This manual will help you to install the MoIN server. There are two options for installation:

Option A) MoIN Cloud-Init setup

General requirements:

- A virtual machine running on a esxi / VMWare host (alternative: a bare metal server)
- Two hard disks **or** one hard disk with two partitions
- Minimum of 4 CPU kernels
- Minimum of 8 GB memory (RAM)
- Minimum of 2 interfaces / network controller (up to 9 are possible)

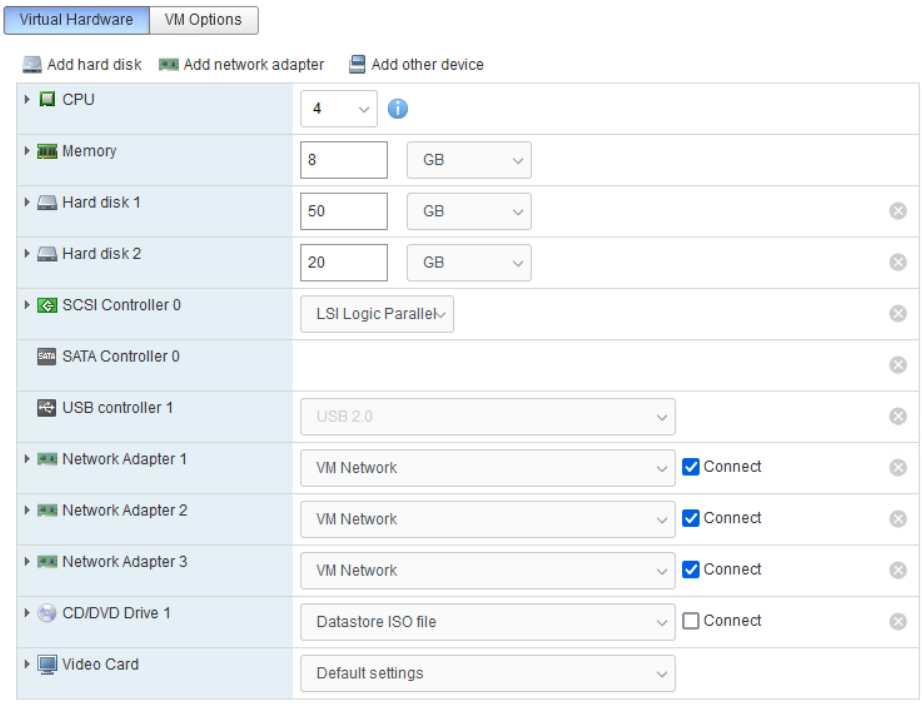
Step 1: Download the latest iso file for the Cloud-Init installation:
https://download.2wcom.com/products/MoIN_HSND/

Step 2: Create a new virtual machine on an esxi / VMWare host or use a bare metal server.

The MoIN and Kubernetes data need at least 20 GB space on your hard disk and will be installed on a second partition. There are two options for the MoIN setup:

Option A: The virtual machine has at least two hard disks. The OS will be installed on disk one, the MoIN data will be installed on disk two.

Option B: The virtual machine only has one hard disk. In this case you can specify to partitions within the installation process and decide that the OS should be installed on the first partition and the MoIN Cluster on the second.



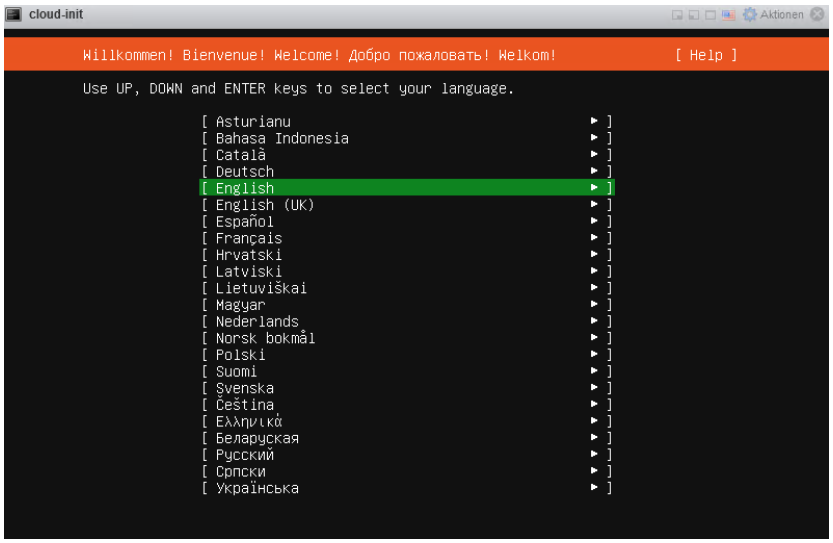
Important: Please define the needed number of network adapters, because it will be more complicated to add and configure further adapters after the setup is done.

Also make sure that the MoIN iso file is mounted into the CD/DVD device and the device is mounted on system startup.

Step 3: Run the newly created virtual machine

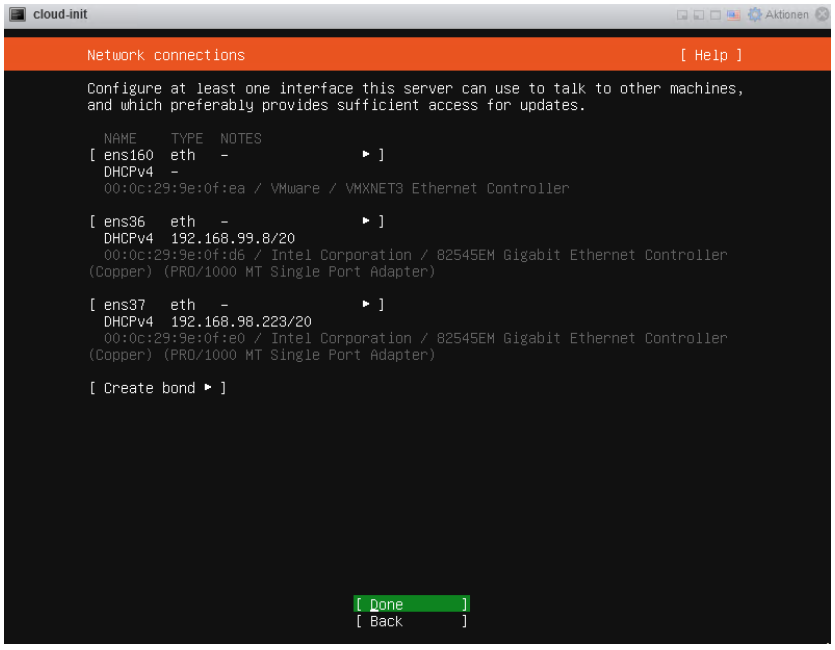
The ubuntu server setup wizard appears.

Step 4: Select your language and your keyboard layout.



Step 5: Setup network settings

At the next screen you can configure the connected network adapters that are available in the virtual machine:

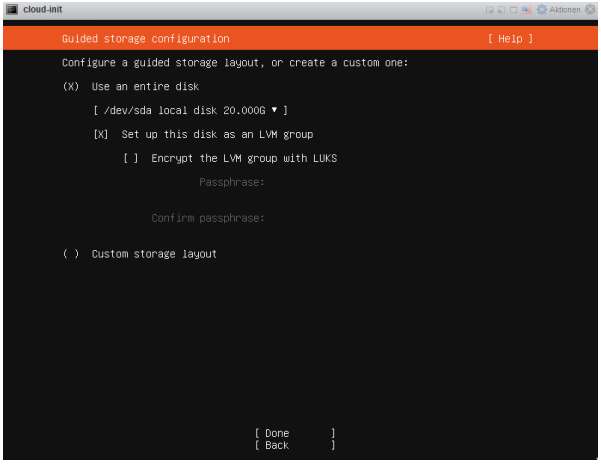


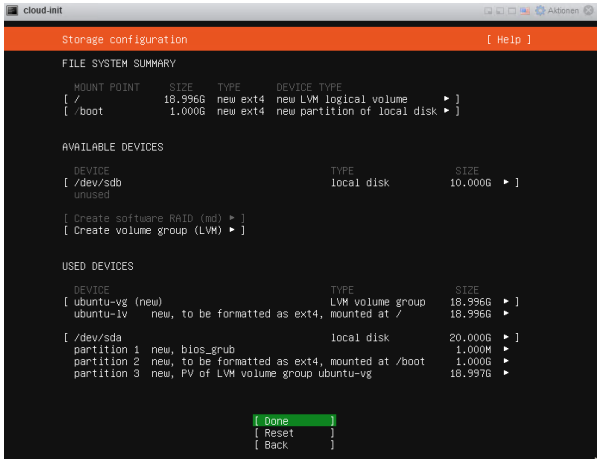
Important: It is strongly recommended to define a static IP address at least for the first / master interface! This is the main IP address through which the entire cluster can be reached.

Notice: It is not recommend to define different nameservers for each interface in this dialog. Best practice is to define a main DNS server (if present) for the first interface and make the remaining settings later in the MCU.

Step 6: Setup the system partitions and decide where the OS should be installed.

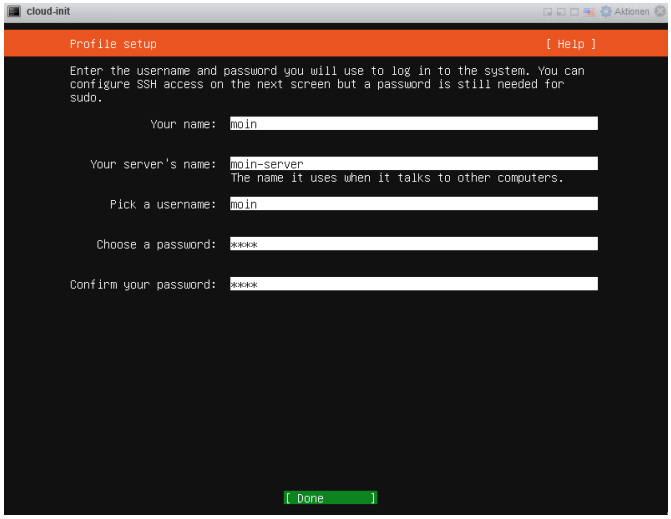
As described before, at this point you can select the hard disk where the OS should be installed. Another option is to create several partitions and select one of them for the ubuntu setup (the selection for the docker installation will be prompt at the end of the installation process).





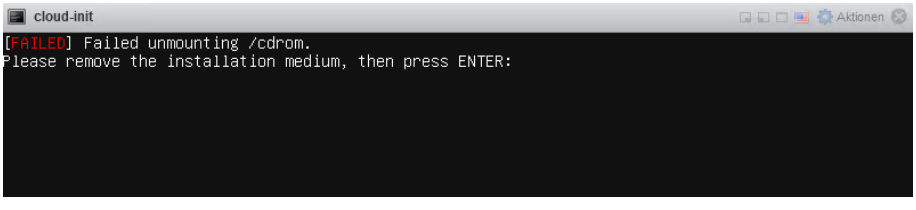
Step 7: Enter the Ubuntu user credentials.

Enter the name and the password for the Linux user for which the cluster is to be installed:



Step 8: Ubuntu installation and system reboot

After pressing the “done” button, the setup will install the ubuntu operating system. This could take several minutes. At the end of the installation process the system will be rebooted automatically. In case you will get a message that the CD/DVD cannot be unmounted, just hit the enter button and the system will restart:

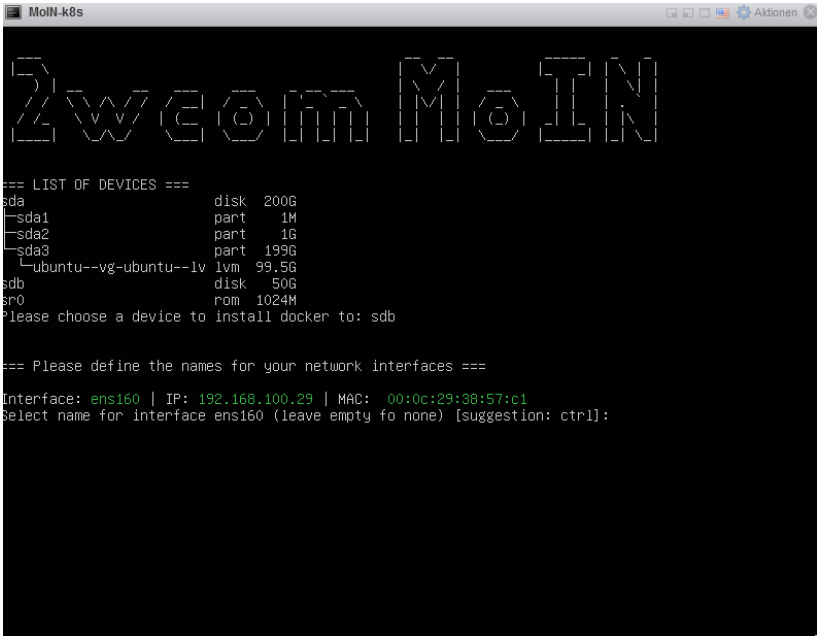


Step 9: The docker and k8s setup

After the first reboot the system will prompt with the docker and Kubernetes installation wizard. **Important:** Do not press any key until you see the screen below (maybe the prompt for the user login data will occur in the meantime).

In this screen you can see all available devices / partitions. Select the device where the installer should install the docker service (e.g., disk two / sdb).

Step 10: After entering the device for the docker / k8s installation files you can define the interface names that should be used.
*(example: Current interface name on host = **ens160;** new name after installation = **ctrl**).*



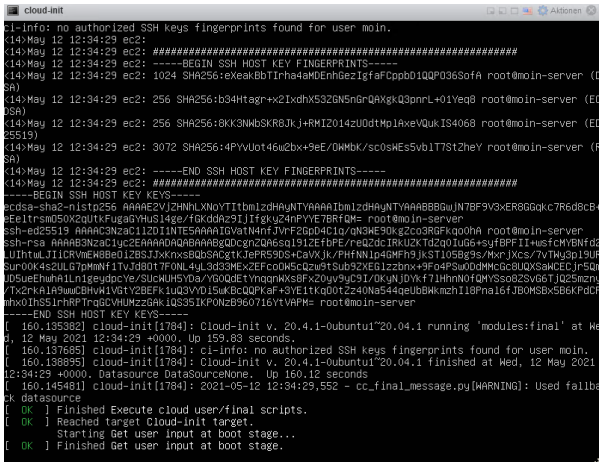
In the last part you can define the interface that should be used for the cluster setup. Enter the number of the interface you want to use for the MoIN cluster master IP (if unclear, chose 1).

```
=== Please define the index of the interface for the kubernetes master setup ===

Interface 1: 192.168.100.29 (ctrl | 00:0c:29:38:57:c1)
Interface 2: 192.168.100.148 (data1 | 00:0c:29:38:57:cb)
Interface 3: 192.168.99.139 (data2 | 00:0c:29:38:57:d5)
Select master interface (index 1 - 3):
```

Now the docker / k8s installation will start. This part could take several minutes.

Step 11: Finalize the setup.

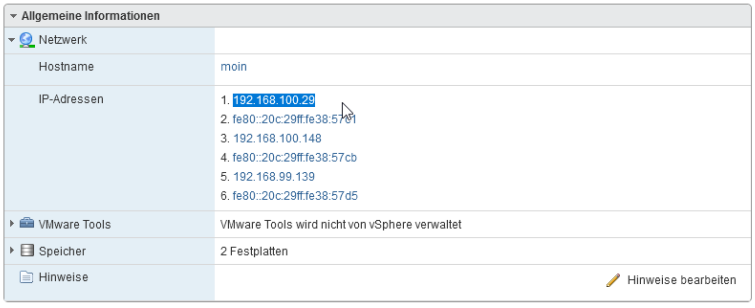
At the end of the setup, you have to hit the enter button to get back to the prompt where the user login data can be entered. At this point the setup is done and the MoIN is installed successfully.

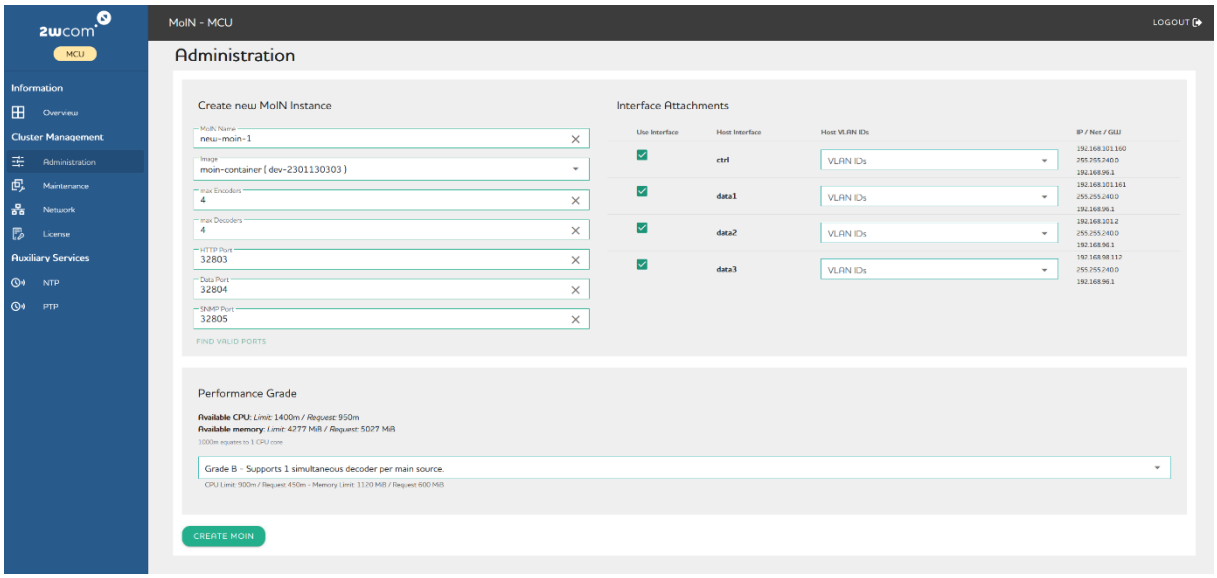



```
[  OK  ] Finished Execute cloud user/final scripts.
[  OK  ] Reached target Cloud-init target.
         Starting Get user input at boot stage...
[  OK  ] Finished Get user input at boot stage.

Hint: Num Lock on

moin-server login: _
```

Step 12: Test the MoIN software.

Now you can enter the IP of the virtual machine in a web browser to see the control panel (MCU) of the MoIN:





Notice: It could take up to 5 minutes until the services in the background are started and the MCU is accessible in the web browser.

Option B) MoIN standalone setup

General requirements:

- A linux server running at least Ubuntu 18.04 or higher
- Docker version 20.10 or higher
- Minimum of 2 CPU kernels
- Minimum of 4 GB memory (RAM)
- Info: The Ports 9000 and 38081 will be used per default

Step 1: Pull the latest .tar.gz file for the MoIN standalone version: https://download.2wcom.com/products/MoIN_HSND/

Step 2: Extract the tarball file on your server: “tar -zxvf MoIN-Standalone-dev.tar.gz”

```
drwxr-xr-x 3 moin moin 4096 Feb  7 09:49 ./
drwxr-x--- 7 moin moin 4096 Feb  7 09:48 ../
-rw-r--r-- 1 moin moin 1933 Feb  7 09:41 docker-compose.yml
-rw-r--r-- 1 moin moin  821 Feb  7 09:49 .env
-rw-r--r-- 1 moin moin  816 Feb  7 09:41 .env.example
-rw-r--r-- 1 moin moin  587 Feb  7 09:41 Makefile
-rw-r--r-- 1 moin moin  687 Feb  7 09:41 Readme.md
drwxr-xr-x 2 moin moin 4096 Feb  7 09:41 src/
moin@moin-standalone:~/MoIN-Standalone$
```

Step 2: Execute the “make setup” Makefile command to deploy the MoIN standalone stack (the linux “make” package is required and can be installed with “apt install make”)).

Step 3: Customize the .env file to your needs

The most important values are:

- **SYSTEM_IP:** The IP of the control interface of the server. The MoIN will be accessible on this address.
- **HTTP_PORT:** The port to access the MoIN in the web browser (80 as default)
- **MAX_ENCODERS:** Number of encoders available
- **MAX_DECODERS:** Number of decoders available
- **CTRL_NET_INTERFACE:** Name of the control interface
- **DATA{n}_NET_INTERFACE:** Name of the data interfaces

```
# Automatic values (only adjust manually if absolutely necessary!)
SERIAL_NUMBER=29d32455b72e56e7f6142dd7fe72f81854c1752afad21a180eb4f694593cd753
MOIN_HASH=eb3f2d302a9ab08b944e0b025eab2046
APP_KEY=fbf205b5e674daa18a0b3748c3f2b806
MOIN_CONTAINER_IMAGE=moin-container:dev
MOIN_LICENSE_HANDLER_IMAGE=moin-license-handler:dev

# Custom MoIN env vars (adapt to your needs / environment)
DEVICE_NAME=moin-server
HTTP_PORT=80
SNMP_PORT=8081
DATA_PORT=8082
MAX_ENCODERS=8
MAX_DECODERS=8
CTRL_NET_INTERFACE=ens160
DATA1_NET_INTERFACE=ens192
DATA2_NET_INTERFACE=none
DATA3_NET_INTERFACE=none
DATA4_NET_INTERFACE=none
DATA5_NET_INTERFACE=none
DATA6_NET_INTERFACE=none
DATA7_NET_INTERFACE=none
DATA8_NET_INTERFACE=none
DATA9_NET_INTERFACE=none

# IMPORTANT: Change this IP address to your system / ctrl IP!
SYSTEM_IP=192.168.101.150
```

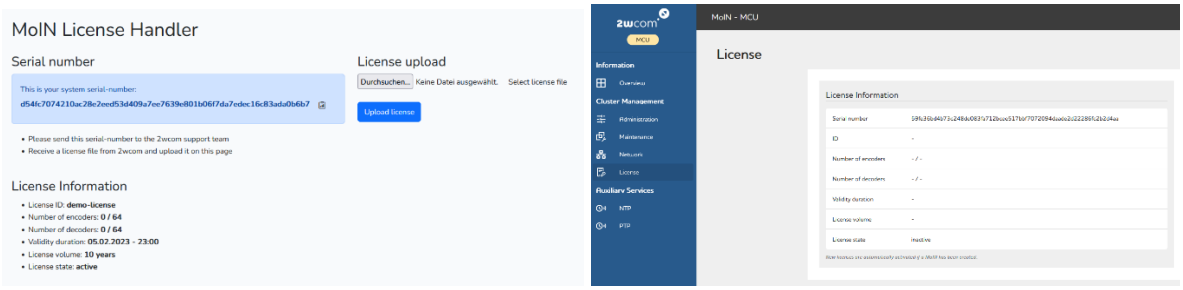
Step 4: Run “make up” to start the MoIN stack.

Step 5: Open the IP address of the host system in the browser to access the MoIN server.

MoIN standalone commissioning

Step 1: Open the license-handler view to get the system serial number

- In **MoIN Cloud-Init** version: Open the MUC and browse to the “License” menu point.
- In **MoIN-Standalone** version: Open the web view of the license handler on port 38081: http://{SYSTEM_IP}:38081



Step 2: Copy and send your serial number to your 2wcom sales representative and receive a license file that contains your specific numbers of encoders/decoders and licensing period.

Step 3: Return to the license page and upload the provide license file by clicking the upload button.

Step 4: Select the license file (.crypt) that you have received from your 2wcom sales representative. You receive a license that will automatically become active.

You have licensed your installation. If the licensing was successful, the information about your license is shown in the block “License information”.