



Installation instructions

VSE OPC UA server

VOS050

V1.3.0 or higher

GB

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1 Preliminary note

This document explains the set-up and use of the VSE OPC UA Server software.

1.1 Legal and copyright information

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1.2 Open source information



For more open source information see: documentation.ifm.com.

1.3 Legal notice OPC Foundation SDK

This product includes software under the OPC Redistributables Agreement of Use of the OPC Foundation in the version current at the time of order.

1.4 Symbols used

✓ Condition

► Instruction

▷ Interim result, interim reaction

▷ Final result, reaction

[...] Designation of keys, buttons or indications

→ See link, cross-reference



Important note

Non-compliance may result in malfunction or interference



Information

Supplementary note

2 Safety instructions

Please read the installation instructions before installing the software.

Ensure that the software is suitable for your application without any restrictions.

If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.

Non-observance of the instructions, operation which is not in accordance with use as prescribed below, wrong installation or incorrect handling can affect the safety of operators and machinery.

The use must comply with the applicable national and international standards. Responsibility lies with the person installing the software.

3 Intended use

The VSE OPC UA Server provides data values of the integrated ifm VSE diagnostic electronics via the OPC UA interface for further processing on an OPC UA client (not included in the scope of delivery).

The VSE OPC UA Server Configurator software is used by the user to maintain and configure the VSE OPC UA Server.

4 Installation under Windows

4.1 System requirements

See data sheet and technical specification at www.ifm.com.

4.2 Ports used

The following ports are used by VSE OPC UA Server under Windows and must not be used by other applications:

Port	Application	Changeable
5433 (TCP)	PostgreSQL	Yes, for first installation
44350 (TCP)	Configurator	Yes, for first installation
32210 (TCP)	Server Port	Yes, in the Configurator
5093 (TCP/UDP)	Sentinel RMS License Manager	No
3321 (TCP)	VSE units	Standard VSE Device Port (depending on the VSE configuration)



The software cannot be installed correctly and function properly if at least one of these ports is used or blocked by other applications.

4.3 Installation



- ▶ Prior to the installation make sure that you have administrator rights.
- ▶ Perform the installation as administrator.
- ▶ Recommendation: Keep the default installation settings if possible.
- ▶ Ensure that the selected ports are free.
- ▶ For external network access, ensure that the ports in any existing firewall are configured accordingly.

Install the software as follows:

Step 1: Start the installation and agree to the licence conditions

- ▶ Open the installation file `VSE OPC UA Server_v.x.x.x.exe` as administrator (right mouse button [Run as administrator]).
- ▶ Accept the licence conditions and click on [Install].
 - ▷ VSE OPC UA Server is installed (among others in the path `C:\Program Files\ifm electronic\VSE OPC UA Server`).
 - ▷ Then: The [VSE OPC UA Server Database Setup Wizard] appears.

Step 2 Installing the database

- ▶ Click on [Next].
 - ▷ The [PostgreSQL database configuration] view appears.
 - ▷ Address is displayed.
- ▶ Enter the TCP port in the database in the field [Port] Default: 5433
- ▶ Enter the name of the database in the field [Database name]. Default: OPCConfiguration
- ▶ Click on [Install].

- ▷ Installation of the database is in progress.
- ▶ Click on [Finish].
 - ▷ The database is installed.
 - ▷ [VSE OPC UA Server Configurator] setup wizard appears.

Step 3: Install the VSE OPC UA Server Configurator

- ▶ Click on [Next].
 - ▷ The [Adjust Configurator Settings] view appears:
- ▶ Enter the TCP port of the Configurator in the [Port] field. Default: 44350
- ▶ Enter the user name in the [User] field. Default: admin
- ▶ Enter the user password in the [Password] field. Please note: [Password requirements](#) (→ [7](#))



User and password are required to log in to the Configurator web interface.

- ▶ Click on [Install].
 - ▷ The [VSE OPC UA Server Configurator] installation is running
 - ▷ The [Setup successful] view appears.
- ▶ Click on [Finish]
 - ▷ VSE OPC UA Server Configurator has been installed.
- ▶ After the installation has been completed, click on [Launch] to start the [VSE OPC UA Server Configurator].

OR

- ▶ After the installation is complete, click on [Close] to close the installation program.

4.3.1 Password requirements

- Minimum length: 8 characters
- Must contain:
 - at least one upper case letter
 - at least one lower case letter
 - At least one number
 - At least one special character

5 Installation under Linux

5.1 System requirements

See data sheet and technical specification at www.ifm.com.

5.2 Ports used

The following ports are used by VSE OPC UA Server under Linux and must not be used by other applications:

Port	Application	Changeable
5433 (TCP)	PostgreSQL	No
44350 (TCP)	Configurator	No
32210 (TCP)	Server Port	Yes, in the Configurator
5093 (TCP/UDP)	Sentinel RMS License Manager	No
3321 (TCP)	VSE devices	Standard VSE device port (depending on the VSE configuration)



The software cannot be installed correctly and function properly if at least one of these ports is used or blocked by other applications.

5.3 Installation



- ▶ Prior to the installation make sure that you have sudo rights.
- ▶ Recommendation: Keep the default installation settings if possible.
- ▶ Ensure that the selected ports are free.
- ▶ For external network access, ensure that the ports in any existing firewall are configured accordingly.
- ▶ Docker Engine and Docker Compose are installed.

Install the software as follows:

Carrying out the installation

- ▶ Copy the binary file `VSE_OPC_UA_Server_Installer_1.1.0.tar` to the system with the Debian-based Linux distribution.
- ▶ Change to the installation directory.
- ▶ Change the permission of the binary file so that it becomes executable: `chmod u+x VSE_OPC_UA_Server_Installer_1.1.0.tar`
- ▶ Start the installation: `./VSE_OPC_UA_Server_Installer_1.1.0.tar`
- ▷ After successful installation, a message appears with the URL for access and the standard login information.
- ▷ If Docker-Engine and Docker-Compose are not installed, a message appears with links to the installation steps.



The standard login credentials are not suitable for permanent use.

- ▶ Change the password after logging in for the first time.



User and password are required to log in to the Configurator web interface.

Exporting log files and database

- To save a backup of the log files and the database in the file `VSE_OPC_UA_Server_Backup.tar`, execute the following command

```
sudo docker run --rm -v vse_opc_ua_server_postgres:/Backup/Database -v  
vse_opc_ua_server_server_logs:/Backup/Server -v  
vse_opc_ua_server_configurator_logs:/Backup/Configurator -v ~/.:/backup ubuntu  
tar cvf /backup/VSE_OPC_UA_Server_Backup.tar /Backup
```

- ▷ The backup is created under: `~/VSE_OPC_UA_Server_Backup.tar`

Opening Docker volumes

Open the Docker volumes manually via:

- For Docker installation with `apt` package manager: `/var/lib/docker/volumes`
- For Docker installation with `snap` package manager: `/var/snap/docker/common/var-lib-docker/volumes/`

5.3.1 Password requirements

- Minimum length: 8 characters
- Must contain:
 - at least one upper case letter
 - at least one lower case letter
 - At least one number
 - At least one special character

6 First login to the Configurator

For Linux installations:



The standard login credentials are not suitable for permanent use.

- Change the password after logging in for the first time.

6.1 Releasing the certificate in the browser

When the VSE OPC UA Server Configurator is called up in the browser for the first time, the URL may be recognised as a security risk.

To enable access:

- Release the certificate in the respective browser.

6.2 Signing in

- ✓ Use a recommended browser: Google Chrome, Mozilla Firefox or Microsoft Edge.

- Call the URL of the VSE OPC UA Server Configurator in the browser:

`https://<IP or Hostname>:<Configurator-Port>/`

Default: `https://localhost:44350/`

- ▷ The login screen will be displayed.

- Log in with the login data assigned during installation.



If an incorrect password to an existing user is entered 3 times, the login for this user will be blocked for 10 minutes.

- ▷ The Configurator interface appears.

6.3 Licence activation

The software is always delivered with a time-limited test licence. You can choose in the licence activation window whether you want to activate the test licence or whether you want to activate a permanent licence.

6.3.1 Activating a test licence

After activating the test licence, the software can be used to a limited extent for 30 days. After the test licence has expired, the software can no longer be used. For further use of the software, a permanent licence activation is required. If no permanent licence has been activated, the software will inform you of the imminent expiry of the test licence in a notification window when you log in. The information is provided 10 days before the licence expires.

6.3.2 Limitation of the test licence

The test licence is limited. The test licence enables the connection to a VSE device for a period of 30 days.

6.3.3 Activating a permanent licence

As a registered ifm customer, you can activate the permanent licence online or offline.

Licence activation code (LAC):

During the activation process, you need to enter the licence activation code (LAC).

- If you have purchased the software and the accompanying licences directly from ifm, ifm will have sent you the LAC by email.

6.3.3.1 Online licence activation

- ▶ Click on [Add licence] (not during the first activation after the installation of the software).
- ▶ Select [Online activation].
- ▶ Click on [NEXT].
- ▶ Enter the licence activation code (LAC) received via email.
- ▶ Click on [NEXT].
- ▶ Click on [FINISH].
- ▷ All activated licences are displayed.

6.3.3.2 Offline licence activation

If no online activation is possible because there is no Internet connection, licences can also be activated offline.

- ▶ Click on [Add licence] (not during the first activation after the installation of the software).
- ▶ Select [Offline activation].
- ▶ Click on [NEXT].
- ▶ Note down the indicated fingerprint.
OR
Click on [Save as .txt file], select the required directory and save fingerprint.txt.
- ▶ Open the page <https://licensing.ifm.com> on a computer with an online connection, click on [Activate licence], follow the instructions of this page and copy the generated licence key.
- ▶ Continue the licensing process in the software:
Click on [NEXT].
- ▶ Enter the licence key you received.
- ▶ Click on [NEXT].
- ▶ Click on [FINISH].
- ▷ All activated licences are displayed.

6.4 Connecting devices

6.4.1 Adding a device / data source

- ▶ Under [Datasources], click on + [Device].
 - ▷ The dialogue window [Add VSE device] appears.
- ▶ Select the option [Scan network] to search for all available devices in the network.
- ▶ Click on [Scan].
 - ▷ The program searches for available devices.
 - ▷ The table shows all detected devices.



The option [Scan network] searches for all available devices via broadcast. Not all available devices in a network environment may be detected, e.g. due to network segmentation, use of firewalls or routers.

✓ If not all devices are found:

▶ Add all devices with the help of the options [Specific] or [Range], see below.

OR

▶ Select the option [Specific] and enter the IP address and port of a device.

▶ Click on [Add to list].

▷ The program adds the devices to the table.



Only after the device has been added to the view [Datasources] and the server has been restarted, the program will check whether the device exists in the network.

OR

▶ Select the option [Range] and enter the start and end address of an IP range and the port.

▶ Click on [Add to list].

▷ The program will add all devices of the IP range to the table.



Only after the device has been added to the view [Datasources] and the server has been restarted, the program will check whether the device exists in the network.

✓ Devices are listed in the table.

▶ Activate the devices in the table that are to be included in the view [Datasources] .

▶ Deactivate the devices in the table that are not to be included in the view [Datasources] .

▶ Click on [Add devices] to include the selected devices in the view [Datasources] .

▷ The view [Datasources] shows all added devices.

▷ The view [Datasources] shows the available functions (column [Actions]).

▶ Click on [Upload changes] to upload the changes to the server. For the changes to take effect, restart the server in the [Server status] area.

OR

▶ Click on [Upload and Restart] to upload the changes to the server and restart the server.

OR

▶ Click on [Reset changes] to discard the changes.

▶ Optional: Filtering the data source list

7 Uninstallation under Windows

The program can be uninstalled via the Windows control panel.

The licences are not deleted by the uninstallation and can be used again after reinstalling the programme.

Uninstall the software as follows:

- ✓ The user has administrator rights in Windows.
- ▶ Open the Windows control panel.
- ▶ Click on [Programs and Features].
- ▶ Install the [VSE OPC UA Server x.x].
- ▶ Click on [Uninstall] and confirm the security query.
- ▶ Click [Uninstall] in the setup window.
 - ▷ The program will be uninstalled.
- ▶ After successful deinstallation click on [Close].
- ▷ The program has been uninstalled.
- ▶ If the program is to be installed again or a new version of the program is to be installed, restart the system first.

8 Uninstallation under Linux

The licences are not deleted by the uninstallation and can be used again after reinstalling the programme.

Uninstall the software under Linux as follows:

- ▶ Execute the following command: `uninstall-vse-opc-ua-server.sh`
 - ▷ The Docker containers (server, configurator and database) are stopped.
 - ▷ The Docker containers are deleted.
 - ▷ The Docker images are not deleted.
 - ▷ The Docker volumes are not deleted.
 - ▷ The GemaltoRMS service is unregistered and the binary files are deleted. (`/opt/ifm/GemaltoRMS`)
 - ▷ The LicenseGateway service is unregistered and the binary files are deleted. (`/opt/ifm/LicenseGateway`)
 - ▷ The uninstall script is deleted. (`/usr/local/bin/uninstall-vse-opc-ua-server.sh`)