Aurea.CRM** and click on the **License Information** link.

To create the license report:

1. Click **Yes** when prompted to register, or select **Edit > License Report** from the menu in the **Rights** module.
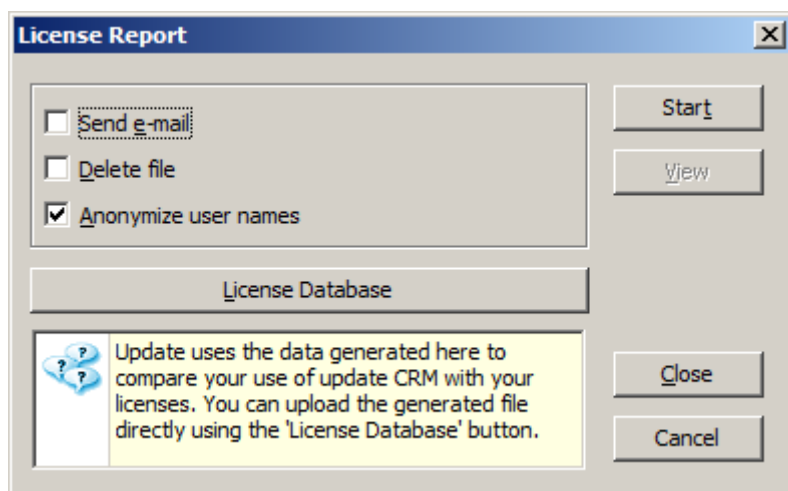
The following options are available:

- **Send e-mail:** Enable this check box to send the information to email:support@aurea.com (instead of uploading it to the license database). This option requires MS Outlook.
- **Delete file:** This check box can only be enabled if the **Send e-mail** check box is enabled. Enable the **Delete file** check box to delete the license report file immediately after sending.
- **Anonymize user names:** Instead of outputting the user name+ID, USER0, USER1 etc. is output. The following user names are **not** anonymized: COM, MMSERVER, SU and TEST.

2. Click **Start** to generate the license report.

The license report file `mmsystemlog_YYYYMMDD_HHMM.xml` is written to the `..\system\sys` directory.

3. Click on **View** to open and view the license file.

4. Click **License Database** to directly upload the license report to the database.

   Use the licensing portal (https://licenseportal.update.com/) to manage your licenses.

License Report in an SaaS Environment

In an SaaS environment the license report is automatically executed once a month via CRM.server.

The task and interval are configured via CRM.server's `settings.xml` file, see Scheduling CRM.server Jobs.

```
CRM.server
[...]
<Jobs>
<Job schedule="* * * * * "
type="update.Crm.Server.Jobs.GenerateLicenseReportJob,update.Crm.Server">
<ExportPath>..\LicenseReport</ExportPath>
<EncodeUserNames>false</EncodeUserNames>
</Job>
[...]
</Jobs>
</Server>
```

The value of `<ExportPath>` determines the target directory for the license report files (`mmsystemlog_<service_name>_YYYYMMDD_HHMM.xml`). You can specify a relative or absolute path. The path may contain an environment variable. If the directory does not exist, it is created.

If `<ExportPath>` is undefined, a `..\LicenseReport` directory is created on the same level as the `..\runtime` directory, >> See the article HOW TO Configure the u8.server to process To Do jobs on the Aurea support portal https://support.aurea.com.

If `<EncodeUserNames>` is set to true, the user names are anonymized, i.e. instead of outputting user name+ID, USER0, USER1 etc. is output. The names of technical users (WWW, SU, COM etc.) are not anonymized.

The automated license report can be executed by another user than the SU. It has to be executed on the main office station.

The license report is created for the current month (monitored timespan: 1st day of current month plus one month).

In the SaaS context all users active in the monitored interval are counted as "active" (irrespective of whether a user has actually logged on to a Aurea CRM module during that time). The **Billable** (ID:6000), **Billable from** (ID:6002) and **Billable to** (ID:6003) fields are taken into account.

Example:

A license report is created on August, 18th, i.e. the monitored timespan is August 1st to 31st.

- USER1: Both 6002 and 6003 are empty; the user is counted as active.

- USER2: Field 6002 is set to "20130905"; the user is no counted as he is not active in August.

- USER3: Field 6003 is set to "20130910"; the user is counted as active.

Users with **Inactive** = true are not counted.

The used modules are counted based on the user's module access rights.

Contents of the License Report

Learn about the contents of license report.

The license report file `mmsystemlog_YYYYMMDD_HHMM.xml` contains the following information:

General Information

- `Date`: Creation date of the license report
- `LastLicenseCheck`: Date of the last license report creation
- `CheckDate`: Start date from which data was collected for the current report
- `StationNumber`: Current station number
- `Version`: version number of Aurea CRM win
- `Vertical`: used vertical (BTB, OTC, FS)
- `Database`: used database (mss, ora)

Version Information

- `SerialNumber`
- SaaS: `Yes` for Saas serial numbers.
- `TemplateName`: Name of the package created with CRM.cockpit (`TE_ISI_*`, `TE_LSI_*`, `TE_FSI_*`)
- `TemplateVersion`: Version number of the cockpit package format
- `Templates/Template`: List of all cockpit package formats existing in the current database (max. 25)

Communication

Lists all stations that have communicated with the main office since the last license report creation.

- `Station/number`: station number
- `Sent`: Number of communication outputs to this station

- `Received`: Number of inputs from this station
- `Lastcommunicationdate`: Date of the last communication to/from this station

User Information

Lists all users that were logged in during the reporting period (except for Saas licenses, >>). The data is retrieved from the **User Tracking** info area (T1).

- `User/name`: Login name (if **Anonymize user names**/`<EncodeUserNames>` is enabled, the names are output as USER1,USER2 etc.)
- `User/type`: `TechnicalUser` (WWW, SU, TEST etc.), `LightUser`, `ClientUser`

  The user types are defined as follows:

  - Technical user: WWW, SU, MMSERVER, TEST, COM. If the installation is based on an Industry Solution and the **Billable** (ID:6000), **Billable from** (ID:6002) and **Billable to** (ID:6003) fields are available in the rep info area, users with **Billable** = false are counted as technical users as well.

    For technical users the user names are never anonymized.

  - Light user: These user can only create/update company, person and activity records.

    Light users are defined as follows:

    1. Assign the login role (R2) "TE_Light_User" (as delivered with the Industry Solution) to the respective rep record as a rep role (R3), >> Rep Roles on page 19.

       The role must be active, i.e. the Inactive flag (R2:8) must not be checked.

    2. The rights format assigned to the "TE_Light_User" login role must be defined as follows:

       - Write access (New/Upd) for company, person and activity records (FI, PE, KP, CP, MA,TD, MD, ER).

       - To allow for correctly using Aurea CRM web write access is also required for I9, II, Q1, Q2, Q3, Q4, D1, D3, FV, C5.

       - Read only access to all other info areas.

  - Client user: All other users.

- `User/repid`: Rep ID of this user.
- `User/repname`: Rep name of this user (not output if **Anonymize user names** is checked).
- `User/inactive`: true for reps with inactive flag.
- `User/deleted`: true for deleted users, i.e. US record with `DeletCode` flag or US record without ID record.
- `User/offline`: true for users with a rep record containing entries in the **Offline user** (115) and the **Offline Station No.** (117) fields.
- `User/billablefrom`: The date entered in **Billable from** (ID:6002).
- `User/billableto`: The date entered in **Billable to** (ID:6003).

> **Note:** `billablefrom` and `billableto` apply to SaaS licenses only.

- `Usage/id`: number of the module to which the user was logged on.
- `Usage/name`: name of the module to which the user was logged on.
- `Usage/templatelangid`: number of the language (as defined in 00) with which the user last logged on to this module.
- `Numberoflogins`: number of logins on this station in this module.
- `Lastlogin`: Date of the last login to this module in this language.
- `Station`: station to which the user was logged on.

Language Information

List all languages as defined in the **Language** info area (00), see Defining Languages on page 109.

- `Language`: Number of the language (as defined in 00: **Language No.** field)
- `Language/langid`: ID of the Aurea CRM language, see Language IDs on page 389
- `Language/parent`: Number of the parent language, see Defining Language Variants on page 110. Only the direct parent is output.
- `Language/name`: Name of the language (as defined in 00: **Lang.(Text)** field)

Rights

Learn how to define access rights.

It is extremely important for any company to ensure that information on clients, potential clients as well as potential customers and competitors is only accessible to a restricted group of people and protected against editing or deletion.

Access rights are defined in the **Rights** info area in the **Rights** module (see Defining Access Rights on page 138) and saved as a format (see Formats in the *Aurea CRM win User Manual*). Access rights can be used to restrict the data the users can display, add, edit and delete. Rights can be assigned to stations, groups, reps and roles in the **Station, Rep** and **Login Role** info areas, see Assigning Rights on page 158.

> **Note:** The administrator (SU) is largely excepted from the access right settings:All catalog entries are visible, irrespective of access rights and tenant rights.Restrictions on accessing, adding, editing and deleting data at the field and info area levels are not applied to the SU. Conditional info area and field access rights, mandatory fields and default values are also not applied to the SU.Conditional field access rights are also applied to the SU in Aurea CRM web.
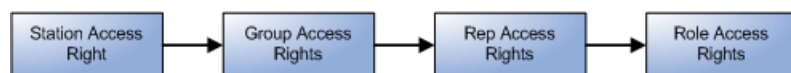
Rights in Aurea CRM

Access rights for reps, rep groups and stations must be defined in accordance with your company structure and communication model.

You need to ensure that the responsibilities for maintaining data are clearly defined to guarantee that data can be communicated and that new and edited records can be integrated correctly.

- **Module access rights** are determined for each user when configuring their login, see Configuring Logins on page 115.
- **CRM Process access rights** can be defined in both the system-wide process CRM configuration and for each login role, see CRM Process Configuration on page 98.
- **Info area and field access rights** are defined for stations, groups, reps and login roles in the **Rights** info area, see Defining Access Rights on page 138 and Assigning Rights on page 158. Access rights are cumulative and can be extended either globally or locally, see Rights Hierarchy.
- You can also split by **tenants**, see Tenants on page 221.

Rights Hierarchy

Aurea CRM's rights system operates on multiple levels. Access rights are combined at runtime and are applied in the following order:

- Station access rights apply to all users who log on to the station the access rights are assigned to, see Defining a Station on page 112.

> **Note:** For all Aurea CRM products apart from Aurea CRM win, Station rights are defined in the database of the current station. However, you can also apply the station rights of another station. Create a file `$$AS` in the `\system\sys` directory e.g. of Aurea CRM web. If this file contains another station number than that of the current station, the access rights defined for that station apply. This `$$AS` file created should be in plain text encoded in ASCII or UTF8 without BOM. It must not be encoded in UTF8+BOM as this results in errors.

- Group access rights apply to all members of the (rights) group the access rights are assigned to, see Defining Groups on page 125.
- Rep access rights apply to individual reps, see Defining Reps on page 114.
- If a rep logs on using one or more roles, the access rights assigned to the login roles are also applied with the priority defined in the login roles, see Login Roles on page 106.

You can merge two or more rights formats in a single rights format in order to display or test the combined settings, see Merging Access Rights on page 169.

By default, the restrictions defined are cumulative and combined using a logical AND. You cannot remove a restriction defined in station access rights using rep access rights. To partially or completely override the rights hierarchy, you need to inherit access rights, see Inheriting Access Rights on page 159.

Rights restrictions are not automatically propagated to child infoareas and elements. The rights in such cases need to be inherited and configured specifically in the inheritance settings. To understand inheritance properties for access rights, see Inheritance Properties per Element on page 163. To configure access rights, see Inheritance Settings on page 161.

Rights and Communication

The access rights defined in the **Rights** info area are not applied during communication.

For further details, see *Communication* in the *Aurea CRM win Administrator Guide*.

If a user has been granted the privileges necessary to log on to the **Communication** module and initiate communication, the rep's access rights are **not** applied during communication.

This is necessary in order for new catalog values to be exchanged and for new information to be added to records the user can read but not edit.

Note: Aurea recommends adding a user (e. g. "COM") that is used exclusively to access the **Communication** module, and to deny access to the **Communication** module to all other users, see Module Access Rights, System Locks and Process Tracking on page 120.

Rights and Import/Export

All restrictions defined for a rep in the rights format also apply during the import or export of data, see Import/Export in the *Aurea CRM win Administrator Guide*.

For example, if mandatory fields are defined for a rep, all imported records where the mandatory field is empty are rejected. Conditional access rights (**Condit. Update**) can also affect the import, for example restrictions on editing or adding records.

In contrast, no restrictions are imposed on the administrator when importing and exporting data. However, triggers defined for the station are still initiated.

When importing, values are only entered in the **Upd** and **Updated at** fields if a new record is added.

Defining Access Rights

Learn how to define access rights.

To define access rights:

1. Start the **Rights** module, see Starting Modules in the *Aurea CRM win Administrator Guide*.

2. Switch to the **Rights** info area.

3. Select **Display info area abbreviations** from the context menu to display the info area IDs in front of the info area names.

   Click 📄 (**Find**) to search for info areas (by name or ID). The search works as described for the CRM Process search, see Searching for CRM Processes on page 102.

4. Click in a cell to make your settings.

   You can:

   • deny access to an info area and prevent records from being added, edited or deleted, see Defining Rights at the Info Area level on page 140.

   • grant access conditionally, see Conditional Access to Info Areas on page 142.

   • specify certain field contents as default values to be used when adding new records, see Default Values when Adding Records on page 152.

   • Prevent users from accessing, adding, editing and deleting data at the field level, see Defining Rights at the Field Level on page 153.

   • Initiate triggers and workflows based on access rights, see Triggers on page 169 and Workflow on page 156.

   • Activate various log functions, see Logging Read and Write Access on page 245 and History on page 258.

   • Determine the behavior when deleting records, see Mark as Deleted on page 155.

   • Extend access rights globally or locally, see Inheriting Access Rights on page 159.

5. Select one of the following options to suppress access rights in the current context:

   • Enable the **Override station rights** check box to override the station access rights; the station access rights are not applied to the rep or group that the current access rights are assigned to.

   • Enable the **Override group rights** check box to override the group access rights; the group access rights are not applied to the rep that the current access rights are assigned to.

   • Enable the **Override rep rights** check box to override the rep access rights; the rep access rights are not applied to the rep that the current access rights are assigned to.

   Note: Station, group and rep access rights can only be overridden by the administrator (SU).

6. Click on the **Further Settings** check box or select the option from the context menu to define further settings (e.g. override the desktop), see Defining Further Settings on page 156.

7. Click 💾 (**Save**), see Saving, Loading and Deleting Formats in the Aurea CRM win User Manual.

8. Assign the rights format to a station, group, rep or login role, see Assigning Rights on page 158.

Note: Click on 📁 (**Load**) to load an existing format for editing. Click on 🖍 (**Delete**) to clear the current settings in the mask.

Defining Rights at the Info Area level

Learn how to define rights at the info area level.

You can deny access to single or all info areas as follows:

• **Deny Access**: This info area and any child info areas are not visible to the user.

• **Deny New**: The info area is displayed, but the user is unable to add any records.

• **Deny Update**: The info area is displayed, but the user is unable to edit existing records.

• **Deny Deletion**: The user may not delete records from this info area.

Note: If access to a particular info area has been denied to a user, this info area is not included in the **Search Crit.** column in the **Selection** info area, >> *Selections* in the *Aurea CRM win User Manual*.The rights format denies access to an entire info area, whereas the desktop format only denies access to specific levels, see Denying Access to Levels in the *Aurea CRM win Administrator Guide*.

Defining Access Rights for Variable Catalogs

Variable catalogs are catalogs that can be edited without requiring the data model to be edited, see Catalog Info Area on page 271. You can control access to variable catalogs by defining access rights for the **Catalog** info area. In distributed systems (e.g. with various regional headquarters), this allows you to determine that a local administrator can only change catalog entries in a specific language, for example. (For information on separating variable catalogs by tenants, see Tenants and Catalog Maintenance on page 228.)

Rights applied to the **Catalog** info area have the following effects:

- **Deny Access:** The **Catalog** level in the **Maintenance** module cannot be accessed by the rep.

  Note: To prevent individual catalog fields from being displayed, deny access to the field itself, see Defining Rights at the Field Level on page 153.

  You can lock individual catalog values in the **Catalog** info area, see Editing Variable Catalogs on page 273.

- **Deny New:** Reps cannot add new catalog values.
- **Deny Update:** Reps cannot edit catalog values.
- **Deny Deletion:** Reps cannot delete catalog values.
- **Condit. Access:** Only those catalog values that meet the defined conditions are displayed. Conditions are only applied to catalog values in the catalog base language. Consequently, you cannot restrict access to specific languages.
- **Condit. New:** Reps can only add catalog values that meet the defined conditions. Otherwise a corresponding message is displayed and the catalog value cannot be saved.
- **Condit. Update:** Reps can only edit catalog values that meet the defined conditions. If the user clicks on a catalog value that does not meet the condition, a corresponding message is displayed.
- **Condit. Delete:** Reps can only delete catalog values that meet the defined conditions. If the user clicks on a catalog value that does not meet the condition, a corresponding message is displayed.

  Note: Use **Condit. New/Update/Delete** to restrict access to catalog values by language.

  If you define conditions on the language for **Condit. New/Update/Delete**, the conditions evaluate to false if the selected language is the catalog base language. In this case, **Condit. New/Update/Delete** is identical to **Deny New/Update/Deletion**.

- **Fields:** Use the **Fields** option to control access to individual variable catalogs, >> Defining Rights at the Field Level on page 153.

Access restrictions are applied to the following functions:

- The dialog used to enter/select catalog values in Aurea CRM win, Aurea CRM web etc.

- Maintaining variable catalogs (Aurea CRM win: **Catalog** level in the **Maintenance** module; Aurea CRM web: **Administration > Catalog Maintenance** menu option)

- When importing catalog values: Records that cannot be imported due to access restrictions are written to the log file (*.fal).

Note: All catalog values are always visible to the administrator (SU).

Special Case: Lead Status Info Area (BTB, FS)

By default, changes to the **Lead Status** field (in the **Company**, **Person, Person in Company** and **Sales Group** info areas) are logged in the **Lead Status** info area. You can also add, edit and delete data in the **Lead Status** info area itself.

To deactivate the logging of changes:

- **Deny Access:** The **Lead Status** info area is not accessible. The **Reason** dialog box is not displayed if the **Lead Status** is changed. Changes to the Lead status (in the **Company, Person, Person in Company** and **Sales Group** info areas) are not logged.

- **Deny New:** The **Lead Status** info area is accessible, but no new records can be added. The **Reason** dialog box is not displayed if the **Lead Status** is changed. Changes to the lead status (in the **Company, Person, Person in Company** and **Sales Group** info areas) are not logged.

To suppress the **Reason** dialog box:

- If you wish to suppress the **Reason** dialog box when adding new records, enable the **Deny New** cell for the **Reason** field in the **Lead Status** info area (**Fields** column).

- To suppress the **Reason** dialog box completely, enable the **Deny Access** cell for the **Reason** field.

Use the **Do not log lead status changes** configuration entry (**General Settings** category) in the **Configuration** info area to determine that records should never be automatically added to the **Lead Status** info area, see General Settings on page 41.

Conditional Access to Info Areas

Learn how to define the conditional access rights to info areas.

Use the **Condit. Access, Condit. New, Condit. Update** and **Condit. Delete** columns to define access rights for info areas based on conditions.

- **Condit. Access**: The user can only access those records in this info area that meet the condition.

> **Note:** The conditions defined in the rights format determine which records are displayed at the info area level; use a desktop format to define conditions applied to levels, see Conditions Tab in the *Aurea CRM win Administrator Guide*.

- **Condit. New**: The user can only add new records to this info area that meet the condition.

- **Condit. Update**: The user can only edit records in this info area that meet the condition.

- **Condit. Delete**: The user can only delete records in this info area that meet the condition.

Defining Conditional Access Rights

To define conditional access rights (see Defining Access Rights on page 138):

1. Click e.g. in the **Condit. Access** cell for **Company**.
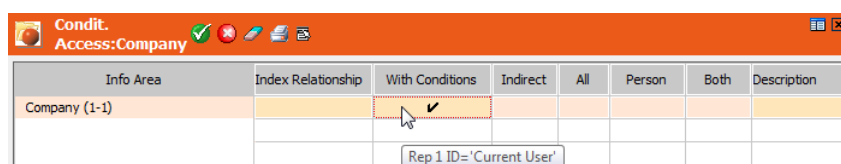
The following settings are available:

- **Info Area:** The info area that the condition applies to, see Conditions Applied to Other Info Areas on page 145. For information on adding and grouping rows, see Context Menu Entries.

- **Index Relationship:** The index used to establish the relationship with the referenced info area. For details on all available links, see Link IDs on page 394.

  Example: If you define a condition applied to the **Relationship** info area for the **Company** info area, you can determine whether the condition applies to the source or target company:
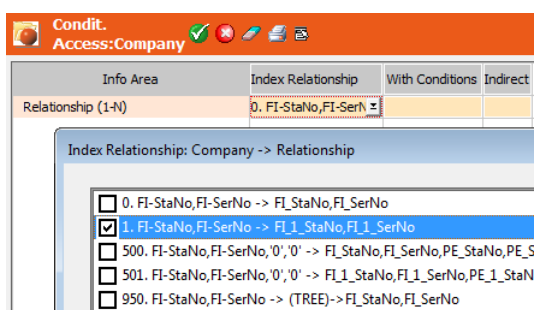
- **With Conditions:** Click in this cell to define the conditions under which records can be displayed, edited, added or deleted, see Conditions in the *Aurea CRM win User Manual*.

- **Indirect:** Enable this option to apply the rights defined for the corresponding info area, see Indirect on page 150.
- **All:** Enable this option to determine that all records in the referenced info area must meet the condition.
- **Person/Both:** Use these options to differentiate between company- and person-dependent records in info areas with an n:1 relationship with a person record (CP/KP/PE), see Person-related/Both on page 149.
- **Description:** Enter a textual description that is displayed if a user tries to edit a record that he can not access. If you do not enter a message, a default message is displayed.

2. Click in the **With Conditions** column and define a condition (e.g. "Rep 1 ID = Current User").

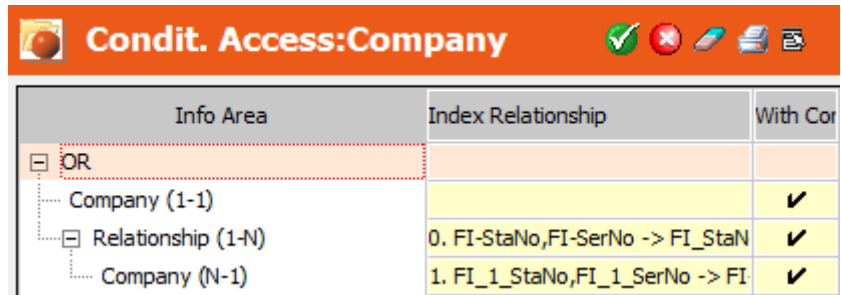3. Click on ✅ (**OK**).

4. Save the rights format.

   A rep with these rights can only access company records where he is entered as **Rep 1**.

Context Menu Entries

The following context menu entries are available when defining conditional access rights:

- **Info Area:** Select this option to define conditions that are applied to another info area, see Conditions Applied to Other Info Areas on page 145.

   The number of levels for conditional rights is not restricted, i.e. you can define conditions for any number of info areas that are linked to each other:

In this example the user can access

- companies with "Rep 1 ID = Current User"
- companies that are related to a company with "Rep 1 ID = Current User" via a specific kind of relationship, e.g. with "Business Area = Software".

Note: To add an info area as a sub-node, double-click the parent info area.

- **Add new AND/OR group:** Use these options to group conditions.

   You can move rows using drag&drop in order to assign them to other AND or OR groups.

- **AND <-> OR:** Click on an **AND** or **OR** node and select this option to switch the operator.
- **Copy line:** Copies the current row to the clipboard.
- **Paste line(s):** Inserts the contents of the clipboard at the current position.
- **Delete line:** Deletes the current row.

Note: If you copy or delete a node, that node's children are also copied or deleted.

Conditions Applied to Other Info Areas

You can define access rights based on conditions defined for other (linked) info areas.

Depending on the relation between info areas you have the following possibilities:

- Define a condition for one or more linked info areas.
- Define a condition for the **Rep Reference** info area to restrict access depending on rep data in related info areas, see Rep-Based Access Rights on page 146.
- Use indirect links (via relationships and item structures), see Conditions Applied via Indirect Links on page 148.

Conditions For Linked Info Areas

Learn about the conditions for linked info areas.

To define a conditional access right where the condition applies to a linked info area:

1. In the **Condit. Access** level select **Info Area** from the context menu. (This example extends the definition from above, see Defining Conditional Access Rights.)
2. Select the desired info area from the **Select Info Areas** window (e.g. **Ticket**).
3. Click on **OK**.

   A new row is added to the **Condit.Access :Company** level.

   By default, new rows are linked using a logical AND

4. Click on the **AND** node and select **AND <-> OR** from the context menu to switch the operator to OR, see Context Menu Entries.

The rep can access companies where he is entered as **Rep 1** plus companies to which a ticket record is linked via the default link.

5. Select a different **Index Relationship** if desired, see

   Example: If you select e.g. link no. 3, only companies entered as **Company Billing Address** are taken into account.

   The rep can access companies where he is entered as **Rep 1** plus companies to which a ticket record is linked via link no.3.

6. Click in the **With Conditions** column to define a condition for the info area if desired:

   Example:

   The rep can access companies where he is entered as Rep 1 plus companies to which a ticket record is linked where "Problem Group = Software".

7. Enable the **All** option if **all** records in the referenced info area should meet the condition. In this example, this would mean that all tickets stored for a company must belong to the same **Problem Group**.

8. Click on ✅ (**OK**).

9. Save the rights format.

Rep-Based Access Rights
Use the **Rep Reference** info area (10) to define conditional access rights based on rep data in linked info areas.

That way, evaluating the rights definition at runtime involves only one table instead of checking for a rep being entered in various linked info areas.

To define a conditional access right using the **Rep Reference** info area:

1. Configure the creation of rep reference records for the desired info areas (e.g. for MA and SB), see Depict Rep Reference on page 347.

2. Add the **Rep Reference** info area to your conditional access rights definition. (Again this example extends the definition from above, see Defining Conditional Access Rights.)

3. Define the desired conditions:

The rep can access companies where he is entered as **Rep 1** plus companies for which a rep reference record with that rep exists. (Rep reference records for all info areas are taken into account.)

4. Click on ✅ (**OK**).

5. Save the rights format.

Depending on how you configured the creation of rep reference records you may need to define further conditions, e.g. consider only a sub-set of linked info areas.

Example:
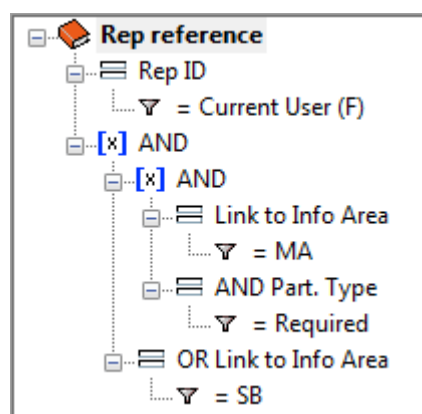
The rep can access companies for which one of the following child record exists:

• an activity record (MA) with the current rep entered as required participant

• a sales group (SB) record containing the current rep.

To define access rights based on hierarchy codes, you can add a hierarchy code field to the **Rep Reference** info area, see Adding New Fields on page 317.

To define rep-based access rights for other independent info areas, add the desired links to the **Rep Reference** info area; e.g. add a link to the **Campaign** (CM) info area in order to be able to define rep-based access to campaigns.

Conditions Applied via Indirect Links

You can define conditional access rights using indirect links (via relationship records).

For further details, see Link IDs on page 394 and *Relationships* in the *Business Logic Manual*.

Example: A rep can view companies where he is entered as **Rep 1**. To enable him to see offers linked to these companies and to companies that are related to "his" companies (e.g. within a corporate structure) you can use an indirect link.

To define conditional access for the above example (displaying offers depending on conditions on companies):

1. Click in the **Condit. Access** cell for **Offer**.
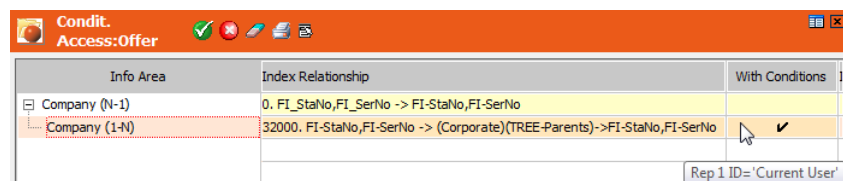
2. Select **Delete line** from the context menu to delete the default row ("Offer (1-1)").

3. Select **Info Area** from the context menu.

4. Select the **Company** info area and click on **OK**.

5. Double-click on this newly created row ("Company (N-1)").

6. Select an info area (in this case **Company** again) and click on **OK**.

7. Select the desired **Index Relationship**, e.g. via link no. 32,000. This link reads the parent record(s) within a corporate structure.

8. Click in the **With Conditions** cell and define a condition (e.g. "Rep ID = Current User").

9. Click on ✅ (**OK**).

10. Save the rights format.

A rep to whom this rights definition applies, sees the following offers (e.g. in the **Offer** search in Aurea CRM web):

* Offers linked to companies that fulfill the condition (i.e. where the current rep is entered as **Rep1**).

* Offers linked to companies of which a company fulfilling the condition is a parent within a corporate structure. For more information and a complete example, see *Corporate Structure* in the *Business Logic Manual.*

Using e.g. link 30,000 instead would return all companies within the corporate structure, thus allowing the rep to see all offers linked to those companies, link 28,000 would return all companies where the company fulfilling the condition is the target record in a relationship record, etc.

The same indirect links are used to access item master (AR) records in product hierarchies,see *Product Hierarchies* in the CRM.core Info Letter SP2.

Person-related/Both

Use the **Person** and **Both** options to further differentiate access rights for info areas that are person-dependent.

For example, reps should only be able to edit **Interest** records if the rep is entered in a **Sales Group** assigned to the corresponding company or person record.

1. Click in the **Condit. Update** cell for the **Interest** info area.

2. Select **Info Area** from the context menu.

3. Select the **Sales Group** info area and confirm with **OK**.

4. Click in the **With Conditions** cell and define the condition "Rep 1 ID = Current User".
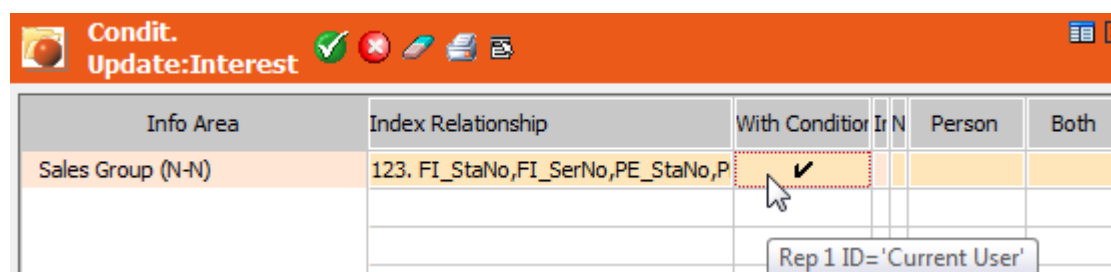
(Since the rep fields in SB are defined as an array, this condition is applied to all rep fields.)

5. You have the following options for the **Person** and **Both** columns:

* **Both:** Disabled; **Person**: this setting is irrelevant in this case.

  If the rep is entered in a **person-related** sales group, the rep can edit the corresponding person-related interest records.

If the rep is entered in a **company-related** sales group, the rep can edit the corresponding company-related interest records.

- **Both:** Enabled; **Person:** disabled

  Any sales group (both company and person-related) can edit all interest records (both company and person-related).

- **Both:** enabled; **Person:** enabled

  Person-related sales groups: can edit **all** interest records.

  Company-related sales groups: can edit **company-related** interest records.

Indirect

Use the **Indirect** option to reference the access rights defined for another info area.

Note: Use this option (instead of multi-level conditional rights and indirect links as used in the previous examples) to reference one (complex) definition from multiple points in your rights definition.

Example: A rep can view persons with "City = Berlin" and persons who have attended an event that took place in Berlin.

1. Define the following for the **Person** info area (PE):
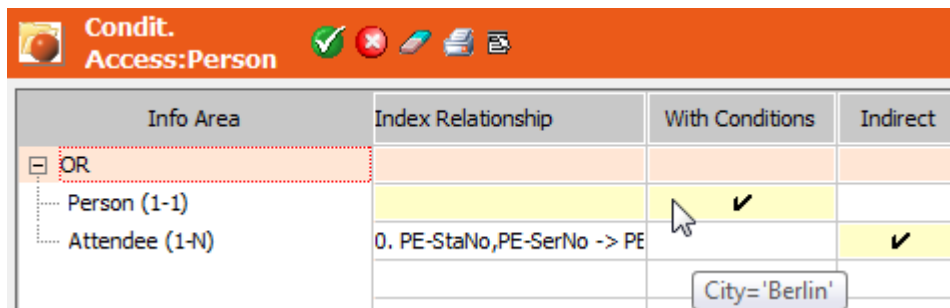
The rep can access persons that meet the following conditions:

- Person records with "City = Berlin"
- Person records that are linked to an attendee record to which the access rights defined for the **Attendee** info area apply.

2. Define the following for the **Attendee** info area:

Make sure you select link no.1 as **Index Relationship** for the **Company** node. This reads companies entered as **Hotel**.

The rep can access attendee records that meet the following conditions:

- The access rights defined for the **Person** info area apply to the person entered as attendee.
- "Hotel: City = Berlin"

3. Save the rights format.

The same example defined with multiple levels (see Context Menu Entries):

Implicit Hierarchy

Learn about the implicit hierarchy.

Access rights are checked hierarchically, e.g. when accessing an activity record, the system checks whether the rep:

1. Has the appropriate access rights for the parent company

2. the parent person

3. the activity record

This "implicit" hierarchy can be disabled, which improves performance when accessing large volumes of data. Access rights need then to be defined for the dependent info areas.

To disable the implicit hierarchy, e.g. for the **Activity** info area:

1. Click in the **Implicit Hierarchy** cell for the **Activity** info area in the **Rights** info area, see Defining Access Rights on page 138.

The **Select Info Areas** dialog box is displayed.

2. Disable the check boxes next to the **Person in Company, Person** and **Contact Person** info areas.

3. Click **OK**.

4. Save the rights definition.

The rep is now granted access (by selecting **Data > Both**) to all activity records stored for a company, irrespective of whether he has access rights for the persons or not.

Note: Settings in the **Implicit Hierarchy** column can only be edited by the Administrator (SU).

Disabling the implicit hierarchy for custom info areas: If a custom child info area contains an additional link to **Company** (FI) and **Selection** (SL), the company link is treated as mandatory if the link to the parent info area has been overridden via implicit access rights. To disable this behavior, make sure the **Included in Selections** checkbox is disabled in the data model, see Properties on page 299.

Default Values when Adding Records

To prevent errors when inputting data, it is possible to predefine default values. Default values are automatically entered in the corresponding fields when a new record is added.

Note: Defaults defined in the access rights take precedence over the defaults defined in the Aurea CRM win main module under **View > Default Values**, see Defining Default Values in the *Aurea CRM win User Manual*.

To define default values:

1. Switch to the **Rights** info area.

2. Click in the **Create Default** cell of the desired info area.

   A list of all fields in the selected info area is displayed.

3. Enter default values in the desired fields.

4. Click ![save icon] (Save).

Note: If the default value should be mandatory, you need to enable the **Deny New** and **Deny Update** check boxes for that field in the info area. Otherwise the user can overwrite the default values, see Defining Rights at the Field Level on page 153.

Defining Rights at the Field Level

Use the **Fields** column to define rights at the field level as well as mandatory fields (i.e. fields where data must be entered in order to save a new record).

To define access rights for fields:

1. Switch to the **Rights** info area.

2. Click in the **Fields** cell of the desired info area.

   A table containing all fields in the info area is displayed, see Tables in the *Aurea CRM win User Manual*:

No.	Company	Type	Lengl	Inheritance	Deny Access	Deny New	Deny Update	Deny Deletion	Mand. Field	Do not log updates
0	Co.Gr.	12	5							
1	Co.No.	12	9							
2	Company	AB	120							
3	Synonym	AB	30							
4	Division	AB	40							
5	Country	☰	80							
6	County	AB	20							
7	ZIP	AB	10							
8	City	AB	40							
9	Borough	AB	50							

3. Use the **Inheritance** cell to determine how access rights are inherited for each field, see Inheritance Settings on page 161.

4. Define the access rights as for an info area, see Defining Access Rights on page 138.

   - **Deny Access:** The field is not displayed for the user.

   - **Deny New:** The user cannot enter new data in this field.

   - **Deny Update:** The field contents cannot be changed.

   - **Deny Deletion:** The field contents can be edited, but cannot be deleted.

   Only the **Deny Access** option is available for system fields, see System Fields on page 392.

Note: When inputting communication files, fields to which access is denied on the source station are not written during input.

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5. You can define **Mandatory** fields to prevent incomplete records from being added to the database (e.g. the **Company, Country** and **Postal Code** fields in the **Company** info area). When adding a new record, the system verifies that data has been entered in these fields. Only if this is the case is the new record added.

Mandatory fields can be highlighted visually using borders and the "*" or "!" characters, see Masks Tab in the *Aurea CRM win Administrator Guide*.

If you enable the **Mandatory** option for a field, the visual highlighting is only displayed in new mode. Field contents can be deleted when editing records at a later date.

If you enable the options **Deny Deletion and Mand. Field**, the visual highlighting is always displayed (new, edit and view modes). The field contents can subsequently be edited but the contents can no longer be deleted.

If you enable the options **Deny Deletion**, **Mand. Field**, **Deny New and Deny Update**, the visual highlighting is not displayed (edit and view modes). In edit mode the field is grayed out. In new mode the visual highlighting is displayed and the field is grayed out.

6. Enable the **Do not log updates** field to determine that changes to the field should not be logged (in the **Log - Write** info area), see Logging Read and Write Access on page 245.

7. Click on ✅ (**OK**) to save the settings and to return to the **Rights** info area.

Note: A rep field consists of four interlinked fields (**Rep, Rep ID, Rep Group, Resp. Rep Group ID**). If you enable the **RepOff** option in the **Configuration** info area, denying access to one of these fields automatically denies access to all of the fields, see General Settings on page 41.

Conditional Field Rights

Use the **Cond. Fields** column in the **Rights** info area to define conditions for field access rights.
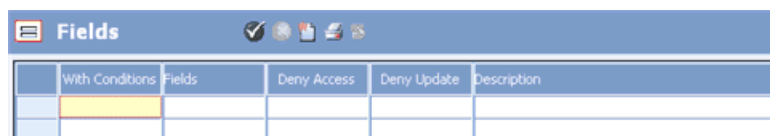
These access rights are only applied if the record meets the corresponding condition.

The condition is tested before the record is edited. If fields tested by the condition are edited, the condition is not tested again.

To define conditional field access rights:

1. Click in the **Cond. Fields** cell of the desired info area.

   The **Cond. Fields** level is displayed:

2. Click in the **With Conditions** column and define a condition, see Conditions in the *Aurea CRM win User Manual.*

3. Click in the **Fields** column and select the fields.

4. The following options are available:

- **Deny Access:** Field values are not displayed. However, users can still enter values. If you wish to prevent users from entering data, you need to enable the **Deny Update** cell as well.

- **Deny Update:** The field contents cannot be edited.

5. Click in the **Description** cell to enter a description in all available languages. If a user clicks into a field to which access is denied, this text is displayed.

6. Click on ✅ (**OK**) to keep your settings and return to the **Rights** info area.

Note: Conditional field access rights are also applied to the SU in Aurea CRM web. To prevent this, you need to assign an empty rights format to the SU with access denied to **Station Access Rights** in the rights format's **Further Settings**.

Mark as Deleted

By default, records that have not been communicated (i.e. the **CmCd** field is empty) are immediately deleted from the database when the record is deleted.

Dependent records are also deleted immediately, provided the station number on which the record was added (**Added on StNo.** field) is the same as the current station number. On the other hand, records that have been communicated are first marked as deleted (**DelCd** field) and are only physically deleted once the change has been communicated to all affected stations, see Communicating Deleted Records in the *Aurea CRM win Administrator Guide*.

Use the **Mark as Deleted** column to change this behavior per info area if certain data should **never** be physically deleted (e.g. in order to track changes). In this case, the affected records are not physically deleted, but instead the **DelCd** field is enabled and the records are retained in the database.

To change the default behavior when deleting records:

1. Click in the **Mark as Deleted** column of the desired info area.

   The **Mark as Deleted** level opens.
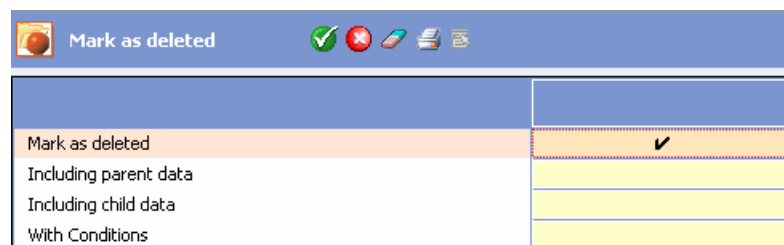
2. Enable the **Mark as deleted** cell.

   If a record is deleted in the selected info area (e.g. **Person in Company**) the **DelCd** field is enabled in the record.

---

3. The following options are available:

- **Including parent data:** If this option is enabled, settings defined for a child info area (e.g. **Person in Company**) are applied to its parent info area (e.g. **Company**). If a record in the parent info area is deleted, the record is also marked as deleted using the **DelCd** field instead of being physically deleted.

- **Including child data:** If a parent record is deleted (e.g. a person), all child records are also marked for deletion (e.g. activities).

- **With Conditions:** Click in this cell to define conditions that determine when the record should be marked as deleted, see Conditions in the *Aurea CRM win User Manual*. Records that do not meet the condition are deleted immediately.

4. Click on ✅ (**OK**) to apply the settings and return to the **Rights** level.

5. This setting overwrites the **Do Not Communicate Deleted Records** option in the **Delete** level in the Maintenance module, see Delete Level on page 383.

Defining Additional Settings per Info Area

Learn how to define additional settings per info area.

Use the **Additional Settings per info area** column to determine that certain info areas are not displayed when defining queries and filters in Aurea CRM web:

1. Click in the **Additional Settings per info area** cell of the desired info area.

   The **Additional Settings per info area** window is displayed.

2. Enable the **Do not display the info area used to define filters and queries (web)** check box.

3. Click on **OK** to apply the settings and return to the **Rights** info area.

For information on defining queries and filters, see *Defining Queries and Filters* in the *Aurea CRM web Administrator Guide*.

Workflow

Use the **Workflow** column in the **Rights** info area to assign workflows created using Aurea CRM's workflow engine to info areas.

Workflows allow you to implement complex processes.

Refer to the Aurea CRM automator User Manual for information on workflows.

If you want to execute triggers and workflows in a particular order, enter workflows in the **Trigger** level, see Defining Database Events on page 189.

Defining Further Settings

Learn how to perform extra settings.

You can define further settings for existing access rights:

Note: These settings **do not apply** to the administrator (SU).

1. Define the rights settings, or click (**Load**) to load an existing rights format, see Defining Access Rights on page 138.

2. Right-click anywhere outside the table. The context menu is displayed. Select **Further Settings...** from the context menu.
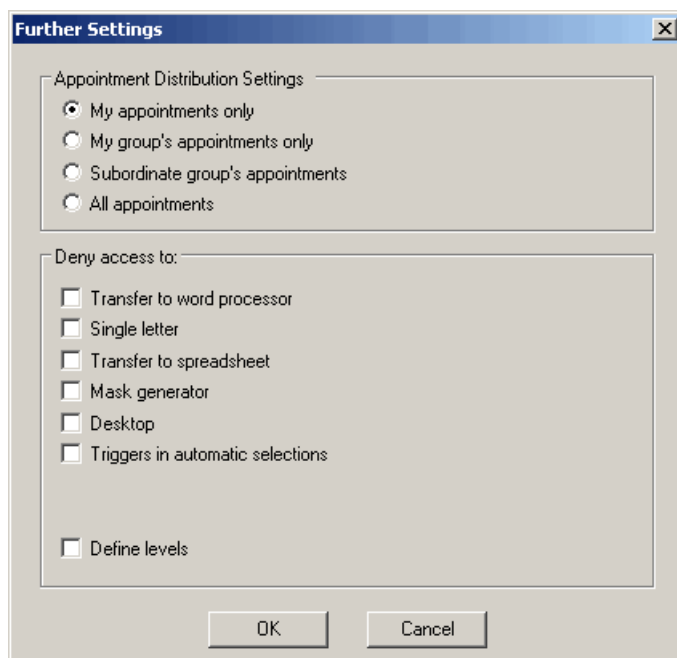
3. Determine how the distribution of appointments is restricted under **Appointment Distribution Settings**, see Rescheduling Appointments in the *Aurea CRM win User Manual*. The following options are available:

- **Own appointments only:** Only the user's own appointments are displayed for the rep.
- **Own group's appointments only:** If the rep is a member of a group, only appointments for members of that group are displayed.
- **Subordinate group's appointments:** If the rep is assigned to a group as the group leader, all subordinate reps' appointments are displayed.
- **All appointments:** All appointments for all reps are displayed.

Note: The settings defined here do not affect how the appointments in the **Calendar** or **Day Overview** are displayed. They apply to appointment distribution only. If a user clicks on the (**Distribute**) button in the daily overview or calendar, only those reps and groups are displayed that meet the selected criteria are displayed in the **Distribution of Appointments**, irrespective of the reps and groups selected in the **Appointment Distribution** dialog box.

4. Use the options under **Deny access to** deny access to functions by the rep, group, station or login role:

- **Transfer to word processor / Single letter / Transfer to spreadsheet:** Prevents users from transferring data to a word processor or spreadsheet application.

  If you enable only the **Transfer to word processor** and **Transfer to spreadsheet** options, users can create single letters but cannot transfer multiple records to external applications.

- **Mask generator / Desktop:** Prevents users from customizing masks and defining desktops.

- **Define levels:** Disables the **Define Levels** button in the desktop settings, preventing reps with these access rights from defining new levels.

- **Triggers in automatic selections:** Prevents the use of triggers in automatic selections.

- **Station Access Rights:** Station access rights are not applied to the rep or group.

- **Group Access Rights:** Group access rights are not applied to the rep.

Note: Station and group access rights can only be overridden by the administrator (SU).

5. Click **OK**.

6. Save.

Assigning Rights

Learn how to assign access rights to a station, group or rep.

After defining the access rights settings, you need to assign them to a station, group or rep.

To assign access rights to a **station**:

1. Switch to the **Station** info area, see Station on page 111.

2. Double-click in the **Station Access Rights** field.

3. Select the rights format you wish to assign to the station.

4. Click **OK**.

5. Save the record.

To assign access rights to a **rep or group**:

1. Switch to the **Rep** info area, see Rep on page 114.

2. Switch to the desired record.

3. Double-click in the **Rights Format** field.

4. Select the access rights format you wish to assign to the rep or group.

5. Enable the **Station Access Rights**, **Group Access Rights** and **User Access Rights** check boxes. Upon logging onto the database, the system verifies that the assigned access rights formats are present. If not, the rep is denied access to the module.

6. Save the record.

To assign access rights to a **login role**:

1. Switch to the **Login Role** info area, see Login Roles on page 106.

2. Double-click in the **Rights Format** field.

3. Select the rights format you wish to assign to the login role.

4. Click **OK**.

5. Save the record.

Inheriting Access Rights

Learn how access rights can be inherited.

In addition to the general hierarchical concept behind access rights (access rights for stations, groups, reps and roles), access rights can also be inherited. This allows you to define access rights that apply to your entire company, and allow local administrators to extend or edit the access rights as necessary. In the process, you can partially or completely override restrictions in the original access rights or extend the restrictions further.

Access rights assigned to a station, group, rep or role can be extended globally or locally, see Defining Extensions on page 160. Global extensions are valid for all stations, groups, reps and roles where the root access rights are entered. Local extensions only apply to a specific station. In the root format, you can determine which settings can be changed in the extensions, see Inheritance Settings on page 161. You can also determine which Further settings can be changed in the extensions, see Inheriting Further Settings on page 166.

Define additional access rights applied to the **Format** info area, for example to determine that local administrators can view but not edit the parent access rights, see Conditional Access to Info Areas on page 142.

The various applicable access rights are combined at runtime and applied as follows:
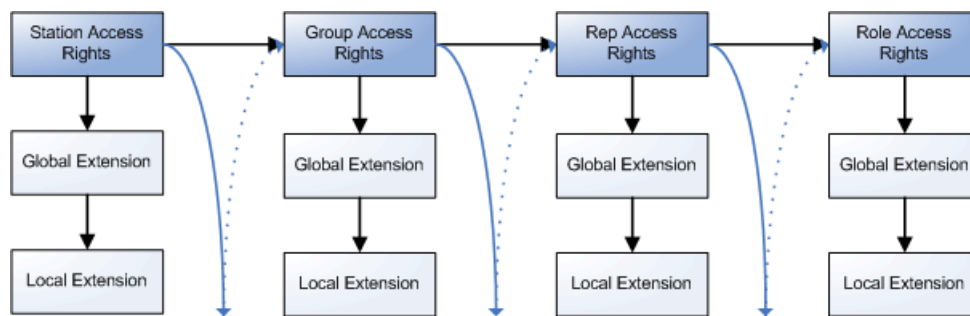
You can merge one or more access rights format to display or test the combined settings, see Merging Access Rights on page 169.

Defining Extensions

Learn how to define an extension.

To define a **global extension** for an existing rights format:

1. Switch to the **Rights** level in the **Rights** module.

2. Load the access rights format that you wish to extend.

- Select **View: Rights Settings** from the context menu to edit the root format's settings if necessary, see Defining Access Rights on page 138.

- Select **View: Inheritance Settings**from the context menu to define the inheritance settings for the root format, see Inheritance Settings on page 161. This allows you to determine which settings can be overridden in the extensions.

- Select **Further Settings Inheritance** from the context menu to define the further inheritance settings for the root format, see Inheriting Further Settings on page 166. You can determine the further settings to override in the extensions.

3. Enter a name for the extension in the **Global Extension** field. (The name cannot be in use by an existing rights format.)

4. Save the access rights. A new rights format with the name of the extension is added in the process.

5. Select **Global Extension** from the context menu.

   The global extension's rights settings are displayed.

6. Define the desired access rights, see Defining Access Rights on page 138 and Inheritance Settings on page 161.

7. Save the extended rights format.

   Select **Root Format** from the context menu to switch to the parent rights format.

To define a **local extension** for an existing rights format:

1. Load the access rights format that you wish to extend.

2. Enter a name for the extension in the **Local Extension** field. (The name cannot be in use by an existing rights format.)

3. Save the access rights.

4. Select **Local Extension** from the context menu.

   The **Search: Station** dialog is displayed.

5. Select the station you wish to define or display the extension for. If you do not select a station, the local extension is added or displayed for the current station.

6. Click on **OK**.

   The local extension's rights settings are displayed.

7. Define the desired access rights (see above).

8. Save the extended rights format.

   The access rights are saved using the name entered in the **Local Extension** field and with the station number in brackets.

   Select **Root Format** from the context menu to switch to the parent rights format.

Global extensions are valid for all stations, groups, reps and roles where the root access rights are entered. Local extensions only apply to a specific station.

Inheritance Settings

The inheritance settings determine how settings in the root format and local/global extensions are combined.

You can use these settings to partially or completely override the rights hierarchy, see Rights Hierarchy.

To define inheritance settings:

1. Load the access rights format that you wish to define the inheritance settings for.

2. You can define inheritance settings at the following levels:

   • For the entire rights format: Enable the **Inheritance** check box (below the access rights names).
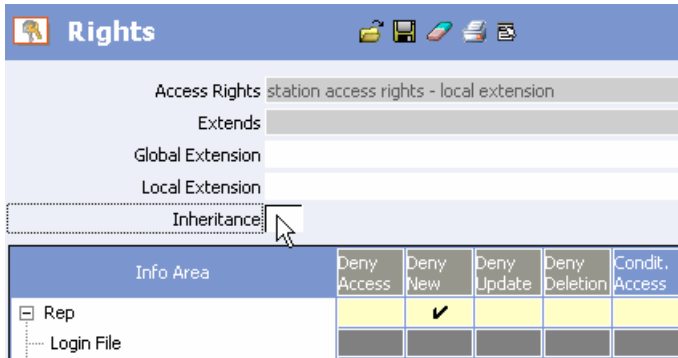
- For each info area: Right-click on the name of the desired info area in the tree and select the desired inheritance settings from the pop-up menu.

- For each setting: Right-click on the desired cell or setting and select the desired inheritance settings from the pop-up menu. Alternatively, select **View: Inheritance Settings** from the context menu and click in the desired cell.The **Inheritance properties** are then displayed in a dialog.
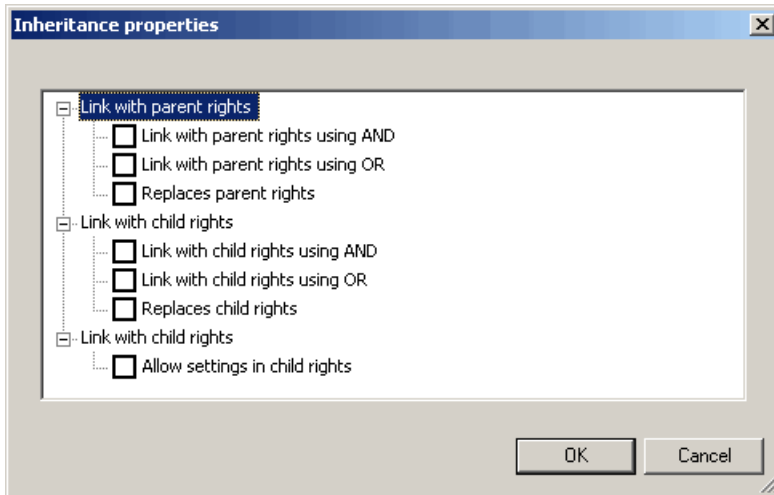
Inheritance settings on info area-level are indicated by the info area name in blue (in both **Rights Settings** and **Inheritance Settings** views). Inheritance settings on cell-level are displayed as red check marks (in **Inheritance Settings** view only).

3. The following options are available:

- **Link with parent rights using AND:** The rights settings are combined with the settings in the parent access rights using a logical AND (default). This option can be enabled for all settings where conditions can be applied.

- **Link with parent rights using OR:** The rights settings are combined with the settings in the parent access rights using a logical OR.

- **Replaces parent rights:** Settings replace the settings in all parent access rights where the option **Allow settings in child rights** is enabled.

- **Link with child rights using AND:** The rights settings are combined with the settings in the child access rights using a logical AND (default). This option can be enabled for all settings where conditions can be applied.

- **Link with child rights using OR:** The rights settings are combined with the settings in the child access rights using a logical OR.

- **Replaces child rights:** Settings in child rights are ignored. The parent settings can thus not be overridden.

- **Allow settings in child rights:** If this option is enabled, settings can be overridden or changed in child access rights. If this setting is not enabled, corresponding setting in child access rights are not applied.

Note: The **Replaces child rights** and **Allow settings in child rights** options are mutually exclusive. If you enable both options, the **Replaces child rights** option is applied.

Not all inheritance properties are available in all contexts. A list of the inheritance settings for each setting in the access rights can be found under Inheritance Properties per Element on page 163.

Inheritance properties are only saved if settings are defined for the affected element in the access rights, i.e. if no default values are defined for an area, inheritance properties defined in this cell are not saved.

4. Save the access rights.

The inheritance settings are evaluated hierarchically from bottom to top at runtime: For example, if default values are defined for a specific info area, the associated inheritance settings are evaluated. If no suitable settings are present, but inheritance properties have been defined at the info area level, these inheritance properties are evaluated. If no settings are defined there either, the inheritance settings defined for the entire rights format are evaluated.

Inheritance Properties per Element
List of available inheritance settings.

The following table lists the available inheritance settings for each element in the access rights:

Setting	Inheritance Properties
Info Area	Link with parent rights using AND Link with parent rights using OR Replaces parent rights Link with child rights using AND Link with child rights using OR Replaces child rights Allow settings in child rights
Deny Access /New /Update /Deletion	Link with parent rights using OR Replaces parent rights Link with child rights using OR Replaces child rights Allow settings in child rights
Condit. Access /New /Update /Deletion	Link with parent rights using AND Link with parent rights using OR Replaces parent rights Link with child rights using AND Link with child rights using OR Replaces child rights Allow settings in child rights
Implicit Hierarchy	Link with parent rights using OR Replaces parent rights Link with child rights using OR Replaces child rights Allow settings in child rights

Setting	Inheritance Properties
Create Default	Replaces parent rights Replaces child rights Allow settings in child rights Note: Settings in multiple access rights formats are always combined using a logical OR.
Fields	Link with parent rights using OR Replaces parent rights Link with child rights using OR Replaces child rights Allow settings in child rights Note: The same settings also can be defined per field (in the Fields level)
Cond. Fields	Replaces parent rights Replaces child rights Allow settings in child rights
Triggers/ Workflow	Replaces parent rights Replaces child rights Allow settings in child rights Note: Additional settings are available for triggers and workflows relating to processing the stack, >> Further Settings for Triggers and Workflows.
Log – Read/ Write	Link with parent rights using AND Link with parent rights using OR Replaces parent rights Link with child rights using AND Link with child rights using OR Replaces child rights Allow settings in child rights

Setting	Inheritance Properties
History	Link with parent rights using AND
	Link with parent rights using OR
	Replaces parent rights
	Link with child rights using AND
	Link with child rights using OR
	Replaces child rights
	Allow settings in child rights
Mark as deleted	Link with parent rights using AND
	Link with parent rights using OR
	Replaces parent rights
	Link with child rights using AND
	Link with child rights using OR
	Replaces child rights
	Allow settings in child rights
Further Settings (general and at the info area level)	Link with parent rights using OR
	Replaces parent rights
	Link with child rights using OR
	Replaces child rights
	Allow settings in child rights

Inheriting Further Settings

The inheritance settings determine how Further settings in the root format and local/global extensions are combined.

You can use these settings to partially or completely override the further settings in the rights hierarchy, see Rights Hierarchy.

To define further settings inheritance:

1. Load the access rights format that you wish to define the further settings inheritance for.

2. You can define further settings inheritance at the following levels:

   • For the entire rights format: Enable the **Further Settings Inheritance** check box (below the Further Settings checkbox).
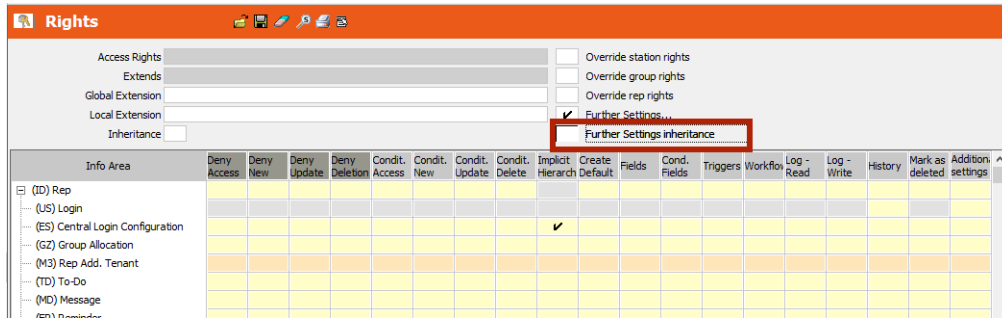
- For each info area: Right-click on the name of the desired info area in the tree and select **Further Settings** from the pop-up menu.

The **Further Settings** dialog displays.
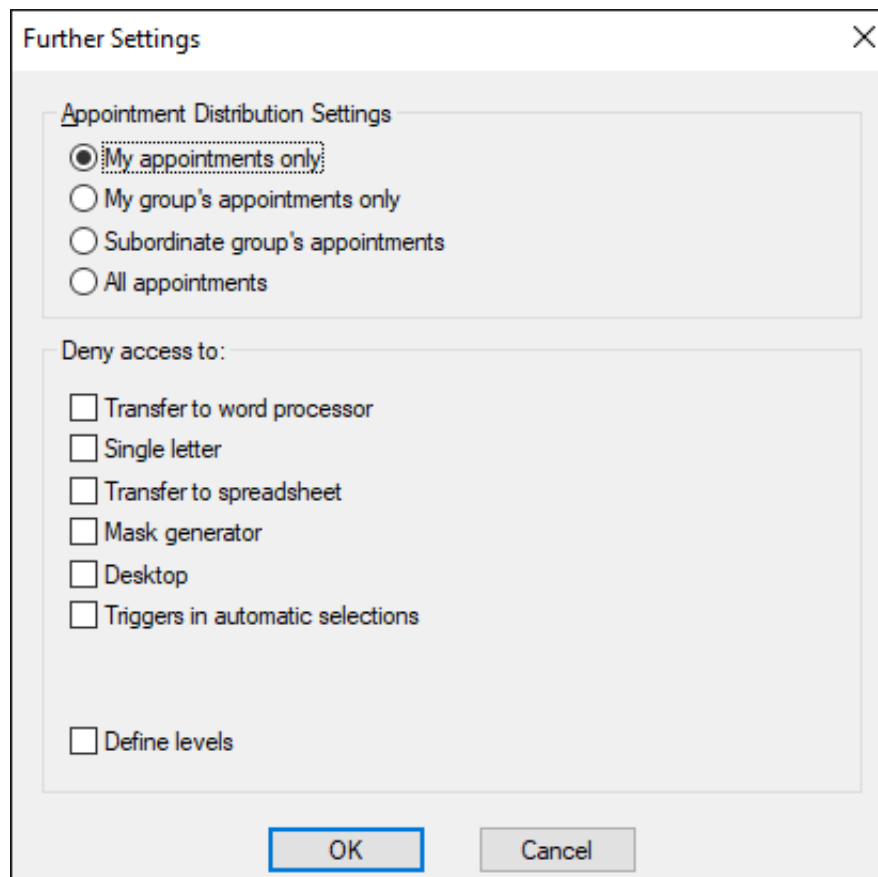
3. The following options are available:

Under **Appointment Distribution Settings**:

- **Own appointments only:** Only the user's own appointments are displayed for the rep.

- **Own group's appointments only:** If the rep is a member of a group, only appointments for members of that group are displayed.

- **Subordinate group's appointments:** If the rep is assigned to a group as the group leader, all subordinate reps' appointments are displayed.

- **All appointments:** All appointments for all reps are displayed.

Note: The settings defined here do not affect how the appointments in the **Calendar** or **Day Overview** are displayed. They apply to appointment distribution only. If a user clicks on the ⬚ (**Distribute**) button in the daily overview or calendar, only those reps and groups are displayed that meet the selected criteria are displayed in the **Distribution of Appointments**, irrespective of the reps and groups selected in the **Appointment Distribution** dialog box.

Use the options under **Deny access to** deny access to functions by the rep, group, station or login role:

- **Transfer to word processor / Single letter / Transfer to spreadsheet:** Prevents users from transferring data to a word processor or spreadsheet application.

  If you enable only the **Transfer to word processor** and **Transfer to spreadsheet** options, users can create single letters but cannot transfer multiple records to external applications.

- **Mask generator / Desktop:** Prevents users from customizing masks and defining desktops.

- **Define levels:** Disables the **Define Levels** button in the desktop settings, preventing reps with these access rights from defining new levels.

- **Triggers in automatic selections:** Prevents the use of triggers in automatic selections.

- **Station Access Rights:** Station access rights are not applied to the rep or group.

- **Group Access Rights:** Group access rights are not applied to the rep.

Note: Station and group access rights can only be overridden by the administrator (SU).

4. Click **Ok**.

5. Click **Save**.

Merging Access Rights

Learn how to merge access rights.

You can merge access rights (e.g. station + rep access rights or station + local extension etc.), in order to display and test the combined settings. To do so:

1. Load the parent access rights.

2. Select **Merge** from the context menu.

   The **Load** dialog box opens.

3. Select the (child) rights format that you wish to combine with the current right format.

   All settings in the two rights formats are displayed.

4. Save the access rights under a new name.

   You can select **Merge** again and select further access rights to merge, if necessary.

5. Assign the combined access rights to a station etc. to test the effects of settings.

Triggers

Triggers allow you to configure Aurea CRM to meet your needs without any programming knowledge.

You can define new functions and processes, carry out calculations with data in the database and start external programs.

Triggers are initiated when certain **events** (trigger events) occur in the database. These events in turn trigger certain **actions**. Both elements are independent, i.e. you can assign the same action to several events and vice versa.

You can log the execution of triggers by enabling the **Log triggers** option (**Triggers** category) in the **Configuration** info area, see Triggers on page 67. With Aurea CRM win logs are created per user and module, see Logs and Error Messages on page 506. For information logging triggers in Aurea CRM web, see https://support.au-rea.com/wiki/index.php?title=HOWTO_troubleshoot_Trigger_in_Web.

Trigger Events

Learn about the events that can activate triggers.

The following events can activate triggers:

- Clicking buttons. Buttons can be defined using the Mask Generator and assigned triggers, see *Button Properties* in the *Aurea CRM win Administrator Guide*.

- Selecting context menu entries, defined in the desktop format, see *Adding Actions to the Context Menu* in the *Aurea CRM win Administrator Guide*. Selecting the entry initiates the associated trigger.

- Clicking buttons in the header, defined in the desktop format. Clicking the button initiates the associated trigger, see *Defining Actions Buttons* in the *Aurea CRM win Administrator Guide*.

- Via the **New** button in the general toolbar, defined in the desktop format. Use the button to initiate triggers with the **Add new** action, see *New - Template* in the *Aurea CRM win Administrator Guide*.

- Database events (adding, editing or deleting a record): These events are defined in the **Rights** module, see Defining Database Events on page 189. You can determine which triggers are initiated for which users. You can also specify that triggers are only activated when certain fields are updated, or if a record satisfies a condition before or after it is updated.

- Events in action plans (BTB only) or workflows.

- Generating automatic selections: You can determine that triggers are executed for the selected companies, persons or properties (BTB only) and child info areas when generating automatic selections, see Automatic Selections in the *Aurea CRM win User Manual*.

For further information on trigger events, see Defining Trigger Events on page 187.

Trigger Actions

Learn about the trigger actions.

The following actions can be carried out by triggers:

- **Show:** Display a record, see Show on page 194.

- **Add new:** Add a new record, see Add New on page 196.

- **Edit/update:** Edit the contents of a record, see Edit/Update on page 197.

- **Delete:** Delete a record, see Delete on page 200.

- **Program Call:** Open an external application. You can also transfer parameters, see External Program Calls on page 201.

- **Single/serial letter:** Transfers data from Aurea CRM to your word processor in order to create a letter or mass mailing, see Transferring Data to a Word Processor on page 204.

- **Default Values:** Enter default values when adding a new record, see Default Values on page 205.

- **WEB level:** Display a web page in Aurea CRM, see Displaying Web Pages on page 206.

- **E-mail:** Create and send an e-mail, see E-Mail on page 208.

- **Abort:** Cancels saving a record if a condition is (not) met. This allows you to implement conditional mandatory fields, see Abort on page 211.

- **SMS:** Create and send a text message, see SMS on page 212.

You can specify whether a trigger should be initiated each time a field is edited, or only upon saving, and whether the trigger is interactive or runs in the background. Errors that occur when executing a non-interactive trigger are logged in the **System Event** info area, see System Event Info Area on page 508.

You can copy fields from different info areas, e.g. to transfer company data to the **Activity** info area.

You can also specify that fields should only be copied when certain conditions are met. You can also prevent data from being entered into certain fields and define error messages to be displayed if the user attempts to enter data in these fields.
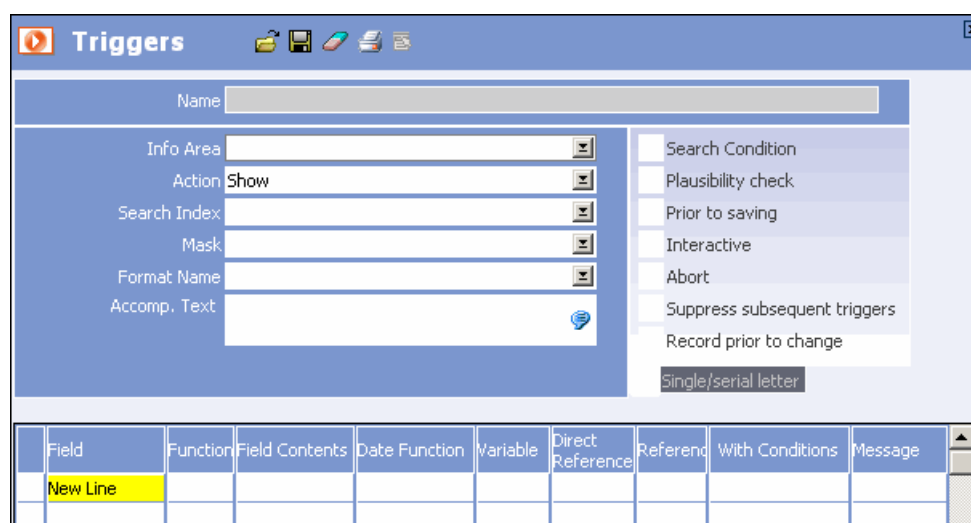
As triggers can themselves cause events in the database, you can define conditions for chains of triggers, see Trigger Chains and Branches.

Defining Triggers

Learn to define triggers.

To define a trigger:

1. Switch to the **Triggers** info area in the **Rights** module.

The mask is divided into two areas:

- The upper section contains a number of options for defining the trigger action.
- The lower section defines which fields are affected by the trigger.

2. Select the **target info area** in the **Info Area** field; i.e. the info area that the trigger is applied to, see Trigger, Target and Reference Info Areas on page 215.

3. Select the action the trigger should executed from the **Action** field, see Trigger Actions on page 170.

4. Enable the following settings as necessary:

- **Search Condition:** Enable this option to determine conditions that need to be met in order for the trigger to be executed, see *Conditions* in the *Aurea CRM win User Manual*. The trigger is only executed for those records that meet the condition.

  Note: The condition is only tested once the trigger is executed, see Processing Triggers on the Stack on page 219.

- **Plausibility check:** Enable this option to execute the trigger each time a field is changed, rather than once the record is saved, see Plausibility Check on page 200. The target info area must be the same as the **trigger info area** (the info area from which the trigger is initiated).

  Note: Triggers for which the **Plausibility Check** option is enabled are not processed using the stack, but directly after each field update. These triggers cannot initiate further triggers, see Processing Triggers on the Stack on page 219.

- **Prior to Saving:** Enable this option to initiate the trigger **after** the **Save** button is clicked but **before** the record is actually saved. The target info area must be the same as the trigger info area. Use this option to enter mandatory fields using a trigger, for example.

  Note: Triggers for which the **Prior to Saving** option is enabled are not processed via the stack, but immediately upon choosing to save or delete the record. These triggers cannot initiate further triggers, see Processing Triggers on the Stack on page 219.

- **Interactive:** Interactive triggers are run in the foreground and users can make changes to fields.

A mask should be entered in the **Mask** field for interactive triggers. This mask is displayed while the trigger is executed. If you do not specify a mask, the custom mask is displayed.

Note: Access rights are applied when using interactive triggers, i.e. all applicable user, group, station and role access rights. These restrictions do not apply to non-interactive triggers, as these triggers are executed as automatic functions. This allows non-interactive triggers to write data to fields that the current user is prevented from accessing. Similarly, records can be added, edited or deleted using the trigger, even if the current user does not have the necessary access rights to do so. Errors that occur when executing non-interactive triggers are logged in the **System Event** info area, see System Event Info Area on page 508.

- **Abort:** Enable this option to display the (**Cancel**) button in addition to the (**Save**) button. This allows users to abort the trigger.

- **Suppress subsequent triggers:** Enable this option to prevent the trigger from initiating further triggers. This also prevents infinite loops from occurring. (**Example:** A trigger logs every change to the database, including the user making the changes, and tracks the total number of changes. This trigger should not trigger subsequent triggers.)

- **Record prior to change:** Enable this option to use the original field contents in an **Edit/update** trigger. The original record contents are used to form keys and references, see Record Prior to Change.

5. If you require data from associated records when using the **Edit/update** or **Delete** actions, select a **Search Index** which is used to find linked records. The search index determines how the relationship from the trigger info area to the target info area is determined, see Delete on page 200.

6. If you enable the **Interactive** option, enter a mask in the Mask field, see *Mask Generator* in the *Aurea CRM win Administrator Guide*. Otherwise the custom mask is displayed.

7. Enter a transfer format in the **Format Name** field when defining triggers using the **Single/serial letter** or **E-mail** actions, see *Defining Transfer Formats* in the *Aurea CRM win User Manual*.

8. Enter a text in the **Accomp. Text** field. This text is displayed above the trigger mask for interactive triggers. The company (and person) for which the trigger is currently being executed is displayed above this text.

9. Define the desired trigger functions, see Defining Trigger Functions on page 174.

10. Save the trigger, see *Saving, Loading and Deleting Formats* in the *Aurea CRM win User Manual*.

11. Define the event that should initiate the trigger, see Defining Trigger Events on page 187.

> **Note:** Additional index fields are ignored when reading data within a trigger (same behavior as elsewhere in the business logic), see Index on page 302.

Defining Trigger Functions

You can use triggers to enter values in the database.

You can transfer fixed values, variable values (date, rep) and the contents of other fields (**references**). Furthermore, you can carry out arithmetic and string operations and determine conditions under which the fields should be updated.

You can process a field several times in one trigger, allowing for intermediate calculations and if-then-else chains.

To define trigger functions:

1. Define a new trigger or load a trigger using ![icon] (**Load**), see Defining Triggers on page 171.

2. Click on **New Line** in the **Field Name** column.

   A dialog box is displayed with all available fields. The fields listed are dependent on the **Info Area** and **Action** defined in the upper section of the mask.

   Fields which cannot be selected in this column (Z-fields, see Data Types in Aurea CRM on page 391) can be selected in the **Direct Reference** column (e.g. the **Person** and **Company** fields in the **Activity** info area).

3. Select the fields whose contents should be changed by the trigger and click **OK**.

4. Define the desired changes in the **Function, Field Contents, Reference Function, Variable , Direct Reference** or **Reference** columns.

> **Note:** The columns are applied from right to left: **Reference – Direct Reference – Variable – Field Contents**.

- Select an operator in the **Function** column to perform string or arithmetic operations, see Functions on page 177. The current field contents are combined with the contents in the **Field Contents, Variable, Direct Reference** or **Reference** columns using this operator. If you do not select a function, the current field contents are overwritten by the value you entered in the **Field Contents, Variable, Direct Reference** or **Reference** columns.

- Use the **Field Contents** column to define fixed content to be written to the field by the trigger. The system immediately checks whether the value entered is in

a valid format for the field, see Field Types on page 177. Invalid values cannot be saved.

Double-click to open the catalog for catalog fields. Double-click to access the calendar for date fields.

Use variable expressions to enter field contents that are dependent on when the trigger was initiated or by whom (e.g. `$curDay` for the current date or `$cur-Superior` for the current rep's superior), see Default Variables on page 178 and User-defined Variables on page 182.

To create line breaks in text fields: Use "\10" for LF, "\13\10" for CRLF. (Use "\13\10" to automatically enter the **Line Break 1-3** fields in company records.)

- Use the **Reference Function** column to:

  - select functions that are applied to a date or time, see Date and Time on page 184.

  - enter regular expressions, see Regular Expressions on page 185.

- Use the **Variable** column to define field contents that depend on the time or date the trigger is executed or the current user, see Default Variables on page 178 and User-defined Variables on page 182. When creating the trigger, the system does not test whether the content is in a valid format for the field type. You need to ensure this yourself.

- Use the **Direct Reference** column to copy or edit fields in the record processed by the trigger. When creating the trigger, the system does not check whether the content is in a valid format for the target field. You need to ensure this yourself.

  Fields which cannot be selected in the **Field** column can be selected in the **Direct Reference** column (e.g. the **Person** and **Company** fields in the **Activity** info area).

- Use the **Reference** column to copy data from other info areas. If you click in a cell in this column, the **Field Reference** level is opened, see Field References on page 185.

  Once you have defined a reference, a tick is displayed in the cell. You can then click in the field to edit or delete the reference.

5. Use the **With Conditions** column to determine that changes to this field are only applied if the target record meets specific conditions, see *Conditions* in the *Aurea CRM win User Manual*.

   Once you have defined a condition, a tick is displayed in the cell. You can then click in the field to edit or delete the condition.

Note: If you apply conditions to fields copied using references within the same trigger, the condition is applied to the record before the reference is copied. For

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example, if you want to copy fields from a company to a person and fill in other fields in the **Person** record based on the contents of these fields, this must either be done using two separate triggers or by executing the trigger twice, i.e. call the trigger a second time from within the trigger.

6. Use the **Message** column to enter messages that are displayed when this line is changing the contents of fields.

   Requirements:

   • The **Plausibility Check** option must be enabled.

   • The trigger must be initiated via a database action, not a button.

7. Click on **New Line** in the **Field Name** column to define further functions.

Note: The lines are executed in the order they are defined.

8. Save the trigger.

Moving, Inserting and Deleting Lines

Learn how to move, insert and delete lines.

To move a line:

1. Click in the left-most column containing the line numbers, and drag the line to the desired position. You need to hold down the mouse button for a while before you can drag the line.
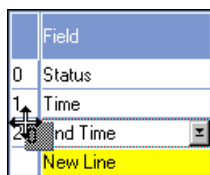
To insert a new line:

1. Add the line to the end and then drag it to the desired position as described above.

To delete a line:

1. Click on the corresponding cell in the **Field** column.

2. Disable the check box next to the field or parameter in the dialog box.

Field Types

Learn about the field types.

Values entered in fields must be compatible with the field type, e.g.:

- Numeric fields may not contain letters and have a fixed length.
- Only a limited number of entries are valid for catalogs. You can transfer the contents from another field to a catalog field if the source field contains a catalog entry. New catalog values cannot be added using triggers.

You should ensure that the value written to a field is compatible with the field type. Otherwise the line is ignored.

Functions

Learn about the different types of functional operators.

The following operators are available in the **Function** column:

- Arithmetic operators (integer and floating point fields only):
  - **Add:** Adds a value to the existing field content.
  - **Sub:** Subtracts a value from the existing field content.
  - **Mul:** Multiplies the existing field content by a specified value.
  - **Div:** Divides the existing field content by a specified value.

- String operators (alphanumeric fields only):
  - **Remove:** Removes a string from the existing field entry. If the string occurs more than once, all occurrences are deleted.
  - **Insert:** Inserts a string at the start of the existing field entry.
  - **Append:** Appends a string to the end of the existing field entry. You can use multiple trigger lines to append multiple strings to one another.

Calculations using Dates and Times

You can add and subtract fixed values (days) to and from date fields. For example, to add 7 days to the current contents of the **Date** field (e.g. in an activity record), enter the following:

	Field	Function	Field Contents
0	Date	Add	7

You can add and subtract time values. You can access the current time using the "Time" option in the **Variable** column.

	Field Name	Function	Field Content	Date Function	Variable	Direct Reference
0	Sum					Start (hh:mm:ss:ttt)
1	Sum	Add			Time	
2	Duration					End (hh:mm:ss:ttt)
3	Duration	Sub				Start (hh:mm:ss:ttt)

In this example:

1. The current time is added to the start time (**Time** field),

2. The duration is calculated (end time - start time).

Note: The fields used in this example or not included in the default configuration.

Default Variables

Learn about the Aurea CRM includes predefined variables that you can use in triggers.

There are two ways of using variable field contents in triggers:

• Using the **Variable** column:

  1. Select a field from the **Field** column, e.g. **FreeC1**.

  2. Select the desired option in the **Variable** column, e.g. "Group".

  Once the trigger is initiated, the name of the current rep's group is output to the **FreeC1** field.

• Using a variable expression in the **Field Contents** column:

  1. Select a field from the **Field** column, e.g. **FreeC2**.

  2. Select "Var. expression" in the **Variable** column.

  3. Enter the variable expression in the **Field Contents** column, e.g. "$curTenant".

  Once the trigger is initiated, the current tenant number is output to the **FreeC2** field.

The following options and variable expressions are available:

Option in the Variable column	Var. expression in the Field Contents column	Explanation
Today's Date	$curDay	Current date
Start of the week	$curWeek	Current week
Start of the month	$curMonth	Current month
Start of the quarter	$curQuarter	Current quarter

Option in the Variable column	Var. expression in the Field Contents column	Explanation
-	$quarter1	1st Quarter
-	$quarter2	2nd Quarter
-	$quarter3	3rd Quarter
-	$quarter4	4th Quarter
Start of the year	$curYear	Current year
-	$prevDay	Yesterday
-	$prevWeek	Previous week
-	$prevMonth	Previous month
-	$prevQuarter	Previous quarter
-	$pyQuarter1	1st Quarter of the previous year
-	$pyQuarter2	2nd Quarter of the previous year
-	$pyQuarter3	3rd Quarter of the previous year
-	$pyQuarter4	4th Quarter of the previous year
-	$prevYear	Previous year
Time	-	Current time (depending on the field format, exact to the nearest minute, second or millisecond).
-	$curTimeMin	Current time (hh:mm)
-	$curTimeSec	Current time (hh:mm:ss)
-	$curTimeMs	Current time (hh:mm:ss:ttt)

Option in the Variable column	Var. expression in the Field Contents column	Explanation
Note: If you append "UTC" to $curTimeMin/Sec/Ms, the time is output in UTC rather than the local time.		
Rep ID	$curRep	ID of the current rep
Rep	-	Name of the current rep
User	-	Login name of the current rep
Current rep's e-mail address	-	E-mail address of the current rep: **E-mail 1** field or **E-mail 2** (if **E-mail 1** is empty).
-	$curGroup	ID of the current rep's group
-	$curExtGroup	IDs of all groups in the rep's extended group: the group entered in the **Org. Group** field and all groups directly allocated to this group in the **Group Allocation** info area.
Group	-	Name or ID of the current rep's group
Group Leader	-	Name or ID of the current rep's group leader
Deputy ID	-	Name or ID of the current rep's deputy
Superior ID	-	Name or ID of the current rep's superior
Note: The result of the **Group**, **Group Leader**, **Deputy ID** and **Superior ID** options is dependent on the type of target field. Names are written to text fields, the person or group's ID is written to numeric fields.		
-	$curSuperior	ID of the current rep's superior

Option in the Variable column	Var. expression in the Field Contents column	Explanation
-	$curLeader	IDs of all groups that the current rep is entered as group leader for
-	$curDeputy	IDs of all reps for whom the current rep is entered as deputy
-	$curTenant	Current tenant
Station	-	Current station
Company	-	**FI_StaNo, FI_SerNo** and reference of the current company; alphanumeric
Person	-	As for company, but for persons
Property (BTB only)	-	As for company, but for properties
Windows User Name	$curWinUser	Name of the current Windows user
Windows computer name	$curComputer	Windows computer name
Reference as link	-	Includes a link to the trigger record in e-mails, see E-Mail on page 208. Using the corresponding entries in the **Configuration** info area, links to Aurea CRM products other than Aurea CRM win can also be created, see Links on page 50.

Use the **Variable default values for conditions** configuration entry (MC) to define additional fields in the **Station, Rep** and **Rep Addnal Info** (OTC only) info areas that should be available from this list, see General Settings on page 41.

You can also add or subtract time periods from variable date expressions. The following units are available:

Function	Explanation
d	day
w	week
m	month
q	quarter
y	year

Examples:

Function	Explanation
$cur-Day+1y+1d	Tomorrow in one year
$curYear+1m-1d	The last day in January of this year.

User-defined Variables

In addition to the default variables available in Aurea CRM, you can define your own variables.

The following options are available:

Defining additional variable rep and station fields in the Configuration info area

Use the **Variable default values for conditions** configuration parameter (**General Settings** category) in the **Configuration** info area (MC) to define additional fields in the **Rep**, **Station** and **Rep Additional Info** (OTC only) info areas to be available as variables, see General Settings on page 41.

Defining variables in the Variable info area

You can define variables in the **Variable** info area, see Variables on page 253.

To write a variable value to a field using a trigger, define the function, and select "Variable" in the **Variable** cell. You can enter the variable in the **Field Contents** cell using the following options:

- Enter the name of the variable
- Double-click in the cell and select the variable

- Enter the variable's station number and serial number ("ID = sno,lno")
- Enter the variables record ID ("ID=recid")

Example:

Define default values for the daily rate in expense records for Austria, Italy and Germany in the **Variable** info area, and a default value for all other countries.

Define a trigger that uses the daily rate defined for a rep's country as the default value in new expense records:

Date and Time

Learn to output information regarding date and time.

To output specific information concerning a given date (weekday, calendar week etc.) or time:

1. Select a field in the **Field** cell, e.g. **FreeC1**.

2. Select a function in the **Reference Function** field:

- **Day (1-31):** Day of the month; numeric

- **Month:** Month; numeric

- **Year:** Year; numeric

- **Quarter (1-4):** Quarter; numeric

- **Calendar Week:** Calendar week; numeric

- **Weekday:** The day of the week (1 = Monday, …, 7 = Sunday)

- **Weekend:** 1 if a Saturday and Sunday, otherwise 0; Boolean

- **Holiday:** 1 if a holiday (according to the calendar defined under **Extras** > **Other Options**), otherwise 0; Boolean

- **Hours (Time)**: Returns the hours entered in a time field as an integer.

- **Minutes (Time)**: Returns the minutes entered in a time field as an integer.

- **Milliseconds (Time)**: Returns the milliseconds entered in a time field as an integer.

- **Time Period in Days (0-1)**: Returns the value entered in a time field in days (decimal value from 0 to 1).

3. Enter the date/time (or select the date/time field) that the function should be applied to in the **Field Contents, Reference** or **Direct Reference** columns.

Example:

Changing the date in an activity (see Database Events on page 189) should enter the calendar week in a free field. Define the following trigger:

Regular Expressions

You can use regular expressions to search for particular string patterns in fields and write the results of the search to another field.

To search for a string using a regular expression:

1. Select a field in the **Field** column.

2. Select a variable, reference or direct reference.

3. Select **Regular Expression** in the **Reference Function** field.

4. Enter the regular expression in the **Field Contents** cell.

   For more information on the syntax used by regular expressions, see Regular Expressions Syntax on page 401.

When executing the trigger line, the system searches for text that matches the regular expression in the source value. The result is written to the field.

Example:

	Field	Function	Field Contents	Reference Fu	Variable	Direct Reference
0	FreeC1		s,[a-z]+	Regular Expre		E-mail 1
1	FreeC2		s,[a-z]+,,,,2	Regular Expre		E-mail 1
2	FreeC3		s,@[^.]+\..+	Regular Expre		E-mail 1
3	FreeC3		r,@,	Regular Expre		FreeC3
	New Line					

The following results are written to the free fields when searching in the **E-mail 1** field (in this example john.doe@example.com):

- **Free C1:** The first occurrence of a string consisting purely of letters ("john")

- **Free C2:** The second occurrence of a string consisting only of letters ("doe")

- **Free C3:** Any string following the '@' character; line 3 then removes the '@' character ("example.com")

Field References

References allow you to copy field contents (**Field** column) from other info areas (**Info Area** column).

You can determine that fields are only copied if the trigger is initiated from a specific info area (**Root info area**) or define that the source record needs to meet (**With Conditions** column).

Each time the trigger is called, the lines are tested in order to see whether the corresponding fields can be copied.

If no suitable reference is found, the field contents are deleted. To prevent this from happening, use the **Direct Reference** field to re-enter the contents of the field.

To define field references:

1. Define a new trigger or load a trigger using 🗃 (**Load**), see Defining Triggers on page 171.

2. Click on the corresponding cell in the **Reference** column.

   The **Field Reference** info area is displayed.

3. The **Root info area** column allows you to make triggers react differently depending on the info area that initiated the trigger.

   • If you do not specify an info area, Aurea CRM attempts to copy the field, irrespective of the info area that initiated the trigger.

   • If you enter an info area in the **Root info area** column, Aurea CRM only attempts to copy the field if the trigger is initiated from the specified info area.

4. Enable the **= Trigger Info Area** cell to define the root info area as the trigger info area. The record that initiated the trigger is then used as a reference, see Counting Dependent Records.

5. Select the reference info area in the **Info Area** column (i.e. the info area containing the field you wish to copy).

   Field contents can only be copied if a connection to the data model can be established when the trigger is initiated. For further information, see Trigger, Target and Reference Info Areas on page 215.

6. If you select a root info area, the default index relationship between the root and reference info areas is displayed in the **Index Relationship** column. This index is used to access the reference info area. If multiple indices are available, click in the cell to select an alternative index.

   If you have not selected a root info area, enter the index you wish to use to access the reference info area here.

7. Click in the **With Conditions** column to determine conditions for the reference info area, >> *Conditions* in the *Aurea CRM win User Manual*. The reference field is only copied if the condition is met.

   If several records meet the condition, the field contents are copied from the first record that meets the criteria. If no suitable record is found, Aurea CRM moves on to the next line of the trigger.

   If none of the fields in any of the lines could be read, Aurea CRM attempts to enter data in the field using the **Direct Reference, Variable** and **Field Contents** columns. If these columns are blank or copying is not allowed, the field contents are deleted, except for alphanumeric fields.

If you want to overwrite a field with references under certain conditions, you need to enter the field in the **Direct Reference** column.

8. Select the field from the reference info area to be copied in the **Field Name** column.

9. If you wish to apply further calculations to the value in this field, select one of the following options from the **Function** column:

   • **Number of records:** Returns the number of referenced records.

   • **Sum:** Returns the sum of the values in the field in all referenced records (only makes sense for numeric fields).

   • **Average:** Returns the average field value in all referenced records (only makes sense for numeric fields).

   • **Minimum:** Returns the minimum field value in all referenced records (only makes sense for numeric fields).

   • **Maximum:** Returns the maximum field value in all referenced records (only makes sense for numeric fields).

   • **All:** The field values in all referenced records are copied (only makes sense for text fields). In addition, you need to select the **Append** option from the **Function** field in the **Trigger** info area.

10. Enable the **Optional** cell to use the first valid reference (i.e. the root info area is correct and at least one record is found that meets the condition).

    If you leave the **Optional** cell disabled, all references are used.

11. Click on ☑ (**OK**) to save the field reference.

    You are returned to the **Trigger** info area.

Defining Trigger Events

Learn how to define trigger events.

In order for a trigger to be executed, you need to define an event that initiates the trigger, see .

Trigger Buttons

Triggers can be initiated using buttons.

You can trigger multiple triggers one after another using a single button and can add any number of trigger buttons to masks, see Adding Elementsand Button Properties. Adding Elements and Button Properties in the *Aurea CRM win Administrator Guide*.

Note: Trigger buttons only work in the Aurea CRM main module.

Trigger Buttons in Masks with Several Info Areas

Some masks contain information from several info areas (e.g. the **Company+Person** levelor the **Opportunity Overview** level in the BTB version).

Trigger buttons added to such masks treat the child info area (e.g. **Person in Company** or **Opportunity**) as the trigger info area.

For example, if you add an activity using a trigger button in the **Company+Person** level, the activity is added for the person.

If you want to add an activity record for a company, you have the following options:

- Hide the **Person in Company** info area (**View > Mask Area**).
- Create a dummy trigger. Clicking on the button initiates the dummy trigger, which applies a change to the **Company** info area; e.g. entering the time in a free field. The "real" trigger then responds to this change and adds the activity (for the company, as the second trigger was initiated by a change in the **Company** info area).

"Conditional" Trigger Buttons

You cannot define conditions that are directly applied to the trigger info area if the trigger is initiated by a button. In order to do so, you have the following options:

- If you define a trigger using the **Edit/update** option where the trigger and target info areas are identical, you can use the **Search Condition** option, see Defining Triggers on page 171.
- In all other cases, you can achieve the desired effect using a dummy trigger: The dummy trigger makes a change to a field; e.g. the time is entered in a free field. The "real" trigger reacts to this change: if this free field is updated and the record meets the condition, the trigger is executed.

Context Menu Entries

Triggers can be initiated by entries in the context menu.

You can add any number of entries to the context menu that initiate triggers, determine in which view and which mode (list view, edit mode etc.) and under which conditions the entry is displayed, see Adding Actions to the Context Menu in the *Aurea CRM win Administrator Guide*.

Buttons in the Level Header

Triggers can be initiated using buttons in the header.

You can define any number of trigger buttons in the header, assign icons and determine which modes the buttons are available in, see Defining Actions Buttons in the *Aurea CRM win Administrator Guide*.

New Button in the General Toolbar

Learn how to add new button in general toolbar.

Triggers whose action is set to **Add new** can be initiated using the **New** button in the general toolbar, see New - Template in the *Aurea CRM win Administrator Guide*.

Database Events

Use the **Rights** level to determine that triggers are initiated when certain events occur in the database.

You can also start triggers from automatic selections or the Workflow Designer (BTB only).

The following events can initiate triggers:

• Manual changes by the user

• Merging companies or persons (see Merging Companies and Merging Persons in the *Aurea CRM win User Manual*):

  • Deleting the source company or person

  • Updating the target company or person when merging

Note: When merging companies or persons, no triggers are initiated in dependent info areas if they are just "re-linked" but not changed otherwise.

• Changes made by workflows

• Changes made by triggers

• Aurea CRM functions

• Importing data

• Data maintenance in the **Maintenance** module

Note: Triggers **cannot** be initiated during communication or when making changes using CRM.cockpit.

Defining Database Events

Use the **Rights** info area to define which database events initiate which triggers (or workflows).

These triggers or workflows apply to all users (including the administrator) assigned these access rights as either their station, group, user or login role access rights.

When a database action initiates a trigger, the triggers is added to the trigger stack, which stores all triggers yet to be executed (see Processing Triggers on the Stack on page 219). Triggers are added to the stack in the order they are entered in the list. (Workflows entered in the **Trigger** info area (see below) are also added to the stack.) The order in which you enter triggers can therefore be important, see Inserting Database Events on page 193.

To define a database event as a trigger event:

1. Switch to the **Rights** info area in the **Rights** module.

2. Click in the **Triggers** cell of the desired trigger info area.

The **Trigger** info area is displayed for the selected info area.

3. Double-click on **New Line** to add a new trigger. Alternatively, click in the **Workflow** column in the new line to add a new workflow. The **Load** dialog box opens.

4. Select a trigger or workflow.

5. Click on **OK**.

6. Click in the **Index Relationship** column to display the default index relationship between the trigger and target info areas, see Trigger and Target Info Areas when Updating, Displaying or Deleting Records on page 217. This index is used to access the target info area. If multiple indices are available, enable the check box next to the desired index to use it. The new index relationship is then displayed in the **Index Relationship** column.

7. Click in the **With Conditions** cell to define a condition. The trigger is only executed if this condition is met, see Conditions in the *Aurea CRM win User Manual*.

   The condition is tested as soon as the trigger is initiated, and not only once the trigger is processed on the stack, see Processing Triggers on the Stack on page 219.

8. Enable the **New** cell to initiate the trigger when a new record is added. The trigger is executed once the new record is saved. If a condition is defined in the **With Conditions** cell, the condition is tested before the trigger is executed.

   If the **Plausibility Check** option is enabled in the trigger, the trigger is initiated immediately after the record is added (i.e. before saving).

9. Enable the **Upd** cell to initiate the trigger when an existing record is updated. The trigger is executed once the record is saved.

   If the **Plausibility Check** option is enabled in the trigger, the trigger is initiated immediately once data is entered (i.e. before saving).

Note: Changes are only present if the record has changed since the last time it was saved.If the **Plausibility Check** option is enabled in a trigger, the trigger is initiated whenever records are edited **and** added, irrespective of which options are enabled (**New, Upd**). To determine that the trigger should only be executed for new records, for example, define the condition **New** = "<empty>" in the **With Conditions** field. Conversely, if the record is being updated, the **New** field contains data.

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10. Enable the **Del** cell to initiate the trigger when a record is deleted. If a condition is defined in the **With Conditions** cell, the condition is tested before the trigger is executed.

> **Note:** Triggers are only initiated **after** a record is deleted and therefore cannot access information stored in the record's child records (as these records no longer exist).

11. If you have enabled the **Upd** column, you can define conditions in the **Old Condition** column that are applied to the record **before** the trigger is executed. This condition does not affect the **New** or **Del** cells.

12. If you enable the **Upd, Old Condition** and **With Conditions** cells, the trigger is only executed if the record was changed from the status defined under **Old Condition** to the status defined under **With Conditions**.

    Example: A trigger should be used to send an e-mail if the **Status** of an activity record is changed from "Scheduled" (**Old Condition**) to "Completed" (**With Conditions**).

13. If the **Upd** cell is enabled, you can use the **Upd Fields** column to determine that the trigger is only initiated after certain fields are updated.

    Click in the **Upd Fields** cell to open the **Trigger Fields** info area which displays all fields in the info area.

No.	Field Name	Type	Lengt	Trigger	Optional
4	Contact	▦	9	✔	✔
5	Status	▦	9	✔	✔
6	Date	▦	10	✔	

   - All the fields with a tick in only the **Trigger** cell (and not the **Optional** cell) **must** be changed before the trigger is initiated.

   - **At least one** of the fields with a tick in the **Optional** column must be changed before the trigger is initiated.

    In the above example, the trigger is only initiated once changes are made to the **Date** field and at least one of either the **Activity** or **Status** fields (or both).

    This condition does not affect the **New** and **Del** columns.

14. Click in the **Properties** cell to define inheritance settings for the trigger or workflow and determine how the workflow/trigger is handled by the stack, see Further Settings for Triggers and Workflows on page 192.

15. Click on ✅ (**OK**) to return to the **Triggers** mask.

16. Click on ✅ (**OK**) to return to the **Rights** info area.

17. Save the access rights.

    Triggers and workflows are executed in the order they are entered, see Inserting Database Events on page 193.

Further Settings for Triggers and Workflows
Learn about the additional settings for triggers and workflows.

You can define the following additional options for triggers and workflows by clicking in the **Properties** cell (from either the **Trigger** or **Workflow** level, accessed from the cell with the same name in the **Rights** level, see Defining Database Events on page 189 and Workflow on page 156).

- **Replaces parent rights:** The trigger/workflow is not executed in the parent access rights. For this setting to work, the **Apply in child rights (if present)** or **Transfer the settings from the child rights** option must be enabled in the parent access rights.

- **Do not apply:** The trigger/workflow is not executed. For this setting to work, you need to explicitly define the events for which the trigger should not be executed. In addition, the **Transfer the settings from the child rights** option must be enabled in the parent access rights. Use this option in combination with the **Replaces parent rights** option to deactivate triggers that would be executed by parent rights.

Note: To completely deactivate a trigger in the child right, no **Upd Fields** must be defined in the child right. If **Upd Fields** are defined, the trigger is **not** executed for the **Upd Fields** of the child right, however it is executed for the **Upd Fields** defined in the parent right.

- **Apply in child rights (if present):** If the trigger/workflow is also entered in child access rights, the trigger/workflow is only initiated from the child access rights.

- **Transfer the settings from the child rights:** The workflow/trigger is executed according to the settings in the child access rights. This means that settings may be defined/edited for the trigger/workflow in the child rights.

- **Execute follow-up triggers recursively:** Follow-up triggers or workflows are executed recursively (i.e. not added to the stack). This setting corresponds to the default behavior in Aurea CRM win. The recursion depth can be defined using the **Log triggers** configuration entry, see Recursion Depth.

- **Execute follow-up triggers non-recursively:** Follow-up triggers are added to the stack. This setting corresponds to the default behavior in Aurea CRM web.

Note: The **Execute follow-up triggers recursively** and **Execute follow-up triggers non-recursively** options are only available in the **Trigger** column, but can be enabled for workflows from there. The **Execute follow-up triggers recursively** and **Execute follow-up triggers non-recursively** options are only applied when the trigger/workflow is actually executed.

Inserting Database Events

Learn how to insert database events.

To insert a trigger:

1. Switch to the **Rights** info area.

2. Click in the **Triggers** cell of the desired trigger info area.

   The **Triggers** info area is displayed for the selected info area.

3. Double-click on the name of the trigger you wish to insert the new trigger in front of.

   The **Load** dialog box opens.

4. Select the desired trigger.

5. Click **OK**.

   The dialog box is displayed:

   • Answer the prompt with **Yes** to insert a line containing the selected trigger.

   • Click on **No** to overwrite the current line.

6. Click on ✅ (**OK**) to return to the **Rights** info area.

7. Save the access rights.

To enter a workflow:

1. Switch to the **Rights** info area.

2. Click in the **Triggers** cell of the desired info area.

   The **Triggers** info area is displayed for the selected info area.

3. Click in the **Workflow** cell of the row that the workflow should be entered in.

   The **Load** dialog box opens.

4. Select the desired workflow.

5. Click **OK**.

   The dialog box is displayed:

   • Answer the prompt with **Yes** to insert a line containing the selected workflow.

   • Click on **No** to overwrite the current line.

6. Click on ✅ (**OK**) to return to the **Rights** info area.

7. Save the access rights.

To subsequently change the order of lines:

1. Click in the left-most column containing the line numbers, and drag the line to the desired position. You need to hold down the mouse button for a while before you can drag the line.

Deleting Database Events

Learn how to delete database events.

To delete a trigger/workflow:

1. Switch to the **Rights** info area.

2. Click in the **Triggers** cell of the desired info area.

The **Triggers** info area is displayed for the selected info area.

3. Click on the trigger/workflow you wish to delete.

4. Delete the name of the trigger/workflow using the keyboard.

5. Click in another line.

The trigger/workflow is deleted.

6. Click on ✅ (**OK**) to return to the **Rights** info area.

7. Save the access rights.

To delete all triggers/workflows:

1. Switch to the **Rights** info area.

2. Click in the **Triggers** cell of the desired info area.

3. The **Triggers** info area is displayed for the selected info area.

4. Click on 🩹 (**Delete**).

5. Click on ✅ (**OK**) to return to the **Rights** info area.

6. Save the access rights.

Trigger Examples

You can find some examples for trigger in this topic.

Below are some of the examples for trigger:

Show

The 'show' trigger.

Displaying Messages for Field Updates

If a person is not assigned to a department, a message should be displayed whenever a field is edited.

1. Define the following trigger:

2. Define the following conditions for line 0:

3. Define the following conditions for line 1:
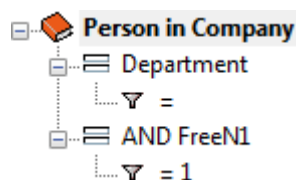
As long as no department has been entered, the values "1" and "2" are entered alternatively in the **FreeN1** field.

4. Save the trigger.

5. Switch to the **Rights** info area.

6. Click in the **Triggers** cell for the **Person in Company** info area.

7. Define the following database event:

8. Save the access rights and assign it (to a station).

Each time a person record is edited where the **Department** field is empty, the value in the **FreeN1** field is updated and the message is displayed.

Note: This example is intended for Aurea CRM win only.

Add New

Learn how to add new activity.

An activity should be added interactively. The rep should be taken from the **Company, Person in Company** or **Activity** info area depending on availability (this example uses the FS version).

1. Define the following trigger:

2. Define the following references:

3. Save the trigger.

4. Define trigger buttons in the **Company+Person** and **Activity** levels used to initiate the trigger, see Trigger Buttons on page 187.

The first valid reference found is used (**Optional** column):

- If the trigger is initiated from an activity record, the rep associated with that activity is transferred (provided one has been entered). The trigger then attempts to transfer the **Account Manager 1** entered for the person, and then the **Rep** entered for the company. If these fields are also empty, the current rep is copied (**Variable** column).

- If the trigger is initiated from a person, the system first attempts to transfer the **Account Manager 1** entered for the person and then the **Rep** in the company. If these fields are also empty, the current rep is copied (**Variable** column).

Default Values for New Records

If you add a new record using a trigger, the following applies:

- Default values do **not** apply to non-interactive triggers.

  Fields that are normally entered automatically by Aurea CRM (e.g. rep, current date and time in activities) are not entered by non-interactive triggers. Key fields, such as the company group and number are automatically entered by all non-interactive triggers. Fields which are calculated automatically (e.g. activity costs) are entered.

- **All** default values apply to interactive triggers:
  - those configured by the user
  - those defined in the access rights
  - all fixed default values such as **Date** and **Rep** in the activities

- Default values are overwritten by field updates defined in the trigger.

You can define situation-dependent default values. For example, you can use references to determine that the rep entered in the **Rep** field in the **Person in Company** info area is entered in the **Activity** info area. If no rep is entered for the person, the rep entered in the **Rep 1** field in the **Company** info area is used instead. You can also define variable default values, such as "current rep" or "in 7 days", >> Defining Trigger Functions on page 174.

Edit/Update

Example for editing and updating trigger.

Calculations using a Trigger

A trigger calculates the sum of the **FreeN1** and **FreeN2** fields in the **Company** info area, multiplies the result by the factor entered in the **Free% 1** field (e.g. 50%) and writes the result to the **FreeN3** field.

1. Define the following trigger:

2. Save the trigger.

3. Switch to the **Rights** info area.

4. Click in the **Triggers** cell for the **Company** info area.

5. Define the following database event:

Name	Index Relation	With C	New	Upd	Del	Old	Upd
Trigger calculation				✔		✔	✔

The trigger is executed whenever the **FreeN1** and **FreeN2** fields are changed (**Upd Fields** cell), provided the Free%1 field is not empty (**With Conditions** cell).

6. Save the access rights and assign it (to a station).

The lines in the trigger are processed from right to left and top to bottom:

Value stored in FreeN3		
After first line	FreeN1	500
After second line	FreeN1+FreeN2	700
After third line	(FreeN1+FreeN2)*Free%1	35000
After fourth line	(FreeN1+FreeN2)*Free%1/100	350

Counting Dependent Records

The number of activities stored for a company should be entered in a free field in the company record. Each time a change is applied to the **Activity** info area, the number should be recalculated.

1. Define the following trigger:

Field	Function	Field Contents	Reference Function	Variable	Direct Reference	Reference	With Conditions
0 FreeN1						✔	
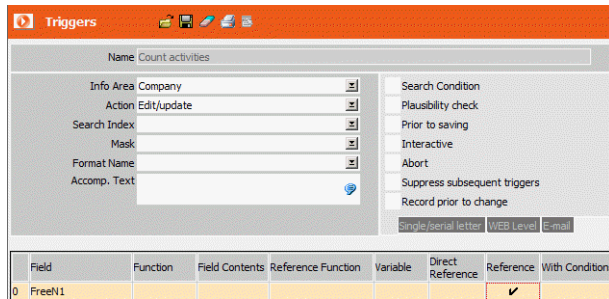
2. Define the following reference:

	Root info area	= Trigger Info Area	Index Relationship	Info Area	With Conditions	Field	Function
0	Company	✔	0. FI-StaNo,FI-SerNo -> FI_StaNo,FI_SerNo	Activity			Number of records

Only those records are counted that are dependent on the current record (**Root info area** column).

3. Save the trigger.

4. Switch to the **Rights** info area.

5. Click in the **Triggers** cell for the **Activity** info area.

6. Define the following database event:

	Workflo	Name	Index Relationship	With Cc	New	Upd	Delete	Old Cor	Upd Fie
	0	Count activities			✔	✔	✔		

7. Save the access rights and assign it (to a station).

Each time a activity is edited, deleted or added, the number of records stored for the parent company is written to the **FreeN1** field in the company record.

Record Prior to Change

Upon changing the value of an offer, a trigger should write the old **Offer Value** and the date of the change (**Upd** field) to two free fields in the corresponding company record.

1. Define the trigger as follows:

2. Define the references:

3. Save the triggers.

4. Switch to the **Rights** info area.

5. Click in the **Trigger** cell of the **Offer** info area.

6. Define the database event:

7. Save the access rights and assign it (to a station).

Each time that the **Offer Value** is changed in an offer, the old value and the date of the change are written to the appropriate free fields.

Plausibility Check

When a new activity is created or an existing one is updated, the system should check whether the status ("Scheduled", "Completed" or "Missed") is consistent with the date.

Activities in the future are set to "Scheduled", activities in the past are changed from "Scheduled" to "Missed" and corresponding messages are displayed.

1. Define the following trigger:

2. Enable the **Plausibility Check** option.

3. Define the following condition for the first line: **Date** = Today's Date

4. Define the following condition for the second line: **Status** = Scheduled AND **Date** <= Today's Date.

5. Save the trigger.

6. Switch to the **Rights** info area.

7. Click in the **Triggers** cell for the **Activities** info area.

8. Define the following database event:

9. Save the access rights and assign them (to a station).

Each time an activity is added or edited, the **Status** is checked against the current date. Activities in the future have their status set to "Scheduled". Activities in the past not set to "Completed" have their status set to "Missed".

Delete

Triggers using the **Delete** action are used to delete dependent records once the parent record has been deleted.

In this example, deleting an activity should delete all follow-up activities as well.

1. Define the trigger and select a suitable **Search Index**:
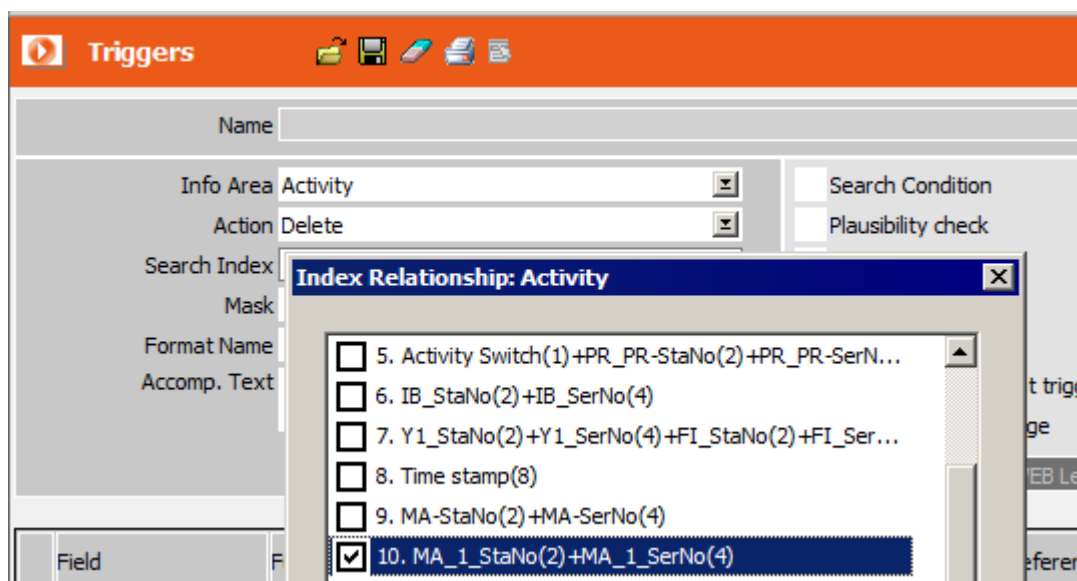
2. Save the trigger.

3. Switch to the **Rights** info area.

4. Click in the **Trigger** cell for the **Activities** info area.

5. Define the following database event:

6. Save the access rights and assign them (to a station).

Each time an activity is deleted, all follow-up activities linked to the activity via the **MA_1_StaNo** and **MA_1_SerNo** fields are deleted.

External Program Calls

You can use triggers to start external applications. Fixed values or data from the database can be transferred as parameters.

To use a trigger to start an application:

1. Define the following trigger:

2. Enter a text in the **Accomp. Text** field. This text is displayed while the application is starting.

3. Click on **New Line** in the **Field** column. A dialog box is displayed.

4. Select the **Program Name** entry.

5. Click **OK**.

6. Enter the name of the program you wish to call in the **Field Contents** field or using a reference to a field in the database, >> Field References on page 185. If you do not specify a path, Aurea CRM win first searches the `.. \system\db` directory and then the `.. \system\exe` directory for the application. If the program is located in a different directory, you must either enter the complete path or the path relative to the `.. \system\db` or `.. \system\exe` directories.

Note: The path name must be specified, even if the path is entered in your Windows environment variables.

If the trigger is initiated in another module or another Aurea CRM application (e.g. Aurea CRM web), the program is searched for in the `.. \system` directory first. If the program is located in a different directory, you must either enter the complete path or the path relative to the `.. \system` directory.

7. You can enter additional parameters in other lines by entering **Parameter(#)** in the **Field Name** cell. These parameters can likewise be assigned fixed values (**Field Contents** cell), referenced from the database or be situation-dependent (**Variable** column), see Defining Trigger Functions on page 174.

Note: Special case: If you wish to transfer the **FI-SerNo** field from the **Company** info area and the **Last Name** field from the **Person** info area, for example, you additionally need to have selected the **Person** info area in the **Info Area** cell when defining the trigger. Otherwise, initiating the trigger always passes the first person

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in the current company, not the person currently displayed on screen. This special case only applies to the **Company+Person** level.

8. Save the trigger.

9. Add a trigger button, e.g. to the **Company+Person** level, used to start Notepad and open or add the file `<FI_SerNo>.txt`, see Trigger Buttons on page 187.

Note: By default, program call triggers initiated by database events (see Database Events on page 189) react to changes made to data in the main and **Maintenance** modules, as well as changes made by CRM.server and importing data using the **Import** module. You can change this behavior by specifying the desired modules, see Module Parameters.

For information on sending XML messages to a 3rd-party tool via COM trigger (HTTP or Message trigger), see *CRM.interface Technical Guide*.

Module Parameters

By default, program call triggers initiated by database events (see Database Events on page 189) react to changes made to data in the main and **Maintenance** modules, as well as changes made by CRM.server and importing data using the **Import** module.

Use the **Module** parameter to change this behavior or to initiate program calls from other Aurea CRM modules or applications:

1. Define the program call.

2. Add a new line, and select **Module** from the dialog box.

3. Enter the modules you wish to allow the program call for in the **Field Contents** cell, or double-click in the field, and select the desired module.
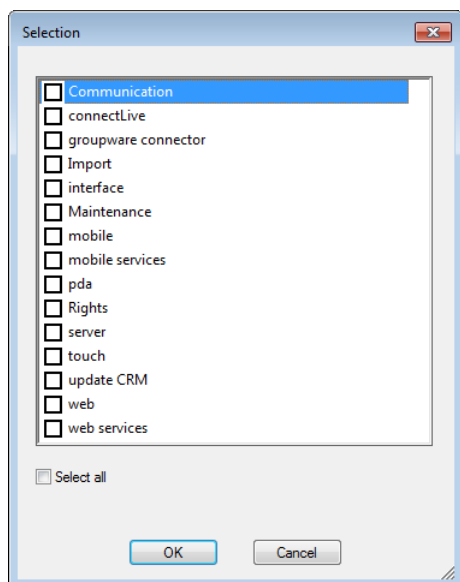
You can define multiple lines or separate modules in single line using a semicolon.

The program call trigger is only started from the specified modules.

Note: Caution is advised when calling programs from the web server, for example. Applications with a GUI or which require user interaction should not be started in this case.

Transferring Data to a Word Processor

You can use triggers to transfer data from Aurea CRM to your word processor.

You can then edit, print and/or save the document in Aurea CRM's document management system, see Word Processor in the *Aurea CRM win User Manual*.

To transfer data to a word processor using a trigger:

1. Define the trigger:
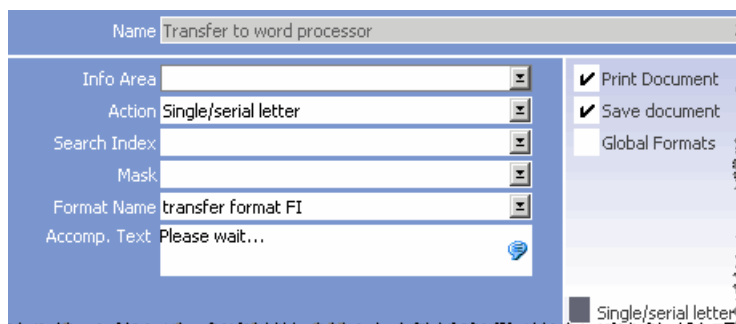
2. Select a transfer format in the **Format Name** field, see Defining Transfer Formats in the *Aurea CRM win User Manual*.

3. Enter a text in the **Accomp. Text** field. This text is displayed in a dialog box while the data is transferred.

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4. Switch to the **Single/serial letter** tab.

5. Enable the **Print Document** option to print the document.

6. Enable the **Save Document** option to save the document in Aurea CRM's document management system, see Document Management in the *Aurea CRM win User Manual*.

7. Use the **Global Formats** option to determine whether to load a private or global format, see Formats in the *Aurea CRM win User Manual.*

8. Save the trigger.

9. Define trigger buttons, e.g. in the **Company+Person** level, used to initiate the trigger, see

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Note: The trigger must be initiated from the info area that the transfer format was defined for.

Default Values

When creating a new expenses record, the current rep's license plate (stored in the **FreeC1** field) should be entered as the default value.

When adding new records, individual fields can be filled with data from other info areas. Field contents are applied immediately when the record is added (as with all default values) and can be changed.

1. Define the following trigger:

2. Define the following reference:

3. Save the trigger.

4. Switch to the **Rights** info area.

5. Click in the **Triggers** cell for the **Expenses** info area.

6. Define the following database event:

Name	Index Relation	With Con	New	Upd	Del	Old Cond	Upd Field
Driving expenses			✔				

7. Save the access rights and assign them (to a station).

Each time a new expense record is added, the current rep's license plate is entered in the **Car No.** field.

Displaying Web Pages

You can use triggers to display web pages in Aurea CRM.

Fixed values or data from the database can be transferred as parameters.

To use a trigger to open a web page:

1. Define the following trigger:
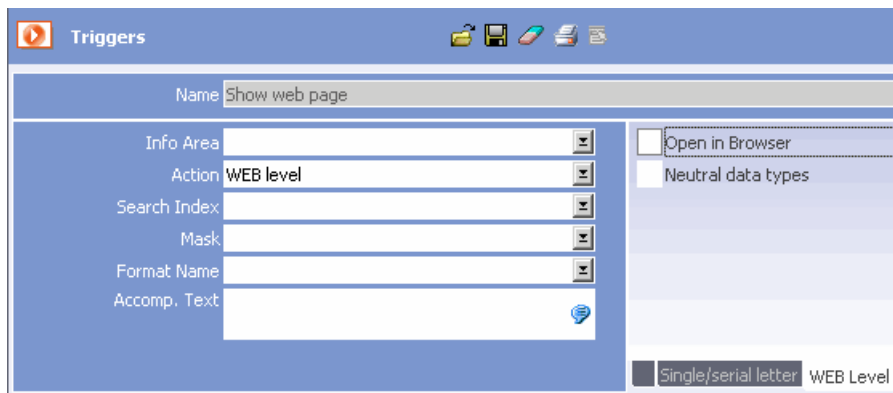
2. Click on **New Line** in the **Field** column.

A dialog box is displayed. You can choose between **URL** and **Parameter(#)**.

3. Select the **URL** entry.

4. Click **OK**.

5. Enter the URL in the **Field Contents** column or reference a field in the database (**Direct Reference** or **Reference** fields)

6. Save the trigger.

7. Define trigger buttons or similar in the levels that you wish to be able to open the web page from, see Trigger Buttons on page 187.

You can configure the display of web levels, see Level Properties in the *Aurea CRM win Administrator Guide*.

To display the web page in the user's default browser instead of in Aurea CRM:

1. Switch to the **WEB Level** tab in the trigger definition.

2. Enable the **Open in Browser** option

3. Save the trigger.

When executing the trigger, the default browser is started and the web page displayed in the browser.

Note: You need to disable User Account Control (Windows Vista and higher) in order to use this feature.

Transferring Parameters

To transfer parameters when opening a web page:

1. Define a trigger with the **WEB level** action, see Displaying Web Pages on page 206.

2. Add a new line, and select **Parameter (#)** in the **Field** column.

3. Enter a string to be used as a parameter in the **Field Contents** column.

4. Save the trigger.

To transfer data from the database as a parameter:

1. Define a trigger with the **WEB level** action.

2. Select the source info area from which data should be transferred in the **Info Area** cell.

3. Add a new line, and select **Parameter (#)** in the **Field** cell.

4. Select the field containing the parameter in the **Direct Reference** cell or reference a field in another info area (**Reference** cell).

5. Save the trigger.

Note: If you transfer field contents as parameters, they are automatically encoded as a URL. All other texts must be encoded as A URL (**Field Contents** column); i.e. you need to enter `%20` for spaces or `%22` for quotation marks.

Parameter Examples

The following screenshots only serve as examples. If you wish to incorporate the web pages of the companies listed below, contact the respective companies.

Searching for Names:

	Field Name	Function	Field Content	Date Fur	Variable	Direct Reference	Referenc	Wit
0	URL		www.google.at					
1	Parameter(#)		/search?hl=de&q=%22			First Name		
2	Parameter(#)		%20			Last Name		
3	Parameter(#)		%22					

Search for Address:

	Field Name	Function	Field Content	Date Fun	Variable	Direct Reference	Referenc	With C	Message
0	URL		www.mapquest.com/maps/m						
1	Parameter(#)		country=AT					✔	
2	Parameter(#)		country=DE					✔	
3	Parameter(#)		&address=			Street			
4	Parameter(#)		&city=			City			
5	Parameter(#)		&			ZIP			

The conditions (**With Conditions** columns) apply to the country codes. If "Country = Austria" then "AT" is transferred. If "Country = Germany" then "DE" is transferred.

Neutral Data Types

The **Neutral data types** option causes numeric values to be transferred in a constant, language-independent format (i.e. without digit grouping symbols and a period is used as the decimal symbol). This setting applies to all field contents that are formatted based on the regional settings, i.e. including date and time fields.

E-Mail

You can use triggers to create and send e-mails in the background.

Before you can use such a trigger, you need to specify your e-mail client in the **Configuration** info area, see General Settings on page 41 (**E-Mail Client** option).

In this example, any changes to the **Processed by** field in the **Ticket** info area should cause an e-mail containing all necessary information to be sent automatically to the new owner of the ticket.

1. Define the following trigger:

	Field	Function	Field Contents	Date Fu	Variable	Direct Reference	Reference
0	From						✔
1	To						✔
2	CC (optional)				Current rep's e-mail address		
3	Subject (optional)	Append	Ticket			No.	
4	Subject (optional)	Append	- please process				
5	Text (optional)		Customer:				
6	Text (optional)	Append				End Customer Company	
7	Text (optional)	Append				End Customer Person	
8	Text (optional)	Append	Description:				
9	Text (optional)	Append				Problem Description	
10	Text (optional)	Append	Link:				
11	Text (optional)	Append			Reference as link		

The following parameters are available:

- **From:** The sender, defined here using a reference:

Root info area	= Trigger	Index Relation	Info Area	With Cond	Field Name
Ticket	⊻	50. Created by Rep ID ->	Rep		E-mail 1

- **To:** The recipient. Separate recipients using a semicolon. A reference is used here:

Root info area	= Trigger	Index Relation	Info Area	With Cond	Field Name
Ticket	⊻	51. Processed by ID -> Re	Rep		E-mail 1

- **CC (optional):** Carbon copy. Separate recipients using a semicolon.

- **BCC (optional):** Blind carbon copy. Separate recipients using a semicolon.

- **Subject (optional):** The e-mail's subject. Use the **Append** function to combine multiple entries to form the subject line. Use the **Reference as link** option in the **Variable** column to include a link to the trigger record in the subject.

- **Text (optional):** The e-mail's body text. Use the **Append** function to combine multiple entries to form the body text. Use "CRLF" to insert line breaks. You can also enter the text in HTML format.

- Use the **Reference as link** option in the **Variable** column to include a link to the trigger record in the e-mail.

  Select the corresponding format (**TXT** or **HTML**) on the **E-Mail** tab. If you do not select an option, the setting is read from the SMTP connection settings, see SMTP Connection Settings on page 92.

  Use the **Reference as Link** option in the **Variable** column to add a link to the source record to the e-mail.

  Instead of using the **Text** parameter, you can also define a global transfer format for the e-mail's body text (**Format Name** field), see Defining Transfer Formats and Global Formats in the *Aurea CRM win User Manual*. The transfer format must include a transfer fields format, even if the e-mail body text does not reference any fields.

  The settings entered in the transfer format for the subject and sender are overwritten if suitable parameters are defined in the trigger.

- **Attachment(optional):** A document in Aurea CRM's document management system or the path to a local file. You can use the **Append** function to generate the path and file name. In this example, a document is taken from an order record and included as an attachment.

	Field	Function	Field Contents	Date	Varia	Direct Reference	Reference
0	From						✔
1	To						✔
2	Subject (optional)	Append	Order				
3	Subject (optional)	Append				Order No.	
4	Text (optional)		Please find the confirmation of your order he				
5	Attachment (optional)		C:\Docs\Process\Order_				
6	Attachment (optional)	Append				Order No.	
7	Attachment (optional)	Append	.doc				

- **Module:** By default, E-Mail triggers are only executed in the main module (`mmba.exe`). Use the **Module** option to specify the modules where the E-Mail trigger should be executed.

  Double-click in the **Field Contents** field to get the module list:
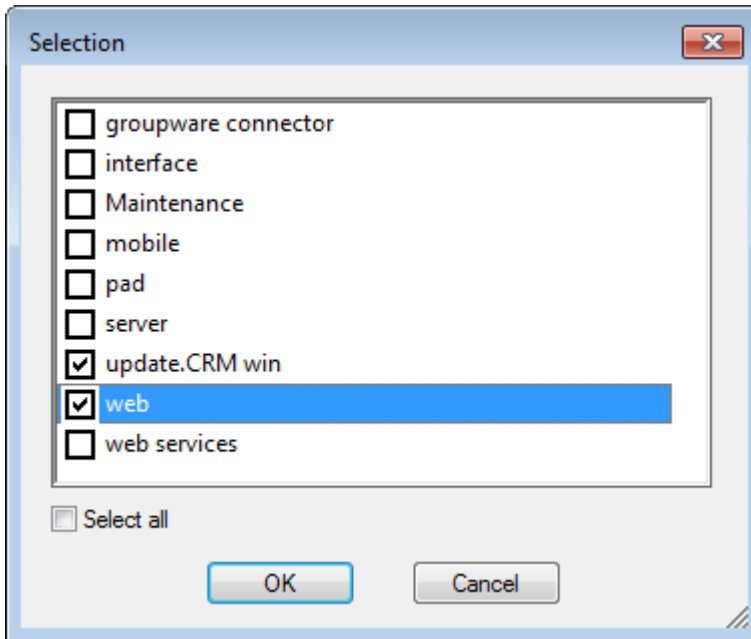
  Enable the check boxes for the desired modules.

2. Enable the **Save e-mail in 'Sent Items'** option on the **E-Mail** tab if you want to save e-mails sent via triggers to the current rep's **Sent Items** folder in their e-mail client.

3. Save the trigger.

4. Switch to the **Rights** info area.

5. Click in the **Trigger** cell for the **Ticket** info area.

6. Define the following database event:

Name	Index Relation	With Con	New	Upd	Del	Old Con	Upd Field
E-mail trigger example				✔			✔

  A change to the **Processed by** field initiates the trigger.

7. Save the access rights and assign them (to a station).

If an e-mail trigger is initiated from either the **Company** or **Person in Company** info areas, an activity record is created containing the contents of the e-mail. If the e-mail is sent in HTML format, a customer document containing the body text is also created.

Note: Use the **Do not add activity when sending e-mail via a trigger** configuration option to prevent activity records from being added automatically, >> Triggers on page 169.

E-mail triggers cannot be executed as part of automatic selections, >> *Automatic Selections* in the *Aurea CRM win User Manual*.
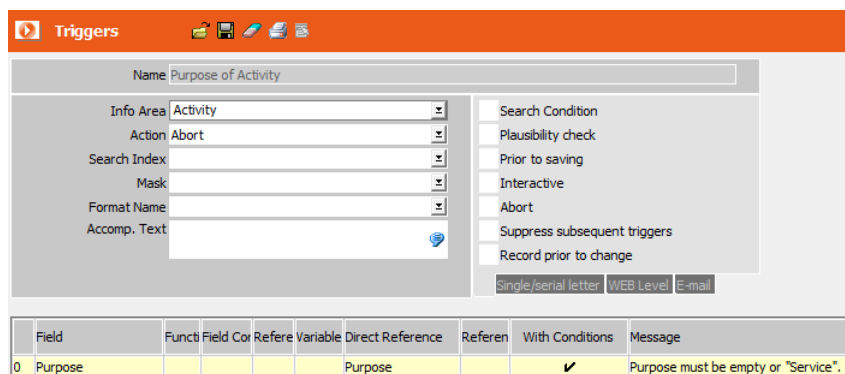
Aurea CRM web only supports triggers that send e-mails via SMTP. A valid configuration entry (**General Settings -> Connection Settings for SMTP**) is required or the `smtp.cfg` file must be copied to the `web\system\sys` directory to be able to execute e-mail triggers in Aurea CRM web, >> SMTP Connection Settings on page 92 and *Aurea CRM web Technical & Installation Guide*.

Abort

You can define triggers that check the contents of records before saving it and cancel save if the defined conditions are not met.

To e.g. allow users to save an activity only if the **Purpose** field contains a certain value:

1. Define the following trigger:

2. To display the **Message** text (without changing a field value), you need to enter the same field as **Direct Reference** as well.

3. Define the following conditions:
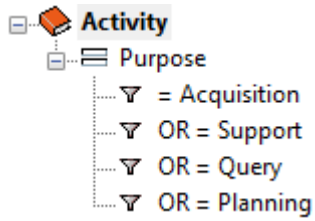
If one the conditions evaluates to true, the record can not be saved.
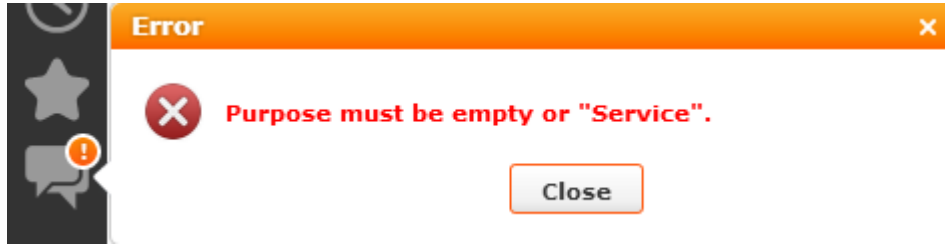
4. Save the trigger.

5. Switch to the **Rights** level.

6. Click on the **Triggers** cell for the **Activity** info area.

7. Define the following database event:

	Workfl Name	Index Rela With Condi	New	Upd	Delete (	Upd Fields
0	Purpose of Activity			✔	✔		✔

The trigger is initiated upon creating or updating an activity. In the **Upd Fields** cell you can define which fields must be updated to initiate the trigger.

8. Save the rights format and assign it e.g. to a station.

SMS

You can use triggers to create and send text messages (SMS).

Before you can use such a trigger, you need to specify the connection settings for sending SMS, see General Settings on page 41 (**SMS** option).

In this example, any changes to a ticket entered by a rep other than the ticket's owner cause an SMS to be automatically sent to the owner.

1. Define the following trigger:

	Field	Function	Field Contents	Refere	Variab	Direct Refer	Reference
0	To						✔
1	Text		FYI -				
2	Text	Append	a ticket has been updated: #				
3	Text	Append					✔
4	Module		mmba;mmwe;mmmb;mmms				

2. Available parameters:

- **From** (optional): Telephone number or arbitrary text to be used as the sender. This parameter is optional since not all SMS providers support the "from" information.

- **To:** The recipient's telephone number.

- **Text:** The text message. Use the Append function to concatenate text. The text can not be generated from a Word template.

- **Module:** Select the modules which should execute the trigger, see E-Mail on page 208.

To and **Text** are mandatory. If no **Module** is specified, the trigger is only executed in the Aurea CRM win main module.

3. The recipient and part of the text are defined using references:

- The ticket owner's (**Processed by ID** field in KM) mobile phone number is retrieved from that rep's rep record (**Mobile tel.** field in ID):

	Root info area	= 1	Index Relationship	Info Area	With	Field	Functic	Optional
0	Ticket		1010. Processed by ID -> Rep/Group ID	Rep		Mobile tel.		✔

- The ticket's number is retrieved from the ticked record that has been updated (**No.** field in KM)

	Root info are	= Ti	Index Relatio	Info Area	With Conc	Field	Function	Optional
0				Ticket		No.		✔

4. Save the trigger.

5. Switch to the **Rights** info area.

6. Click in the **Triggers** cell for the **Ticket** info area.

7. Define the following database event:

	Workflov	Name	Index Relatior	With Conditions	New	Upd
0		SMS		✔		✔
		New Line				

Processed by ID<>'Current User'

8. Save the access rights definition and assign them (to a station, group or user).

The SMS trigger is initiated if a rep other than the one entered in the **Processed by ID** field of a ticket updates that ticket.

Note: No activity records (MA) are created when sending SMS.

Initiating Several Triggers from one Event

You can assign multiple triggers to a trigger event.

For example, if you wish to execute multiple trigger actions using a single button, you can do so using a dummy trigger:

- The trigger button initiates a dummy trigger, which makes a specific change to the database, e.g. entering the time in a free field.

- Changes to the database made by the dummy trigger then initiate (possibly conditional) trigger actions.

Applying Triggers to Several Records

Learn to apply triggers to multiple records.

You can execute a trigger for several records:

- If a trigger is executed for a dependent info area (e.g. **Person in Company**) from the parent info area (e.g. **Company**), the trigger is executed for all child records (all persons in the company).

- If you want to execute a trigger for all companies or all activities (for all companies and persons), you can achieve this by exporting and then re-importing the data. Triggers are then initiated for each record during the import process, see Rescheduling Missed Activities on page 215.

- You can execute triggers as part of automatic selections, see Automatic Selection in the *Aurea CRM win User Manual*.

Rescheduling Missed Activities

Learn to reschedule missed activities.

To reschedule all missed activities to a future date, or to set their status to "Missed":

1. Export the keys for all activities with the status "Scheduled" and lying in the past. Also export a free field. The free field is used as a flag to ensure that each record is updated when the record is imported.

2. Import the keys automatically (match up companies and persons, update activities). During the import process, a value is entered in the free field.

3. The trigger reacts to the value entered in the free field. (Define an appropriate condition and select the field in the **Upd Fields** column.)

4. The trigger moves all activities to the current date if they have been marked as movable, and sets the status to "Missed" if they cannot be moved (similar to the "Activity Check" trigger, >> Plausibility Check on page 200). The trigger also deletes the value stored in the free field.

5. You can combine automatic import and export processes in batch files and call the batch file using a button in Aurea CRM.

Note: Separate command lines in the batch file using the "pause" command.

Trigger, Target and Reference Info Areas

Learn about the info areas involved when trigger is executed.

Three info areas are involved whenever a trigger is executed:

- **Trigger Info Area:** The info area from which the trigger is initiated. This can be the info area for which a trigger is defined in the **Rights** info area (**Triggers** column) or the root info area of the **Reference** defined in the **Trigger** info area, see Defining Database Events on page 189 and Reference and Root Info Area on page 216.

- **Target Info Area:** The info area that is updated by the trigger. This is the info area entered in the **Info Area** field in the **Trigger** info area, see Defining Triggers on page 171.

- **Reference Info Area:** This is the info area from which data is copied using a reference. The info area is entered in the **Reference** field in the **Trigger** info area, see Field References on page 185 and Reference and Root Info Area on page 216.

The trigger, target and reference info areas can be the same.

When using the **Plausibility Check** or **Prior to saving** options in a trigger, the trigger and target info areas must be the same.

Reference and Root Info Area

The reference info area is the info area entered in the **Reference** field in the **Trigger** info area.

The root info area should either be left empty or be the same as the trigger info area.

Any info area with the same key as the trigger or target info area can be used as a reference info area.

Whether the key is taken from the trigger or target info area depends on the trigger actions and the entry in the **Root info area** column. Apart from when adding new records using a trigger, only one of the two info areas is possible, as the records must be identical in all common parent info areas. For example, if an activity record is added from a note record, both are dependent on the same person, and by extension, the same company.

When adding records, the reference refers to the trigger record.

An entry in the **Root info area** column means that the line is only used if the trigger is initiated from that info area.

Trigger and Target Info Areas when Adding Records

When the **New** button is clicked in an info area, Aurea CRM automatically fills in a number of key fields (e.g. the company group and number in companies and all company-dependent info areas).

You can use triggers to add records from any other info area. In some cases, it is not clear from the context where Aurea CRM should take the key information from.

When adding new records via triggers, all relevant keys are automatically copied from the trigger info area to the target info area.

As a result, you can add records from info area A to info area B automatically (i.e. without worrying about the key information), as long as one of the following conditions applies:

* B is an independent info area

* B is dependent on A

* B is **directly** dependent on an info are which is hierarchically above A

If B is not dependent on A, but on another info area, you need to enter the key using the **Field Contents**, **Variable** or **Reference** columns.

Example: Adding Activities to Notes

For example, if you add an activity from a note, the key fields of the company (and possibly the person) are transferred. The activity is added for the same company or person as the note. Because the date is a key field in both cases, and notes are associated with activities (the text in activities is copied to notes with the same date), the date is transferred to the activities.

The rep entered in the activity is not a key field, and is therefore not copied automatically. You need to use reference fields to copy the rep, see Field References on page 185.

Trigger and Target Info Areas when Updating, Displaying or Deleting Records

Triggers with the **Edit/update, Show** or **Delete** actions access the database.

These actions are carried out for all possible records. For example, if you apply changes to a dependent info area from a parent info area, the changes are applied to all dependent records that meet the defined conditions.

Default options:

- **Trigger info area = target info area:** The changes are applied to the record from which the trigger was initiated.

- **Trigger info area is a parent of the target info area:** The changes are applied to all dependent records, irrespective of whether they are directly or indirectly dependent on the trigger info area.

- **Target info area is a parent of the trigger info area:** The changes are applied to the parent record, irrespective of whether the trigger info area is directly or indirectly dependent on the target info area.

Special cases:

Trigger Info Area	Target Info Area	Changes to records
Company or **Person in Company**	Dependent on **Person in Company** or **Company**	Dependent on the same company (if **Data > Company-Related** is selected) or person
Dependent on **Company** or **Person in Company**, only company-dependent	Dependent on **Person in Company** or **Company**	Dependent on the company (only company-dependent)
Company or **Person in Company**, only company-dependent	**Person in Company**	All persons within the company
Dependent on **Person in Company** or **Company**	Only company-dependent	All for this company

You can change the default index relationship between the trigger and target info areas (**Index Relationship** column in the access rights, see Defining Database Events on page 189). For example, if you wish to apply changes to the **Company** info area from the **Relationship** info area, by default, the trigger would apply to the parent company. If you select **FI_1_StaNo, FI_1_SerNo -> FI_StaNo, FI_SerNo** as the index relationship, the trigger affects the target company.

You cannot edit, delete or display records in independent info areas from other independent info areas. Consequently, you cannot apply changes to the **Document** info area from the **Company** info area.

Example: Updates Between Info Areas

The trigger in the following examples applies the following changes:

Company >

- **Ext. Company Key** (1:n)
- **Person in Company** (1:n) > Activity (1:n)
- **Activity** (1:n)

Key:

Person in Company	Activity	Ext. Company Key
FI_StaNo.	FI_StaNo.	FI_StaNo
FI_SerNo	FI_SerNo	FI_SerNo
KP_StaNo	KP_StaNo	Ext. System
KP_SerNo	KP_SerNo	Ext. Key
	Date	
	MA_SerNo	

- If you want to apply changes to the **Activity** info area from the **Person in Company** info area, only activities associated with this person can be changed. Conversely, you can only apply changes to the person from person-dependent activity records, not from company-dependent ones.

- You can apply changes to external company keys, despite these being company-dependent and not person-dependent. Conversely, you can make changes to all persons and company-dependent records from the **Ext. Company Key** info area.

Processing Triggers on the Stack

Learn how to process triggers on stack.

An event can initiate several triggers, which in turn can initiate further triggers, see Trigger Chains and Branches. Aurea CRM stores the triggers on an internal stack. Whilst a trigger is being executed, any number of other triggers can be stored on the stack waiting to be processed.

If the execution of a trigger initiates a further trigger, the new trigger is added to the top of the stack ("First In First Out"). This behavior can be changed globally using a configuration entry (**Log triggers**) or per trigger in the access rights definition (**Execute follow-up triggers recursively** option), see Recursion Depth.

Trigger conditions (see Defining Database Events on page 189) are tested when triggered, and not before the trigger is actually executed. However search conditions (see Defining Triggers on page 171) are only tested once the trigger is actually executed.

The situation in which the trigger was initiated is also stored on the stack: which records need to be edited or deleted; or from which record new records should be added.

When executing triggers, Aurea CRM's multi-tier system of access rights applies, see Rights Hierarchy. Triggers defined in the station access rights are initiated first, followed by those in the group and rep access rights, and finally those in the role access rights. If you are inheriting access rights, you can configure this behavior for each trigger, see Further Settings for Triggers and Workflows on page 192.

Note: Triggers for which the **Plausibility Check** or **Prior to Saving** options are enabled are not processed using the stack, but directly after each field update. They cannot initiate further triggers.

Trigger Chains and Branches

It is possible to define chains of triggers, with one trigger calling the next. Take care to avoid infinite loops: If you want one or more triggers to be initiated repeatedly, ensure that process also terminates at some point (**Suppress subsequent triggers** option).

If you want to call several external programs or transfer several records to the word processor at once, you can define dummy triggers. The dummy trigger applies a change to a specific field which in turn initiates the trigger containing the program call or used to transfer data to the word processor.

Triggers containing the actions **Program Call**, **Single/serial letter**, **WEB level** or **E-mail** cannot initiate other triggers, as they do not apply any changes to the database.

Recursion Depth

The recursion depth determines the depth up to which follow-up triggers are processed directly and not added to the stack.

In the following example, a database event initiates triggers 1 to 3. Trigger 1 updates 2 records (**X** and **Y**), the remaining triggers update a single record each. The triggers 1a, 1b and 2a are follow-up triggers that are initiated by the changes applied using the first trigger.
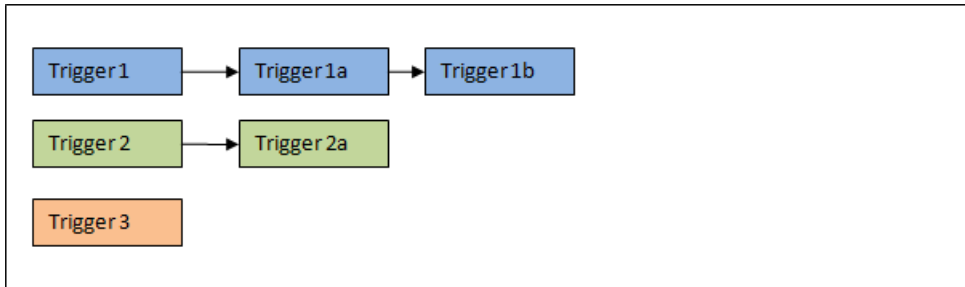
The orange lines depict the order in which triggers are executed; the large blue rectangle represents the stack.

Recursion depth 1 (default in Aurea CRM win):
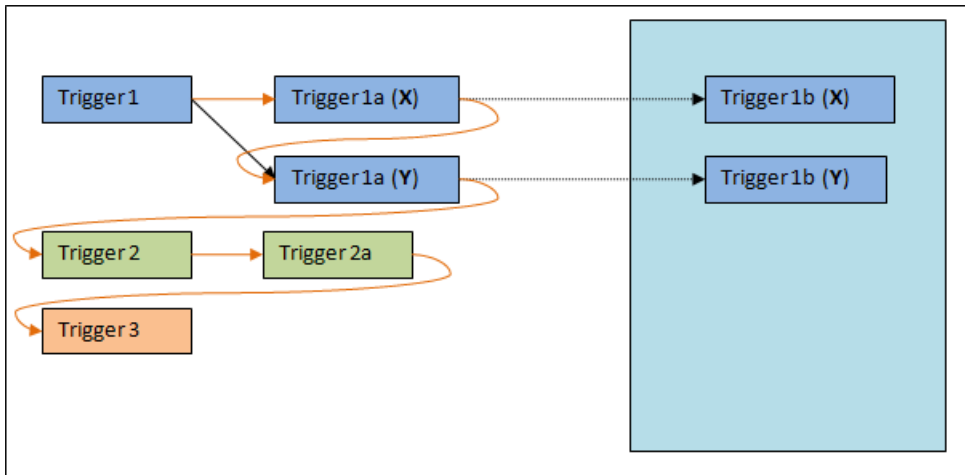
Recursion depth 0 (default in Aurea CRM web):
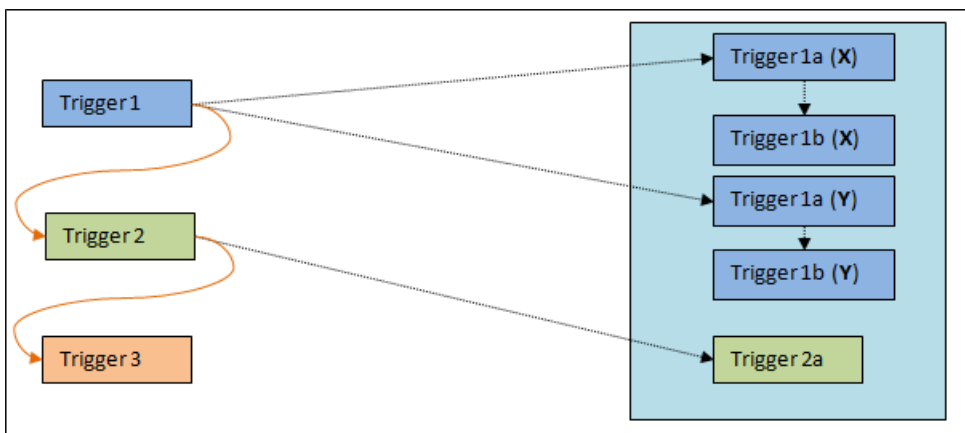
You can configure the default recursion depth globally or per station using a configuration entry (**Log trigger**). The maximum recursion depth is 100.

Recursion depth 2:
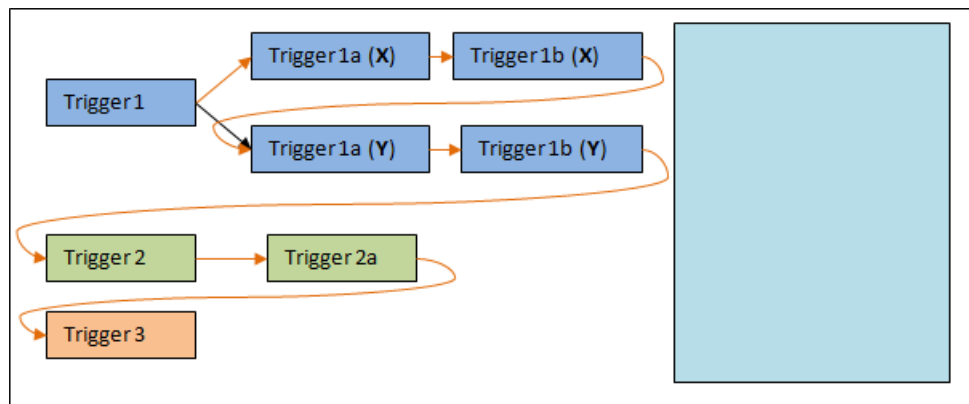
Note: If the recursion depth is changed (i.e. from 1 in Aurea CRM win or 0 in Aurea CRM web, this setting is also applied to triggers initiated when adding new records.

You can also determine whether follow-up triggers or workflows are executed recursively or not for each trigger/workflow, see Further Settings for Triggers and Workflows on page 192.

Tenants

Learn how to configure the Aurea CRM database for multiple tenants.

All Aurea CRM products support tenants.

To configure the Aurea CRM database for multiple tenants:

1. Define which info areas and catalogs should be tenant-dependent, see Defining Tenant Rights on page 222.

2. Define tenants and assign them to reps, groups or stations, see Defining Tenants on page 225 and Assigning Tenants.

Preparations

Pre-requisites for defining tenants and tenant rights.

Consider the following before defining tenants and tenant rights:

- Which tenants are required, i.e. which user groups work with joint or separate data.

- Which users should have access to the data of multiple tenant and the relationships between tenants. For example, you need to identify whether a tenant can access other tenants' data but not vice versa, and whether individual users should be able to edit data assigned to multiple tenants, see Assigning Data/Catalogs to Several Tenants on page 226.

- Which data and catalogs are tenant-independent. In general, this applies to companies, persons and their dependent data (e.g. catalogs such as **Marketing Activity, Product Group** etc.), see Defining Tenant Rights on page 222.

- Whether existing catalogs and data should be separated and to which tenants they should be assigned, see Changing the Tenant Structure on page 231.

- Whether data needs to be imported for multiple tenants simultaneously, in which case the import user requires access to all tenants' data, see Import on page 230.

- How data is entered. You should ensure that data is always assigned to the correct tenant irrespective of how the data is added (manually in the Aurea CRM win main module, via import etc.).

- Which users are responsible for entering catalog values. You should ensure that catalog values are always assigned to the correct tenant irrespective of how the data is added (manually in the Aurea CRM win main module, via import etc.), see Tenants and Catalog Maintenance on page 228.

Defining Tenant Rights

The **Tenant Rights** info area is used to specify which data and catalogs are separated by tenants.

In general, the following tenant rights should suffice:

- "Standard", for most users
- "Admin", for collective imports etc.

Defining Tenant Rights for Info Areas

To define tenant rights for info areas:

1. Open the **Tenant Rightd** info area in the **Rights** module.
2. Select **Info Area** from the context menu.

3. Click in the **Tenant No. Field** column and select the field that contains the tenant number. When accessing a record in this info area, the contents of this field are compared to the tenant number of the user, group or station. When adding new records, the appropriate tenant number is entered in this field, see Assigning Tenants.

   You can choose to index the field in the SQL database in order to optimize performance when accessing this field.

The **<InfoAreaID>-TenNo** field is available in the most important independent info areas (**Company, Person, Campaign, Marketing Activity, Expenses, Property** (BTB), **Conditions** (OTC) etc.). For other info areas, you can select a free field to use instead or define a field of type "mno" in the data model. If no field is available from the drop-down list in the **Tenant No. Field** column, you need to define a field of the type "mno" in the data model for that info area, see Aurea CRM Field Types.

4. Enable the desired options:

- **View:** Reps can only view those records that contain their tenant number (or contain no tenant number).

- **New:** When a new record is added, the user's tenant number is entered in the field selected in the **Tenant No. Field** column upon saving. Default values or values entered manually are overwritten. You can deny access to tenant fields using access rights, in order to prevent subsequent changes to these fields, see Defining Rights at the Field Level on page 153.

Note: If tenant rights are assigned to a parent info area, its child info areas are not automatically separated by tenant.

- **Update:** Users can only edit those records that contain their tenant number (or contain no tenant number).

- **Delete:** Users can only delete those records that contain their tenant number (or contain no tenant number).

The following combinations are common:

- **View + New + Update + Delete:** Read and write access is tenant-dependent.

- **New + Update + Delete:** Write access is tenant-dependent. All users can view the records of other tenants.

5. Define the tenant rights for all necessary info areas.

6. Click 🖫 (**Save**), see Saving, Loading and Deleting Formats in the *Aurea CRM win User Manual*.

7. Assign the tenant rights to the desired tenant, see Defining Tenants on page 225.

Defining Tenant Rights for Catalogs

You can define which (variable) catalogs are identical for all tenants and which are different. For example, the **Currency** catalog is identical for all users, but the **Marketing Activity** catalog is separated by tenant.

Note: Fixed catalogs cannot be separated by tenant, see Catalogs on page 270.

To define tenant rights for catalogs:

1. Open the **Tenant Rights** info area in the **Rights** module.

2. Select **Catalog** from the context menu.

Catalogue	View	New
Absences Free K1 (Absences)	✔	✔
Absences Free K2 (Absences)		
Absences Free K3 (Absences)	✔	✔
Acad. Title (Person)	✔	✔
Account Group (Sales Sector Item)		
Accounts (Accounts)		

3. Enable **View** or **New** for the appropriate catalogs.

- **View:** Reps can only select catalog values containing their tenant number (or containing no number).

Note: All catalog values are always visible to the administrator (SU).

- **New**: The user's tenant number is entered when adding a new catalog value.

4. Save the tenant right and assign it to the appropriate tenant, see Defining Tenants on page 225.

Note: If you separate a catalog by tenants, you should also do the same for those info areas that access the catalog. Otherwise, records may be displayed or saved with incomplete data. For example if a user edits a record containing a catalog value assigned to another tenant, the catalog value is deleted upon saving the record.

You can determine that certain values in catalog separated by tenants are available to all tenants, whereas others are only available to a single tenant.

Example: Standard activities in the **Marketing Activity** catalog should be available to all users, but not certain specific activities, see Tenants and Catalog Maintenance on page 228.

Access Rights and Tenant Rights

Data

You can separate data by tenants using either the **Rights** or **Tenant Rights** info areas:

- You can configure tenant access rights with some effort in the **Rights** info area:
  1. For each info area, define a field (catalog, alphanumeric or numeric) used to store the tenant number.
  2. Define access rights for each tenant, which differs in terms of default values and conditions for this field.

> **Note:** This method is relatively cumbersome and prone to errors: access rights must be defined for each tenant and the correct values and conditions must be entered for all cases. Changes need to be applied to all access rights.

- Defining tenant rights in the **Tenant Rights** info area has the advantage that separate access rights do not need to be defined for each tenant and default values and conditions are much clearer and easier to define.
- If you have previously defined tenant rights using the **Rights** info area (using an appropriate field (catalog, alphanumeric or numeric) per info area), you can continue to use these fields or discard them and use the **Maintenance** or **Import** module to transfer existing data.

  You do not need to do this immediately when switching, but can subsequently update your settings in steps or only for some info areas.

All settings in the **Tenant Rights** info area are applied as those you had defined access rights in the **Rights** info area with conditions applied to the **<xx>TenNo** field.

Catalog Values

For catalogs, the settings in the **Rights** and **Tenant Rights** info areas do not overlap:

- The **Rights** info area is used to define which catalogs new entries can be added to.
- The **Tenant Rights** info area is used to specify those catalogs for which the tenant number should be entered when new values are added.

Defining Tenants

Use the **Tenant** info area to define tenants and assign tenant rights to the tenants.

In general, a single administrator tenant with administrator tenant rights combined with several tenants with standard tenant rights suffices.

To define tenants:

1. Open the **Tenant** info area in the Rights module.
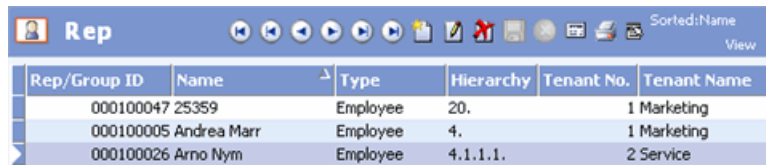
2. Click ⬚ (**New**).

3. Enter a number (integer; up to 9 digits) in the **Tenant No.** field. The tenant number forms a tenant's unique key.

4. Enter a name for the tenant in the **Tenant Name** field.

5. Select the desired **Tenant Rights** that apply to this tenant.

---

6. Save the record.

7. Assign the tenant to a station, group or rep, see Assigning Tenants.

Assigning Tenants

To assign tenants to reps and groups:

1. Open the **Rep** info area in the **Rights** module.

2. Switch to the desired record.

3. Enter the appropriate tenant number in the **ID_TenNo** field.

4. Save the record.

Rep/Group ID	Name	Type	Hierarchy	Tenant No.	Tenant Name
000100047	25359	Employee	20.		1 Marketing
000100005	Andrea Marr	Employee	4.		1 Marketing
000100026	Arno Nym	Employee	4.1.1.1.		2 Service

Depending on the options in the selected tenant rights:

- Reps can only view, edit or delete data containing their tenant number or no tenant number.
- Reps can only select catalog values containing their tenant number or no tenant number.
- The current rep's tenant number is automatically entered in the appropriate tenant number field (type: "mno") when adding new records to tenant-dependent info areas.
- The current rep's tenant number is automatically entered when adding new catalog values to tenant-dependent catalogs, .

You can also assign tenant rights to stations (**AS-TenNo** field in the **Station** info area).

If you wish to grant individual users or groups access to other tenants' data, you need to define additional tenants, see Additional Tenants on page 227.

Assigning Data/Catalogs to Several Tenants

Learn how to assign data/catalog to several tenants.

Data

To make data accessible to several or all tenants:

- Data with no tenant number can be accessed by all tenants (tenant-independent).
- You can assign additional tenants to users, allowing users to access the data of several tenants, see Additional Tenants on page 227.
- You can assign additional tenants to tenants, allowing all users assigned to the parent tenant to also access the child tenant's data (e.g. reps at a parent company should be able to access the subsidiary's data, but not vice versa), see Additional Tenants on page 227.

- The same companies or persons should not exist multiple times for several tenants, if one tenant is an additional tenant of the other. Otherwise companies belonging to different tenants is merged when importing data and matching up by name and address, see Import on page 230.

- If several tenants should have access to certain data, you can again use additional tenants. Define a single tenant that accesses the shared data, and assign this additional tenant to all tenants that require access, see Additional Tenants on page 227.

Catalogs

To allow catalog values to be accessed by multiple tenants:

- Catalog values without a tenant number are available to all tenants (tenant-independent). Aurea recommends leaving "general" catalogs (e.g. **Country, Currency** etc.) as tenant-independent.

- Define the same catalog value for all tenants that require it. This is recommended if catalog values only use the same name. Deleting the catalog value for one tenant does not affect the value for other tenants, see Tenants and Catalog Maintenance on page 228.

- Enter the catalog value only once, but use additional tenants to allow several tenants to access this catalog value, see Additional Tenants on page 227.

Note: Aurea recommends keeping the number of tenant-dependent catalogs and catalog values to a minimum.

Additional Tenants

Use the **Additional Tenant** and **Rep Add. Tenant** info areas to assign additional tenants to reps or tenants, granting access to other tenants' data.

This allows you to grant individual reps (e.g. regional managers, branch managers) or groups (e.g. parent company, campaign managers) access to other tenants' data.

Example: A parent company has 3 subsidiaries with data separated by tenants (i.e. 3 tenants). Employees at the parent company have access to data of the subsidiaries (one main tenant and 3 additional tenants assigned to the main tenant). A standard employee is responsible for two tenants and therefore has access to both tenants' data (one main tenant + an additional tenant). A regional manager has access to several tenants' data (one main tenant + several additional tenants assigned to the main tenant).

Note: The tenant rights assigned to the main tenant always apply, i.e. when adding new records or catalog values, the number of the main tenant is entered.

You cannot assign additional tenants to rep groups via **Rep Add. Tenant**. You need to define additional tenants for the group's (main) tenant instead.

To assign additional tenants to tenants:

1. Open the **Tenant** info area in the **Rights** module.

2. Switch to the desired record.

3. Select **Additional Tenant** from the context menu.

4. Click ▣ (**New**).

5. Enter the number of the desired additional tenant in the **Add. Tenant No.** field.

6. The tenant's name is transferred automatically.

7. Save the record.

Reps assigned to the main tenant (number 6) have access to tenant-independent data and all data assigned to additional tenants 7,8 and 9. When adding new data, the number of the main tenant (6) is entered.

Note: Additional tenants are **not** inherited. **Example:** Tenant A includes additional tenants B and C. Tenant A is assigned to tenant D as an additional tenant. Tenants B and C are **not** added as additional tenants of D.

This is not possible for performance reasons. As such, there is no means of defining that tenants 110-199 are additional tenants of tenant 100.

To assign additional tenants to reps:

1. Open the **Rep** info area in the **Rights** module.

2. Switch to the desired record.

3. Select **Additional Tenant** from the context menu.

4. Define the additional tenants.

Tenants and Catalog Maintenance

Tenant numbers are saved for each catalog value in the **Catalog** info area in the **Maintenance** module.

For further details, see Catalog Info Area on page 271.

Reps can only select catalog values they can access according to their tenant rights in catalogs that are separated by tenants.

A maximum of 65535 entries can be defined per catalog. This number also cannot be exceeded by the total entries for all tenants. Furthermore, performance suffers when opening catalogs containing around 1,000 entries. This results in the following guidelines for the number of entries:

- Up to 50 tenants: a maximum of 1,000 entries per tenant
- Up to 100 tenants: a maximum of 500 entries per tenant
- Up to 200 tenants: a maximum of 200 entries per tenant

Catalog values must be unique within a tenant. You can define identical catalog values for different tenants. However, avoid adding catalog values without a catalog number that are identical to catalog values assigned to a tenant, as all tenants can also access catalog values with no tenant number assigned.

You can edit the tenant numbers of catalog values in the **Catalog** info area, see Editing Variable Catalogs on page 273.

Note: If catalog texts or tenant numbers are updated when importing data into the catalog table, the **Catalog Maintenance** info area is updated automatically.

If you use additional tenants to depict catalog values common to several tenants, mix tenant-independent and tenant-dependent catalog values in one catalog, or additional tenants are used to grant have access to other tenant's data, you should ensure that entries in the additional tenants' catalogs are not the same as in the main tenant's catalogs. Firstly, this avoids confusing the user, and secondly, the catalog value assigned to the tenant entered in the record is always used during import, see Import on page 230.

If a condition is defined for a tenant-dependent catalog value and a format containing the condition is distributed, users must be able to access the catalog value. In some cases, it may therefore be necessary to duplicate the format for each tenant. You should therefore avoid using conditions applied to tenant-dependent values in formats defined for several or all users.

If configured incorrectly, a user may be able to view catalog values that should be hidden. In this case, for performance reasons, the catalog value is displayed in the mask and the list. When the catalog is opened, the catalog value is not visible.

This can be caused by the following:

- A catalog is tenant-dependent but appears in an info area which is tenant-independent.

  Solution: Define the info area as tenant-dependent as well.

- The record contains a catalog value assigned to a different tenant than the record.

Import

Aurea CRM allows you to import data for a single tenant (i.e. using the tenant's rights) or to import data assigned to multiple tenants at once.

Note: If you have used the **Rights** info area to define tenant rights and switch to using the **Tenant Rights** info area, you need to update your import formats accordingly.

If you import data for a single tenant, you need to do so as a user assigned to the tenant. This means that you need to define an import user for each tenant. During the import, all tenant rights are applied, i.e. only data assigned to the tenant can be added or accessed. In this case, you do not need to update your import or export formats.

To import data for several tenants at once:

1. Define an import user and assign administrator tenant rights to the user, granting read and write access to all data.

2. Define an import format, see Defining an Import/Export Format in the *Aurea CRM win Administrator Guide*:

   The tenant number must be included in each line of the import file.

Pos.	Field Name	Length	Transf.
0	M1-Tenant No.	9	
1	FI-Company	120	
2	FI-Tenant No.	9	

   Import the tenant numbers into the **Tenant** info area (matching up with the data in the **Tenant** info area and adding new tenants as necessary). Define the **Tenant** info area as the first info area in the **Info Area Properties** (number 0):

Pos.	Info Area	Match	New	Upd
0	Company	✔	✔	✔
1	Tenant	✔	✔	

   Aurea CRM then assumes that data in this line is meant for this tenant. The tenant rights assigned to this tenant are applied, i.e. data is added or matched up using this tenant number.

You can define other tenant numbers for individual records, e.g. the number of an additional tenant. Ensure that the main tenant number is imported into the **Tenant** info area and matched up there. This ensures that the system is aware of which data is tenant-dependent and which fields are used for the tenant number.

Note: The system checks whether an identical catalog values exists that is accessible by the tenant. If so, the existing value is used. If multiple values exist,

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those values assigned directly to the tenant or without a tenant take precedence. You should therefore ensure that no identical catalog values exist for the tenant entered in the record when entering or importing catalog values. If no corresponding value exists, the catalog value is added. Depending on the settings in the tenant rights, the current tenant number is also entered.

Import Tips

- If an user with administrator rights imports a tenant number (e.g. 100) into the tenant table, and no restrictions have been defined in the tenant rights for this info area, and the user also imports tenant number 110 into the **Company** info area, the system checks whether tenant 100 has access to tenant 110.

- If restrictions have been defined and you import as a user of tenant (e.g. 200), the system checks whether you have access to tenants 100 or 110.

- You should avoid matching up by name and address if tenants have access to the data of other tenants and if there is a chance identical companies exist. When matching up by name and address, any data is displayed that your tenant or the tenant for which you are importing can access.

  Example: Restrictions apply, and you import as a user of tenant 200, with identical companies existing for tenants 100 and 110. When matching up by name and address, the first company found is matched up if identical companies exist for both tenants.

Changing the Tenant Structure

Learn how to change the tenent structure.

Changing Tenants

You can transfer records and catalog values from one tenant to another by changing the tenant numbers in the record or value:

- Records can be transferred manually in the **Aurea CRM** info area (see Update Level on page 385) or by exporting and importing.

  Note: Only the administrator can change the <xx>**-TenNo** field in individual info areas. Other users can add new values, but cannot change existing entries.

- Catalog values can be transferred individually in the **Catalog** info area (see Editing Variable Catalogs on page 273) or by exporting and importing.

  Note: Use the **Maintenance** module to maintain catalog values and determine which catalog values are shared by all tenants.

You can merge data assigned to several tenants in the following ways:

- Define a tenant as an additional tenant of another. The tenant structure is retained for existing data.

- Companies and persons added separately for both tenants can be merged selecting **Edit > Merge Company/Person** from the menu in the main module, see Managing Companies and Persons in the *Aurea CRM win User Manual*.

Changing Additional Tenants

If you change the tenant access rights defined for a rep or tenant, you also need to update the additional tenants.

Note: Whenever you allow a rep or tenant to access the data of another tenant, you should also allow access to the data of all that tenant's additional tenants.

Keys

Keys are not tenant-dependent:

- If a user can access data assigned to several tenants, the key is always unique for each record, irrespective of the number of tenants.

- If the data allocated to a tenant is changed (e.g. allocated to another tenant, merged, separation of tenants), this does not change the (primary) key.

This should be taken into account for the following types of keys:

- Serial numbers (e.g. company, person, order etc.): the only visible effect for the user is that serial numbers are not necessarily assigned continuously. However, since the purpose of serial numbers is simply to identify records uniquely, this should not be a problem.

- Keys which contain catalogs (external company key, questionnaire etc.): by separating the relevant catalogs, tenants can assign keys independently of one another.

- Assignable keys (item / product master etc.): If these areas are separated by tenant, you should ensure that the various tenants' keys are different, e.g. by automatically assigning item numbers using a trigger for each tenant.

Communication

The **<xx>-TenNo** field is not part of the key, so it is not used for match-up purposes during communication. If companies which differ only by tenant number exist on different stations and you match up companies by name and address during communication, these companies are merged during communication. This cannot happen if you match up records during communication using the primary key (**FI_StaNo + FI_SerNo**), as recommended by Aurea, see Match-up in the *Aurea CRM win Administrator Guide*.

Note: In principle, all catalogs are available on the stations. To check which stations should receive which tenant's catalogs would be too complex and so no check is performed during communication. The catalogs data volume is low in comparison to the rest of the data, and should therefore be of no consequence.

Station Configuration

Use the **Station configuration** (T0) info area to define the tracking of sessions and processes, password settings and blocking mechanisms for individual stations.

Only one configuration record can be added per station.

To add a new record:

1. Switch to the **Station Configuration** info area.

2. Click on ![icon] (**New**).

3. Enter the station number in the **Stat. No.** field.

4. Configure the following settings on the **General** tab:

- **Session tracking/Session tracking Web:** Enables session tracking for Windows or Web clients on this station, see Session Tracking on page 242.

- **Process tracking/Process tracking Web:** Enables process tracking for Windows or Web clients on this station, see Process Tracking on page 243.

- **Windows Trace/Web Trace:** Enable these fields to activate the SQL logs for Aurea CRM win and Aurea CRM web.

- **Cat. refresh frq.:** Determines how often (in minutes) Aurea CRM should check whether catalogs have been updated by other users (manually, via import or catalog maintenance), see Catalogs on page 270. The default value is 30 minutes.

  The value in this field is also used to query for changes to the Configuration table (MC), see Configuration on page 10, and for variables, see Defining Variables on page 253. Deleted catalogs and configuration entries are refreshed every 120 minutes.

  The user cache is refreshed at the frequency defined in **Cat. refresh frq.** (the roles assigned to a user are stored here).

  The roles cache (i.e. the **login role** records) is refreshed every 60 seconds.

- **Format refresh frq.:** Applies to Aurea CRM web only. Indicates how often formats should be refreshed.

- **User Tracking Frequency/User tracking frq. Web:** Determines the interval in which Aurea CRM updates records in the **User Tracking** info area.

- **Last system check:** Date on which the license report was last executed, see License Report on page 131.

- **Domain:** Default domain for the station, i.e. domain for all users for whom no domain is entered.

5. Use the **Password** tab to configure the password settings for the station, see Password Security.

6. Configure the blocking mechanism applied when users log on using an incorrect password, see System Blocking.

7. Save the record.

   The system checks for updates of these settings once per minute.

Password Security

To guarantee greater security, Aurea CRM allows you to specify that passwords must be changed at regular intervals and must meet certain criteria. In addition, you can enable the blocking mechanism, which prevents a user from attempting to log in after a specified number of failed attempts, see System Blocking.

You can configure the following settings on the **Password** tab in the **Station Configuration** info area:

- **Frq. PW Update in days:** Number of days after which users must change their passwords.
- **Minimum PW Length:** The minimum password length. The maximum length is 128 characters, which is sufficient to prevent against brute force attacks.
- **Passwords in History:** The number of passwords stored in the history that may not be used again (maximum: 10).
- **Password History:** The number of characters in the next password that may not be repeated in the same order (possible values: 0 = no limit; 3, 4, …)
- **PW must contain digits:** If enabled, the password must contain at least one digit.
- **PW must contain letters:** The password must contain at least one letter.
- **PW must not contain user name:** The password must not contain the user name.
- **PW must contain upper and lower case:** New passwords must contain both upper and lower case.

Note: If you enable this option and export or import users in the **Export/Import** modules (**Login**/US info area), you need to include the **Password** and **Encrypted Password** fields in the export/import format.

- **PW may not be in blacklist:** Words entered in the blacklist may not be used as passwords. The blacklist is defined in the **Configuration** info area, see Security on page 62.

Note: You can configure certain password settings for individual users, see Password Settings on page 118. User-specific settings take precedence over station-specific settings.

You can exclude certain users from the password settings (e.g. the communication user) by enabling the **Deactivate Password** or **Ignore PW Settings** option in the **Configure Login** window.

When Aurea CRM is started, the system checks whether the user's password must be changed and whether it meets the defined security criteria. If one of these criteria is not met, the user is prompted to change their password. The systems also checks whether the new password meets the security criteria.

System Blocking

Aurea CRM provides a variety of blocking mechanism to protect the system against unauthorized access.

If one of the blocking mechanisms is enabled, a neutral message is displayed informing the user that a login error has occurred (instead of a specific error message).

The following options are available for each station on the **Blocking** tab in the **Station Configuration** info area:

- **Max. no of failed login attempts:** Number of failed login attempts before the user can no longer log in.

  Note: The maximum number of login attempts can be defined for both stations and users (in the **Configuration** module or in the **Configure Login** window). User-specific settings take precedence over station-specific settings. The maximum number of failed login attempts **also applies to the SU**.

- **Track Login Attempts:** Failed login attempts are logged in the **Process Tracking** info area (**Process:** "(8000) Login", **Text:** "<Computer name>: Incorrect password").
- **Max. Blocking:** Enables the blocking mechanism for the maximum number of failed login attempts on this station.

  If a user enters an incorrect password, the value in the **No. of failed login attempts** (in the **Configuration** module or the **Configure Login** window) is increased by 1. Once the number of attempts reaches the value in the **Max. No. of failed login attempts** field (in the **Configuration** module or the **Configure Login** window), the user is no longer allows to log in.

  Reset the value in the **No. of failed login attempts** to 0 (zero) in the **Configuration** module or **Configure Login** window to allow the user to log in again.

  If the **Ignore max. no of failed login attempts** option is enabled for a user, the user is exempted from this blocking mechanism.

- **Exponential Blocking:** Enables exponential blocking for the station.

  If a user enters an incorrect password, the value in the **No. of failed login attempts** (in the **Configuration** module or the **Configure Login** window) is increased by 1. The system is locked for 2n seconds (where "n" is the number of failed login attempts).

  Once the correct password has been entered, the value in the **No. of failed login attempts** is reset to 0 (zero).

  Note: The maximum time that the SU is blocked is limited to approximately 17 minutes (210 seconds).

System Locks

Learn how to use the system lock info area.

You can lock the system for some or all users, allowing you to:

• Back up your database

> **Note:** Use the programs supplied with MS SQL or Oracle to back up the Aurea CRM database.

• Edit the data model, see Data Model on page 280.

• Rebuild corrupt indices, see Rebuild module on page 468

• Perform maintenance, see Maintenance Module on page 265

• Reduce system load if you are experiencing performance issues (e.g. by logging off certain users and locking them out of the system for a period of time)

You can:

• Define system locks for specific dates or weekdays, see System Lock Info Area on page 237.

• Lock the system on the fly, see Lock System Dialog Box on page 239.

> **Note:** The system can only be locked by the system administrator (SU) or users assigned roles with access to the "System lock" process, see CRM Process Configuration on page 98.

System Lock Info Area

Use the **System Lock** info area to define system locks at specific times.

To add a new record:

1. Open the **Rights** module and switch to the **System Lock** info area.

2. Click on 🗋 (**New**).

3. Enter the number of the station to be locked in the **Stat. No.** field.

4. You can define system locks for specific days or time periods, as well as define regular system locks on specific weekdays:

   • **To lock the system at a specific time,** enter dates in the **System lock from/to (date)** fields and times in the **System lock from/to (time)** fields.

   • **To define a regular system lock**, switch to the **Daily** tab. Enable the check boxes for the desired weekdays (**System lock Monday - System lock Sunday** fields) and enter the times the system is locked in the **Daily system lock from/to** fields.

5. Specify the **Type** of system lock:

   - **Log off and lock:** Users affected by the lock are logged off and can only log on again once the system is no longer locked.

   - **Log off:** Users affected by the lock can immediately log back on to the system.

6. Click on 🖼 (**Rep list**) in the **Locked reps** field and select the users and/or groups that should be affected by the system lock. If you do not select any users, the system lock is applied to all users.

   Note: Enable the **Ignore system lock date** or **Ignore daily system lock** to exempt individual users (e.g. communication or import users) from system locks, see Module Access Rights, System Locks and Process Tracking on page 120.

   System locks defined in the **System Lock** info area do not apply to the administrator (SU).

7. Enter a message used to notify the affected users of the system lock. If you do not specify a message, the following default message is displayed: "The system is being locked. You have x minutes to finish working.", where x is the value entered in the **Time to lock (in minutes)** field.

8. Enter the number of minutes after which the system lock come into effect in the **Time to lock (in minutes)** field. Once this time period has expired, active users are logged off automatically. If there are currently no active users, the system lock takes effect "immediately" (i.e. the next time the system polls for a lock).

   Note: The system checks whether a system lock has been defined once per minute. The time of the system lock can therefore differ slightly from the time entered in the **System lock from (time)** field.

9. Use the **Module** tab to determine which Aurea CRM modules and applications should be locked for the selected users. If you do not make any settings, all modules and applications are locked.

10. Save the record.

    The system is locked according to your settings:

    - The affected users are notified of the system lock using the message entered in the **Text** field. If a user has not exited the system within the time period entered in the **Time to lock (in minutes)** field, Aurea CRM is closed automatically.

    - If you have entered **Log off and lock** in the **Type** field, users can only log on to the system again once the system is unlocked.

> **Note:** System locks defined in the **System Lock** info area are **not** displayed in the **Lock System** dialog box in the list of **Active Locks**, see Lock System Dialog Box on page 239.

The system is unlocked at the time entered in the **System lock to (date)** and **System lock to (time)** fields. The system lock record is not automatically deleted, but is instead set as inactive (the **Inactive** field in the record is enabled, visible using **View > All Mask Fields**).

Lock System Dialog Box

You can also lock the system on the fly, for example if you are experiencing performance issues or need to use the **Rebuild** module.

To lock Aurea CRM on the current station:

1. Select **Extras > Lock System** from the menu in the main module. (When editing the data model in the **Maintenance** module, select **Lock system** from the context menu.)
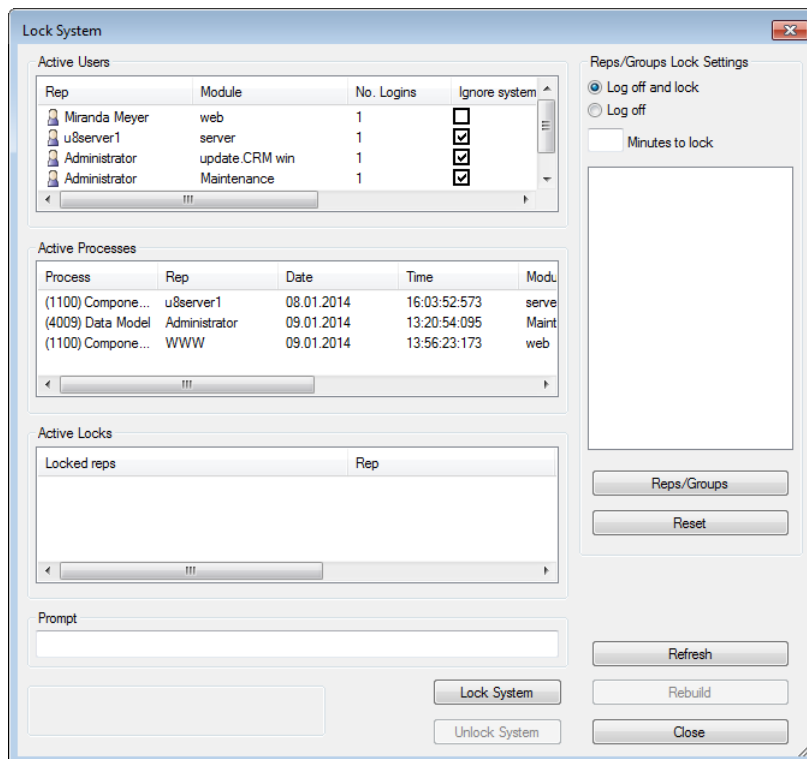
The following information is displayed:

- **Active Users:** Lists all currently active users and the modules they are currently using. Once a system lock is active and selected in the list of **Active Locks**, only those users affected by the lock are listed.

- **Active Processes:** Lists all active processes. Once a system lock is active and selected in the list of **Active Locks**, only those active processes belonging to users affected by the lock are listed.

- **Active Locks:** Lists all active system locks initiated by the current user from this dialog box.

Note: If you have enabled **Session tracking** in the **Station Configuration** info area, the **Windows User Name** and **Windows Computer Name** is also displayed for each entry in these lists.

2. Determine the type of lock under **Reps/Groups Lock Settings**:

- **Log off and lock:** Users affected by the lock are logged off and can only log on again once the system is unlocked.

- **Log off:** Users affected by the lock are logged off and can log back on immediately.

3. Click on **Reps/Groups** to select the reps and groups that should be locked.

   Enable the **Ignore system lock** check box for individual users in the list of **Active Users** to exempt these users from the system lock. If the **Ignore system lock** option is enabled in a user's login configuration, the user is exempted from the system lock by default, see Module Access Rights, System Locks and Process Tracking on page 120.

Note: The current user is automatically exempted from the system lock, unless specifically selected in the list of reps. In this case, the current user is also logged off, but can log back on immediately.

4. Enter the number of minutes until the system is locked in the **Minutes to lock** field. Once this time period has expired, all users still active in the system are logged off automatically. If no users are active, the system lock is applied "immediately" (i.e. the next time the system polls for a lock).

Note: The system polls for new system locks once per minute.

5. You can enter a message in the **Prompt** field that is used to notify users of the upcoming system lock. If you do not enter a message, the following default

message is used: "The system is being locked. You have x minutes to finish working.", where x is the value entered in the **Minutes to lock** field.

6. Click on **Lock System**.

   The system is locked according to your settings:

   • The affected users are notified of the system lock using the message entered in the **Prompt** field. If a user has not exited the system within the time period entered in the **Minutes to lock** field, Aurea CRM is closed automatically.

   • If you have entered **Log off and lock** in the **Type** field, users can only log on to the system again once the system is unlocked.

   • A new record is added to the **System Lock** info area (the **Interactive** field is enabled, visible using **View > All Mask Fields**).

   Note: System locks defined in the **Lock System** dialog always apply to all modules. You cannot define additional system locks for individual users if a global system lock is active. If you are locking the system as the result of a change to the data model, the **Reps/Groups Lock Settings** are inaccessible; you can only lock the system globally for all users.

The system lock is displayed with a gray background in the list of **Active Locks**.

To unlock the system:

1. Click on the desired entry in the list of **Active Locks**.

2. Click on **Unlock System**.

   The system is unlocked. The corresponding record in the **System Lock** info area is deleted.

3. Click on **Reset** to reset the settings in the **Reps/Groups Lock Settings** pane.

4. Click on Refresh to refresh the lists of **Active Users**, **Active Processes** and **Active Locks**.

5. Click on **Rebuild** to rebuild database tables, see Rebuild module on page 468.

   Note: The **Reset** and **Refresh** buttons are only active if no entry is selected in the list of **Active Locks**. The **Rebuild** button is only active for global system locks using the option **Log off and lock**.

6. Click on **Close** to close the dialog box.

Tracking

Learn about user, session, process tracking.

User Tracking

User Tracking

The **User Tracking** (T1) info area tracks the number and duration of logins per user, station and module.

The **User Tracking** (T1) info area is used to determine the active user (e.g. for a system lock, or to verify the number of allowed users concurrently logged-in to a Aurea CRM win module etc.). In addition, T1 is used to verify if a process (tracked via T3) is still active, see Process Tracking on page 243.

Default interval for checking if a user is still active: 1 minute.

You can specify another interval in the Station configuration info area (**User Tracking Frequency** and **User Tracking Frequency Web** fields), see Station Configuration on page 233.

The data in the **User Tracking** info area are created automatically and cannot be edited or deleted.

Information on the fields in this info area can be found in the online field help.

Session Tracking

Session tracking is used to keep a track every time a user logs in.

If the **Session tracking** check box in the **Station configuration** info area has been enabled, a record is created every time a user logs on to an Aurea CRM module, see Station Configuration on page 233.

If the volume of data is too large, you can define conditions that allow you to focus the data on a specific day or user, for example.

- **Stat. No.:** Station being tracked.
- **User name:** Name of the user being tracked.
- **Module:** Module being tracked.
- **Date, Time:** Login date and time.
- **Logout date, Logout time:** Logout date and time.
- **Login duration:** The login duration is stored in milliseconds and converted to days, hours and minutes when displayed.

Process Tracking

Process tracking keeps the CRM data base secure from multiple access to same data and documents critical processes.

The **Process Tracking** (T3) info area is used:

- to track (and document) critical processes that affect the Aurea CRM database
- to prevent multiple users from concurrently starting a process that can only be executed once, e.g. modifying the data model.

Whenever certain processes are executed, a T3 record is created. Some processes are always tracked. Other processes are only tracked if the **Process tracking** check box in the **Station configuration** info area or in the **Login** record of the current user is enabled.

The T3 records can be deleted via maintenance.

- **Station Number:** Station being tracked.

- **User name:** Name of the user being tracked.

- **Date, Time:** Date and time the process was started.

- **Module:** Module from which the process was started.

- **Process:** The process being tracked. For detailed information on all process types, see https://support.aurea.com/wiki/index.php?title=Process_Tracking_Types.

Note: System locks are not added as records to the process tracking, even if the **Process tracking** check box had been enabled in the **Station configuration** info area, see System Locks on page 236.

- **End Date:** Date on which this process was ended.

- **Duration:** The duration of the process is stored in milliseconds, and converted to days, hours and minutes when displayed.

- **Status:** Fixed catalog:

  - open: the process is being executed right now

  - completed: the process has been completed successfully

  - aborted: the process was aborted by the user

  - error: an error occurred and the process was aborted

    If an error occurs when executing an activity, the error number is written to the **Status No.** field, see Error Codes for Marketing Activities on page 514.
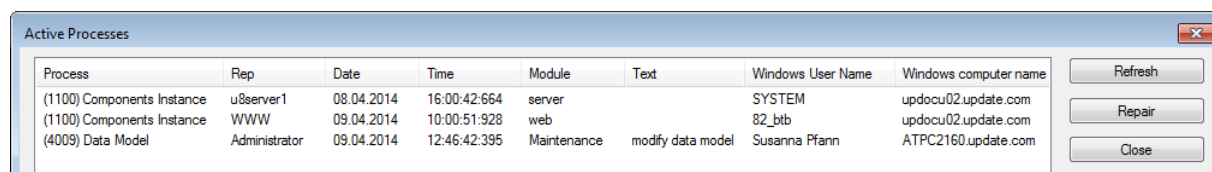
  - exception: Aurea CRM crashed while the process was being executed

- **Text:** Text relating to the process is added automatically (e.g. for selections, the name of the selection).

Note: The text displayed in this field is always in English.

Repairing Processes

To view all currently active processes:

1. Start the Aurea CRM win main module.

2. Select **Extras** > **Active Processes**.

3. To abort invalid processes click **Repair**.

You can access the T3 info area and "repair" invalid processes in Aurea CRM web as well, see Process Tracking in the *Aurea CRM web Administrator Guide.*

Note: The **Repair** button is only available for the SU and users who have access to the CRM process 1.5.2.6.2.1. "Repair active processes" (CRM process ID 70000280).

This CRM process is disabled by default.

You can also use the `mmba.exe` command with the option `-cleanup` to abort invalid processes, >> *mmba.exe Parameters.*

Logging Read and Write Access

Aurea CRM allows you to log access to the system.

The following types of access can be logged:

• Write access (i.e. adding, editing or deleting records) by users in the main module, as well as in the **Import, Maintenance**, **Communication** and **Rights** modules and via Aurea CRM web, CRM.pad, CRM.interface, CRM.cockpit, CRM.webservices, CRM.connector and CRM.server.

• Write access via the Web or XML interfaces or DDE server

• Read access (only in Aurea CRM win):

  • Displaying data in lists and masks

  • Displaying data in a dialog box (e.g. search engine, person or company search)

  • In the **Export** module

  • By the DDE server

  • Printing from the main module

  • Data transfer to Microsoft Word or Microsoft Excel

The following do not count as access:

• Rebuild

• Selections

• Reading in workflows or triggers (in the background; i.e. not interactive)

Note: Log records are not communicated; i.e. they need to be added, exported and deleted per station.

Enabling and Executing Logs

Steps to configure and execute access logs.

The following steps are necessary to configure and execute access logs.

• Read and write access logging is enabled in the **Rights** info area in the **Rights** module, see Log - Read and Log - Write.

• The rights format is assigned to the users whose read and write access should be logged.

• Logs are generated according to various criteria (for certain users, info areas etc.) in the **Log - Read** and **Log - Write** info areas in the **Rights** module. Logs can be and can be exported and deleted from here, see Exporting Access Logs on page 249 and Deleting Log Entries on page 252.

Note: Only the administrator has access to the **Log - Read** and **Log - Write** info areas. You can specify the separator used by log entries in the **Configuration** info area, see General Settings on page 41.

Log - Read

To enable read access logs:

1. Open the **Rights** info area in the **Rights** module.

2. Click in the **Log - Read** column of the info area you wish to log.
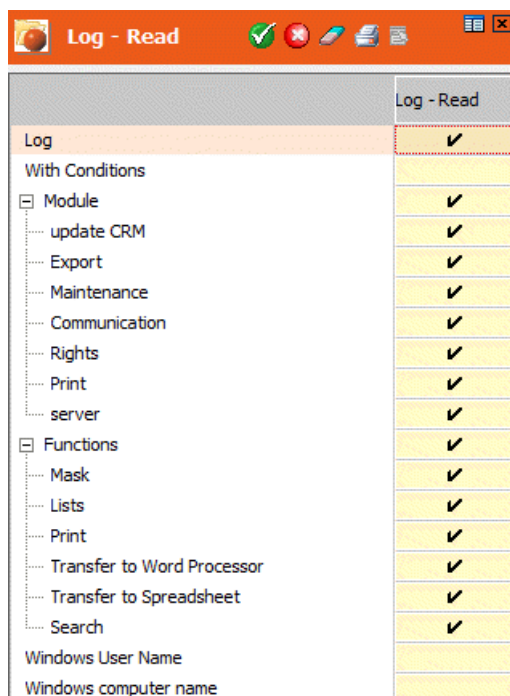
3. The following options are available:

- **Log:** Enable this cell to activate logging for read access in general. If you enable this option, the **Module** and **Functions cells** are also enabled.

- **With Conditions:** Click in this cell to define a condition for logging read access, see Conditions in the *Aurea CRM win User Manual*.

- **Module:** Determines which modules are logged. Click on the ⊞ to display the individual modules. If the **Module** cell is enabled, then logging is automatically enabled for all modules. You can disable logging for individual modules.

- **Functions:** Determines which functions (masks, lists etc.) are logged. Click on the ⊞ to display the individual functions. If the **Functions cell** is enabled, then logging is automatically enabled for all functions. You can disable logging for individual functions.

- **Windows User Name/Windows computer name**: Enable these cells to include the corresponding Windows user name and/or computer name in read access logs.

4. Click on ✅ (**OK**).

5. Save the rights format and assign it to a station, group, rep or login role, see Assigning Rights on page 158.

The corresponding access logs are stored in the **Log - Read** info area and can be exported as a log file, see Read Access

Log - Write

To enable write access logs:

1. Open the **Rights** info area in the **Rights** module.

2. Click in the **Log - Write** column of the info area you wish to log.

Log - Write	Add new	Edit	Delete
Log	✔	✔	✔
With Conditions			
Conditional (prior to changes)			
⊟ Module	✔	✔	✔
update CRM	✔	✔	✔
Import	✔	✔	✔
Maintenance	✔	✔	✔
Communication			
Rights			
web	✔	✔	✔
interface	✔	✔	✔
connectLive			
cockpit			
web services			
groupware connector			
server	✔	✔	✔
mobile services	✔	✔	✔
⊟ Functions	✔	✔	✔
Manual	✔	✔	✔
Marketing Activity	✔	✔	✔
Triggers	✔	✔	✔
Workflow	✔	✔	✔
Catalog Maintenance	✔	✔	✔
Update	✔	✔	✔
Delete	✔	✔	✔
Business Logic	✔	✔	✔
Link to Parent Info Area	✔	✔	✔
Import	✔	✔	✔
Communication	✔	✔	✔
Only the changed fields			
Windows User Name	✔	✔	✔
Windows computer name	✔	✔	✔
⊟ Fields	✔	✔	✔
FI-StaNo	✔	✔	✔
FI-SerNo	✔	✔	✔
Company	✔	✔	✔

3. The following options are available:

- **Log:** Enable the **Add new, Edit** or **Delete** cells to enable write access logs.

- **With Conditions:** Enable the corresponding cell to define conditions that dictate when adding, editing or deleting records should be logged, see *Conditions* in the *Aurea CRM win User Manual*.

- **Conditional (prior to changes):** This option is only available for the **Edit** column. Click on the cell to define a condition that should apply to the record before it is edited   *Conditions* in the *Aurea CRM win User Manual*.

- **Module:** Determines which modules are logged. Click on the ⊞ to display the individual modules. If the **Module** cell is enabled, then logging is automatically enabled for all modules. You can disable logging for individual modules.

- **Functions:** Determines which functions (masks, lists etc.) are logged. Click on the ⊞ to display the individual functions. If the **Functions cell** is enabled, then logging is automatically enabled for all functions. You can disable logging for individual functions.

- **Only the changed fields:** If this option is enabled for **New** or **Edit**, then only those fields that are edited are logged, not the entire record.

- **Attachment:** Enable the **Attachment** option for info areas that store data in binary form (documents, formats) to log any changes to the length of the binary code.

- **Windows User Name/Windows computer name**: Enable these cells to include the corresponding Windows user name and/or computer name in write access logs.

- **Fields:** You can specify which fields in the info area should be logged. Click on the ⊞ to display all the fields in the info area. If the **Field** cell is enabled in either the **New, Edit** or **Delete** columns, then logging is automatically enabled for all modules in that column. You can disable logging for individual fields.

4. Click on ✅ (**OK**).

5. Save the rights format and assign it to a station, group or rep, see Assigning Rights on page 158.

6. The corresponding access logs are stored in the **Log - Read** info area and can be exported as a log file, see Write Access.
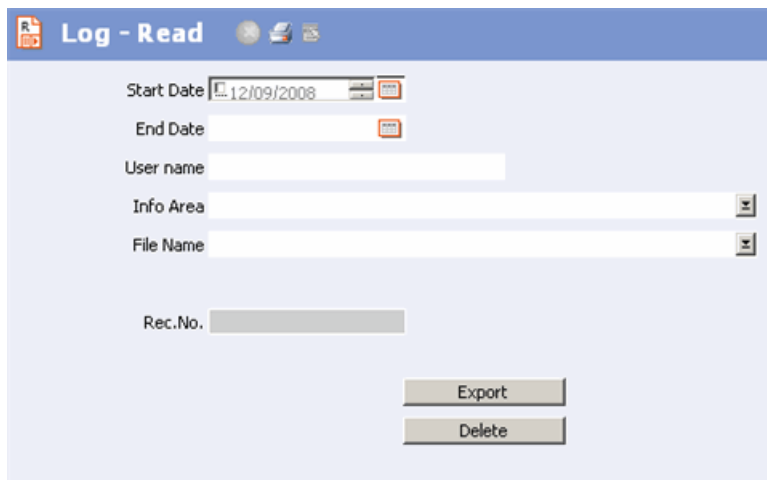
Exporting Access Logs

Learn how to export access logs.

Read Access

To export read access logs:

1. Open the **Log - Read** info area in the **Rights** module.

2. Enter a **File Name** for the log file.

3. Configure the desired settings:

- **Start Date:** Enter the start date here, if you wish to limit the log file to a specific time period.

- **End Date:** Enter the end date here, if you wish to limit the log file to a specific time period.

- **User name:** Enter the user name here, if you wish to limit the log file to a specific user.

- **Info Area:** Choose an info area from this catalog if you wish to limit the log file to a specific info area.

4. Click on **Export**.

The log entries are exported to the specified log file. The log file is saved in the `\system\db` directory if not otherwise specified. The number of log entries exported is displayed in the **Rec. No.** field.

The log file includes the following information:

Date (YYYYMMDD)	20031113
Time (HHMMSS)	132054
User (Login Name)	LEA
Rep / Grp. ID	10000018
Module	Aurea CRM win
Function	List
Info Area	FI
Record ID	1
Field No.	F0
Field	F1;6

The following fields are logged:

- The fields containing the records unique key, e.g. `F0 ;1 ;F1;167;` for company records (**FI_StaNo** = 1; **FI_SerNo** = 167).
- If you have defined that the Windows user name and computer name should be included in the log, fields 4198 and 4199, >> Log - Read.

Write Access

To export write access logs:

1. Open the **Log - Write** info area in the **Rights** module.

2. Enter a **File Name** for the log file.

3. Configure the desired settings:

- **Start Date:** Enter the start date here, if you wish to limit the log file to a specific time period.
- **End Date:** Enter the end date here, if you wish to limit the log file to a specific time period.
- **User name:** Enter the user name here, if you wish to limit the log file to a specific user.
- **Info Area:** Choose an info area from this catalog if you wish to limit the log file to a specific info area.
- **Add new:** Enable this check box if you wish to export logs for new records.
- **Edit:** Enable this check box if you wish to export logs for edited records.
- **Delete:** Enable this check box if you wish to export logs for deleted records.

Note: You need to enable at least on of **Add new, Edit** or **Delete**, otherwise no log file is created.

---

4. Click on **Export**.

The log entries are exported to the specified log file. The log file is saved in the `\system\db` directory if not otherwise specified. The number of log entries exported is displayed in the **Rec. No.** field.

The log file includes the following information:

Date (YYYYMMDD)	20031113
Time (HHMMSS)	132054
User	LEA

Rep / Grp. ID	10000018
Module	Aurea CRM win
Mode	N for new records U for edited records D for deleted records
Function	e.g. Import
Info Area	FI
Record ID	1
Field No.	F0
Field	F1;6

The following fields are logged:

- The fields containing the records unique key, e.g. `F0 ;1 ;F1;167;` for company records (**FI_StaNo** = 1; **FI_SerNo** = 167).
- All fields defined for logging in the rights format, see Log - Write.

Note: Interactive triggers are treated and logged as manual changes.

Deleting Log Entries

Learn how to delete log entries.

To delete log entries:

1. Open the **Log - Read** or **Log - Write** info area in the **Rights** module.

2. If you wish to delete the entries in a specific time period, enter the desired dates in the **Start Date** and **End Date** fields.

Note: You cannot restrict the logs to be deleted to specific reps or info areas.

3. Click **Delete**.

The log entries are deleted.

Variables

Use the **Variable** info area to define variables with values that change according to the current rep's data (e.g. country, tenant etc.).

You can use variables in many areas of Aurea CRM, see Using Variables on page 256. Example: You could define a trigger that uses revenue thresholds for company classifications based on the country the company is located in. The variable is used with the appropriate value for each rep.

Variables can be maintained in Aurea CRM win (see Defining Variables on page 253) and Aurea CRM web (see Variables in the *Aurea CRM web Administrator Guide*).

Defining Variables

Learn how to define variables.

Each variable consists of a "header" record (in the **Variable** (Z5) info area) that determines the name and type of the variable and an arbitrary number of child records (in the **Variable Value** (Z6) info area) containing the criteria and possible values of the variable.

To define a variable:

1. Switch to the **Variable** info area in the **Rights** module.

2. Click on ![new icon] (New).

3. Enter a **Name** for the variable.

Note: Ensure that the name is unique, since it is used to reference the variable.

---

4. Select an **Info Area** and **Field Name**. Selecting an info area and field name only serves to determine the data type of the variable; the variable can be used for any field (of the same type).

Select "Condition" in the **Type** field if you want to define the variable as a condition, see Defining Conditions as Variable Values.

Enable the **Lock** field to lock an entry. The variable is then ignored.

5. Save.

6. Define the required values, see Defining Variable Values.

Note: Changes to variables and values are not active immediately but only after the time specified as **Cat. refresh frq.** (default: 30 minutes), see Station Configuration on page 233.

Defining Variable Values

You can define any number of variable values based on a combination of criteria applied to the current rep or station.

To define a value:

1. Select **Variable value** from the context menu.

2. Click on (**New**).

3. In the upper section of the mask, define the criteria that need to apply for the value to be used. In order for a variable to be used for a certain rep, the criteria must be either empty or match the values entered in the rep or station record.

The following values are taken into account when searching for a suitable variable value:

- Tenant: The tenant number of the current rep (additional tenants are ignored)
- Station number: Current station number

- Rep Group: The group the current rep belongs to. (The **Org. Group** in the **Rep** info area (ID) and groups assigned via the **Group Allocation** info area (GZ) are taken into account.)

- Rep: The current rep's ID

- Login role: One of the login roles assigned to the current rep

- Country: The country entered in the current rep's record

- Language: The current Aurea CRM language

In addition, you can use **Info Area** and **Condition for info area** fields, to define conditions on data from the **Rep, Station** and **Rep Addnal Info** (OTC only) info areas that must be met by the current rep or station in order for the variable value to be applied.

Note: If there are several suitable entries, the entry with the most matching criteria is used. If no suitable entry is found, but an entry is present where the **Default** check box has been enabled, this entry is used. If the entry flagged as **Default** has the highest number of matching criteria, it takes precedence over other entries with the same number of matching criteria.

---

4. In the lower section of the mask, enter the actual value of the variable. If you have selected a field in the parent record (Z5), different input fields are available depending on the selected field's type: Text, integer, catalog, rep, date, time, decimal, logical (Boolean, i.e. true or false), link (allowing you to select a link to a record).

Note: If you do not select an info area and field for a variable (which is not a "Condition"), only the **Var. Text** value is taken into account. You can only define string or numeric values in this field.

Link fields defined as variable values are evaluated as follows (depending on the field to which the value is written):

- The complete reference text is transferred if the target field is a reference field.

- The complete link is transferred if the target field is a generic link.

- The complete link is transferred if the target field is part of a link and a link exists between the two info areas (i.e. target info area and link).

- If the target field is a text field, the link to the record is copied in the format "<info area code>-<station number>-<serial number>".

5. Save.

Defining Conditions as Variable Values

In some cases, the operator used in a condition is also variable, not just the comparison value:

If you select "Condition" as the **Type** in the variable definition, you can enter conditions (in the **Var. Text** field) as variable values:

- Enter the condition as text (e.g. `F35='A'`).

- Or click on the arrow and define the condition in the **Define Search Conditions** dialog (Aurea CRM win only).

Note: Variables of type "Condition" can only be used in conditions (and not in workflows or triggers).

Example

You define a country-dependent variable with different criteria for A-customers: Revenue for companies in Germany must exceed 100,000, while "A" must be entered in the **ABC** field for companies in Austria.
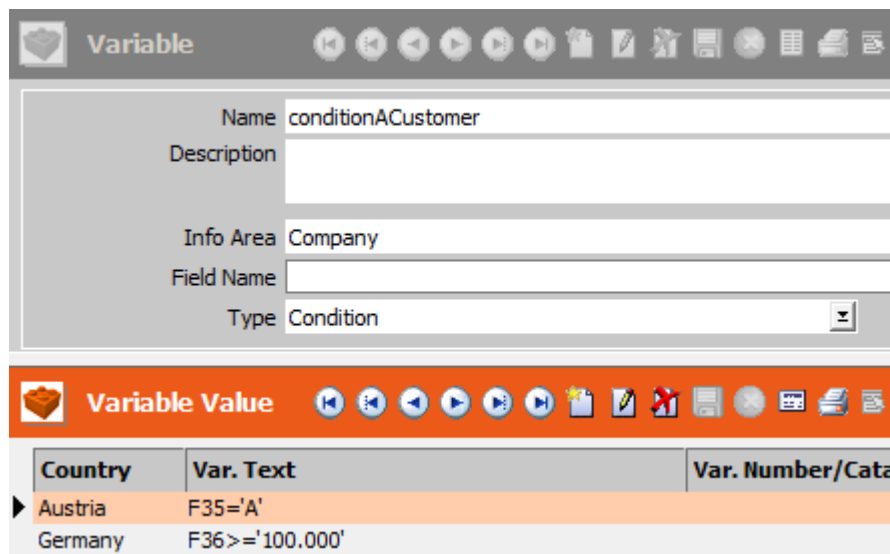
The condition can be applied to any field, as the condition is replaced by the condition defined in the **Variable Value** record.
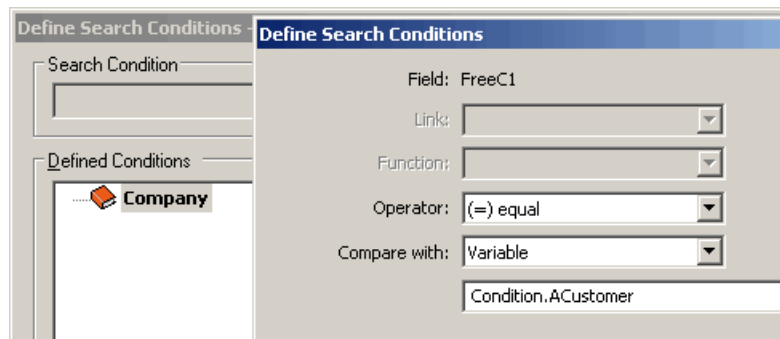
For reps in Germany, the condition is applied to the company's revenue, but for reps in Austria to the **ABC** field.

Using Variables

Learn how to use variables.

Variables can be used in the following areas:

Workflows

When defining a workflow, parameters can be directly initialized with a variable. For details, see *Defining Parameters* in the *Aurea CRM automator User Manual*.

Triggers

You can define triggers that write variable values to fields, see User-defined Variables on page 182.

XML Reports

If you enable the **Output variables** option (`EmitVariables=true`) in a report format, all variable values valid in the current context are included in the XML output (`<Variables>` node). For details, see Reports in the *Aurea CRM win User Manual*.

Conditions

Variables can be used as comparison values in conditions, see Defining Conditions in the *Aurea CRM win User Manual*.

Note: Variables cannot be used in extended conditions or selections.

Aurea CRM web: Variables can be used in filters and queries defined in CRM.designer.

Example: A variable with values defined for different rep groups. The variable can be used to define a condition that determines the minimum revenue for category A customers.

When defining the condition, select "Variable" from the **Compare with** field and enter the name of the variable or click on 🔴 (**Select variable value**) to select the variable.
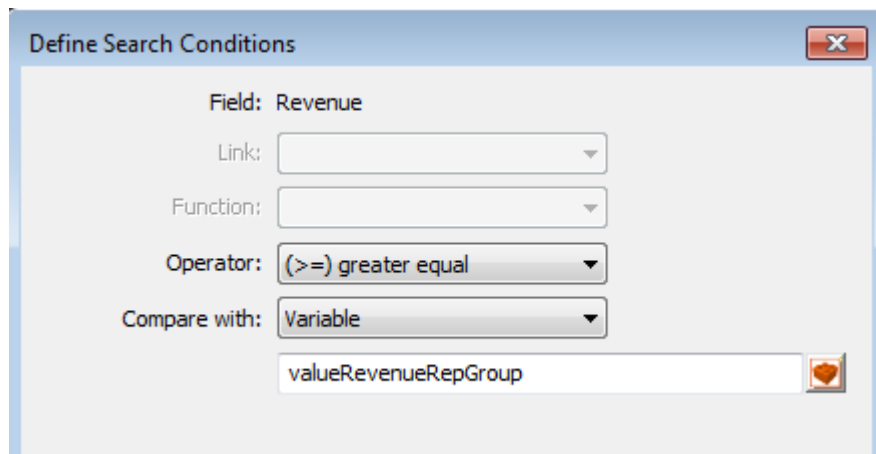
When evaluating the condition, the value defined for the current user's rep group is used as the comparison value.

History

The history tracks who made which changes to a record, and when.

This provides an overview of the history of the record. Adding and deleting records is not tracked by the history, >> Log - Write.

The history needs to be enabled for each info area in the rights settings, >> Enabling the History on page 259.

A history record is added for each record. Changes are saved in a BLOB (Binary Large Object) and can be displayed in the **History** level, see Displaying the History on page 260. The history is written irrespective of the write access rights of the current user, i.e. **Deny Upd** is ignored when applied to the **History** info area.

Note: No history is displayed or output in reports for fields that the current user is unable to access due to their access rights.

You can configure which changes are displayed in the history, see Conditional Access to Info Areas on page 142. For example, if you define "Updated by = Current rep", only changes made by the current rep are displayed in the history. If you define "Created by Rep ID = Current rep", only those records that were initially added by the rep are displayed in the history.

You can use the following virtual fields to output history records in XML reports or to export data in the history: **ID**, **Stat.No.**, **Date**, **Time**, **Rep ID**, **Rep, Windows User Name, Windows computer name, Version, Module, Field Number, Field Name, Old Value, New Value, Time Zone**.

Note: These fields are only available for XML reports and export purposes and otherwise have no function.

For more information on outputting the history in XML reports, see XML Format in the *Aurea CRM win User Manual*. For more information on exporting the history, see Selecting Fields in the *Aurea CRM win Administrator Guide*.

History records can be communicated if the primary key of the record the history refers to consists of the station number plus serial number. This allows you to track changes to records other stations, see Communicating System Tables in the *Aurea CRM win Administrator Guide*.

Enabling the History

Learn how to enable history for an info area.

To turn on the history for an info area:

1. Switch to the **Rights** info area in the **Rights** module.

2. Click in the **History** cell for the desired info area.

   The **History** area is displayed

3. Enable **Log History**.

4. The following options are available:

   • **Log History:** Enable this option to turn on the history for the selected info area. The **Module** and **Functions** cells are automatically enabled if you enable this option.

   • **Archive History:** Enable this option to determine that history records are retained even if the record they refer to is deleted. To export archived history

records, the **History** info area must be the first info area in the export format, see Selecting Fields in the *Aurea CRM win Administrator Guide*.

- **With Conditions:** Enable this option to determine conditions for the history, see Conditions in the *Aurea CRM win User Manual*.
- **Conditional (prior to changes):** Enable this option to determine conditions that should be tested before the record is updated.
- **Module:** Use these options to determine the modules that the history tracks. Click on ⊞ to display the individual modules. Enable the **Module** cell to enable all modules. Disable those modules that you do not wish to track in the history.
- **Functions:** Use this option to determine which functions (marketing activity, catalog maintenance etc.) the history tracks. Enable the **Functions** cell to enable all functions. Disable those functions that you do not wish to track in the history.

Note: Aurea recommends to disable the history for triggers and/or workflows for info areas where a lot of triggers and/or workflows are executed. Otherwise the history may grow very fast and have a negative impact on performance when updating records.

- **Attachment:** This option is available for those info areas in which compressed data is stored in binary form within fields (documents, formats). Any change to the length of the binary code is logged in the history.
- **Exclude the following fields from history:** Use this option to determine which fields are excluded from the history. Click on ⊞ to display all fields.

5. Click on ✅ (**OK**).

6. Save the rights format.

Once the rights have been assigned to a station, group, rep or login role, changes to the selected info areas are logged according to your settings.

Displaying the History

Learn how to display history for an info area.

To display a record's history:

- Select **Data > Display History** from the menu in the **Rights, Maintenance** and **Communication** modules.
- Define context menu options in the desktop settings used to open the history from the main module, see Accessing the History from the Context Menu in the *Aurea CRM win Administrator Guide*.

For information on the view options, see History in the *Aurea CRM win User Manual*.

For information on displaying a record's history in Aurea CRM web, see Displaying a Record's History in the *Aurea CRM web Administrator Guide.*

CRM.phone

CRM.phone for Aurea CRM is a telephone-based solution.

If you have installed CRM.phone, you need to configure the component in the **Rights** module.

Note: If you have not installed CRM.phone, you still need to enter the telephone prefixes used by Aurea CRM to search for telephone numbers, see Basic Settings for CRM.phone on page 261.

Further information on CRM.phone can be found in the CRM.phone User Manual and in the *CRM.phone Administrator Guide.*

Basic Settings for CRM.phone

The options used to configure CRM.phone are accessed from the **Extras** menu in the **Rights** module.

Note: If you do not use CRM.phone, you still have to set the basic settings using the **Telephone Profile** option. You need these basic settings to search for phone numbers and e-mail addresses in Aurea CRM.

To determine the basic settings:

1. Open the **Rights** module.

2. Select **Extras > Telephone Profile** from the menu.

   The **Telephone Profile** dialog box opens.

3. You can enter the following information under **Incoming Call** and **Outgoing Call**:

- **International**: The leading digits used for international calls.

  Country codes are standardized, e.g. Germany 49, United Kingdom 44, Austria 43. When dialing you must add a prefix to this country code. In Europe, a double zero is generally used; in Australia, '011' is used.

  Depending on the telephone system, you can enter the symbol + instead of the prefix of the corresponding country.

- **National**: The leading digits used for national calls. In most countries, a leading zero is used.

- **External number prefix**: The prefix required to call an external number. The prefix can include * or #.

Note: Whether you need to enter the **External number prefix** depends on whether your telephone system includes the external prefix with incoming calls. If an external prefix has been configured in your telephone system, the prefix is included with phone numbers and you need to enter the prefix here. If your system is not configured to use a prefix, leave this field blank. You must always enter the prefix for external calls.

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4. Enter your country and area code and company number under **Local Settings**:

- **Country code**: Your international country code

- **Area code**: Your area code

- **Own company no.**: Your local telephone number (without area or country code or extensions)

5. Use the settings under **Search Algorithm Settings** to determine how telephone numbers are searched for, see Searching Using the Complete Number.

- **Truncated digits:** The maximum number of digits that are removed from the end of the telephone number during the search.

- **Do not check hits for company number:** Enable this option to terminate the search even if only a person number is found.

6. Click ![save icon] (**Save**).

The **Save** dialog box opens.

7. Enter a name for the profile.

8. Click **OK**.

9. Click **Close**.

Telephone Number Search

Users can search for telephone numbers in Aurea CRM win and Aurea CRM web.

If CRM.phone is installed, telephone numbers can be searched for automatically when an incoming call is received.

Telephone numbers of companies and persons are stored in a standardized and indexed format in the **Tel.No./E-mail** (TN) info area. The search always takes place in this info area.

Determining the Complete Number when Searching

The logic described here is used:

- when manually searching for telephone numbers in the company and person search in Aurea CRM win.

- in Aurea CRM web, if the **Original Number** check box is enabled.

Example settings:

- **Country code**: 0043

- **Area code**: 01

- **Own company no.**: 87855

- **International**: 00

- **National**: 0

- **External call prefix**: 0
- **Internal call length**: 5

In contrast to the method used to determine the number of an incoming call, no prefix is used for external numbers, to save users from needing to enter the prefix when searching manually. In addition to the values entered under **International,** the following prefixes are also used:

- International prefix: 00 or +
- National prefix: 0

Using the above the settings, the telephone numbers are transformed as follows:

100 > 43187855100

444444 > 431444444

0732333333 > 43732333333

004989222222 > 4989222222

Searching Using the Complete Number

Aurea CRM carries out the following steps when searching:

1. Generate the complete number.

2. Search for one or more identical telephone numbers in the **Tel.No./E-mail** info area (TN):

   - If the number is found in a company, the company is displayed.

   - If a the number is found in the **Tel 1**, **Tel 2** or **Mobile Tel.** fields of a contact person (CP), the contact person is displayed.

   - If for a contact person (PE) the number is found in the **Private Tel.** field, the system also searches for links to the **Contact Person** (CP) info area:

     - If the person is linked to at least one **Contact Person** (CP), all linked contact persons are displayed.

     - If the matching PE record is **not** linked, the PE record is displayed.

     Note: Instead of the standard algorithm you can also set the **Display Person** configuration option to PE_NO_CP (if a PE record is found, no linked contact person (CP) records are displayed) or PE_With_CP (all linked contact persons (CP) and the PE record are displayed). You can define these options in the **Configuration** info area in the **Rights** module (**Telephone/E-Mail Search** category).

   The search continues until a person record (PE or CP) is found.

   If no person is found, the search continues with the following step.

3. The database is searched for telephone numbers starting with the given number. If matching numbers or numbers starting with the given numbers are found, the hits are listed. A number that was found in the previous step is not listed twice.

   If no matching telephone number is found, the search continues with the following step.

Note: If you uncheck the **Do not check hits for company number** check box in the telephone profile, the hits must contain at least one company. If this option is enabled, only persons are listed as hits.

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4. If no matching number is found, the last digit is truncated and the remaining number is searched for.

The search stops:

- When a matching telephone number is found.
- After a specified number of truncated digits (as defined in the telephone profile, by default 3), >> Basic Settings for CRM.phone.
- When the number has 6 digits left.

Maintenance Module

Here you learn to perform basic configurations in the database and maintain and upgrade it as per your need.

Use the **Maintenance** module to maintain your database. You can:

- add and maintain new countries and cities, see Country Info Area on page 265 and City Info Area on page 268
- define and update catalog values, see Catalogs on page 270.
- change the data model (edit or define info areas, fields and catalogs), see Data Model on page 280.
- manage the user-defined texts, see Text Info Area on page 368
- change or delete large quantities of data, see Update Level on page 385 and Delete Level on page 383

Before you start working with this module, start a data back up to save all Aurea CRM data.

Country Info Area

All the information on countries and cities used in your database is stored in the **Country** info area and in the **City** info area.

Each country is added to the **Country** catalog when it is added to the database for the first time, see Catalogs on page 270.

Cities are linked to countries using the language catalog:
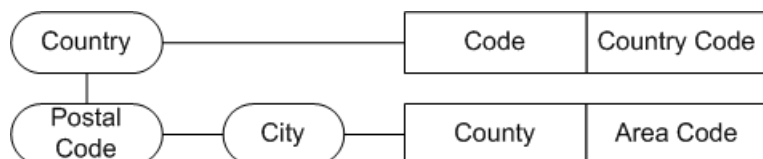
The **Maintenance** module is used to maintain these links, which result in automatic entries in the database whenever new records are added.

Adding a New Country

Use the **Country** info area to store country details.

To add a new country:

1. Start the **Maintenance** module, see Starting Modules in the *Aurea CRM win Administrator Guide*.

2. Switch to the **Country** info area.

3. Click (**New**).

4. Enter the name of the country in the **Country** field or select an entry from the country catalog.

5. Enter the number of digits in the post code that should be compared when matching up addresses in the **Match-up Length** field, see Match-up in the *Aurea CRM win Administrator Guide*.

For example, in Austria postal codes are made up of four digits, with the first three defining the federal province and the area, and the last digit specifying the post office. In this case, the **Match-up Length** is "3". In Germany, postal codes are five digits (starting with a zero) so "5" should be entered.

6. Select **View** > **All Mask Fields** from the menu. Enter the language for the country in the **Language** field.

Each country is also linked to its own catalog of academic titles, see Title Catalogs on page 278.

7. Enter further information on the country (for details on the individual fields, refer to the field help).

8. Save the record.

If this country is now entered when adding a new record (e.g. companies, persons, additional addresses, properties (BTB only)), the international dialing code (**Country Code** field) and **Label** (for companies and persons) are transferred automatically from the country table. Subsequent changes to records in the **Country** info area are **not** automatically propagated.

You can add an entry to the **Configuration** info area which prevents fields from the country table being transferred to other info areas, see Country Table on page 34.

If a new country is entered while adding a record, the new country is automatically added to the **Country** info area, see Adding a New Country (Aurea CRM win Main Module).

Cities (Context Menu)

Every city entered in the **City** info area is linked to a country using the **Country** catalog.

To display all cities in a specific country:

1. Select the country in the **Country** info area.

2. Select **Cities** from the context menu.

All the currently available cities in this country are displayed.

Conditions defined for the **City** info area are not applied when switching to this view. Either define a new condition or click 🔍 (**Find**) to search for the desired city.

Adding a New Country (Aurea CRM win Main Module)

New countries can be added from the Aurea CRM win main module in the **Company, Person, Person in Company, Additional Addresses** and **Property** (BTB only) info areas.

To add a new country from the Aurea CRM win main module:

1. Add a new record, e.g. a company.

2. Enter a country not yet present in the **Country** info area in the **Country** field.

3. Save the record.

The country is added to the **Country** info area.

If a company or person was added, the following information is also transferred to the **Country** info area:

	Company/Per-son	Country
Country Code	Country Code	Country Code
Label	Label	Label

Subsequent changes to the data in the Aurea CRM win main module are not automatically transferred to the **Country** info area.

You can prevent new countries from being added from the Aurea CRM win main module by configuring the data model appropriately, see Mapping on page 307.

Note: Aurea recommends adding new countries from the **Country** info area. A country that has been added from the **Country** info area is always available from the country catalog. An entry in the **Country** catalog does not however mean that the country is automatically available in the **Country** info area. If you enter a new country in a record, but then do not save the record, the new country is added to the country catalog but **not** to the **Country** info area.

City Info Area

Information relating to the cities in the database is stored in the **City** info area.

Note: Unlike for countries, there is no city catalog.

Adding a New City

To add a new city:

1. Open the **Maintenance** module and switch to the **City** info area.

2. Click [icon] (**New**).

3. Select the country the city is located in from the **Country** field. This field is used to link the city with the **Country** info area.

Note: Do not add new countries from the **City** table, as these are not transferred to the **Country** table.

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4. Enter the name of the city in the **City** field.

5. Enter the range of postal codes applicable to the city in the **From Postal Code** and **To Postal Code** fields.

    If several cities have been added with the same post code, a serial number is automatically assigned in the **Postcode ID** field.

6. Enter further information on the city. For more information on the individual fields, refer to the field help.

7. Save the record.

When adding new records in the Aurea CRM win main module (companies, persons, additional addresses, properties (BTB only)), further information is transferred from the **Country** and **City** info areas once the city and postal code have been entered, see City Table and Database.

Note: In order for users to be able to use these functions, they require read access to the **City** info area, >> Defining Rights at the Info Area level on page 140.

If several cities have been entered with the same postal code, a list of the cities is displayed and the user can choose the desired entry.

Subsequent changes to data in the **City** info area are not automatically propagated.

You can add an entry to the **Configuration** info area which prevents fields from the city table being transferred to other info areas, see City Table on page 30.

If a new city is entered while adding a record, the new city is automatically added to the **City** info area, see Adding New Cities (Aurea CRM win Main Module).

Adding New Cities (Aurea CRM win Main Module)

To add a city from the Aurea CRM win main module (from the **Company**, **Person**, **Person in Company**, **Additional Address** and **Property** (BTB only) info area):

1. Add a new record, e.g. a company.

2. Enter the country in the **Country** field.

3. Enter the postal code and **City**.

4. Save the record.

   The city is added to the **City** info area.

Note: In order for users to be able to use these functions, they require read access to the **City** info area, see Defining Rights at the Info Area level on page 140.

Upon saving the record, the **Country**, **City**, **Postal Code** and **Postcode ID** are transferred to the **City** info area (the **Postcode ID** is not displayed in the Aurea CRM win main module). The entry in the **Postal Code** field is transferred to the **From Postal Code** and **To Postal Code** fields in the **City** info area. Further fields are also transferred depending on the info area and vertical, see City Table and Database.

Subsequent changes to the data in the Aurea CRM win main module are not automatically transferred to the **City** info area.

You can prevent new cities being added from the Aurea CRM win main module by configuring the data model appropriately, see Mapping on page 307.

City Table and Database

The **Company, Person, Person in Company, Additional Address** and **Property** (BTB only) info areas are linked to the **Country** and **City** tables via the country and postal code.

The following fields are transferred both to and from the **City** table when new records are added (depending on the info area and vertical):

Info Area	BTB	OTC	FS
Company	**Rep 1, Rep 2, County, State, Area, Jurisdiction, Pol. District, Area Code**	**Rep, Block Name, Block No., Block Segment, County, Area, Office Rep, Nielsen Area, Area Code**	**Rep, County, Area**
Person / Person in Company	**State, Area Code**	**County, Area Code**	**County, Area Code**
Additional Address	**State, Area Code**	**Area Code**	**Area Code**
Property	**Rep 1, Rep 2, County, State, Area, Jurisdiction, Pol. District**	-	-

You can add an entry to the **Configuration** info area which prevents fields from the city table being transferred to other info areas, see City Table on page 30.

You can prevent new cities being added from the Aurea CRM win main module by configuring the data model appropriately, see Mapping on page 307.

Cities and Communication

During communication city records are only matched up if the following fields are identical: **Country**, **From Postal Code**, **Postcode ID**, **City**, **Area Code**.

When inputting company records, no new records are added to the **City** info area.

For information on communicating records, see Communication in the *Aurea CRM win Administrator Guide*.

Catalogs

Catalogs are lists of predefined values you can select when entering data.

For further details, see Catalogs in the *Aurea CRM win User Manual*.

Fixed catalogs are part of the data model. They are predefined by the system (e.g. **Status** and **Priority**) and cannot be edited by users. You can edit and create fixed catalogs as part of the data model, see Editing Predefined Fixed Catalogs on page 286 and Adding New Fixed Catalogs on page 289.

Variable catalogs can be created and renamed as part of the data model, see Adding New Variable Catalogs on page 292 and Renaming Predefined Variable Catalogs on page 291.

Variable catalog values are stored in the **Catalog** (KA) info area, see Catalog Info Area on page 271. Catalog values can be added, edited and deleted in the **Catalog** info area, see Editing Variable Catalogs on page 273.

Changes to catalogs are saved in the **Catalog Maintenance** (KW) info area on the **catalog maintenance station** and transferred to other stations in your setup during communication, see Defining a Station on page 112 and Communicating Catalogs in the *Aurea CRM win Administrator Guide*.

Note: Access to the **Catalog Maintenance** info area is controlled via the CRM process 1.5.2.1.1. "Catalog Maintenance" (CRM process ID 312600?) which is disabled by default. Only the SU and users for whom this CRM process is enabled can edit values of variable catalogs (via the **Catalog** level in the Aurea CRM win Maintenance module or via catalog maintenance in Aurea CRM web).Aurea recommends that you never add/change catalog values to the database directly and prevent or restrict users from editing and deleting catalog values on all stations other than the catalog maintenance station, to prevent data inconsistencies, see Defining Access Rights for Variable Catalogs.

The following actions to not create catalog maintenance records:

- Creating a new catalog value directly in the Catalog selection dialog in Aurea CRM win or Aurea CRM web
- Creating a new catalog value during import

Catalog values that have been added in such a way can not be deployed correctly via CRM.cockpit.

Catalog Info Area

Variable catalog values in all languages are stored in the **Catalog** info area.

Languages are defined in the **Language** info area, see Languages on page 109. Catalog values can be edited, deleted and added in catalog infoarea.

Information including the following is saved for each catalog value:

- **Catalog No.**: The catalog number (corresponds to the **No.** column in the data model). For example, the **Country** field in the **Company** info area accesses the **Country** catalog (number 2).

  Note: The **Catalog No.** is displayed in square brackets after the catalog name in the drop-down list.

- **Language No.**: The number of the language the catalog value was added in. The catalog base language always uses language number 0 in the **Catalog** info area.
- **Code:** The number of the catalog value.
- **Text:** The text of the catalog value.

- **Ext. Key:** Key of the catalog value in an external system.
- **KA-TenNo:** The number of the tenant the catalog value was added for, see Tenants and Catalog Maintenance on page 228.

The following combinations are unique keys for catalog values:

- **Catalog No.** + **Language No.** + **Code**
- **Catalog No.** + **Text** (in the base language) + **KA-TenNo**

Only the catalog value's code is stored in records. You can display the codes by clicking on ▣ (**Number**) in dialogs containing catalog values. Catalog values are displayed in the current language, see Multi-Language Catalogs on page 277.

Catalog values in formats are saved using the tenant number and catalog text in the catalog base language. The catalog base language is defined in the **Language** info area (**Rights** module), see Defining Languages on page 109.

Communication and CRM.cockpit match up catalog values by the tenant number and catalog text in the catalog base language. On the target station the codes are generated again, i.e. they may differ between stations.

It may be necessary to use absolute references (reports, additional programming) to catalog values in distributed systems (separate development, test and live systems). As the value in the catalog base language may be changed, you can use the **Ext. Key** in the catalog base language to reference the catalog value. The external key can be created automatically using a configuration entry, see Unique System-wide Identification of Catalog Values.

When importing catalog values into the **Catalog** info area, you can either match up values directly using the **Language No.** field (see Selecting Fields in the *Aurea CRM win Administrator Guide*) or using the external key(see Importing Catalog Values using External Keys in the *Aurea CRM win Administrator Guide*). When importing values into other info areas, catalog values can be matched up using the text in the catalog base language and/or using the external key.

Unique System-wide Identification of Catalog Values

The combination of **Catalog No.** + **Text** (in the catalog base language) + **KA-TenNo** serves as the system-wide key for catalog values (e.g. when communicating). As the catalog base language is generally a language that is used in the system, the catalog text may be prone to changes.

To uniquely identify catalog values you can use the external key in the base language. The external keys remain unchanged when transferring data between development and live systems (e.g. using CRM.cockpit), so that for example reports that query specific catalog values work on all stations.

You can prevent users of the live system from editing or deleting these external keys in the access rights, see Defining Access Rights for Variable Catalogs. You can thus ensure that no keys are overwritten when communicating between the live and development systems.

To automatically create external keys for the catalog base language when adding catalog values:

1. Enable the **Automatically enter external keys** configuration entry, see Catalogs on page 30.

To create external keys for the catalog base language for existing catalog values:

1. Start `mmba.exe` on the catalog maintenance station using the `--genextkey` parameter, see mmba.exe Parameters on page 13.

   Existing external keys **are not** overwritten.

External keys are generated using the following format: `<station>_<catno>_<code>` or `<station>_<catno>_<code (parent)>_<code>`.

Examples:

1_2_37: Station 1, **Country** catalog, catalog value with code 37

100_46_1_2: Station 100, **Interests** catalog, parent catalog code 1, catalog value with code 2

If an external key is already present in the database as the external key of another catalog value, **no** key is created for the current catalog value. In this case, the following message is written to the active module's log file: `Catalogs;Warning;Generated external key already exists: '1_18_2'`. In this case, you need to enter the external key manually, see Editing Variable Catalogs on page 273.

Editing Variable Catalogs

Learn how to edit variable catalog.

To edit catalog values:

1. Open the **Maintenance** module and switch to the **Catalog** level.

   The drop-down list at the top of the page contains all available variable catalogs.

2. Select the catalog you wish to edit from the list or click on (**Find**) to search for the catalog (by name or number). The search works as described for the CRM process search, see Searching for CRM Processes on page 102.

   The catalog values are displayed. The number of catalog entries is displayed in the **Records** field.

3. Make the desired changes:

- Click (**New**) to add a new catalog value. Enter the new catalog value (and a tenant number if applicable) in the dialog box, see Tenants and Catalog Maintenance on page 228. Click **OK**.

- Select a catalog value and click (**Edit**) to edit a catalog value: Enter the new value in the dialog box, and click **OK**. The edited value is displayed in blue.

Note: Catalog fields have a maximum length of 80 characters. A catalog should consist of a maximum of 1,000 entries: The more values a catalog contains, the longer it takes to load the catalog.

- Select a catalog value and click (**Delete**) to delete a catalog value. (You may need to specify a parent catalog.)

  The **Replace with?** dialog box is displayed:

  - If you simply wish to delete the value, leave the field empty.
  - If you wish to replace the value with an existing value, double-click in the field to open the catalog and select the desired value.

  Click **OK**. The catalog value is displayed in red.

- Select **Delete All** from the context menu to delete all the entries in a catalog.

- **Tenant:** Enter the tenant number in the **Tenant** column, see Tenants and Catalog Maintenance on page 228. The tenant number and the catalog value are displayed in blue.

- **Ext. Key:** You can enter an external key for each language in the **Ext. Key** column, if you are using external keys for catalog values.

External keys can be used to match up catalog values when importing data, see Importing Catalog Values using External Keys in the *Aurea CRM win Administrator Guide*.

The external key for catalog values in the catalog base language can be created automatically, allowing catalog values to be identified uniquely in distributed systems, see Unique System-wide Identification of Catalog Values

- **Sort Order:** You can define the sort order of catalog values in catalog fields for each language. Enter numbers in the **Sort Order** cells of the desired language. If two values have the same number, these values are sorted alphabetically.

  When selecting catalog values from catalog fields, catalog values for which a sort order has been defined are displayed first (and sorted numerically according to the sort order). Values without a sort order are sorted alphabetically at the end of the list of values.

- **Description:** Enter a description of the catalog value.

- **Valid from/to:** Enter dates in these fields to define the time period the catalog value is valid for. The catalog value is unavailable outside the defined time period. Catalog values in existing records and formats (e.g. conditions) are not affected by this setting.

Note: Use the **External Key**, **Sort Order**, **Description** and **Validity** entries in the context menu to hide/show the corresponding columns in the table. If no value is entered in the **Ext. Key, Sort Order, Description, Valid from** and **Valid to** fields, the value entered in the parent language is used (if available). If this value is not present, the corresponding value in the catalog base language is used.

- **Lock:** Click in the **Lock** column to lock the catalog value. Locked values are no longer visible when selecting a value from this catalog. Catalog values in existing records and formats (e.g. conditions) and the import of catalog values are not affected by this setting.

Note: If a catalog value is locked in a language using the **Lock** column, the lock applies to this language, and the value in the parent language is used. If the parent language's value is also locked, the value in the catalog base language is used. If this catalog value is also locked, the lock applies to all languages. For more details, >> Behavior of Lock and Validity with Hierarchical Languages.Use the `CatalogLockOnBaseLanguage=off` entry in the `mm.ini` file

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to determine that a lock and/or a validity period applied to the catalog base language is **not** applied to all other languages, >> [Option].
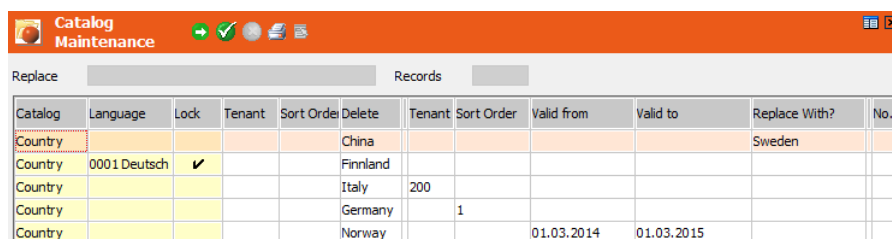
4. Select **Apply Changes** from the context menu, >> Applying Changes to Catalogs on page 276.

Applying Changes to Catalogs

Learn how to apply changes to catalogs.

To apply the changes to the catalogs:

1. Select **Apply Changes** from the context menu in the **Catalog** level.

Catalog	Language	Lock	Tenant	Sort Order	Delete	Tenant	Sort Order	Valid from	Valid to	Replace With?	No.
Country					China					Sweden	
Country	0001 Deutsch	✔			Finnland						
Country					Italy	200					
Country					Germany		1				
Country					Norway			01.03.2014	01.03.2015		

2. Verify that the correct values are displayed in the list.

- Click on ✅ (**OK**) to return the catalog without performing any changes.
- Click on a catalog value in the **Catalog** column to remove an entry from the list and cancel any changes made in the **Catalog** info area. Confirm the prompt with **Yes**.

3. Click on ➡ (**Start**) to begin applying catalog changes.

For each change a catalog maintenance record (KW) is created and the catalog values are deleted or replaced accordingly. Changes only take effect once Aurea CRM win has been restarted or the time period entered in the **Cat. refresh freq.** field has expired, see Station Configuration on page 233.

The catalog maintenance records are automatically communicated to other stations, see Communicating Catalogs in the *Aurea CRM win Administrator Guide*.

If catalog values are used in formats (e.g. conditions), the `pro*.cfg` file that stores user-defined settings may need to be deleted for the module that uses the format, see \<user name> in the *Aurea CRM win Administrator Guide*

Multi-Language Catalogs

International companies generally work with various language versions of Aurea CRM, making it important that catalog values are available in all languages.

To work with multi-language catalog values:

1. Define the desired languages in the **Language** info area, see Defining Languages on page 109.

2. Enable the **Catalog Lang.** check box for all languages that you wish to use for catalog values.

3. Enable the **Catalog Base Lang.** check box for one of the languages. The catalog base language forms the unique catalog key together with the tenant number, and is used as the basis for translating catalog values into other languages.

   If a catalog value has not been defined for a specific language (or the language's parent language), the entry in the catalog base language is displayed when using that language.

   Note: Only enable this check box for a single language and do not subsequently change the catalog base language.

4. Assign the desired languages to stations, see Assigning Languages on page 113.

   Note: If you have defined a language as a catalog language and **have not** assigned the language to a station, catalog values on that station in the missing language are displayed using the catalog base language.

5. Assign all defined languages to the catalog maintenance station.

   A column is displayed for each language in the **Catalog** info area. The first column contains the catalog base language, see Editing Variable Catalogs on page 273.

New catalog values should always be added on the catalog maintenance station in the catalog base language, and translations should be entered in the corresponding language columns.

If new catalog values may be added on other stations, check catalog values after communicating and add any missing translations. Catalog changes are communicated to other stations in the next communication cycle, see Communicating Multi-language Catalog values in the *Aurea CRM win Administrator Guide.*

If you are using different external keys for catalog values in different languages, this is taken into account when importing data, see Importing Catalog Values using External Keys in the *Aurea CRM win Administrator Guide.*

You can define fixed catalog values in multiple languages in the data model, see Editing Predefined Fixed Catalogs on page 286 and Adding New Fixed Catalogs on page 289.

Use CRM.translation tool to translate variable catalog values and user-defined texts in the data model, see CRM.translation tool on page 474.

Behavior of Lock and Validity with Hierarchical Languages

If you have defined sub-languages (language "variants") you can define catalog values for each sub-language, see Defining Language Variants on page 110.

The following logic applies for locked catalog values within a language hierarchy:

- catalog value locked in the current language > not displayed in catalog selection dialog
- catalog value locked in the parent language > the first available (i.e. not locked) value from the hierarchy (i.e. the parent's parent etc.) is displayed
- catalog value locked in catalog base language > the value is locked for all languages
- catalog value locked in base language and `mm.ini` entry `CatalogLockOnBaseLanguage=off` > the value is displayed for all child languages (where it is defined), see [Option]
- no catalog values defined in the current (child) language > the first parent language containing values (no matter if locked or not) is used.

The same logic applies for validity periods defined for catalog values.

Note: Locks and validity periods do not affect catalog values used in existing records and formats (e.g. conditions).

Title Catalogs

Learn about the logic to enter academic titles in the **Person in Company** info area.

Aurea CRM uses the following logic to enter academic titles in the **Person in Company** info area:

The **Acad. Title** (or **Abbr. Title** in the FS vertical) and **Full Title** catalogs are language-dependent and linked with one another via a 1:1 link.

A language needs to be selected before entering values in the **Acad. Title** catalog (**Abbr. Title** in the FS vertical).

Use the **Full Title** catalog to store the corresponding full title in each language:

1. Select the **Full Title** catalog from the drop-down list.

2. Select the desired **Language**.

   The current entries in the **Acad. Title** (**Abbr. Title** in the FS vertical) catalog are displayed in a separate column.

3. Enter the desired values in the corresponding language column, see Editing Variable Catalogs on page 273.

The entries in the **Full Title** catalog are output in labels if you include the Full title placeholder in labels, see *Defining Label Formats* in the *Aurea CRM win User Manual*

Note: Entries can only be added to the **Full Title** catalog from the **Maintenance** module; they cannot be added from the **Person in Company** info area. All other title catalogs are assigned to fields in the **Person in Company** info area.

The BTB and OTC verticals include the following additional title catalogs:

• **Full Acad. Title:** language-dependent catalog with **no connection** to the **Full Title** catalog.

• **Title:** language-independent catalog with no special business logic

• **Long Title:** language-independent catalog with no special business logic

These additional catalogs can be used to define labels using different forms of academic and other titles. The **Full Title** placeholder is redundant if you use the **Full Acad. Title**.

Data Model

The **Data Model** level allows you to configure Aurea CRM's data model (info areas, fields and catalogs) to meet your individual requirements.
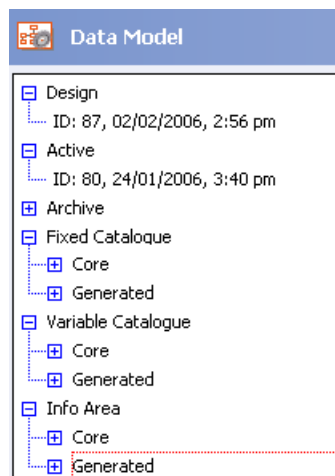
You can either edit the "core" elements supplied by update or add and edit newly "generated" elements. The data model is saved as a format, see Formats in the *Aurea CRM win User Manual*.

The current design is displayed under **Design**. The currently active data model used by Aurea CRM is displayed under **Active**. Any backups you may have made are displayed under **Archive**.

A diagram of the default data model can be downloaded from https://support.au-rea.com.

Use the `--writexmldef` parameter to output the current data model (info areas, fields, catalogs, links and indices) as XML, see mmba.exe Parameters on page 13.

Accessing the Data Model Level

The data model can only be edited on the main office and only by the SU or a user who has access to the CRM process 1.5.1.6. "Data Model", see CRM Process Configuration on page 98.

The SU and users with appropriate roles can open the data model on other stations in read-only mode.

The **Data Model** level is not available to other users.

To grant users read-only access to the data model on the main station, assign a read-only role to these users granting access to the "Data Model" process, see Rep Roles on page 123.

The data model can only be edited by a single user at a time: Once a user begins editing the data model, other users can only access the data model in read-only mode, irrespective of their roles.

Fixed Catalogs

Fixed catalogs are predefined by the system (e.g. **Status** and **Priority** fields) and cannot be changed by users.

Fixed catalogs can be edited in the **Data Model** level, see Editing Predefined Fixed Catalogs on page 286.

Variable Catalogs

Entries in variable catalogs can be added, edited and deleted, provided a user has the necessary access rights, see Defining Access Rights for Variable Catalogs.

You can only define or rename variable catalogs in the **Data Model** level.

Use the **Catalog** info area to edit catalog value and configure further settings, see Catalogs on page 30.

Info Areas

You can edit and add info areas in the **Data Model** level.

Editing the Data Model - General Procedures

Learn about the identical steps needed to be carried out for all info areas, fields and catalogs you wish to edit, when editing the data model.

If you make changes in the data model of an info area and the changed fields are also listed in another info area, then you should ensure that similar data model changes are performed on the second info area.

For example, if you make changes in the data model for the CP or PE info areas and if the changed fields are listed in the KP info area, you should ensure that the same changes are made in the KP info area.

To edit the data model, perform the following steps:

1. Click on the desired entry in the tree view (**Core** or **Generated** under **Fixed catalog**, **Variable catalog** or **Info Area**).
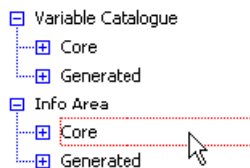
The selected level is displayed.

2. Click in the cell to define settings, see *Tables* in the *Aurea CRM win User Manual*. You can:

   - Edit existing elements, see Editing Predefined Fixed Catalogs on page 286, Renaming Predefined Variable Catalogs on page 291, Editing Predefined Info Areas on page 297 and Renaming Fields on page 340.

   - Define new elements, see Adding New Fixed Catalogs on page 289, Adding New Variable Catalogs on page 292, Adding New Info Areas on page 293 and Adding New Fields on page 317.

   - Delete elements, see Deleting Entries on page 354.

Note: Enable the **Sort selection lists alphabetically** option under **Extras > Other Options** in the main module to sort options (info area type, field type, link etc.) alphabetically in dialog boxes. If you open a sub-level, you need to click in the newly opened level to ensure it has focus before scrolling etc.

Any changes you make are color-coded as follows:

New entries are yellow, edited entries pink and deleted entries red.

Note: Note: If you make changes to fields used in a View, then you have to make manual changes in the View.

When closing the **Data Model** level, any changes you have not yet applied to the data model are saved in the design data model. Click on 🖫 (**Save**) to save the current state of your design data model without applying the changes.

3. To apply changes to the active data model, right-click on a new, edited or deleted entry to access the context menu. The following options are available:

For catalogs:

- Select **Apply change** to apply the change to the current line to the active data model.

- Select **Apply all changes** to apply all changes to catalogs and catalog entries to the active data model.

- Select **Undo** to undo any changes in the design. The line is displayed in its original color.

For fields:

- Select **Apply field format** to apply the change to the field definition to the active data model.

- Select **Apply all field formats** to apply all changes to fields in this info area to the active data model.

For info areas:

- Select **Test info area** to test the info area.

- Select **Apply info area** to apply all changes to the info area to the active data model.

Note: You need to lock the system for all active users before applying changes to info areas to the active data model see System Locks on page 236.

- Select **Apply attribute** to apply changes to the **Properties** field to the active data model.

- Select **Apply text** to apply the changes in the **Text** column to the active data model.

- Select **Apply all texts** to apply changes to all fields in the **Text** column to the active data model.

  For details, see Applying Text Changes.

- Select **Undo** to undo all changes to this info area in the design. The line is displayed in its original color.

For variable catalogs, info areas and fields:

- Select **Reference search** to check which formats etc. refer to a catalog (value), an info area or field, see Reference Search on page 353.

Changes to "core" info areas that have been applied to the data model are highlighted in green.
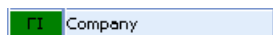
4. Click on ✅ (**OK**) to close a level.

5. The following options are used to manage your data models:
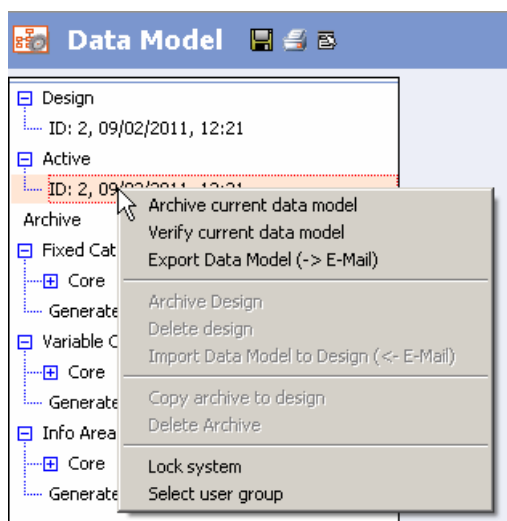
Right-click on a data model under **Design**:

• **Archive Design:** Saves a back-up copy of the selected design data model in the **Archive**.

• **Delete design**: Deletes the selected design data model.

• **Import Data Model to Design (<- E-mail):** Imports a data model from a suitable e-mail in the current user's inbox, see Merging Data Models on page 523.

Right-click on the data model under **Active**:

• **Archive current data model**: Stores a backup of the current data model. The backup is listed under **Archive**.

• **Verify current data model**: Tests whether the active data model and the database are identical. If an error message is displayed, you need to remedy the problem to guarantee the consistency of your data.

• **Export Data Model (-> E-mail):** Exports the current data model as a file. An e-mail is created with the subject "MM_BLOB_2" and a file with the same name is added as an attachment. This file can be imported on other stations and merged with the data model used on the target station, see Merging Data Models on page 523.

Right-click on a data model under **Archive**:

• **Copy archive to design**: Copies an archived data model to the design. The current design is overwritten. The data model is only copied once the **Maintenance** module is closed and after answering a prompt. After copying, the differences to the current data model are highlighted accordingly. These changes is then transferred to the active data model the next time changes are applied.

• **Delete Archive:** The selected archived data model is deleted.

Right-click on a data model under **Data Model**:

- **Lock system**: Opens the **Lock System** dialog box where you can lock the system for active users. This is necessary to apply changes to info areas to the active data model, see Lock System Dialog Box on page 239.

- **Select user group**: You can log in as an Aurea partner or user if you have the necessary password. Depending on the selected user group, IDs for new catalogs, info areas, fields, links and indices are assigned from different number ranges, see Number Ranges in Aurea CRM on page 398.

> **Note:** On a station with a number > 10000, do **not** select a user group when modifying the data model. The station number already determines the number ranges to be used.

- **Analysis**: Opens the **Analysis** level, where you can analyze the structure and contents of your Aurea CRM database, see Database Analysis on page 358. The **Analysis** option is only available to the SU or users granted access to the "Data Model" process in the process configuration, see CRM Process Configuration on page 98.

- **Migration**: Opens the **Migration** level, see Migrating Data on page 407. The **Migration** context menu option is only available to Aurea and its partners (select **Select user group** from the context menu to enter your password).

Communicating Data Model Changes

Learn about communicating with data model changes.

The data model is either defined on a central server or a test system. After applying the changes to the active data model, these changes are available on the server: you need to communicate changes to the data model to branch offices and/or other Aurea CRM products. The entire data model is transferred and overwrites the current data model on the target station. For more information on merging data models, see Merging Data Models on page 523.

Communicating changes to branch offices

The data model is saved as a format. It is communicated to branch offices (irrespective of the settings in your communication format) whenever the data model is updated.

When communicating, the system checks whether the data model on the main office and target station are identical. If not, the data model is updated on the target station before importing any other data, see Input in the *Aurea CRM win Administrator Guide*.

During manual communication, the changes to the data model are input first. You are then prompted to restart the communication process. You need to close and reopen the **Communication** module and restart the input process.

This step is carried out automatically during automatic communication.

> **Note:** Aurea recommends completing any communication cycles **before** editing the data model to guarantee data consistency, see Outdated Data Model at Branch Offices in the *Aurea CRM win Administrator Guide*.Changes to the data model can also be communicated without problems between Oracle and MS SQL versions.

Transferring Changes via CRM.cockpit

For information on communicating data model changes using CRM.cockpit, refer to the CRM.cockpit documentation.

Transferring Changes to other Aurea CRM Products

Apply the changes to the CRM.designer database using CRM.bulkloader, see Data Model, CRM Processes, Roles and Catalogs in the *Aurea CRM web Administrator Guide*. To immediately transfer changes to the data model to other Aurea CRM products, the corresponding application pool needs to be stopped and restarted.

For information on transferring changes to formats to Aurea CRM web, see Station Configuration on page 233.

Editing Predefined Fixed Catalogs

Learn how to edit predefined fixed catalog.

1. Start the **Maintenance** module.

2. Switch to the **Data Model** info area.

3. Click on the **Core** entry under **Fixed catalog** in the tree view.

   The **Fixed Catalogs** table is displayed.

4. Click on the catalog you would like to edit.

   The **Fixed Catalog** table is displayed with the original catalog entries.

5. To edit a catalog value, enter the new text in the **Language Independent** and language columns. For information on applying text changes, see Applying Text Changes.

Note: The languages are those defined in the **Language** info area, see Languages on page 109.

The value entered in the **Language Independent** column is used as the default value for languages for which no specific value is defined (including in the parent language). If nothing is entered in the **Language Independent** column as well, the entry in the **Original** column is used.

If the value is linked to a record in the **Text** info area, the key of this record is displayed in the **Reference (Text)** column.

6. You can determine the order in which catalog values are sorted for each language. Enter numbers in the desired language's **Sort Order** column. If a number is not entered for a catalog value in a specific language, the value entered in the **Language Independent** column is used instead. However, if a value is locked (**Lock** cell), the catalog value's sort order is ignored. If two catalog values are assigned the same number, these values are further sorted by catalog code.

   When selecting catalog values from catalog fields, catalogs assigned a sort order are displayed at the top of the list (sorted numerically). Catalog values with no sort order assigned are displayed at the end of the list and are sorted by catalog code.

   Note: Select **Sort Order** from the context menu to hide or show the **Sort Order** column.

7. Enable the **Lock** cell to lock a catalog value in a specific language. The lock is applied to the entire database and takes effect immediately. Once the lock is applied, the catalog value is no available for selection, but is retained in existing records. The catalog value can also continue to be used when defining conditions.

   Note: If a lock is applied to a language-independent value, that value is locked in all languages.

8. Click in the **Icon** column to select an icon for the catalog value.

   Note: You can define how icons are displayed for fixed catalogs in the desktop settings, see Masks Tab in the *Aurea CRM win Administrator Guide*. Icons are only displayed correctly if an icon is defined for the first value in a catalog.

9. Click in the yellow cell below the last defined entry to add a new entry. You cannot add entries if the cell is not yellow but gray.

> **Note:** Certain catalogs cannot be expanded, as the values are linked to Aurea CRM's internal functions, see Non-extensible Fixed Catalogs.

10. Enter the desired value.

> **Note:** The maximum number of entries in the **Activity** catalog is 20; the limit for all other fixed catalogs is 255.Enter data in all columns for new entries, as in this case there is no original value. Otherwise users sees an empty catalog value when selecting from the catalog.

11. The catalog is displayed in pink. Select **Apply change** from the context menu to apply the change to the active data model. Select **Undo** from the context menu to undo all changes to this catalog in the design.

12. Close the opened tables using the **OK** (✅) button.

Non-extensible Fixed Catalogs

The following fixed catalogs cannot be expanded, as the values are linked to Aurea CRM functions:

Catalog	Info area	CatNo.
Unit	Person in Company	1
Visit Day	Person in Company	2
Status	Activity	5
Unit	Activity	7
Month	Repetition	8
Execution	Communication	30
Status	Communication Log	31
Log Type	Communication Log	32
Status	Task	33
Type	Format	36
Format	Document	37
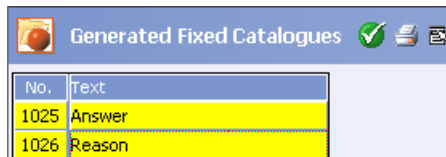
Catalog	Info area	CatNo.
Execution Status	Marketing Activity	40
Execution Type	Task	41
Module	User Tracking	42
Status	Process Tracking	43
Type	Rep	45
Process	Log (Marketing Activity)	46
Connection Type	Response (Marketing Activity)	47
Reaction Time Units/SLA	Offer	48
Execution Type	Execution (Marketing Activity)	49
To-Do Type	To-Do	52
Part. Type	To-Do	53
Status	Absence	54
To-Do Status	To-Do	55
Message Type	Message	56
Type	Task	58
Preferred Channel	Person	59
Base	Execution (Marketing Activity)	60

Adding New Fixed Catalogs

Learn how to add new fixed catalogs.

1. Start the **Maintenance** module.

2. Switch to the **Data Model** info area.

3. Click the **Generated** entry under **Fixed Catalog**.

    The **Generated Fixed Catalogs** table is displayed.

4. Click in an empty row.

   A new catalog is added and displayed in yellow. The catalog is automatically assigned a number.

5. Double-click in the **Text** column and enter a name for the catalog in all available languages. Click **OK**.

6. Click in the **No.** column in the same row.

   The **Fixed Catalog** table is displayed.

7. Double-click in the **Code** or **Original** columns to add a new catalog value.

8. Enter the new value in the **Language Independent** column and in the various languages.

Note: The languages need to be defined in the **Language** info area in the **Rights** module, see Languages on page 109.

The entry in the **Language Independent** column is used if a value is not entered for a specific language (or its parent language). Make sure you always at least enter a value in the **Language Independent** column, otherwise users may see empty catalog entries when using catalogs.

9. You can determine the order in which catalog values are sorted for each language. Enter numbers in the desired language's **Sort Order** column. If a number is not entered for a catalog value in a specific language, the value entered in the **Language Independent** column is used instead. However, if a value is locked (**Lock** cell), the catalog value's sort order is ignored. If two catalog values are assigned the same number, these values are further sorted by catalog code.

   When selecting catalog values from catalog fields, catalogs assigned a sort order are displayed at the top of the list (sorted numerically). Catalog values with no sort order assigned are displayed at the end of the list and are sorted by catalog code.

Note: Select **Sort Order** from the context menu to hide or show the **Sort Order** column.

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10. Enable the **Lock** cell to lock a catalog value in a specific language. The lock is applied to the entire database and takes effect immediately. Once the lock is applied, the catalog value is no available for selection, but is retained in existing records. The catalog value can also continue to be used when defining conditions.

Note: If a lock is applied to a language-independent value, that value is locked in all languages.

11.Click in the **Icon** column to select an icon for the catalog value.

Note: You can define how icons are displayed for fixed catalogs in the desktop settings, see Masks Tab in the *Aurea CRM win Administrator Guide.*Icons are only displayed correctly if an icon is defined for the first value in a catalog.

12.Select **Apply change** from the context menu to apply the change to the active data model. Select **Undo** from the context menu to undo all changes to this catalog in the design.

13.Close the tables using the ✅ button (**OK**).

Renaming Predefined Variable Catalogs

Entries in variable catalogs are defined in the **Catalog** info area.

You can only change the name of variable catalogs in the **Data Model**.

1. Start the **Maintenance** module.

2. Switch to the **Data Model** level.

3. Click on the **Core** entry under **Variable catalog** in the tree structure.

   The **Variable Catalog** info area is displayed.

4. Enter the new catalog name in the **Language Independent** column and the columns for the available languages. For information on applying text changes, see Applying Text Changes.

Note: The languages need to be defined in the **Language** info area, see Languages on page 109.

The value entered in the **Language Independent** column is used if no entry is defined for a language (including its parent language). If no entry is made in the **Language Independent** column, the value in the **Original** column is used instead.

5. Click in an empty field after making an entry to save your changes.

6. The catalog is highlighted in pink. Select **Apply change** from the context menu to apply the change to the active data model. Select **Undo** from the context menu to undo all changes made to this catalog in the design.

7. Close the **Variable Catalog** table.

To edit variable catalog values, switch to the **Catalog** info area, see Catalog Info Area on page 271.

Adding New Variable Catalogs
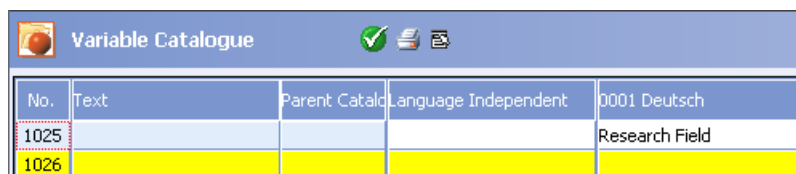
Learn to add new variable catalogs.

1. Start the **Maintenance** module.

2. Switch to the **Data Model** info area.

3. Click the **Generated** entry under **Variable catalog** in the tree structure.

   The **Variable Catalog** table is displayed.

4. Click in an empty row.

   A new catalog is added and highlighted in yellow. The catalog is automatically assigned a number.

5. Enter a name for the catalog in the **Language Independent** column and for each of the available languages and click **OK**.

Note: The languages need to be defined in the **Language** info area, see Languages on page 109.

Note: The **Text** column is empty for generated catalogs.

The value in the **Language Independent** column is used if a value is not entered for a specific language (including its parent language). Make sure you always at least enter a value in the **Language Independent** column, otherwise users does not see a catalog name when selecting catalog values.

6. If you wish to define a parent catalog, click in the **Parent Catalog** column and choose the parent catalog.

7. The catalog is highlighted in pink. Select **Apply change** from the context menu to apply the change to the active data model. Select **Undo** from the context menu to undo all changes made to this catalog in the design.

8. Close all tables using the ✅ button (**OK**).

To add entries to a variable catalog, switch to the **Catalog** info area, see Catalog Info Area on page 271.

Note: You need to delete the catalog entries in the **Catalog** info area before deleting a variable catalog in the data model. Otherwise the catalog entries are retained in the database.

Adding New Info Areas

Learn how to add new info areas.

1. Start the **Maintenance** module.

2. Switch to the **Data Model** info area.

3. Click the **Generated** entry under **Info Area** in the tree view.

   The **Info Area: Generated** table is displayed.

4. Click in the **No.** or **Name** column in the first free row.

   The **Selection** dialog box opens.
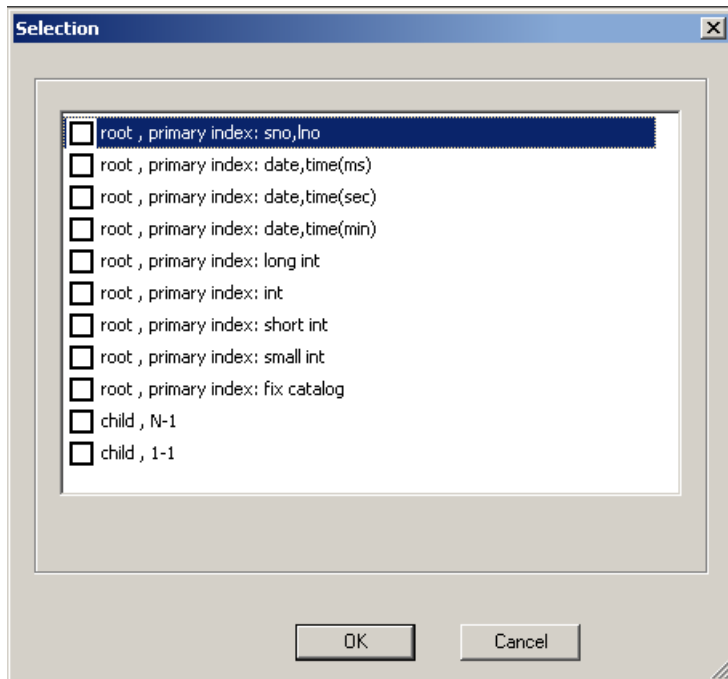
5. Select the type of info area:

   • **root:** Independent info area; i.e. not a child of any other info area

   • **primary index: sno, lno:** The primary key is composed of the station number and serial number. A column named **ID** of the type long integer is added to the database and stores the two values together. When a new record is added, the station number is automatically entered and a serial number generated.

   This type of index is used to generate unique system-wide keys. Data of this type can also be linked. For this reason, the **Gen.ID** field is automatically enabled for info areas of this type.

Note: Aurea recommends using this index for all independent info areas. In contrast to other primary keys it guarantees that data is communicated correctly between stations without any undesired merging of records.

- **primary index: date, time(ms):** The primary key is composed of the **Date** and **Time** fields. A column named **ID** of the type long integer is added to the database and stores the two values together. The time is displayed including milliseconds. When a new record is added, the current date and time are entered automatically.

- **primary index: date, time(sec):** As above, except the time is displayed with seconds.

- **primary index: date, time (min):** As above, except the time is displayed with minutes.

- **primary index: long int:** The primary key is composed of the **ID** field of the type long integer.

- **primary index: int:** As above, but the **ID** is an integer.

- **primary index: short int:** As above, but the **ID** is a short integer.

- **primary index: small int:** As above, but the **ID** is a small integer.

- **primary index: fix catalog:** An **ID** field of the type long integer is created. Assign this field to a fixed catalog: Click in the **Info Area** column in the **Info Area** table. The associated **Info Area** table is displayed. Click in the **Catalog** column in the **Info Area** table. Select the desired catalog from the list.

Note: The first value in all fixed catalogs has the ID '0'. If you use a fixed catalog as an index, records with the first catalog value cannot be saved as there is no primary key for '0'.

- **child N-1:** The new info area is a child info area, and any number of records in the new info area can be assigned to a record in the parent info area. The station number (sno) and a serial number (lno) are used to form the primary key. The LINK_XX_Sno and LINK_XX_Lno fields are added as a link to the parent info area, with XX the abbreviation of the parent info area. Two columns are added to the database, ID and ID_XX, which store the station and serial number together as a long integer.

- **child 1-1:** The new info area is a child info area, and each record in the parent info area can be associated with a single record in the child info area. This allows info areas to be defined that function as an extension of other info areas. The LINK_XX_Sno and LINK_XX_Lno fields are added as a link to the parent info area, with XX the abbreviation of the parent info area. The ID column is added to the database, which stores the station and serial number together as a long integer.

Note: Info areas that have a different primary key than the station number and serial number should not be communicated. Without a unique station and serial number, records could be merged incorrectly. If you wish to define an info area that should be communicated, use the **primary index: sno, lno** option to form the primary key.

Depending on the type of info area, system fields are added automatically, for example **DelCd.** (delete code) and the station number, see System Fields on page 392.

6. Select **Test info area** from the context menu to test the info area for errors. Select **Apply info area** from the context menu to apply all changes to the info area to the active data model.

Note: You need to lock the system for all active users before you can apply the info area to the active data model.

7. Close all tables.

More information on editing info areas can be found under Info Area Options on page 298 and Field Options on page 340.

You need to integrate the new info area in a level in order to use it in Aurea CRM, see Defining New Levels in the *Aurea CRM win Administrator Guide*.

Note: The data model can contain a maximum of 512 info areas.

Note: Aurea recommends using the existing data model as much as possible, for example by renaming free fields. Only define new info areas and fields if the standard info areas cannot meet your requirements.

Integrating External Tables

To display additional data from another database in Aurea CRM (e.g. statistics of website visits, additional product information etc.) you can integrate external tables into the Aurea CRM data model.

Note: These external tables are available as **read-only** info areas in Aurea CRM.

Non-unicode tables are automatically converted to unicode.

To link an external table to the Aurea CRM data model:

1. Create a new info area: In the **Select Info Area Type** dialog select the type matching the key of the external table.
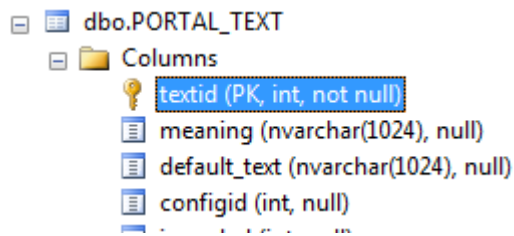
In this case you would have to select "root, primary index: int".

2. Click **OK**.

3. Select the **External** column.
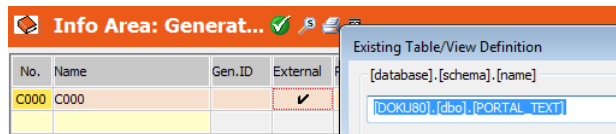
4. Enter the database, schema and name of the external table.

Note: The external table must be accessible via the settings defined in the `mmdb.ini` file of your Aurea CRM win installation, i.e. it must be located on the same database server.

5. Click **OK**.

6. Select the **Fields** column.

7. Delete the automatically generated fields (no. 4011-4016).

8. Add the desired fields, see Adding New Fields on page 317.

Note: Make sure the data types of the internal and external fields match since this is not automatically checked by the system.

9. Select the **DB Column** column to define the "mapping" between external and internal fields:

10. For each field select the field from the external table: Make sure you assign the unique key field(s) from the external table to the unique key field(s) of the new info area.

11. Click **OK**.

12. Click ✅ (**OK**) to close the **Fields** level.

13. Select **Test info area** from the context menu:

You can page through the data from the external table using the arrow buttons.

After applying the data model changes you can use the new info area in customizations like any other info area (links to other info areas, reference fields, configuring the info area for Aurea CRM web etc.).

Since info areas displaying data from external tables are read-only you do not need to define additional access rights for them.

Note: External tables are not communicated, i.e. an error message is displayed if the info area mapped to the external table is accessed by an offline client.

Editing Predefined Info Areas

Learn how to edit predefined info areas.

1. Start the **Maintenance** module.

2. Switch to the **Data Model** info area.

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3. Click on the **Core** entry under **Info Area** in the tree structure.

A table is displayed listing all info areas.

Click 🔍 (**Find**) to search for info areas (by name or ID). The search works as described for the CRM Process search, see

4. Click in the **Fields** column of the info area you wish to edit.

5. Edit the fields in the info area by:
   - adding new fields, see
   - editing field names, see
   - editing field properties, see

Note: Aurea recommends using the existing data model as much as possible, for example by renaming free fields. Only define new info areas and fields if the standard info areas cannot meet your requirements.

---

6. Close the **Fields** table. The info area is highlighted in pink.

7. Continue editing the info area, see

8. Close the **Info Area** table.

Info Area Options

Find the list of info area options here.

Below are some of the options for info areas:

Name and No.

Name of the info area and its internal ID.

- **No.:** The internal ID of the info area:
  - A 2 character abbreviation for predefined info areas ("Core")
  - C + 3 digit serial number of the info area (for info areas added by **C**ustomers)
  - P + 3 digit serial number (for info areas added by **P**artners of Aurea)

- U + 3 digit serial number (for info areas added by **Aurea**)

- A + 3 digit serial number (for info areas added on a Base development station)

- **Name:** Name of the info area:

  - Fixed name for predefined info areas

  - C + 3-digit serial number of the info area

  - P + 3-digit serial number

  - U + 3-digit serial number

  - A + 3-digit serial number

  Both fields cannot be edited. To edit the name of an info area in Aurea CRM, use the **Text** field, see Text on page 311.

Properties

The general properties of an info area.

Click in the **Properties** column to define the general properties of an info area.

Note: You cannot change the properties of predefined ("Core") info area.

- **Included in selections:** Enable this option to display the info area in the **Selection** info area and to include data from it in selections. This option is only available, if:

  - The info area is a child of the **Company** or **Person in Company** info areas.

  - The info area is indirectly dependent on the **Company** or **Person in Company** info areas and includes a link to the **Company** or **Person** info area.

  Note: Note (BTB only): This option is not available for child info areas of the **Property** info area.

- **No rights definition:** Enable this option to exclude the info area from any access rights settings. The info area is then not displayed in the **Rights** info area.

- **Do not communicate:** Enable this option to exclude the info area from communication. The info area is then not displayed in the **C.Format** info area in the **Communication** module and thus not communicated.

Gen. ID

The **Gen.ID** field is automatically enabled if the primary key used by the info area is composed of the station number and a serial number.

This is the case for the following:

- Info areas of the type **root, primary index: sno, lno**
- Info areas of the type **child, N-1** or **child, 1-1** that are dependent on info areas for which **Gen.ID** is enabled.

If this field is enabled, a sequential number is assigned when a new record is added. Records can be linked using generic links.

Fields

The **Fields** column displays the number of fields in each info area.

Click in this column to edit the fields in the corresponding info area, see Field Options on page 340.

Telephone

The **Telephone** column displays the number of telephone fields.

Click in this column to display these fields.

To define a new telephone field:

1. Click in the first empty row and select the **Type** ("Telephone", "Fax", "Modem" or "Mobile tel.").

	Type	Info Area Prefix	Country Code	Area Code	Info Area Tel.	Telephone	Extension	Search
0	Telephone	Company (FI)	Country Code	Area Code	Person in Compa	Tel 1		✔
1	Telephone	Company (FI)	Country Code	Area Code	Person in Compa	Tel 2		✔
2	Fax	Company (FI)	Country Code	Area Code	Person in Compa	Fax		
3	Telephone	Person in Compa	Country Code	Area Code	Person in Compa	Private Tel.		✔
4	Fax	Person in Compa	Country Code	Area Code	Person in Compa	Private Fax		
5	Mobile tel.	Company (FI)	Country Code		Person in Compa	Mobile Tel.		✔
6	Telephone	Company (FI)	Country Code	Area Code	Company (FI)	Telephone	Tel. Ext.	✔
7	Fax	Company (FI)	Country Code	Area Code	Company (FI)	Fax	Fax Ext.	
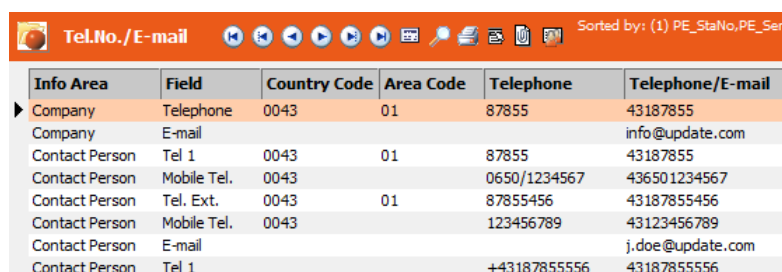
2. Click in the following columns and select the desired info areas or fields:
   - **Info Area Prefix** (only for KP and CP): Click in this column to determine whether the area and country codes are taken from fields in the **Person in Company** or **Company** info area. Select the desired field in the **Country Code** and **Area Code** columns.
   - **Country Code:** Field for the country code.
   - **Area Code:** Field for the area code.
   - **Telephone:** Field used to store the telephone, fax or modem number.

- **Extension:** Field for the extension.
- **Search:** Can only be enabled for telephone and mobile telephone fields. This field is used during the search for telephone numbers (if the record containing the phone number is linked to a company/person and contains a station number and serial number).

The **Info Area Tel.** column displays the info area of the field in the **Telephone** column.

The **Info Area Prefix** column displays the info area of the fields in the **Area Code** and **Country Code** columns.

Note: If you delete telephone fields in the data model, the telephone numbers in the **Tel.No./E-mail** info area are retained. To update the entries, use **Drop table** and **Create table** in the SQL tool to update the **Tel.No./E-mail** (TN) table and select **Fill** from the context menu in the **Tel.No./E-mail** info area.

If the current user has a valid phone profile, telephone fields of type "Telephone" and "Mobile tel." display a telephone icon beside the number. (In Aurea CRM web the phone number is displayed as a link when in View mode.) If CRM.phone is installed, clicking on the icon (or the link) dials the number entered in the filed, see CRM.phone documentation.

Telephone fields of type "Fax" and "Modem" have no special functions.

Array Fields

Learn how to display fields that are linked to one another.

Click in the **Array fields** column to display all the fields that are linked with one another in the search or in selections (i.e. a condition linked with OR is applied to all the linked fields). If you define conditions applied to a field in the **Select. Field** column, the condition is also applied to the corresponding fields in the **Array Fields** column.

Note: If you specify one of the array fields in addition to the selection field in the search (with or without a comparison value), the other array fields are **not** taken into consideration.

	Select. Field	Array fields
0	Sector	;Sector 2;Sector 3;Sector 4
1	SIC1	;SIC2;SIC3
2	Sel.Field1	;Sel.Field2;Sel.Field3;Sel.Field4
3	Free Child Catalog 1	;Free Child Catalog 2;Free Child Catalog 3
4	Co. Type	;Co. Type 2;Co. Type 3;Co. Type 4;Co. Type 5

To add a new group of linked fields, click in the **Select. Field** column and select a field. Click in the **Array Fields** column to select the linked fields. You can only select fields of the same type as the field selected under **Select. Field**.

Note: You can only add one group per info area that uses the same selection field. In prior versions of Aurea CRM, this was possible for multiple groups. If you have defined multiple groups, only the last group defined is taken into account.

The catalog fields in a group access the same catalog.

Index

When adding a new info area or link, indices are generated automatically.

You can define additional indices for the most commonly used search processes.

Note: Only add index fields that you require. A large number of index fields impact negatively on performance, e.g. when searching.

The **Index** column displays the number of indices defined for the info area.

1. Click on the **Index** column to display/edit/add indices:

No.	ID	Properties	Fields	Additional index fields
1	1	[ID]	FI-StaNo,FI-SerNo	
2	2	[DUPLICATE]	Company(40)[ALPHA]	
3	3	[DUPLICATE]	Country,Postal Code(3)[UPPER],Street(3)[PHONETIC]	
4	4	[DUPLICATE,NO'	Synonym(10)[ALPHA,NOT NULL]	
5	5	[DUPLICATE,NO'	Corp. No.[UPPER,NOT NULL,BINARY SORT]	
6	6	[DUPLICATE]	Time stamp	

The primary index is highlighted in gray and cannot be changed.

- **No.:** The number of the index is assigned automatically.

- **ID:** The ID is automatically assigned. IDs 0-99 are used by the default data model, IDs starting from 100 are assigned depending on the user group and/or station number, see Number Ranges in Aurea CRM on page 398.

- **Properties:** The index properties:

  - `[ID]` indicates the primary index. This is the index highlighted in gray.

  - `[DUPLICATE]` indicates the index is not unique; i.e. several records could contain identical values in the index fields. Click in this column for generated indices to enable the [DUPLICATE] property. If disabled, the index is unique.

  - `[NOT NULL]` indicates that empty values is not saved. Example: If the Synonym index for FI is used, companies, where no **Synonym** is entered, are not part of the search result.

- **Fields:** The fields forming the index.

2. To **add a new index**, double-click in the first empty row. A list of the fields of the info area is displayed. Select the first index field. Click on the **Properties** cell to specify the index' properties (s. above). Add more index fields by clicking on the **Fields** cell (s. below).

   To **edit an existing index**:

   - Edit custom indices by clicking in the **Fields** column.

   - Extend predefined indices (except primary indices) by adding **Additional index fields**.

No.	Fields	Properties	Length	Binary-Sort	Not Null	Not in Key
1	Company	[ALPHA]				
2	Synonym	[ALPHA,NOT NULL]			✔	

Note: Additional index fields are ignored by the business logic and when executing triggers.

3. To add an **index field**:

   a. Click on the **Fields** cell (of a custom index).

   b. Click on the first empty row.

   c. Select a field.

d. For text fields you can define the following properties:

- **Properties:**

  UPPER: Adds the index in upper case (and therefore does not distinguish between upper or lower case).

  CASE: Adds the index with the field value and distinguishes between upper and lower case for that field.

  ALPHA: Removes all characters apart from letters and digits (e.g. spaces, special characters) and saves the result in a new field (`<field name>_GEN_A`). A database index is added, accessing this field.

  Note: Core Alpha Index only works with CRM.Win client. It does not work with CRM.Web. Furthermore, there is no configurable alphanumeric search in CRM, only a phonetic search. The phonetic search also allows searches for other fields and other info areas.

  PHONETIC: Adds a phonetic index in a new field (`<field name>_GEN_P`). Use this option to define a phonetic search index for Aurea CRM web. (The phonetic search fields are fixed in Aurea CRM win.) For a description of the algorithm used by the phonetic search, see *Phonetic Search* in the *Business Logic Manual*.

  Note: If a text field is already used in an index where the ALPHA or PHONETIC options have been enabled, the same field length must be used by this field in all other indices using the ALPHA or PHONETIC options.

  To search phonetically in KP you need to define the phonetic index in PE or CP. This phonetic index is then automatically used for KP as well if a field is searched that is mapped to a field with a phonetic index in PE or CP.

- **Length:** Enter the number of characters to be used by the index. If undefined, the entire field value is used.

- **Binary-Sort:** If checked, the sorting definitions defined in the `mmdb.ini` file (`COLLATION` (MS SQL) or `MM_NLS_SORT` (Oracle)) are ignored.

e. For field of any type you can check the **Not Null** cell, i.e. if the field contains no value the record is not a part of the search result.

4. To add an **additional index field**:

   a. Click on the **Additional index fields** cell.

   b. Click on the **Fields** cell.

   c. Select a field.

d. The field is added with property `[ADD]`.

e. The **Not in Key** flag is automatically set. This means that the field is added to the index as "included column", i.e. the field does not affect the sorting and uniqueness of the index. Remove the flag to change this behavior.
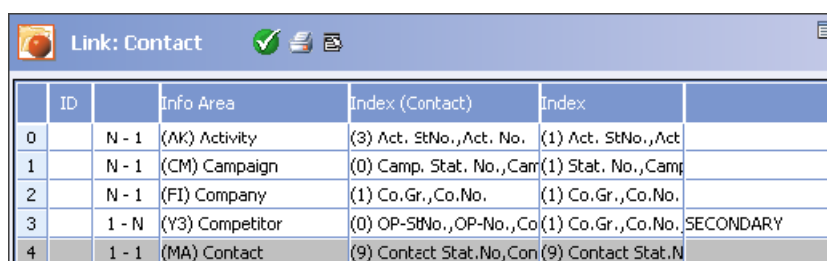
Note: The **Not in Key** option is not supported by Oracle databases.

Link

The **Link** column displays the number of links to other info areas.

To display the number of links to other info areas:

1. Click in the **Link** column to display the existing links or to add new ones.

	ID		Info Area	Index (Contact)	Index	
0		N - 1	(AK) Activity	(3) Act. StNo.,Act. No.	(1) Act. StNo.,Act	
1		N - 1	(CM) Campaign	(0) Camp. Stat. No.,Cam	(1) Stat. No.,Camp	
2		N - 1	(FI) Company	(1) Co.Gr.,Co.No.	(1) Co.Gr.,Co.No.	
3		1 - N	(Y3) Competitor	(0) OP-StNo.,OP-No.,Co	(1) Co.Gr.,Co.No.	SECONDARY
4		1 - 1	(MA) Contact	(9) Contact Stat.No,Con	(9) Contact Stat.N	

- Each info area is linked to itself. This entry is highlighted in gray.
- The number of the link is displayed in the first column.
- **ID:** An ID is displayed if several links exist to the same info area (e.g. a link from the **Relationship** info area to the source and target companies), see Link IDs on page 394.
- The third column displays the type of link: 1-1, N-1.
- Info Area: The info area that is linked.
- Index (<Info Area>): The index used by the current info area to form the link.
- Index: The index of the target info area.
- The attributes of the link are determined by the type of link. They are displayed in the last column:

  DUPLICATE: The info area is already linked to the target info area using the same index. For example, the **Relationship** info area is linked to the **Company** info area twice; once to the source company and once to the target company. One of these links is indicated as a duplicate.

  SECONDARY: If a dependent info area is linked by a link with the attribute **Secondary**, the dependent info area cannot be displayed from the parent info area.

  HIDE: The link is not displayed.

UPD/DEL: If the data in the index fields in one info area are deleted or changed, the corresponding fields in the linked info area are also updated. For example, if the company number is edited in the **Company** info area, this change is applied to all activity records associated with the company.

MUST: This attribute applies to the target info area. In this case the link is mandatory; i.e. if the fields used by the link have not been entered, the record cannot be added.

2. Click in the first free row in the table to define a new link.

3. Select the type of link:
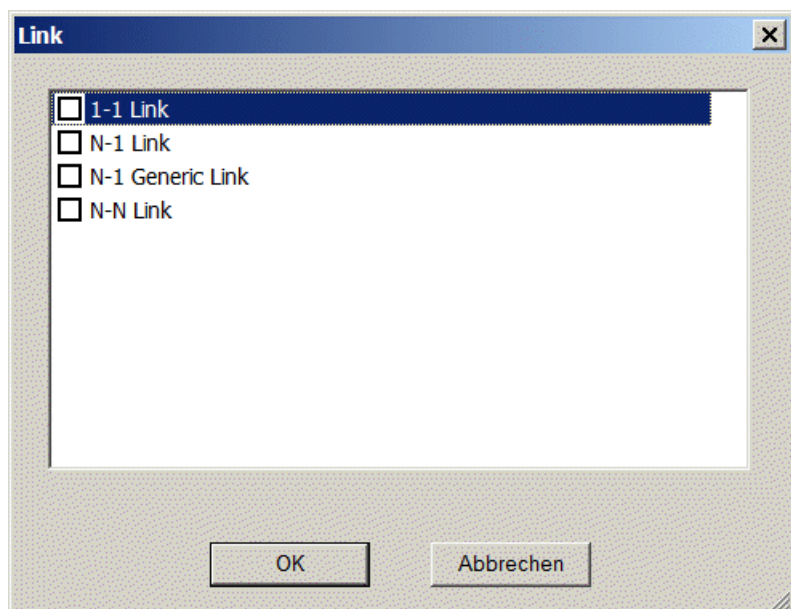
- A "1-1 Link" allows you to associate a record in the parent info area with exactly one record in the child info area.

- The "N-1 Link" allows you to associate any number of child records with the record in the parent info area.

- The "N-1 Generic Link" allows you to associate any number of child records with the record in the parent info area. The parent info area is not fixed, however; it can be any info area with a primary key composed of the station number and a serial number. Only one generic link can be defined for each info area.

- The "N-N Link" allows you to associate any number of child records with the record in the parent info area where the child records and the parent record have a common field or index in another record (e.g. all service contracts for an opportunity where the company is the same for the service contracts and the opportunity). 1-N is displayed as the link type (not N-N) in the third column.

4. Click on **OK**.

5. If you selected either "1-1", "N-N" or "N-1", the **Select Info Areas** window is displayed:

   a. Select the info area you wish to define a link to.

   b. Click **OK**.

6. If you selected the **Person** info area, a further dialog is displayed. Select the index used to link the person from this dialog.
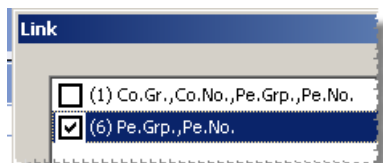
   Use index 1 to add a link to the **Company** and **Person** info areas; use index 6 to add a standard link to the **Person** info area.

7. Click on **OK**.

   For each newly defined link:

   - The corresponding key fields are added (and an additional field for the target info area for "1-N Generic Links").

   - a link field is added (a field of the type "reference (uid)" for reps or "reference (table)" for info areas). You need to define a level in the desktop format used to display the record when a user clicks on the link, see Defining New Levels and Defining Links in the *Aurea CRM win Administrator Guide*.

   - An index is created using the key fields. The index is unique for 1-1 links; the index is not unique for N-1 links, which uses key fields from the parent info area).

   Note: Generic links are **not** displayed in the link table. You need to delete the corresponding field to remove a generic link.

8. You can use the **Mapping** column to determine that additional fields are transferred from the linked info area, see Field Mappings.
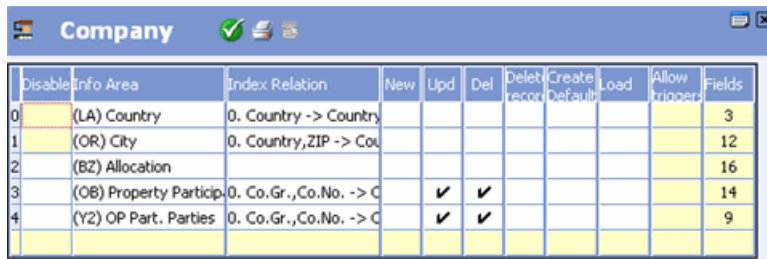
Mapping

The number of info areas to which information is transferred from the info area is displayed in the **Mapping** cell.

A link needs to exist between the source and target info areas for data to be transferred between info areas in this manner, see Link on page 305.

You can display existing settings and define additional fields that are mapped:

1. Click in the **Mapping** cell for the desired info area.

The target info areas are listed in the **Info Area** column. The **Index Relationship** column displays the index relationship with the target info area.

2. The following options are available:

- **Disable:** Use this option to turn off the mapping. For example, if the **City** info area mapping is disabled, adding a new company in a new city no longer automatically adds the city to the city table, see Adding New Cities (Aurea CRM win Main Module).

- **New:** Enable this option to determine that a new record should be added to the target info area whenever a new record is added to the source info area. The appropriate field values are transferred from the source record.

- **Del:** Enable this option to determine that the contents of mapped fields should be deleted in the target info area if the corresponding source record is deleted.

- **Delete record:** Enable this option to determine that the record in the target info area is deleted if the record in the source info area is deleted. This feature is already included in the data model for dependent info areas (e.g. deleting a company also deletes all persons in the company).

Note: The options **New, Del** and **Delete record** are only available for info areas that are linked via a 1:n or 1:1 relationship. The source record must contain the station number and serial number of the target record.

- **Upd:** Enable this option to determine that edits are transferred between the info areas:

  1 :n and **1:1** relationships: Changes to the record in the source info area are transferred to the mapped fields in the target info area.

  n:1 relationship: Changes to fields linked to a function (see Field Mappings) in the source record result in updates to the fields defined in the function in the target info area

- **Create Default:** Enable this option to determine that the contents of mapped fields are transferred to the source record when a new record is added. The

source info area must be a child of the target info area (child n-1 or child 1-1), see Adding New Info Areas on page 293.

- **Load:** Enable this option to determine that the contents of mapped fields are transferred as soon as a record in the source info area is linked to a record in the target info area.

Note: This option is only available for info areas linked via an n:1relationship.

- **Allow triggers:** By default, triggers initiated by events in the database (new, update, delete) are not executed for the target info area of a mapping. Enable this option to execute triggers in the target info area.

3. Click in the **Fields** cell to display and edit the mapping for the corresponding info area, see Field Mappings.

4. Click in an empty line to define a new mapping, see Defining Mappings.

5. Click on ✅ (**OK**).

Defining Mappings

To define a new mapping:

1. Click in the **Mapping** cell of the source info area.

2. Click in an empty line.

   A dialog box is displayed.

3. Select the desired target info area.

Note: If you wish to map an info area to itself or add a second mapping to an existing target info area, you need to add an additional link first, see Link on page 305.

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4. Select an **Index Relationship** and click **OK**.

5. Click in the **Fields** column to define the field mappings, see Field Mappings.

6. Click on ✅ (**OK**).

Field Mappings

To display and edit the list of mapped fields:

1. Click in the **Fields** column of the desired mapping.

	ID	Product	ID	Product Overview
0	7000	FI_StNo.	0	Co.Gr.
1	7001	FI_INo.	1	Co.No.
2	7012	PS_St.No.	4007	Prod.St.No.
3	7013	PS_INo.	4008	Prod.Ser.No.
4	7016	Product Name	7	Product
5	7011	Product ID	57	Product-ID
6	7018	Product Type	6	Product Type
7	7019	Product	7	Product

(In this example for the FS vertical, a mapping has been defined between a new info area named **Product** and the **Product Overview** info area (1:n link, index: Sno, Ino -> Link Type, Prod.St.No., Prod.Ser.No.".)

The table displays the IDs and the mapped fields in the source and target info areas.

2. Click in an empty line to define a new field mapping.

A dialog box is displayed listing the fields in the target info area.

3. Select a field and click **OK**.

A dialog box is displayed listing the fields in the source info area.

4. Select a field and click **OK**.

Note: Ensure that you map fields of the same type, see Aurea CRM Field Types. If the value is invalid for the field in the target info area, the field is left empty or the contents truncated. For example, if you transfer a field of the type "decimal (8 Byte)" to a field of the type "int (4 Byte)", the decimal places are lost.

Mapping catalog fields is only possible for fields using the same catalog.

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5. Click in the **Function** cell to select the function to be applied to the target info area.

Note: Functions are only available if the info areas are linked via an n:1 relationship and the **Upd** option is enabled for the mapping.

	ID	Invoice Items	ID	Invoices	Function
0	7003	Price	7000	Total Price	Sum
1	7004	Max	7001	Max	Maximum
2	7005	Min	7002	Min	Minimum
3	7006	INo.	7003	No. of Records	Number of record
4					
5					

The following functions are available:

• **Number of records**: Writes the number of child records to the parent record.

• **Sum:** Writes the sum total of the corresponding values in the child records to the parent records.

- **Minimum:** Writes the lowest value in the corresponding fields in all child records to the parent record.
- **Maximum:** Writes the highest value in the corresponding fields in all child records to the parent record.

If the link between the records is changed (i.e. the source record is linked to a different record in the target info area), values in the old and new records are recalculated.

6. Click on ✅ (**OK**).

You can use field mappings to transfer data from linked records, e.g. to transfer an item name from the **Item Master**. In this case, the info area to which data is to be transferred must be defined as the source info area. An n:1 link must exist between the source and target info areas, and the **Upd** option must **not** be enabled under **Mapping**.

Alternatively, you can add a reference field to the info area you wish to transfer the data to, see Adding New Fields on page 317.

Text

Click in the **Text** column to edit the names of the info area (singular and plural) and its fields.

	ID	Name	Reference (Text)	XML Name	Language-independent	0001 Deutsch	0002 English
		Company					
0	4243	Name (Plural)					
1	0	StaNo					
2	1	SerNo					
3	2	Company					
4	3	Synonym					

Enter the new texts in the **Language-independent** column and the columns for the defined languages, see Languages on page 109. For information on applying text changes, see Applying Text Changes.

The value in the **Language-independent** column is used if no alternative value is entered for a specific language (or its parent language). If no value is entered in the **Language-independent** column, the name in the **Name** column is used instead.

If the text is linked to a record in the **Text** info area, the **Reference (Text)** column contains a reference to the **Text** record.

XML Name

The **XML Name** column contains the XML field name. XML names of info areas and fields are vertical-independent. XML field names are used to identify fields for external interfaces and in configuration units in CRM.designer.

1. Enter XML names for new fields in the **XML Name** column. If you do not enter XML names, the following defaults are used:

   - Fields: `F<fieldID>`, e.g. F7000
   - Info areas: `<infoAreaID>`, e.g. C001

2. To view the built-in XML names of the default data model, select **Display resource texts** from the context menu:

	ID	Name	Reference (Text)	XML Name	Language-independent	0001 Deutsch	0002 English
		Company		Company		Firma	Company
0	4243	Name (Plural)					
1	0	StaNo		CoGrp		StaNo	StaNo
2	1	SerNo		CoNo		SerNo	SerNo
3	2	Company		Company		Firma	Company
4	3	Synonym		Synonym		Synonym	Synonym
5	4	Division		Division		Division	Division
6	5	Country		Country		Land	Country
7	6	County		County		Bundesland	County
8	7	Postal Code		ZipCode		PLZ	Postal Code

Note: XML names for built-in fields and info areas can not be changed.

Use the context menu option **Import XML names from dictionary.xml** to import custom XML names from earlier versions (as defined in `.. \system\xml\dictionary.xml`). Only XML names of custom fields and info areas are imported. Already existing XML names are overwritten without confirmation.

Automatic Numbering

The Core data model contains fields that are automatically numbered to reduce translation costs.

Example: Actual Value M1 to **M12** in P5

The texts for these fields are saved as "Actual Value M" for all 12 fields.

To customize the position of these numbers (e.g. to meet grammatical requirements of another language), you can use a '#' character. Enter e.g. "M# Actual Value" for the above example. '#' is replaced with the respective number, otherwise the number is appended to the end of the string.

Reusing Texts

To reuse an existing text you can reference other fields or catalog values using placeholders:

- {[FI,2]} … text of field 2 in the **Company** info area
- To reference an info area name use field number 4240: {[FI, 4240]} is the reference to the name of the info area "Company"
- {[FIX4,0]} … text of the fixed catalog **Activity Type**, value 0 "Telephone"
- {[VAR,2]} … text of the variable catalog **Country**

You can also use a reference within a text, e.g. "My {[FI,2]} (Private)".

Select the context menu option **Resolve references (blue)** to display the actual text instead of the reference.

If you want to use a reference for all languages, enter it in the **Language-independent** column.

Consolidating Texts

To keep your texts consistent and to reuse as many texts from the **Text** info area as possible you can search for identical texts used in other info areas:

1. Select a row.

2. Select **Search for identical texts** from the context menu.

All occurrences of the text in the data model are listed (info area names, field names, variable catalog names, fixed catalog values).

If the context menu option **Display resource texts** is active, the resource texts (i.e. the texts in the language DLLs) are searched as well and displayed in green. Custom texts that are identical to resource texts are displayed in red.

Use the following context menu options to consolidate your texts:

- **Remove row**: Removes the current row from the list. The consolidation functions are applied only to the displayed rows. If you remove a row, the changes are not applied to it.

- **Set all texts in the selected language to the same**: Copies the text of the selected entry to all entries for this language. Use this option to consolidate inconsistent translations.

- **Set all texts in all languages to the same**: Copies the text of the selected row and all languages to all rows in the list (including the reference to the **Text** info area if applicable).
- **Transfer the text in the selected field to the source field**: Copies the text of the selected field to the original field (the one from which you opened the list).

You can also insert references instead of texts:

	ID	Name	Reference (Text)	XML Name	Language-independent	0001 Deutsch
0	112	(ID) Company		Company		Firma
1	4240	(FI) File Name		Company		Firma
2	2	(FI) Company		Company	My Company	Meine Firma
3	76	(MA) Company		Company		Firma
4	34	(BR) Company		Company		Firma
5	6	(FB) Company		My Company	{[FI,2]}	Meine Firma

- **Transfer source field's reference to the selected field:** Enters the reference to the source field instead of a field name into the selected row.

  Transfer selected field's reference to the source field: Enters the reference to the selected field instead of a field name into the originally selected row (gray).

- **Transfer reference to all selected fields:** Transfers the reference to the selected field to all rows of the list.

  Select **Resolve references (blue)** to display the actual text instead of the reference.

3. Upon closing the **Search for identical texts** level a confirmation message is displayed: If you click **Yes** the text changes are saved.
4. To apply your changes you need to select **Apply text** from the context menu in the info area level, >> .

If you have custom texts that are the same as the original resource texts (displayed in red with **Display resource texts** active), you can delete these duplicate texts. Use the following context menu options (in the Text level of a specific info area and in the **Search for identical texts** level):

- **Delete all identical (red) texts in the selected row:** Reverts the red texts from the selected row to the original resource texts.
- **Delete all identical (red) texts in the selected language:** Reverts the red texts for the selected language to the original resource texts.
- **Delete all identical (red) texts:** Reverts all red texts (of the info area or the **Search for identical texts** list) to the original resource texts.

To globally remove custom texts from an info area or for all info areas in a specific language use the following context menu options:

- **Delete current info area's texts:** Reverts the custom texts for the current info area to the original resource texts (including the reference to the **Text** info area if applicable).

- **Delete current info area's texts (only core fields):** Select this option to only remove custom texts for built-in fields and not for user-defined fields.

- **Delete texts in selected languages and independent of info area:** Reverts all custom data model texts to the original resource texts (including the reference to the **Text** info area if applicable).

   For all three options you can select the languages for which you want to revert texts.

For stations with number >= 10.000 the following additional context menu option is available (not in the **Text** level but generally):

- **Delete all translations if the (<language>) translation equals the resource text:** Deletes all custom texts in all info areas that are identical to the resource texts.

Applying Text Changes

Use the following context menu options to apply text changes in the data model:

- For info area and field names:

   - Select **Apply texts** (in the **Info Area** level) to apply the text changes for the selected row.

   - Select **Apply all texts** to apply text changes for all info areas.

- For catalogs and values of fixed catalogs:

   - Select **Apply changes** to apply the text changes for the selected row.

   - Select **Apply all changes** to apply text changes for all catalogs (and values).

      These options are also available for info areas (**Text** column).

   When selecting one of these options the text changes are applied to the active data model. To create/update text table records for these texts, select **Transfer texts** in the **Text** info area, see Displaying and Editing Texts on page 373. The text record's ID is written to the **Reference (Text)** column in the data model.

In addition you can transfer texts to and from the **Text** info area. The following context menu options are available for info areas (**Text** column) and catalogs:

- **Transfer current info area's texts to the Text table (translate):** Select this option to transfer custom texts defined for an info area (or catalog) to the **Text** info area. You are prompted to choose the languages for which texts should be transferred.

   The text record's IDs are written to the **Reference (Text)** column. If a text already exists in the text table but is used in other formats or records, a new text record is created for the data model text. Select **Apply changes** to save the text table references in the data model.

If you delete custom texts from the data model, the corresponding text table records are deleted when selecting **Transfer current info area's texts to the Text table (translate)**.

To transfer the original resource texts of an info area as well (e.g. for translation purposes), activate the **Include resource texts** option before selecting **Transfer current info area's texts to the Text table (translate)**.

- **Transfer current info area's texts form the Text table (apply translation):** Select this option to transfer translated custom texts from the text table to the date model for the current info area (or catalog).

Note: Only texts that are already linked to a text ID (**Reference (Text)** column) can be transferred to the data model.

Triggers

You can use triggers to carry out database actions whenever a record is added, edited or deleted.

For example, you could calculate the key used by an external application and enter this value in a field.

1. Click in the **Trigger** column to enter the SQL code for the database trigger.
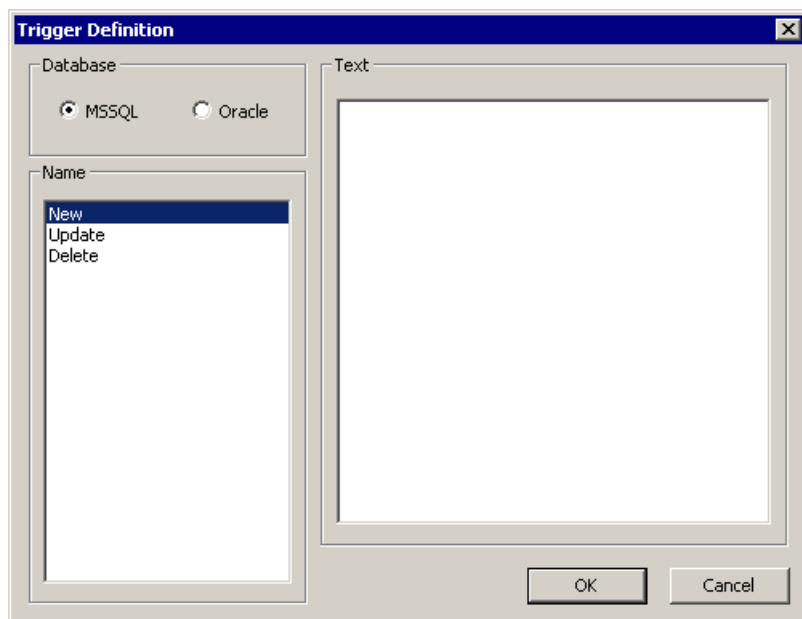
2. Select the type of database you are defining the trigger for (**MSSQL** or **Oracle**).

3. Select **New, Update** or **Delete** to determine whether the trigger is initiated by adding, editing or deleting a record.

4. Enter the SQL statement in the **Text** field.

5. Click **OK**.
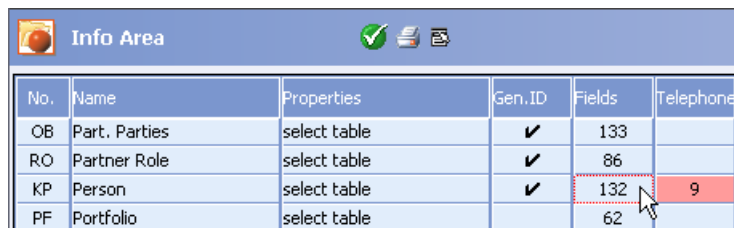
Note: This is only possible for custom ("generated") info areas.

Adding New Fields

Learn how to add new fields.
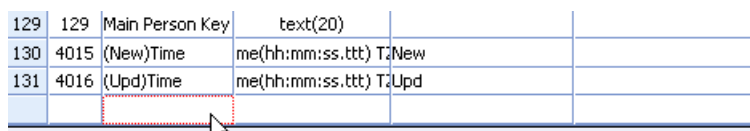
Follow the below steps:

1. Click in the **Fields** column of the info area you wish to add a field to.

2. Click in one of the first four columns in an empty row.

3. Select the type of field from the **Select Field Type** dialog, see Aurea CRM Field Types.

4. Depending on the selected field type you may need to define additional properties (e.g. the length for text fields), see Field Options on page 340.

5. Enter a name for each new field, see Renaming Fields on page 340. Otherwise the fields are not displayed in Aurea CRM.

Note:

1. Aurea CRM logs a warning if a field name in an infoarea is duplicated. The warning is in the following format:

Duplicated field name is found on info area 'XX'. Field name is 'XX' and field id is 'XX'. Please use unique xml names in your info area model.

2. An info area can contain up to 1088 fields (1024 user-defined fields, the rest are reserved for default fields).

Aurea CRM Field Types

The Aurea CRM data model supports the following field types:

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (data model)
Boolean field	y/n	B		---	
Text field	text	C		---	mandatory: Length (see Length on page 342) optional: Properties (see Properties on page 342), Mask (see Mask on page 348)
Telephone field	text	C	If CRM.phone is installed, clicking a number starts dialling. Phone fields are defined in the data model (**Telephone** column), see Telephone on page 300.	---	
E-Mail field	text	C	If the "E-Mail" property is set in the data model, e-mailaddresses are displayed as a hyperlink: Clicking the address opens the mail client.	---	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Hyperlink field	text	C	If the "Hyperlink" property is set in the data model, web addresses are displayed as a hyperlink: Clicking the address opens the web page.	---	
Rep fields	uid, reference (uid)	Z,L	Consists of four fields, e.g. **Rep** (Z) | **Rep ID** (L) | **Rep Group** (Z) | **Rep Group ID** (L) If a user enters a rep's ID in the **Rep ID** field, the **Rep**, **Rep Group ID** and **Rep Group** fields are filled in automatically.	---	optional (for uid): Properties (see Properties on page 342)
Catalog field	fix catalog	X	Field referencing a fixed catalog	---	mandatory: Catalog (see Catalog on page 341)
Catalog field	var catalog	K	Field referencing a variablecatalog	---	mandatory Catalog
Date field	date (4Byte)	D	Date field (without time)	---	optional: Mask (see Mask on page 348)

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Time field	time (hh:mm)	T	Time field with hours and minutes	---	
Time field	time (hh:mm:ss)	T	Time field with hours, minutes and seconds	---	
Time field	time (hh:mm:ss,ttt)	T	Time field with hours, minutes, seconds and milliseconds	---	
Combined date/time field	date, time (hh:mm)	D,T	Consists of two fields (Date and Time) Use these fields to represent time zones. Use `mm-ba.exe --writeDate-Time` to output a list of all combined date and time fields, see mm-ba.exe Parameters on page 13 .	---	
Combined date/time field	date, time (hh:mm:ss)	D,T		---	
Combined date/time field	date, time (hh:mm:ss,ttt)	D,T		---	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Number field	small int (1 Byte)	S	Integer between 0 and 255	---	optional: Format (see Format on page 344), Mask (see Mask on page 348)
Number field	short int (2 Byte)	S	Integer between 0 and 65535	---	optional: Format, Mask
Number field	signed int (4 Byte)	L	Integer between -2147483647 and +2147483647	---	optional: Format, Mask
Number field	int (4 Byte	L	Integer between 0 and 2147483647	---	optional: Format, Mask
Number field	long int (8 Byte)	L	Integer between 0 and 99999999999999999 (17 places)	---	optional: Format, Mask
Number field	decimal (4 Byte)	F	Floating point number	---	optional: Format, Mask
Number field	decimal (8 Byte)	F	Double-length floating point number	---	optional: Format, Mask
Binary field	binary		Field containing binary data Binary data can only be entered and read via add-on programming.	---	mandatory: Length (see Length on page 342)

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Station number field	sno (2 Byte)	S	Field containing a station number	---	optional: Format (see Format on page 344)
Serial number field	lno (4 Byte)	L	Field containing a serial number	---	optional: Format

Note: Do not use field type "lno (4 Byte)" for fields where you copy e.g. the serial number of **Offer** (PR) records (via trigger etc.), as this may result in an integer overflow. Either use a field of type "long int (8 Byte)" or activate the **Generate sequence numbers without year** configuration (MC) entry, see General Settings on page 41. If this option is enabled, serial numbers for PR, AU etc. are generated without the year.

Naming convention for station/serial number fields:

- **<InfoAreaId>-StaNo** / **<InfoAreaId>-SerNo**: Station and serial number fields representing the unique key of a record. <InfoAreaId> is the info area ID of the current record, e.g. **FI-StaNo** and **FI-SerNo** for company records.

- **<InfoAreaId>_StaNo** / **<InfoAreaId>_SerNo**: Station and serial number fields representing a link to another record. <InfoAreaId> is the info area ID of the linked record. If more than one link to the same info area exists, the fields are numbered, e.g. **FI_1_StaNo**, **FI_2_StaNo** etc.

| Tenant number field | mno (4 Byte) | L | Tenant number field: An integer field used to store the tenant number, see Tenants on page 221.

Naming convention: **<InfoAreaId>-TenNo**, e.g. **FI-TenNo**.

Only one field of this type is permitted per info area. | 4003 | |

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Currency field	currency	K	Stores the currency used for the record. This field accesses the **Currency** catalog. Only one field of this type is permitted per info area.	4005	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
External key fields	ext.key	K,C	Consists of two fields: **Ext. System** (K, 4017) | **Ext. Key** (C, 4018) This field type is available in all info areas whose key consists of station number plus serial number and for all info areas whose key consists of a numeric field (e.g. the **Rep** info area). The **Company**, **Person** and **Property** info areas have external key fields by default. The external key can be used when importing, see *Importing with External Keys* in the *Aurea CRM win Administrator Guide*.	4017, 4018	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Hierarchy code field	hierarchy code	C	Only available in info areas with at least one rep field. The field stores a rep's hierarchy code. If a rep is entered in the rep field, therep'shierarchy code is automatically entered in the corresponding hierarchy code field.		Read-only by default - can be changed, see Properties on page 342.

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
External match-up fields	ext.matchup	Z	Consists of three decoded fields (**Score**, **Text**, **Description**) used to match up data using an external application, see External Match-up on page 40. Aurea CRM copies the values from the node in the external XML file as follows: **Score (match-up)** (4019): The score that indicates how similar the records are ("Score" node). **Text (match-up)** (4020): Contents of the "Text" node. **Description (match-up)** (4021): Contents of the "Description" node.	4019-21	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Geographic coordinates field	geographic coordinates	F,X,L			

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			Select this type to save geographic coordinates for a record. The following fields are created: **x(geographic coordinate):** Latitude (decimal(8Byte)) **y(geographic coordinate):** Longitude (decimal(8Byte)) **Precision (Geo-coordinates):** fixed catalog defining the quality of the geocoding: empty (default), Manual input, High, Medium, Low, failed. **Updated (Geo-coordinates):** Date and time of creation or last update of the coordinates (long int(8Byte)) The out-of-the-box data model contains these fields for ID, FI, KP, ZA, OJ (BTB on-		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			ly) and PE. To use geographic coordinates in variable queries (using the location of the current rep or station as a comparison value), use the geographic coordinate fields in the **Rep** info area (ID) and/or define geographic coordinate fields in the **Station** info area (AS). If you are using MS SQL, an additional field (type: "geography", name: "XY_F<Field number>") is created in the database.		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			If an index is defined for the longitude and latitude fields and the "geography" data type is supported, a spatial index is only added for this field.For information on the interface with external applications, see Geo-Coordinates on page 49.		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
HTML field	html-text	C			mandatory: Length (see Length on page 342) If you linked the html field to a text field, the text field's length is used.

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			Select this type to add a field for storing formatted text in the database, e.g. when importing e-mails into Aurea CRM or when creating html-formatted text in Aurea CRM web (e.g. for e-mail activities). **Note:** Entering html-formatted text is not supported in Aurea CRM win. To create an HTML field: Create a new field of type "html-text". Select an existing text field to which the HTML field is linked. **Note:** Aurea recommends to always link HTML fields to text fields since not all		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			clients support html-formatted text in all circumstances.		
			When adding text to the HTML field, the plain text (without html tags) is automatically entered into the linked text field. Line breaks are preserved in the plain text field.		
			Make sure that only one of the fields - either HTML or text - is editable for the user. Otherwise the field contents may no longer be synchronized correctly:		
			If the plain text field is edited, changes are transferred to the HTML field.		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			If the HTML field is edited in a way that the field content no longer starts with a `<PRE>` tag, changes in the plain text field are no longer transferred to the HTML field.		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
2nd currency field	virtual(2nd currency)	Z	Stores values of a record in the 2nd currency, see *Currencies* in the *Business Logic Manual*. This field type is only available, if a field of type "currency" and a numeric field (small int, short int, signed int, int, long int, decimal) with the "Currency" property checked in the **Properties** column exists. The 2nd currency field's name is automatically generated as "<field name> (2C)". Changing the label of the linked numeric field changes the label of the 2nd currency field as well.		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Corporate currency field	corporate currency	F,K,D		4024-26	Properties (see Properties on page 342)

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			Stores values of a record in the corporate currency.		
			To create a corporate currency field:		
			Define a Z5 variable `update_CorporateCurrency` (for info area **ExchangeRate** (BTB/FS: WK, OTC: WT), field **Currency**).		
			Define the corporate currency as variable value, i.e. value of the "Currency" catalog.		
			In the data model, create a new field of type "corporate currency".		
			Select the field whose value should be converted.		
			The following fields are created:		
			4024 (Currency): A catalog field containing the		

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
			currency defined in the Z5 variable. 4025 (Rate): The exchange rate as defined in WT or entered manually. 4026 (Date): The date of the most recently entered exchange rate. the actual corporate currency field displaying the value of the reference field converted to the corporate currency. For detailed information on the business logic, see *Currencies* in the *Business Logic Manual*.		
Reference field	reference (field)	Z	Contains a field value transferred from another info area.	---	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
Link field	reference (table)	Z	Contains the link to another record. The actual link consists of key fields (e.g. sno, lno) plus one field of type "reference (table)", e.g the link to a **Ticket** (KM) record in the **Activity** (MA) info area. The list contains one entry per info area and link. Select the desired entry and confirm with **OK.** The fields in the selected info area are then listed in a new window. Select the field whose contents should be transferred and confirm with **OK**.	---	

Field Type	Field Type (data model)	Data Type	Description	Fixed Field No.	Additional Properties (datamodel)
System fields	\<various>	\<various>	Fields that track when a record was added, edited or communicated, when, on which station and by whom, see *System Fields* in the *Aurea CRM win Administrator Guide*.	>=4000	
Custom fields	---	---	Fields defined in `Custom-Fields.xml`.		

Renaming Fields

Learn how to rename a field.

1. Click in the **Text** column of the info area to change its field names.

2. Enter the field names in all the available languages, see Text on page 311.

Note: Aurea CRM logs a warning if a field name in an infoarea is duplicated. The warning is in the following format:

Duplicated field name is found on info area 'XX'. Field name is 'XX' and field id is 'XX'. Please use unique xml names in your info area model.

Field Options

Find the list of field options here.

Below are some of the options for info areas:

ID, Name, Type, Reference

The field name, type, reference and ID.

Serial Number

The first column displays the sequential serial numbers for each field.

ID

An ID (fixed field number) is automatically assigned and displayed in the **ID** column.

Core fields: 1-3,999

System fields: 4,000-5,000

Custom fields: from 5,000 (update internal); from 7,000 for customers, see Number Ranges in Aurea CRM on page 398.

Name

The field is automatically named and numbered according to its type.

Edit the name of the field using the **Text** field in the **Info Area** table, see Text on page 311.

Type

The field type is determined when the field is added and cannot subsequently be edited, see Aurea CRM Field Types.

Reference

Several associated fields are added for some field types. The **Reference** column displays the fields that a field is linked with. You cannot edit the values in this column.

date, time: Date and time fields are linked to one another.

sno, lno: The station number and serial number are used to form a record's unique key. It there is a link to another record using the station and serial number, a corresponding reference is displayed here.

uid: A corresponding group field is added for each rep field. If a user enters a rep's ID in the **Rep ID** field, the **Rep, Resp. Rep Group ID** and **Rep Group** fields are filled in automatically.

Catalog

This column is used to link a field with a catalog.

Users can then access the catalog when editing the field.

You can only edit the catalog for **fix catalog** and **var catalog** fields.

You cannot change the associated catalog once the info area has been applied to the active data model.

DB Column

The name of the column in the database is displayed here.

This name is assigned automatically and cannot be edited. The name is composed of F + ID or F + ID + _DT for date fields.

Time Stamp

This fields option is to display the current date and time.

Enable the Time Stamp cell for a field, if you wish to update the **Upd** field with the current date whenever the field contents are edited.

Length

The length of the field in the input mask is determined here.

This corresponds to the number of characters for text fields.

In Aurea CRM web fields with length >= 256 characters are automatically displayed as multi-line fields unless a contrasting field attribute is set.

Note: You can define text fields longer the 8 KB in Oracle. However, if you wish to communicate data to other stations using an MS SQL database, you should nonetheless restrict the field length to 8KB. Otherwise problems could occur in the receiving MS SQL database.

Properties

Properties for various field types.

You can select the following properties for the various field types:

Text Fields

- **Document:** Document fields function as standard document fields. A document field must have a **Length** of at least 20 characters.
- **E-mail:** Clicking on an e-mail field opens the mail client with an empty e-mail addressed to the recipient entered in the field. The field length should be at least 50 characters.
- **Hyperlink:** If a user clicks on a hyperlink field, the URL is opened in the user's web browser.

Rep, Date and Time Fields

- **Default:** When a new record is added, the current rep, date or time is automatically entered in this field.

Rep Fields

- **Rep, Group, Resource :** Use the first of the four linked rep fields ("uid") to determine whether reps, groups or resources can be selected in the field.

Numeric Fields

- **Currency:** If the info area already contains a field of the type **currency** determining the currency used by the record, you can select a numeric field used to store amounts in the selected currency.

All Fields

- **readonly :** The field is set to read-only and cannot be edited.

Further Properties

The following properties are only displayed and cannot be edited.

Property	Description
"in()"	Associated with an input function
"out()"	Associated with an output function
"filter()"	Search filter function
"hide"	Hidden field
"lock"	Locked field
"no sum"	No totals displayed in lists
"refFi"	Display the associated company as a reference
"refKp"	Display the associated person as a reference
"def.listfield"	Standard list field
"no listfield"	Not a list field
"no mask-field"	Not a mask field

Property	Description
"readonly"	read-only field (including for the SU)
"y/n"	Boolean field
"no comm.field"	Not communicated
"no times-tamp"	No time stamp is entered when the field is edited
"must"	Mandatory field
"select.lock"	Locked for selections
"activity.lock"	Locked for activities
"not used"	Obsolete
"mno"	Tenant number (names are output by language)
"free"	Free field
"lno"	Serial number
"sno"	Station number

Format

The format determines the output of the field contents.

Click in the **Format** column to select a format, depending on the field type.

Decimal places (0-7)

2

☐ Negative (-999)
☐ Leading zeroes (000999)
☐ Display zero values (0)
☑ Thousand separator (9,999)

○ Value tag (999.-)
○ Percent symbol (99%)

◉ Align left
○ Centred
○ Align right

[OK]   [Cancel]

Select the desired options. Depending on your settings, a code is displayed in the **Format** field.

Option	Description	Code
Decimal Places	Number of decimal places for decimal fields.	e.g. "#.1" (1 decimal place); "#.1234567" (7 decimal places)
Negative	Determines whether negative values are allowed.	"signed"
Leading zeros	Determines whether leading zeros are displayed so that the value takes up the full field length.	"leading zero"
Display zero values	Determines whether values of zero are displayed.	"0" "00:00" for time fields
Thousand separator	Determines whether a separator is used for numbers from 1,000 onwards. If a number entered exceeds the length of a field, digit grouping symbols are not displayed (irrespective of the setting above). This allows the entire number to be displayed.	"1.000"
Value tag	Adds a ".-" after the value.	".-"
Percent symbol	Determines that the value is displayed with a percentage sign.	"%"
Align left	The field contents are aligned to the left.	"left"
Centered	The field contents are centered.	"center"
Align right	The field contents are aligned to the right.	"right"
(no option)	Edit field with arrow	"button"
(no option)	Date format (d = day, m = month, y = year)	"ddmmyy", "ddmm", "mmyyyy", "mmyy
(no option)	Text field containing digits only	"only digits"
(no option)	Time format (h = hours, m = minutes, s = seconds)	"hhmmss", "hhmmss,ttt"

Depict Rep Reference

Rights definitions that check for a specific rep being entered in company-/person-dependent info areas may impact performance because the evaluation of such conditional access rights involves multiple tables. If configured, the **Rep Reference** info area (10) can be used instead: The **Rep Reference** info area contains a record for each instance of a rep in a dependent record which can be used in queries and rights definitions, see Rep-Based Access Rights on page 146.

To configure the creation of rep reference records:

1. Activate the **Depict Rep Reference** flag for all rep fields for which rep reference records should be created.

2. Apply the data model changes.

3. The creation of rep reference records is activated per station: Switch to the **Station Configuration** info area.

4. Activate the **Calculate rep reference** checkbox for those station where you want to use rep references.

5. Save.

Rep reference records are maintained via database triggers. Once the **Calculate rep reference** flag is set for a station (and communicated, if applicable), these triggers are created in the station's database for the info areas where a **Depict Rep Reference** flag was set.

For the above example (MA):

Entering/changing a rep in the MA **Participant** field creates/updates the respective rep reference record.

ID_GENERIC	ID_FI	ID_PE	LinkTyp	fid	cnt	unr	ugr	uart
4294967691	4294967297	4294967297	MA	12	0	100004	100014	0
4294967695	4294967359	4294967334	MA	12	0	100005	0	0
4294967695	4294967359	4294967334	MA	12	1	100012	0	1
4294967695	4294967359	4294967334	MA	12	2	100015	0	2

Note: Rep reference records can not be displayed in Aurea CRM win or Aurea CRM web. Fields from the **Rep reference** info area can not be used as mail merge fields. Manual changes to rep reference records are not supported.Rep reference records can not be transported via communication or CRM.cockpit.

If you add the **Depict Rep Reference** flag for a rep field, new database triggers and rep reference records are created accordingly. Removing the flag deletes the corresponding records from the **Rep Reference** info area (and the database triggers, if applicable).

Removing the **Calculate rep reference** flag removes the database triggers.

In addition, you can re-create rep reference records and the data base triggers using the **SQL tool** (`mmba.exe -q`):

1. Select an info area for which rep references are configured.

2. Click on **Calculate rep reference**.

   Use the **ReCreate Procedure** and **ReCreate All Procedures** buttons to re-create the database triggers.

For information on the SQL tool, see

Mask

Use the **Mask** column to determine the characters that can be entered in a field.

For example, you can determine that the station number consists of two groups of digits separated by a hyphen.

You can either enter these restrictions in the **Mask** field or select a list of predefined masks from the list. If you select a mask the code assigned to the mask is displayed (e.g. #108).

> **Note:** These settings are only applied to Aurea CRM win. You need to enable the **Masked input fields** option in the user interface settings (**Masks** tab) in order to use this function, see Masks Tab in the *Aurea CRM win Administrator Guide*.

Selecting Field Masks

1. Double-click in the **Mask** column or click on the small arrow to open the **Selection** dialog box.

2. Select one of the following options:

- **Numeric:** Only digits can be entered.
- **Alphanumeric:** No digits may be entered.
- **IP Address:** The field is made up of 4 blocks or 3 digits separated by a full stop; e.g. 123.123.123.123
- **E-mail:** The field must contain the @ sign.
- **Currency:** The field is displayed as a currency fields and uses the same settings (decimal places, digit grouping symbol).
- **Time (standard):** Time field using the format configured for the system.
- **Time (am/pm):** Time field with "am" or "pm" appended.
- **Time:** Time field without "am"/"pm".
- **Percent (without decimal places):** The number is displayed as a percentage without decimal places; e.g. "13 %".
- **Date (standard):** The date is displayed according to the Windows settings. However the date is not subject to consistency checks and the pop-up calendar cannot be accessed.

Defining Field Masks

You can determine your own input restrictions for fields by entering them directly in the **Mask** column.

- Fixed characters are entered directly
- Groups of characters are defined using the following format:

[LIMIT:FILTER:FLAGS:LENGTH:MIN:MAX]

• LIMIT	Number of characters allowed. Enter -1 for no limit.
FILTER	Permitted characters. You can enter the characters themselves or a range; e.g. "ABCD" or "0-9", "a-z".
FLAGS	Attributes that determine the behavior of the group, >> Flags Options on page 163.
LENGTH	Number of characters available for this group. If you have determined that leading zeros are displayed (FLAGS option), zeros are added until the number of characters is equal to the LENGTH.
MIN	The smallest possible value
MAX	The largest possible value.

You do not need to enter values for all options. For example, you could enter "[4:0-9]" and ignore all options apart from LIMIT and FILTER. However, if you only want to enter values for FLAGS, you need to precede the value for FLAGS with two colons (for LIMIT and FILTER).

Examples

Input	Explanation	Example
[1]	Up to 1 character	A
[3]	Up to 3 characters	7:4
[-1]	Any number of characters	Ad943
[1:A-Z]	Up to 1 capital letter	R
[3:A-Z]	Up to 3 capital letters	AUT
[3:0-9]	Up to 3 digits	123
[1:ABCD]	Up to 1 character; either A, B, C or D	A
[1:C-M]	Up to 1 character between C and M	F
[3] [3]	Two groups of up to 3 characters separated with a space.	BN1 4NE
[1:A-Z][2:a-z]	Up to 1 capital letter followed by up to 2 lower case letters.	Mfj
[4:0-9]-[9:0-9]	Two groups of digits separated by a hyphen. The first group can be up to 4 digits long; the second up to 9 digits long (station number - serial number)	1234-123
[3:0-9::3]-[3:0-9:3]	Two groups of 3 digits separated by a hyphen. If less than 3 digits are entered, the digits still occupy space for 3 digits	1- 1
[3:0-9:::0:255]	3 digit number no higher than 255	4

Flags Options

The options used to determine the attributes of a field can be combined with one another. Each attribute has an associated value:

Value	Explanation	Example	On Screen
1	If the LENGTH is set, the field is aligned to the left. Otherwise the field is aligned to the right.	***[3:0-9:1:3]*** ***[3:0-9::3]***	***1 *** *** 1***
2	Determines that the characters entered under FILTER are those that may **not** be entered.	***[3:0-9:2]***	***abv***
4	Removes any leading zeros.	[2:0-9:4]	
32	If the LENGTH is set, determined that any empty places are filled with leading zeros.	[3:0-9:32:3]	***001***
64	If fixed characters are entered to the right of the group, these characters are only displayed if the group is not empty.	[-1:0-9:64],-	1,- or empty
128	The group only becomes "active" if values from the group to its right overflow.	[3:0-9:192].[3:0-9:320],-	123,- 1.234,-
256	The group on the right is filled out first. The values in the group on the left are deleted first.	[3:0-9:192].[3:0-9:320],-	123,- 1.234,-
512	If the separator character is entered and the character is not allowed within the group, input switches to the next group.	[3:0-9:512]-[2:0-9]	Press "-" to jump to the second group.

Value	Explanation	Example	On Screen
4096	If a character is entered that is not permitted in the current group, the system tries entering it in the next group.	[3:0-9:4096]-[3:A-Z]	As soon as a capital letter is entered, the letter is entered in the second group.
8192	Prevents deleting a previous group when deleting a latest group.	[1:-:8192][3:0-9:192].[3:0-9:320],-	When deleting digits, the hyphen is not deleted.

- To enable multiple options, add the values for the options you wish to enable and enter this value in the **Mask** column.
- Note that value entered under FLAGS corresponds to a binary representation of an integer, whereby the first option corresponds to the least significant bit, the second option to the next bit etc.
- The values 64, 128, 256 and 8192 are used to define print options for currency fields. The thousand separator is only displayed when the fourth digit is entered (and removed if the fourth digit is deleted). Values in these fields are deleted from right to left.

Note: Saving: The options in the **Length, Properties** and **Format** columns only affect the display and not how data is saved in the database. The options entered under **Mask** determine that the data is also saved differently. For example, if [1:ABC]-[1:123] is entered, "A-1" would be saved in the database.

Importing: The value entered under **Length** is tested when importing data. Numeric values that exceed the threshold are refused; alphanumeric values are truncated to fit. The attributes entered under Mask are not taken into account when importing for performance reasons.

Reference Search

Use the reference search to check which objects (formats, queries, distribution logic, opportunity plan) use an info area, a field or a variable catalog.

The **Reference Search** context menu option is available in the following levels of the data model:

- **Info Area**
- **Fields**
- **Variable Catalog** node on the data mode main page: This results in a list of all catalog values referenced in formats etc.
- **Variable Catalog** list: Lists the references to values of the selected catalog.

Example: Reference search for "Country" catalog

	Info Area	ID	Type	User	Name	Quantity	
1	Format	100-1	Search Condition	SU	Condition Company	1	'Austria'{{100}}
2	Format	100-1	Rights		Right Country	1	'Switzerland'
3	Format	100-1	Rights		Right Country	2	'Hungary'
4	Format	100-1	Trigger		Trigger Country	1	'Switzerland'
5	Format	100-2	Read Engine		Readengine Company	1	'Hungary'

The last column displays the referenced catalog value with the tenant number in curly brackets (if applicable).

Deleting Entries

Learn how to delete info areas or fields.

Before deleting an info area or field or a variable catalog, select **Reference search** to check which objects (formats, queries, distribution logic, opportunity plan) refer to the info area, field or catalog you plan to delete, see . Edit these objects to remove the references.

Double-click in the first column and confirm the message to delete a field, info area or catalog value.

Fixed catalogs can only be deleted by double clicking when using the integrated view. Otherwise the first click opens the **Fixed Catalog** table. Resize the **Fixed Catalog** by dragging the left hand border. You can now delete the catalog by double-clicking. If you save your windows settings, the next time you double-click, you do not need to resize the window.

The info area, field and or catalog with the highest number (or ID) should **never** be deleted from the data model. If you no longer wish to use such a value, delete it from the mask or list or set it to inactive. If you remove such an entry from the data model and subsequently add a new one, the new entry is assigned the same number as the deleted entry. This can lead to problems when communicating the data model or in CRM.designer.

Example: Customer Complaints

This example uses a new table that is used to store complaints from customers.

The table should be dependent on the **Company** info area; i.e. complaints are stored for companies.

Adding the Customer Complaints table

First you need to define the properties of the new table:

1. Open the **Maintenance** module.

2. Switch to the **Data Model** info area.

3. Click **Generated** below **Info Area** in the tree structure.

   The **Info Area: Generated** table is displayed.

4. Click in the **No.** or **Name** cell in the first empty row to add a new table.

5. Choose "child, N-1" from the dialog box and click **OK**. This defines an N-1 relationship between the parent info area (**Company**) and this info area; i.e. a company can be linked to any number of customer complaint records, and each customer complaint is linked to a single company.

6. Select "Company" as the parent info area in the next dialog box and click **OK**.

   Your new line should look like the following:

No.	Name	Properties	Gen.ID	Info Area Fields	Telephone	Array fields	Index	Link	Text	Triggers
C000	C000	Included in selections	✔	12			3	3		

7. Click in the **Info Area** cell to display a table containing the fields in the new info area. A number of fields are added by the system. These include system fields, such as time stamps, delete and communication codes, as well as the fields required to establish the link between the new info area and its parent, key and index fields.

8. To add the **Description** field, used to store a description of the complaint:

   a. Click in one of the first four columns in an empty row.

   b. Select "Text" as the field type, and click **OK**.

   c. Specify the length for the text field in the **Length** column.

9. Add the other fields in the same manner, but select the corresponding field type from the dialog box:

   • Product Group: Select "var catalog" as the field type. Select "Product Group" as the catalog to link the field to the **Product Group** catalog.

   • Product: Select "var catalog" as the field type. Select "Product" as the catalog to link the field to the **Product** catalog. You are then asked to specify the parent catalog. Select "Cat.Var" (the only option) to link the **Product** catalog with the **Product Group** catalog.

   • Rep: Select "uid" as the field type. 4 new fields are added, that display the rep's name, ID, group and group ID.

   • Reply by: Select "date(4Byte)" as the field type.

10. Click on ✅ (**OK**).

11. In the row of the new info area click in the **Text** column.

    The info area and a list of the fields in the info area are displayed.

12. Enter the name of the info area (e.g. "Customer Complaints) and fields (e.g. "Description", "Product Group", "Product", "Rep", "Reply by") in the **Language Independent** and language-specific columns.

	ID	Name	Language Independent	0001 Deutsch	0002 English
		Customer Compl.	Customer Complaints	Reklamation	Customer Complaints
0	4001	Sno			
1	4002	Lno			
2	4010	New			
3	4011	Upd			
4	4012	Astnr.			
5	4013	DelCd.			
6	4014	CmCd.			
7	4015	(New)Time			
8	4016	(Upd)Time			
9	7000	LINK_FI_Co.Gr.			
10	7001	LINK_FI_Co.No.			
11	7002	LINK_FI			
12	7003	Text	Description	Beschreibung	Description
13	7004	Cat.Var	Product Group	Produktgruppe	Product Group
14	7005	Cat.Var_1	Product	Produkt	Product
15	7006	Uid	Rep	Bearbeiter	Rep
16	7007	Uid	Rep ID	Bearbeiter-ID	Rep ID
17	7008	Uid(group)	Rep Group	Bearbeitergruppe	Rep Group
18	7009	Uid(group)	Rep Group ID	Bearbeitergruppe-ID	Rep Group ID
19	7010	Date_2	Reply by	Beantworten bis	Reply by

13. Click on ✓ (**OK**).

14. Select **Apply info area** from the context menu to apply the changes to the data model used by Aurea CRM.

Integrating the new Table

In order to use the **Customer Complaints** table in Aurea CRM win, a level containing the info area needs to be defined.

1. Start the Aurea CRM win main module.

2. Select **Extras > Define Desktop** from the menu.

3. Click on **Define Levels**.

4. Click **OK**.

5. Click on 📋 (**New**) in the **Levels** pane.

6. You are prompted for an ID for the level. Accept the default value by clicking **OK**.

7. Enter the name of the level ("Customer Complaints") in all available languages.

8. Click on 📝 (**Edit**) next to **Info area selection**.

9. Select the **Customer Complaints** info area from the list.

10.Click **OK**.

11.Select a mask and list to be used by the level.

12.Click on [icon] (**Edit**) next to the **Settings** field.

13.Enable the **Select All** check box in the **Level commands** pane:

All the commands are then available in the **Customer Complaints** level.

14.Click **OK**.

15.Click on [icon] (**Edit**) next to the **Predecessor** field.

16.Select **Company + Person** as the predecessor level.

17.Click **OK**.

18.Click on [icon] (**Edit**) next to the **Relationship with Parent** field.

19.Select "Ratio n:1" and enable the **Mandatory** check box for the **Company** info area.

20.Click on [icon] (**Flags**) next to the **Company** info area and enable **PRO_PREL_KEY**. This setting causes the system to automatically enter the company group and number when adding a new customer complaint record.

21.Click **OK** three times.

Accessing the Level

In order to access the new level, you need to add commands used to open the level to the desktop format. You can open levels from the **Info** menu, the level header, context menu or icon bar, see Desktop in the *Aurea CRM win Administrator Guide*.

Database Analysis

You can analyze the structure and contents of your Aurea CRM database - the info areas used, the number of records per info area, the time of the last modification, customer-specific customizations (fields and formats).

The analysis results can be used e.g. to plan and execute the migration from Aurea CRM win to Aurea CRM web, see Migrating Data on page 407.

Executing the Analysis

Learn how to execute the analysis.

To analyze the Aurea CRM database:

1. Switch to the **Data Model** level in the **Maintenance** module.

2. Select **Analysis** from the context menu.

Note: The **Analysis** option in the context menu is available for the SU and users who have access to CRM process 1.5.1.6 "Data Model" and 1.5.1.6.40. "Analysis", see CRM Process Configuration on page 98.

The **Analysis** info area is displayed.

Info Area	Number of records	Records analyzed	Analyzed	Last record added	Last change
⊟ Rep	30	0			
Login	13	0			
Central Login Configuration	0	0			
Group Allocation	5	0			
Rep Add. Tenant	0	0			

When first accessing the **Analysis** level info areas that contain records are displayed in red. Info areas that contain no records are displayed in black.

When subsequently accessing the **Analysis** level all info areas are displayed in red until they have been analyzed (again).

Available context menu options:

- **Info areas:** The **Info areas** view displays the results of the analysis per info area (fields used, active triggers, workflows etc.), see Info Areas on page 360.

- **Format:** The **Format** view displays the results of the analysis per format type (number of formats and formats in use), see Formats on page 365.

- **Rep:** The **Rep** view displays the usage of the Aurea CRM modules per rep, login and station, see Reps on page 366.

Note: These options are only active once the data base has been analyzed completely.

- **Transfer to Spreadsheet:** Select this option to transfer the analysis results to Microsoft Excel.

- **Display info area abbreviations:** If this option is enabled, the info area IDs are displayed after the info area names in the **Info Area** column.

- **Display all:** If this option is enabled, all info areas are displayed. Disable this option to restrict the display to only those info areas that contain at least one record.

- **Analyze selected info area:** Select this option to analyze the currently selected info area. In this case, the result of the analysis only update the **Number of records** to **Fields** columns. Information on formats is not updated for the info area.

  You need to (re-)analyze the **Format** info area to update the information on formats used by the info area.

- **Migration:** Opens the **Migration** level, see Migrating Data on page 407.

Note: The **Migration** option is only available to internal update users and partners (**Select user group** option in the **Data Model** level).

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3. Click on ➡ (**Execute**) to analyze the entire database.

   Aurea CRM searches for records and formats in all info areas. The results of the analysis are displayed in three views (**Info areas**, **Format**, and **Rep**) and saved as a BLOB in a new record in the **Process Tracking** (T3) info area. Select **Transfer to Spreadsheet** to transfer the analysis results to Microsoft Excel.

The next time the **Analysis** level is opened the results are automatically loaded. The info field above the table displays the time and date at which the analysis was saved. All info areas are again displayed in red, as the contents of the database may have changed since the last analysis.

Info Areas

Learn about the info areas view displays.

The **Info areas** view displays the following information for each info area:

- **Number of records:** The number of records in the info area. Records marked as deleted are also included in the total.

  Double-click on the column-header to count the number of records in the info areas again. If the number of records counted differs from the number stored in the loaded analysis, the number is displayed in blue. Double-click in the **Number of records** cell to only count the records in that info area again.

- **Records analyzed:** The number of records analyzed in the info area.

  Different figures in the **Number of records** and **Records analyzed** columns result from records that have been marked as deleted; these records are counted but not analyzed.

- **Analyzed:** Date and time of the last analysis

- **Last record added:** Date on which the most recent record was added in this info area.

- **Last change:** Date of the most recent change to a record in this info area.

- **Q1-4 New/update:** These columns display the number of added and edited records over the course of the past year (i.e. the current date - 1 year) in "quarters" (i.e. 9-12 months ago, 6-9 months ago, 3-6 months ago, and the last 3 months).

- **Fields:** The number of fields in the info area that contain data in at least one record. Click on the **Fields** cell to display details on the corresponding info area, see Fields on page 300.

- **Search Condition/List/Selection etc.:** These columns display information on the number of formats of that type which reference the corresponding info area. Switch to the **Format** view to display an overview of the formats across the entire database, see Formats on page 365.

Info Area	Search Condition	Selection	Label		Rights active/inactive	Transformation	Import/Export active/inactive
⊟ Company	13	11	3		0 / 2	2	0 / 1
⊟ Person in Company	4	9	3				
⊟ Activity		4			0 / 1		
Repetition							
Note							

A column is displayed for each type of format where at least one format is stored in the database. To display/update these values, (re-)analyze the **Format** info area.

Click in a cell to display details concerning the formats of that type for the corresponding info area.

The following information is displayed for each format:

- Format name and name of the user who created the format. (No user name is displayed for global formats.)

- **Created on/Updated on:** The date on which the format was added / last updated.

Select **Print Format** from the context menu to display the selected format in the print preview; select **View XML** to display the format in the XML view.

Formats that are relevant when migrating to Aurea CRM web (e.g. word processor, rights, triggers etc.) are split up into active and inactive formats, see Active/Inactive Formats.

Click in a cell to display details concerning the formats of that type for the corresponding info area

Active formats are displayed in black; inactive formats in gray. Select **Active** or **Inactive** from the context menu to determine which formats are displayed.

Info Area	Rights active/inactive	Transformation	
⊞ Company	2 / 2	2	0

F **Company - Format**	🖥 🖹	

Rights	Created on	Updated on
BR_Logging	26.02.2013	
BR_Test	27.09.2012	26.06.2014
Konzernstruktur	16.04.2014	09.05.2014
SR_Standard	09.03.2012	26.06.2014

Fields

Click in the **Fields** cell in the analysis results to display details of the fields in the corresponding info area:

Info Area	Fields	Search Condition	Lists	Selection	Label	Word ocess
⊟ Company	52	13		11	3	

Company - Fields 🖥 🖹

No.	ID	Name	Quantity	Type	Catalog	DB Column	Time stamp	Length	Properties	Format
0	0	FI-StaNo	47	sno(2Byte)		ID		5		
1	1	FI-SerNo	47	lno(4Byte)		ID		9	no sum	
2	2	Company	47	text(120)		Firma	✔	120	in()	
3	3	Synonym	7	text(30)		Syno	✔	30		
5	5	Country	41	var catalog (2) Country		Land	✔	80	in()	
6	6	County	4	text(20)		Bland	✔	20		
7	7	Postal Code	17	text(10)		Plz	✔	10	in()	
8	8	City	19	text(40)		Ort	✔	40	in()	
10	10	Street	14	text(100)		Strasse	✔	100		
14	14	Area Code	7	text(6)		Vwl_O	✔	6		
15	15	Telephone	6	text(40)		Telefon	✔	40		
17	17	Fax	2	text(40)		Fax	✔	40		
18	18	E-mail	8	text(80)		EMail1	✔	80	E-mail	
20	20	Website	2	text(60)		Internet	✔	60	Hyperlink	
21	21	Label	6	var catalog (31) Label		Label	✔	60		
23	23	Area	4	var catalog (35) Area		Gebiet	✔	80		
24	24	Rep 1 ID	17	uid		AD1Id	✔	10	no sum , rep	leading z
26	26	Rep 2 ID	2	uid		AD2Id	✔	10	no sum , rep	leading z

The **Quantity** column displays the number of records where the corresponding field contains data. Fields that do not contain data in any record are not listed.

Active/Inactive Formats

Formats that are relevant when migrating to Aurea CRM web (e.g. word processor, rights, triggers etc.) are split up into active and inactive formats.

Note: Formats (e.g. XML reports) that are not integrated in other formats but can instead be accessed directly (from the **File** menu) are **not** counted as active formats.

Criteria for active formats:

Format Type	Criteria
Analysis	Used in: an active workflow an active mask or list an active desktop an active dashboard
Chart	Used in an active XML report
Communication	Used in a communication connection (C1)
Dashboard	Used in: an active desktop an active workflow an active mask or list
Desktop	Assigned to: an active rep record (rep or group) a station an active role Note: A Rep or Login Role is active if the Inactive field is disabled.
Import/Export	Executed at least once in the past year The time of the last execution is stored in the Communication Logs info area for imports, and directly in the format for exports. Note: The communication log records must be present on the station on which the analysis is carried out.
Info Area	Used in: an active desktop an active configuration (MC) entry, >> .

Format Type	Criteria
Masks (masks and lists)	Used in: an active trigger an active workflow an active mask or list an active desktop an active dashboard an active interface format an active info area format a level definition ("Defined levels" format)
Read engine (transfer fields format)	Used in: an active XML report an active analysis an active word processor format an active chart
Rights	Assigned to: an active rep record (rep or group) a station a role Or used in: an active workflow an active rights format in the case of global or local extensions
Timeline	Used in: an active dashboard an active mask or list an active desktop

Format Type	Criteria
Trigger	Used in: an active rights format an active workflow an active desktop an active mask or list an automatic selection ("Autom. Selection" and "Autom. Property Selection" (BTB only) formats) an active dashboard an active chart
User interface	Used in an active desktop
Word processor (transfer format)	Used in: an active workflow an active mask or list an active trigger
Workflow	Used in: an active rights format an active desktop an active mask or list an active dashboard an active chart
XML reports	Used in: an active workflow an active mask or list an active desktop an active dashboard

Formats

The **Format** view displays the results of the analysis per format type.

To update these values, re-analyze the **Format** info area.

A row is displayed for each type of format where at least one format is stored in the database. Formats that are relevant when migrating to Aurea CRM web are split up into active and inactive formats, see Active/Inactive Formats.

Format	Quantity	Active	Inactive
Search Condition	27		
Lists	3		
Selection	15		
Label	3		
Word processor	4	0	4
Marketing Activity	7		
Rights	8	5	3
Transformation	2		
Import/Export	2	0	2

Note: Formats (e.g. XML reports) that are not integrated in other formats but can instead be accessed directly (from the **File** menu) are **not** displayed as active formats.

Click in the **Quantity** cell of the desired format type to display a list of the available formats. Click in the **Active** or **Inactive** cells to restrict the display to only active or inactive formats.

The following information is displayed for each format:

• Format name and name of the user who created the format. (No user name is displayed for global formats.)

• **New/Upd:** The date on which the format was added / last updated.

• Active formats are displayed in black; inactive formats in gray.

Select **Print Format** from the context menu to display the selected format in the print preview; select **View XML** to display the format in the XML view.

Format	Quantity	Active	Inactive
Rights	8	5	3

Format - Rights

Rights	Created on	Updated on
Aktivitäten zählen	25.02.2013	
BR_Logging	26.02.2013	
BR_Test	27.09.2012	26.06.2014
GR_Admin	14.01.2014	
GR_User	14.01.2014	

Reps

The **Rep** view displays the usage of the Aurea CRM modules per rep, login and station.

The analysis is based on the data stored in the **User Tracking** (T1) info area.

Rep	Active	Configuration	update.CRM win	Rebuild	Import	Rights	Analysis	Communication
Quantity		2 / 1	5 / 2	1 / 1	3 / 2	3 / 2	1 / 1	3 / 2
⊟ Nutzung		0,190 / 2,000	23,190 / 25,632	0,190 / 4,000	0,190 / 1,000	4,381 / 9,200	4,571 / 96,000	1,571 / 4,714
⊟ Administrator (100026)		1	23	4	1	21	96	26
SU (1)	✔	1	13	4	1	17	96	5
SU (101)	✔		3			2		2
SU (200)	✔		3			1		10
SU (1000)	✔		2			1		
SU (1001)	✔		2					9
⊟ COM-User (100056)								2
COM (1)	✔							2
⊟ Import-User (100001)					1			
IMP (1)	✔				1			
⊟ Simon Service (100067)			1			14		
SIMON (1)	✔		1			14		
⊟ Susanna Müller (100023)(Inactive)		3	10		1	1		3
SUSI (1)	✔	3	9		1	1		3
SUSI (101)	✔		1					
⊟ mmserver1 (100037)			2					
SERVER1 (1)	✔		2					
⊟ WWW (100065)			6					
WWW (1)	✔		6					
⊟ Does not exist			445		1	56		2
BERTA (1)	✔		1					

A column is displayed for each used module containing the number of reps, the average usage and the number of times the reps and logins have logged in to the module

Quantity

Number of users per module:

The first value indicates the number of reps that have at some point logged on to this module

The second value indicates the number of reps that have logged on to this module in the past year (i.e. the current date - 1 year)

Nutzung

Average use of the modules:

The first value indicates the number of times users have logged on to this module divided by the number of users (login records) where the **Active** column is enabled.

The second value indicates the number of times users have logged on to this module divided by the number of users (login records) where the **Active** column is enabled and where the user has accessed the module at least once.

Below this node, a node is displayed per rep record (**Name + Rep/Group ID**) with all associated login names of the rep as child nodes (**User Name + Stat.No.** of the stations that the user has logged on to). The columns for the individual modules display the number of times the module has been logged on to.

Inactive reps are displayed in gray (the **Inactive** field is enabled in the rep record).

The "Does not exist" node contains all login names (**User Name + Stat.No.** the login is assigned to) that are not assigned to a rep record. This node is ignored when calculating the "Quantity".

Active Column

The **Active** column allows you to exclude individual reps (login records) from the usage calculations (e.g. administrative users such as COM, WWW, IMP etc.). The "Nutzung" row and the number of times that users logged on entered in the parent rep node (or "Does not exist") are updated accordingly.

Text Info Area

Use the **Text** info area to manage user-defined texts.

For further details, see Displaying and Editing Texts on page 373.

T Text										
0002 English / 0000 Language-indep	Record	Field Help	Data Model	Format	Info Area	Format Type	ID	Language-in	0001 Deutsch	0002 English
Number of employees?	✔				(F2) Question, (2) Ques		1, 11764		Wieviele Mitarbeiter?	Number of employees?
Number of faxes generated	✔	✔			(FH) Field Help, (14) Sh		1,3961		Anzahl der generierten Faxn:	Number of faxes generated
Number of hits	✔	✔			(FH) Field Help, (14) Sh		1,4739		Anzahl der Hits	Number of hits
Number of info areas from which data was i	✔	✔			(FH) Field Help, (14) Sh		1,3054		Anzahl der Infobereiche, aus	Number of info areas from which data was
Number of installed items	✔	✔			(FH) Field Help, (14) Sh		1,2602		Menge des installierten Artike	Number of installed items

The **Text** info area displays:

- All user-defined multi-language texts saved in formats (messages, field names, info area names, buttons etc.), see Entering Texts in Multiple Languages on page 369.

- All texts entered in multi-language fields in the database (e.g. field help, questionnaire etc.), see Multi-language Fields on page 371.

Words or sentences that occur multiple times (e.g. in several formats) are linked to a single entry in the **Text** info area, see Displaying References on page 378.

Use CRM.translation tool to translate user-defined texts, see CRM.translation tool on page 474.

The text IDs of new or edited field names and info areas are output in curly brackets in the `mm_dbstr.txt` file, see mmba.exe Parameters on page 13.

The following information is displayed for each text entry:

- **Record:** A check mark in this column indicates that the text is used in a record, e.g. a questionnaire or field help record.

- **Field Help:** The text is referenced by a field help record, see Field Help on page 380.

- **Data Model:** The text is used by the data model, i.e. a field or info area name or a value of a fixed catalog. For texts used as field or info area names the **Info Area** column contains the name of the info area.

Note: Values of variable catalogs are maintained in the **Catalog** info area, see Catalogs on page 270.

- **Format:** The text is used by a format (except the data model format), e.g. a trigger or mask.

- **Info Area:** Displays the info area where the text is used. If a text is referenced by more than one info area, the first occurrence is displayed.

  If a text is referenced by a record or the data model, the **Info Area** column displays the respective field name as well.

- **Format Type:** Displays the format type for texts referenced by formats. If a text is reference by more than one format, the first occurrence is displayed.

- **ID:** The ID of the text.

- Language columns: One column for each defined language plus the **Language Independent** column is displayed. (The text in the **Language Independent** column is used if no translation is available for a language (or its parent language).)

  The text for each language is saved in a separate text record. All translations of a text are linked via the **04_1_StaNo** and **04_1_SerNo** fields (unique key for translated texts).

Note: By default, the text in the **Language Independent** column is always displayed even when the native language text is present in the defined language column. To display the native language text enable the `Disable Language Independent Text Overrides Native` option in the general settings. For more information, see Disable Language Independent Text Overrides Native.

The usage information (**Record**, **Info Area** etc.) is automatically added to text records, if a text is added in the data model or when saving a record. To update all text records with this information, select **Calculate Text Usage** from the context menu.

Note: You cannot load any texts, propagate any changes or remove any references in the **Text** info area if the **Data Model** is open.

If you are using tenants: Do not define tenant rights settings for the **Text** info area. Tenant-dependent texts are not supported.

Entering Texts in Multiple Languages

You can enter user-defined texts (messages, field names etc.) in multiple languages in Aurea CRM.

To do so, you need to define the languages in the **Language** info area in the **Rights** module and assign the languages to the corresponding stations in the **Station** info area, see Defining Languages on page 109 and Assigning Languages on page 113.

You can define multi-language text fields in info areas in order to provide the means for users to enter data in their current language, see Multi-language Fields on page 371.

You can manage user-defined texts in the **Text** info area, see Displaying and Editing Texts on page 373.

To enter text in multiple languages:

1. Click on 💬 (**Multi-language Input**) next to a text field.

   The **Edit text** dialog box is displayed:

2. Enter the text in the desired languages or click on 📂 (**Load**) to load a text from the **Text** info area. Use Ctrl+Enter to add line breaks in multi-line fields.

   The **Text Selection** dialog box is displayed.

The list of texts is stored in the cache and updated every 30 minutes.

- Double-click on an entry to transfer it to the **Edit Text** dialog box.

- Click ![Edit icon] (**Edit**) to edit an entry.

- Click ![New icon] (**New**) to add a new entry.

- You can group entries in the list and move entries from one group to another, as in the **Text** info area, see Grouping Texts on page 374.

3. Click **OK**.

Click ![Remove link icon] (**Remove link**) in the **Edit Text** dialog box to remove the link between the text and the **Text** info area.

Multi-language Fields

You can add multi-language fields to info areas in order to display and enter data in multiple languages.

To do so, you need to link the desired info area with the **Text** info area. "Reference fields" allow users to enter information in multiple languages while accessing the **Text** table.

Multi-language fields are implemented by default for the following info areas: **Answer** (F3), **Field Help** (FH), **Question** (F2) and **Questionnaire/Portfolio** (F1).

To define a multi-language field, for example in the **Activity** info area:

1. Open the **Maintenance** module and switch to the **Data Model** info area.

2. Define an N:1 link from the **Activity** info area to the **Text** info area, see Link on page 305.

3. Make sure you select index "(2) 04_1_StaNo,04_1_SerNo,Language No.".

The fields **04_<linkID>_04_1_StaNo, 04_<linkID>_04_1_SerNo.** and **04_<linkID>_Link** are added.

4. Specify the length of the reference field (**04_<linkID>_Link**) and its name, see Length on page 342 and Text on page 311.

5. Apply the changes to the data model, see .

Aurea CRM web: Apply the changes to the CRM.designer database using CRM.bulkloader, see Data Model, CRM Processes, Roles and Catalogs in the *Aurea CRM web Administrator Guide*.

6. Add the field e.g. to the MA Details control, see Customizing Controls in the *Aurea CRM web Administrator Guide*.

The contents of such multi-language fields are displayed in the current user's current language. If no text is defined for the current language, the text is determined as follows:

- if a text exists in one of the parent languages, then this text is used
- otherwise the language-independent text is used
- if no language-independent text is found, the next available text in any other language is used (the search order is determined by the language numbers in ascending order).

If a user enters text into a multi-language field, the text is saved as follows:

- If no link to the text table exists, a new record is created either
  - for the current language (if the current language has no parent language)
  - or for the last parent language in the hierarchy
- If a link to the text table exists already, this text record is updated.

Note: This may alter a text in another language (s. above). Define conditional access rights for 04 to make sure users cannot change translations they are not supposed to change.

The record containing the field is not updated, i.e. the system fields containing the update information (**Updated by**, **Updated on** etc.) are not updated.

Note: When communicating info areas that contain multi-language fields, make sure you also communicate the related text table entries, see Communicating System Tables in the *Aurea CRM win Administrator Guide.*

By clicking 🗨 (**Edit**) next to the field users can add the text in other languages:

All languages assigned to the current station and which the user has access rights for are displayed. Exception: **All** languages defined in Aurea CRM are displayed for the administrator (SU).

The `Languages.Editable` and `Languages.Visible` Web Configuration parameters determine, which languages are displayed/can be edited (defaults: display = all, edit = current language), see Languages.Editable/Languages.Visible in the *Aurea CRM web Administrator Guide*.

`Languages.Editable` and `Languages.Visible` do not apply to the SU, i.e. the SU can view/edit all languages.

Note: The 💬 (**Edit**) icon is only visible in Expand views (not in lists).

Displaying and Editing Texts

Learn how to display and edit all texts defined in Aurea CRM.

To display and edit all texts defined in Aurea CRM:

1. Switch to the **Text** info area in the **Maintenance** module.

2. Select **Apply all texts** from the context menu. (Or click in a language column and select **Transfer language: <language>** from the context menu.)

   You can restrict which texts are transferred using conditions, e.g. applied to the format type (**Data** > **Define Conditions**).

3. Answer the prompt with **Yes**, see Propagating Changes on page 376.

   All user-defined texts are displayed in the table.

   • Click on a gray language column header to sort the texts in the column alphabetically.

   • Click 🔍 (**Find**) to search for a specific text, see Searching for Texts on page 375.

4. Double-click in the line you wish to edit.

The **Edit Text** dialog box is displayed.

5. Enter the desired changes and click on **OK**.

6. Write your changes to the formats, see Propagating Changes on page 376. (Records that reference a text from the Text info area load the (changed) texts at runtime.)

To add a new entry in the **Text** info area:

1. Click on ☐ (**New**).

The **Edit Text** dialog box is displayed.

2. Enter the text in the appropriate fields.

3. Click **OK**.

The text is displayed in a new line.

Grouping Texts

Learn how to group entries.

To group entries:

1. Add a new entry as the title of a new group.

2. Click on the entry you wish to assign to the group for a couple of seconds.

3. Drag the entry to the title. The entry is displayed as a gray shadow.

Drag an entry to the table's header to remove it from a group and move it to the top-most level.

Select **Expand all** or **Collapse all** from the context menu to display or hide all grouped entries.

Texts are grouped using the **04_1_StNo.** and **04_1_SerNo.** fields. The **04_1_StNo.** and **04_1_SerNo.** of the group name are written to the **04_2_StaNo.** and **04_2_SerNo.** fields.

User-defined texts in multi-language fields (see Multi-language Fields on page 371) can be assigned to groups when entered by entering values in the **Predecessor** fields using default values or triggers:

• Define the desired default values for the **04_2_StaNo.** and **04_2_SerNo.** fields in the **Text** info area, see Default Values when Adding Records on page 152.

• Define suitable triggers for the info areas containing multi-language fields, see Triggers on page 169.

Note: The default values and triggers do not work when adding texts from the tree view (📰 (**New**) button in the Text Selection dialog), see Entering Texts in Multiple Languages on page 369.

Sorting Texts

Texts in groups are sorted within the group.

To sort texts in the **Text** info area:

1. Click on one of the gray column headers to sort the entries in the column alphabetically.

   Empty texts are sorted according to the entry in the **Language Independent** column.

Searching for Texts

Learn how to search for texts info area.

To search for texts in the **Text** info area:

1. Open the **Text** info area in the **Maintenance** module.

2. Click 🔍 (**Find**).

3. Enter the text (or part of it) in the **Text** field.

4. Select the **Language**. If you do not select a language, the string is searched for in all languages.

5. The following search options are available:

   • **Case sensitive:** Enable this option to carry out a case sensitive search.

   • **Wildcards (* ?):** Enable this option to use wildcards in your search (* = several characters; ? = a single character).

> **Note:** Note: You can use literal character values of '*' and '?' using the escape sequences '*' and '\?'.

- **Hidden Texts:** Enable this option to search in text groups that are hidden (i.e. not expanded), see Grouping Texts on page 374.
- **Search Up:** Enable this option to change the search direction.

> **Note:** The search is carried out from the current cursor position.

6. Click **Find** to begin the search.

7. Click **Close** to exit the search.

Propagating Changes

Learn how to propagate changes.

You can restrict texts transferred to the **Text** info area and formats using conditions (e.g. a condition applied to the format type using **Data** > **Define Conditions** > **Format**).

> **Note:** When transferring new data model texts using a condition, make sure the condition includes the format types "Data Model" and **"Design"**. Otherwise the IDs of newly generated text records is not written to the data model.

Texts that you have deleted in the **Text** info area are **not** deleted in formats.

For information on all available options for applying text changes in the data model, see Applying Text Changes.

Changes to texts are transferred to branch offices within the scope of communication between stations. Ensure (using access rights) that no edited texts are input on the main office during communication.

Formats -> Text Info Area

To transfer changes to **texts in all languages** from formats to the **Text** info area:

1. Click in the left-most column and select **Transfer all texts** form the context menu.
2. Confirm the prompt with **Yes**.
3. Select any languages to be excluded from the match-up in the **Language(s) to exclude from match up when first transferring texts** dialog. All other languages are matched up when transferring the texts.
4. Click on **OK**.

5. If you selected all languages (i.e. no match-up), a message is displayed asking whether texts that are identical in all languages should be merged.

   - **Yes:** Texts that cannot be matched up using the unique key are matched up with entries in all languages and possibly merged.

   - **No:** Texts that cannot be matched up using the unique key are added as new entries.

6. A message is displayed if texts present in the **Text** info area have been changed in either the **Text** info area or a format:

   - Select **Update Record** to transfer the text from the format to the **Text** info area. In the above example, the record in the **Text** table would be changed to "New Phone Call".

   - Select **Update Format** to transfer the text entered in the **Text** info area to the all formats using the text. In the example above, "New Call" would be written to all appropriate formats.

   - Select **No changes** to retain both versions of the text, e.g. "New Call" in the **Text** info area and "New Phone Call" in formats. If you select **Transfer all texts** from the context menu again, the message is displayed again.

   - Select **Cancel** to cancel the process.

   To display this message for empty text strings, enable the following options in the context menu before transferring the texts:

   - **Prompt when transferring new texts and updating Text table (match up by ID):** The message is displayed if the text in the **Text** table is empty.

   - **Prompt when transferring empty texts and updating Text table:** The message is displayed if the text in the format is empty.

   The **Text** info area and formats containing the text are updated according to your settings.

To **transfer changes to texts in a single language** from formats to the **Text** info area:

1. Click in the desired language's column and select **Transfer language** from the context menu.

2. Confirm the prompt with **Yes**.

   The transfer is carried out the same way as for the **Transfer all texts** option.

Text Table -> Formats

Records that reference a text from the **Text** info area load the (changed) texts at runtime.

To propagate text changes to the formats referencing these texts:

1. Select **Write all texts** from the context menu to propagate all changes, or select a field in a language column and select **Write language** from the context menu to propagate the changes in the selected language.

2. Answer the prompt with **Yes**.

The updated texts are transferred to the formats.

Displaying References

Learn how to display references.

To list the formats that use a specific text:

1. Click in the corresponding line in the **Text** info area.

2. Select **Reference search** from the context menu. The formats that use the selected text and records that are linked to this text are displayed.

	File Name	ID	Type	User	Name	Quantity	
1	Format	1-1	Masks		test	1	Text is not identical
2	Format	0-1	Data Model			1	Info Area: Company, Field Number: 2,Text is not identical
3	Format	0-1	Data Model			1	Info Area: Contact, Field Number: 76,Text is not identical
4	Format	0-1	Design			1	Info Area: Company, Field Number: 2,Text is not identical
5	Format	0-1	Design			1	Info Area: Contact, Field Number: 76,Text is not identical

The info area and field number is displayed for texts used in the data model.

If texts differ between the format and **Text** table, "Text is not identical" is displayed as a comment.

3. Click on ✅ (**OK**), to return to the **Text** info area.

Select **Remove all References** from the context menu to remove the links between the **Text** info area and the formats. Select **Apply all texts** to read the references including all texts anew.

Merging Texts

You can merge text records in the **Text** info area to a single record

To merge texts:

1. Click on the text you wish to retain.

2. Select **Merge** from the context menu.

The **Merge** dialog is displayed.

3. Search for the texts you wish to merge with the initial text, see Searching for Texts on page 375.

4. Click on **Find**.

The search results are listed under **Merge with selected text**.

You have the following options:

- Click on ⊞ (**Edit**) next to the **Selected Text** field to edit the text you wish to retain.

- Click on 🔍 (**Find**) to search for further texts. Texts found by the new search are added to the list of results.

- To remove entries from the list, enable the corresponding check boxes and click on ⊞ (**Delete**).

- Click on ⊞ (**Delete All**) to clear the list.

5. Enable the check boxes next to the desired entries in the list. Click on ⊞ (**Select All**) to select all entries in the list. Click on ⊞ (**Clear Selection**) to clear the current selection.

6. Click on **Start**.

7. Confirm the prompt with **Yes**.

The selected text records are deleted. The text in formats using the selected texts is replaced by the text entered in the **Selected Text** field.

Note: Click on **Cancel** to cancel the replacement process. Any replacements that have already been made are not undone.

Field Help

Information about all the fields in the database is stored in the field help.

Field help is displayed as context-sensitive help in the Aurea CRM application.

To make the field help available for your users:

1. Download the field help from the Aurea CRM support page at https://support.au-rea.com.

2. Use CRM.translation tool to import it into your database, see Importing Field Help on page 495.

The field help is stored in the **Field Help** info area (FH). The FH table is linked to the **Text** table (04).

The field help is displayed in the current language. If no field help is available for the current language, the texts are determined as follows:

- if no field help is available for the current language, the parent languages are searched

- if no field help is available in the parent languages, the catalog base language is used

- if no field help is available in the catalog base language, the language-independent text is used

- if no language-independent text is found, the next available text in any other language is used (the search order is determined by the language numbers in ascending order).

Note: Import the field help to be used as a fallback for languages for which no translated field help exists to the catalog base language or as language "0" (i.e. language-independent).

You can edit the field help to adapt it to your requirements and to reflect customizations made to your system, see Editing Field Help on page 381. If you add new fields to your Aurea CRM database, make sure you define field help entries for them, see Adding Field Help for New Fields on page 383. The field help can be exported from and imported to Aurea CRM's database using CRM.translation tool, allowing you to edit and translate the texts in Microsoft Excel, see Exporting Field Help on page 496 and Importing Field Help on page 495.

Note: Access rights defined for the **Field Help** info area do not affect the displaying of the field help, i.e. **Deny Access** defined for FH does not prevent the field help from being displayed in Aurea CRM win and Aurea CRM web

Editing Field Help

You can edit the field help in the Aurea CRM win **Maintenance** module and in Aurea CRM web.

To access field help, go to **Administration** > **Field Help**.

Alternatively you can export the field help and edit its contents in Microsoft Excel, see Exporting Field Help on page 496.

To edit the field help in Aurea CRM:

1. Locate the field help record you want to change.

2. Double-click it to open the mask view.

3. Enter the desired text in the **Short Text** and **Long Text** fields. For more information, see Contents of the Field Help File on page 500.

4. To reuse another field's field help, click ▣ (**Search**) to change the **Reference**. Select the field whose field help you want to use.

Note: When reusing the same text for multiple fields, make sure all fields reference the same field to avoid circular references.

5. Click 💾 (**Save**).

> **Note:** The field help is cached on the server. However, changes to a field help record are applied within the same session. To display the updated field help in Aurea CRM web you need to recycle the application pool.

Note: Obsolete field help records (i.e. field help for deleted fields) are **not** automatically deleted from the database; you need to manually delete these FH records from the database (and from the XSLX file if you maintain your field help there).

Text Formatting and Placeholders

Learn about how to format text.

Markdown Syntax

You can format text in the field help using Markdown syntax, see http://en.wikipedia.org/wiki/Markdown. When displaying the field help, Aurea CRM win and Aurea CRM web convert the Markdown syntax automatically.

Placeholders

References to info areas and other fields can be entered using placeholders. These placeholders are replaced by the actual field name at runtime. Aurea CRM win displays these field names as a link to the referenced field.

Examples:

{FI/Country} references the **Country** field in the **Company** info area (Aurea recommends always using the XML field names).

{FI/22} references field 22 in the **Company** info area.

{PE} references the **Person** info area. (using field numbers is possible but not recommended)

Note: XML field names are case-sensitive.

You can output the XML field names using the `--xmlFieldNames` parameter, see mmba.exe Parameters on page 13.

When editing the field help in MS Excel, use the **Export XML field names** option to export the XML field names in an extra column of the XSLX for reference, see Exporting Field Help on page 496.

Conditional Text

You can define product-specific parts of the field help as conditional text.

Use the following syntax:

`< product >`||This is the product-specific text.||`<product>`

Available values for `<product>`: `win, web, mobile, pad`

Example:

```
This is a generic help text.  win||This  is an Aurea CRM win-specific help
text.||win web||This is an Aurea CRM web-specific help text.||web The
generic text continues.
```

If the help text ends with product-specific text, the closing tag may be omitted.

Adding Field Help for New Fields

You can check the field help against the current data model.

Aurea CRM automatically generates a field help record for those fields without any field help.

To update the field help for the current data model:

1. Select **Update field help** in the context menu.

2. Select **Take rights settings into account** to create field help records only for fields that you can access according to your current rights settings.

3. Select **Global System Fields** to generate **Field Help** records for all global system fields (field IDs 4000 to 4299). These **Field Help** records do not have an info area and only the field number is entered. Since these fields are used in almost all info areas with the same meaning, they are only stored once in the field help.

4. Click **Update All Info areas** or click **Select Info areas** and select the info areas for which you want to update the field help.

5. Decide if you want to view the new entries you have created.

> **Note:** This is done with a filter. Any other existing filters are removed from the Field Help list.

New field help entries contain NO FIELD HELP in the **Comment** column. You can now add information to the new field help records.

Delete Level

Use the **Delete** level to delete certain records under specific conditions from your database.

> **Note:** Back up your database before using the **Delete** level.

When deleting records, all deleted records' child records are also deleted.

Note: You can only delete data from one info area in each deletion process.

The **Delete Records** info area provides you with the following options:

Use the drop down list box in the top left-hand corner to select the info area from which records should be deleted.

Delete: Indicates the info area from which data are to be deleted.

Condit. Active: If a previously defined condition is to take effect, you should enable this check box. Click the **Condit. Activ.** check box or select **Data > Activate Conditions**.

Condition: Use the **Condition** button to restrict the records to be deleted even further.

You can only define conditions for the currently selected info area from which records are to be deleted. The box used for defining conditions appears, see Conditions in the *Aurea CRM win User Manual*.

Note: Only the Supervisor should delete records from the **Process tracking** info area. A condition should also be defined to prevent records with the status "open" from being deleted. Otherwise active processes is deleted.

Conditions are especially important when deleting or updating dependent records which are part of a previously defined selection. A selection record of all companies to which a telephone activity was entered, contains not only the activity records where the activity (type) = telephone but also all activity records (company/person) where at least one telephone activity exists.

Starting a deletion or update process would affect all the activity records in this selection. To therefore delete or update only those telephone activities that satisfy the condition activity (type) = telephone (one telephone activity), the condition must be activated again.

Selection: Activates the chosen selection.

Sel. Name: Should you only wish to delete the companies and persons included in a selection, not all the records:

Property Selection (BTB only): If you only want to delete companies and persons that have been limited by a property selection and not all records:

1. Double-click on the field to open the list of defined selections.

2. Select the desired property selection.

User Confirmation: If you want to be able to check the deletion process manually, enable the **User Confirmation** check box. For every record to be deleted, the system then prompts you to confirm the deletion manually.

Do Not Communicate Deleted Records:

By default, information on deleted records is communicated to other stations, see Communicating Deleted Records in the *Aurea CRM win Administrator Guide*.

Enable the **Do Not Communicate Deleted Records** option if you want to be able to delete records on one station, but retain them on another. Information on deleted records is not communicated to other stations, and records are only deleted physically on the local station.

Note: This setting is not applied to info areas for which the **Mark as Deleted** option is enabled in the access rights, see Mark as Deleted on page 155

Total: This field indicates how many records have been searched.

Deleted: Indicates how many records have actually been deleted.

1. Click on ➡ (**Execute**) to start deleting records.

Update Level

You can update field contents in the entire database from this info area.

Note: Back up your database before extensive updating measures!

You can update:

- data fields (numerical, alphanumeric values, or catalog values)
- Country and city entries

Note: You can only update a single info area at once.

The **Update** level provides you with the following options:

- Use the drop-down list in the top left-hand corner to select the info area from which you want to update records.

- **Condit. Active:** If a previously defined condition is to take effect, you must make sure it is activated. Click the **Condit. Active** check box or select **Data > Condition Active**.

- **Update Cond.:** With the **Update Cond.** button you can restrict the records to be updated even further.

  The dialog box used for defining conditions is displayed, see *Conditions* in the *Aurea CRM win User Manual*.

  The condition determines the records and field to be replaced. (The condition is set for an existing entry.)

  Conditions are especially important when deleting or updating dependent records that are part of a previously defined selection. A selection of companies to which a telephone activity was entered contains not only the activity records where the activity (type) = telephone, but all activity records (company/person) where at least one telephone activity exists.

  Starting a deletion or update process would affect all activity records in this selection. To delete or update only those telephone activities that satisfy the condition activity (type) = telephone (one telephone activity), the condition must be activated again.

- **Selection:** Activates the chosen selection.

- **Sel. Name:** Enable the Selection check box.: choosing a selection does not automatically activate it.

If you do not wish to update all records but only a subset of company or person records defined by a selection (or their supplementary info),

1. Double-click the field to open the **Selection** catalog.

2. Make the required selection from the **Selection** catalog.

• **Property Selection** (BTB only): If you only want to update companies and persons that have been limited by a property selection and not all records:

1. Double-click on the field to open the selection list.

2. Select the desired selection from the property selection list.

• **User Confirmation:** If you want to be able to check the update process manually, enable the **User Confirmation** check box. You are then required to confirm each updated record manually.

• **Updated:** This field indicates how records have actually been updated.

• **Field:** Name of the field to be replaced.

• **Replace with:** Beneath the mask is the replacement table. The replacement table contains all the fields in the currently selected info area. In this table you can specify in which field the current entry should be replaced with the new value. Double-click the field to open the catalog, if available. The contents of all the fields in the database to which the condition(s) apply(ies) are replaced with the entry in the Replace With field. To update a field without a replacement value (i.e. to replace the field with a blank field), select the field but do not enter a replacement value (no input).

• **Upd:** Click in the **Upd** column to specify which fields should be updated by the update process.

Note: Do not edit the **CmCd** field, as this could lead to inconsistent data during communication.

• **Start:** Before you start the update process, check that manual control has been activated (for safety's sake). To commence the update process, click the **Start** button.

• **User Confirmation:** If the **User Confirmation** check box is enabled, the first record appears inside a dialog box.

• **Update:** To update the record on the screen, confirm the update process with the **Update** button.

• **OK:** To retain the data in the record, accept the old entry with **OK**, and the next record appears on the screen.

• **Stop:** Use **Stop** to terminate the entire update process prematurely.

Example:

1. A city's area code has changed.

2. Click the **Update** icon in the icon bar.

3. Select **Company** from the drop down list.

4. Enable the **Condit. Active** check box.

5. Click the **Update Cond.** button.

6. Define the condition "Area Code=0222", and click **OK**.

7. In the **Area Code** row click the **Replace With** column.

8. Enter the new area code.

9. Check the **Upd** field on that row.

10. Click on ➡ (**Execute**).

   All the 0222 area code entries are replaced with the replacement value throughout the **Company** info area.

Displaying all Fields in a Mask

Learn how to display all fields in a mask.

Select **View > All Mask Fields** from the menu to display all fields in a level's info areas. The following options are available:

- Click on ⌸ (**Load all fields**) to display system fields as well, see System Fields on page 392.

- Click on ▤ (**Show last change**) to display the last modification date and time for each field.

- Double-click with the right mouse button in the window's header to display the following additional information:

The header contains the following information: Info area name (info area code - info area number) [record ID in decimal, Record ID in hexadecimal]

The following is displayed for each field: Field name (sequential field number | fixed field number | base field number - field type) [catalog number] {field length in the database, maximum input length} number of the field text in the resources

Note: Info area numbers and field text numbers are only intended for use internally by Aurea. For information on field numbers, see ID, Name, Type, Reference on page 340 and Vertical-independent Configuration on page 528.For information on field data types, see Data Types in Aurea CRM on page 391.

Language IDs

Learn about the language IDs in Aurea CRM.

Languages in Aurea CRM are identified using the following IDs and codes:

Language	Code	ID	Language	Code	ID
German	ger	0	Swedish	swe	16
English	eng	1	Finnish	fin	17
French	fre	2	Norwegian	nor	18
Spanish	spa	3	Turkish	tur	19
Portuguese	por	4	Croatian	cro	20
Dutch	nld	5	Serbian	ser	21
Danish	dan	6	Romanian	ron	22
Italian	ita	7	Japanese	jpn	23
Czech	cze	8	Chinese	chn	24
Hungarian	hun	9	Korean	kor	25
Slovakian	slk	10	Bulgarian	bul	26

Language	Code	ID	Language	Code	ID
Polish	pol	11	Thai	tha	27
Greek	gre	12	Albanian	alb	28
Ukrainian	ukr	13			
Slovenian	sln	14			
Russian	rus	15			

Module Numbers

Learn about the Aurea CRM module numbers.

Aurea CRM modules are identified using the following numbers:

Configuration	0	CRM.cockpit	13
Main Module	1		
Rebuild	2	CRM.phone	15
Import	3	CRM.mobile	16
Rights	4	CRM.webservices	17
Analysis	5		
Communication	6		
Print	7	CRM.connector	20
Export	8		
Maintenance	9	CRM.server	22
Aurea CRM web	10	CRM.pad	23

CRM.interface	11		
CRM.connectLive	12		

Data Types in Aurea CRM

In some dialog boxes, the field type is also displayed along with the field name and number.

The following data types are available:

- B = Boolean (logical)
- C = Character string
- D = Date
- F = Floating point number
- K = Variable catalog
- L = Long integer
- S = Short integer
- T = Time
- X = Fixed catalog
- Z = Decoded field. Values in these fields are automatically entered by the business logic. Z-fields do not exist in the database. (Examples: reference fields, fields that contain links to other records, rep fields, rep group fields, 2nd currency fields, external match-up fields etc.).

  Z-fields cannot be added as search fields or used for defining filters and queries.

  The content of a Z-field is not updated in lists if the target record is updated by another process. Workaround: Instead of the Z-field add a linked field of the target record to the list. Example: Instead of using the **Company** field (MA:76), add the **Company** field from FI as linked field to the MA List control.

System Fields

System fields are fields that track when a record was added, edited or communicated, when, on which station and by whom.

System fields have field numbers starting from 4,000. Select **View > All Mask Fields** from the menu and click on ▦ (**Load all fields**) to display the system fields.

- **Created on:** Date the record was created.

- **Updated on:** Date the record was last updated.

- **DelCd:** Delete code, used to indicate that the record has been deleted. This field is automatically enabled if a record is deleted that has been communicated to other stations (determined from the **CmCd** field), see Communicating Deleted Records in the *Aurea CRM win Administrator Guide*.

- **Added on StNo.:** Number of the station the record was added on.

- **CmCd:** Communication code that indicates whether the record has been communicated to other stations.

- **Created at:** Time the record was created.

- **Updated at:** Time the record was last updated.

- **Created by Rep ID:** ID of the rep that added the new record.

- **Created in Module:** Module the new record was created in.

- **Updated on Station:** Number of the station on which the record was last updated.

- **Updated by ID:** ID of the rep that last updated the record.

- **Updated in Module:** Module the record was last updated in.

- **Com Station:** Number of the station from which the record was last communicated to the current station.

- **Com Date:** Date on which the record was last communicated to the current station,

- **Com Time:** Time at which the record was last communicated to the current station.

- **Created by:** Rep that created the record.

- **Updated by:** Rep that last updated the record.

Fields with Fixed IDs

Learn about the fields with fixed Ids.

The following fields have fixed unique field IDs. They are visible in the data model.

ID	Name
4003	TenNo
4005	Currency
4010	Created on
4011	Updated on
4012	Added on StNo.
4013	DelCd.
4014	CmCd.
4015	Created at
4016	Updated at
4017	Ext. System
4018	External Key
4019	Score (match-up)
4020	Text (match-up)
4021	Description (match-up)

The following fields have fixed unique field IDs. They are NOT visible in the data model (flagged as VirtualCore). They are automatically created for each info area..

ID	Name
4200	Created by ID
4201	Created in Module
4202	(Created on) internal code
4203	Updated on Station

ID	Name
4204	Updated by ID
4205	Updated in Module
4206	(Updated on) internal code
4207	Com Station
4208	Com Date
4209	Com Time
4210	Created by
4211	Updated by
4215	Time stamp
4223	Last communicated on
4230	Number of records

Link IDs

Learn how link Ids are assigned.

Links are assigned the following IDs based on their type and context:

ID	Description
0	Default link
1,2,3...	More links to the same info area (e.g. three additional links to FI in KM)
125	Generic N:N link
126	Generic N:1 link

ID	Description
127	Generic 1:N link
250-299	User-defined links. (Number ranges for links defined by partners or for Industry Solutions, >> Number Ranges in Aurea CRM on page 398.)
300-499	Reverse links, i.e. links in the opposite direction
500-599	Company-related links (i.e. the person key is reset to "0") Example: FI -> MA - use link 500 to read only company-related records. These links are available for PE as well ("person-only" related links): PE -> MA via link no. 1 reads child records linked to PE and KP. PE -> MA via link no. 500 reads only records linked to PE.
>=1000	Links to the **Rep** info area
900-939	Indirect links from **Relationship** records (PB) to all info areas containing indexed links to FI and/or PE: • **900-919:** Returns all records linked to the **source** company/person of the relationship record. • **920-939:** Returns all records linked to the **target** company/person of the relationship record. The relationship record determines whether child records are read company-/person-dependently: If the relationship record is e.g. company-independent, the child records are read in the same manner.

ID	Description
950,960,970,980	Links from FI/KP/CP/PE to PB allowing to read PB records within corporate structures: • **950:** Returns all relationship records in the structure (including siblings). • **960:** Returns all parent relationships of the current record. • **970:** Returns all child relationships of the current record. • **980:** Returns all parent and child relationships of the current record. Use 951,961,971,981 to read company-related (or "person-only") relationship records. For details on defining corporate structures, see Corporate Structure in the *Business Logic Manual*. Analogous: Links from AR to IS allowing to read IS records within item structures, see Item Structure in the *Business Logic Manual*.

ID	Description
24000-29999	Indirect links from FI/KP/PE/CP (via PB) allowing to read child info areas based on relationship records: • **24000:** Returns all child records of all records where a relationship exists **from** the current record. • **26000:** Similar to 24000-25999, but only relationship records with **Affiliate** = `true` (or a custom condition defined by Z5 variable `CORE::INDIRECT -PB-LINK`) are taken into account. These links are used by the Affiliation View, see Affiliations on page 23. **Note:** Displaying only company-related child records of affiliation members (e.g. when using the respective Tree view flag) is not supported. • **28000:** Returns all child records of all records where a relationship exists **to** the current record (i.e. a reciprocal relationship). These links are only available if the company or person key of the source info area is part of the link and if the target link is indexed. The link ID is composed of the base link ID (1,2,500, etc.) and the corresponding indirect link ID (24000, 26000 etc.). Child records that are directly linked to the current record are always returned. The result set does not contain duplicate records.
30000-130000	

ID	Description
	Indirect links from FI/KP/PE/CP (via PB) allowing to read child info areas within a corporate structure (see Corporate Structure in the *Business Logic Manual*): • **30000:** Returns the entire corporate structure (including siblings). • **32000:** Returns all parents of the current company/person. • **34000:** Returns all children of the current company/person. • **36000:** Returns the parents and children of the current company/person. The link ID is composed of the base link ID (1,2,500, etc.) and the corresponding indirect link ID (30000, 32000 etc.). By default, all existing relationship records are taken into account when using links 30000-36000. You can restrict the relationships by **Relationship Type** via a condition defined in a Z5 variable `CORE::INDIRECT-PB-LINK-TREE-0`. In addition you can create up to 9 additional links 40000, 50000 etc.) to depict different corporate structures (corporate group, supplier, etc.) via additional Z5 variables `CORE::INDIRECT-PB-LINK-TREE-1` to `9`. The same link IDs are used to access records in product hierarchies: **Indirect links AR -> AR via Item Structure (IS) records** (see Item Structure in the *Business Logic Manual*). Analogous to the Z5 variables `CORE::INDIRECT-PB-LINK-TREE-0` etc. you can filter item structure records (IS) by **Structure type** via variables called *CORE::INDIRECT-IS-LINK-TREE-0* to *CORE::INDIRECT-IS-LINK-TREE-9*.

Number Ranges in Aurea CRM

IDs for user-defined info areas, fields, catalogs, links and indices are assigned from number ranges depending on the selected user group or station number

For further details, see Station Number Ranges on page 526.

Sta-tion No.	Type	Info Areas	Fields	Fixed and Vari-able Cata-logs	Fixed Cata-log En-tries	Links	Indices	CRM Pro-cesses	Lan-guages
10000	Base	A0-500	6000 - 6999	6000 - 6999	80-104	150-174	100-199	200-249	1-99
10001	Indus-try So-lution Dev (BTB)	U0-500	5000 - 5999	5000 - 5999	130-154	175-199	200-299	400-499	100-499
10002	Indus-try So-lution Dev (OTC)	U0-500	5000 - 5999	5000 - 5999	130-154	175-199	200-299	400-499	100-499
10003	Indus-try So-lution Dev (FS)	U0-500	5000 - 5999	5000 - 5999	130-154	175-199	200-299	400-499	100-499
10010	Base	A500-599	13000 - 13499	7000 - 7199	105-109	25-29	500-599	250-279	1-99
10011	Base	A600-699	13500 - 13999	7200 - 7399	110-114	30-34	600-699	280-309	1-99
10012	Base	A700-799	14000 - 14499	7400 - 7599	115-119	35-39	700-799	310-339	1-99
10013	Base	A800-899	14500 - 14999	7600 - 7799	120-124	40-44	800-899	340-269	1-99

Station No.	Type	Info Areas	Fields	Fixed and Variable Catalogs	Fixed Catalog Entries	Links	Indices	CRM Processes	Languages
10014	Base	A900-999	1500 - 15499	7800 - 7999	125-129	45-49	900-999	370-399	1-99
10020	Industry Solution Dev	U500-599	15500 - 15999	8000 - 8199	155-159	200-204	1000-1099	500-519	100-499
10021	Industry Solution Dev	U600-699	16000 - 16499	8200 - 8399	160-164	205-209	1100-1199	520-539	100-499
10022	Industry Solution Dev	U700-799	16500 - 16999	8400 - 8599	165-169	210-214	1200-1299	540-559	100-499
10023	Industry Solution Dev	U800-899	17000 - 17499	8600 - 8799	170-174	215-219	1300-1399	560-579	100-499
10024	Industry Solution Dev	U900-999	17500 - 17999	8800 - 8999	175-179	220-224	1400-1499	580-599	100-499
10100	Partner	P0-P499	10000 - 10999	10000-10999	180-189	225-229	400-449	600-699	500-999
10101	Partner	P500-P599	11000 - 11499	11000-11499	190-194	230-234	450-459	700-719	500-999

Sta- tion No.	Type	Info Areas	Fields	Fixed and Vari- able Cata- logs	Fixed Cata- log En- tries	Links	Indices	CRM Pro- cesses	Lan- guages
10102	Partner	P600- P699	11500- 11999	11500- 11999	195- 199	235-239	460-469	720-729	500-999
10103	Partner	P700- P799	12000- 12499	12000- 12499	200- 204	240-244	470-479	730-739	500-999
10104	Partner	P800- 899	12500- 12999	12500- 12999	205- 209	245-249	480-489	740-749	500-999
<10000	Cus- tomer	C0-999	7000 - 8999	1024 - 4999	210- 255	250-299	300-399	800-999	>=1000

Note: Language number ranges are **ignored** when automatically assigning language numbers. They are used exclusively when merging data models in order to prioritize field texts, >> Merging Data Models on page 523.

Regular Expressions Syntax

You can use regular expressions in triggers, workflows and to transform field contents.

This makes it easier to edit or evaluate texts.

The following functions are available:

• Search: The system searches for a string in a text.

• Match: Similar to "Search", except that the search is only successful if the entire text matches the search criteria.

• Find: Similar to "Search", but returns only the position where the string was found.

• Replace: Certain strings are replaced by others.

• Transform: Transforms the text based on a predefined pattern.

General Notation

A command to evaluate a regular expression is a list of parameters separated by commas. Each parameter can be included in single or double quotation marks. If a parameter contains one or more commas, the parameter needs to be specified within quotation marks.

Note: Note: The regular expression parameter uses the comma as a delimiter. In order to be interpreted correctly, ensure that you enclose the parameter using comma as a delimiter within double quotes.

The order of the parameters is as follows:

TYPE,REGEX,MODIFIER,OPTIONS,POSITION,OCCURRENCE,…

TYPE and REGEX must always be specified, the remaining parameters are optional or dependent on the function.

- TYPE: The function type
- REGEX: The regular expression
- MODIFIER: Dependent on the regular expression language
- OPTIONS: Options that control the behavior of the regular expression, >> *Options* below.
- POSITION: The position in the source text from where the processing should start. The default is 0 (start of the text). The position may not be more than the length of the text.
- OCCURRENCE: Determines which occurrence of the text should be returned. The default is 1 (the first occurrence) for one-off operations (e.g. search) and 0 (all) for other operations (e.g. replace and transform).

By default, the grammar **ecma** is used. A different one can be specified by a language flag (**bre**,**ere**,**awk**,**grep**,**egrep**):

e.g. s,John,,grep;i

For more information on the regular expressions that are supported, see http://ms-dn.microsoft.com/en-us/library/bb982727.aspx.

The following examples always use "john.doe@example.org" as the source text.

Options

General options (>> OPTIONS above) consist of a single character. Upper and lower case are treated differently. Multiple options must be separated using semi-colons.

Example: The option 'i' is used to compare strings ignoring upper and lower case:

Regular Expression	s,John,,i
Result	john
Description	In this case, all characters are converted to lower case before being compared. This option can only be applied to specific strings and not to character ranges.

For more information on the available options, see http://msdn.microsoft.com/en-us/library/bb982727.aspx.

Options supported by the C++ backend

Language flags: bre,ere,ecma,awk,grep,egrep

Syntax modifiers: icase,nosubs,optimize,collate

Match options and format flags: bol,eol,bow,eow,any,null,cont,prev and fdef,fsed,fnocpy,ffirst

Functions

Search (TYPE = s): Searches for a string and returns it. If the string cannot be found, an empty string is returned.

Regular Expression	s,[a-z]+
Result	john
Description	Searches for a string consisting purely of letters.

Regular Expression	s,[a-z]+,,,2
Result	hn
Description	Searches for a string consisting purely of letters starting from the 3rd character (position 2).

Regular Expression	s,[a-z]+,,,,3
Result	example
Description	Searches for the third occurrence of a string that consists purely of letters.

Match (TYPE = m): Tests whether the entire string matches the regular expression. If so, the entire text is output, otherwise an empty string is returned. If a modifier is specified, the result of the modifier is returned.

Regular Expression	m,[a-z]+\.[a-z]+@example.at
Result	empty
Description	Tests whether the e-mail address contains "@example.at". As this is not the case in our example, an empty string is returned.

Regular Expression	m,[a-z]+\.[a-z]+@example.org
Result	john.doe@example.org
Description	Tests whether the e-mail address contains "@example.org". As this is the case in our example, the entire text is returned.

Regular Expression	m,([a-z]+)\.([a-z]+)@example.org,$1
Result	john
Descriptions	Tests whether the e-mail address contains "@example.org". As this is the case in our example, the result of the modifier '$1' is returned.

Find (TYPE = f): Searches for a string and returns the index (starting with 0 relative to the start position). If the string is not found, -1 is returned.

Regular Expression	f,[a-z]+
Result	0
Description	Finds the first string (consisting of letters only) at position 0.

Regular Expression	f,[a-z]+,,,2
Result	0
Description	Searches for the first string (consisting of letters only) starting at position 2. Finds the string at position 2 and returns the relative position as 0.

Regular Expression	f,[a-z]+,,,,3
Result	9
Description	Finds the third occurrence of a string consisting of letters only.

Regular Expression	f,[a-z]+,,,8
Result	1
Description	Searches for the first string (consisting of letters only) from position 8 . Finds it at position 9 and returns the relative position as 1.

Replace (TYPE = r): Searches for a text and replaces the text with the text specified in the MODIFIER parameter. This function does not support the OCCURRENCE parameter.

Regular Expression	r,@,-AT-
Result	john.doe-AT-example.com
Description	Replaces all occurrences of '@' with "-AT".

Regular Expression	r,[a-z]+,xxx
Result	xxx.xxx@xxx.xxx
Description	Replaces all strings consisting purely of letters with "xxx".

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Regular Expression	r,@[^.]+,@xxx
Result	john.doe@xxx.com
Description	Replaces the string starting with the '@' character up to the first period ('.') with '@xxx".

Transform (TYPE = t): Transforms the input text and returns the result. The following optional parameters can be specified at the end of the regular expression:

- DELIMITER: The text to be inserted between individual occurrences of the search string.
- BEGIN: The text to be inserted at the start of the generated text.
- END: The text to be appended at the end of the generated text.

Regular Expression	t,([a-z]+)\.([a-z]+),'($2,$1)',,,,;,<,>
Result	<(doe,john);(com,example)>
Description	Swaps strings consisting purely of letters and separated by a single period, separates the two strings with a comma and encloses them in brackets. Strings transformed in this manner are separated by a semicolon and enclosed in angled brackets.

Regular Expression	t,([a-z]+)\.([a-z]+),'($2,$1)',,,1,;,<,>
Result	<(doe,john)>
Description	Swaps strings consisting purely of letters and separated by a single period, separates the two strings with a comma and encloses them in brackets. Only one occurrence is transformed; the DELIMITER parameter is therefore not included in the result.

Regular Expression	t,([a-z]+)\.([a-z]+),'($2,$1)',,,2,;,<,>
Result	<(com,example)>
Description	As above, but with the second pairs of strings.

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Migrating Data

You can migrate data and formats in an existing customer solution for into another Aurea CRM environment in order to reuse the data and formats.

Examples of use cases:

- Aurea CRM win > Aurea CRM web
- Aurea CRM win > Industry Solution
- within Aurea CRM win: user-defined info areas > core info areas

You can (partially) automate the following tasks when migrating data:

- Moving data to different fields of info areas based on mappings
- Adjust or convert existing masks and other formats

Data is migrated to the current database.

Note: Some changes made to data within the scope of migrating data are **irreversible**. Before migrating, back up your database or first carry out the migration on a test system, see Recommended Procedure on page 430.

User-specific settings (e.g. list settings, active conditions, sort orders etc.) saved in the `*.cfg` files cannot be migrated; these settings are lost.

Below topics are solely directed at internal Aurea CRM users and partners.

Accessing the Migration Area

Learn how to access the migration area.

To access the **Migration** area:

1. Switch to the **Data Model** level in the **Maintenance** module.

2. Select **Migration** from the context menu.

   You can also open the **Migration** area from the **Analysis** level, see Executing the Analysis on page 358.

Note: The **Migration** option is only available to internal Aurea users and partners (**Select user group** option in the **Data Model** level). You do not need to carry out an analysis of the database to use the migration functions. Information on active/inactive formats and the fields in use can however only be obtained from a database analysis.

The **Migration** level is displayed.

Migration History	Date, Time	Duration	Result	Info
Merged with template	31/05/2011, 16:03			[Sno=101] ID: 25, 31.05.2011, 16:03
Migrate info areas	05/10/2011, 17:31		Sum=8 New=8	Bearbeiter (ID) -> Person (KP)
Migrate info areas	05/10/2011, 17:32		Sum=45	Person (KP) -> Bearbeiter (ID)
Migrate info areas	05/10/2011, 17:33		Sum=45 Upd=8	Person (KP) -> Bearbeiter (ID)
⊟ Test format migration	14/10/2011, 15:29	1 Sec	Sum=256 Upd=2	Migrate info areas
Search Condition	14/10/2011, 15:29			<SU><FilterAnfrageart>
Rights	14/10/2011, 15:29		OK	<BR_Test_indirekte_Referenz>
Rights	14/10/2011, 15:29		OK	<BR_Test_indirekte_Referenz_generischer_link>
Rights	14/10/2011, 15:29		OK	<GR_Außendienst>
Communication	14/10/2011, 15:29		OK	<alles senden/empfangen>
Communication	14/10/2011, 15:29		OK	<Zentrale to/from Offline-Stationen>
Trigger	14/10/2011, 15:29			<Datensatz vor Änderung>
Tenant Right	14/10/2011, 15:29		Not migrated	<MR_Standard>
Read Engine	14/10/2011, 15:29			<Angebot_Felder>
Read Engine	14/10/2011, 15:29			<Kunde/Bearbeiter/Angebot>
Info Area	14/10/2011, 15:29		Not migrated	<link-test>
Workflow Designer	14/10/2011, 15:29			<id=1,6>
Workflow Designer	14/10/2011, 15:29		OK	<id=1,7>
Workflow Designer	14/10/2011, 15:29		OK	<id=1,8>
Test data migration	14/10/2011, 15:31			Migrate fixed catalogs

All changes (and test runs) are logged in the **Migration History**. The **Result** column displays the number of records or catalog values that were changed by the migration process.

Conflicts and errors are displayed in red. These need to be resolved manually. In the case of errors, the error code is output to the **Result** column, see General Error Codes on page 508.

If data models have been merged on the current station, this is also logged in the migration history ("Merged with template" entry, irrespective of the source station's station number), see Merging Data Models on page 523.

3. Carry out the migration. The following options are available from the context menu:

- **Migrate languages:** Converts the existing language numbers to new ones, see Migrating Languages on page 409.

- **Migrate tenants:** Converts the existing tenant numbers to new ones, see Migrating Tenants on page 410.

- **Migrate station number:** Converts a station number to a new one. All records that contain the station number are edited accordingly, see Migrating the Station Number on page 411.

- **Map variable catalogs:** Defines the mapping of existing catalog values to new/existing catalog values in another variable catalog, see Mapping Variable Catalogs on page 413.

- **Migrate fixed catalogs:** Converts catalog values within a fixed catalog, see Migrating Fixed Catalogs on page 416.

- **Migrate info areas:** Migrates data from one info area to another, see Migrating Info Areas on page 417.

- **Export masks:** Exports mask formats as XML files, which can be imported into CRM.designer, see Exporting Masks on page 426 and Importing Mask Formats into CRM.designer.

- **Delete line:** You can delete individual lines or nodes in the migration history, e.g. to document the steps that are actually required (in order to migrate the data to a live system).

Note: Triggers and workflows defined in the currently valid access rights and any business logic functions are triggered by changes carried out within the scope of migrating data. Any such changes are **not** logged in the **History** (H0).

4. Click on 🖫 (**Save**). The migration history is saved as a format with the type "Migration".

   The next time the **Migration** level is opened, the last used format is loaded. Click on 📂 (**Load**) to load another format. If no migration format is found, the corresponding record in the **Process Tracking** (T3) info area is read.

5. Click ✅ (**OK**) to close the **Migration** level.

Note: You may need to close the **Maintenance** module and restart for all changes to be visible after migrating.

Migrating Languages

To migrate from a "classic" Aurea CRM win solution to an Industry Solution, you can convert the existing language numbers to the language numbers used in the Industry Solution.

The languages in the Aurea CRM database are uniquely identified by their number (**Language No.** field in the **Language** info area), see Languages on page 109.

To migrate languages:

1. Select **Migrate languages** from the context menu in the **Migration** info area.

Source	Target	Migrate Language (00)
1 - Deutsch	1000	
2 - English	1001	
3 - Français	1002	

   The **Source** column lists the languages currently stored in the database.

The Base Solution uses language numbers < 100. For this reason, suggestions are displayed in the **Target** column for languages with numbers < 100: 1000 + the number of the corresponding Aurea CRM language (e.g. 1000 + 7 for Italian). If the resulting number is already assigned to a language in the database, no number is suggested.

2. Enter the desired new language number in the **Target** column. If you do not enter a new number for a language, the existing number is retained.

   You can merge languages by assigning the same target number to several languages. Before merging languages, ensure that there are no conflicts between texts stored in these languages.

   Note: Catalog entries in the catalog base language are **ignored** when migrating languages, i.e. existing catalog entries in the catalog base language are kept in the catalog base language (language number 0) after migrating the languages, and cannot be moved to another language within the scope of migrating. You need to subsequently merge these catalog entries, e.g. using an import/export.

3. Enable the **Migrate Language (00)** cell if you want to migrate language numbers in the **Language** (00) and **Station Language** (01) info areas as well.

   Disable the corresponding cell for those languages where a target record already exists (with the new number) in the current database.

4. Select one of the following entries form the context menu to being the migration:

   • **Migrate all rows:** All language numbers are migrated.

   • **Migrate selected row:** Only the language number in the currently selected row is migrated.

   Changes are applied to records, catalogs and formats according to your settings and are logged in the **Migration History**.

5. Click ✅ (**OK**) to return to the **Migration** level.

Migrating Tenants

Learn how to migrate tenants.

The Aurea CRM database supports tenants, see Tenants on page 221. In order to migrate from a "classic" Aurea CRM win solution to an Industry Solution, you must migrate tenant numbers, if the existing customer solution uses tenant numbers that are also used in the Industry Solution.

Note: Free fields defined as tenant fields in tenant rights are **ignored** by the migration process. Define proper tenant fields ("mno" type) in the affected info areas,

edit the tenant rights accordingly and copy the tenant number to the new fields before migrating tenant numbers.

To migrate tenants:

1. Select **Migrate tenants** from the context menu in the **Migration** info area.

Quelle	Ziel	Mandant (M1) migrieren
1 - Mandant Österreich		
2 - Mandant Deutschland		
3 - Mandant Schweiz		
100000 - Admin		

The **Source** column lists the tenants currently stored in the database.

2. Enter the desired new language number in the **Target** column. If you do not enter a new number for a tenant, the existing number is retained.

You can merge tenants by assigning the same target number to several tenants. Ensure that there are no overlaps before merging tenants.

3. Enable the **Migrate Tenant (M1)** cell if you want to migrate tenant numbers in the **Tenant** (M1) and **Additional Tenant** (M2) info areas as well.

Disable the corresponding cell for those tenants where a target record already exists (with the new number) in the current database.

4. Select one of the following entries form the context menu to being the migration:

* **Migrate all rows:** All tenant numbers are migrated.
* **Migrate selected row:** Only the tenant number in the currently selected row is migrated.

Changes are applied to records, catalogs and formats according to your settings.

5. Click (**OK**) to return to the **Migration** level.

Migrating the Station Number

Learn how to migrate station number.

Aurea CRM stations are uniquely identified by their station number, see Station on page 111. You can convert an existing station number to a new one (e.g. if a customer solution uses a station number reserved for the Industry Solution (1, 9001)). The change is applied to all records.

To migrate the station number:

1. Select **Migrate station number** from the context menu in the **Migration** info area.

2. Enter the station number you wish to change in the **Source** column.

3. Enter the new station number in the **Target** column.

4. Select **Migrate station number** from the context menu.

5. Confirm the prompt with **Yes**.

   The migration is carried out as described in Station Number Ranges on page 526: All records that contain the station number are edited accordingly. The changes are logged in the **Migration History**.

6. Click ✅ (**OK**) to return to the **Migration** level.

Migrating Document Fields

You can migrate the **Customer Document** info area (D2) to the **Document** info area (D1).

For further details, see Customer Document (D2) -> Document (D1).

To migrate all info areas containing document fields:

1. In the data model (**Data Model** > **Info Area** > **Link** column), create a 1:1 link from D2 to D1.

2. In the Migration Tool, select **Migrate Info Areas** from the context menu.

3. Select "Customer Document (D2)" as a **Source** and "Document (D1)" as a **Target**.

4. Select the 1:1 link under **Link**.

5. Click **OK** (✅).

6. Select **Migrate Document Fields** from the context menu in the **Migration** info area to update all document fields in records with the new document key. The appropriate D1 and D3 records are created as well.

Mapping Variable Catalogs

Within the scope of migration, you can convert catalog values in a variable catalog to values in another variable catalog.

In the process, values is child catalogs can be migrated to non-hierarchical catalogs, see Migrating Hierarchical Catalogs.

To define the mapping of variable catalogs:

1. Select **Map variable catalogs** from the context menu in the **Migration** info area.

2. Double-click in the **Source** column to select the catalog whose values you wish to migrate.

3. Double-click in the **Target** column to select the catalog to which you wish to migrate the values.

Select **Delete line** from the context menu to delete a mapping.

4. Select **Mapping definition** from the context menu.

A list of all catalog values in the source catalog is displayed, along with recommendations for the migration. Values are matched up using the catalog value's **Text**.

The color-coding indicates the following:

- **White:** Catalog value prior to migration.

- **Yellow:** The catalog values is not yet present in the target catalog and is added when saving.

- **Pink:** The catalog value is already present in the target catalog (e.g. "Europa/Europe" in the example). You can change these values by selecting **Select target value** from the context menu and selecting a different value from the target catalog.

  Catalog values whose mapping you have edited (using **Select target value**) are also displayed in pink.

- **Green:** The catalog value has already been saved (**Save selected row** option) and is used when migrating data and formats. Subsequent changes to green rows are ignored.

- **Red Text:** Applying this change would result in a conflict in the target catalog ("UK" in the example: the catalog value exists in the target catalog, however with a different catalog text in the catalog base language). Such catalog values must be edited manually (in the **Catalog** info area) before they can be saved.

Note: You can add new catalog values (to the target catalog) when migrating; editing or deleting catalog values is only possible within the scope of catalog maintenance, see Catalog Info Area on page 271.

The following options are available from the context menu:

- **Text: match all rows (language):** All rows are matched up again (based on the catalog text in the selected language).

- **Text: match selected row (language):** The current row is matched up again (based on the catalog text in the selected language).

- **Ext. Key: Match all rows (language):** All rows are matched up again (based on the external key in the selected language).

- **Ext. Key: Match selected row (language):** The current row is matched up again (based on the external key in the selected language).

- **Select target value:** Select this option to select an existing catalog value in the target catalog that the current value should be converted to. (Alternatively, double-click on the value.) A dialog is opened displaying the entries in the target catalog. Select the desired target value and click on **OK**.

- **Copy source to target:** Select this option to copy the source text to the target catalog. If the value does not exist in the target catalog, the row is displayed in yellow. If the value already exists in the target catalog, the row is displayed in pink.

- **Save all rows:** All changes are saved (in the **Catalog** info area): The catalog values are added to the target catalog if applicable.

- **Save selected row:** The changes to the current row are saved (in the **Catalog** info area): The catalog value is added to the target catalog if applicable.

5. Make the desired changes:

- Determine which catalog values are migrated and should be added to the target catalog: yellow rows / **Copy source to target** option.

- Determine which catalog values should be migrated and merged with existing values in the target catalog: **Select target value** option.

- If you do **not** want to migrate a value, do not save the corresponding row.

- Furthermore, you can determine or change the following settings for new catalog values: **Tenant**,**Ext . Key**, **Sort Order**, **Description**, **Valid from/to** and **Lock**, see Editing Variable Catalogs on page 273.

6. Select **Save all rows** or **Save selected row** to save the defined mappings.

> **Note:** Resolve any conflicts that may occur manually before saving. You cannot subsequently edit saved (green) rows.

The changes are saved (in the **Catalog** info area): **No data** is written to the **Catalog Maintenance** info area in the process.

The catalog values in the source catalog are retained after migrating. They can be deleted after successfully migrating.

The actual migration takes place within the scope of data migration, i.e. when migrating info areas and formats, the affected catalog values in records and formats are migrated based on the mappings defined here. Only green rows are taken into account by the migration process.

If info areas are migrated with mapped catalog fields (accessing different catalogs) (see Migrating Fields on page 419), mappings are automatically defined for the affected catalogs (in the test run). If conflicts arise, Aurea CRM attempts to merge catalog values in each language.

Migrating Hierarchical Catalogs

You have the following options when migrating hierarchical catalogs:

- Child catalog > non-hierarchical catalog: You can map entries in the source catalog to entries in the target catalog while ignoring the parent catalog.

- Child catalog > another child catalog: You first need to define and save a mapping for the parent catalog. When defining mappings for the child catalog, you can then select the desired parent values (double-click in the corresponding field in the **Parent Catalog** column).

Catalog values that have not yet been mapped to a parent catalog value are displayed with "???". These catalog values cannot be saved.

- Non-hierarchical catalog   child catalog: same as when migrating between child catalogs.

Migrating Fixed Catalogs

Learn about migrating catalog values.

You can migrate catalog values within a fixed catalog.

1. Select **Migrate fixed catalogs** from the context menu in the **Migration** info area.

   A dialog is displayed allowing you to select a catalog.

   If you click on **Cancel**, you can access the dialog using the following context menu options:

   - **Select fixed catalog:** This option allows you to select from all available catalogs.

   - **Select saved fixed catalog:** This option allows you to select a catalog for which you have already defined a mapping.

2. Select the desired catalog.

3. Click on **OK**.

A list of existing catalog values is displayed.

4. Enter the desired values in the **Target** column:

- Double-click in a cell and select the desired target value.

- Enter the code of the desired value directly in the cell: This allows you to map values that are not present in the current database.

  Rows for which a target value has been entered are displayed in pink: These are used by the next migration process (**Migrate all rows/Migrate selected row**), irrespective of whether data has already been migrated (**Date, Time** column).

- Select **Delete line** from the context menu to delete a mapping, or 🖌 (**Delete**) to delete all mappings.

5. Define any necessary conditions for the migration:

- **Condition (format):** Select this context menu option to define conditions under which the changes should be applied to formats (e.g. only to specific format types etc.).

- **Migrate in data:** If this option is enabled, changes to catalogs are applied to records.

- **Migrate in formats:** If this option is enabled, changes to catalogs are applied to formats.

Note: These settings are applied and saved **globally**, not per catalog.

6. Test the mappings:

- **Test data migration (selected row/all rows):** Select this option to test how many records would be affected by the migration and in which info areas.

- **Test format migration (selected row/all rows):** Select this option to test how many formats would be affected by the migration.

7. Migrate the catalog values:

- **Migrate all rows:** All changes are applied according to your settings.

- **Migrate selected row:** Changes defined in the selected row are applied.

The results (of test runs and the migration) are logged in the **Migration History**.

Migrating Info Areas

Learn how to migrate data between info areas.

To migrate data from one info area to another:

1. Select **Migrate info areas** from the context menu in the **Migration** info area.

Source	Target	With Conditions	Link	New	Generate new ID	Match & update	Migrate fields	Migrate links	Migrate formats	Condition (format)	Date, Time
Offer (PR)	Ticket (KM)	✔	175. KM_1_StNo.,KM_1_IN	✔	✔		✔	✔	✔	✔	
Customer Documents (D2)	Documents (D1)			✔	✔		✔				

2. Define the desired settings:

- **Source:** Select the info area whose data you wish to migrate.

- **Target:** Select the info area the data should be migrated to.

- **With Conditions:** You can define the conditions under which data should be migrated.

- **Link:** If a 1:1 link exists between the source and target info areas, you can select the link here. This allows data to be matched up with existing records in the target info area (**Match & update** column), links to be migrated and the field mappings to be subsequently updated.

  If you are migrating data in the **History** (H0) info area, you also need to migrate the corresponding links to the history.

- **New:** Enable this option if new records should be added to the target info area based on the data from the source info area. If you are migrating data within the same info area (source = target), **do not** enable this option.

- **Generate new ID:** Enable this option in addition to the **New** option to determine that new IDs (keys) should also be generated when adding new records.

- **Match & update:** If this option is enabled, data is matched up with existing records in the target info area when migrating. The records are updated accordingly.

Note: The **Match & update** option only works if you have selected a **Link** or if you are migrating fields that are part of the unique index, see Migrating Fields on page 419.

- **Migrate fields:** Define the desired field mappings between the source and target info areas, seeMigrating Fields on page 419.

- **Migrate links:** Determine which links should be migrated, see Migrating Links on page 421. This controls the migration of child records.

- **Migrate formats:** Enable this option if the changes defined here (target info area, field mappings, links, variable catalogs) should also be applied to formats, see Migrating Formats on page 422.

- **Condition (format):** Use this option to define conditions under which the changes should be applied to formats (e.g. only to specific format types etc.).

For examples of this setting, see Examples on page 423.

3. Select **Test format migration (selected row)** from the context menu to test the defined mappings (for the selected row). The system checks whether fields can be migrated based on the field types (i.e. the source and target field are compatible), and whether migrating leads to any other errors (e.g. a field is not migrated and the **Remove in formats** option is not enabled). The system does **not** verify whether the formats function correctly after migration.

4. Carry out the migration:

   - **Migrate selected row:** Changes defined in the selected row are applied according to your settings.

   - Select **Delete line** from the context menu to delete a mapping.

   The results (of test runs and the migration) are logged in the **Migration History**.

Note: The info area and fields in conditions defined in plain text ("filter strings") are converted during migration (**Variable value** and **Distribution Logic**). The following are not migrated:- Conditions defined in the **Update priority** configuration entry (**Communication** category)- The **Info Area** and **Field** fields in records in the **Question** info area.

The records in the source info areas are retained after migrating. They can be deleted after successfully migrating.

Migrating Fields

Learn about migrating fields from source info area to target info areas.

When migrating info areas, you need to determine which field contents from the source info area are written to which fields in the target info area (field mapping).

1. Click in the **Migrate fields** cell in the **Migrate info areas** level.

A list of fields (**Source**) and suggested mappings (**Target**) is displayed.

The **Suggested mappings** cell is enabled for those field mappings that were suggested by Aurea CRM. If you change the mapping manually, the tick is removed from this cell.

2. To edit the field mappings:

- Use the **Search** 🔍 to search for a field in the list. You can choose to search in the source or target info area.

- Click in a cell in the **Target** column to select a field in the target info area.

Note: The system does not check that the source and target fields are of compatible data types when selecting a field.

- Click in a row and select **Remove mapping** from the context menu to remove a mapping.

- Select **Mappings only** from the context menu to remove all fields from the list for which no **Target** has been defined.

- Select **Delete line** from the menu to delete the current row.

- Click in the last (free) row in the list to define a new field mapping.

- You can migrate multiple fields to a target field (of the type "Text"): The field contents are appended to one another in the target field in the order they are defined in the list.

- **Hide mapped fields:** Enable this option to only display those fields that have not yet been mapped.

- **Append to end of list:** Enable this option to determine that new fields are not sorted according to their field number, but are appended to the end of the list.

- **Mark used fields:** Enable this option to determine that rows corresponding to fields that contain data in at least one record (according to the database analysis) are displayed in pink, see Database Analysis on page 358.

3. Use the **Transf.** column to define field transformations. The transformations are defined as for imports, see Transforming Field Contents in the *Aurea CRM win Administrator Guide*.

4. Enable the option **Remove in formats** to remove a field in the source info area from all formats (e.g. mask formats). The conditions defined under **Condition (format)** in the **Migrate info areas** level are taken into account.

Note: If you use this option, you need to verify that the formats work correctly after migrating.

---

5. You can define default values for the target fields:

6. Select **View** > **All Mask Fields** from the menu.

7. Enter the desired default values.

8. Select **Test field mapping** from the context menu to test the defined mappings.

No.	ID	Source	No.	ID	Target
0	0	1	2	2	1
1	1	14	3	3	14
2	2	1	6	6	1
3	3	815	7	7	68
6	6	27/09/2011	8	8	27/09/2011
24	24	000100006	74	74	000100006

You can navigate through the records in the test results. Field values that were not migrated because no target field was selected or because the field types are incompatible are displayed in red. The results of matching up and updating records (**Match & update** option) are not displayed for the test run.

If you have mapped catalog fields (using different catalogs), mappings are defined automatically for the corresponding catalogs (if not already defined), see Mapping Variable Catalogs on page 413.

9. Click ✔ (**OK**) to save the field mapping.

Migrating Links

When migrating info areas, you can determine which links should be migrated.

This allows you to ensure that child records are also migrated accordingly.

This requires a 1:1 link from the source info area to the target info area, and the link must be entered in the **Link** cell in the **Migrate info areas** level. Alternatively, you can migrate the fields in the unique index (**Migrate fields** level).

To migrate links:

1. Click in the **Migrate links** cell in the **Migrate info areas** level.

Info Area	Source Offer (PR)	Target Ticket (KM)	Suggested mappings	In use
Contact (MA)	0. Contact Switch,Offer Stno.,Offer No. ->	0. KM_StNo.,KM_INo. -> StNo.,INo.		✔
Comments (NO)	126. Info Area Code,Rel.Stat.No.,Rel.Ser.I	126. Info Area Code,Rel.Stat.No.,Rel.Ser.I	✔	✔
Offer Item (AP)	0. Stat. No.,Offer No. -> Stat. No.,Offer N			
Offer Item (AP)	126. Link to,LinkStNo.,LinkINo. -> Stat. No.	126. Link to,LinkStNo.,LinkINo. -> StNo.,IN	✔	
Order (AU)	0. Offer Stno.,Offer No. -> Stat. No.,Offer			
Order Item (UP)	126. Link to,LinkStNo.,LinkINo. -> Stat. No.	126. Link to,LinkStNo.,LinkINo. -> StNo.,IN	✔	
Tasks (A1)	126. Link Type,Link Stat. No.,Link No. -> St	126. Link Type,Link Stat. No.,Link No. -> St	✔	
Tel.No./E-mail (TN)	126. Info Area Code,Link Stat. No.,Link No.	126. Info Area Code,Link Stat. No.,Link No.	✔	
Participant (RO)	126. Info Area Code,Rel.Stat.No.,Rel.Ser.I	126. Info Area Code,Rel.Stat.No.,Rel.Ser.I		✔
Offer Line Partial Delivery (	0. Stat. No.,Offer No. -> Stat. No.,Offer N			
Ticket (KM)	126. Link to,LinkStNo.,LinkINo. -> Stat. No.	126. Link to,LinkStNo.,LinkINo. -> StNo.,IN	✔	
To-Do (TD)	126. Link Type,Link Stat. No.,Link No. -> St	126. Link Type,Link Stat. No.,Link No. -> St	✔	
Message (MD)	126. Link Type,Link Stat. No.,Link No. -> St	126. Link Type,Link Stat. No.,Link No. -> St	✔	
Reminder (ER)	126. Link Type,Link Stat. No.,Link No. -> St	126. Link Type,Link Stat. No.,Link No. -> St	✔	
Act. Target Group (AG)	126. Link Type,Link Stat. No.,Link No. -> St	126. Link Type,Link Stat. No.,Link No. -> St	✔	

A list of all links that exist in the source info area is displayed, along with suggestions for corresponding links in the target info area. The **In use** column displays which links are actually used.

The **Suggested mappings** cell is enabled for those mappings that were suggested by Aurea CRM. If you change the mapping manually, the tick is removed from this cell.

2. Select **Determine link usage** from the context menu to update the **In use** column.

   Links that are in use, but are not assigned to a **Target**, are displayed in red.

3. Click in a cell in the **Target** column to select the link or to change/delete a defined mapping.

   Select **Clear selected links** from the context menu to delete all rows. The **Migrate links** cell in the **Migrate info areas** level is disabled in the process.

4. Click ✅ (**OK**) to save the field mapping.

Migrating Formats

If you have enabled the **Migrate formats** option, the changes defined for the migration of the info area (target info area, field mappings, links, variable catalogs) are also applied to formats.

 Use the **Condition (format)** column to define conditions that need to be met for formats to be migrated (e.g. to only migrate certain types of formats).

The following format types are migrated by default:

- Query
- Condition
- Chart
- Dispatching dashboard
- Label
- Custom mask
- Import/export
- Communication
- List
- Mask
- Read engine
- Rights
- Transformation
- Trigger

- Info area default values

- Workflow

- Timeline

All other formats are not taken into account by the migration. (The migration history contains "Not migrated" in the **Result** column.) These formats may need to be manually edited of recreated in the new environment.

Note: When migrating formats, Aurea CRM attempts to directly map fields in the source and target info areas that are used in indices. If no exact mapping is possible, the indices no longer functions after migrating. Manually verifying the migrated formats (read engine, triggers, workflows, rights) is therefore highly recommended. Mask formats **must** be migrated (**Migrate formats** option) before they are exported for CRM.designer, see Exporting Masks on page 426.

Examples

Examples for Migrating Data.

Refer to below examples:

Offer (PR) -> Ticket (KM)

To migrate records in the **Offer** info area to the **Ticket** info area, define the following info area migration:

Migrate info areas											
Source	Target	With Conditions	Link	New	Generate new ID	Match & update	Migrate fields	Migrate links	Migrate formats	Condition (format)	Date, Time
Offer (PR)	Ticket (KM)	✔	175. KM_1_StNo.,KM_1_IN	✔	✔		✔	✔	✔	✔	

1. Define a condition, e.g. "Request Type = 'Customer Problem' ", to determine that only customer problems are migrated.

2. Define a 1:1 link from the **Offer** info area to the **Ticket** info area, and select this link in the **Link** cell.

3. Enable the **New** and **Generate new ID** options. New records should be added to the **Ticket** info area.

4. Define the desired field mapping by clicking in the **Migrate fields** cell:

No.	ID	Source	No.	ID	Target	Suggested mappings	Transf.	Remove in formats
0	0	Pe.Gr.	2	2	Pe.Grp.	✔		
1	1	Pe.No.	3	3	Pe.No.	✔		
2	2	Stat. No.	6	6	StNo.			
3	3	Offer No.	7	7	INo.			
6	6	Date	8	8	Date	✔		
24	24	Sales Rep ID	74	74	Resp. Rep ID			
25	25	Rep ID	10	10	Processed by ID	✔		
38	38	Document	12	12	Document 1	✔		
58	58	FreeC1	31	31	FreeC1	✔		
67	67	FreeL1	40	40	FreeL1	✔		
72	72	Offer Text	14	14	Text			
82	82	Department	28	28	Department	✔		
83	83	Product Group	29	29	Product Group	✔		
84	84	Product	30	30	Product	✔		
85	85	FreeDec1	43	43	FreeDec1	✔		
175	175	Co.Gr.	0	0	Co.Gr.	✔		
176	176	Co.No.	1	1	Co.No.	✔		
188	188	Sales Group ID	75	75	Resp. Rep Grp. ID			
189	189	Rep Group ID	47	47	Processed by Group ID	✔		
195	195	KM_StNo.	71	71	KM_1_StNo.	✔		
196	196	KM_INo.	72	72	KM_1_INo.	✔		
198	198	Service Status	25	25	Status	✔		
199	199	Creation Date	55	55	Creation Date	✔		
200	200	Creation Time	56	56	Creation Time	✔		
201	201	Due Date	57	57	Due Date	✔		
202	202	Due Time	58	58	Due Time	✔		
203	203	Completed on	59	59	Completed on	✔		
204	204	Completed at	60	60	Completed at	✔		
205	205	Problem Description	62	62	Problem Description	✔		
206	206	Cause	63	63	Cause	✔		
207	207	Solution	64	64	Solution	✔		
208	208	Created by ID	9	9	Created by Rep ID			
212	212	Completed by ID	11	11	Completed by ID	✔		
222	222	Contract starts	107	107	Contract starts	✔		
223	223	Contract ends	108	108	Contract ends	✔		
233	233	Reaction Time/SLA	109	109	Reaction Time/SLA	✔		
234	234	Reaction Time Units/SLA	110	110	Reaction Time Units/SLA	✔		
242	242	Service Contract No.	111	111	Service Contract No.	✔		
248	4015	Created at	117	4015	Created at	✔		
249	4016	Updated at	118	4016	Updated at	✔		
245	245	SAP Company Code	65	65	Service Level		✔	
70	70	Company	90	90	Subject			
71	71	Co. Pe.	90	90	Subject			

A field transformation has been defined for the **Service Level** here: Entries in the **SAP Company Code** field in the offer are converted to corresponding catalog values.

The **Subject** of the ticket is generated using the **Company**, **Contact Person** and **PR_SerNo.** fields in the offer.

5. Define which links should be migrated by clicking in the **Migrate links** cell:

Info Area	Source Offer (PR)	Target Ticket (KM)	Suggested mappings	In use
Contact (MA)	0. Contact Switch,Offer Stno.,Offer No. ->	0. KM_StNo.,KM_INo. -> StNo.,INo.		✔
Comments (NO)	126. Info Area Code,Rel.Stat.No.,Rel.Ser.l	126. Info Area Code,Rel.Stat.No.,Rel.Ser.l	✔	✔

When migrating, the corresponding child records (**Activity** and **Notes**) are linked to the new tickets: Child records are "moved" from the old to new parent record; generic (NO) and additional links (MA) are updated accordingly.

6. Enable the **Migrate formats** cell in the **Migrate info areas** level and define a condition in the **Condition (format)** cell used to migrate formats (e.g. "Type = 'Masks' OR 'Search Condition' ").

Offer (PR) -> Ticket (KM): Add and Match Up

If records have already been migrated, you can define the migration as follows:

Source	Target	With Conditions	Link	New	Generate new ID	Match & update	Migrate fields	Migrate links	Migrate formats	Condition (format)
Offer (PR)	Ticket (KM)	✔		✔		✔	✔	✔	✔	✔

1. Enable the **New** and **Match & Update** options: New records should be added; existing records should be updated.
2. In order to match up records in this case, you need to migrated fields in the unique index (**PR_StaNo+PR_SerNo**):

No.	ID	Source	No.	ID	Target
0	0	Pe.Gr.	2	2	Pe.Grp.
1	1	Pe.No.	3	3	Pe.No.
2	2	Stat. No.	6	6	StNo.
3	3	Offer No.	7	7	INo.

Customer Document (D2) -> Document (D1)

To migrate records in the **Customer Document** info area to the **Document** info area, define the following info area migration:

Source	Target	With Conditions	Link	New	Generate new ID	Match & update	Migrate fields	Migrate links	Migrate formats	Condition (format)
Customer Documents (D2)	Documents (D1)			✔	✔		✔			

When migrating, corresponding new records are added to the **Document** info area. Furthermore, the corresponding links to the **Company** or **Person in Company** info areas are generated in the **Document Link** (D3) info area. The configuration entry **Company document link in person** (**Document** category) is taken into account in the process, see Documents on page 36.

To migrate also all info areas containing document fields, see Migrating Document Fields on page 412.

Linking Reps (ID) with Persons in Company (KP)

In order to log on to Aurea CRM web, each **Rep** must be linked to a **Person in Company**. To implement this via migration:

1. Define a 1:1 link from the **Person in Company** to the **Rep** info area.
2. Define the following info area migration:

Source	Target	With Conditions	Link	New	Generate new ID	Match & update	Migrate fields
Rep (ID)	Person (KP)	✔	350. Rep/Group	✔	✔		✔
Person (KP)	Rep (ID)		250. ID_4_Rep/			✔	✔

The first row creates new person records.

The second row enters the corresponding company and person key in the rep record.

3. Define a condition, e.g. "KP_SerNo = '' AND Inactive = 'No' " for the migration of reps > persons so as to only add new person records for reps not assigned to a person record and that are active.

4. Define the field mappings for the migration of reps > persons:

No.	ID	Source	No.	ID	Target
0	0	Rep/Group ID	14	14	Rep ID
11	11	Last Name	2	2	Last Name
12	12	First Name	3	3	First Name
27	27	E-mail 1	9	9	E-mail 1

Co.Gr.	1
Co.No.	13
Country	
Country Cod	

You can use default values (**View** > **All Mask Fields**) to determine which company the person should be added to.

5. Define the field mappings for the migration of persons > reps:

No.	ID	Source	No.	ID	Target
45	45	Co.Gr.	60	60	Co.Gr.
46	46	Co.No.	61	61	Co.No.
47	47	Pe.Grp.	62	62	Pe.Grp.
48	48	Pe.No.	63	63	Pe.No.

Exporting Masks

To migrate from a "classic" Aurea CRM win solution to an Industry Solution, you must convert user-defined masks/lists to CRM.designer field groups.

The lists and masks defined in Aurea CRM win using the Mask Generator can be exported as XML files and imported into CRM.designer. To do so, you need to migrate the mask formats in the scope of migrating info areas (**Migrate formats** option), see Migrating Info Areas on page 417.

To export mask formats:

1. Select **Export masks** from the context menu in the **Migration** info area.

All mask formats stored in the database are listed. Active formats are displayed in black; inactive formats in gray. Select **Active** or **Inactive** from the context menu to determine which formats are displayed.

> **Note:** In order for the active formats to be displayed correctly, you need to analyze the database, >> Database Analysis on page 358. Otherwise all formats are displayed as inactive.

2. Enable the **Export** cell for those mask formats you wish to export.

   Click on (**Delete**) to remove all the ticks.

3. Start the export using one of the following context menu options:

   • **Export all rows:** All formats where the **Export** cell is enabled are exported.

   • **Export selected row:** Only the format in the currently selected row is exported.

   The selected formats are exported to an XML file: `.. \sys-tem\db\transf_masks_YYYYMMDD_HHMMSS.xml` (e.g. `transf_masks_20110727_095816.xml`).

4. Click (**OK**) to return to the **Migration** level.

The XML file can be imported into the CRM.designer database using `DesignerImport.exe`, see Importing Mask Formats into CRM.designer.

Importing Mask Formats into CRM.designer

Masks/lists exported from Aurea CRM win can be imported into CRM.designer using the **Designer Import** tool.

In order to import the masks, you require a **CRM.designer database containing the current data model**, i.e. the target CRM.designer database must contain all info areas and fields referenced by the mask formats.

To import Aurea CRM win mask formats into CRM.designer:

1. Start the Designer Import tool: `.. addons\DesignerImport.exe` in the Aurea CRM web installation directory.

2. Enter the connection to the CRM.designer database in the **Connection String** field. (The syntax is identical to the syntax in the `settings.xml` file, see *Aurea CRM web Technical & Installation Guide*.

3. Click on **Connect**.

   The connection to the CRM.designer database is established.

4. Enter the path and name of the XML file containing the exported mask formats in the **XML File Name** field, or click on ▭ (**Browse**).

5. Click on **Load** to load the XML file.

   The Aurea CRM win mask formats contained in the file are listed. **Vertical** is read from the XML file.

6. Select the CRM.designer configuration you wish to import the masks into in the **Import Configuration** field.

7. By default, the format name is used as **FieldGroupName**. Change the values in the **FieldGroupName** and **InfoArea** columns as necessary.

Field groups are defined for a specific info area in Aurea CRM web. Masks/lists are defined for levels in Aurea CRM win, which can contain one or more info areas, see Defining a New Mask in the *Aurea CRM win Administrator Guide*. When importing, the info area that the field group should be added for is determined as follows (**InfoArea** column):

- If the format name starts with a valid info area code, this info area is used.
- Otherwise the first info area in the `<GmParam>` section (in the XML file) of the format is used.

8. Enable the **Import** checkbox for those formats you wish to import. Use the **Select/Deselect All** buttons to enable or disable the option for all formats.

9. Determine which text groups the mask texts should be imported into, see Languages and Texts in the *Aurea CRM web Administrator Guide*.

- Enter the name of the text group that tab headers should be imported into in the **TextGroup-Name for Imported Tab Texts** field, see Tab Group Properties in the *Aurea CRM win Administrator Guide*.
- Enter the name of the text group that field texts should be imported into in the **TextGroup-Name for Imported Alternate Field Labels** field, see Field Properties in the *Aurea CRM win Administrator Guide*.
- If you enter a valid language number in the **Default Lang. No.** field (**Language No.** field in the **Language** info area), texts in this language are added as default texts in CRM.designer. This requires this language number to be entered as the **CRM Sub-Language** for the corresponding language in CRM.designer, see Languages in the *Aurea CRM web Administrator Guide*.

10. Click on **Import**.

The masks/lists are imported into the CRM.designer database as field groups according to your settings:

- Masks are converted to **Details** controls: The tabs are imported with their field texts and texts sorted by position on the mask (first the Y axis then the X axis).
- Lists are converted to **List** controls: Only fields and their widths are imported. All other settings are ignored.
- No further field properties are imported from Aurea CRM win and no field attributes are generated.

If the import of a format fails, the entire import is reverted, i.e. nothing is imported.

The **Status** column is updated accordingly:

- For rows that would be successfully imported, the following text is displayed:

  "Successful."

- For rows that would be successfully imported but to a renamed field group:

  "Successful. Field group with name `<fieldGroupName>` already exists in configuration `<configurationID>`. New field group renamed to `<fieldGroupName>_1`."

- For rows where an error occurred a problem description is displayed, e.g.

  "Field for id 103, info area MA in vertical FS not found!"

The entire import process and all errors are logged in the `DesignerImport.log` file located in \addons\logs.

11. Fix all errors (or deselect the respective formats) and import again.

After successfully importing all selected formats, you can integrate the imported controls in the desired configuration units.

Recommended Procedure

Recommended procedure for migrating from Aurea CRM win to an Industry Solution.

The following procedure is recommended for migrating from Aurea CRM win to an Industry Solution:

Requirements

- The Industry Solution input for the migration may only contain the data model and vertical-specific texts, but no formats, as these are not migrated.
- No changes may be made to the data model and catalogs may no longer be maintained in the customer database (live system) once the migration project has started.
- Test and live systems must both be defined as the main office and have different station numbers, see Migrating the Station Number on page 411.

Migrating the Test System

1. Create a back up of the database.

   Note: Document the following steps in details, to ensure that you can repeat the migration process and any necessary manual changes on the live system.

2. Check whether there are overlapping fixed catalogs in the customer database and Industry Solution (i.e. the catalogs have identical codes for different catalog values), and migrate the affected catalog values, see Migrating Fixed Catalogs on page 416.

   Conversely, you need to merge any customer-specific catalog values with Industry Solution catalog values if the maximum number of catalog values would be exceeded after migrating (e.g. the **Activity** catalog). Ensure that you select catalog values that are not linked to the business logic when mapping catalogs.

   Note: If you use conditions when migrating fixed catalogs, you need to make a note of these settings for each catalog: These settings are saved globally in the migration history, i.e. only the last used condition or setting (**Migrate in data/Migrate in formats**) is logged.

3. Check whether there are overlapping tenants in the customer database and Industry Solution, and migrate the tenant numbers if required, see Migrating Tenants on page 410.

4. Migrate the languages in the customer database to language numbers in the Industry Solution, see Migrating Languages on page 409.

5. Input the Industry Solution (data model, texts) on the test system (using CRM.cockpit).

6. Migrate the variable catalogs and info areas, see Mapping Variable Catalogs on page 413 and Migrating Info Areas on page 417.

7. Input the formats in the Industry Solution once the migration is complete (using CRM.cockpit).

8. Adjust the formats to the new environment as needed: For example, define the current station access rights as an extension of the Industry Solution station access rights, grant access to Aurea CRM web-specific info areas in the station access rights etc.

9. Test the results of the migration.

10. Export the masks, see Exporting Masks on page 426.

Making Adjustments in CRM.designer

1. Load the current data model into the CRM.designer database using CRM.bulkloader.

2. Import the Industry Solution configuration into the CRM.designer database using CRM.bulkloader.

Migrating the Live System

1. Create a back up of the database.

2. Migrate the fixed catalogs, tenant numbers and languages according to the notes you made when testing the migration (see steps 3-5).

3. Input the data model, texts and migration format from the test system (using CRM.cockpit or via communication).

4. Repeat the migration of variable catalogs and info areas according to the migration history.

5. Input the formats in the test system once the migration is complete (using CRM.cockpit or via communication).

6. Test the results of the migration.

7. Ensure that every rep (ID) is assigned to a person record (KP), see *Linking Reps/Users to Persons* in the *Aurea CRM web Technical & Installation Guide*.

8. Delete any unnecessary info areas (and catalogs) from the data model on the live system.

9. Generate a new data stock download for all branch offices.

4

Additional Modules and Applications

Explore additional possibilities with Aurea CRM.

Managing Companies and Persons

Learn how to manage companies and persons.

Personal and company-related data about a person is split over two info areas - **Person** (PE) and **Contact Person** (CP):

- The **Person** info area (PE) represents the "physical" person. It contains data that only needs to be entered once for a person, such as their first and last name, date of birth and private address.

- The **Contact Person** info area (CP) contains data related to a specific company (e.g. department, position, phone extension).

- The **Person in Company** info area (KP) depicts all data concerning a person in the context of a company (using a JOIN applied to the PE and CP tables), see Data Model(KP). No data is stored in KP.

The following chart shows the relationships in the data model:

Depending on your customer structure you can work only with FI and KP records, or also use the PE info area to manage your data.

Use cases for working with PE records:

- Private bank customers

- Doctors who both work at a hospital and have a private practice

- A contact person working for a new company: It may be useful to retain e.g. the contact history form the former company

If you plan to use the **Person** info area (PE), integrate PE into your customizations as an independent info area like FI. In addition you can still use the **Person in Company** view (KP) if needed. (The name of the database view is "CPPE".) All info areas that can be linked to FI and CP can be linked to PE as well.

Note: In Aurea CRM web you can control the access to PE-related functions via the CRM Process Configuration; to hide PE-related functions lock CRM Process 1.4.1.3.11 "Person" (CRM Process ID 2470000).

For further details, see Configuring CRM Processes.

Descriptions of procedures for "Persons" in the Aurea CRM documentation generally apply to both KP and PE/CP.

Special cases and differences are described in the following chapters, in the Aurea CRM win User Manual and in the Business Logic Manual.

Data Model (KP)

Each field of KP is mapped to a field in either PE or CP. The mapping is defined in the data model (info area KP, **Fields** level, **Mapping** column).

	ID	Name	Type		Mapping
0	0	Form of address	fix catalog		Person (PE), Form of address (2)
1	1	Acad. Title	var catalog(child)		Person (PE), Acad. Title (18)
2	2	Last Name	text(80)		Person (PE), Last Name (3)
3	3	First Name	text(20)	[...]	Person (PE), First Name (4)
4	4	Internal Address	text(60)		Contact Person (CP), Internal Address (6)
5	5	Internal Name	text(60)		Contact Person (CP), Internal Name (7)
6	6	Tel 1	text(40)		Contact Person (CP), Tel 1 (8)

To add a new field to the KP info area:

1. Create a corresponding field in the CP or PE info areas, see Adding New Fields on page 317.

2. Apply the data model change.

3. Create the new field in KP.

---

4. Select the field in CP/PE to which you want to map the new KP field.

5. Apply the data model change.

When displaying KP, Aurea CRM reads the data from the mapped CP and PE fields.

Analogously, links have to be first created in CP/PE. The link fields can then be mapped in KP.

To delete such fields and links you have to proceed in reversed order:

1. Delete the field or link first from **KP**.

2. Apply the data model change.

3. Delete the field or link from CP/PE.

4. Apply the data model change.

Adding, Editing and Deleting Persons

Learn about info areas to add, delete and edit persons in Aurea CRM.

When creating, deleting and editing person records, KP and CP/PE are maintained in parallel automatically, which means:

This action …	… causes the following
Adding a KP	Adds a CP and PE
Adding a PE	Just adds the PE
Linking a PE with a FI using a CP	KP view available

This action ...	... causes the following
Changing field values in CP or PE	Changes are reflected in KP (KP provides a view of the fields in CP and PE).
Changing field values in KP	Changes are reflected in CP and PE.
PE with one CP: Deleting the CP	PE is retained.
PE with one CP: Deleting the KP	PE is deleted as well.
PE with more than one CP: Deleting one of the KPs	PE is retained.
PE with more than one CP: Deleting an FI to which one of the CPs is linked	PE is retained.
PE with one CP: Deleting the FI to which the CP is linked	PE is deleted as well.
	Note: Enable the **No deletion of Person records when a Company is deleted** configuration entry (Data Model category) to prevent this behavior, see Data Model on page 34.

Rights Settings

Rights settings defined for the PE and CP info areas are applied to the KP info area.

Locking Person Info Areas

Aurea recommends setting the same locks for the KP, CP and PE info areas in the **Deny New**, **Deny Update** and **Deny Deletion** columns in the **Rights** info area. Otherwise the following can occur:

Deny New, Deny Update and Deny Deletion only for KP

Action	Result
Adding a KP	Not possible.
Adding a PE and CP	A KP is added automatically.

Action	Result
Changing field values in a PE and CP	Changes are visible in the KP.
Deleting a KP	The corresponding CP is deleted automatically. The corresponding PE is deleted if it is only linked to this company. **Note:** To prevent the PE from being deleted, set **Deny Deletion** for the PE info area in the access rights.
Deleting a CP	The corresponding KP is deleted automatically.
Deleting a PE	All corresponding CPs and KPs are deleted automatically.

Deny New, Deny Update and Deny Deletion only for PE

Action	Result
Adding a KP	You can enter data in CP-specific fields but you cannot save the record.
Adding a PE	Not possible.
Adding a CP and using it to link FI and PE	Possible.
Editing a KP	Editing the CP-specific fields and saving is possible.
Deleting a KP	The corresponding CP is deleted automatically, the PE is retained.

Merging Persons

Persons from all Person info areas (KP, CP and PE) can be merged.

This action …	… causes the following
Merging KP records	If only one corresponding PE record exists, the CP records are merged.
	If more than one corresponding PE record exists, the PE records are merged.
Merging PE records	Merges the PE records and links child records to the resulting record.

If you have defined triggers initiated by deleting KP records during the merge process in previous versions of Aurea CRM, they no longer work. You need to define these triggers for the PE or CP record.

Note: When merging companies identical persons (KP, CP, PE) are only merged if the PE-record is linked to only one company record.

Generic Links to KP and CP

Learn about linking info areas KP and CP.

When linking a record to a person via a **Link** field (i.e. generic link), the behavior differs depending on the info area you are linking from:

* **Favorite** and **History** records can be linked to both **Contact Person** (CP) and **Person in Company** (KP) records. If, for example, both the CP and KP are added to the favorites, the person is displayed in the **Favorite** list twice.

* **Document Links** (D3) that are linked to a **Person in Company** (KP) are automatically converted to a link to the **Contact Person** (CP) when you save the link.

* All other info areas: You can link both **Person in Company** (KP) and **Contact Person** (CP) records in a link field. In both cases you switch to the **Person in Company** (KP) info area when you click the link.

Telephone Number/E-Mail Search

This topic is about defining custom telephone and email fields.

For differences between the person info areas when searching for a phone number, see Searching Using the Complete Number and Telephone Number/E-Mail Search on page 66.

Note: When defining custom telephone fields for persons, you need to define them for both KP **and** CP or PE, see Telephone on page 300. Make sure all fields composing a number (area code etc.) come from either CP or PE, i.e. you may not mix telephone fields from CP and PE.

Match-Up (PE)

Learn about match-up (PE) parameter.

When matching up records, either when importing or adding PE records, the following fields are compared:

- **First Name** and **Last Name**
- **PE-SerNo** (import only)
- **External Key** (import only)
- **Private Address**

The settings defined in **Extras** > **Other Options** under **Match-up Control Person** apply to both PE and KP records.

For information on match-up during communication, see Match-up (topic *Communication*) in the *Aurea CRM win Administrator Guide*.

CRM.server

CRM.server is a background service used to carry out time- and resource-consuming tasks (marketing activities, queries, calculations, etc.).

CRM.server is available for both Aurea CRM win and Aurea CRM web. CRM.server is installed as part of the Aurea CRM web setup.

For additional information, see the articles "How to Configure the CRM.server to process To-Do jobs" and "Available Jobs for the CRM.server" at https://support.aurea.com.

Configuring the Service

Learn how to configure the service.

`update.server.exe` is located in the `..\bin` directory of the Aurea CRM web installation.

All required settings are configured in the `settings.server.xml` file located in the `.. \system\settings` directory of the Aurea CRM web installation. The CRM.server user must be specified in the `users.xml` file (located at `web\system\settings` as well).

CRM.server uses the connection to the Aurea CRM database as defined in the `mmdb.ini` file (located at `web\system\sys`). CRM.server does not require a connection to the CRM.designer database.

To configure the service:

1. Ensure that the following files and directories are present on the server:

   - The `web\bin` directory (containing `update.server.exe` and all required DLLs)

   - The `web\system\settings` directory (containing the `settings.server.xml` and `users.xml` files)

2. Create a Aurea CRM user (rep and login record) solely for use by CRM.server. This user requires access rights for all info areas required to execute tasks.

3. Specify configuration settings in the `settings.server.xml` file, see

4. Enter the CRM.server user in the `users.xml` file:

   - `<User type="Server">`

   - `<Name>CRMSRV1</Name>`

   - `<Password></Password>`

   - `</User>`

Note: You can set up several instances of CRM.server for the same user or for different users, see Aurea recommends using multiple users if CRM.server accesses the same database from different computers.

---

5. To send mailings via CRM.server (required when carrying out marketing activities via e-mail):

   a. Configure SMTP (in the **Configuration** info area) as the e-mail client on the station that CRM.server runs on, see General Settings on page 41 (**E-mail Client** option).

   b. Specify valid SMTP connection settings for the CRM.server user, see SMTP Connection Settings on page 92.

6. Register the service via the command prompt:

   ```
   update.server.exe --install [-n <servicename>]
   ```

7. Start the service:

   ```
   update.server.exe --start [-n <servicename>]
   ```

   For a complete list of available parameters, see update.server.exe Parameters on page 19.

8. To use CRM.server with Aurea CRM web you need to specify the CRM.server user's **Rep ID** in the `UpdateServer.RepID` Web Configuration parameter, see UpdateServer.RepID in the *Aurea CRM web Administrator Guide*.

settings.server.xml

CRM.server is configured via the `settings.server.xml` file located in the `..\system\settings` directory of the Aurea CRM web installation.

The `settings.server.xml` file contains the following settings:

- Logging settings as described in the article "How To Configure Logging on the Server" at https://support.aurea.com.

- The `<PlugIns>` node contains the plug-ins to be loaded by CRM.server. The delivered `server.settings.xml` file already contains the correct settings.

- Specify all jobs you want CRM.server to carry out in the `<Jobs>` node, see CRM.server Jobs on page 442. The `MonitorTodosJob` and `MonitorExecuteActivityTodosJob` are activated by default in the delivered `server.settings.xml` file.

Running Multiple Instances of CRM.server

You can run multiple instances of CRM.server using the same installation.

You need to register each CRM.server instance using a different service name:

```
update.server.exe --install -n crm.server1
```

```
update.server.exe --install -n crm.server2
```

The service name is set as environment variable `SERVICENAME`. Use the environment variable to

- configure each CRM.server instance to use a different log file (mandatory)
- configure each instance for a different user (optional).

For additional information, see the article "How to run multiple CRM instances" at https://support.aurea.com.

Configuring the Logging For Multiple CRM.server Instances

Since log files can not be shared between processes, you need to configure each CRM.server instance to use a different log file.

Define the following in the `settings.server.xml`:

```
<update.lib>

<Logging>

...

<Writer

filePath="&dataPath;\log\server.%SERVICENAME%.log" name="DefaultLog"

maxSizeKB ="8192"

closeOnIdleTimeout ="5"

type ="update.Lib.Logging.Writers.FileLogWriter,update.Lib" />

...

</Logging>

</update.lib>
```

If both CRM.server instances as defined above are running, the following log files are created (at the location defined as `dataPath`):

- `server.crm.server1.log`
- `server.crm.server2.log`
- `web.log`

Configuring Multiple CRM.server Users

By default, CRM.server uses the Aurea CRM user specified in the `users.xml` (`User type="Server"`).

Use the `SERVICENAME` environment variable to configure multiple CRM.server users:

1. In the `server.settings.xml` specify the user file as follows:

```
<update.crm.base>

<UsersFile>users.%SERVICENAME%.xml</UsersFile>

...
```

```
</update.crm.base>
```

2. Create one file per user in the `web\system\settings` directory as follows:

- `users.xml`
- `users.crm.server1.xml`
- `users.crm.server2.xml`

3. Enter the names of the CRM.server users in the <User type="Server"> node of the appropriate file, e.g.

```
<User type="Server">

<Name>CRMSRV1</Name>

</User>
```

4. To use CRM.server with Aurea CRM web you need to set the `UpdateServer.RepID` Web Configuration parameter of the desired configuration.

CRM.server Jobs

Learn about configuring jobs to be executed.

The jobs that should be executed by CRM.server are configured via the `settings.server.xml` file, see settings.server.xml on page 440.

```
<Job name="FIImport" schedule="0 2 * * * "
type="update.Crm.Server.Jobs.ImportJob,update.Crm.Server">
<FormatName>CompanyImport</FormatName>
<ImportPath>E:\MyDocuments\FI_import.txt</ImportPath>
<CreateProtocol>false</CreateProtocol>
</Job>
```

For each job you can specify the following attributes:

- `name`: the job's name (if you want to define different jobs of the same type).
- `schedule`: the job's schedule, see Scheduling CRM.server Jobs on page 459.
- `type`: the type of job, e.g. `MonitorTodosJob`, `ImportJob` etc.
- additional parameters as additional nodes inside the `<Job>` node, if applicable.

The following chapters list all available jobs and parameters.

If a job is not relevant for your installation, make sure to remove the job from the `settings.server.xml` file.

Automatically Completing To-Dos

Learn about the To-Dos server jobs.

To-dos created for CRM.server are carried out by the `MonitorTodosJob` as defined in the `settings.server.xml` file:

```
<!--
Execute open todos for the crm.server user (every three minutes)
-->
<Job schedule="*/3 * * * * "
type="update.Crm.Server.Jobs.MonitorTodosJob,update.Crm.Server" />
```

If the `schedule` attribute is undefined, the `MonitorTodosJob` checks for due to-do records of **Type** "Calculate" every minute.

To-do records are automatically created with all necessary parameters by various Aurea CRM features (e.g. mass data operations, background queries etc.) and by the business logic respectively.

To (manually) define a to-do for CRM.server:

1. Add a **To-Do** (TD) record.

2. Specify the following:

   • **Rep/Group:** the CRM.server user

   Note: For to-dos created in Aurea CRM web the CRM.server user specified by the `UpdateServer.RepID` Web Configuration parameter (for the current configuration) is automatically entered.

   • **Type:** "Calculate"

   • **Due on/at:** The date and time the job should be completed.

3. Specify the task or workflow that should be carried out:

   • **Task:** Enter the to-do type and its parameters in the **Text** field, e.g. `14 ;MA` or `0;;2014;2014;` etc.

      For a list of available types and their parameters, see To-Do Types on page 444.

      Use a semicolon as separator. To include a semicolon in a parameter, you need to escape it by entering "\;".

   • **Workflow:**

      1. Select "Workflow" as Execution Type.

      2. Select the desired workflow format in the Execution Format field.

      3. Enter the parameters in the Text field.

      Notes: The Hidden option must be enabled for the workflow in the workflow's General Settings.

      The workflow is executed in the to-do records context, i.e. data entered in the to-do record can be read and used in the workflow.

> **Note:** The **Hidden** option must be enabled for the workflow in the workflow's **General Settings**. The workflow is executed in the to-do records context, i.e. data entered in the to-do record can be read and used in the workflow.

---

4. Save the **To-Do** record.

The to-do is carried out as follows:

1. CRM.server polls for due to-do records as specified in the `settings.server.xml` file.

2. CRM.server enters the **Starts on/at** time.

3. CRM.server completes the task.

4. Once the task is completed, the to-do record's **Status** is set to "Completed" and the **Ends on/at** time is entered.

5. A message is sent to the rep entered in the **Assigned by Rep ID** field in the to-do record informing the rep that the task is complete. The message includes a link to the to-do record.

To-Do Types

Learn about the types of To-Do types tasks.

CRM.server can process the following tasks:

Calculate Support Costs: Type = 0

Executes the same function as the **Calculate** option in the **Support** info area.

Parameters:

• <FI_StaNo>-<FI_SerNo> (e.g. 100-12) (leave empty for all companies)
• Start year (integer, 4 digits)
• End year (integer, 4 digits)
• Currency (catalog code); optional; the base currency is used by default

Calculate Campaign Status: Type = 1

Executes the same function as the **Calculate** option in the **Campaign** info area.

Parameters:

• <CM_StaNo>-<CM_SerNo> (e.g. 10-47) (leave empty for all campaigns)

Calculate Activity Status: Type = 2

Executes the same function as the **Calculate** option in the **Marketing Activity** info area.

Parameters:

- <AK_StaNo>-<AK_SerNo> (e.g. 1-57)

Fill Telephone Number Table: Type = 3

Executes the same function as the **Fill** option in the **Tel.No./E-mail** info area (no parameters).

Inventory: Type = 4

Executes the same function as the **Stocktaking** option in the **Stock** info area, see Stocktaking in the *Business Logic Manual*.

```
4 ;20121005 ;20121020;text;10000003
```

Parameters:

- ID of the stocktaking format
- Start date (integer, 8-digit, yyyymmdd)
- End date (integer, 8-digit, yyyymmdd)
- Stocktaking text (max. 100 characters)
- Rep ID (ID of the rep for whom the stocktaking should be executed)

  Specifying a Rep ID in the to-do overrules the rep selection in the stocktaking format (**Employee** list on the **General** tab).

Allocate Business Line: Type = 5 (OTC only)

Executes the same function as the **Allocate** option in the **Business Line** info area (no parameters).

Execute Query: Type = 7

Executes a query in Aurea CRM web, see Background Queries in the *Aurea CRM web Administrator Guide*. The query result is either saved in a query result record (Q1) or written to a file.

Parameters (all optional):

- -n: name of the query result (if no name is specified, the following name is assigned: <query_name>_<creation_date>_<creation_time>)
- -r: maximum number of result lines (if not specified, no restrictions apply)
- -f: private (>0 = private, otherwise global)
- -csv: the query results are written to a file

The query format is saved as a document in the database (D1 table) and linked to the To-Do by means of a document link. The document contains the XML definition of the query. After successfully executing the query, the document is deleted from the database.

XML Report: Type = 9

Creates an XML report, see Reports in the *Aurea CRM win User Manual*.

Parameters:

- -xml <report name>
- -xfile <Path> (path to a file containing a report name per line)
- save=1;context=1;doc.class=<text>;keyword=<text>

  Use these parameters to specify how the report should be saved in Aurea CRM's database.

  - save=1 … The report document is saved to the **Document** info area (D1) under the name specified in the report format. (save=0 (default) … The report is not saved in the database but created as specified in the Report format).
  - context=1 … The D1 record is linked to the record entered in the **Link** field in the **To-Do** record via a **Document link** record (D3).

    If the **Context** of the report format is set to "current record", the linked record is used as context for the report.

    This parameter is ignored when used in the command line.

  - <doc.class> is a text parameter: You can enter the external key of the catalog value that is added to the new D1 record (**Document class** field).
  - <keyword> is a text parameter: You can add a value (for example the customer's ID) that is added to the new D1 record (**Keyword** field).

  The four parameters must be separated by semicolons.

  If the record entered in the **Link** field is already linked to a D1 record with the document and the same **Document class** catalog value via D3 record, the document is replaced by the new report and no new records are created. If the D1 record contains a document with a different name than specified in the Report format, the document's name is left unchanged and updated with the contents of the report. If there's a different **Document class** entered, a new link is created in addition to the already existing one.

Prerequisites:

- The report format must be present in Aurea CRM.
- The path and file name of the report (defined under **Select File/Directory** in the **Define Report Format** window; or under **Save first transformation** to file) must be defined.
- The report may not use any variable conditions.

If these prerequisites are not met, the process is aborted.

Calculate Accommodation & Event Venue Ratings: Type = 10

Calculates the average of all event ratings (accommodation and venue).

Parameters:

- Start date of the campaign (format: YYYYMMDD). All campaigns that start after the specified date are calculated. If no start date is specified, the average is calculated for all campaigns.

Calculate Lecture & Speaker Ratings: Type = 11

Calculates the average of all event ratings (lecture and speaker).

Parameters:

- Start date of the agenda item (format: YYYYMMDD). All agenda items that start after the specified date are calculated. If no start date is specified, the average is calculated for all campaigns and agenda items.

Update Sales Territory Management: Type = 12 (BTB and FS only)

Updates the allocation of reps (in sales groups and property management records) for companies, persons and properties (BTB only), see Territory Management in the *Business Logic Manual*s.

Enter the To-do type and affected info areas in the **Text** field :

12;FI,KP,OJ updates the allocation for all three info areas,

12;KP only updates the allocation to persons in the **Person in Company** info area.

Mass Updates: Type = 14

Applies mass data updates for Aurea CRM web, see Mass Data Operations in the *Aurea CRM web Administrator Guide*.

Parameters:

- Abbreviation of the info area subject to the change (e.g. "FI")
- The frequency with which the To-Do is executed (between the due date and end date). Format: 3d = 3 days, 2m = 2 months. This parameter is optional.

If errors occur, a log file is saved in the database and linked to the appropriate message. If the **web URL** configuration entry is present, the file also contains a link to the Aurea CRM web record that the error affects.

Mass Deletions: Type = 15

Mass Deletions without Communication: Type = 16

Carries out mass deletions for Aurea CRM web, see Mass Data Operations in the *Aurea CRM web Administrator Guide*.

Parameters:

- Abbreviation of the info area subject to the change (e.g. "FI")
- The frequency with which the To-Do is executed (between the due date and end date). Format: 3d = 3 days, 2m = 2 months. This parameter is optional.

If errors occur, a log file is saved in the database and linked to the appropriate message. If the **web URL** configuration entry is present, the file also contains a link to the Aurea CRM web record that the error affects.

Create Calendar Definition Entries: Type = 17

Creates records in the **Calendar Definition** (CD) info area for the specified time span and calendar IDs, see Calendar Definition Info Area on page 94.

```
17 ;YYYY -MM-DD,YYYY-MM-DD,ID1,ID2,...
```

Parameters:

- Start / End Dates (format YYYY-MM-DD or YYYYMMDD): The records are created the specified time span. The maximum number of days and therefore records is 3660. If the time span exceeds this number, no records are created.

- Calendar ID(s): Catalog value IDs of the fixed catalog "Calendar". If no value exists for the specified ID, no records are created.

Calculate Root Ticket for Existing Ticket Hierarchy: Type = 18

Enters a link to the respective root ticket in all existing (hierarchical) tickets (**KM_2_StaNo/SerNo/Link**). (This is required to highlight all **Activity** records belonging to a ticket hierarchy in the Dispatching Dashboard.)

```
18 ;KM
```

Alternatively, you can use the **Generate Root ID** context menu option in the **Ticket Overview** (in Aurea CRM win).

Calculate Corporate Structures: Type = 19

Generates/updates relationship levels for corporate structures in Aurea CRM web, see *Corporate Structures* in the *Business Logic Manual*.

```
19 ;force ;highLevelUpdate;timestamp
```

Parameters (optional):

- `force` : By default, corporate structures are only created, if at least one relationship hierarchy entry is present in the **Relationship level** (BL) info area. Use the `force` parameter to create corporate structures even if no relationship hierarchy exists.

- `highLevelUpdate` : By default, no triggers are executed when this to-do changes records. Use the `highLevelUpdate` parameter to enable the execution of triggers.

- `timestamp` : By default, no time stamps are set in the relationship records when this to-do changes records. Use the `timestamp` to enable the setting of time stamps.

The calculation is tracked in the **Process Tracking** (T3) info area (process "Generate Relationship Hierarchy" (1010)). Relationship records with no children are deleted during this process. Relationships with a depth greater than 10 levels and relationship loops are written to the log file.

Calculate Item Structures: Type = 20

Generates/updates item structure records (IS), see *Item Structure* in the *Business Logic Manual*.

This to-do type supports the same parameters as described for type 19.

Import: Type = 21

Allows starting an import, see Import/Export in the *Aurea CRM win Administrator Guide*.

```
21;import_FI;C:\temp\FI_imp.txt;1
```

Parameters:

- Name of the import format (required when importing from file and from database)
- Path and name of the import file (only required when importing from file)

  If undefined, the file specified in the import format is used. In this case, you need to add an "empty" parameter, e.g. `21;import_FI;;`

- Switch for creating **Import Results** records (C5): 0 or 1.

  If undefined, the setting specified in the import format is used (**Log import results** check box in the **File Format** dialog).

After completion of the to-do the following information is written to the database:

- The message (MD) that is created for the **Assigned by** rep contains the number of records that have been imported successfully and the number of records for which the import failed in the **Message** field.
- The record ID of the import log record (created in the **Communication Log** info area C3) is written to the **Text** field of the message record (e.g. "#71/x0000000000000001").

For imports which should be executed at regular intervals you can define jobs of type `ImportJob` in the `settings.server.xml`, see .

Export: Type = 22

Allows starting an export, see Import/Export in the *Aurea CRM win Administrator Guide*.

```
22;export_PR;C:\temp\PR_export.txt
```

Parameters:

- Name of the format
- Path and name of the target file

  If undefined, the file specified in the format is used. In this case, you need to add an "empty" parameter, e.g. `21;export_PR;;`

For exports which should be executed at regular intervals you can define jobs of type `ExportJob` in the `settings.server.xml`, see .

Note: Since CRM.server can not handle Selections and Property Selections (BTB only), you can not use export formats exporting records restricted based on selections.

Note: To-Dos of types 1, 2, 6, 7, 9-12, 14-17, 21 and 22 are executed within the user context, i.e. they are executed using the access rights of the user who added the **To-Do** record (**Assigned by** field).

Linking To-Dos to Other To-Dos

Learn how to link To-Dos to other To-Dos.

You can link a to-do to a predecessor to-do. The to-do is only processed after its predecessor has been completed. The **Due on** and **Due at** values are taken into account, i.e. the child to-do is processed at its scheduled time if the predecessor to-do has been completed successfully.

Note: This feature is only available for CRM.server, i.e. update.seven sever does **not** support concatenated to-dos.

To-do records are linked via the **TD_1_StaNo** and **TD_1_SerNo** fields containing the key of the **Predecessor** to-do.

If a to-do can not be processed due to a technical problem (e.g. an import fails because the database is unavailable), the child to-dos are not processed as well.

If a to-do can not be processed due to a problem regarding its content (e.g. parent record or catalog value not found, wrong date/time format, etc.), the child to-dos are processed regardless.

For to-dos that failed due to a technical problem, the **Status** is set to "Aborted".

Sales Planning

Aurea CRM's sales planning & optimization functionality uses CRM.server to-dos to perform calculations.

Each function creates a to-do of **To-Do Type** "Calculate" calling a workflow (**Execution Type** = "Workflow", **Execution Format** = "<workflow_name>"), see

Syntax:

To enter parameters directly in the to-do record (**Text** field), use the following syntax:

```
parameter name = <value/>
```

Example:

```
"BY=<2013/> FilterFi=<F0='2' AND F1='100'/> FilterP5=</> RepId=<010000003/>"
```

Global Parameters

`ServerId`: Rep ID of the CRM.server user for asynchronous to-dos.

`ExecutionMode`: `synchron` | `asynchron` (default)

Available Functions (Workflows) and Parameters

Name: U_BL_P5_1

Creates "empty" **Sales Optimization** records (P5) for the specified year (no values, no quantities).

Parameters:

BY	Business year for which the P5 records are generated. If unde-fined, the previous year is used.
FilterFi	Filters for specific FI records.
FilterId	Filters by rep.
FilterLa	Filters by country.
FilterP5	Filters for specific P5 records.
RepId	If defined, the P5 records are generated for this rep. If a company "belongs" to another rep and its product records are rep-related (i.e. no company or country entered), no P5 records are created.

Name: U_BL_P5_2

Calculates default target values by reading the actual values from the specified year and adds the percentages specified in P6 or P7.

Parameters:

BY	Business year
FilterFi	Filters for specific FI records.
FilterId	Filters by rep.
FilterLa	Filters by country.
FilterP5	Filters for specific P5 records.
Copy	If set to `true`, the calculated defaults are directly copied to the target values. Only if `CopyFunction = <false/>`. If set to `false`, the values are only calculated and the `U_BL_P5_3` function has to be used to update the P5 records.
CopyFunction	If set to `true`, `U_BL_P5_3` is called with parameters `BY`, `FilterP5` and `HierachyLevel` (see below).
HierarchyLevel	Specifies on which product level the target values are calculated, i.e. the planning level. Available values: 1-6
AggType	Specifies the type of plan: 1…company, 2…rep, 3…country, 4…business year.

Name: U_BL_P5_3

Copies default targets to target values (annual values).

Parameters:

BY	Business year
FilterP5	Filters for specific P5 records.
HierarchyLevel	Specifies on which product level the target values are written, i.e. the planning level. Available values: 1-6
AggType	Specifies the type of plan: 1…company, 2…rep, 3…country, 4…business year.

Name: U_BL_P5_4

Calculates the market growth per product and target values based on the growth.

Note: P5 records for the newly calculated target values must exist.

Parameters:

BY	Business year
FilterFI	Filters companies for the calculation (read).
FilterFIWrite	Filters companies for the result (write).
FilterId	Filters reps for the calculation (read).
FilterIdWrite	Filters reps for the result (write).
FilterLa	Filters countries for the calculation (read).
FilterLaWrite	Filters countries for the result (write).
FilterP5	Filters for specific P5 records.
Forecast	If set to false, target values are calculated. If set to true, forecast values are calculated.

Error Codes

- BL_ERROR_TODO_PARAMETER = 280
- BL_ERROR_READ_FILTER_FORMAT = 281

- `BL_ERROR_WRITE_FILTER_FORMAT` = 282

- `BL_ERROR_STRING_TO_FILTER` = 283

Carrying Out Marketing Activities

Learn how to carry out and abort marketing activities.

Marketing activities defined to be carried out by CRM.server are executed by the `MonitorExecuteActivityTodosJob` as defined in the `settings.server.xml` file:

```
<!--
Execute open todos with marketing activities for the crm.server user (every three
 minutes)
-->
<Job schedule="*/3 * * * "
type="update.Crm.Server.Jobs.MonitorExecuteActivityTodosJob,update.Crm.Server" />
```

If the `schedule` attribute is undefined, the `MonitorExecuteActivityTodosJob` checks for due to-do records of **Type** "Execute Marketing Activity" every minute.

For detailed information on defining and executing marketing activities, see Marketing Activities in the *Business Logic Manual*.

Aborting the Execution of a Marketing Activity

You can define that users can enable a Boolean field in the **Execution (Marketing Activity)** info area while the marketing activity is being executed in order to abort the execution of the marketing activity. Which field is used for this purpose is defined by the **Field used to cancel the execution for marketing activities** configuration option (**Campaigns** category) in the **Configuration** info area (MC), see Campaigns on page 29.

When executing the marketing activity, CRM.server regularly polls to check whether this field has been enabled. The default polling interval is 5 seconds. To change this interval, enter "Interval=n" (where n is the desired number of seconds) in the **Comment** field if the configuration entry.

If the execution is aborted, the **Execution Status** field in the **Execution (Marketing Activity)** info area and the status of the corresponding to-do are both set to "Canceled". The time at which the execution is aborted is written to the **Time** field in the **Log (Marketing Activity)** info area.

Note: This function can impact negatively on the system's performance when executing marketing activities.

Scheduling Import Jobs

Learn how to schedule import jobs execution.

Imports which should be executed at regular intervals can be executed by the `ImportJob` in the `settings.server.xml`:

```
<Job schedule="0 2 * * "
type="update.Crm.Server.Jobs.ImportJob,update.Crm.Server">
The import format name
<FormatName>CompanyImport</FormatName>
The path to the import file (optional)
<ImportPath>E:\MyDocuments\FI_import.txt</ImportPath>
```

```
Set to true if an import result should be generated (optional)
<CreateProtocol>false</CreateProtocol>
</Job>
```

The import is executed based on an import format, see Import/Export in the *Aurea CRM win Administrator Guide*.

Available parameters:

FormatName

The name of the import format.

ImportPath

The path to the import file. This can be a relative or absolute path, environment variables are resolved. If undefined, the import file specified in the import format is used.

CreateProtocol

If set to `true`, **Import Result** (C5) records are generated for import errors. If undefined, the setting specified in the import format is used (**Log import results** check box in the **File Format** dialog).

Use the `name` attribute to schedule multiple import jobs with different parameters to execute multiple imports at regular intervals.

Default: `false`

Scheduling Export Jobs

Learn how to schedule export jobs execution.

Exports which should be executed at regular intervals can be executed by the `ExportJob` in the `settings.server.xml`:

```
<Job schedule="0 2 * * * "
type="update.Crm.Server.Jobs.ExportJob,update.Crm.Server">
The export format name
<FormatName>Export_format</FormatName>
The path to the export file (optional)
<ExportPath>export.txt</ExportPath>
</Job>
```

The export is executed based on an export format, see Import/Export in the *Aurea CRM win Administrator Guide*.

Available parameters:

FormatName

The name of the format.

Note: Since CRM.server can not handle Selections and Property Selections (BTB only), you can not use export formats exporting records restricted based on selections.

ExportPath

The path and name of the target file. This can be a relative or absolute path, environment variables are resolved. If undefined, the file specified in the format is used.

Use the `name` attribute to schedule multiple export jobs with different parameters to execute multiple exports at regular intervals.

Background Geo-Coding

Learn about jobs to retrieve and recalculate geocodes in the background.

Background geo-coding consists in the following tasks executed by CRM.server:

- retrieve geographic coordinates for large amounts of data, see Batch-Geocoding on page 456

- recalculate geographic coordinates of low quality, see Re-Encoding Failed Geo-Codings on page 457

Both tasks are executed in one step by the `BatchGeocodingJob` job as defined in the `settings.server.xml` file:

```
<!--
Update missing or faulty geo-coordinates in records each night at 2 o'clock
You need a valid Bing license!
-->
<Job schedule="0 2 * * * "
type="update.Crm.Server.Jobs.BatchGeocodingJob,update.Crm.Server">
The catalog value of the precision catalog: all records with a value equal or lower
 is recoded
<Precision>2</Precision>
The interval which should be checked: i.e. P1Y2M10DT2H30M
<Timespan>P2D</Timespan>
</Job>
```

Available parameters (for more details,see Re-Encoding Failed Geo-Codings on page 457):

Precision

Defines the precision of records which should be re-encoded. All records with a lower value is re-encoded.

Timespan

Defines the interval which is subtracted from the current date to re-encode all records with a value lower than this date in the **Updated (Geo-coordinates)** field.

Background geo-coding can only be executed on a Aurea CRM database containing a server license, see Aurea CRM License on page 130.

To enable server-side geo-coding, enable the **Use Geo-coordinates** configuration options (**Geo-Coordinates** category) in the **Configuration** info area (MC), see Geo-Coordinates on page 49.

In addition, at least the following configuration options must be defined:

- **License key**
- **Geolocation handler**

To restrict geo-encoding to batch-geocoding only, set the **Active in the following modules** option to "mmse".

Batch-Geocoding

Learn about batch geocoding.

The following records are updated:

- A configuration entry **Geolocation Handler** (MC) is defined for the record's info area.
- Mandatory address fields (**Country**, **City**, **Street** and **ZipCode** (default) or custom fields as defined by the **Field Mapping** configuration entry) are not empty.
- Records with **Precision** != "failed".
- The coordinates fields (**Longitude** and **Latitude**) are empty.

By default, when the configuration options are not defined, the following limits are enforced:

- 200,000 records per batch
- five batches per day
- 10,000,000 records per year

The maximum size of a batch is 300 MB (uncompressed request).

The limits can be configured using the following configuration options (MC, Geo-Coordinates category):

- **Maximum number of addresses per batch request:** Records per batch.
- **Maximum number of batch requests per day:** Batches per day.
- **Maximum number of addresses in batch requests per year:** Records per year.

  Enter the desired values in the **Numeric** field. These settings are applied globally.

Note: For Bing maps license keys supplied by Aurea Software Inc., refer to Aurea Bing Maps Usage Limits on page 457.

The information on the remaining number of records to be geo-encoded in the current year is saved in T3 (Process "(10,000) TrackingProcessTypes.BatchGeocodingRemainingLimit") and displayed on Aurea CRM web's System Information page (**Remaining number of geocodes for the current year**).

Note: The year always starts at January 1st. The counter (on the System Information page) is reset when batch-geocoding is executed for the first time in a year. Therefore, limit changes are only applied at this time.

Re-Encoding Failed Geo-Codings

After batch-geocoding is completed and if the limit of the daily quota is not yet exceeded, records with a low geo-coding precision are re-encoded.

The following records are updated:

* A configuration entry **Geolocation Handler** (MC) is defined for the record's info area.

* Mandatory address fields (**Country**, **City**, **Street** and **ZipCode** (default) or custom fields as defined by the **Field Mapping** configuration entry) are not empty.

* Records with **Precision** below acceptable (as defined by the `<Precision>` attribute, see below).

    Records with **Precision** = "Manual input" are not changed.

* The date of the last geo-encoding (**Updated (Geo-coordinates)** field) is older than the re-encoding timespan (as defined by the `<Timespan>` attribute, see below).

* The records to be re-encoded are ordered by **Date** ascendant (= oldest first) and **Precision** descendant (lowest first).

The amount of records to be re-encoded is limited by the maximum batch size and the daily quota that is left. The sum of the number of records geo-coded by batch-geocoding and re-encoded may not exceed the daily quota.

The precision and timespan defining which records are to re-encoded is defined in the `settings.server.xml` file:

```
<Job schedule="0 2 * * * "
type="update.Crm.Server.Jobs.BatchGeocodingJob,update.Crm.Server">
<Precision>2</Precision>
<Timespan>P2D</Timespan>
</Job>
```

Enter the code of the desired value of catalog **Precision** (97), e.g. `2` for "High". In this case records with **Precision** = "Medium", "Low" and "failed" is re-encoded.

Enter the timespan using ISO 8601, see http://en.wikipedia.org/wiki/ISO_8601#Durations.

Examples:

`P1Y2M10DT2H30M` => 1 year, 2 months, 10 days, 2 hours and 30 minutes.

Values without a value can be omitted: `P2D` => 2 days.

Aurea Bing Maps Usage Limits

The mandatory limits apply to Bing Maps license keys supplied by Aurea Software Inc.

For information about the limits applicable to license keys supplied by Microsoft or other 3rd parties, please contact the corresponding supplier.

CRM.core Batch Geocoding Configuration

Access the Win Rights module (mmri.exe) and assure the following configuration options exist:

- Maximum number of batch requests per day: 3

- Maximum number of addresses per batch request: 2.500

- Maximum number of addresses in batch requests per year: 1.200.000

CRM.server Job Configuration

For the background service CRM.server, the limits are:

- Medium(3) as minimum precision

- 7-day re-encoding timespan

The above limits are defined in the configuration file settings.server.xml.

For example, a daily execution at 4am would be defined as follows:

```
<Job schedule="0 4 * * * "
type="update.Crm.Server.Jobs.BatchGeocodingJob,update.Crm.Server">
    <Precision>3</Precision>
    <Timespan>P7D</Timespan>
</Job>
```

Additional considerations

- If the same License Key is configured in multiple stations with Batch Geocoding enabled, the 3 requests per day must be balanced between all stations, for example, 1 in production, 1 in development and 1 in test.

- It is recommended not to keep Batch Geocoding permanently enabled in non-productive systems, ideally jobs should be scheduled individually for specific tests.

- It is a best practice to keep the CRM.server Batch Geocoding job schedule consistent with the batches per day CRM.core configuration.

Generating License Reports (Saas)

Learn how license reports are automatically generated.

In an Saas environment license reports are automatically generated by the GenerateLicenseReportJob as defined in the settings.server.xml file:

```
<!--
Generate the license report at the first day of every month at 23 o'clock
-->
<!--
<Job schedule="0 23 1 * *"
type="update.Crm.Server.Jobs.GenerateLicenseReportJob,update.Crm.Server">
The path to which the license report should be exported.
Can be a relative or absolute path, environment variable are resolved.
(Default is "LicenseReports")
<ExportPath>..\testLicenseReport</ExportPath>
Should user names be anonymized (default is false)
<EncodeUserNames>true</EncodeUserNames>
</Job>
```

Available parameters (optional):

ExportPath

Defines the path to which the license report should be exported. This can be a relative or absolute path, environment variables are resolved. If undefined, the file is saved to the `web\LicenseReport` directory. (The directory is created if it does not exist).

EncodeUserNames

If set to `true`, user names are anonymized in the report.

For more information, see License Report in an SaaS Environment on page 133.

Default: `false`

Escalating To-Dos

The escalation of to-dos is done in a background thread of CRM.server.

The job checks for to-dos to escalate every 30 seconds.

This job is always active and cannot be disabled.

Processing Rep Hierarchy Changes

The processing of Hierarchy Changes is also done in a background thread of CRM.server.

The processing of **Hierarchy Change** (05) records (see Rep Hierarchy on page 127) is done in a background thread of CRM.server checking for hierarchy changes every 30 seconds. This job is always active and cannot be disabled.

Scheduling CRM.server Jobs

CRM.server jobs are scheduled via the `server.settings.xml` file using the `crontab` syntax.

For further details, see http://www.adminschoice.com/tag/crontab-syntax.

Example:

```
<Job schedule="*/3 * * * "
type="update.Crm.Server.Jobs.MonitorTodosJob,update.Crm.Server" />
```

In this case the `MonitorTodosJob` is started every three minutes.

Jobs with the `schedule` attribute undefined are started every minute.

Note: If you suffer lag in processing background jobs, set the pooling interval to 1 minute in the configuration file as mentioned below.

```
<Job schedule="1 * * * "
type="update.Crm.Server.Jobs.MonitorTodosJob,update.Crm.Server" />
```

update.seven server

In Aurea CRM CRM.server replaces update.seven server.

The "old" update.seven server is discontinued with future service packs.

For a list of differences between update.seven server and CRM.server, see the article "Comparison between old and new CRM.server" at https://support.aurea.com.

Configuring update.seven server

Learn how to configure CRM.server.

To set up update.seven server:

1. Ensure that the following Aurea CRM directories are present on the server:

   - The `.. \exe` directory (containing `mmserver.exe` and all DLL files)

   - The `.. \sys` directory

   - A user directory for the administrator (SU)

2. Add a user to Aurea CRM win solely for use by CRM.server. This user requires access rights for those info areas required to execute tasks.

3. To send mailings via CRM.server (see Automatically Executing Marketing Activities on page 466):

   a. Configure SMTP (in the **Configuration** info area) as the e-mail client on the station that CRM.server runs on, >> General Settings on page 41 (**E-mail Client** option).

   b. Specify valid SMTP connection settings for the CRM.server user, see SMTP Connection Settings on page 92.

4. Register the service by entering the following at the command prompt, see mmServer.exe Parameters on page 19:

   ```
   mmserver --install [-n <servicename>] [-u <username>] [-p <password>]
   ```

   `-n` = Name of the instance of CRM.server

   `-u` = The CRM.server user's user name

   `-p` = The CRM.server user's password

Note: You can set up several instances of CRM.server for the same user. Logs are written per user. Aurea recommends using multiple users if CRM.server accesses the same database from different computers. If single sign-on has been configured for the CRM.server user, you do not need to specify the `-u` and `-p` parameters. The password must be entered in upper case, unless the **PW must contain upper and lower case** option is enabled. In this case, you need to enter

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the password exactly as defined. Use `mmserver --remove` to remove the service, see mmServer.exe Parameters on page 19.

The service is registered per instance under `HKEY_LOCAL_MACHINE/Software/update.com/mmServer`.

5. Start the service.

Using update.seven server

Learn where to use CRM.server.

You can use update.seven server to:

- Add a to-do, see Automatically Completing To-Dos on page 442.

  In addition, update.seven server is used to automatically perform various calculations used by the business logic, see To-Do Types (update.seven server) on page 461.

- Define an automatic marketing activity, see Automatically Executing Marketing Activities on page 466.
- Define that hierarchy codes should be updated automatically, see Automatically Updating Hierarchy Code Fields on page 467.
- Calculations for the sales planning&optimization functionality are performed as described for CRM.server,see Sales Planning on page 450.

To-Do Types (update.seven server)

To-dos for update.seven server are created as described for CRM.server.

For further details, see Automatically Completing To-Dos on page 442.

Aurea CRM server can process the following tasks:

Calculate Support Costs: Type = 0

Executes the same function as the **Calculate** option in the **Support** info area.

Parameters:

- <FI_StaNo>-<FI_SerNo> (e.g. 100-12) (leave empty for all companies)
- Start year (integer, 4 digits)
- End year (integer, 4 digits)
- Currency (catalog code); optional; the base currency is used by default

Calculate Campaign Status: Type = 1

Executes the same function as the **Calculate** option in the **Campaign** info area.

Parameters:

• <CM_StaNo>-<CM_SerNo> (e.g. 10-47) (leave empty for all campaigns)

Calculate Activity Status: Type = 2

Executes the same function as the **Calculate** option in the **Marketing Activity** info area.

Parameters:

• <AK_StaNo>-<AK_SerNo> (e.g. 1-57)

Fill Telephone Number Table: Type = 3

Executes the same function as the **Fill** option in the **Tel.No./E-mail** info area (no parameters).

Inventory: Type = 4

Executes the same function as the **Stocktaking** option in the **Stock** info area.

Parameters:

• Stocktaking format ID
• Start date (integer, 8-digit, yyyymmdd)
• End date (integer, 8-digit, yyyymmdd)
• Stocktaking text (max. 100 characters)

Allocate Business Line: Type = 5 (OTC only)

Executes the same function as the **Allocate** option in the **Business Line** info area (no parameters).

Execute Selection: Type = 6

Executes a selection.

Parameters:

• Selection format ID
• Selection format name

Only one of the parameters needs to be entered.

Execute Query: Type = 7

Executes a query in Aurea CRM web, see Background Queries in the *Aurea CRM web Administrator Guide*. The query result is either saved in a query result record (Q1) or written to a file.

Parameters (all optional):

• -n: name of the query result (if no name is specified, the following name is assigned: <query_name>_<creation_date>_<creation_time>)
• -r: maximum number of result lines (if not specified, no restrictions apply)

- -f: private (>0 = private, otherwise global)
- -csv: the query results are written to a file

The query format is saved as a document in the database (D1 table) and linked to the To-Do by means of a document link. The document contains the XML definition of the query. After successfully executing the query, the document is deleted from the database.

Automatic Selection: Type = 8

Executes all the automatic selections entered in the **Autom.** column in the **Autom. Selection** info area with a frequency >0, see Automatic Selections in the *Aurea CRM win User Manual*. Also enter the **End Date** for this type: the automatic selection is executed with the specified frequency between the **Due on** and **End Date** entered in the To-Do.

Parameters:

- SL: Executes the automatic selection
- OS: Executes the automatic property selection (BTB only)
- SL,OS or OS, SL: Automatic selections and automatic property selections (BTB only) are executed. Selections are always executed prior to property selections.

XML Report: Type = 9

Creates an XML report, see Reports in the *Aurea CRM win User Manual*.

Parameters:

- -xml <report name>
- -xfile <Path> (path to a file containing a report name per line)
- save=1;context=1;doc.class=<text>;keyword=<text>

  Use these parameters to specify how the report should be saved in Aurea CRM's database.

  - save=1 … The report document is saved to the **Document** info area (D1) under the name specified in the report format. (save=0 (default) … The report is not saved in the database but created as specified in the Report format).
  - context=1 … The D1 record is linked to the record entered in the **Link** field in the **To-Do** record via a **Document link** record (D3).

    If the **Context** of the report format is set to "current record", the linked record is used as context for the report.

    This parameter is ignored when used in the command line.

  - <doc.class> is a text parameter: You can enter the external key of the catalog value that is added to the new D1 record (**Document class** field).
  - <keyword> is a text parameter: You can add a value (for example the customer's ID) that is added to the new D1 record (**Keyword** field).

The four parameters must be separated by semicolons.

If the record entered in the **Link** field is already linked to a D1 record with the document and the same **Document class** catalog value via D3 record, the document is replaced by the new report and no new records are created. If the D1 record contains a document with a different name than specified in the Report format, the document's name is left unchanged and updated with the contents of the report. If there's a different **Document class** entered, a new link is created in addition to the already existing one.

Prerequisites:

- The report format must be present in Aurea CRM.
- The path and file name of the report (defined under **Select File/Directory** in the **Define Report Format** window; or under **Save first transformation** to file) must be defined.
- The report may not use any variable conditions.

If these prerequisites are not met, the process is aborted.

Calculate Accommodation & Event Venue Ratings: Type = 10

Calculates the average of all event ratings (accommodation and venue).

Parameters:

- Start date of the campaign (format: YYYYMMDD). All campaigns that start after the specified date are calculated. If no start date is specified, the average is calculated for all campaigns.

Calculate Lecture & Speaker Ratings: Type = 11

Calculates the average of all event ratings (lecture and speaker).

Parameters:

- Start date of the agenda item (format: YYYYMMDD). All agenda items that start after the specified date are calculated. If no start date is specified, the average is calculated for all campaigns and agenda items.

Update Sales Territory Management: Type = 12 (BTB and FS only)

Updates the allocation of reps (in sales groups and property management records) for companies, persons and properties (BTB only), see Territory Management in the *Business Logic Manual*s.

Enter the To-do type and affected info areas in the **Text** field :

12;FI,KP,OJ updates the allocation for all three info areas,

12;KP only updates the allocation to persons in the **Person in Company** info area.

Mass Updates: Type = 14

Applies mass data updates for Aurea CRM web, see Mass Data Operations in the *Aurea CRM web Administrator Guide*.

Parameters:

- Abbreviation of the info area subject to the change (e.g. "FI")
- The frequency with which the To-Do is executed (between the due date and end date). Format: 3d = 3 days, 2m = 2 months. This parameter is optional.

If errors occur, a log file (`massdata_log.txt`) is saved in the database and linked to the appropriate message. If the **web URL** configuration entry is present, the file also contains a link to the Aurea CRM web record that the error affects.

Mass Deletions: Type = 15

Mass Deletions without Communication: Type = 16

Carries out mass deletions for Aurea CRM web, see Mass Data Operations in the *Aurea CRM web Administrator Guide*.

Parameters:

- Abbreviation of the info area subject to the change (e.g. "FI")
- The frequency with which the To-Do is executed (between the due date and end date). Format: 3d = 3 days, 2m = 2 months. This parameter is optional.

If errors occur, a log file (`massdata_log.txt`) is saved in the database and linked to the appropriate message. If the **web URL** configuration entry is present, the file also contains a link to the Aurea CRM web record that the error affects.

Create Calendar Definition Entries: Type = 17

Creates records in the **Calendar Definition** (CD) info area for the specified time span and calendar IDs, see Calendar Definition.

```
17 ;YYYY -MM-DD,YYYY-MM-DD,ID1,ID2,...
```

Parameters:

- Start / End Dates (format YYYY-MM-DD or YYYYMMDD): The records are created the specified time span. The maximum number of days and therefore records is 3660. If the time span exceeds this number, no records are created.
- Calendar ID(s): Catalog value IDs of the fixed catalog "Calendar". If no value exists for the specified ID, no records are created.

Calculate Root Ticket for Existing Ticket Hierarchy: Type = 18

Enters a link to the respective root ticket in all existing (hierarchical) tickets (**KM_2_StaNo/SerNo/Link**). (This is required to highlight all **Activity** records belonging to a ticket hierarchy in the Dispatching Dashboard.)

```
18 ;KM
```

Alternatively, you can use the **Generate Root ID** context menu option in the **Ticket Overview** (in Aurea CRM win).

Calculate Corporate Structures: Type = 19

Generates/updates relationship levels for corporate structures in Aurea CRM web, see Corporate Structures in the *Business Logic Manual*.

```
19 ;force ;highLevelUpdate;timestamp
```

Parameters (optional):

- `force` : By default, corporate structures are only created, if at least one relationship hierarchy entry is present in the **Relationship level** (BL) info area. Use the `force` parameter to create corporate structures even if no relationship hierarchy exists.

- `highLevelUpdate` : By default, no triggers are executed when this to-do changes records. Use the `highLevelUpdate` parameter to enable the execution of triggers.

- `timestamp` : By default, no time stamps are set in the relationship records when this to-do changes records. Use the `timestamp` to enable the setting of time stamps.

The calculation is tracked in the **Process Tracking** (T3) info area (process "Generate Relationship Hierarchy" (1010)). Relationship records with no children are deleted during this process. Relationships with a depth greater than 10 levels and relationship loops are written to the log file.

Calculate Item Structures: Type = 20

Generates/updates item structure records (IS), see Item Structure in the *Business Logic Manual*.

This to-do type supports the same parameters as described for type 19.

Note: To-Dos of types 1, 2, 6, 7, 9-12 and 14-17 are executed within the user context, i.e. they are executed using the access rights of the user who added the **To-Do** record (**Assigned by** field).

Automatically Executing Marketing Activities

Learn to set up auto marketing activities execution.

1. An Aurea CRM user enables the **Start automatically** check box in the **Execution (Marketing Activity)** info area, and enters the CRM.server user in the **Rep** field.

Note: The access rights assigned to the user entered in the **Sel. User** field are used when executing queries/selections and generating records.

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2. The number of the station on which CRM.server is running must be entered in the **Station No.** field.

3. If the execution definition (**Execution (Marketing Activity)** info area) contains all required settings, the CRM.server user receives a To-Do record of type "Execute Marketing Activity", see Marketing Activities in the *Business Logic Manual*.

4. Aurea CRM server searches for To-Do records that meet the following conditions once every minute. It processes them sequentially by date and time.

   - Records in the **To-Dos** info area, where the **Type** is set to "Execute Marketing Activity" and the execution date is today or in the past. If the execution date is

today, then the execution time needs be in the past or empty. The status is "Open".

- Linked to a marketing activity, whose **Status** is either "In Progress" or "Scheduled", and whose **Execution Status** is neither "Error" nor "Done".

5. A control file is created for serial letters and faxes.

6. Mass mailings can be generated by CRM.server. The e-mails should be merged by Aurea CRM; i.e. the **Body File Txt** in the **Generate** dialog box should link to the desired file.

7. A control file is created:

- The path and the file entered in the **Execution (Marketing Activity)** info as the control file is used. If a file with this name already exists, the first three characters of the file name are combined with a unique hexadecimal number to form a new name. The name of the control file is entered in the **Log File** field in the **Log (Marketing Activity)** info area.

- If no control file is defined in the **Execution (Marketing Activity)** info area, the file is created temporarily in the user's Windows directory and subsequently deleted.

CRM.server requires write access and the web server requires read access to this directory.

Note: Delete the control file at regular intervals to prevent performance issues.

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8. CRM.server informs the user of completion of tasks by sending a message to the user.

If the **Create log** field is enabled in the **Execution (Marketing Activity)** info area, the execution is logged in the file

`<user_name>_<service_name>.log` in the `.. \system\db` directory.

Set the log level to "Info", see Logs and Error Messages on page 506.

You can define that users can manually abort the execution of a marketing activity. Implement this functionality as described for CRM.server, see Aborting the Execution of a Marketing Activity.

Automatically Updating Hierarchy Code Fields

Learn how to automatically update hierarchy code field.

To update the hierarchy codes after changing the rep hierarchy using CRM server:

1. Add a new record for the updated rep in the **Hierarchy Changes** info area.

2. Enter the new superior.

3. Enter the date for the changes to be applied (**Due on** and **Due at)**.

4. Enter the CRM.server user in the **Executing Rep ID** field.

Note: You can also enter a different station in the **Station No.** field, in order to apply the change to another station. You need to ensure that CRM.server is configured on the station, and that no reps affected by changes to the hierarchy are missing in the station's database.

If the rep hierarchy is changed, the user does not receive a message. The result is saved in the record.

Rebuild module

The **Rebuild** module is used to restore damaged indices which Aurea CRM is no longer able to access.

A power failure, a defective hard disk or even incorrect settings in the ini files can be the cause of such an incident.

Rebuilding the Indices

To rebuild the indices:

1. Check that you have the necessary access rights, see Rights on page 136.

2. Lock the system in order to make sure that no other users are accessing the database, see System Locks on page 236.

3. Back up your data.

4. Start the **Rebuild** module (see Starting Modules in the *Aurea CRM win Administrator Guide*) or click the **Rebuild** button in the **System Lock** dialog box.

The list contains all info areas for which an alphanumeric or phonetic index exists.

5. Select the info areas to be rebuilt. Select **All** to select all info areas.

6. Select the rebuild functions you wish to execute:

   • **Rebuild Internal update.CRM Fields**: The internal key fields are rebuilt.

   • **Rebuild Person Counter**: The persons are counted per company.

7. Click on **Start**.

   The rebuild is started.

8. Click on **Cancel** to close the dialog box.

9. Unlock the system, see System Locks on page 236.

You can also start the **Rebuild** module from the command line, e.g. to start the module at specific times using external scheduling software, see mmba.exe Parameters on page 13.

SQL Tool

Learn to use Aurea CRM's SQL Tool to carry out changes to the SQL database.

Note: The SQL Tool can only be started by the administrator (SU) and reps assigned a role where the "Aurea CRM SQL Tool" CRM process is not locked, see CRM Process Configuration on page 98. You can irretrievably delete your Aurea CRM database

and your license with this tool! Only use this program if you have detailed knowledge of the system.

1. Start the SQL tool by executing `mmba.exe` (in the `.. \system\exe` directory) using the following parameter:

   `mmba.exe -q`

2. Log on as "SU", as otherwise you cannot access the tool.

   The **update.CRM SQL-Tool** dialog box is displayed.

3. In order to enable the functions that carry out far-reaching changes to the database, enter the password "130369" in the **Pwd** field and click on **Enable**.

4. Carry out the desired changes to the database.

   - **Create All Tables/Indexes:** Creates all tables and indices anew.

   - **Drop All Tables/Indexes:** Deletes all tables (and all data in the tables) and indices.

   Note: Warning: Your data is **deleted irretrievably!**

   - **Create All Indexes:** Creates all indices anew.

   - **Drop All Indexes:** Deletes all indices.

   - **Create Table/Index:** Creates the selected table together with its index.

- **Drop Table/Index:** Deletes the selected table including all records and indices.

- **Create Index:** Creates a new index for the selected table.

  Aurea recommends only changing indices in the **Maintenance** module, see Data Model on page 280.

- **Drop Index:** Deletes the selected table's index.

  Note: You need to carry out the "drop" action before carrying out the corresponding "create" action.

- **Rebuild Table:** Rebuilds the keys in the selected table.

  Aurea recommends using the Rebuild module to rebuild tables, see Rebuild module on page 468.

- **Rebuild All Tables:** Rebuilds the keys in all tables.

- **Rebuild COLLATION Indexes, Rebuild NLS_SORT Indexes:** Rebuilds the indices used to sort the selected table, see Multi-language Sort (Oracle) and Multi-language Sort (SQL).

- **Rebuild ALL COLLATION Indexes, Rebuild ALL NLS_SORT Indexes:** Creates all the indices used to sort data in tables, see Multi-language Sort (Oracle) and Multi-language Sort (SQL).

- **Calculate rep reference:** Re-creates rep reference records for the selected info area, see Depict Rep Reference on page 347.

- **Count Table:** Counts the number of records in the selected table.

- **Count All Tables:** Counts the number of records in all tables.

- **Count All Sel. Tables:** Counts the number of records in all selection tables.

- **Recreate All Sel. Indexes:** Rebuilds the indices in all selection tables.

- **Check Table:** Checks whether a table is present in the database.

- **Check All Tables:** Checks whether all tables are present in the database.

- **Recreate Sequence:** Regenerates the automatically generated serial numbers.

- **Recreate All Sequences:** Regenerates all the automatically generated serial numbers.

- **Analyze Table:** Synchronizes the memory usage counter (sysindex tables).

- **Analyze All Tables:** Carries out an analysis of all tables.

- **Recreate Procedure:** Creates the assigned stored procedures anew.

- **Recreate All Procedures:** Creates all stored procedures anew.

- **Recreate All Functions:** Creates all functions for conditions that affect system fields anew.

- **Rebuild Pers.Counter:** Aurea recommends using the **Rebuild** module, see Rebuild module on page 468.

- **Write Script to File:** Writes all the executed SQL statements to file under `..\system\db\<table prefix>_ct.sql`.

- **Check -> Check Cols.:** If this option is enabled, after adding or checking a table, the table is checked that all columns are present.

5. Click on **Done** to close the SQL Tool.

CRM.cryptographic tool

Use CRM.cryptographic tool (`update.crypto.exe`) to encrypt/decrypt files and XML documents used/produced by Aurea CRM.

You can:

- encrypt XML files (partially or entire files), e.g. to encrypt the connection string in the `settings.xml` file used by Aurea CRM web.

  To partially encrypt an XML file use the XML attribute `encrypt`:

  ```
  <?XML version="1.0"?>
  <sample xmlns:uxe="http://schema.update.com/xmlenc#">
  <sensitiveInformationuxe:encrypt="True">mysecretpassword</sensitiveInformation>
  </sample>
  ```

- decrypt XML files (partially or entire files)

- encrypt and sign documents (using X509 Certificates, file extension `.p7m`)

  For details on encrypting documents, see Security on page 62.

  The certificate's private key (used for encryption) is required to decrypt the documents.

- verify the signature of signed files

- decrypt signed documents

`update.crypto.exe` is located in Aurea CRM webs' `..\bin` directory.

Use CRM.cryptographic tool to encrypt the `settings.xml` and `Offline.xml` files. To encrypt the `users.xml`, use CRM.users tool, see CRM.users tool on page 501.

User Interface

Command Line Parameters

Usage: `update.crypto operation [OPTIONS]`

Operation	
`decrypt`	Decrypts a file (`*.p7m`).
`encrypt`	Signs and encrypts a file (creates a `*.p7m` file).
`verify`	Verifies the signature of a signed and encrypted file (`*.p7m`).
`encryptxml`	Encrypts an XML file.
`decryptxml`	Decrypts an XML file.

[OPTIONS]	
`-h, -?, --help`	Show help.
`-f, --file, --files=VALUE`	The file name
`-o, --output=VALUE`	The output file name or directory.

[OPTIONS]	
`-k, --key=VALUE`	The name of the encryption key.
`--keyid=VALUE`	The id to be used for the key stored in the XML file (operation `encryptxml`).
`--xpath=VALUE`	An XPath expression defining the elements to encrypt (operation `encryptxml`).
`-c, --cert, --certificate, --cer=VALUE`	The output file name or directory.
`--ms`	If set use the Local Machine store to retrieve keys and certificates.
`--di, --deleteinput`	Deletes the input files after decryption (operation `decrypt`)
`-l, --log=VALUE`	Specifies the name of a log file.

For more information and examples, see the article "How to Use update.crypto.exe" at https://support.aurea.com.

CRM.translation tool

Use CRM.translation tool to manage the translation of customized texts in Aurea CRM.

You can export (untranslated) catalog values and texts from both the Aurea CRM and CRM.designer databases, see Exporting Texts for Translation on page 475. Once the texts have been translated, you can import them into the same or another database, see Importing Translated Texts on page 491.

The tool supports both CSV and XML formats. The XML output is optimized for interaction with SDL Passolo.

You can also import and export Aurea CRM's field help with CRM.translation tool see Importing Field Help on page 495 and Exporting Field Help on page 496. The source file can be edited with Microsoft Excel, see Contents of the Field Help File on page 500.

CRM.translation tool (`TranslationTool.exe`) is located in Aurea CRM win's `..\system\exe` directory. CRM.translation tool logs to the `TranslationTool.log` file located in `.. \system\db`.

Prerequisites for using CRM.translation tool:

- .NET Framework 4.5

- For importing/exporting the field help Microsoft Excel must be installed

- When translating texts from the CRM.designer database, you need to assign a **CRM Sub-Language** to each target language: The language number in the Aurea CRM database (**Language No.** field in the **Language** info area) must be entered

as the **CRM Sub-Language** in CRM.designer, see Global Language Settings in the *Aurea CRM web Administrator Guide*.

- If both Aurea CRM and CRM.designer texts are to be translated, only languages defined in both databases are listed.

- When importing translations into another database ("database-independent" import/export):

  - The language numbers and catalog base language must be the same in the source and target databases.

  - Catalog entries must have unique external keys in the catalog base language at least.

  - The **Text** records (04) must have the same IDs in the source and target databases.

Exporting Texts for Translation

Learn how to export texts for translation.

To export texts for translation:

1. Start `TranslationTool.exe`.

(The **Manual** button opens this book if present in the `.. \manuals` folder.)

2. Select **Export texts for translation**.

3. Select the desired database type: **MS SQL** or **ORACLE**.

4. Click **Next**.

5. Select the texts you want to export by activating the corresponding check boxes:

   - **Designer Texts:** Exports texts from the CRM.designer database, see Texts in the *Aurea CRM web Administrator Guide*.

   - **Text Table:** Exports texts from the **Text** info area (04), see Text Info Area on page 368.

   - **Catalogs:** Exports variable catalog values, see Catalogs on page 270.

6. Select the **Output Format**: **CSV (Excel)** or **XML (Passolo)**, see Contents of the Export File on page 481.

7. Enter the path and file name in the **Target File** field or browse to the desired location.

8. Click **Next**.

9. Enter the **Connection String(s)** for the Aurea CRM and/or CRM.designer database(s) using the following syntax:

- for MS SQL databases:
  Server=[name];Database=[name];UID=[login];PWD=[password]

- for Oracle databases: Data Source=[name];user id=[login];password=[password]

10. Enter the **Table Prefix** for the Aurea CRM database if applicable.

11. Click **Check Connection(s)**.

12. Check **Save settings** to save the connection settings for later use.

13. Click **Next**.

Depending on the specified database connection(s) the following languages are listed in the language selection fields:

- languages defined in the Aurea CRM win database (**Language** info area (00))

- languages defined in the CRM.designer database with a **CRM Sub-Language**, see Languages in the *Aurea CRM web Administrator Guide*.

If both Aurea CRM and CRM.designer texts are to be translated, only languages defined in both databases are listed. (**Text Table Base Language** always lists all languages as defined in Aurea CRM win.) The language number in the Aurea CRM database (**Language No.** field in the **Language** info area) must be entered as the **CRM Sub-Language** in CRM.designer.

14. Specify the desired **Languages** settings:

Note: The source and target languages may not be the same.

Catalog translations: The catalog base language cannot be selected as the target language.

- **Target Language:** Select the target language.

  When exporting to CSV, you can select multiple target languages. For each language a separate row is output to the CSV. Thus you can create translations to multiple languages in a single export and import.

- **Text Table Base Language:** This language is used to determine the number of untranslated records in the **Text** info area (04). By default, the catalog base language is selected.

In addition to the languages defined in the Aurea CRM win database, the list contains a "Language-independent" entry with **Language No.** '0' (for counting the **Language-independent** entries in the **Text** info area), see Displaying and Editing Texts on page 373.

- **Additional Languages (CSV):** When exporting to CSV, select the source language here. You can select additional languages to be exported, e g. if you are using an extra "language" to document texts and catalog values.

The following options only apply when exporting to XML:

- **Text Table Add. Lang. (XML)**: When exporting the text table to XML, select an additional language here. This language's text is written to the **AdditionalInfo** attribute. It can give translators more information about the usage of the text.

- **Source Language (XML):** When exporting to XML, select the source language here.

- **Passolo Source/Target Language (XML):** Select the matching SDL Passolo languages.

- **Generate glossary file for Passolo (XML):** Enable this check box to create a Passolo-compliant glossary file in addition to the export file. The glossary file allows you to reuse translated strings. It contains all existing translations as "language pairs" in the source and target languages.

15. If you chose to export CRM.designer texts, specify the desired **Designer** settings:

- **Designer texts per verticals:** Select the desired vertical(s).

- **Configurations to Export:** Select the configurations from which texts are to be exported.

  All available CRM.designer configurations are displayed with their names and IDs. The UPDATE* configurations are listed as well. Although texts from these default configurations may be exported (e. g. to create a glossary), they **cannot** be imported.

- **Truncate Texts/Meaning at Character:** Use these options to truncate the strings to be exported (default=250 characters).

  By default, all text fields and the **Meaning** field have a length of 1024 characters. Exporting the **Default Text** plus one additional language plus **Meaning** would result in a row width of 6K. The **Truncate** options enable you to set a row width below the 8K database limit.

  The **Truncate Texts** option affects the following fields: **Default Text**, **Text** and texts in additional languages.

  The **Truncate Meaning** option affects the **Meaning** field.

16. Specify **Further Options**:

- **Database-independent:** Enable this check box if you plan to import the translated texts into another database. This option affects the match-up method used when importing, see Match-up on page 494.

  In addition, the XML output is created with database-independent IDs, see ID Creation (XML) on page 481.

Note: If you use the **Database-independent** option when exporting you have to enable this option when importing the file as well, see Importing Translated Texts on page 491.

- **Only export texts with translations:** Enable this check box to export translated texts only (e.g. to change texts in a sub-language that are already translated in a parent language). If this check box is enabled

  - **Only export texts without translations** is disabled automatically
  - **Text Table Base Language** is disabled automatically

  Only export texts with translations works as follows:

  - If text table items are exported, only texts containing a text table entry for the target language are exported. The "DefaultText" column contains the language-independent text. If no language-independent text exists, it contains the same text as the Text column, see Contents of the Export File on page 481.
  - If catalog values or texts from CRM.designer are exported, only texts where a translation exists for the target language are exported.

  If **Only export texts with translations** is disabled all texts are exported.

- **Only export texts without translations:** Enable this check box to export untranslated texts only. If this check box is disabled all texts are exported.

- **Only export used text table entries:** Enable this check box to export only text table entries that are used in the current installation and are therefore referenced in one of the following files: `mm_dbstr.txt` and `mm_fixcatno_custom.txt`, see mmba.exe Parameters on page 13. If you use the `--CheckRights` parameter you can create these files for only those items for which the current user has access rights.

  The texts exported to the glossary are not affected by this option.

- **Exclude text table entries used for online field help**: Enable this check box to exclude text table entries that are linked to field help records (FH) from the export.

- **Export field help in Usage column:** This option is only available when exporting text table records. Enable this check box to export field help for texts used by

a field in the data model. The field help is written to the "Usage" column. If multiple field help records are found, the first one is output.

This option requires an `mm_dbstr.txt` file in the `.. \system\db` folder.

The field help is exported in the **Text Table Base Language**. If no field help exists for this language, the **Target Language** is used. If no field help exists for this language, the **Additional Languages** are searched and the first one containing field help is used.

- **Exclude locked catalog entries:** This option is only available when exporting catalog values. Enable this check box to exclude locked catalog values from the export. If this option is enabled, values with **Lock** set for the catalog value in the language to export and/or the catalog base language are not exported.

17. Click **Next**.

18. Click **Start Export**.

The texts are exported to a file according to the specified settings.

CRM.designer texts flagged as "Sealed" are **not** exported, see Editing Texts in the *Aurea CRM web Administrator Guide*.

19. Click **Close** to exit the application, or click **Back** to export texts for another target language. Make sure to specify a different name for the output file.

ID Creation (XML)

ID creation when exporting to XML.

When exporting to XML, the following unique IDs are generated for the purpose of matching up the source and target texts in SDL Passolo:

- **Text table:** T_<04_1_StaNo>_<04_1_SerNo>
- **Catalog:**
  - database-dependent: C_KatNr_Code_Unterkat1
  - database-independent: C_KatNr_ExtKey

- **Designer:**
  - database-dependent: D_textid
  - database-independent: D_Textgroupname_Nr

Contents of the Export File

Learn about the format in which the texts are exported.

The texts are exported as follows:

CSV Output

Learn about the csv output format.

The output file is a Unicode CSV file using Tab as the field separator. If more than one target language was selected, a separate row is created for each target language.

A	B	C	D	E	F	G	H	I	J	K
Type	DefaultText	LanguageNo	Text	Context	Usage	TextId	Textgrou	No	Customc	Customco
Core	None	3			CAT: Lead Status (Company) (3), 000;					
Core	Total Product Value (Corporate Curr.)	3			DM: Opportunity (Y1), 0174;					
Core	User number	3			FH: Login (US), No. (0000);					
Catalog	Germany	3								
Designer	Appointment Data	3		Title of the main tab in the Activity info area (MA).	MA (Tabs, Details)	9511		0		

L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Configname	ConfigId	CatBaseLangNo	CatNo	Code	Ucode	ExtKeyBaseLang	ExtKey	TenantNo	TextStNo	TextlNo	Deutsch (1)	UsageWebInstall	Textgroupid	VerticalId
								0	1	65426	Keiner			
								0	1	32110	Produktwert i. Konzernwährung			
								0	1	40000	Nummer des Benutzers			
			2	2	2	0 1_2_2		100			Deutschland			
customized_parent	1001											-1	361	1

Enter the translations in the "Text" column. If a translation already exists (**Export only texts without translation** disabled), it is output to this column.

Do not change the number and order of columns in the CSV file. Otherwise the import fails.

Tabs and line breaks are encoded as follows (and should not be changed):

- Tab (\t): #tab#
- Carriage return (\r): #cr#
- Linefeed (\n): #ln#

Note: To enter a text beginning with a single quote in Excel, you need to escape it with a (second) single quote.

The following tables (one per text type) show the contents and significance of each column. The "Import" column contains the following information:

- x: required for import
- d: required for database-dependent import
- i: required for database-independent import

Text Table

CSV Column	Field Name	DB Column Name	Comments	Import
Type	-	-	Type of text: "Core"	-
DefaultText	[Text in base language]	-	Text in the selected text table base language	-
LanguageNo	Language No.	SpracheN	Number of the target language	x
Text	Text / Text (long)	Text/Long Text	Enter translations here	x
Context	[04_2_StaNo./Ser No.]	[ID_04/ID_04_2]	Text of parent entry in the selected text table base language, if applicable (determined using the **04_2_StaNo./04_2_SerNo.** fields)	-
Usage	-	-	Information on user interface items that use the text: Field names: `DM:<infoAreaName> (<infoAreaId>),<fieldId>` If **Export field help in Usage column** is checked, the field help is output as well. Fixed catalog entries: `CAT:<catalogName> (<infoAreaName>) (<catalogId>),<code>` Field help: `FH:<infoAreaName> (<infoAreaId>),<fieldName> (<fieldId>)` Prerequisites:The `mm_dbstr.txt` and `mm_fixcatno_custom.txt` containing the referenced text table entries (curly brackets, last entry) must be present in the `..\system\db` directory.The field help must be present in the database. If a text is referenced by more than one element, all occurrences are output separated by a semicolon.	-
04_1_StaNo	StaNo.	ID_04	ID of the Text table record	x

CSV Column	Field Name	DB Column Name	Comments	Import
04_1_SerNo	SerNo			x
<Language Name (Language Number)>	-	-	Additional language(s): source text	-

Catalogs

CSV Column	Field Name	DB Column Name	Comments	Import
Type	-		Type of text: "Catalog"	-
DefaultText	Text in base language	-	The catalog value in the catalog base language	x
LanguageNo	Language No.	SpracheNr	Number of the target language	x
Text	Text	Text	Enter translations here	x
Context	Description	Beschreibung	Description in the catalog base language	-
CatBaseLangNo	-	-	Number of the catalog base language	-
CatNo	Catalog No.	KatNr	Catalog number	x
Code	Code	Code	The number of the catalog value	d
Ucode	Parent Catalog	Unterkat1	The code of the parent value, if applicable	d

CSV Column	Field Name	DB Column Name	Comments	Import
ExtKeyBase-Lang ExtKey	External Key	ExtKey	If available, the external keys are exported in both the target language and the catalog base language, >> Match-up on page 494. Catalog values without an external key are written to the log file. Database-independentexport/import: The external key must be unique for each catalog value.	i
TenantNo	<xx>-Ten-No	MandNr	Tenant number	x
<Language Name (Language Number)>	-	-	Additional language(s): source text	-

Designer Texts

CSV Column	DB Column Name	Comments	Import
Type	-	Type of text: "Designer"	-
DefaultText	Default Text		-
LanguageNo	Language No.	Number of the target language	x
Text	Langtext	Enter translations here	x
Context	Meaning	Exported if available in CRM.designer	-
Usage	Usage	Format: name (source, additional info), e. g. PR (Tabs, Details). If a text is referenced by more than one element, all occurrences are output separated by a semicolon: name (source, additional info); name (source, additional info); etc.	-
TextId	ID		d

CSV Column	DB Column Name	Comments	Import
Textgroupname	Textgroupname		i
Nr	Nr		i
Customconfigname	Customconfig-name		i
CustomconfigId	CustomconfigId		d
Configname	Configname		i
ConfigId	ConfigId		d
<Language Name (Language Number)>	-	Additional language(s): source text	-
UsageWebInstalla-tion	-	The number of times a text was loaded during all tracked Aurea CRM web sessions, see Logging the Usage of CRM.designer Texts in the *Aurea CRM web Administrator Guide*.	-

XML Output

Learn about the XML output format.

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE pslXMLExportImport SYSTEM "pslXMLExportImport.dtd">
<pslXMLExportImport>
<pslTransList Id="" Source-Language="en" Target-Language="it">
<Entry Id="T_1_65426" Origin="text table" Comment="CAT: Lead Status (Company) (3),
 000; "
AdditionalInfo="Keiner" LangNo="3">None</Entry>
AdditionalInfo="Produktwert i. Konzernwährung" LangNo="3">Total Product Value
(Corporate
Curr.)</Entry>
<Entry Id="T_1_40000" Origin="text table" Comment="FH: Login (US), No. (0000); "
AdditionalInfo="Nummer des Benutzers" LangNo="3">User number</Entry>
<Entry Id="C_2_2_0" Origin="catalog" Comment="2" LangNo="3" TenantNo="100"
BaseLang="Germany"
CatBaseLangNo="2" Code="2" ParentCode="0" ExtKeyBaseLang="1_2_2"
ExtKey="">Germany</Entry>
<Entry Id="D_9511" Origin="MA (Tabs, Details)" Comment="Title of the main tab in
the Activity
info area (MA)." Language="" LangNo="3" ConfigId="1001"
ConfigName="customized_parent"
CustomConfigId="" CustomConfigName="" TextId="9511" TextGrpName="" No="0"
VerticalId="1">Appointment Data</Entry>
```

The XML output can be translated with SDL Passolo. The `pslXMLExportIm-port.dtd` file supplied by Aurea (located in `.. \system\exe`) has been adapted to contain all necessary attributes. Translators need to copy this file to their Passolo installation.

Each `<entry>` node contains a text to translate. If a text does not exist in the selected source language, the following text is used:

* Text table: the text in the selected text table base language

* Catalog: the text in the catalog base language

* Designer: the **Default Text**

The following tables (one per text type) show the contents and significance of each attribute. The "Import" column contains the following information:

* x: required for import

* d: required for database-dependent import

* i: required for database-independent import

Text Table

XML At-tribute/Tag	Field Name	DB Col-umn Name	Comments	Import
Id	-		Unique ID for SDL Passolo, see ID Creation (XML) on page 481	x
Origin	-		Type of text: "text table"	-

XML Attribute/Tag	Field Name	DB Column Name	Comments	Import
Comment	[04_2_StaNo./04_2_Ser-No.]	[ID_42]	Text of parent entry in the selected text table base language, if applicable (determined using the **04_2_StaNo./04_2_SerNo.** fields)	-
			Information on user interface items that use the text:	
			Field names: `DM:<infoAreaName> (<infoAreaId>),<fieldId>` If **Export field help in Usage column** is checked, the field help is output as well.	
			Fixed catalog entries: `CAT:<catalogName> (<infoAreaName>) (<catalogId>),<code>`	
			Field help: `FH:<infoAreaName> (<infoAreaId>),<fieldName>(<fieldId>)`	
			Prerequisites:The `mm_dbstr.txt` and `mm_fixcatno_custom.txt` containing the referenced text table entries (curly brackets, last entry) must be present in the `..\system\db` directory.The field help must be present in the database.	
			If a text is referenced by more than one element, all occurrences are output separated by a semicolon.	
AdditionalInfo	-		Text of the entry in an additional language	-
LangNo	Language No.	SpracheNr	Number of the target language	x
<Entry></Entry>	Text / Text (long)	Text/LongText	Text to translateIf the text is missing in the source language, the text in the selected text table base language is output.	x

Catalogs

XML Attribute/Tag	Field Name	DB Column Name	Comments	Import
Id	-	-	Unique ID for SDL Passolo	x
Origin	-	-	Type of text: "Catalog"	-
Comment	Catalog No.	KatNr	Catalog number; Description field of the catalog value in the catalog base language	x
LangNo	Language No.	SpracheNr	Number of the target language	x
TenantNo	<xx>-TenNo	MandNr	Tenant number	x
BaseLang	Text in base language	-	The catalog value in the catalog base language	x
CatBaseLangNr	-	-	Number of the catalog base language	
Code	Code	Code	The number of the catalog value	d
ParentCode	Parent Catalog	Unterkat1	The number of the parent value, if applicable	d
ExtKeyBaseLang ExtKey	External Key	ExtKey	If available, the external keys are exported in both the target language and the catalog base language, see Match-up on page 494. Catalog values without an external key are written to the log file. Database-independentexport/import: The external key must be unique for each catalog value.	i
<Entry></Entry>	Text	Text	Text to translateIf the text is missing in the source language, the text in the catalog base language is output.	x

Designer Texts

XML At-tribute/Tag	DB Column Name	Comments	Import
Id	-	Unique ID for SDL Passolo	x
Origin	[Usage]	Type of text: value of the **Usage** field. Format: name (source, additional info), e. g. PR (Tabs, Details). If a text is referenced by more than one element, all occurrences are output separated by a semicolon: name (source, additional info); name (source, additional info); etc.	-
Comment	Meaning	Exported if available in CRM.designer	-
LangNo	Language No.	Number of the target language	x
ConfigId	ConfigId		d
ConfigName	Configname		i
CustomConfigId	Customcon-figId		d
CustomConfig-Name	Customconfig-name		i
TextId	ID		d
TextGrpName	Textgroup-name		i
Nr	Nr		i
<Entry></Entry>	Langtext/De-fault Text	Text to translateIf the text is missing in the source language, the **Default Text** is output.	x

Importing Translated Texts

Learn how to import translated texts.

To import translated texts:

1. Start `TranslationTool.exe`.

2. Select **Import translated texts**.

3. Select the desired database type: **MS SQL** or **ORACLE**.

4. Click **Next**.

5. Select the texts you want to import by activating the corresponding check boxes:

- **Designer Texts:** Imports texts into the CRM.designer database, see Texts and Languages in the *CRM.designer Administrator Guide*.

- **Text Table:** Imports texts into the **Text** info area (04), see Text Info Area on page 368.

- **Catalogs:** Imports variable catalog values, see Catalogs on page 270.

  If you import catalog values, make sure an up-to-date `mm_catno.txt` file is present in the `..\system\db` directory of the target station, see mmba.exe Parameters on page 13 (`--writedbstr` parameter). Otherwise no **Catalog Maintenance** (KW) records are created when importing translated catalog values. In that case you need to distribute the new catalog values via a data stock download. For more information, see Communicating Catalogs in the *Aurea CRM win Administrator Guide*.

6. Activate the **Database-independent** check box if you are importing texts from another database.

> **Note:** This option **must** be enabled for files that were exported using the **Database-independent** option. Otherwise the file cannot be imported.

---

7. Select the **Input Format**: **CSV (Excel)** or **XML (Passolo)**.

8. Enter the path and file name of the translation in the **Input File** field or browse to the location.

9. Click **Next**.

10. Enter the **Connection String(s)** for the Aurea CRM and/or CRM.designer database(s) using the following syntax:

   • for MS SQL databases:
      Server=[name];Database=[name];UID=[login];PWD=[password]

   • for Oracle databases: Data Source=[name];user id=[login];password=[password]

11. Enter the **Table Prefix** for the Aurea CRM database if applicable.

12. Click **Check Connection(s)**.

13. Check **Save settings** to save the connection settings for later use.

14. Click **Next**.

   The **Import Summary** is displayed.

---

15. Enter the number of the target station in the **Current Station No.** field.

16. Click **Check Import File** to verify your settings.

The **Target Language** and affected CRM.designer configurations are displayed.

If the target language or a CRM.designer configuration is not found in the target database, the file cannot be imported. (UPDATE* configurations are ignored on import.)

When importing catalog values, the catalog base language of the import file must match the catalog base language in the database. Otherwise the file cannot be imported.

17. Click **Next**.

18. Click **Start Import**.

The texts are imported to database according to the specified settings. For information on match-up rules, see Match-up on page 494.

CRM.designer texts flagged as "Sealed" are not updated on import.

Existing texts are overwritten without checking for changes since the last export. If a translation exists in the database but not in the import file, the translation is **not** deleted by the import process.

The import process is logged in `LogFile.txt`. Texts that could not be imported are listed here.

Note: The changes to the database are not logged in detail. No **History** (H0) records are written.

---

19. Click **Close** to exit the application, or click **Back** to import another file.

20. Text table only: To apply the changes (translations) to the formats, select **Write language** from the context menu in the **Text** info area, see

Match-up

Learn how the texts are matched up while importing translations.

When importing translations, the texts are matched up as follows:

Text Records

Records in the **Text** info area are matched up by **04_1_StaNo** + **04_1_SerNo** + **Language No.**

If a corresponding entry is found in the database, the **Text** field (or **Text (long)** if the text length exceeds 2000 characters) is updated. Otherwise a new text record is created. Language independent texts (**Language No.** '0') are never updated or created.

Catalog Values

Catalog values are matched up by:

- DB-dependent: **Catalog No. + Language No. + <xx>-TenNo + Code + Parent Catalog**
- DB-independent: **Catalog No. + Language No. + <xx>-TenNo + External Key**

    If available, the external keys are exported in both the target language and the catalog base language. When importing, the catalog values are first matched up by the external key of the target language. If no matching key is found, the value is then matched up by the external key of the base language.

If a corresponding entry is found in the database, the catalog value is updated. Otherwise a new catalog value is created.

Designer Texts

Texts in CRM.designer are matched up by:

- DB-dependent: **ConfigID + ID**
- DB-independent: **ConfigName + Textgroupname + Nr**

If a corresponding entry is found in the database the text is updated. Otherwise a new text is created.

Importing Field Help

You can import field help that was provided by update, or you can import your own field help that has been adapted to your customization.

To import field help to the Aurea CRM database:

1. Start `TranslationTool.exe`.

2. Select **Import Online Field Help**.

3. Select the desired database type: **MS SQL** or **ORACLE**.

4. Click **Next**.

(The **Manual** button opens this book if present in the `..` `\manuals` folder.)

5. Enter the **Connection String** for the Aurea CRM database using the following syntax:

   • for MS SQL databases:
     Server=[name];Database=[name];UID=[login];PWD=[password]

   • for Oracle databases: Data Source=[name];user id=[login];password=[password]

6. Enter the **Table Prefix** for the Aurea CRM database.

7. Enter the path and file name of the field help (`*.xlsx`) in the **Input File** field or browse to the location.

8. Click **Check Connection(s)**.

9. Check **Save settings** to save the connection settings for later use.

10. Click **Next**.

11. Select the **Target Language** and **Station Number** for the import.

> **Note:** Depending on the specified database connection the languages defined in the Aurea CRM win database (**Language** info area (00)) are listed.

12. Click **Start Import**.

Field help is imported from the specified file to the Aurea CRM database. Records with **Do not update** checked in the database are not updated by the import (if the **Do not update field help records marked with 'Do not Update '** check box is enabled).

13. Click **Exit** to exit the application, or click **Back** to import field help for another target language.

> **Note:** Importing field help does **not** delete obsolete field help records (i.e. field help for deleted fields) from the database; you need to manually delete these FH records from both the XSLX file and the database.

Exporting Field Help

To translate or edit the field help in MS Excel, you can export the contents of the **Field Help** info area (FH) to an `*.xlsx` file.

> **Note:** You can also generate a report to display the field help outside of Aurea CRM, see Reports in the *Aurea CRM win User Guide*.

You can also export the **Text** info area in order to translate texts, see Exporting Texts for Translation on page 475.

To export the field help:

1. Make sure the information on the currently active data model is available in the `.. \system\db\mm_dbstr.txt` file, see mmba.exe Parameters on page 13 (`--writedbstr` parameter). Make sure you create the `mm_dbstr.txt` file in the language you want to export.

2. To update the field help to reflect the current data model, select **Update field help** from the context menu (in the **Field Help** level), see Adding Field Help for New Fields on page 383. This creates field help entries for the new fields (with NO FIELD HELP in the "Comment" column).

3. Start `TranslationTool.exe`.

4. Select **Export Online Field Help**.

5. Select the desired database type: **MS SQL** or **ORACLE**.

6. Click **Next**.

7. Enter the **Connection String** for the Aurea CRM database using the following syntax:

   • for MS SQL databases:
     Server=[name];Database=[name];UID=[login];PWD=[password]

   • for Oracle databases: Data Source=[name];user id=[login];password=[password]

8. Enter the **Table Prefix** for the Aurea CRM database.

9. Enter the path and file name in the **Target File** field or browse to the desired location.

10. Click **Check Connection(s)**.

11. Enable **Save settings** to save the connection settings for later use.

12. Click **Next**.

13. Select the **Language To Export**.

Note: The languages defined in the Aurea CRM win database (**Language** info area (00)) of the specified database connection are listed.

---

14. Specify additional options if applicable:

- **Only export items changed after:** Specify a date and time to export only a delta (for translation). The following field help records are exported:
  - field help records created or updated after the specified date,
  - field help records for which one of the linked **Text** records (**Short Text**, **Long Text**, **Admin Text**) was created or updated in the specified language after the specified date.

- **Use this language to check update:** Select a language against which Aurea CRM should check for updated text table records linked to the field help. If undefined, the **Language to Export** is used.

When using these options, the following field help entries are exported:

- Field help records that where created or updated after the specified date

- Field help records whose linked text table records (**Short Text**, **Long Text** or **Administrator Info**) were changed or added in the specified language after the specified date.

  If you have enabled **Use this language to check update** without selecting a language, the text table record of the language specified under **Language to export** is used.

- **Export changed texts in language to check:** Use this option together with **Only export items after** and **Use this language to check update** to create a delta file for translation.

  Enable this option to export all changed texts in the **Language to check** (i.e. the source language) and any matching unchanged texts in the **Language to Export** (i.e. the target language). This creates an XSLX file where only the changed texts of a field help record (e.g. just the **Functionality** cell) is exported in the source language and all unchanged texts are exported in the target language.

- **Resolve placeholders for fields and info areas:** If enabled, all placeholders used in field help texts are resolved to the actual field and info area names, see Text Formatting and Placeholders on page 382. Use this option if you want e.g. to create a PDF file containing the field help.

- **Export XML field names:** If enabled, the export creates an extra column containing the XML field names (for reference). This column is ignored on import.

Note: When using the **Resolve placeholders for fields and info areas** (and XML field names as placeholders) and/or **Export XML field names** options, the `mm_dbstr.txt` file required for the export needs to be created with the additional parameter `--xmlFieldNames`.

---

15. Click **Start Export**.

   The field help is exported to the specified file.

16. Click **Exit** to exit the application, or click **Back** to export texts in another language. Make sure that an `mm_dbstr.txt` file for that language is available and specify a different file name as **Target File**.

Contents of the Field Help File

Learn about editing contents of field help file.

Instead of editing field help in the **Field Help** info area (see Field Help on page 380), you can edit the `*.xlsx` file that you received from Aurea or that you exported from the database.

You can edit the following columns in the field help XSLX:

* **Description:** Short description of the field.
* **Functionality:** Longer description of functionality and business logic.
* **Comment:** For internal use (max. 2500 characters); visible only in the XSLX file and the **Field Help** info area (**Maintenance** module)
* **Reference Info Area, Reference Field:** Info area and field number of the field whose field help you want to reuse. The **Reference** column contains the link to the respective row.

  On import, a link to the field help record is created automatically. If a row contains both short/long texts and a reference, the texts are ignored.

  Note: Texts (short and long) that are referencing the field help of another field are output in green in the XSLX file (if exported with **Resolve placeholders for fields and info areas** disabled): If you change the field help for such a field, make sure you remove the reference from the XSLX.

* **Do not update:** If you enable this check box for a field help record, the field help in the XSLX file is ignored during import and the existing field help record is retained.
* **Administrator Info:** Information about the field which is only relevant to administrators. This information is not displayed when a user opens the field help (as a tooltip or using a function key). This information can be displayed in Aurea CRM web by enabling the `System.ShowAdminHelp` Web Configuration parameter.
* **Referenced by:** Lists all fields which use this field help entry, thus providing information on which field help entries are affected by changing the text of the current entry.

  Note: The **Referenced by** column is ignored on import.

The other columns (IDs, numbers) are handled by Aurea CRM. Do not remove these columns.

For more information on editing the field help, see Text Formatting and Placeholders on page 382.

CRM.users tool

CRM.users tool

Use CRM.users tool (`update.Users.exe`) to set/change the special users required.

Example - for Aurea CRM web and to encrypt/decrypt the `users.xml` file, see Creating the Special Users for Aurea CRM web in the Aurea CRM web Installation & Technical Guide.

`update.Users.exe` is located in Aurea CRM webs' `..\bin` directory.

User Interface

Command Line Parameters

Usage: `update.Users operation [OPTIONS]`

operation	
set	Sets user name and password for a special user.
encrypt	Encrypts a `users.xml` file.
decrypt	Decrypts a `users.xml` file.

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[OPTIONS]	
`-h, -?, --help`	Show help.
`-f, --file, --files=VALUE`	The path and name of the file.
`-o, --output=VALUE`	The output file name or directory.
`-k, --key=VALUE`	The name of the encryption key (default "up-date.eight.users").
`-t, --type=VALUE`	The type of user (operation `set`): `-t=Special`
`-u, --username=VALUE`	The user name, e.g. WWW (operation `set`)
`-p, --password=VALUE`	The password for the user (operation `set`)

For more information and examples, see the article "How to use users.xml" at https://support.aurea.com.

Record Cache

Learn how record caching works for Aurea CRM.

Aurea CRM caches records both globally and locally, i.e. per session. If multiple instances of Aurea CRM access the same record, the record may be cached by one instance while it is updated by another instance. If instance 1 reloads the record from the cache it may "lose" the changes made by instance 2.

CRM.core provides a configurable record cache:

• Global cache:

  • single: Record cache per info area for frequently used info areas, e.g. FI.

  • mixed: Up to 10 info area-independent caches, i.e. multiple info areas are cached collectively.

• Session cache: one info area-independent (mixed) record cache.

The record cache is configured hard-coded, see Record Cache Defaults on page 503. These defaults can be overruled via an XML file, see performanceSettings.xml on page 504.

Read/Write

- **Aurea CRM web:**
  - `FetchId()`:
    - if the `MMC_RECORD_SEARCHINCACHE` flag is enabled
    - if `MMC_READ_FOR_UPDATE` or `MMC_RECORD_BLOB` are disabled and the `cache` attribute <> `"low"` or `FetchId()` is explicitly disabled
  - `LoadRecordById()`:
    - if the `MMC_RECORD_SEARCHINCACHE` flag is enabled (e.g. when building references, or via `FetchId()`)

- **CRM.core:**
  - `LoadReadRec()`: if the `cache` attribute is set to `"high"`

Update/Delete

Update and delete operations are reflected in the cache.

Record Cache Defaults

Learn about the default record cache settings.

Info areas that are not cached:

- **Catalog** (KA)
- **Language** (00)
- **Station Language** (01)
- **Key** (02)
- **System Event** (03)

Info areas that are cached by the local cache (mixed):

- **WWW Interest** (II)
- **WWW Interest Configuration** (I9)

Info areas that are cached by the global cache (single):

- **Company** (FI)
- **Person in Company** (KP)
- **Contact Person** (CP)
- **Person** (PE)
- **Activity** (MA)
- **Task** (A1)

- **Absence** (A3)
- **To-Do** (TD)

Custom info areas are cached in the global cache 2.

All other info areas are cached globally (mixed).

Once a minute the system checks for changes of the `perfomanceSettings.xml` file if defined.

In debug mode once a minute the current state of the cache is written to the `.. \system\u8.log` file.

To change these defaults and/or define further settings, create a `perfomanceSettings.xml` file, see

performanceSettings.xml

To configure the record cache create the file `performanceSettings.xml` in the `.. \sys` directory.

Example:

```
<PerformanceSettings>
<RefreshCycle min='1' />
<DumpCycle min='1' />
<RecordCache>
<CacheTypes>
<CacheType id='1' cache='low' maxSize='2000' maxRecs='100' reloadInMin='30'
checkInMin='2'/>
</CacheTypes>
<GlobalCache>
<Table code='FI' cacheType='1' cacheNo='1' />
</GlobalCache>
<SessionCache>
</SessionCache>
<Not>
<Table code='KA'/>
</Not>
</RecordCache>
</PerformanceSettings>
```

Syntax:

The following settings are available:

<RefreshCycle min='1' />

By default, the system checks for changes of the `perfomanceSettings.xml` file once a minute. Use this tag to define the refresh cycle in minutes.

<DumpCycle min='1' />

By default, in debug mode once a minute the current state of the cache is written to the `.. \system\u8.log` file. Use this tag to set a different dump frequency in minutes.

<CacheTypes>

Use the `<CacheTypes>` node to define a set of parameters as a cache type to be referenced by your global or session cache definitions (s. below).

```
<CacheType id='1' flags='9' cache='low' maxSize='2000' maxRecs='100'
reloadInMin='30'
checkInMin='2'/>
```

Available attributes:

`id`: Used to reference the cache type.

`cache`: Indicates what is cached:

- `low`: Only references are cached.
- `medium`: References and FetchId() operations performed by Aurea CRM web are cached.
- `high`: In addition to the above LoadReadRec() operations performed by CRM.core are cached.

`maxSize`: Determines the size of the cache in Bytes.

`maxRecs`: Determines the size of the cache in no. of records.

If the defined `maxSize` or `maxRecs` are exceeded, the least recently used records are deleted from the cache.

`reloadInMin`: Determines the time span after which a record is reloaded.

`checkInMin`: Determines if a cached record is still valid, i.e. time span after which the system checks if the record was updated. This setting applies only for `cache='medium'` | `'high'`.

<GlobalCache>

Use the `<GlobalCache>` node, to define one or more global caches (mixed and single).

<Table code='FI' cacheType='1' cacheNo='1' />

Available attributes:

- `Table code`: The info area to be cached.
- `cacheType`: The cache type to be used.
- `cacheNo` (optional): Defines an info area-independent (mixed) cache.

<SessionCache>

Use the `<SessionCache>` node, to configure the local record cache (mixed).

Available attributes: `Table code` and `cacheType`.

<Not>

Use the `<Not>` node to exclude info areas from being cached.

Available attribute: `Table code`

Note: You can use wildcards in the Table code attribute to specify multiple info areas at once.

Logs and Error Messages

Learn about the logs and error messages.

Logs are written to the following files in the `.. \system\db` directory:

`##GLOBAL_-1.log`	User- and module-independent information: campaign designer, XML output of conditions (debug version), messages relating to loading the data model, message relating to sending e-mails via SMTP)
`##GLOBAL_<module>.log`	user-independent information per module
`u8_<USER>.log`	module-independent information per user
The following files log user- and module-specific information:	
u8_analyze_<USER>.log	`mman.exe`
`u8_base_<USER>.log`	`mmba.exe`
`u8_communication_<US-ER>.log`	`mmco.exe`
`u8_config_##GLOBAL.log`	`mmcfg.exe`
`u8_export_<USER>.log`	`mmim.exe -e`
`u8_import_<USER>.log`	`mmim.exe`
`u8_print_<USER>.log`	`mmpr.exe`
`u8_rights_<USER>.log`	`mmri.exe`

u8_server_<USER>.log	update.server.exe
u8_service_<USER>.log	mmri.exe -w

Logging is configured via the `mm.ini` file located in the `..\system\sys` directory. For information on all available options, see the article "How to Configure Logging for the core" at https://support.aurea.com.

By default, the following information is logged:

- General information ("General" in the log file)
- Information on the business logic, e.g. log files for CRM.server ("Businesslogic")
- Export/import of formats via XML (Aurea CRM, cockpit, Aurea CRM web) ("XML")
- Information on the data model ("Datamodel")
- Aurea CRM initialization ("Init")
- User interface (desktops, masks) ("Userinterface")
- Imports and exports and parameters ("Import", only at log level "Info")
- Communication parameters ("Communication", only at log level "Info")
- E-mails sent via SMTP ("SMTP")

You can additionally choose to log the following information (only at log level "Info"):

- SQL access logs ("SQL"): Start the application with the parameter `-q:stmtlog` (see General Aurea CRM Parameters on page 11) or enable the options **Windows Trace** and **Web Trace** in the **Station Configuration** info area, see Station Configuration on page 233
- Trigger logs ("Trigger"): Enabled using a configuration entry, see Triggers on page 67
- Workflow logs ("Workflow"): Enable using a configuration entry, seeWorkflow on page 69.

Information is also logged in the following info areas:

- **User Tracking, Session Tracking, Process Tracking**, see Tracking on page 242
- **Log - Read** and **Log - Write**, see Logging Read and Write Access on page 245
- History, see History on page 258
- Communication logs, see Communication Logs in the *Aurea CRM win Administrator Guide*.

For information on logging in Aurea CRM web, see Server Log in the *Aurea CRM web Technical & Installation Guide* and the article "How to Configure Logging on the Server" at https://support.aurea.com.

System Event Info Area

System events are logged in the **System Event** info area in the Aurea CRM win main module.

System events include:

You can communicate these records from branch offices to the main station in order to be able to track errors on branch offices from a central location.

The value in the **Error Type** field indicates the following:

- 1: Non-interactive trigger error, see General Error Codes on page 508

- 4: Error loading format. If an error occurs when loading a format, a system event record is added. The **Error No.** is 0 in this case.

- 7: Mail system error, e.g. an SMTP server timeout. The **Text** field contains a more detailed error description if provided by the mail system.

- 40004: MAPI communication error, see Error Codes when Communicating via MAPI on page 518

General Error Codes

Learn about the common error codes that can occur when working with Aurea CRM.

The following error messages can occur when working with Aurea CRM:

Code	Description
2	Record already exists
8	Record was changed on the network; operation not possible
12	File cannot be opened/created
13	Inconsistent data (verification prior to saving)
16	Record is incomplete (e.g. key fields are missing)
17	No free IDs available
18	Persons are still linked to the company; company not deleted

Code	Description
19	Saving the record by the check function is not allowed (WEBDLL)
20	Table is locked for editing
21	Table is locked for editing (condition)
22	Table is locked for editing (top-down)
23	Table is locked for editing (bottom-up)
24	Table is locked for editing (mandatory fields in rights format)
25	Constraint violated: Invalid timespan
40	Assigning hierarchy code: The superior entered is already entered as an employee of this rep
41	Assigning hierarchy code: The rep or superior is currently being edited
45	Hierarchy code change: Unable to load rep
47	Hierarchy code change: The superior entered is already entered as an employee of this rep
48	Hierarchy code change: Rep or superior is currently being edited
55	Language record could not be saved (infinite loop in the language hierarchy)
80	The numeric value is too high.
81	Invalid value

Code	Description
82	The value is out of range.
97	General initialization error
98	Internal initialization error
99	The data model DLL could not be loaded (vvdmxxi.dll, whereby vv = bb, bc or fs; xx = mss or or8)
100	No language DLL found (vv_eng.dll, whereby vv = bb, bc or fs)
101	Incorrect start directory
102	Station number could not be read
103	Error reading station configuration
104	Invalid license
105	User does not exist
106	Incorrect password
107	User does not have the necessary access rights for the module
108	User has no login
109	No multiple logins allowed
110	User is already logged in
111	Module may only be used in exclusive mode
112	Maximum number of users for the module reached

Code	Description
113	Password has expired
114	Login is locked (number of failed login attempts exceeded)
115	SU user cannot be loaded
120	The system has been locked manually
121	The system was locked on the current date
122	Daily system lock
131	mmdb.ini not found
132	A section in mmdb.ini was not found
133	No table prefix entered in the mmdb.ini file
134	Internal error
135	Secure login error
136	No connection with the database
137	Not all entries in mmdb.ini are present or correct
138	The character set entry in the mmdb.ini file (NLS_LANG) does not correspond to the character set in the database
139	No login table (US) present
141	Initializing Aurea CRM server: No login for the specified rep

Code	Description
142	Initialization of Aurea CRM server: Unable to load rep
143	Initialization of Aurea CRM server: Unable to load rep group
146	Initialization: Tenant cannot be loaded
147	Initialization: Assigned access rights cannot be loaded
148	Initialization of Aurea CRM server: Rep is inactive
149	Initialization: Rep role cannot be loaded.
160	Recurring appointments: No possible date found
161	Recurring appointments: Neither a number nor end date have been entered
162	Recurring appointments: End date prior to start date
163	Recurring appointments: No interval entered
164	Recurring appointments: No weekday entered "Weekly" interval)
165	Recurring appointments: No month entered ("Monthly" or "Yearly" interval)
166	Recurring appointments: The weekday specified is invalid
167	Recurring appointments: No day of the month entered

Code	Description
168	Recurring appointments: The current station number is not the station on which the record was added
169	Recurring appointments: No date entered in the activity record
175	Different campaigns/activities in linked participant and agenda item.
176	Invalid participation status
180	Database transaction: Error executing transaction
181	Database transaction: A transaction is already active
182	Database transaction: The transaction to be terminated is not active
183	Database transaction: Error committing transaction
184	Database transaction: Error rolling back transaction
185	Database transaction: Error executing a program call trigger in a transaction
186	Database transaction: Error executing a single letter trigger in a transaction
187	Database transaction: Error executing an e-mail trigger in a transaction

Error Codes for Marketing Activities

Learn about the error codes for marketing activities.

Marketing activity error messages are written to the following fields or log files:

- **Log (Marketing Activity)** info area, **Error** field.

- `system\db\<user name>_<module number>.log` in the case of activities executed manually

- `system\db\<user name>_<service name>.log` in the case of activities executed using CRM.server

- In a text field in the **Target Group (Marketing Activity)**, if configured, see Campaigns on page 29.

Code	Text
0	OK
1	Cancel
2	General error
3	Problem with access rights
4	Problem opening the selection
5	Problem opening the document
6	Unable to log on to the e-mail system
7	E-mail cannot be sent
10	Connection with the word processor cannot be established
11	Connection with the word processor cannot be established
12	Word processor cannot be initialized
13	Data cannot be sent to word processor
14	Log file cannot be opened: <file name>
15	Unable to log on to the SMS system

Code	Text
16	SMS cannot be sent
20	Activity format could not be loaded
21	Record could not be loaded: Activity
22	Record could not be loaded: Execution (Marketing Activity)
23	Record could not be loaded: Campaign
30	The current date is outside the defined timeframe of the Campaign:
31	The status of the Campaign is incorrect:
32	The status of the Activity is incorrect:
34	The status of the Activity Execution is incorrect:
35	The number of the executing station is not the number of the current station:
36	The rep executing the activity is not the current user:
37	It is not yet the start date of the Activity Execution:
38	It is not yet the end date for editing the target group:
39	Activity has already been generated:
40	It is not yet the scheduled generation date:
41	Record could not be added:
42	Record could not be changed:
50	Record could not be saved: Activity
51	Record could not be saved: Execution (Marketing Activity)
52	Selection cannot be copied

Code	Text
53	Selection cannot be loaded
54	Selection cannot be executed
55	Execution (Marketing Activity) cannot be changed
56	Generation not necessary
57	Company/Person level must be open
58	At least one record must be generated to be able to generate packages
59	Packages can only be generated based on a selection
60	Data cannot be read
61	Data cannot be read
62	Temporary process cannot be created
63	Cannot load query
64	Cannot execute query
65	Cannot execute query
70	Access to record denied: Company
71	Access to record denied: Person **in Company**
72	No e-mail address entered:
73	No telephone number for SMS entered:
74	No fax number entered:
75	No valid address for channel entered:
76	Invalid Webserver Address

Code	Text
77	The connection with the web server cannot be initialized.
78	The HTTP session with the server address entered cannot be initialized.
79	The HTTP request cannot be created.
80	This query cannot be sent to the web server.
81	The header information in the HTTP request could not be found.
82	The data could not be read by the web server.
83	The e-mail cannot be sent. (Note that the process is continued nonetheless.)

Communication Error Codes

This topic has a list communication error code.

Code	Description
1	The output file cannot be created; this may be due to a lack of hard disk space or system resources.
2	Output file cannot be opened; this may be due to a lack of hard disk space or system resources.
3	Output file cannot be written; this may be due to a lack of hard disk space or system resources.
4	Positioning is not possible in the output file; this may be due to a lack of hard disk space or system resources.
8	Memory allocation error; this may be due to a lack of hard disk space or system resources.
30	Incorrect file length
31	Error applying catalog

Code	Description
32	Data error
34	Internal error
35	Incomplete file; the output process may have been interrupted. The file is moved to the `\<Source station number>\ERR directory` on the target station.
37	Catalog maintenance error when replacing an entry
41	Error adding a new catalog maintenance record
44	Transferred data model format cannot be deserialized
45	New data model cannot be implemented
46	Data model in the communication file is not up to date, see Outdated Data Model at Branch Offices in the *Aurea CRM win Administrator Guide*

Error Codes when Communicating via MAPI

Learn about the error codes when communicating via MAPI.

Code	Description
50	MAILCALL.DLL could not be found.
51	MAPI could not be initialized.
52	File could not be sent.
53	File could not be received (written).
54	Confirmation could not be sent.
55	General error (bug in mailcall.dll)
56	Message could not be input
57	Message acknowledgment could not be sent.

Code	Description
58	Message could not be sent.
59	Try and load the MAPI lib a second time.
60	Current station has no e-mail address.
61	File could not be appended to message.
62	Message was faulty on arrival.
63	A new synchronization process could not be started.
64	Recent output failed.
65	This synchronization was aborted as a new one is already active.
66	MAPI could not be started. Send file later.

Import/Export Error Codes

Learn about the Import/Export error codes.

Code	Description
501	The name of the import/export file is not specified.
502	No access to source file, i.e. unable to open import/export file.
503	Unable to locate the position of the offset in the import/export file.
504	No connection to source table or field(s) in the source table wrong (only when importing/exporting databases).
505	No columns defined in the database table (only when importing/exporting databases).
506	Database table cannot be opened (only when importing/exporting databases).
507	Unique index required (only when importing/exporting databases).

Code	Description
508	Log file cannot be opened.
509	No import fields defined.
510	SQL error, i.e. database table cannot be read.
511	Unable to write to export file.
512	Record rejected due to condition.
513	Record rejected due to tenant rights.
514	Value exceeds the permitted maximum.
515	Value is lower than the permitted minimum.
516	The value may not be negative.
517	Invalid month.
518	Invalid day.
519	Invalid catalog value.
520	Invalid rep ID.
521	Parent record has been deleted.
522	Parent record could not be found.
523	Rejected due to invalid field rights.
524	Deleting field not permitted due to invalid field rights.
525	Format not found.
526	Invalid format.
527	Invalid hour.

Code	Description
528	Invalid minute.
529	Invalid second.
530	Invalid conversion of data types.
531	Invalid numeric conversion.
532	Match-up record not found. **Note:** This error may occur e.g. if a record is matched-up and not found in the database and **New** is disabled for the record's info area in the import format.
534	Catalog: Parent value not found. This error occurs when importing catalog values into the KA table: If a parent catalog value is not found, the catalog value is not imported.

Chart Error Codes

Learn about the error codes for chart structures.

The following error messages can occur when working with chart structures in Aurea CRM win (see *Chart Structures* in the *Aurea CRM win Administrator Guide*):

Code	Description
251	No root node found
252	Invalid input record
253	Condition not met
254	Query or transfer fields format cannot be loaded
255	Infinite loop
256	For internal use

Code	Description
257	For internal use
258	For internal use
259	No link present in the data model between the parent and root node
260	The generated record is of the wrong type (info area)
261	Recursive reading is not supported
262	The read engine cannot be initialized
263	For internal use
264	For internal use
265	Collecting data for child records returns the wrong info area
266	Collecting data for child records returns no data
267	Unable to initialize the read engine for child records
268	Internal sort error

Error Codes for Target Group Records

If an error occurs when sending e-mails, you can determine (in the **Configuration** info area) that a message is linked to the target group record.

Further information can be found under see Campaigns on page 29 (**Generate message on error** option).

5

Industry Solution Configuration

Learn about the functions that support the development of industry solutions.

The following topics describes those functions that support the development of Industry Solutions and deriving multiple solutions from a single Base Solution. This topic is solely directed at internal Aurea CRM users and partners.

Merging Data Models

Learn how to merge data models.

By default, data model changes transferred between stations using the Aurea CRM win **Communication** module or CRM.cockpit overwrite the data model on the target station, see Communicating Data Model Changes on page 285. By using different (station) number ranges, you can prevent changes to Industry Solution data models from being overwritten by updated data models, for example. Any changes made to the data model are instead merged with the existing data model on the station.

Requirements:

- Stations used to maintain data models must always be set as the main office, see Defining a Station on page 112.
- Stations used to maintain data models must use different number ranges and/or station number ranges, see Number Ranges in Aurea CRM on page 398 and Station Number Ranges on page 526.
- A design data model must be present on the target station.
- For correct handling of texts, make sure to use different language ranges for Base and Industry Solutions. Texts in languages with IDs>= 100 are not overwritten by the base data model during import.

If these requirements are not met, the data model is overwritten on the target station (default behavior).

Note: Aurea recommends only changing those elements (info areas, fields, catalogs etc.) on the station they were added on or have been assigned to the station's number range.

Merging data models via e-mail

The data model can be exported, sent via e-mail, and imported on the target station.

1. Select **Export Data Model (-> E-Mail)** from the context menu for the **Active** data model.

   An e-mail is created with the subject "MM_BLOB_2". A file with the same name is added as an attachment.
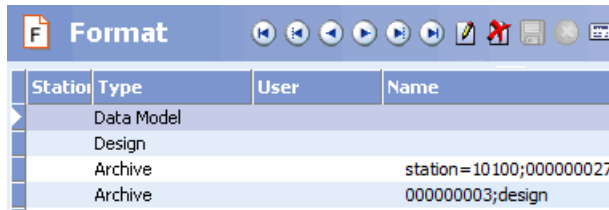
2. Send the e-mail.

3. Select **Import Data Model (<- E-mail)** from the **Design** node's context menu.

   The data model is imported. (The system searches for the corresponding e-mail in the current user's inbox.)

   Two new archived data models are created on the target station:

   • The newly imported data model (with the corresponding station number)

   • The current design data model on the target station prior to importing the new data model

Station	Type	User	Name
	Data Model		
	Design		
	Archive		station=10100;000000027
	Archive		000000003;design

   Any messages concerning problems that occurred while importing the data model are written to the **Maintenance** module's log file, see Logs and Error Messages on page 506.

4. The imported data model changes are color-coded, as with "normal" data model changes, and need to be applied manually, see .

No.	Name	Properties	Gen.ID	Fields
P000	P000		✔	10
P001	P001		✔	10
P002	P002		✔	9
P003	P003		✔	9

   • yellow: New elements that can be applied to the data model or deleted

   • red: Elements deleted in the external data model. If you apply the changes, the element is also deleted on the target station. If you select **Undo Changes** from the context menu, the element is retained on the target station.

   • pink: Elements changed by the external data model that were already present in the internal data model. In this case, the element properties are displayed for the data model that the element was originally added to. You can apply the change, undo the change, or change the affected element manually before applying changes.

Merging data models via communication

You can also merge data models using <suite's> communication mechanism. In order to be able to merge data models, the data model you are importing may not have been created on the target station.

When inputting the data model, a message is displayed:

- Confirm with **Yes** to merge the data models automatically. Only in the case of conflicts are these changes color-coded and need to be applied manually (see above).
- Select **No** to cancel the process with error 45.

Message concerning problems encountered when inputting the data model are written to the **Communication** module's log file.

Once you have input the data model, you are prompted to restart communication.

In order to merge data models using automatic communication, use the `--DmMerge` parameter, >> mmco.exe Parameters.

Merging data models via CRM.cockpit

Merging data models in CRM.cockpit is identical to merging via communication. Any conflicts need to be resolved after inputting the data model (see above).

Maintaining Catalogs on Multiple Stations

You can communicate catalog maintenance records between stations which are both defined as the catalog maintenance station.

Example - a development station at a customer <-> Industry Solution station. The **(In.)Cat.Maint . ID** field in the station record of the target station stores the highest **(Ext.)Cat.Maint . ID** in the station record of the source station, and not the highest catalog maintenance ID on the target station.

In such cases, IDs are generated when inputting catalog maintenance records (**Ext. Key** field in the **Catalog Maintenance** (KW) info area; composed of the source station number and serial number). This ID uniquely identifies catalog maintenance records from other catalog maintenance stations. This prevents changes to catalogs from being applied multiple times on the same station.

Preventing the Updating of Catalog Values

Learn about the values that cannot be changed to prevent updating of catalog values.

To prevent the unwanted updating of variable catalog values delivered with an Industry Solution, the following values (in the catalog base language) can not be changed (i.e. the respective cells are read-only in the **Catalog** info area):

* Tenant

* External Key

* Text

This applies to catalog values delivered with an Industry Solution with the following tenant numbers:

* ISI, FSI: 9000

* LSI: 9000, 9004, 9005

Note: This restriction is not applied in the Communication module and when importing Industry Solutions with CRM.cockpit.

If you want to change these values anyway, add the following option to the `mm.ini` file:

```
[Option]
ChangeTemplateCatalog=on
```

Note: Only use this setting in an environment where no further upgrades of the Industry Solution are planned.

Station Number Ranges

Learn about the valid number ranges for stations.

Valid number ranges for station numbers:

* 1-9999: Station numbers for customers
* 10000-10003: update-internal station numbers
    * 10000: Base development station
    * 10001: BTB development station
    * 10002: OTC development station
    * 10003: FS development station

- 10010-10014: update-internal station numbers for additional Base development stations
- 10020-10024: update-internal station numbers for additional vertical-specific development stations
- 10100-10104: Station numbers for partners

All other 5-digit station numbers are invalid.

Note: You need a password for station numbers higher than 9999.

Migration

If a station number is subsequently changed to a number over 10000, existing data can be migrated accordingly (keys, formats, distributed logic records, rep, document & text IDs) when next starting the **Maintenance** module. After migrating the data, all `*.cfg` files containing user-specific settings need to be deleted to prevent unexpected results, see *.. \<user name>* in the *Aurea CRM win Administrator Guide*.

When changing station numbers within the 1-9999 range (or from a station number starting from 10000 to a number below 10000), no data is migrated.

Functionality

Depending on the station number, IDs for user-defined info areas, fields, variables and fixed catalogs, links and indices are assigned from different number ranges, see Number Ranges in Aurea CRM on page 398.

Note: On a station with a number > 10000, do **not** select a user group when e.g. modifying the data model. The station number already determines the number ranges to be used.

Only info areas, fields and catalogs present in all verticals are available in the data model on stations 10000 and 10010-10014. This allows you to create "Base" configurations that can be used by Industry Solutions for all verticals, see Vertical-independent Configuration on page 528.

Records created on a station with a station number >= 10000 cannot be deleted on stations with a station number < 10000 (not even by the SU). Exception: Catalog values in variable catalogs can be deleted on all stations (using Aurea CRM win's catalog maintenance features).

Use the **Allow deletion of the following data** configuration entry (**Business Solutions** category) in the **Configuration** info area to override this behavior: You can specify info areas from which records may be deleted on stations with a station number < 10000, see Business Solutions on page 24.

Vertical-independent Configuration

Learn about the vertical independent info areas, fields and catalogs.

The data model on station 10000 contains those info areas, fields and catalogs that are present in all verticals. All vertical-specific elements are hidden or displayed as inactive (e.g. when defining access rights). This allows you to make general changes to the data model on this "Base" station and distribute the changes to Industry Solutions for individual verticals.

"Base" elements are identified by special IDs:

Info Areas

- **Base info areas:** Info areas that are identical in all verticals (e.g. **Rep** (ID), **Station** (AS) etc.). Use the `--writedbstr` parameter to generate the file `mm_rel_base.txt`, which contains a list of all base info areas, see mmba.exe Parameters on page 13.
- **Base info areas with different codes:** Info areas whose contents are identical, but whose info area codes differ. These info areas have an additional Base info area code which is used in XML reports and to define variables (in the **Variable** info area).

BB	BC	FS	Base	Info Area
WK	WT	WK	**0WK**	**Exchange Rate**
BL	B5	B5	**0BL**	**Relationship level**
BZ	ZU	-	**0BZ**	**Allocation**
RO	PA	-	**0RO**	**Participant**
VP	VE	-	**0VP**	**Sales Area (Partner)**
B6	BS	B6	**0B6**	**Stock**
B7	BV	B7	**0B7**	**Stock Control**
B8	BP	B8	**0B8**	**Stock Cont.Item**
BA	BL	BA	**0BA**	**Receipt Type Calc.**
KO	IP	-	**0KO**	**Installed Base Item/Inst. Base Position**

- **Info areas containing Base fields:** Info areas present in all verticals, but whose fields are only partially identical (e.g. **Company**). Fields common to all verticals

have Base field numbers. Use the `--writedbstr` parameter to generate the file `mm_dbfnr_base.txt`: This file contains the common fields in these info areas together with the Base field numbers, see mmba.exe Parameters on page 13.

Fields

The following number ranges apply to Base fields (see above):

Field Num-ber	Vertical	Comment
1000-1999	Base	For all verticals
2000-2499	BTB + OTC	
2500-2999	BTB + FS	
3000-3499	OTC + FS	

The file `mm_dbfnr_base.txt` contains all Base fields and the Base field numbers (see above). Base fields numbers are displayed as the third field number in the window containing all fields in an info area, see Displaying all Fields in a Mask on page 388.

Catalog

Base catalog numbers exist for variable catalogs using the following number ranges:

Catalog Num-ber	Vertical	Comment
20000-22999	Base	For all verticals
23000-23999	BTB + OTC	
24000-24999	BTB + FS	
25000-25999	OTC + FS	

The file `mm_catno.txt` contains the Base catalog number for Base catalogs (in the last column), see mmba.exe Parameters on page 13.

There is **no differentiation** between Base and vertical-specific fixed catalogs. Vertical-specific fixed catalogs are located in the number range 10-29. Please note that the order of catalog entries (and consequently their codes) may differ between verticals (e.g. in the **Activity** info area).

Distributing the Base configuration

Base configurations can be transferred to the same vertical using Aurea CRM's communication mechanisms. CRM.cockpit must be used to transfer the configuration to other verticals to ensure that IDs are converted correctly. For more information, refer to the CRM.cockpit documentation.

Base configurations defined in CRM.designer can be transferred using Aurea CRM bulkloader or CRM.cockpit. For more details, refer to the *Aurea CRM web Technical & Installation Guide*.

Mixed purpose:

To develop a base configuration for just 2 verticals, use the following `mmdb.ini` entries:

```
[CORE]
```

```
Vertical = xxxx
```

The following values are possible:

Value	Description
BBBC	BTB+OTC
BBFS	BTB+FS
BCFS	OTC+FS

This results in the common elements of two verticals being displayed on the Base station: All fields, catalogs and info areas common to both specified verticals can then be used by the Base configuration.

Empty texts in the Text info area

Learn how to add empty texts in text info area.

In the **Text** info area there is a context menu option **Include empty texts** (available only on Industry Solution stations (station number >= 10000)).