

## SINUMERIK

## Mcenter

### Product Information

Valid for control system:  
SINUMERIK 840D sl/ 840DE sl,  
SINUMERIK 828D, SINUMERIK ONE

Software  
Mcenter, version 5.4.0.0

05/2024

## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
|  <b>DANGER</b> |
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|                                                                                                        |
|--------------------------------------------------------------------------------------------------------|
| indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken. |
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|                                                                                                  |
|--------------------------------------------------------------------------------------------------|
|  <b>WARNING</b> |
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|                                                                                                       |
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| indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken. |
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|                                                                                                  |
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|  <b>CAUTION</b> |
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|                                                                                      |
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| indicates that minor personal injury can result if proper precautions are not taken. |
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|---------------|
| <b>NOTICE</b> |
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| indicates that property damage can result if proper precautions are not taken. |
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If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

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|----------------------------------------------------------------------------------------------------|
|  <b>WARNING</b> |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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# Introduction

## 1.1 Important notes regarding this document

### Overview

These Release notes contain important information and supplements relating to the configuration and operation.

This information has priority with respect to the product documentation, and where relevant, replaces the appropriate data and information in the operating and installation manuals.



## Product information/technical update

### 2.1 Installation and setup

The following section describes the new and modified functions for Mcenter, version 5.4.0.0.

#### Update

- You can install the Mcenter server version as a stand-alone package or as an update from the Mcenter versions **5.3.2.0 / 5.3.3.0 / 5.3.3.1**.
- Applications are updated to the following versions:
  - Platform - 1.5.0.0
  - MMR /Tools - 2.2.0.0
  - MMR /Programs - 2.2.0.0
  - OMP - 1.3.0.4
  - AMP - 1.4.0.0
  - AMD - 1.1.2.0
  - MMM - 1.0.0.0
  - ACM - 4.1.0

#### Setup

Take note of the following modified system behavior:

- A new **.NET version 8.0.4 Hosting bundle** is required.
- A new **Apache Tomcat version 10.1.x** is required.
- The setup creates or uses the following new databases and users:
  - CommonData(user: commonUser)
  - DomainEventData(user: domainEventUserName)
  - MMMDData (user: mmmLogin)
  - MMRProgramsScheduleData (user: mmrProgramsScheduleUserName)
  - OmativeDB(user: OmativeUser)

### 2.2 Mcenter Platform - New Functions

#### Platform New Features

The following section describes the new Mcenter platform features in this version:

### AlarmTrigger, AlarmUpload (Internal Feature)

This new feature allows machines to upload alarms to the server based on triggers defined by applications, making them available to applications.

Applications using this feature in Mcenter version 5.4.0.0 are:

- AMD
- MMM

Supported Connectivity Types:

- Integrated
- Connected (depending on the capability of the Third-party controller)

Alarm triggers can be configured in many ways:

- as a consequence of the occurrence of a specific alarm
- due to changing a specific alarm to the "acknowledged" status
- one or more specific alarm numbers (exceptions may be given)
- based on one or more scales (exceptions may be granted)
- exceptions can be specified both individually and for a range

Regardless of the triggered triggers set, for both the new and the "acknowledged" alarms, the entire alarm list is uploaded.

The triggers do not filter the alarm list on the platform side. In case of such a need, this must be done by the application.

### Re-onboarding Client Machines

This new feature allows a client in use to be reusable as smoothly as possible after downtime due to maintenance or replacement of a defective part.

- Only applicable for the SINUMERIK Integrate connectivity type.
- You can change the IP address or MAC address. This can occur as a result of hardware maintenance.
- After re-onboarding, the assigned applications are automatically installed/updated on the client machine.
- The applications do not yet natively support the re-onboard procedure, keep this in mind when using this function.

### Plant Hierarchy: Mapping User to Plant Hierarchy

This new feature allows Administrators and Key Users to assign, modify or unassign Mcenter users to specific Plant nodes in a Plant node hierarchy.

- The configured plant node-user assignment is inherited to nodes currently further down in the hierarchy. Subordinate nodes added later do not automatically grant the user privileges.
- The introduction of this new feature does not restrict user privileges, by default-users are assigned to the root-node.



- A bulk permission setting is possible.
- Any Mcenter application can now use this new feature in in-app permissions management. The application using this feature in Mcenter version 5.4.0.0 is AMP.

### Using Windows 10 & 11 Professional and MS SQL Server Express for pilotings and PoCs

For Pilot and Proof of Concept purposes, it is possible to install Mcenter on Microsoft Windows 10 & 11 Professional. For the same reason, we are making the version of Microsoft SQL Server 2022 Express usable in terms of the database application used.

- Connect up to 5 clients
- Not applicable in production environments
- When using Microsoft Windows 10 or 11 Professional for piloting or PoC reasons (small-scale demonstration or trial to validate the feasibility and functionality), use Microsoft SQL Server 2022 Express. Other "low infrastructure cost" OS/database engine combinations are not supported.

### License server SALT is now supported

License Server SALT (Siemens Automation License Tool) is a software component developed by Siemens that acts as a central server for managing and distributing licenses for various Siemens automation products and software applications. It enables license activation, deactivation and monitoring in industrial environments.

- The license server is now configurable to use SALT.

### Orders and Sequences

- **Overview of orders and sequences**  
The new overview page provides means to see existing orders and sequences in the system on the WEB-UI. You can also create, update and delete the work sequences.
- **Resource preparation status of orders and sequences**  
The new overview page also provides status information regarding the required resources such as programs and tools for a work order and sequence.

## 2.3 Mcenter Platform- Modified Functions

### Platform Modified Features

The following section describes the modified Mcenter platform features in this version:

## Dashboard Using Siemens iX

Siemens iX web interface is a user-friendly online platform that provides access to the features and functionalities of Siemens iX, allowing users to interact with and manage industrial automation systems through a web browser.

- The main functions remain unchanged. Tiles continue to represent applications and Mcenter functions.
- A new left side bar with "Home", "Settings" and "About" buttons has been introduced that opens and closes dynamically, depending on the size of the main window.
- Changed: Pressing the "Settings" button allows the logged-in user to log out in a pop-up window.

## Platform Feature Expansion

### **New User Roles: Purchaser, Material Manager, Tool corrector**

Three new items have been added to the list of user roles under "Manage users":

- Purchaser, material manager, tool corrector: These new roles can be de/assigned to users via UI.
- These new roles are available for internal & external User Management.
- Any Mcenter application can now use these new roles in in-app permissions management.

Applications using this feature in Mcenter version 5.4.0.0 are:

- Purchaser: MES Overview (when MMR/T is installed)
- Tool corrector: MMR /T

## Support of Microsoft Windows Server 2022 / SQL Server 2022

- The newest official Windows Server 2022 and SQL Server 2022 versions are now supported by Mcenter.
- The Windows Server 2019 and SQL Server 2019 versions are still supported by Mcenter.
- The Windows Server 2016 and SQL Server 2016 versions are not supported by Mcenter (from version 5.4.0.0).

## Quality and System Improvements

- The application "Overview of Openness Clients" is now "Manage API access".
- Corrupted ToolStat data does not block further client/server communication. Improper files are deleted and a warning log inserted.
- The stability of the DTS service has improved.
- When creating a new user account, External ID cannot start with a space or contain only spaces.

## 2.4 Functions in Manage MyResources /Tools

### 2.4.1 MMR /Tools on the server and SINUMERIK Operate

#### 2.4.1.1 MMR /Tools on the server and SINUMERIK Operate - New Functions

The following section describes the new functions for Manage MyResources /Tools, version 2.2.0.0.

#### New Features MMR /Tools on the Server

##### Flexible tables

The mandatory number of columns for tables has been reduced to one or two, depending on the table. In addition, there is no longer a maximum limit on the number of columns you can select. When the columns exceed the screen width, a horizontal scroll is activated.

##### Double Holder Support

Tool master data has been expanded to include an additional parameter named "Mounting bidirectional, machine side". In case the tool is attached to a double holder, this must be set to YES. The direction of the holder is defined in tool instances generated by this master data. The "Holder direction" parameter is by default set to Original as if it is a regular static tool without rotation capability. However, it can be changed to 'Reversed,' indicating a 180-degree rotation against the Z-axis. The tool must be measured when the holder is in the original state. The geometry transformation for reversal is calculated by the MMRT application on HMI before loading.

##### Filters for additional parameters on Tool stock

Tool stock filtering has been enhanced. Starting from the current version, all tool parameters are available for filtering in the standard filter. In addition, to manage the extensive list of attributes, a new quick filtering feature has been implemented. Beginning to type when you open the drop-down list of attributes displays only the matching attributes.

#### New Features MMR /Tools at SINUMERIK Operate

##### Tool Status Bits Display

In the "Tool details" window of "Internal view", there is a new section as Status. This section displays the first eight status bits of the tool state, which can also be edited directly within this section.

##### Double Holder Support

If the tool to be loaded has the parameter "Mounting bidirectional, machine side" as YES, the "Holder direction" parameter is displayed on the loading dialog. It appears with the value set for the tool instance on the server side. However, it can be changed if desired. Transformation 3 is applied in case the "Holder direction" value is "Reversed" before loading the tool.

### **Synchronizing Tools via "Settings"**

In case there is an inconsistency between the server and the HMI as to the tool information the machine contains, the server can be updated with the latest information by clicking "Settings" HSK and after that "Sync tools" VSK.

### **Improvements and Quality**

- Enhancement in the conversion of the Brownfield tool to Greenfield.
- Enhancement in the support of the offline mode.

#### **2.4.1.2 MMR /Tools on the server and SINUMERIK Operate - Modified Functions**

The following section describes the modified functions for Manage MyResources /Tools, version 2.2.0.0

### **Modified Features MMR /Tools on the server**

#### **Orders and sequences feedback page based on tool scheduling results**

With the extended tool scheduling functionality, MMRT can now send additional feedback to work the Orders and sequences overview page, based on the status of the scheduling results. MMRT keeps track of the required tools based on their availability on the target machine (loaded or unloaded). For example, if the required tool instances are loaded to the relevant machine, the "loaded" state is sent so that you know the works sequence is ready to be executed from tool perspective.

#### **Storage location extension**

Storage locations are extended with physical dimensions of cabinets and containers. Containers now have their own detail view where the resource boxes are handled as well.

#### **Change in Tool component wear**

The formal wear yes/no was changed to a more detailed wear type. There are three different types, consumable, durable and resharable. Following the wear, the type tool component stacks now can store components in 4 different states. In addition to the already existing "new" and "old" states, "resharpened" and "to be resharpened states" are also available. Also handling components during tool assembly and disassembly is supported these new states.

### **Improvement and Quality**

- Enhancement regarding the Quick filtering functionality of the tables.

## 2.4.2 MMR /Tools at HMI-Advanced

### 2.4.2.1 MMR /Tools at HMI-Advanced - New Functions

The following section describes the new functions for Manage MyResources /Tools at HMI-Advanced, version 2.2.0.0

#### New Features at HMI-Advanced

##### Tool Status Bits Display

In the "Tool details" window of "Internal view", there is a new section as Status. This section displays the first eight status bits of the tool state, which can also be edited directly within this section.

##### Double Holder Support

If the tool to be loaded has the parameter "Mounting bidirectional, machine side" as YES, the "Holder direction" parameter is displayed on the loading dialog. It appears with the value set for the tool instance on the server side. However, it can be changed, if desired. Transformation 3 is applied in case the "Holder direction" value is "Reversed" before loading the tool.

##### Synchronizing Tools via "Settings"

In case there is an inconsistency between the server and the HMI as to the tool information the machine contains, the server can be updated with the latest information by clicking "Settings" HSK and after that "Sync tools" VSK.

#### Improvement and Quality

- Enhancement in the conversion of the Brownfield tool to Greenfield
- Enhancement in the support of the offline mode.

### 2.4.2.2 MMR /Tools at HMI-Advanced - Modified Functions

There are no modified functions for Manage MyResources /Tools at HMI-Advanced.

## 2.4.3 MMR /Tools at FANUC - New Function

#### MMR /Tools at FANUC

MMR /Tools is now supported on FANUC machines with and without the "Tool manager" option.

## 2.4.4 MMR /Tools at Heidenhain - New Function

### MMR /Tools at Heidenhain

MMR /Tools is supported on Heidenhain controllers with the versions TNC128 and TNC320.

This first 5.4.0.0 release is only meant for tests and pilots, not for production.

## 2.4.5 Functions in Toolstatistics

### New feature

None

### Modified features

None

## 2.5 Functions in Manage MyResources /Programs

### 2.5.1 MMR /Programs

#### 2.5.1.1 MMR /Programs

The following section describes the new and modified functions for MMR /Programs, version 2.2.0.0.

### New feature

NC packages are now integrated into the MES workflow.

### Modified feature

The scanning workflow for detecting and downloading NC packages has been improved for better usability.

## 2.6 Functions in Optimize MyProgramming /NX-Cam Editor

There are no new functions for Optimize MyProgramming /NX Cam-Editor in this version.

## 2.7 Functions in Analyze MyPerformance /OEE - New Functions

The following section describes the new functions in Analyze MyPerformance /OEE.

### New Features in Analyze MyPerformance /OEE

#### Managed Users with Hierarchy Information

You can manage machine access for users via the "Managed users" page. These changes apply to the AMP machine selection information for every user.

#### Cycle Time Analysis

With this new feature, you can detect and analyse the cycle time information which is mapped to a custom address at machine side. You can measure the elapsed time regarding production and compare multiple pieces of machine cycle time information at "Performance Monitoring" and on the "Reporting" pages.

#### Visualization of "State Summary" Information on the "Machine Comparison" Page

With this functionality, the machine state information of the selected machines is aggregated and visualized in the top area of the "Machine Comparison" page.

#### Machine Data API

A new API for accessing machine data has been implemented.

#### Operator States in IPC Screens

Managing operator states and workpieces is supported for Non-SINUMERIK controller types via IPC screens.

#### Copy Configuration

You can copy the machine's selected configuration to multiple machines.

## 2.8 Functions in Analyze MyPerformance /OEE - Modified Functions

The following section describes the modified function in Analyze MyPerformance /OEE.

### Modified function

The UI library "Angular" is updated to 17.3.2.

## 2.9 Access MyData /Collector - New Functions

The following section describes the new functions in Access MyData /Collector.

## New Features in Access MyData /Collector

### Order Management Integration

You can export the current active order with aquired data.

### Alarm Access for SINUMERIK

You can now access alarms for controllers connected via the SINUMERIK Integrate client.

## 2.10 Access MyData /Collector - Modified Functions

The following section describes the modified functions for Access MyData /Collector.

### Modified Functions

#### More Frequent Data Reading

For both Machine Agent and SINUMERIK Integrate client-connected controllers, the capabilities for data (variable) reading have been increased:

- 1sec for Integrate client
- 500ms for Machine Agent-connected machines

These numbers also depend on the controller capabilities.

#### New UI Design

Access MyData /Collector follows the iX guide and comes with a new UI design.

#### Export Data

The machine name is now also part of the exported data.

## 2.11 Manage MyMachines

The following version describes the new Manage MyMachines functions.

### New Features

#### Machine Alarm Occurence

This feature provides insight into the most frequently occurring alarms within a specified date range.

#### Machine Alarms Duration Feature

This feature offers a view of the alarms with the longest durations within the specified date range.



### **Machine Alarms List**

This feature presents a comprehensive list and description of all occurred alarms. You can sort and filter for efficient monitoring and management.

### **Machine Alarms - Alarm Filtering Feature**

You can selectively exclude specific alarms or ranges from storage in the database and optimize storage space.

## **2.12 API changes**

There are new functions to support the MES integration for Manage MyResources /Programs and new functions to handle locations for Manage MyResources /Tools.

## **2.13 Boundary conditions**

### **Applicable Boundary Conditions**

There are no applicable boundary conditions for this version.

*2.13 Boundary conditions*