



Installation instructions
ifm moneo
as of version 1.15

GB

Table of contents

1	Preliminary note	3
2	Safety instructions.	4
3	Functions and features	5
4	Installation under Windows	6
4.1	System requirements	6
4.2	Installation / update	6
4.3	Activation of ifm moneo products	6
5	Logging in to ifm moneo for the first time.	7
5.1	Initial login.	7
5.2	Licence activation	7
5.2.1	Activating a test licence.	7
5.2.2	Activating a permanent licence	7
5.2.2.1	Online licence activation	7
5.2.2.2	Offline licence activation	8
5.2.2.3	Activating licences that are not registered.	8
5.3	Language selection	9
5.4	Activation of further licences in ifm moneo	9
5.5	Help	9
6	Backing up and restoring a moneo system under Windows	10
6.1	Requirements	10
6.2	Backup	10
6.2.1	Automatic backup via Windows task scheduling	11
6.3	Restore	11
7	Uninstallation under Windows.	12
8	Appendix.	13
8.1	Ports used.	13
8.2	Network and communication settings	13
8.2.1	Changing the host name / port in a Windows system	13
8.2.2	Creating an alias in the DNS server	14
8.2.3	Creating a firewall rule	14
8.2.4	TLS transport encryption in a Windows system.	14
8.2.4.1	Requirements	14
8.2.4.2	Activating the TLS transport encryption.	15
8.3	Licensing of further products via Sentinel RMS License Manager (e.g. VSE OPC UA Server)	16
8.4	Logging of API calls	16
8.5	Logging of login events in the Windows Event Viewer.	16

1 Preliminary note

This document describes how to set up and use the software ifm moneo.

- ▶ Instruction
- > Reaction, result
- [...] Designation of keys, buttons or indications
- Cross-reference
-  Important note
Non-compliance can 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 Functions and features

ifm moneo is a software framework comprising different software products.

The available software products and their features can be found at www.ifm.com.

ifm moneo is intended for the following applications (depending on the licensed products):

- Parameter setting of devices
- Visualisation and evaluation of process values with trend display for continuous condition monitoring of machines and systems
- Condition-based triggering of warnings and alarms
- Tracking and qualitative evaluation of moving physical objects in production and logistics chains

ifm moneo can be used for quality assurance, preventive maintenance management and efficient production optimisation. In addition, ifm moneo can be used to increase transparency and efficiency of goods movements and moving physical objects.

ifm moneo is not a control system in the sense of a programmable logic controller.

4 Installation under Windows

4.1 System requirements

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

4.2 Installation / update



If other services for other software products are active on the Windows system, note the information in the appendix in chapter [Ports used](#) (→ [13](#))



If other software products are licensed on the Windows system via the Sentinel RMS License Manager, please refer to the information in the appendix under the following chapter [Licensing of further products via Sentinel RMS License Manager](#) (e.g. VSE OPC UA Server) (→ [16](#))



Prior to the installation make sure that you have administrator rights.

Complete the installation as an administrator.

Updates can be made from the current or immediately preceding major release. Updates from the penultimate major release or from even older versions are not permitted.

Example: A direct update from version 1.8.1 to version 1.10.0 is not permitted. You need to first update the software to version 1.9.x and then to version 1.10.0.

Install/update the software ifm moneo as follows:

- ▶ Open the installation file ifm_moneo_x.x.x.xxxxx.exe as an administrator (right mouse button [Run as administrator]).
- ▶ Accept the licence conditions and click on [Install].
 - ▷ ifm moneo is installed (among others under C:\Program Files\ifm electronic\moneo).
- ▶ After successful installation click on [Close].
- ▶ Reboot the system.

The setup program checks whether a version of ifm moneo is already installed and automatically recognises whether the software must be updated or installed for the first time.

4.3 Activation of ifm moneo products

The activation of ifm moneo products is done by activating licence activation codes (LAC).

Example: The upgrade from moneo|configure SA to ifm moneo|RTM is done by activating licences within moneo|configure SA. No additional software installation is required.

To activate additional ifm moneo products in an existing installation, proceed as follows:

- ▶ Click on
- ▶ Click on [System administration].
- ▶ Click on [Licence management].
 - ▷ The licence management shows all available licences and the currently used licences. Users with the respective rights can activate additional licences with the corresponding LAC. You can choose between online and offline activation:
 - Online activation
 - Offline activation
- ▶ Log out of ifm moneo and then log in again.
- ▷ The new products are available.

5 Logging in to ifm moneo for the first time

- ▶ Start ifm moneo via the start menu or the shortcut (icon) that has been created on your desktop.

5.1 Initial login

When logging in for the first time, a user with administrator rights must be created.

- ✓ The window to configure the administrator appears.

- ▶ Enter the first name, last name and email address.
(The email address is used as the username)

- ▶ Enter and confirm the password.

- ▶ Accept the General terms.

- ▶ Click on [Login].

▷ moneo is set up accordingly. This may take a moment.

▷ The configured user is logged in to moneo.



There must always be a user account with administrator rights in the system so that the system and the user management remain configurable.

5.2 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.

5.2.1 Activating a test licence

After activating the test licence, the software can be used without restrictions 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.

5.2.2 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.
- If you have purchased the software from a trade partner or as part of a sensor set, you will find the LAC written down in the enclosed documents. In this case you are not yet registered as an ifm customer. As a result, the licence also is not registered for the time being. Registration will then take place during the licence activation process → [Activating licences that are not registered](#) (→  8). The purpose of the registration is to provide you as the customer with information about the software (e.g. updates).

5.2.2.1 Online licence activation

- ▶ Click on + (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.



Proxy settings (only during the first activation after the installation of the software)

If no connection to the EMS licence server can be established during online licence activation, the software will display a proxy configuration dialogue.

- ▶ Enter the http or https address of the proxy server.
- ▶ Enter the user name and password for logging onto the proxy server.
- ▶ Click on [Check connectivity].
- ▶ After the connection has been checked successfully, click on [Save proxy].

5.2.2.2 Offline licence activation

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

- ▶ Click on + (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.

5.2.2.3 Activating licences that are not registered

During the activation process you register as an ifm customer.

- ▶ Select [Online activation].
- ▶ Click on [NEXT].
- ▶ Enter the licence activation code (LAC).
- ▶ 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 ifm moneo:
Click on [NEXT].

- ▶ Enter the licence key you received.
- ▶ Click on [NEXT].
- ▶ Click on [FINISH].
- ▷ All activated licences are displayed.

5.3 Language selection

The user interface of ifm moneo is displayed in the currently set browser language, provided that ifm moneo supports this language.

To display ifm moneo in another language:

- ▶ In the browser settings, select the desired language for displaying websites.
- ▶ Reload the page.

5.4 Activation of further licences in ifm moneo

To open the dialogue for activating further licences in ifm moneo:

- ▶ Click on .
- ▶ Click on [System administration].
- ▶ Click on [Licence management].
- ▷ The licence management shows all available licences and the currently used licences. Users with the respective rights can activate additional licences with the corresponding LAC. You can choose between online and offline activation:
 - [Online licence activation \(→ !\[\]\(e62391daf7cd84201aa45f7a0e5f66a7_img.jpg\) 7\)](#)
 - [Offline licence activation \(→ !\[\]\(fb2dc96057e6cb05145d98b1ccc95f16_img.jpg\) 8\)](#)

5.5 Help

For all modules within ifm moneo a corresponding help is available.

You can display a help file for each dialogue via .

The underlying documentation provides detailed information about managing and using ifm moneo. Among others, it describes how you can map your system configuration in ifm moneo and parameterise your devices. The help file features a search function.

6 Backing up and restoring a moneo system under Windows

A user with Windows administrator rights can back up and restore a moneo system.

The backup includes the following components:

- moneo databases
- moneo configurations

During the backup, a ZIP file with the time stamp of the backup creation is created. The backup file with the requested time stamp can be selected during the restore process.



It is possible to carry out a backup at any time during runtime. moneo is not affected and can continue to be operated.



The moneo system is automatically stopped during the restore process. No data processing takes place during this period.

After the restore process is completed, the moneo system is in the same state it was at the time of the backup. All recent data is overwritten.



Please install the 7-Zip software before creating a backup (download: <https://7-zip.org>).

Creating large backup files is not possible with the Windows zip archiving programme. Therefore, the programme 7-Zip is required to be able to execute the backup script.

6.1 Requirements

- Only a licensed and activated moneo system can be restored after a backup.
- Backup and restore must be done on the same computer.
- The 7-Zip software must be installed on this computer.
- There must be enough free memory space for the backup.
- Sufficient free memory space must be available for the restore process.
- The current moneo system and the moneo system to be restored must have the same main version of moneo.
If version 1.6.x is installed, for example, the backed up version 1.6.0 can be restored. However, if version 1.5.x or 1.7.x is installed, the backed up version 1.6.0 cannot be restored.
- Windows administrator rights are required for both the backup and restore process.

6.2 Backup

- ▶ Open Windows PowerShell as an administrator.
- ▶ Open the directory `C:\Program Files\ifm electronic\moneo\scripts`.
- ▶ Set the execution policy for PowerShell scripts to "RemoteSigned":
`Set-ExecutionPolicy RemoteSigned -Scope LocalMachine`
- ▶ Execute the `backup_moneo.ps1` file with PowerShell (right-click on the file → select [Execute with PowerShell]).
- ▶ Select the target directory for the backup and confirm with [OK].
- ▷ The system creates the following files:
 - a backup file (`Backup_moneo_V.V.V_YYYYMMDD-HHmmss.zip`)
 - a test file (`Backup_moneo_V.V.V_YYYYMMDD-HHmmss.md5`)
 The files created must not be changed.

6.2.1 Automatic backup via Windows task scheduling

In order to have a backup performed automatically, the backup of the moneo data can be set up as a task via Windows task scheduling.

- ▶ Select the entry [Task scheduling] under [Windows Administrative Tools].
- ▶ In the [Action] menu, select [Create Simple Task].
- ▶ Enter the required name for the task.
- ▶ Click on [Next].
- ▶ Select the trigger to define when the backup is to be performed, e.g. daily.
- ▶ Click on [Next].
- ▶ Define the trigger more precisely, e.g. set start date and time and repeat interval.
- ▶ Click on [Next].
- ▶ Select the action [Start programme].
- ▶ Click on [Next].
- ▶ Enter the executing program in the [Program/script] field:
`powershell.exe`
- ▶ Enter the path of the moneo backup script and the required storage location:
`-file "C:\Program Files\ifm electronic\moneo\scripts\backup_moneo.ps1" C:\backup\` in the [Add arguments (optional)] field
- ▶ Click on [Next].
- ▶ Acknowledge the safety query.
- ▶ Click on [Finish].

6.3 Restore



The moneo system is automatically stopped during the restore process. No data processing takes place during this period.

After the restore process is completed, the moneo system is in the same state it was at the time of the backup. All recent data is overwritten.

- ▶ Check whether there is enough free space on the C:\ drive.



The free space on the C:\ drive must be at least twice as large as the backup file (ZIP file) to be imported.

- ▶ Open Windows PowerShell as an administrator.
- ▶ Open the directory `C:\Program Files\ifm electronic\moneo\scripts`.
- ▶ Set the execution policy for PowerShell scripts to "RemoteSigned":
`Set-ExecutionPolicy RemoteSigned -Scope LocalMachine`
- ▶ Start the script for restoration:
`.\restore_moneo.ps1`
- ▶ Select the directory and backup file (ZIP file) with the requested time stamp and confirm with [OK].
- ▷ The script checks whether the moneo versions are compatible and the backup files are correct.
- ▷ A successful check will result in the moneo system being reset to the status of the selected backup file and restarted.

7 Uninstallation under Windows

You can uninstall ifm moneo via the Windows control panel. Stored data (e.g. user data, process values etc.) and licences are not deleted by uninstalling the software. This data remains on the device and can be used again after reinstalling ifm moneo.

Uninstall the software ifm moneo as follows:

- ▶ Log in to Windows as administrator.
- ▶ Open the Windows control panel.
- ▶ Click on [Programs and Features].
- ▶ Click on [ifm moneo].
- ▶ Click [Uninstall] and confirm the safety query.
- ▶ Click [Uninstall] in the setup window.
- ▷ ifm moneo is uninstalled.
- ▶ After successful deinstallation click on [Close].

Saved data is still available in the following directory after deinstallation:
C:\ProgramData\ifm electronic\moneo

8 Appendix

The following chapters contain information on advanced settings to configure moneo for large corporate networks.

This information is not usually required for standard installations.

8.1 Ports used

The following ports are used by ifm moneo under Windows and must not be used by other applications:

Port	Application
5000 (TCP)	ifm moneo
8086 (TCP)	influx DB
8088 (TCP)	influx backup DB
5439 (TCP)	postgres DB
5093 (TCP/UDP)	Sentinel RMS License Manager



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

8.2 Network and communication settings

8.2.1 Changing the host name / port in a Windows system

The host name under which ifm moneo can be reached can be changed.

It may be necessary to change the port, for example if the port number is already used by another service.

- ▶ Open the file `C:\Program Files\ifm electronic\moneo\os\appsettings.machine.json` in an editor.
- ▶ Insert the following text after the first opening curly bracket:


```
"ExternalHosts": [
  "${ListeningUri}",
  "http://hostname.company.tld:5000"
],
```



If several host names are used, further entries can be added, each separated by a comma.

Example:

```
...
"http://hostname1.company.tld:5000",
"http://hostname2.company.tld:5000"
...
```



Instead of the host name, the IP address can be entered. In this case, the IP address must also be used in the address line of the browser.

- ▶ Adjust `hostname`, `company` and `tld`.
- ▶ Adjust the port number (in the example: `5000`).
- ▶ Save and close the file.
- ▶ Restart the [moneo OS] service.

▷ moneo can be reached at `http://hostname.company.tld`.

If the port number is changed, the `appsettings.json` file must also be adjusted:

► Open the file `C:\Program Files\ifm electronic\moneo\os\appsettings.json` in an editor.

▷ The following text appears after the first opening curly bracket:

```
"Authenticated": false,
"ListeningUri": "http://localhost:5000",
"Urls": "http://*:5000",
"StrictMode": false,
"BaseConnectionStrings": {
  "Postgresql": {
    "Host": "localhost",
    "Port": 5439,
    "Username": "postgres",
    "Password": "postgres",
    ...
```

► Adjust the port number (in the example: `5000`) in both places.

► Save and close the file.

► Restart the [moneo OS] service.



Manual changes to the file `appsettings.json` are overwritten during the moneo update and must be re-entered after the update.

8.2.2 Creating an alias in the DNS server

The following adjustment is required to create an alias in the DNS server:

► An administrator must create an alias with the name `moneo.yourcompany.tld` in the DNS server, pointing to the following address:
`http://hostname.company.tld:5000/`

► It must also be adjusted accordingly in the file `C:\Program Files\ifm electronic\moneo\os\appsettings.machine.json`:
→ [Changing the host name / port in a Windows system \(→ 13\)](#).

8.2.3 Creating a firewall rule

For access from a remote system, the firewall may need to be adjusted:

► An administrator must create a firewall rule for TCP port 5000 inbound.

8.2.4 TLS transport encryption in a Windows system

A user with Windows administrator rights can set up TLS transport encryption in moneo and thus establish a secure connection between a client and the moneo server system. Client requests, e.g. a user login, are then encrypted via https.

8.2.4.1 Requirements

- moneo as of version 1.8.0
- Current Microsoft Windows operating system in accordance with to the specifications released by ifm
- Administrator rights on the Microsoft Windows Server
- Web server authentication certificate

The necessary certificate file must contain the following properties:

- The certificate must be authenticated by the company root certification body.

- The attribute [commonName] must contain the server host name.
- Optionally, [Localhost] and the [IP address of the server] can be added to the attribute [X509v3 Subject Alternative Name].
- For [X509v3 Key Usage], [Digital Signature] and [Key Encipherment] must be selected.
- For [X509v3 Extended Key Usage], [TLS Web Server Authentication] must be configured.

8.2.4.2 Activating the TLS transport encryption

TLS transport encryption is activated as follows:

- Log in to Windows as a user with administrator rights.
- Import the certificate into the local certificate store.
- Add the root certificate authority as a trusted root certificate authority.
- Open the file `C:\Program Files\ifm electronic\moneo\os\appsettings.machine.json` in an editor.
- Inside the global { } bracket, insert the following text:

```
,
  "ExternalHosts": [
    "${ListeningUri}",
    "https://[Servername]:5001",
    "http://[Servername]:5000"
  ],
  "OpenIdConnect": {
    "RequireHttpsMetadata": true
  },
  "JwtBearer": {
    "RequireHttpsMetadata": true
  },
  "ListeningUri": "http://localhost:5000",
  "Urls": "[http://:5000|http://+:5000/]",
  "Kestrel": {
    "Endpoints": {
      "Http": {
        "Url": "http://[Servername]:5000"
      },
      "Https": {
        "Url": "https://[Servername]:5001",
        "Certificate": {
          "Subject": "[CN-of-Server-certificate]",
          "Store": "My",
          "Location": "LocalMachine",
          "AllowInvalid": true
        }
      }
    }
  }
}
```

- Restart the server.

8.3 Licensing of further products via Sentinel RMS License Manager (e.g. VSE OPC UA Server)

moneo is licensed via the Windows service *Sentinel RMS License Manager*. Other software products, such as the VSE OPC UA Server, also use this service for licensing. Licensing different products with different versions of this service on the same server may cause errors. To avoid this, the following must be observed:

- If the VSE OPC UA Server is to be installed on the same Windows system, this product must first be installed and licensed. After that, moneo can be installed and licensed.
- If other software products have already been installed on a Windows system and licensed via the Windows service *Sentinel RMS License Manager* version < 9.8.0, error-free functioning cannot be guaranteed at present. Please contact the ifm support beforehand.
- If other software products have already been installed on a Windows system and licensed via the Windows service *Sentinel RMS License Manager* Version ≥ 9.8.0, install moneo on another system.

8.4 Logging of API calls

moneo can log API calls. By default, this function is not activated. Logging is set up as follows:

- Open the file `C:\Program Files\ifm electronic\moneo\os\appsettings.machine.json` in an editor.

- Insert the following text:

```
"Logging":
{
  "W3C": {
    "Enabled": true,
    "LogDirectory": "C:\\W3CLogs"
  }
}
```

- Where necessary, adjust the log file directory.

Logging is based on the W3C standard and can be configured accordingly.

8.5 Logging of login events in the Windows Event Viewer

Events related to the login of users in moneo can be logged in the Windows Event Viewer.

The logging of these events is deactivated by default. You can activate logging as follows:

- Open the configuration file: `appsettings.machine.json` in `C:\Program Files\ifm electronic\moneo\os`.

- Set the EventLogs to "true":

```
},
"FeatureManagement": {
  "EventLogs": true
},
```

- Save the file.

- ▷ Login events in moneo are indicated in the Windows Event Viewer with the source "ifm_moneo".

The following login events in moneo are logged:

- Successful login
- Failed login
- Logout
- Unknown login data

Display of login events:

- ▶ Open the Windows Event Viewer.
- ▶ Select [Windows protocols] / [Applications].
- ▶ If necessary, filter the indicated events according to the source "ifm_moneo".