

Migrating from mapp Services 5.x to mapp Services 6.0

This section lists all changes with the changeover to 6.x.

The following are general changes that affect several components. The changes per mapp Services component are listed [here](#).

Components no longer available

The following components are no longer available in mapp Services 6.x:

- mapp User
Instead of mapp User, component mapp UserX can be used.
- mapp Alarm
Instead of mapp Alarm, component mapp AlarmX can be used.
- mapp WebXs
Instead of mapp WebXs, mapp Cockpit can be used as a diagnostic tool for mapp Services components.

There is no replacement for the following components; the functionality must be solved via the application:

- mapp Energy
- mapp Tweet
- mapp OEE
- mapp AssetInt

Behavior of mapp components at runtime

The behavior of mapp components at runtime has changed. Whether or not a mapp Services component should be available at runtime is defined in 6.x via the general configuration setting (section "General"). For additional information, see [here](#).

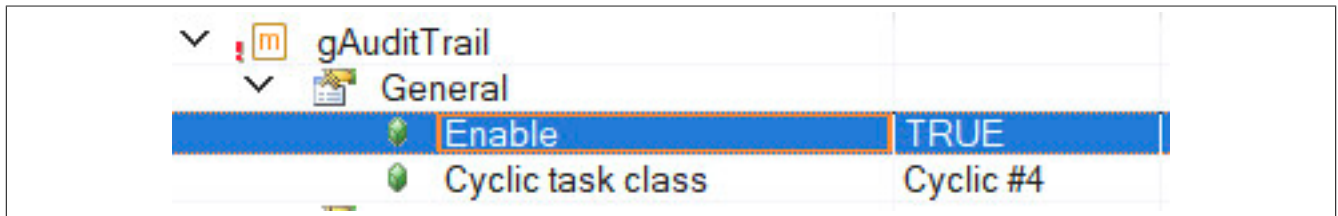


Figure 1: mapp Audit - Example

The component is active as soon as the target system is booted and the functions can be used directly. This means that it is no longer mandatory to use the so-called core function blocks.

Functions of the component are directly available.

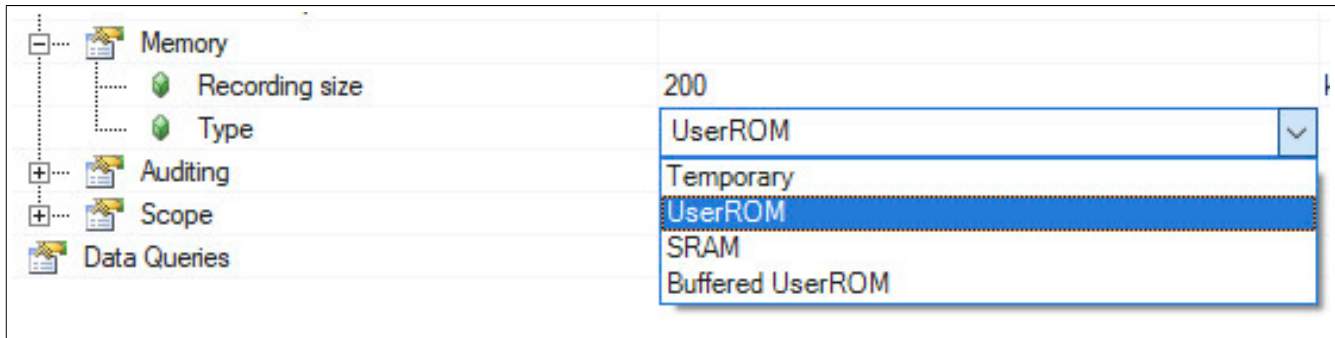
In mapp Audit for example, it is no longer mandatory to implement function block MpAuditTrail if only the export function of MpAuditExport or the HMI application via MpAuditTrailUI is required. The mapp Audit functions can be used directly and the events are collected as soon as the target system is running. The component can also be diagnosed via mapp Cockpit directly.

Calling function blocks

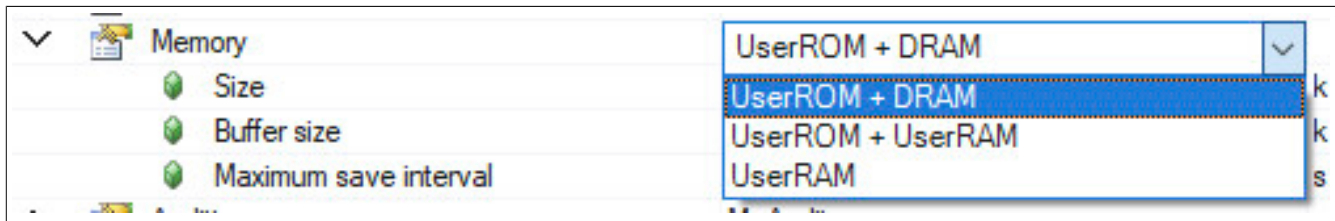
Since the functionality of a mapp component is no longer managed via the main function block, it is no longer mandatory to initialize the function blocks in the INIT section of a program. The function blocks must no longer be disabled in the EXIT section as in mapp Services 5.x. How the function blocks can be used is explained in the general mapp Technology section [here](#). This means that re-enabling and disabling no longer has a major impact on the performance of the target system.

Changing the memory setting

Data is collected in some mapp Services components, such as events in mapp Audit or the alarm history in mapp AlarmX. In mapp Services 5.x for example, the following options were available for saving data:



The selection of options have been standardized and expanded in mapp Services 6.x. It is possible to choose between the following storage types:



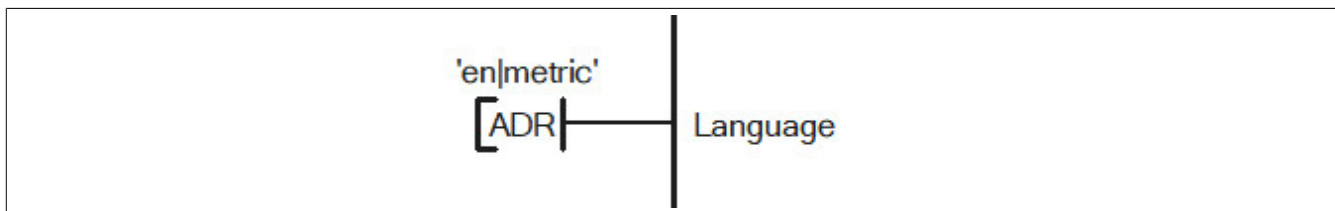
For additional information about the individual types, see here in section "Storage location". This change has been made to the following components:

- mapp AlarmX
- mapp Audit
- mapp Data

The configuration is changed from 5.x to 6.x automatically via the [configuration update](#). After the update, the memory settings should be checked and adjusted if necessary.

Defining the language and unit of components

In some components, data can be displayed or saved based on the language and units. The language and unit had to be specified in the same input parameter "Language":

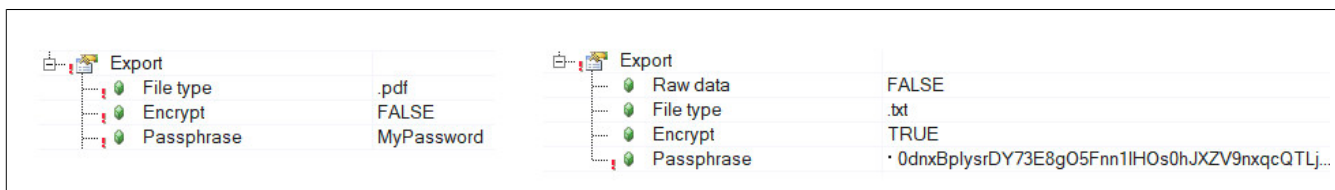


In mapp Services 6.x, specifying the language and unit has been made easier. **The language is still defined via parameter "Language" as usual and the unit is specified in a separate input parameter "MeasurementSystem" using an enumerator such as MpAlarmXMeasurementSystemEnum.**

For additional information about the language and unit, see here.

Password encryption in the configuration

In mapp Services 5.x, the password could be encrypted or defined as plain text in a configuration.



Starting with mapp Services 6.x, the password must be defined in encrypted form for security reasons. Passwords can no longer be displayed as plain text. For additional information, see here in section "Password encryption in the configuration".

Passwords can be defined in the following configurations:

- mapp Audit
- mapp Database
- mapp Report
- mapp CodeBox
- mapp Recipe
- mapp Data

If a password has been saved as plain text in a configuration, it must be encrypted manually. The password must be deleted once and re-entered for this. Via [Configuration update](#) the passwords to check are listed!

If a configuration which does not have an encrypted password is imported using MpComConfigManager, the password is invalid for security reasons and cannot be used by the component. If the component tries to use the password, the password not readable or password is invalid error is displayed in the Logger. This means that the audit list cannot be exported or a report cannot be created!

Change in StatusID data types

In mapp Services 5.x, StatusID data types such as MpAlarmXStatusIDType had parameter "Code", which displayed the error code of the StatusID. For additional information about this code, see the help documentation. With 6.x, parameter "Code" was removed from all StatusID data types since additional information about an error can always be found via the StatusID and the code is no longer noted in the help.

Parameter "Code" can no longer be used in the application.

Configuration function blocks

All configuration function blocks, such as MpAuditTrailConfig or MpUserXMappingConfig, no longer exist starting with 6.0 and later.

The following configuration function blocks can no longer be used in the application:

- MpAlarmXConfigMapping
- MpAlarmXConfigAlarm
- MpAuditTrailConfig
- MpDataRecorderConfig
- MpUserXLoginConfig
- MpUserXMappingConfig
- MpUserXServerConfig
- MpBackupCoreConfig
- MpSequenceAxisConfig
- MpSequenceCommandConfig
- MpSequenceActuatorConfig
- MpFileManagerConfig

Instead of the individual configuration function blocks, function block MpComConfigManager can be used.

All associated data types of the configuration function blocks have been removed since they are no longer required.

For the configuration of mapp AlarmX and mapp Backup, function blocks MpComConfigBasic and MpComConfigAdvanced can be used. How the configuration can be changed at runtime using these function blocks is described in section Changing the configuration at runtime. Additional components will be supported with future mapp Services versions.

Binding to mapp Cockpit

The mapp components can now be used in combination with mapp Cockpit. For additional information, see section mapp Cockpit.

Which commands and parameters are visible or usable via mapp Cockpit is explained per component. For additional information, see [here](#) or [here](#) in section "Diagnostics", for example.

New "General" configuration section

Starting with 6.0, there is a "General" section in every mapp configuration. General configuration settings can be defined in this section. This includes, for example, enabling the audit function or the cyclical context in which certain tasks should be processed. For additional information, see [here](#).

Auditing

mapp Audit can be used to collect events.

With 6.0, collecting events from mapp components has been standardized. The auditing function for each component can be found in the configuration of the respective component in section "General". The auditing function is enabled by default.

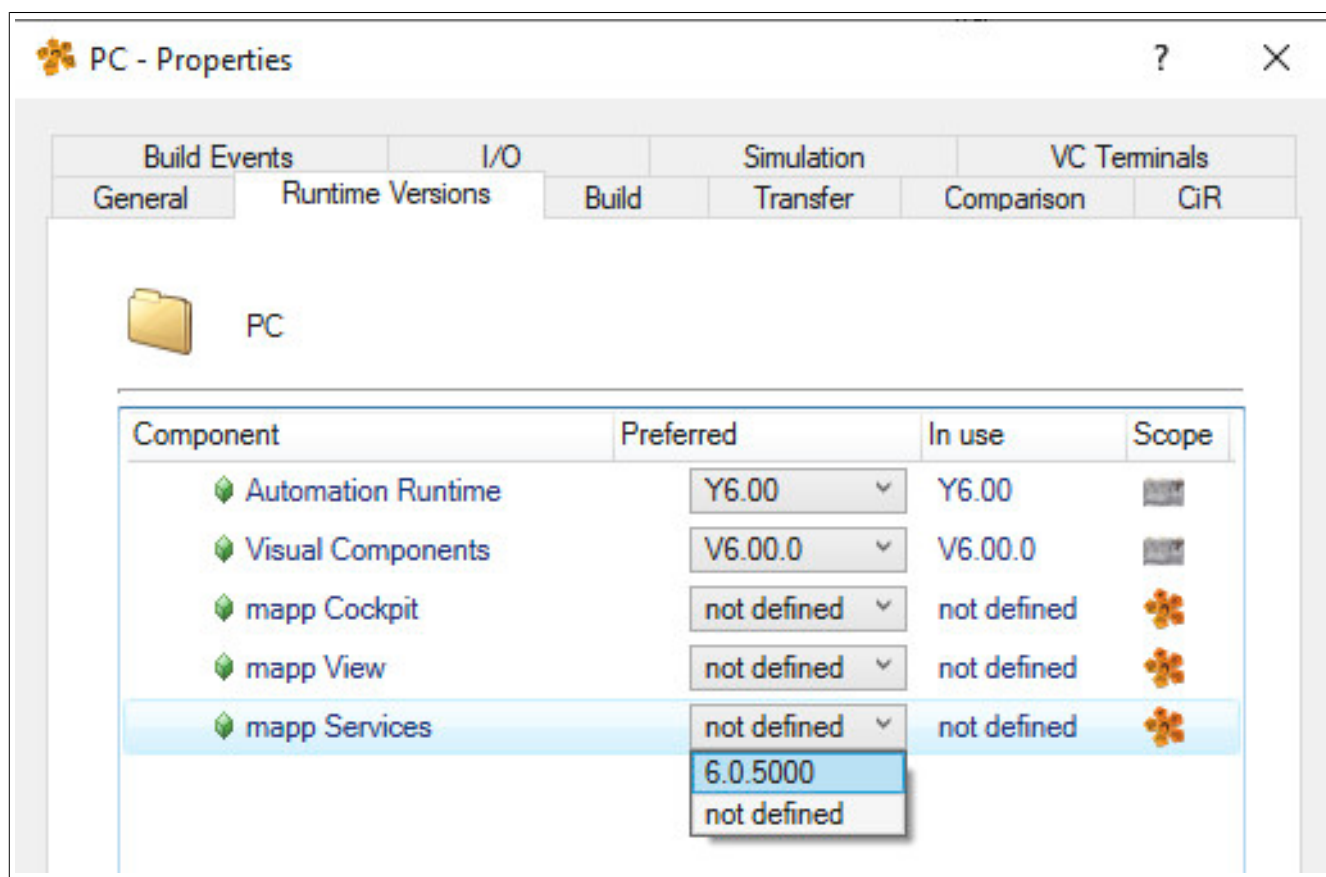
Components that deliver events are described in section Events. For additional information about auditing and required changes, see [here](#).

1 Configuration update

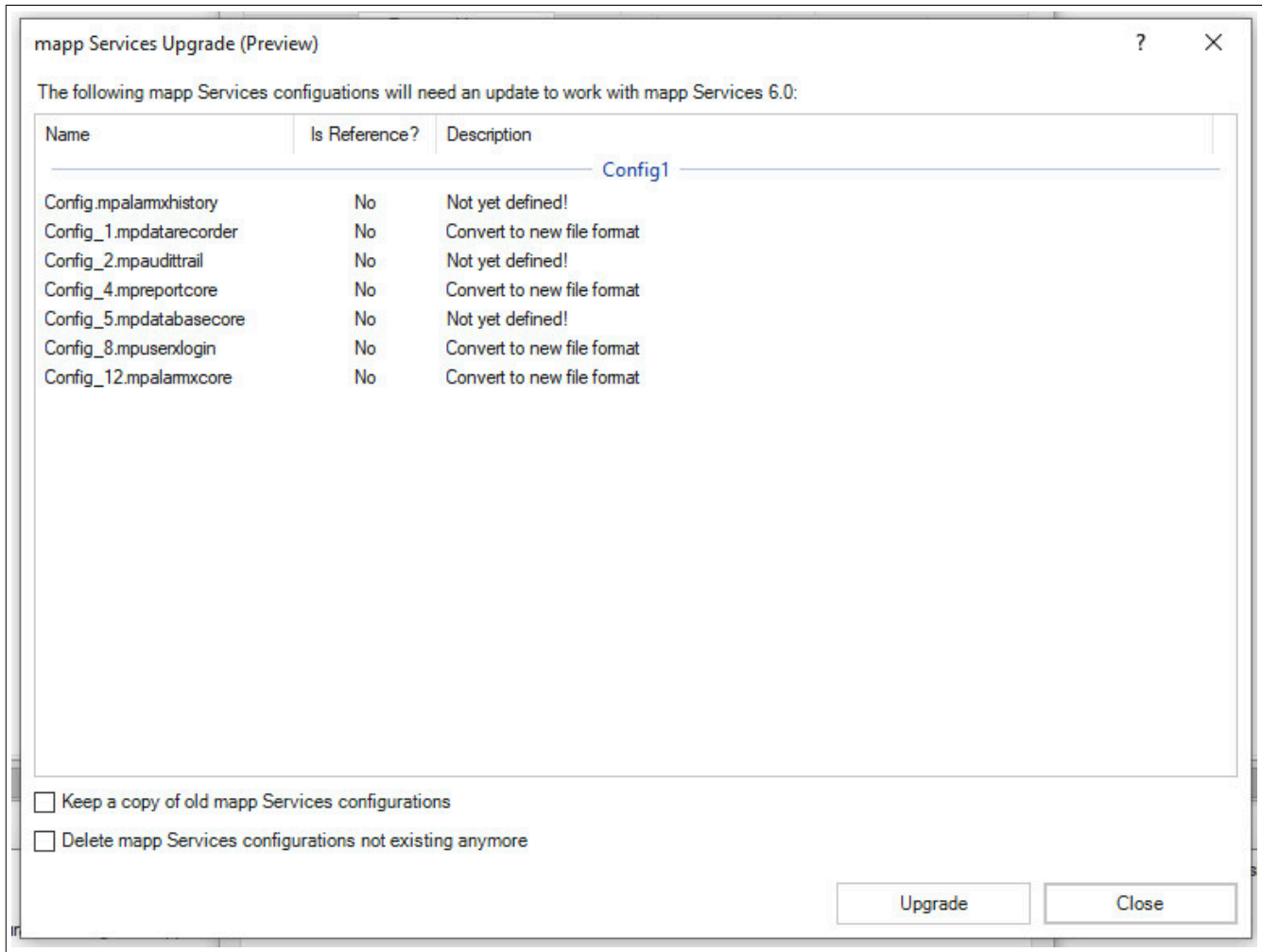
With 6.0, [configuration changes](#) have been made in each component. Sections and parameters have been added and existing sections have been restructured and parameters renamed to make them easier to understand.

If a project is changed from 5.x to 6.0, all configurations in a project can be easily and conveniently converted through a dialog box.

If an existing project containing 5.x configurations is opened, the first step is to update the mapp Services version to 6.0.

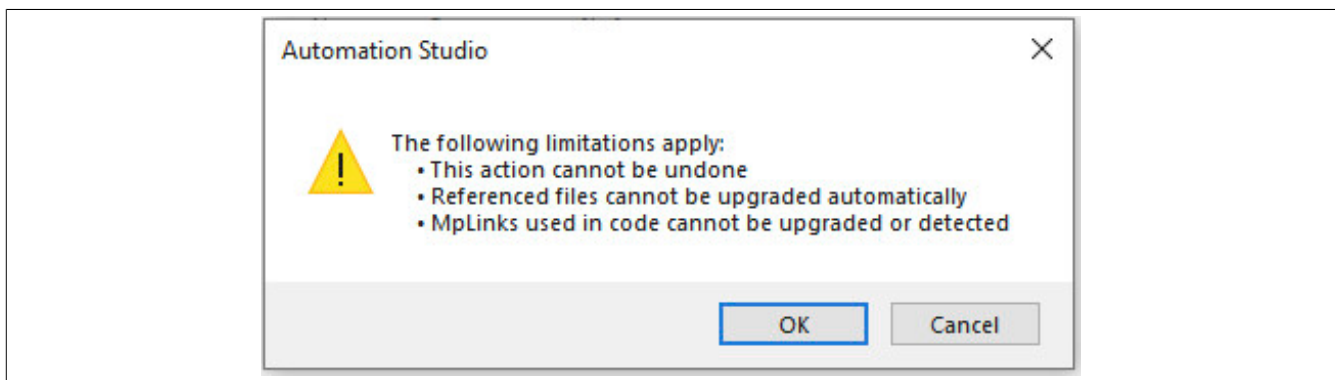


The version is confirmed by clicking "Ok" or "Apply". During the version change, the following dialog box appears, with which the configurations can be updated to 6.0 automatically:



All existing configurations in the project are listed. The name of the configuration, as well as the description and information about whether the configuration is a reference, are displayed. In the lower area of the dialog box, whether copies of the 5.x configurations should be created and whether to delete configurations that no longer exist can be selected. Click on "Cancel" to close the dialog box without converting the configurations.

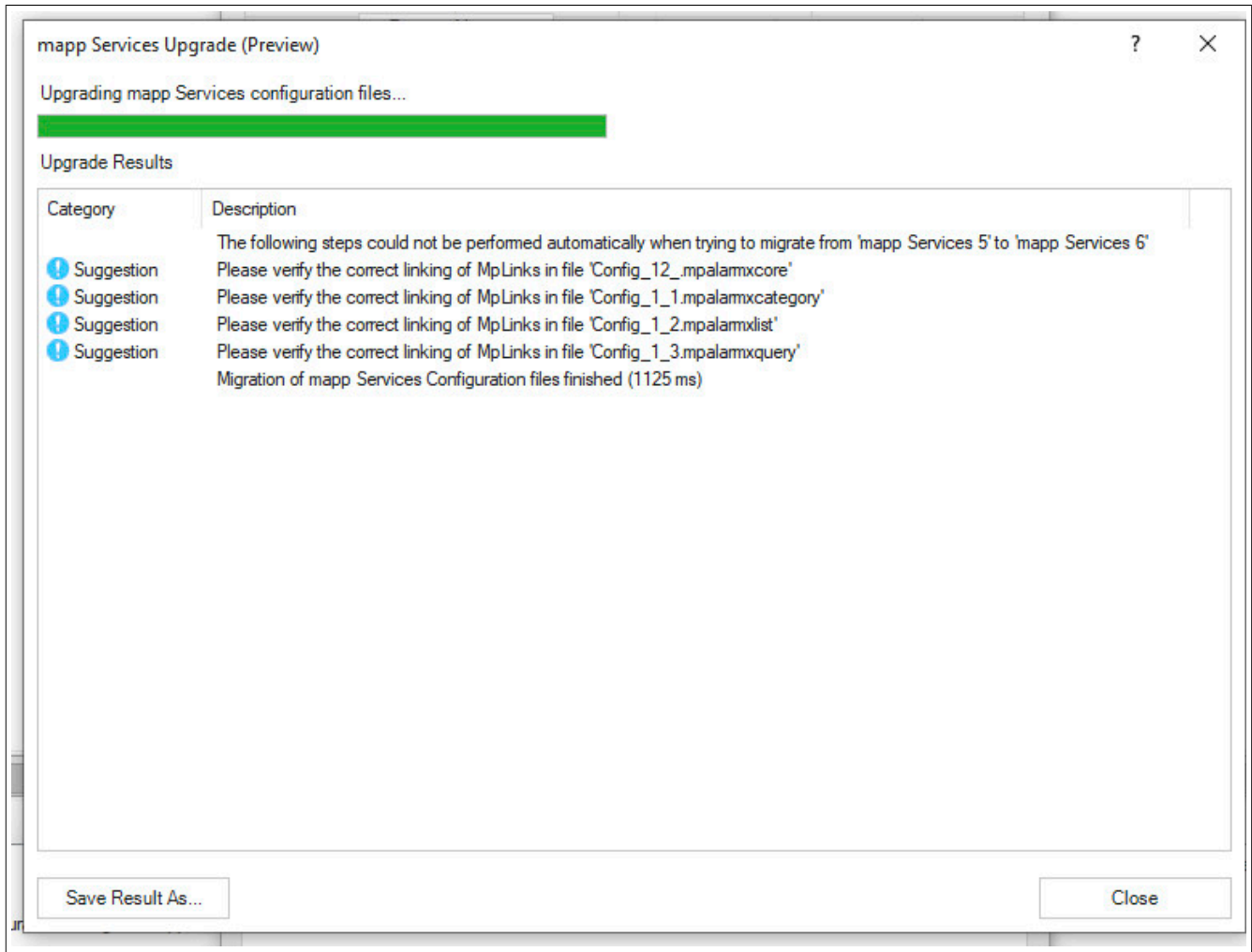
"Upgrade" converts all configurations. Before the update is performed, an information window is displayed:



Please note that the conversion cannot be undone. Referenced files within the configuration cannot be updated automatically. If another mapp configuration is referenced in a configuration as a result of the update for example, the referencing must then be performed manually. When converting the configurations from 5.x to 6.0, no changes are made to the application code.

Configurations cannot be updated individually. If only part of the configuration should be changed to 6.0, the desired configurations can be copied to a separate project and updated there.

Click on "Ok" to update the configurations. As soon as the process is complete, a list of the configurations to check is displayed. If a link to another configuration must be created for example, it is displayed in the dialog box. The messages displayed can be saved using "Save result as". This means that the individual messages can be viewed again later.



2 Changes per component

This section lists the changes per component:

2.1 mapp AlarmX

This section lists the changes to component mapp AlarmX.

General

The following general changes were made:

- Starting with 6.x, an alarm can also be confirmed in addition to being acknowledged. For additional information, see [here](#). In addition, the two new functions MpAlarmXConfirm and MpAlarmXConfirm have been added. An alarm can also be confirmed via structure UIConnect on MpAlarmXListUI.
- The definition of the language and unit in function blocks MpAlarmXQuery, MpAlarmXListUI, MpAlarmXHistoryUI and MpAlarmXHistory have been standardized. **Input parameter "MeasurementSystem" was added for this.** For additional information, see [here](#) in section "Defining the language and unit of components". The language must be defined in input "Language" and the unit in input "MeasurementSystem".
- In mapp AlarmX, configuration packages are available starting with 6.x. These simplify implementing the alarm system.
- The configurations can be adjusted at runtime using function blocks MpComConfigBasic and MpComConfigAdvanced. For additional information, see [Configuring at runtime](#).

Configuration

The following changes have been made in the configurations.

MpAlarmXCore Konfiguration:

- The configuration was divided into various configurations. With 6.x, user alarms and alarm snippets are defined in the MpAlarmXList Konfiguration, categories in the MpAlarmXCategory Konfiguration and queries in the MpAlarmXQuery Konfiguration. How these configurations can be used is explained here.

Using [Configuration update](#), the core configuration is automatically divided into the MpAlarmXList Konfiguration, MpAlarmXCategory Konfiguration and MpAlarmXQuery Konfiguration.. Defined user alarms, categories and queries are automatically assigned to the correct configurations.. Only the mapp Link references within the configurations must be updated manually. The references are listed during the [Configuration update](#).

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- Alarm mapping options "Send message" and "Replace" no longer exist. "Send message" can no longer be used since the mapp Tweet component no longer exists with 6.x. Instead of "Replace", "Aggregate alarm and escalate" can be used.
- There are two new additional parameters ("Code offset", "Argument") in section "Alarm list", which can be used to create complex alarm management more easily. For additional information, see here in section "Complex alarm management".
- With 5.x, non-configured alarms were created automatically via MpAlarmXSet, for example. With 6.x, function "Unconfigured alarms" must be used in the configuration. This means that non-configured alarms are not created automatically by default. For additional information about the function, see here.
- The memory setting in section "Retain" has been standardized. For additional information, see [here](#) in section "Changing the memory setting".

MpAlarmXList Konfiguration:

- Parameter "Auto detect" under the alarm snippets is enabled by default with 6.x. This means that the snippets are automatically assigned to the alarms in which they are used and no longer to all alarms by default. For additional information, see here.
- Predefined snippets can be used in the configuration for configuration alarms. **With 6.x, snippet "Limit" has changed to "limit", "LimitText" to "limittext" and "MonitoredValue" to "monitoredvalue".** This must be updated in the configuration or text system.

MpAlarmXHistory Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- Parameters "File name pattern", "Timestamp pattern" and "Overwrite file" no longer exist. The functionality is completely applied by MpAlarmXHistory. For additional information about this, see here.
- Parameters "Auto file extension" and "Column separator" have been added. For additional information about parameters, see here.
- The memory settings have been standardized. For additional information, see [here](#) in section "Changing the memory setting".

MpAlarmXQuery Konfiguration:

- With 6.x, all queries are specified in the configuration. For each query, parameter "Component" can be used to specify whether the query should be performed for the current alarm list or the alarm history. For additional information, see here.

Function block

MpAlarmXAcknowledgeAll:

- The function no longer exists starting with 6.x. All alarms can be acknowledged via command "AcknowledgeAll" to MpAlarmXCore.

MpAlarmXCore

- Input parameter "AcknowledgeAll" has been added. All alarms can now be acknowledged via this command.
- Four new output parameters have been added. "CommandBusy" and "CommandDone" show whether or not a command has been executed. "UnacknowledgedAlarms" and "UnconfirmedAlarms" can be used to display the number of unacknowledged and unconfirmed alarms.

MpAlarmXHistory

- Several parameters have been added. Input parameters "FileName", "Overwrite" and "Clear" as well as output parameter "HistoryEntries". For additional information about this, see [here](#). Parameter "GeneratedFileName", which displays the name of the last exported file, has also been added in the information structure.

Data types

The following changes have been made to the data types:

- MpAlarmXListUIConnectType, MpAlarmXHistoryUIConnectType: Parameter "Language" no longer exists. The language and unit are specified in the respective function block. For additional information, see section "General" above.
- MpAlarmXListUIBacktraceType: The array sizes in the data type have been changed from 5 to 10.
- MpAlarmXHistoryUIDetailsType: Parameters "DataDescriptions" and "DataValues" were reserved in 5.x for later use and removed with 6.x.

The following changes have been made in the enumerators:

- MpAlarmXListUIStatusEnum: Enumerators mpALARMX_LIST_UI_STATUS_BUSY and mpALARMX_LIST_UI_STATUS_WARNING have been added.
- MpAlarmXHistoryUIStatusEnum: Enumerator mpALARMX_HISTORY_UI_STATUS_BUSY has been added.

2.2 mapp Audit

This section lists the changes made to component mapp Audit.

General

The following general changes were made:

- The event IDs have changed with 6.x; which event is assigned which ID is listed in section Events. Each event that occurs in a mapp component now has its own event ID. For example, if a recipe is loaded, this event has the ID 700. Saving a recipe has the ID 702. This enables a more precise selection of which events should be recorded in the system and which should not. **The desired events must now be configured in the MpAuditTrail Konfiguration under "Events"**. With 6.x, the desired events can be selected conveniently and easily through a dialog box. For additional information, see [here](#) in section Events.
- Only the format {&key} can be used for tokens in the event text; **the old [%key] format no longer exists**.
- As in 5.x, text files are provided in library MpAudit, which make it easier to configure the event texts. These texts have been updated to the changed event IDs. For additional information, see [here](#). **Since the event IDs have changed, the event texts must be updated.**
- The definition of the language and unit in function blocks MpAuditTrailUI, MpAuditExport, MpAuditTrail and MpAuditQuery have been standardized. **Input parameter "MeasurementSystem" was added for this**. For additional information, see [here](#) in section "Defining the language and unit of components". The language must be defined in input "Language" and the unit in input "MeasurementSystem".

Configuration

In the MpAuditTrail Konfiguration, the following changes were made:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General".
- The event list can be queried for specific entries. With 6.x, these queries are no longer defined in the MpAuditTrail Konfiguration but in the newly added MpAuditTrailQuery Konfiguration. **The division of the configuration and the addition of existing queries is automatically applied in the [Configuration update](#).**
- With 6.x, the event list can be exported as an XML, TMX or CSV file; option "PDF" is no longer available in section "Export". **If "PDF" was used as the export format, it must be changed.**
- The text source to be used for the events is defined in the configuration. **With 6.x, only the text system can be defined. The sources "VC4" and "None" no longer exist.** This has also changed the text specification. In the configuration, the text is no longer defined in section "Text source" but via "Text". Parameters "Root namespace", "Format text source", "Display text" and "Error message" no longer exist. The text is now specified via parameters "Display" and "Export". **If the text system or "None" was used as the text source, the required changes are automatically made during the [Configuration update](#). If VC4 was used as the text source, the text to define should be checked and updated as necessary.**

Text source	TextSystem
Root-Namespace	
Format Text Source	AuditPackage/Event/Root
Display Text	Same
Error message	

Figure 2: Definition of the text in 5.x

Text
Display
Export

Figure 3: Definition of the text in 6.x

- The configuration parameters "Filename pattern" and "Archive name pattern" could be used to define the name for the event list and for the archive. With 6.x, these parameters no longer exist in the configuration. **The name of the file can now be flexibly defined directly in the function block.** For additional information, see section "Function blocks".
- The memory settings in the configuration have been standardized in 6.x. **The memory settings must be checked after the Configuration update and updated as necessary.** For additional information, see [here](#) in section "Memory settings".

Function blocks

Changes have been made to the following function blocks:

MpAuditClearBuffer:

- The function no longer exists with 6.x. The audit buffer can now be deleted using command "Clear" in MpAuditTrail.

MpAuditTrailConfig:

- The function block no longer exists with 6.x. MpComConfigManager can be used to change the configuration at runtime. For additional information, see [here](#) in section "Function blocks configuration". The associated data types of the function block have also been removed as they are no longer required.

MpAuditRegPar:

- The information structure of the function block has changed from MpAuditTrailInfoType to MpAuditRegParInfoType.
- Parameter "Identifier" has been changed to "Identifier".

MpAuditTrail:

- Output parameter "NumberEntries" has been added. All logged events are stored in a ring buffer. The number of events in the buffer is displayed in "NumberEntries".
- Parameter "GeneratedFileName" has been added to the information structure.
- Parameter "FileName" has been added. The name can now be specified directly and flexibly in the function block.

MpAuditTrailUI:

- Input parameter "Refresh" no longer exists. Events are updated automatically.
- Parameters "DeviceName" and "FileName" have been added. This means that the filename and the storage medium can be defined directly and flexibly in the function block.
- The information structure of the function block has changed from MpAuditInfoType to MpAuditTrailUIInfoType.

MpAuditExport:

- Parameter "FileName" has been added. This allows the name to be defined directly and flexibly in the function block.
- The information structure of the function block has changed from MpAuditInfoType to MpAuditExportInfoType.

2.3 mapp Backup

This section lists the changes to component mapp Backup.

Configuration

In the MpBackUpCore Konfiguration, the following changes were made:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- Section "Auditing" no longer exists with 6.0. Starting with 6.0, the auditing function is enabled via section "General".

Function block

MpBackupCoreConfig:

- The function block no longer exists with 6.x. MpComConfigManager can be used to change the configuration at runtime. For additional information, see [here](#) in section "Function blocks configuration". The associated data types of the function block have also been removed as they are no longer required.

MpBackupCore:

- Input parameter "Overwrite" has been added. This parameter defines whether the existing file should be overwritten. For additional information, see [here](#).

2.4 mapp CodeBox

This section lists the changes to component mapp CodeBox.

Configuration

The following changes have been made in the configurations:

MpCodeBox Konfiguration:

- **Parameters "Macro namespace" and "Argument namespace" no longer exist.** Localizable texts are now created via parameter "Text" for the condition or argument. The text can be defined as static or in localized form using the text system. If parameters "Condition" or "Argument" were used, the desired text for each condition/argument must be specified with 6.x. For additional information, see [here](#). **If the parameters were used, the localizable text must be defined per condition/argument!**



Figure 4: Definition in 5.x

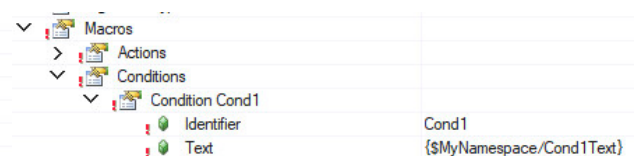


Figure 5: Definition in 6.x

MpCodeBoxCore Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .

MpCodeBoxFlexInstance Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .

Function block

MpCodeBoxProgramControl:

- Input parameter "Reload" no longer exists. The input parameter was reserved in 5.x for later use and was removed with 6.x.

MpCodeBoxFlexMonitor:

- The definition of the language and unit in the function blocks has been standardized. Input parameter "MeasurementSystem" was added for this. For additional information, see [here](#) in section "Defining the language and unit of components". The language must be defined in input "Language" and the unit in input "MeasurementSystem".

2.5 mapp Com

This section lists the changes to component mapp Com.

Configuration

The following changes have been made in the configurations:

MpComGroup configuration

- **The MpComGroup configuration is replaced by the MpComGroup Konfiguration.** The configuration is used to build a mapp hierarchy. Via the MpComGroup Konfiguration, this can now be set up quickly and easily. How a mapp hierarchy can be configured is explained in use case Alarm management for a printer machine line.

MpComUnit Konfiguration:

- The MpComUnit Konfiguration was simplified. **Section "Customized measurement system" no longer exists since user-defined units are managed via Automation Studio. The [Configuration update](#) makes this change automatically.**

Function blocks

The following change was made in MpComConfigManager:

- The function block can be used to export/import configurations. **If a configuration that does not have an encrypted password is imported,** the password is invalid and cannot be used by the component. If the component tries to use the password, the password not readable or password is invalid error is displayed in the Logger. This means that the audit list cannot be exported or a report cannot be created!

2.6 mapp Data

This section lists the changes to component mapp Data.

Configuration

In the MpDataRecorder Konfiguration, the following changes were made:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General".
- The structure of the MpDataRecorder configuration has changed. For better structuring, the configuration also contains sections "Memory", "Record" and "File". The update is performed automatically via the [Configuration update](#).
- **Parameter "Power fail-safe" no longer exists.** With 6.x, "Memory" is used to define whether the data should be saved in SRAM or DRAM. Via the [Configuration update](#), the memory settings are automatically defined correctly. If "Power fail-safe = TRUE" was used, SRAM is used as memory; otherwise, DRAM is used.
- The unit system specification has changed in the configuration. **Section "Unit definition" no longer exists.** The system of units is specified via parameter "Measurement system". How the unit should be displayed is defined via parameter "Unit display". **The unit definition "Registration based" no longer exists** since the unit must be defined via the Automation Studio system of units. **If "None" or "Measurement system" was specified as the system of units, the update is performed automatically via the [Configuration update](#) automatically. For "Registration based", the configuration should be subsequently checked and updated if necessary.**

Function blocks

The following changes have been made to the function blocks.

MpDataRecorderConfig:

- The function block no longer exists with 6.x. MpComConfigManager can be used to change the configuration at runtime. For additional information, see [here](#) in section "Function blocks configuration". The associated data types of the function block have also been removed as they are no longer required.

MpDataRegPar:

- The information structure in the function blocks has been changed from MpDataInfoType to MpDataRegParInfoType.
- The unit must be defined via the Automation Studio system of units. For this reason, parameters "Unit" and "ScaleFactor" have been removed.

MpDataRegParLimits:

- The unit must be defined via the Automation Studio system of units. For this reason, parameters "Unit" and "ScaleFactor" have been removed.

MpDataStatisticsUI:

- The information structure in the function blocks has been changed from MpDataInfoType to MpDataStatisticsUIInfoType.
- The definition of the language and unit in the function block has been standardized. Input parameters "MeasurementSystem" and "Language" were added for this. Parameter "Language" has been removed from structure UIConnect. For additional information, see [here](#) in section "Defining the language and unit of components". **The language must be defined in input "Language" and the unit in input "MeasurementSystem".**

MpDataTableUI:

- The information structure in the function blocks has been changed from MpDataInfoType to MpDataTableUIInfoType.
- The definition of the language and unit in the function block has been standardized. Input parameters "MeasurementSystem" and "Language" were added for this. Parameter "Language" has been removed from structure UIConnect. For additional information, see [here](#) in section "Defining the language and unit of components". **The language must be defined in input "Language" and the unit in input "MeasurementSystem".**

Alarms

The following Alarms have been changed:

- Alarm mpDATA_ALM_RECORDING_COMPLETED no longer exists.

2.7 mapp Database

This section lists the changes to component mapp Database.

General

The following general changes were made:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- When using the MS SQL and PostgreSQL database system, a MySQL connector is no longer required starting with 6.x and later.
- With an INSERT query, a maximum of 1000 rows can be added with 6.x.

Script

The following changes have been made in the script:

- With mapp Services 6.x, only Python version 3.8 can be used since support for Python 2 has been discontinued.
- When starting the script, specifying the database system is no longer required since this is defined via the MpDatabaseCore Konfiguration in section "Database settings". For additional information, see [here](#).

Function block

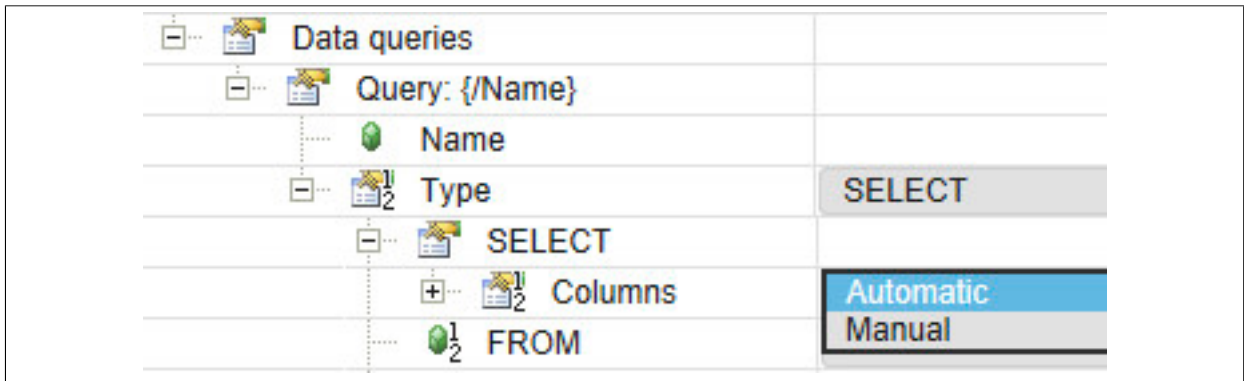
MpDatabaseCore:

- **Function block MpDatabaseCore was removed with 6.x.** The function is completely replaced by MpDatabaseQuery. How to connect to a database and perform queries is explained step by step in "Getting started" tutorial Connecting to a database. The associated data types of the function block have also been removed as they are no longer required.

Configuration

The following changes were made in the MpDatabaseCore Konfiguration:

- The connection parameters in the MpDatabaseCore Konfiguration have changed. **Parameter "DBMS" no longer exists.** The database system is now defined via **parameter "Type" under "Database settings"**. **Parameter "Automatic mapping" has been replaced by "Automatic mapping verbosity"**. Instead of "Strict" and "Flex", it is now possible to select between "Error", "Warning" and "Off". For additional information, see here. **The changes are enabled in the [Configuration update](#).** **Parameter "Type" must be updated manually.**
- Parameter "Destination" no longer exists.** This could be specified in the definition of SELECT queries. "Destination" could be used to define whether the result of the query should be visible in a process variable or widget Database. **With mapp Services 6.x, queries made via widget Database are displayed directly in the widget. No further settings are required for displaying in the widget.** For additional information, see section Binding to mapp View.
- In the MpDatabaseCore Konfiguration, how the process variable should be specified for various query types can be defined under the "Data queries" tab. Option "Single columns" was replaced by "Manual" in 6.x. For additional information, see section "Specifying variables" here. **The update is performed automatically in the [Configuration update](#).**



Status numbers

The following changes have been made to the Statusnummern.

- 1064289630 was newly added
- 1083316228 was changed to 1083316227.
- 1064167419 was changed to -1064167420.
- 2137909241 was changed to -2137909243.
- 1064167416 was changed to -1064167418.
- 1064167415 was changed to -1064167417.
- 1064289627 was changed to -1064289629.
- 1064289626 was changed to -1064289628.
- 1064289625 was changed to -1064289627.
- 1064289624 was changed to -1064289626.
- 1064167421 was changed to -1064289622.
- 2137909238 was changed to -2138031445.
- The enumerator from -1064167415 has been renamed from `mpDATABASE_ERR_INVALID_USER` to `mpDATABASE_ERR_PV_NOT_CONFIGURED`.

2.8 mapp File

This section lists the changes to component mapp File.

Function block

MpFileManagerConfig:

- The function block no longer exists with 6.x. MpComConfigManager can be used to change the configuration at runtime. For additional information, see [here](#) in section "Function blocks configuration". The associated data types of the function block have also been removed as they are no longer required.

Enumerators

The following change was made to the data types:

- MpFileManagerUIMessageBoxType: The structure has been expanded with parameter "StatusID".

The following changes have been made to the enumerators:

- MpFileManagerUIMessageEnum, MpFileManagerUIItemTypeEnum, MpFileManagerUISortOrderEnum: The names of the enumerators have been extended with "UI". Instead of mpFILE_MSG_OK, mpFILE_UI_MSG_OK is used, etc.

Alarms

The following change has been made to the alarms:

- Alarm mpFILE_ALM_ALREADY_EXISTING no longer exists

2.9 mapp IO

This section lists the changes made to component mapp IO.

Configuration

The following change was made in the MpIO Konfiguration:

- Section "Master configuration" has been renamed "Main configuration". **The change is made automatically in the [Configuration update](#).**
- Parameter "Auto restore", with which the hardware configuration can be checked, has been added. For additional information, see [here](#).

Function block

The following change was made to the function blocks:

MpIOImport:

- **Parameter "ImportAllowed" no longer exists in the function block.** Importing is now defined via parameter MpIO Konfiguration in parameter "Allow import". A BOOL process variable is specified.

MpIOImportUI:

- With 6.x, the storage medium for the function block can be defined flexibly and simply in input "Device-Name".

2.10 mapp J1939

This section lists the changes made to component mapp J1939.

Configuration

The following change was made in the MpJ1939Generic Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .

Function block

The following change was made to the function blocks:

MpJ1939Generic:

- The function block no longer exists with 6.x. The functionality of the function block is completely applied with the MpJ1939Generic Konfiguration. The associated data types have also been removed since they are no longer required.

2.11 mapp PackML

This section lists the changes made to component mapp PackML.

General

- When using PackTags with 6.x, the status of the PackTags structure is visible in the Logger. For example, whether the structure is active or warnings exist is displayed. For additional information, see section Verwendung der PackML Struktur PackTag. The PackTags structure has also changed. Parameters "StateCurrentTime" and "StateCumulativeTime" are of data type "ARRAY[0..31, 0..17]OF DINT" with 6.x. The PackTags structure can be downloaded [here](#).

Configuration

The following changes have been made to the configurations:

- Configuration MpPackMLCore has been replaced by the MpPackMLStandaloneUnit Konfiguration or MpPackMLSynchronizedUnit Konfiguration. Depending in which mode mapp PackML is used, it is possible to choose between the two configurations. If mapp PackML is operated in synchronized mode, the MpPackMLSynchronizedUnit Konfiguration must be used. In standalone mode, the MpPackMLStandaloneUnit Konfiguration is required. For additional information about this, see section Grundprinzip. Because of this separation, section "Unit operation" no longer exists in the MpPackMLStandaloneUnit Konfiguration. **The change is made automatically in the [Configuration update](#).**
- Configuration MpPackMLModule has been replaced by the MpPackMLSynchronizedModule Konfiguration. **The change is made automatically in the [Configuration update](#).**

Function block

MpPackMLCore:

- The function block was removed with 6.x. The function is completely applied with the MpPackMLStandaloneUnit Konfiguration. The associated data types of the function block have also been removed as they are no longer required.

MpPackMLStatisticsUI:

- The information structure of the function block has changed from MpPackMLUIInfoType to MpPackMLStatisticsUIInfoType.

MpPackMLBasicUI:

- The information structure of the function block has changed from MpPackMLUIInfoType to MpPackMLBasicUIInfoType.

2.12 mapp Recipe

This section lists the changes to component mapp Recipe.

Configuration

The following changes have been made in the configurations:

MpRecipeXml Konfiguration, MpRecipeCsv Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .

Function block

The following change was made to the function blocks:

MpRecipeUI:

- Input parameters "DeviceName", "Category" and "Header" have been added. This allows the parameters to be flexibly changed directly on the function block.
- The information structure of the function block has changed from MpRecipeInfoType to MpRecipeUIInfoType
- The message box structure in structure UI connect has been expanded. Errors and warnings can now be displayed in the structure using parameters "ErrorNumber" and "StatusID". Enumerator MpRecipeUIStatusEnum has been expanded with mpRECIPE_UI_STATUS_ERROR and mpRECIPE_UI_STATUS_WARNING.

MpRecipeRegPar:

- The information structure of the function block has changed from MpRecipeInfoType to MpRecipeRegParInfoType.

MpRecipeRegParSync:

- The information structure of the function block has changed from MpRecipeInfoType to MpRecipeRegParSyncInfoType.

Data types

The following changes have been made to the data types:

- MpRecipeXmlHeaderType, MpRecipeCsvHeaderType: Instead of 2 different data types, the common data type MpRecipeHeaderType was created with 6.x.
- MpRecipeUIHeaderType; The parameters within the data type have been changed from STRING to WSTRING.
- MpRecipeUIStatusEnum: Enumerators mpRECIPE_UI_STATUS_PREVIEW and mpRECIPE_UI_STATUS_WARNING have been added.

2.13 mapp Report

This section lists the changes made to component mapp Report.

Configuration

The following change was made in the MpReportCore Konfiguration:

- Parameter "Filename pattern" no longer exists in section "Report". The filename is now defined directly and flexibly via function block MpReport.
- Parameter "Name" in section "Report" has been renamed "ID". The change is automatically applied with the [Configuration update](#).
- In section "Tables", the minimum height of a row can be specified under "Minimum row height". The default value has been changed from 1 to 10. The change is automatically applied with the [Configuration update](#).
- Predefined snippets can be used in the configuration to specify the number of pages. **With 6.x, snippet "PageNr" has changed to "pagenr" and "TotalPageNr" to "totalpagenr"**. This must be updated in the configuration. For additional information, see [here](#).

Function block

The following change was made to function block MpReport:

- Parameter "Name" has been renamed to "ReportID". There are also two new input parameters: "FileName" and "Overwrite". For additional information, see [here](#).
- The data type of parameter "ReportName" has been changed from STRING[50] to STRING[255].
- The definition of the language and unit in the function blocks has been standardized. **Input parameter "MeasurementSystem" was added for this.** For additional information, see [here](#) in section "Defining the language and unit of components". The language must be defined in input "Language" and the unit in input "MeasurementSystem".

2.14 mapp Sequence

This section lists the changes to component mapp Sequence.

Configuration

The following change was made in the MpSequenceCore Konfiguration:

- Parameter root namespace no longer exists; the texts are now created via parameter Text in the command itself. Can be defined statically or localized via text system. For additional information, see [here](#). If the parameter was used, the texts must be defined manually in parameter Text.

Function block

MpSequenceAxisConfig, MpSequenceCommandConfig, MpSequenceActuatorConfig:

- The function blocks no longer exist with 6.x. MpComConfigManager can be used to change the configuration at runtime. For additional information, see [here](#) in section "Function blocks configuration". The corresponding data types of the function blocks have also been removed as they are no longer required.

For function block MpSequenceCore, the following changes have been made:

- Additional diagnostic information is available in the information structure of MpSequenceCore. "ActiveMode" indicates the current mode of the sequence. With 5.x, the mode defined in input parameter "Mode" was always active. With 6.x, it is important to note that the mode specified in input parameters "Mode" and "ActiveMode" may differ. If the mode was selected via mapp Cockpit, for example, "ActiveMode" displays the mode defined via mapp Cockpit. If the mode should be changed again, the currently running mode ("ActiveMode") must first be specified in "Mode" and then the desired mode is defined.
- In 5.x, a falling edge on input "Start" caused the sequence to stop. This behavior was changed with 6.x. "Start = FALSE" does not trigger an immediate stop of the sequence. An immediate stop can now be triggered by the newly added parameter "StopImmediate".
- Output parameters "ImportDone" and "ExportDone" no longer exist. Instead of these parameters, output parameters "CommandBusy" and "CommandDone" have been added. These indicate whether or not a command has been executed.
- If a sequence is started with MpSequenceCore, output "Running" directly displayed TRUE in 5.x although the sequence had not yet actually started. With 6.x that behavior has changed. Output "Running" is only set to TRUE when the sequence has actually started. This is also visible via the Zeitdiagramme.

Data types and enumerators

The following changes have been made in the data types and enumerators:

Data types

- MpSequenceCoreInfoType: Parameter "ActiveMode" has been added.
- MpSequenceCycleType: Parameter "CurrentTime" has been renamed "CurrentDuration" and "LastTime", "LastDuration".

Enumerators

- MpSequenceMovementStateEnum: Enumerator mpSEQUENCE_MOVEMENT_ERROR has been added.

Status numbers

The following changes have been made to the status numbers:

The following status numbers have been added:

- 1083190015
- 1083190016
- 1083190017
- 1083190018
- 1083190019
- 10831900120
- 10831900121
- -2137746408

A new cause has been added for the following error:

- -1064004607: Sequence cannot be imported if a sequence is currently running.

2.15 mapp Skyline

This section lists the changes to component mapp Skyline.

Configuration

In the MpSkyline Konfiguration, the following changes were made:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General".

2.16 mapp UserX

This section lists the changes to component mapp UserX.

General

- Starting with 6.x, disabled users are no longer visible via widget UserList and MpUserXManagerUI.

Configuration

The following changes have been made in the configurations:

MpUserX Konfiguration:

All changes listed here are automatically applied via the [Configuration update](#).

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- The configuration was restructured with 6.x. Sections "Password policy", "User account" and "Import/ export" are now provided for a better overview. User criteria can now be found in section "User account" and password criteria in section "Password policy". Import and export parameters are listed under "Import / export"
- The functionality of "Edit with same user-level" has been updated. There are now various selection options for the parameter instead of `TRUE` or `FALSE`. For additional information, see here under "User account specific settings".
- Parameter "Password case" has been renamed "Require mixed case characters"
- Parameter "Password alphanumeric" has been renamed "Require alphanumeric characters"
- Parameter "Password special characters" has been renamed "Require special characters"
- Parameter "Password change interval" has been renamed to "Max age"
- Parameter "Password history size" has been renamed "History size"
- Parameter "Password expiration notification" has been renamed "Expiration notification"
- Parameter "Auto-logout time" has been moved from configuration MpUserXLogin to configuration MpUserX. For the parameter, see section "User account".
- Parameter "Prioritize central users" no longer exists. The function is implemented via the new user management modes "Central than local" and "Local than central". For additional information, see here in section "Servers".
- Parameter "Access right" no longer exists in section "Roles". The rights are handled with 6.x via OPC UA.

The following default values have changed with 6.x for security reasons:

- "Password length" has been changed from 5 to 8
- "Change required", "Require mixed case characters", "Require alphanumeric characters" and "Require special characters" have been changed from `FALSE` to `TRUE`.

MpUserLoginX Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- Parameter "Auto-logout time" has been moved to configuration MpUserX. For the parameter, see section "User account".
- The size of parameters "UserName", "Password" and "CurrentUser" has been changed from 50 to 100.

MpUserXSign Konfiguration:

- The section "General" has been added. For additional information, see [here](#) in section "New configuration section General" .
- Parameter "Sign attempts" from MpUserX has been added to the MpUserXSign configuration. The parameter has been renamed "Attempts".
- The failed signature attempts are no longer related to the login attempts! The user is no longer blocked by failed signatures with 6.x!

MpUserXHasRole

- The size of parameter "Role" has been changed from 50 to 100.

MpUserXGetData

- The size of parameters "Username" and "Key" has been changed from 50 and 20 to 100 respectively.

Function block

The following changes have been made in the function blocks:

MpUserXAccessRight

- The function no longer exists. The rights are handled with 6.x via OPC UA.

MpUserXLoginConfig, MpUserXMappingConfig, MpUserXServerConfig:

- The function blocks no longer exist with 6.x. MpComConfigManager can be used to change the configuration at runtime. For additional information, see [here](#) in section "Function blocks configuration". The corresponding data types of the function blocks have also been removed as they are no longer required.

MpUserXLoginUI:

- If a user logged out in 5.x, the user had the level "-1", in 6.x.x the user now has the level "0". This means that MpUserXLogin and MpUserXLoginUI work the same.

MpUserXLogin

- Parameter "AccessRights" no longer exists. The rights are handled with 6.x via OPC UA.

MpUserXManagerUI

- A user with admin rights must be logged in for security reasons to import/export users with 6.x.
- If the users/roles are imported, with 6.x it is no longer mandatory to include the file extension in the filename. The file extension is attached automatically.

MpUserXGetData

- The size of parameter "Key" has been changed from 20 to 100.

Data types and enumerators

The following changes have been made to the enumerators:

- MpUserXUIMessageEnum: The enumerators names have been extended with "UI". Instead of mpUSERX_MSG_NONE, mpUSERX_UI_MSG_NONE is used. Enumerator mpUSERX_UI_MSG_WARNING has also been added.
- MpUserXUIStatusEnum: The enumerator has been expanded with mpUSERX_UI_STATUS_WARNING.

The following changes have been made to the Datentypen:

- The message box structure in structure UI connect has been expanded. The status ID can now be displayed in the structure using parameter "StatusID".
- MpUserXSignatureUIConnectType: Parameter "SignAction" no longer exists. The value is used in input parameter "SignAction" of MpUserXSignatureUI.
- MpUserXMgrUIUserInfoType, MpUserXMgrUICreateDlgType: Parameter "Roles" has been expanded. With 6.x, 30 roles can now be used instead of 10. The size of parameter "UserName" has been changed from 50 to 100. Parameter "DisplayUnit" has been renamed "MeasurementSystem". The size of parameters "NewPassword" and "ConfirmPassword" has been changed from 50 to 100.
- MpUserXMgrUIRoleInfoType, MpUserXMgrUIRoleDlgType, MpUserXMgrUIRoleCreateDlgType: Parameter "AccessRights" has been removed. The rights are handled with 6.x via OPC UA. The size of parameter "Name" has been changed from 50 to 100.
- MpUserXMgrUIUserListType: Parameter "UserOption" no longer exists. The size of parameter "UserName" has been changed from 50 to 100.
- MpUserXMgrUIAddDataType: The size of parameter "Key" has been changed from 20 to 100.
- MpUserXMgrUIRoleListType: Parameter "Users" has been expanded. Instead of 10 users, 20 can be displayed. The size of the parameter was also changed from 50 to 100.
- MpUserXMgrUIRoleSelectType: The size of parameter "Name" has been changed from 50 to 100. In addition, 30 roles can now be displayed instead of 20.
- MpUserXLoginUIPwdDlgType: The size of parameters "NewPassword", "OldPassword" and "ConfirmPassword" has been changed from 50 to 100.

- MpUserXLoginUILoginType, MpUserXSignatureUIDlgType: The size of parameters "UserName" and "Password" has been changed from 50 to 100.
- MpUserXLoginUIConnectType:Parameter "DisplayUnit" has been renamed "MeasurementSystem". The size of parameter "CurrentUser" has been changed from 50 to 100.

Status numbers

The following changes have been made to the status numbers:

The following status numbers have been deleted:

- -1064144896
- -1064144893
- -1064144892
- -1064144889
- -1064144886
- -1064144882
- -1064144881
- -1064144880
- -1064144871
- -1064144869
- 1083338786
- -1064144856
- -1064144879

The following status numbers have been changed:

- Status number -1064144845 - ERR_PASSWORD_RESTRICTION is displayed instead of -1064144889, -1064144881 and -1064144856
- Status number -1064144883 - ERR_NOT_LOGGED_IN is displayed instead of -1064144892.
- The constant of status ID -1064144890 - mpUSERX_ERR_ROLE_NOT_PRESENT was changed to mpUSERX_ERR_ROLE_NOT_EXISTING

The following status numbers have been added:

- -1064144840
- -1064144841

The following status numbers are only visible in the Logger with 6.x

- 1083186027
- 1083186028
- 1083186029
- 1083186030
- 1083186031
- 1083186032
- 1083186033
- 1083186034
- 1083186035
- 1083186036
- 1083186037
- 1083186038
- 1083186039
- 1083186040