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Home

What are the requirements for operating OPC in connection with WinCC (V7 or Professional)?

SIMATIC WinCC V7 /
SIMATIC WinCC Professional (TIA Portal)

https://support.industry.siemens.com/cs/ww/en/view/109763316

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Contents

1 Brief Description

Introduction

With OPC there is a manufacturer-independent standard via which systems and devices of different manufacturers can exchange data.

Requirements

The following requirements must be met for data exchange without any problems:

1. The computer name must correspond to the specifications.
   → see section 2.1

2. The general network settings must be made:
   → see section 2.2

3. The computers (OPC server and client) must be in the same subnet/trusted domains and know each other.
   → see section 2.3

4. The OPC server must be installed.
   → see section 2.4

5. The same user must be on the server and the client.
   → see section 2.5

6. The Windows users must be in the user groups provided.
   → see section 2.6

7. The firewall must permit OPC communication.
   → see section 2.7

8. No Remote Desktop Protocol (RDP) may be used on the OPC server.
   → see section 2.8

9. The virus scanner must be compatible with the used version of WinCC.
   → see section 2.9

10. The OPC specifications must be compatible with each other.
    → see section 2.10

11. The Windows DCOM settings must be correctly configured (only required for OPC DA).
    → see section 2.11

12. The WinCC/Connectivity Pack license must be available for WinCC V7 (only required for OPC A&E, OPC HDA, OPC XML DA and OPC UA servers).
    → see section 2.12

13. The WinCC Runtime must be started.
    → see section 2.13

2 Detailed Description

2.1 Computer Name

When assigning the computer name make sure that you observe the restrictions.

WinCC V7

The restrictions for WinCC V7 are given in the FAQ response "What restrictions are there for assigning the computer name for WinCC?".

https://support.industry.siemens.com/cs/ww/en/view/5708281

WinCC Professional

The restrictions for WinCC Professional are given in the system manual "STEP 7 and WinCC Engineering V15.1" in the section entitled "Installation of WinCC Runtime Professional".

https://support.industry.siemens.com/cs/ww/en/view/109755202/117665780491

2.2 Network Settings

In the next step you check the network settings that have to be made to operate WinCC. Here you should make sure that the settings are correct for the name resolution.

Note	More information about which requirements have to be met are available in this FAQ: "What are the requirements for operating SIMATIC WinCC in a Windows network?"
	https://support.industry.siemens.com/cs/ww/en/view/868014

2.3 Subnet and Domains

Subnet

The two computers (server and client) must be in the same subnet and know each other (name resolution and Windows users) and must be reachable via the ping command.

Refer here also to the network settings (section 2.2) and the Windows DCOM settings (section 2.11).

Note	With WinCC V7.3 and higher the tighter security policies of the WinCC OPC client apply. More information is available in the FAQ entitled "Why can you no longer connect the WinCC OPC DA Client to third-party servers after upgrading to WinCC V7.3?".
	https://support.industry.siemens.com/cs/ww/en/view/109483815

Domain

If the two computers are in the same domain or trusted domains, you must also observe the correct name resolution (see also section 2.2)

| Note	More information about trusted domains is available in the FAQ entitled "What are the requirements for operating SIMATIC WinCC in a Windows network?".
	https://support.industry.siemens.com/cs/ww/en/view/78346833
	Further information about how to add a trusted domain is available from Microsoft:
	https://docs.microsoft.com/de-de/security-updates/windowsrightsmanagementservices/18119089

2.4 OPC Server Installation

The OPC servers of WinCC V7 and WinCC Professional have to be installed to achieve OPC communication.

WinCC V7

With WinCC V7, if you select the option "WinCC Complete", the OPC server is installed automatically.

However, if you use the setting "WinCC Standard", you have to enable the WinCC OPC server separately in the installation directory "WinCC Expert".
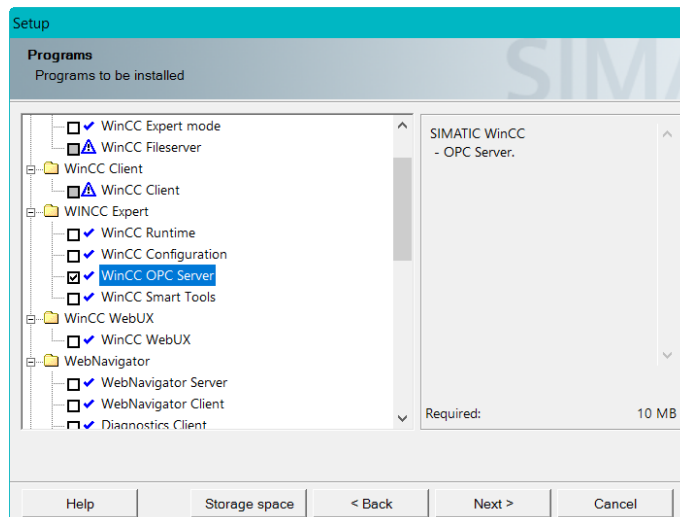

Note	You should use the "User-defined installation" type of installation; otherwise you might not be able to enable the option.
	If you cannot enable the "WinCC OPC server" for the installation, you might still have to enable the "WinCC Expert mode".

WinCC Professional

With WinCC Professional you can install the OPC server via the installation setup of WinCC Runtime Professional.
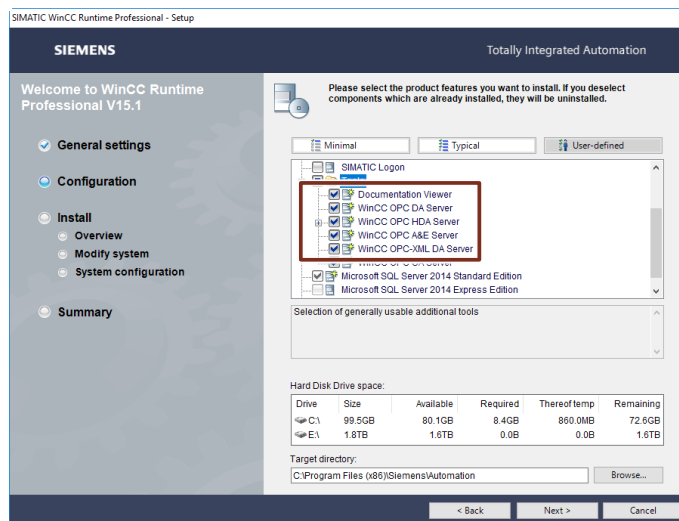
2.5 Windows User on Server and Client

In the Windows user administration, you must enter a Windows user for the OPC client and for the OPC server.

| **Note**	The user name and the password must be identical on the OPC server and on the OPC client.

Note	More information about how to create a user account in Windows 10 is available at this link:
	https://support.microsoft.com/de-de/help/4026923/windows-10-create-a-local-user-or-administrator-account

2.6 Windows Users in User Groups

The Windows user (from section 2.5) must be entered as member of the following groups both on the OPC server and on the OPC client:

- Recommended configuration (1)
  - "Administrators"
- Minimum configuration (2)
  - "Power Users"
  - "SIMATIC HMI"
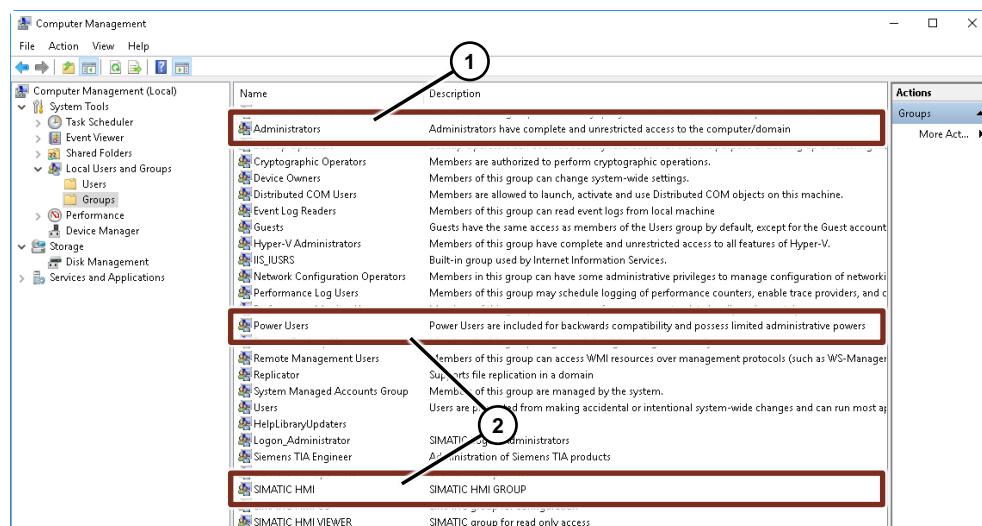
2.7 Windows Firewall Settings

To establish an OPC communication the following ports in the firewall settings of Windows must permit the communication.

WinCC V7

- Port OPC DA: 135
- Port WinCC OPC UA: 4862 (default)
- Port WinCC OPC XML: 80 (HTTP) / 443 (HTTPS) (default)

Note	How to configure the OPC UA server (WinCC V7.5)
	https://support.industry.siemens.com/cs/ww/en/view/109760748/62437095435

WinCC Professional

- Port OPC DA: 135
- Port WinCC Prof OPC UA: 4861 (default)
- Port WinCC OPC XML: 80 (HTTP) / 443 (HTTPS) (default)

Note	How to configure the OPC UA server (WinCC Professional)
	https://support.industry.siemens.com/cs/ww/en/view/109755215/23227619083

Note	Further information about the firewall and port settings is available in the OPC white paper (see links in chapter 3):
	• OPC and DCOM: 5 things you need to know
	• OPC and DCOM Troubleshooting Quick Start Guide

2.8 Remote Desktop Protocol (RDP)

Furthermore, it is recommended that no Remote Desktop Protocol (RDP) be used on the WinCC OPC server.

Note	More information about when it is permitted to use the Remote Desktop Protocol (RDP) is available in the FAQ "How do you remotely access WinCC stations (WinCC V7 and WinCC Professional)?".
	https://support.industry.siemens.com/cs/ww/en/view/78463889

2.9 Virus Scanners

Check whether the virus scanner you are using is compatible with your version of WinCC.

Using the "Compatibility Tool for Automation and Drive Technology" you can do this quickly and easily free of charge.

https://support.industry.siemens.com/cs/ww/en/view/64847781

2.10 OPC Specifications

Please note that there are different OPC specifications for OPC.
When operating OPC you must ensure that the specifications are compatible with each other.

Note	More information about the specifications is available on the web pages of the OPC Foundation.
	OPC Unified Architecture Specification https://opcfoundation.org/developer-tools/specifications-unified-architecture
	OPC Classic Specification: https://opcfoundation.org/developer-tools/specifications-classic

Otherwise refer to the manufacturers of the OPC applications.

2.11 DCOM Settings (only for OPC DA)

Check that the Windows DCOM configurations have been set correctly.

More information about this is available in the FAQ "Which DCOM settings must be checked for WinCC (V7 and Professional) with OPC DA if the connection between server and client does not work?".

https://support.industry.siemens.com/cs/ww/en/view/109768431

2.12 WinCC Connectivity Pack License

WinCC V7

You need the WinCC/Connectivity Pack license if you want to operate WinCC V7 together with one of the following versions of the OPC server:

- OPC A&E server
- OPC HDA server
- OPC XML DA server
- OPC UA server

The license must be stored on each server concerned.

| Note	You can procure the WinCC/Connectivity Pack license via your sales partner or directly from the Industry Mall:
	https://mall.industry.siemens.com/mall/en/en/Catalog/Products/10016160?tree=CatalogTree

WinCC Professional

If you want to use OPC with WinCC Professional, you only need the WinCC Runtime Professional license.

2.13 Start WinCC Runtime

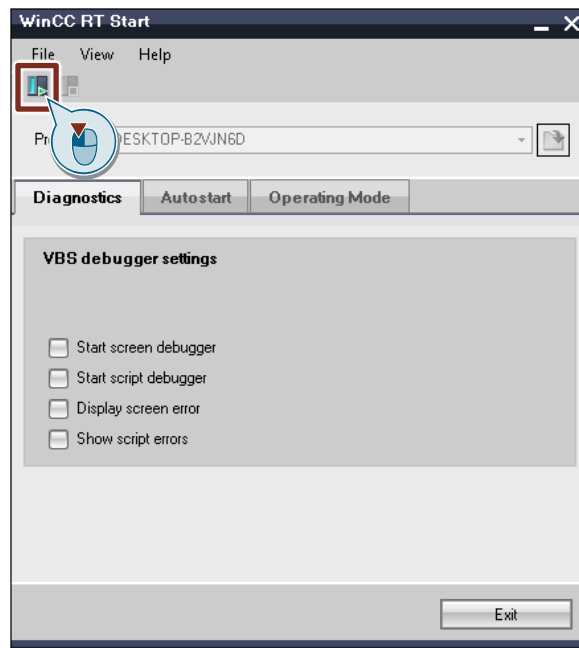You must then start the Runtime for successful communication.

WinCC V7

You start the WinCC Classic Runtime via the "Start" button.
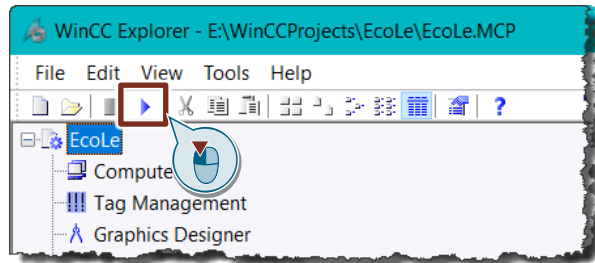
WinCC Professional

The WinCC Runtime Professional is started by loading the project and Runtime is started via the "Start Runtime" button.

Figure 2-1

3 Further Information

- OPC & DCOM Troubleshooting: Quick Start Guide
  http://www.opcti.com/opc-dcom-troubleshooting.aspx

- OPC and DCOM – 5 things you need to know
  http://www.opcti.com/opc-dcom-tutorial-intro.aspx

- How do you configure a server/client connection of two WinCC SCADA computers in OPC UA? (video)
  https://support.industry.siemens.com/cs/ww/de/view/109479664