# SIEMENS Introduction Fundamental safety instructions 2 SINUMERIK Installation environment System requirements 4 Installing Create MyVirtual Machine Installing and licensing 5

**Tips & Tricks** 

**Installation Manual** 

Valid for: CNC ShopFloor Management Software Create MyVirtual Machine V1.3 SINUMERIK ONE SINUMERIK Virtual CNC-SW V6.20 SINUMERIK ONE STEP 7 Toolbox V17 Update 10

#### 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.

# **⚠** DANGER

indicates that death or severe personal injury will result if proper precautions are not taken.

# **⚠** WARNING

indicates that death or severe personal injury may result if proper precautions are not taken.

#### **♠** CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

#### NOTICE

indicates that property damage can result if proper precautions are not taken.

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:

#### **№** WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

#### Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

#### **Disclaimer of Liability**

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.

# **Table of contents**

1	Introduction				
	1.1	About SINUMERIK	5		
	1.2	About this documentation	5		
	1.3 1.3.1 1.3.2	Documentation on the internet	6		
	1.4	Feedback on the technical documentation	7		
	1.5	mySupport documentation	7		
	1.6	Service and Support	3		
	1.7	Important product information10	С		
2	Fundamer	ntal safety instructions1	1		
	2.1	General safety instructions	1		
	2.2	Warranty and liability for application examples1	1		
	2.3	Security information	1		
3	Installatio	Installation environment			
	3.1	General information1	3		
	3.2	Commissioning environment14	4		
	3.3	Migration environment	5		
	3.4	Installation guideline	7		
4	System re	quirements19	9		
	4.1	System requirements	9		
	4.2	Software required	C		
	4.3	Valid Windows user accounts	O		
5	Installing and licensing23				
	5.1	Installing Create MyVirtual Machine	3		
	5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.2.6 5.2.7	Licensing       24         Licensing MyVirtual Machine       24         Local license       26         License server       26         User interface of the licensing application       28         Using local licenses       29         Using the license server       30         Command line of the licensing application       30	4 6 8 9		
	5.2.7	Using the command line of the licensing application			

	5.3	Starting Create MyVirtual Machine for the first time	32
	5.4	Uninstalling Create MyVirtual Machine	33
6	Tips & Tricks		35
	6.1	Recurring message, Windows restart	35
	6.2	3D Simulation is not started/displayed	35
	Index		37

Introduction

#### 1.1 About SINUMERIK

From simple, standardized CNC machines to premium modular machine designs – the SINUMERIK CNCs offer the right solution for all machine concepts. Whether for individual parts or mass production, simple or complex workpieces – SINUMERIK is the highly dynamic automation solution, integrated for all areas of production. From prototype construction and tool design to mold making, all the way to large-scale series production.

Visit our website for more information SINUMERIK (https://www.siemens.com/sinumerik).

#### 1.2 About this documentation

#### Target group

This documentation is intended for project engineers, programmers and commissioning engineers.

#### **Purpose**

This documentation describes the installation environment required for working with the Create MyVirtual Machine product. Optional software packages, such as those required for commissioning, the migration of existing projects based on SINUMERIK 840D sl and for extended simulation options, are also described briefly.

Create MyVirtual Machine is provided in the form of an installation package. This includes the simulation environment for the NCK, PLC, drive components, and SINUMERIK Operate. You can create machine projects and operate the control via the user interfaces.

To allow the use of all functions, such as PLC programming and monitoring of variables and inputs/outputs, SIMATIC STEP 7 Professional (TIA Portal) with option packages must also be installed. SIMATIC STEP 7 Professional can be installed on the same computer or on another computer or in a virtual machine. Communication takes place via Ethernet.

#### **Benefits**

This documentation enables the addressed target group to install, configure and commission the system.

#### Standard scope

This documentation only describes the functionality of the standard version. This may differ from the scope of the functionality of the system that is actually supplied. Please refer to the ordering documentation only for the functionality of the supplied drive system.

#### 1.3 Documentation on the internet

It may be possible to execute other functions in the system which are not described in this documentation. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

For reasons of clarity, this documentation cannot include all of the detailed information on all product types. Further, this documentation cannot take into consideration every conceivable type of installation, operation and service/maintenance.

The machine manufacturer must document any additions or modifications they make to the product themselves.

#### Websites of third-party companies

This document may contain hyperlinks to third-party websites. Siemens is not responsible for and shall not be liable for these websites and their content. Siemens has no control over the information which appears on these websites and is not responsible for the content and information provided there. The user bears the risk for their use.

#### 1.3 Documentation on the internet

#### 1.3.1 Documentation overview SINUMERIK ONE

Comprehensive documentation about the functions provided in SINUMERIK ONE Version 6.13 and higher is provided in the Documentation overview SINUMERIK ONE (<a href="https://support.industry.siemens.com/cs/ww/en/view/109768483">https://support.industry.siemens.com/cs/ww/en/view/109768483</a>).



You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

User: Operating

User: Programming

Manufacturer/Service: FunctionsManufacturer/Service: Hardware

• Manufacturer/Service: Configuration/Setup

• Manufacturer/Service: Safety Integrated

· Information and training

Manufacturer/Service: SINAMICS

#### 1.3.2 Documentation overview SINUMERIK operator components

Comprehensive documentation about the SINUMERIK operator components is provided in the Documentation overview SINUMERIK operator components (<a href="https://support.industry.siemens.com/cs/document/109783841/technische-dokumentation-zusinumerik-bedienkomponenten?dti=0&lc=en-WW">https://support.industry.siemens.com/cs/document/109783841/technische-dokumentation-zusinumerik-bedienkomponenten?dti=0&lc=en-WW</a>).

You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- Operator Panels
- Machine control panels
- Machine Pushbutton Panel
- Handheld Unit/Mini handheld devices
- Further operator components

An overview of the most important documents, entries and links to SINUMERIK is provided at SINUMERIK Overview - Topic Page (<a href="https://support.industry.siemens.com/cs/document/">https://support.industry.siemens.com/cs/document/</a> 109766201/sinumerik-an-overview-of-the-most-important-documents-and-links? dti=0&lc=en-WW).

#### 1.4 Feedback on the technical documentation

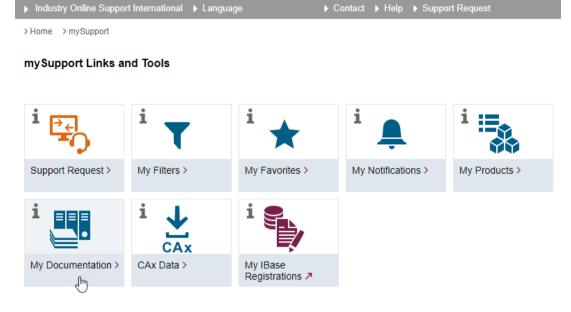
If you have any questions, suggestions or corrections regarding the technical documentation which is published in the Siemens Industry Online Support, use the link "Send feedback" link which appears at the end of the entry.

# 1.5 mySupport documentation

With the "mySupport documentation" web-based system you can compile your own individual documentation based on Siemens content, and adapt it for your own machine documentation.

To start the application, click on the "My Documentation" tile on the mySupport homepage (https://support.industry.siemens.com/cs/ww/en/my):

#### 1.6 Service and Support



The configured manual can be exported in RTF, PDF or XML format.

#### Note

Siemens content that supports the mySupport documentation application can be identified by the presence of the "Configure" link.

# 1.6 Service and Support

#### **Product support**

You can find more information about products on the internet:

Product support (https://support.industry.siemens.com/cs/ww/en/)

The following is provided at this address:

- Up-to-date product information (product announcements)
- FAQs (frequently asked questions)
- Manuals
- Downloads
- Newsletters with the latest information about your products
- Global forum for information and best practice sharing between users and specialists
- Local contact persons via our Contacts at Siemens database (→ "Contact")
- Information about field services, repairs, spare parts, and much more (→ "Field Service")

#### **Technical support**

Country-specific telephone numbers for technical support are provided on the internet at address (<a href="https://support.industry.siemens.com/cs/ww/en/sc/4868">https://support.industry.siemens.com/cs/ww/en/sc/4868</a>) in the "Contact" area.

If you have any technical questions, please use the online form in the "Support Request" area.

#### **Training**

You can find information on SITRAIN at the following address (<a href="https://www.siemens.com/">https://www.siemens.com/</a> sitrain).

SITRAIN offers training courses for automation and drives products, systems and solutions from Siemens.

#### Siemens support on the go





With the award-winning "Siemens Industry Online Support" app, you can access more than 300,000 documents for Siemens Industry products – any time and from anywhere. The app can support you in areas including:

- · Resolving problems when implementing a project
- Troubleshooting when faults develop
- Expanding a system or planning a new system

Furthermore, you have access to the Technical Forum and other articles from our experts:

- FAQs
- Application examples
- Manuals
- Certificates
- · Product announcements and much more

The "Siemens Industry Online Support" app is available for Apple iOS and Android.

#### Data matrix code on the nameplate

The data matrix code on the nameplate contains the specific device data. This code can be read with a smartphone and technical information about the device displayed via the "Industry Online Support" mobile app.

#### 1.7 Important product information

# 1.7 Important product information

#### **Using OpenSSL**

This product can contain the following software:

- Software developed by the OpenSSL project for use in the OpenSSL toolkit
- Cryptographic software created by Eric Young.
- Software developed by Eric Young

You can find more information on the internet:

- OpenSSL (https://www.openssl.org)
- Cryptsoft (<a href="https://www.cryptsoft.com">https://www.cryptsoft.com</a>)

#### Compliance with the General Data Protection Regulation

Siemens observes standard data protection principles, in particular the data minimization rules (privacy by design).

For this product, this means:

The product does not process or store any personal data, only technical function data (e.g. time stamps). If the user links this data with other data (e.g. shift plans) or if he/she stores person-related data on the same data medium (e.g. hard disk), thus personalizing this data, he/she must ensure compliance with the applicable data protection stipulations.

Fundamental safety instructions

# 2.1 General safety instructions

# **№** WARNING

#### Danger to life if the safety instructions and residual risks are not observed

If the safety instructions and residual risks in the associated hardware documentation are not observed, accidents involving severe injuries or death can occur.

- Observe the safety instructions given in the hardware documentation.
- Consider the residual risks for the risk evaluation.

# **MARNING**

#### Malfunctions of the machine as a result of incorrect or changed parameter settings

As a result of incorrect or changed parameterization, machines can malfunction, which in turn can lead to injuries or death.

- Protect the parameterization against unauthorized access.
- Handle possible malfunctions by taking suitable measures, e.g. emergency stop or emergency off.

# 2.2 Warranty and liability for application examples

Application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. Application examples do not represent specific customer solutions, but are only intended to provide support for typical tasks.

As the user you yourself are responsible for ensuring that the products described are operated correctly. Application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.

# 2.3 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to

#### 2.3 Security information

an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit

https://www.siemens.com/industrialsecurity (https://www.siemens.com/industrialsecurity).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

https://www.siemens.com/cert (https://www.siemens.com/cert).

Further information is provided on the Internet:

Industrial Security Configuration Manual (<a href="https://support.industry.siemens.com/cs/ww/en/view/108862708">https://support.industry.siemens.com/cs/ww/en/view/108862708</a>)



#### **WARNING**

#### Unsafe operating states resulting from software manipulation

Software manipulations, e.g. viruses, Trojans, or worms, can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a holistic, state-of-the-art industrial security concept for the installation or machine.
- Make sure that you include all installed products into the holistic industrial security concept.
- Protect files stored on exchangeable storage media from malicious software by with suitable protection measures, e.g. virus scanners.
- On completion of commissioning, check all security-related settings.

Installation environment

# 3

#### 3.1 General information

#### Create MyVirtual Machine

Create MyVirtual Machine is a virtual CNC system that simulates a SINUMERIK ONE on your PC. The hardware components of the control are modeled as software components, and represent a complete image of a real CNC.

With Create MyVirtual Machine, you can develop and test the next control generation in the development phase of a CNC machine, or NCK, PLC and HMI software without requiring any hardware. Parts of the machine commissioning are preconfigured on the virtual model. You can significantly shorten the commissioning time of the real machine by configuring the system using the virtual model. Furthermore, the created machine projects can be made available by Create MyVirtual Machine for processing in Run MyVirtual Machine for work preparation.



Figure 3-1 Create MyVirtual Machine, virtual commissioning

#### Components of overall system Create MyVirtual Machine

Create MyVirtual Machine (incl. SINUMERIK Virtual CNC software) consists of the following components:

- simNCK: Simulation of the NCK
- SIMATIC S7-PLCSIM Advanced: PLC simulation based on S7-1500
- HMI: SINUMERIK Operate
- MCP: Virtual machine control panel
- simDrive (drive simulation): SINAMICS S120 substitute drive component

#### 3.2 Commissioning environment

- Integrated peripheral simulation
- Open interface for integration of external simulation tools (option)
- 3D Simulation (option)

# 3.2 Commissioning environment

#### **General information**

Additional engineering software is required to create PLC projects for SINUMERIK with SIMATIC PLC S7-1500 and load them into Create MyVirtual Machine.

#### Note

#### SINUMERIK Virtual CNC software add-on packages

Create MyVirtual Machine consists of a software package which provides the framework application for the operation of a virtual SINUMERIK controller. You have to additionally install the required version of the SINUMERIK Virtual CNC software. These installation packages include the simulation of the components NCK, PLC, HMI, drive replacement component and communication mechanisms. Besides the frame application, you can install different versions of the SINUMERIK Virtual CNC software in parallel.

#### Installation environment overview

The engineering software for PLC projects can be installed on the same computer as the engineering software for SINUMERIK projects (Create MyVirtual Machine), on another computer, or in a virtual machine. SIMATIC STEP 7 Professional and Create MyVirtual Machine communicate via Ethernet.

The table provides the overview of the required and optional software components. Also observe the installation sequence.

#### • Installation on a computer: Steps 1-5

When you install the complete software on a computer, you must first install SIMATIC STEP 7 Professional with all the required option packages and only then Create MyVirtual Machine.

#### • Installation on different computers

- First computer: Steps 1 and 2
   Install SIMATIC STEP 7 Professional with all required option packages
- Second computer: Steps 3 to 5
   Install Create MyVirtual Machine and the required versions of the SINUMERIK Virtual CNC software and templates for machine projects.

Step	PLC projects engineering software	SINUMERIK projects engineering software
1	SIMATIC STEP 7 Professional V17 Update 4 (TIA Portal)	
	incl. SIMATIC Safety (license)	
2	Option package required for HW configuration and PLC programming	
	SINUMERIK STEP 7 Toolbox V17 Update 10 contains	
	SINUMERIK 840D sl STEP 7 Toolbox V17 Update 10	
	SINUMERIK ONE STEP 7 Toolbox V17 Update 10	
3		Create MyVirtual Machine V1.3 or higher
4		SINUMERIK Virtual CNC SW V6.20 or higher
		(the current version CNC SW V6.20 requires Create My- Virtual Machine V1.3 or higher)
5		Templates for machine projects, suitable for SINUMER-IK Virtual CNC-SW V6.20
-		Optional:
		Software for the peripheral simulation for connection to the Open Interface
		SINUMERIK Virtual CNC Software Language Extensions     Additional display languages for SINUMERIK Operate

#### Note

#### Two-computer solution

When you work with two computers, you must configure the inbound connections of the TCP communication in the firewall on the computer with Create MyVirtual Machine. Observe the "Cross-computer communication via Ethernet" section in the SINUMERIK Virtual CNC SW Installation Instructions.

#### More information

- For the installation of SIMATIC STEP 7 Professional and other option packages, observe the software requirements and the installation instructions in the appropriate software documentation.
- More information about installing the CNC software can be found in the SINUMERIK Virtual CNC SW installation instructions.
- More information about installing Create MyVirtual Machine can be found in the SINUMERIK Create MyVirtual Machine installation instructions.
- More information about installing templates for machine projects is provided in the Installation instructions for machine projects Create/Run MyVirtual Machine.

#### See also

Documentation overview SINUMERIK ONE (Page 6)

# 3.3 Migration environment

#### **General** information

If you need to migrate an existing SINUMERIK 840D sl project to a SINUMERIK ONE (real/virtual) project, further software components must be installed in addition to the SIMATIC STEP 7 Professional commissioning software.

#### Installation environment overview

The table provides the overview of the additional software components.

Step	Migrate PLC projects from SINUMERIK 840D sl	
1	SIMATIC STEP 7 as of V5.5 SP4 with all option packages used in the project	
2	SINUMERIK 840D sl STEP 7 Toolbox 4.5 SP2 (or higher)	
3	Readiness Check Tool TIA Portal	
4	Migration tool TIA Portal V17 Update 4	

#### Note

#### One/two-computer solution

If you install SIMATIC STEP 7 V5.5 and SIMATIC STEP 7 Professional V17 Update 4 on the same computer, the TIA Portal V17 Update 4 migration tool does not need to be installed.

#### More information

For the installation of SIMATIC STEP 7 and other option packages, observe the software requirements and the installation instructions in the appropriate software documentation.

The Migration to a SINUMERIK ONE System Manual contains more information about project and archive migration.

#### See also

Commissioning environment (Page 14)

Documentation overview SINUMERIK ONE (Page 6)

# 3.4 Installation guideline

#### Installing and configuring MyVirtual Machine products

The virtual development and configuration environment for SINUMERIK ONE consists of several individual products which are installed and configured prior to their first use. Depending on the product Create MyVirtual Machine or Run MyVirtual Machine, all necessary steps are shown in the overview. In the right-hand column of the overview you will find the reference to further information.

After you have completed all steps, Create or Run MyVirtual Machine is ready for use.

#### 3.4 Installation guideline

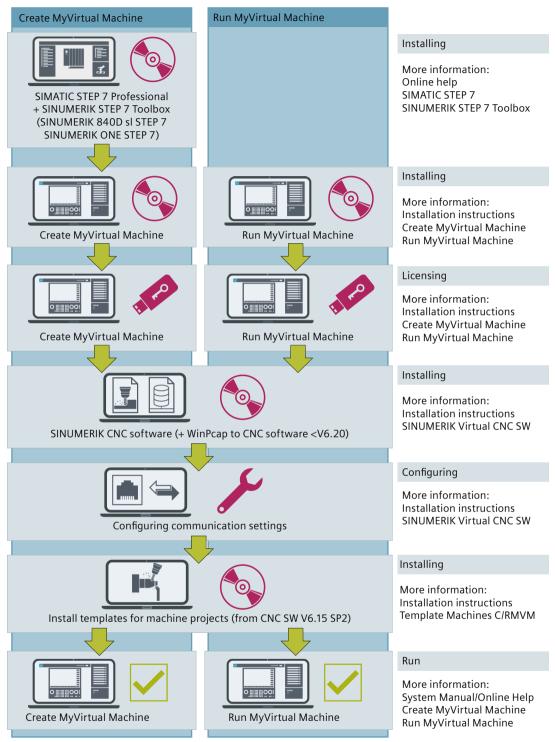


Figure 3-2 Guideline: Installing and configuring MyVirtual Machine products (sample installation sequence)

#### See also

Documentation overview SINUMERIK ONE (Page 6)

System requirements

# 4.1 System requirements

#### Requirement

You require administrator rights to install Create MyVirtual Machine. After installation, use a user account without administrator rights when working with Create MyVirtual Machine, in order to protect the system against security risks and unauthorized manipulation.

See also: Security information (Page 11)

#### Create MyVirtual Machine

#### Supported operating systems

• Microsoft Windows 10 Professional/Enterprise/IoT Enterprise/Home (64 Bit)

#### Hardware requirements

· Processor:

At least 4 processor cores (Intel® Core i5 class or comparable)

RAM

4 GB memory (minimum)

- Hard disk (available memory):
   6 GB (minimum)
- Graphic:

Intel HD Graphics 4000 (or comparable) with the latest graphics driver

- Graphic when using the Create MyVirtual Machine /3D option:
  - Use powerful 3D graphics cards with OpenGL support and the respective latest drivers for your operating system.
  - The use of the 3D option places increased demands on the graphics card. Simple onboard GPUs can be overwhelmed by complex 3D models. This can lead to general display errors during rendering of the 3D machine simulation or to frame rate slumps (faltering display).
- Screen:

Resolution 1680x1050 or higher, 15.6"

• Input devices: Mouse, keyboard

#### Mobile terminals - Notebooks

The processor cycle can be severely restricted in battery mode depending on the power options and the type of notebook. If the charge level of the battery is low, the simulation mode for Create

#### 4 3 Valid Windows user accounts

MyVirtual Machine can be restricted to such an extent that the simulation performance is reduced to such a degree that individual components come to a standstill.

- Check the configured power options.
- Use the notebook connected to the mains or ensure sufficient charge of the battery.

#### Note

#### Increased system requirements

Note the increased system requirements for SIMATIC STEP 7 Professional V17 Update 10 compared with Create MyVirtual Machine when both engineering software packages are installed on the same computer. The system requirements are specified in the Readme for SIMATIC STEP 7 Professional V17 Update xx.

#### Note

#### Using additional software

The release of Create MyVirtual Machine in combination with other software for SINUMERIK 840D sl or other software products refers to the products mentioned in the documentation. Please refer to the documentation of other software products for the combination with Create MyVirtual Machine if they are not listed in this documentation.

# 4.2 Software required

#### Description

Before Create MyVirtual Machine is installed, check whether the software required for operation has been pre-installed.

Observe the installation environment specified in the Commissioning environment (Page 14) section.

#### 4.3 Valid Windows user accounts

#### User accounts and permitted characters

Just the same as for the real SINUMERIK control, the virtual SINUMERIK ONE also has a memory card (SD card) for data storage and program management. The virtual memory card is temporarily created in the Windows USER directory when you start a machine project.

The virtual memory card is stored under the following path:

• C:\Users\<username>\AppData\Local\Siemens\Automation\SINUMERIK ONE\ncu\card

#### Restrictions for <username>

SINUMERIK Operate accesses the commissioning data, machine data, archives, NC programs and other data via the path of the virtual memory card. SINUMERIK Operate only supports the following characters in path names:

- A-Z
- a-z
- 0-9
- Blanks
- Underscore ( )

Only use the abovenamed characters and no special characters, umlauts, etc. for the user account <username>.

#### Invalid characters in <username>

If Create MyVirtual Machine is installed or started under a user account (username) with invalid characters, communication will be interrupted even though the machine project was started successfully.

Example of invalid username: Max Müller Example of valid username: Max Mueller

#### Remedy for invalid user account

For the installation and operation of Create MyVirtual, create a user account that does not contain any special characters or umlauts.

4.3 Valid Windows user accounts

Installing and licensing

# 5.1 Installing Create MyVirtual Machine

#### Description

The Create MyVirtual Machine installation package is located on the installation medium supplied.

#### Note

The term "installation medium" is synonymous with DVD, download or other supplied media.

#### Requirement

- The hardware and software of the PC meet the system requirements.
- You have administrator rights on your computer.
- All running programs are closed.
- Only one version of Create MyVirtual Machine can be installed on a single computer.

#### How to install Create MyVirtual Machine

- 1. Navigate to the setup files on the installation medium of Create MyVirtual Machine.
- 2. Double-click "Start.exe". The installation wizard opens.
- 3. Follow the wizard's instructions and confirm the prompts.

#### Note

#### Updating during the Setup

If existing installation requirements are updated during the Setup, an additional restart may be necessary. In this case, the Setup prompts you to restart and then continues with the installation process.

4. You must restart the computer once the installation has been completed.

Create MyVirtual Machine is now installed and must be licensed. The licensing is described in the next section.

#### **Further procedure**

Then install the SINUMERIK Virtual CNC SW (own installation file). Create MyVirtual Machine can only be used in combination with one or more installed SINUMERIK Virtual CNC SW instances.

# 5.2 Licensing

#### 5.2.1 Licensing MyVirtual Machine

#### Description

A license is required for operation of Create MyVirtual Machine, which is provided via a license file (\*.lic). A license file can include one or more licenses. The license is managed via a licensing application. The application is installed automatically when setting up Create MyVirtual Machine.

#### Licenses for Create MyVirtual Machine and options

The installation of Create MyVirtual Machine also includes the Open Interface and the 3D simulation. If you use the functions of these options, additional licenses are required.

The following licenses are required to run Create MyVirtual Machine:

• Create MyVirtual Machine /Operate (basic license to use the framework application Create MyVirtual Machine)

The following licenses can optionally be used:

- Create MyVirtual Machine /Open (license for using the Open interface to connect own applications)
- Create MyVirtual Machine /3D (license for using 3D simulation in Create MyVirtual Machine)

#### Types of licenses

The license is transferred by way of a license file as follows:

- Local license (node-locked configuration) (Page 26)
  Configuration of the license file following installation on the local client or on a connected storage medium with the licensing application.
- License server (server configuration) (Page 26)
  Use of a license server which is managed by the licensing application. The license file with multiple licenses is located on the license server. The licenses can be used by all clients in the network with an installed and configured licensing application. Simultaneous use of a license is only ever possible by one open Create MyVirtual Machine.

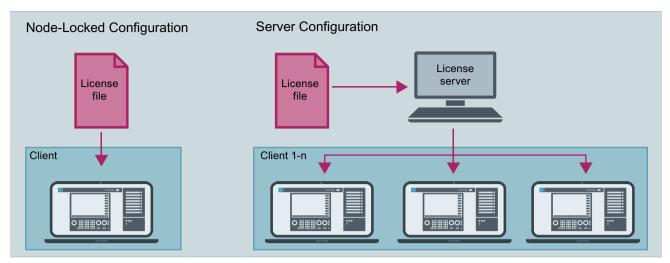


Figure 5-1 License file for local computer or server license

#### License file source of supply

The license file is generated according to your specifications and infrastructure (license requirement, server, MAC address and computer name of the client) during the order process and is then made available by e-mail.

### **Managing licenses**

Licenses are managed via the user interface or via the command line of the licensing application.

- Managing licenses via the user interface
- · Managing licenses via the command line

#### More information

Detailed documentation for the installation of the license server and for setting up the licenses can be found on the installation medium in the directory "Create\_MyVirtual\_Machine\Support\".

- Siemens PLM Licensing User Guide (see SPLMLicensing user guide.pdf)
- Installing Siemens PLM License Server (see SPLM\_Licensing\_Install.pdf)

#### See also

User interface of the licensing application (Page 28)

Command line of the licensing application (Page 30)

#### 5.2.2 Local license

#### Description (node-locked configuration)

The license file is copied to the local client or is installed on a computer connected in the network, e.g. "C:\LicenseFiles\license-myvirtual-machine-node-locked.lic". The license file is only used by one client. The path for storage of the license file is configured with the licensing application. The client references directly to the license file. The licenses in the license file are assigned to one client (computer name, MAC address) and are not available for any other client.

#### Note

#### Permitted characters in the path name

Do not use umlauts or special characters in the path name.

Characteristics of stand-alone configuration of a local license file (node-locked configuration):

- No server and no server configuration required
- Suitable for a small number of installations

#### 5.2.3 License server

#### Description

A license server is used for management of the licenses. One or more license files used by the clients (floating) are located on the server. A floating license means that each client in the network can use the number of licenses specified in the license file.

The license server is set up and configured in advance. The reference to the server with the licensing application is configured on the clients.

#### The following license configurations are supported:

- Single server configuration A server manages the license file.
- Redundant server configuration
   Redundant servers manage the license file with a corresponding copy of the master license file.
- Configuration of several servers
   Each server has a stand-alone license file with its own licenses. The client places a license request at Server 1. If there is no free or available license, the request is forwarded to server n.

# Requirement

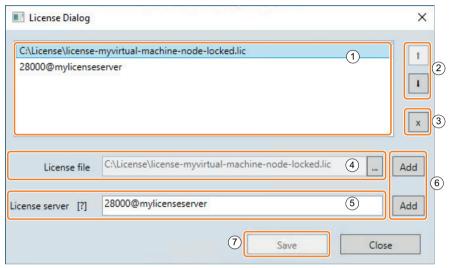
The license server is set up in accordance with the "Siemens PLM Licensing User Guide" and "Installing Siemens PLM License Server" documentation.

- License server installed and configured.
- License server stored on server and adapted to infrastructure.
- Port for TCP communication for license request is enabled on the server (Windows firewall).
- Name of the "License server" and "Port" are defined and are provided when configuring the licensing application.

#### 5.2.4 User interface of the licensing application

#### Licensing application

The user interface of the licensing application allows you to manage the licenses for Create MyVirtual Machine products. The application is installed on the computer with the Create MyVirtual Machine products.



- 1 List of added license servers or license files. When the Create MyVirtual Machine framework application is started, it searches for a valid license in the license files and on the license servers. The search sequence goes from the top to the bottom. The first valid license found is used.
- 2 The selected license file or the selected license server is shifted either up or down using the arrow keys. This allows you to change the search sequence for the license check.
- 3 Clicking on the "x" button will remove the selected license file or the selected license server from the list of license sources.
- 4 Selection of the local "License file" (<path and file name>). Select the local license file by clicking on "...".
- (5) Entry and display of the port number and the name of the "License server" (<port number>@<server name>)
- 6 Clicking on the "Add" button will add the license file or the license server to the list of license sources.
- (7) Saving the license sources

  If the list does not contain any license, an empty license entry is saved. The Create MyVirtual Machine product therefore does not have any reference to a valid license and is not opened.

Figure 5-2 Managing licenses with the licensing application

#### Requirement

Administrator rights are required for configuration of the licenses via the licensing application.

#### This is how you work with the user interface of the licensing application

- 1. In the Windows Start menu, select "Start > Siemens Automation > CMVM\_LicenseTool".
- 2. Acknowledge the confirmation prompt. The "License Dialog" is opened.
- 3. Select a new license source.
  - Using local licenses (Page 29)
  - Using the license server (Page 30)
- 4. Click on "Add" to add the new license source to the list.
- 5. Click on the arrow keys to change the search sequence for multiple license sources. You use the sequence to specify which license source is to be searched first for a valid license.
- 6. Click on the "x" button if you want to remove added license sources from the list.
- 7. Click "Save" to save the list of license sources.
- 8. Click "Close" to close the application.

A search is performed for a valid license in the entered license sources upon startup of the Create MyVirtual Machine product. If a valid license is found, the framework application is opened.

#### 5.2.5 Using local licenses

#### This is how you configure a local license file

- 1. Copy the license file \*.lic locally to a directory on the client, e.g. "C:\LicenseFiles\license-myvirtual-machine-node-locked.lic".
- 2. Open the user interface of the licensing application.
- 3. Select the path for storage of the local license file.
- 4. Click on "Add" to add the new license source to the list.
- 5. Confirm with "Save".
- 6. Close the app with "Close".

#### See also

User interface of the licensing application (Page 28)

#### 5.2.6 Using the license server

#### This is how you configure access to a license server

- 1. Open the licensing application.
- 2. Enter the port number and the name of the host in the "License server" field. The default port is 28000.
  - Syntax: [Port]@[Hostname]
  - Example: 28000@mylicenseserver
- 3. For multiple servers, enter all names, separated by semicolons.
  - Example:28000@mylicenseserver1;28000@mylicenseserver2;28000@mylicenseserver3
- 4. Click on "Add" to add the new servers to the list.
- 5. Confirm with "Save".
- 6. Then close the app with "Close".

#### See also

User interface of the licensing application (Page 28)

# 5.2.7 Command line of the licensing application

Licensing application "LicenseTool.exe" can be controlled via the command line and is then executed without user interface. The functional scope is identical to that of the user interface, and allows licenses to be managed, e.g. for automated licensing procedures.

#### **License Tool storage location**

After installing the MyVirtual Machine product you can find the licensing application at the following storage location:

 "C:\Program Files (x86)\Common Files\Siemens\VMx Middleware \licenseTool\LicenseTool.exe"

#### **Functions**

Command LicenseTool.exe is extended by the following parameters (options and arguments). The parameters are attached to the command using a space followed by a separator. The different separators and the short and/or long form of the parameter can be used alternatively.

Sepa- rator	Short pa- rameter	Long parame- ter	Arguments	Significance/example
/ - 	m	menu	-	Starts the user interface and closes the application in the command prompt.  LicenseTool.exe /m
/ - 	1	list	-	Lists the registered licenses line-by-line (line number 0-n). The sequence in the license list corresponds to the search sequence when checking the license.  LicenseTool.exe /1
				Example of a license list:  Id Type Path  0 File c:\License\mylicense.lic  1 Server 28000@myserver  2 Server 28000@licenseserver  3 Server 28000@backupserver
/ - 	as	addServer	<pre><port@servername> Server port and server name</port@servername></pre>	Inserts a license server at the end of the list. LicenseTool.exe /as 28000@myserver
/ - 	af	addFile	<pre><path file\filename="" to=""> Path and file name</path></pre>	<pre>Inserts a local license (license file) at the end of the list. LicenseTool.exe /af c:\License \mylicense.lic Note:</pre>
				Do not use umlauts or special characters in the path name.
/ - 	r	remove	<line> Specifies the line ID (line number)</line>	Deletes the specified line with the entered license (ID of the line). LicenseTool.exe /r 2
/ - 	S	swap	<pre><src line=""> <dst line=""> Specifies the line ID (line number) of the source and the destination.</dst></src></pre>	Exchanges the license of the source line <src line=""> with the destination line <dst line="">. The modified license list is displayed after the exchange.  LicenseTool.exe /s 1 3</dst></src>
/ - 	rr	removeAll	-	Deletes all registered licenses from the list. The licenses are deleted after the prompt by entering DE- LETE and pressing the ENTER key. LicenseTool.exe /rr
/ - 	h	help	-	Displays the help for the command. LicenseTool.exe /h

#### See also

Using the command line of the licensing application (Page 32)

5.3 Starting Create MyVirtual Machine for the first time

#### 5.2.8 Using the command line of the licensing application

You can manage licenses via the command line directly via the Windows command prompt or via batch files.

#### This is how you use the command line to manage licenses

- 1. In Windows, open the command prompt.
- 2. Enter the path to the licensing application in the command prompt.
   "C:\Program Files (x86)\Common Files\Siemens\VMx Middleware
  \licenseTool\"
- 3. Check the current license status using LicenseTool.exe -1. A list of registered licenses is displayed.
- 4. Register the local licenses or the license server, for example. At least one license must have been registered.
- 5. Manage the licenses with the other parameters of the licensing application.
- 6. Close the command prompt.

# 5.3 Starting Create MyVirtual Machine for the first time

#### Description

The project management opens first when Create MyVirtual Machine is started.

#### Note

#### Requirement

Before starting Create MyVirtual Machine for the first time, you must install at least one version of the SINUMERIK Virtual CNC SW and configure the communication settings.

More information can be found in the SINUMERIK Virtual CNC SW installation instructions.

#### Starting Create MyVirtual Machine

1. On the desktop, double-click the "Create MyVirtual Machine" icon, or select "Start > Siemens Automation > Create MyVirtual Machine". The Create MyVirtual Machine project management appears.

In the project management, create and open the machine projects that manage all data required for a virtual SINUMERIK control.

# 5.4 Uninstalling Create MyVirtual Machine

#### Introduction

Software packages are uninstalled automatically by the Setup program. Once started, the Setup program guides you step-by-step through the entire uninstallation.

#### Uninstalling selected components using the Windows settings

To uninstall selected software packages, follow these steps:

- 1. Open "Windows settings" with "Start > Settings".
- 2. Double-click on the "Apps" entry in the settings. The "Apps Select Features" window is opened.
- Select the "Create MyVirtual Machine" software package to be uninstalled and click on "Uninstall".
- 4. Confirm the displayed message with "Uninstall". The dialog for selecting the setup language opens.
- 5. Select the language in which you want the dialogs of the Setup program to be displayed and click the "Next" button.
  - The dialog for selecting the products you want to uninstall opens.
- 6. Activate the checkboxes for the products you want to uninstall and click the "Next" button. The next dialog displays an overview of the installation settings.
- 7. Check the list with the products to be uninstalled. If you want to make any changes, click the "Back" button.
- 8. Click the "Uninstall" button. Uninstalling begins.
- 9. The computer may need to be restarted. Activate the "Yes, restart computer now" checkbox. Then click the "Restart" button.
- 10. If the computer does not need to be restarted, click the "Exit" button.

5.4 Uninstalling Create MyVirtual Machine

Tips & Tricks

# 6.1 Recurring message, Windows restart

#### Frror case

If error message "Please perform a restart before installing additional programs" is output when installing software, although you have already restarted the PC, the cause can be write-protected files that have not been successfully deleted or renamed. To do this, you must make changes in the registration database.

#### Remedy

Detailed instructions on how you can resolve the error case described above is provided in the Industry Online Support Portal.

SIOS entry - recurring "Windows restart" requested (<a href="https://support.industry.siemens.com/cs/ww/en/view/8861819">https://support.industry.siemens.com/cs/ww/en/view/8861819</a>)

# 6.2 3D Simulation is not started/displayed

#### Error case

The 3D Simulation is not displayed or is terminated immediately after starting the machine project.

#### Requirement

First check that the following requirements are met.

- The system requirements are fulfilled.
- The option "Create MyVirtual Machine /3D" or "Run MyVirtual Machine /3D" is licensed.
- The machine project contains a 3D machine model.

#### Possible cause graphics card driver

If the installed graphics card driver is not compatible with the graphics hardware or offers insufficient OpenGL support, the 3D Simulation cannot be started.

#### Remedy

If possible and available, install an up-to-date graphics card driver with OpenGL support.

6.2 3D Simulation is not started/displayed

#### Possible cause remote connection

If you use CMVM/RMVM with the 3D option activated via remote access via Microsoft "Remote Desktop Connection" (RDP) from a second computer, there may be display errors or a black 3D window due to the lack of OpenGL graphics drivers for this RDP transmission protocol. This depends on the graphics hardware used or the installed graphics drivers on the remote computer running CMVM/RMVM.

#### Remedy

A possible remedy is to install a software OpenGL renderer, such as the "Mesa 3D" freeware on the remote computer running CMVM/RMVM.

# Index

п	L
"Siemens Industry Online Support" app, 9	License, 24 Application, 28 Command line, 30
3	Configuring a local license file, 29
3D Simulation	configuring on the license server, 30 Create MyVirtual Machine /3D, 24
does not start, 35	Create MyVirtual Machine /Open, 24
OpenGL, 35	Create MyVirtual Machine /Operate, 24 License server, 24, 26
C	Local, 24
	Local license, 26
Create MyVirtual Machine	User interface, 28
Components, 13	License server
Installing, 23 Licensing, 24	Documentation, 25
Overview, 13	
Starting, 32	M
Uninstalling, 33	mySupport documentation, 7
D	0
Data matrix code, 9	OpenSSL, 10
	Operating system, 19
G	
General Data Protection Regulation, 10	Р
Graphic, 19	Performance, 19
Graphic: 3D Simulation, 19	Product support, 8
Н	_
	R
Hardware requirements, 19	RAM, 19
I	S
Installation environment	
Commissioning, 14	Send feedback, 7
Migration, 16	Siemens Industry Online Support
Installing, 23	App, 9 SIMATIC Safety, 14
	SIMATIC Safety, 14 SIMATIC STEP 7 Professional, 14
	SINUMERIK, 5
	SINUMERIK, 5 SINUMERIK STEP 7 Toolbox, 14
	Standard scope, 5

System requirements, 19

# Т

Technical support, 9 Training, 9

# U

Uninstalling, 33 User account, 20

#### W

Websites of third-party companies, 6 Windows restart Recurring message, 35