

Installation and configuration guide

CS Network for OVF image with Linux

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2 Prologue

Dear customer,

if you use the CS Network software, you can read out our sensors directly or save several measured values from our data recorders in a central database. You can then access these data from several clients and evaluate or display them via a user authorization concept. You can also send alarms and evaluations automatically by e-mail to the users via push message.

This documentation describes the installation and initial configuration for running the solution on a server. Several virtual platforms can be used.

3 Notes

3.1 About this document

- Read this documentation carefully.
- Keep this documentation handy for reference when needed.
- Pass this documentation on to subsequent users of the product.

CS Instruments GmbH & Co.KG makes no warranty as to the suitability for any particular purpose and assumes no liability for errors printed in these instructions for use. Nor for consequential damages in connection with the delivery, performance or use of this software.

4 System-Voraussetzungen

Virtualisierungsplattformen	Vmware, Hyper-V, virtualBox
Virtualization platforms	Vmware, Hyper-V, virtualBox
Main memory requirement	min. 8 GB RAM - recommended 16 GB
Hard disk space	min. 100 GB SSD (also depends on the measured values and log times)
Processors	4 CPUvCore

The following ports must be enabled on the network for proper communication and operation of the software:

Port 50051 is used for communication between the Windows client and the Ubuntu server via gRPC.

The server needs port 502 for communication with the devices/sensors via ModbusTCP.

For the broadcast for autom. device detection the port 8800 (server - devices/sensors) is used.

5 Installation / Application CS Network

There is an installation package for Windows server from version 2016 64bit.

The data storage is based on a MySQL database version 5.7.34. This is then installed with the installation package if there is no installation.

Further there is for the Windows clients an installation package "CS Network setup.exe".

For mobile devices there is also a MobileApp, which will be available for Android and iOS.

All packages can be downloaded from our homepage.

5.1 Installing network application on virtual platform

After the provided image has been loaded on the platform, the configuration can be performed, for this purpose the virtual server must be started.

Logging in to the virtual server (Ubuntu operating system) is done with this user information:

User: `csnetwork` Password: `csNetwork_45+#`

Then assign a fixed IP address for this server, if not already assigned, and then reserve it on your DHCP server.

Here is a weblink for setting a fixed IP address in Ubuntu (no guarantee for external links):

<https://www.tecmint.com/configure-network-static-ip-address-in-ubuntu/>

and the original text to it:

Set Static IP Address in Ubuntu 18.04

In this example, we will configure a static IP for the `enp0s8` ethernet network interface. Open the netplan configuration file using your text editor as shown.

Important: In case a **YAML** file is not created by the distribution installer, you can generate the required configuration for the renderers with this command.

```
$ sudo netplan generate
```

In addition, auto generated files may have different filenames on desktop, servers, cloud instantiations etc (for example `01-network-manager-all.yaml` or `01-netcfg.yaml`), but all files under `/etc/netplan/*.yaml` will be read by netplan.

```
$ sudo vim /etc/netplan/01-netcfg.yaml
```

Then add the following configuration under the `ethernet` section.

```
enp0s8:

  dhcp4: no

  dhcp6: no

  addresses: [192.168.56.110/24, ]

  gateway4: 192.168.56.1

  nameservers:
```

```
addresses: [8.8.8.8, 8.8.4.4]
```

Where:

- **enp0s8** – network interface name.
- **dhcp4** and **dhcp6** – dhcp properties of an interface for IPv4 and IPv6 respectively.
- **addresses** – sequence of static addresses to the interface.
- **gateway4** – IPv4 address for default gateway.
- **nameservers** – sequence of IP addresses for nameserver.

Once you have added, your configuration file should now have the following content, as shown in the following screenshot. The first interface `enp0s3` is configured to use **DHCP** and `enp0s8` will use a static IP address.

The addresses property of an interface expects a sequence entry for example **[192.168.14.2/24, "2001:1::1/64"]** or **[192.168.56.110/24,]** (see **netplan man page** for more information).

```
# This file describes the network interfaces available on your system

# For more information, see netplan(5).

network:

    version: 2

    renderer: networkd

    ethernets:

        enp0s3:

            dhcp4: yes

        enp0s8:

            dhcp4: no

            dhcp6: no

            addresses: [192.168.56.110/24, ]

            gateway4: 192.168.56.1
```

```
nameservers:
```

```
addresses: [8.8.8.8, 8.8.4.4]
```

```
# This file describes the network interfaces available on your system
# For more information, see netplan(5).
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s3:
      dhcp4: yes
    enp0s8:
      dhcp4: no
      dhcp6: no
      addresses: [192.168.56.110/24, _]
      gateway4: 192.168.56.1
      nameservers:
        addresses: [8.8.8.8, 8.8.4.4]
```

Configure Static IP in Ubuntu

Save the file and exit. Then apply the recent network changes using following **netplan** command.

```
$ sudo netplan apply
```

Now verify all the available network interfaces once more time, the `enp0s8` ethernet interface should now be connected to the local network, and have an IP addresses as shown in the following screenshot.

```
$ ifconfig -a
```

```
tecmint@tecmint:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
inet6 fe80::a00:27ff:fe0a:ca1d prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0a:ca:1d txqueuelen 1000 (Ethernet)
RX packets 271 bytes 285746 (285.7 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 112 bytes 10440 (10.4 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.56.110 netmask 255.255.255.0 broadcast 192.168.56.255
inet6 fe80::a00:27ff:fef8:d2a prefixlen 64 scopeid 0x20<link>
ether 08:00:27:f8:0d:2a txqueuelen 1000 (Ethernet)
RX packets 2 bytes 120 (120.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 15 bytes 1186 (1.1 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 20 bytes 1576 (1.5 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 20 bytes 1576 (1.5 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

tecmint@tecmint:~$
```

Verify Network Interfaces in Ubuntu

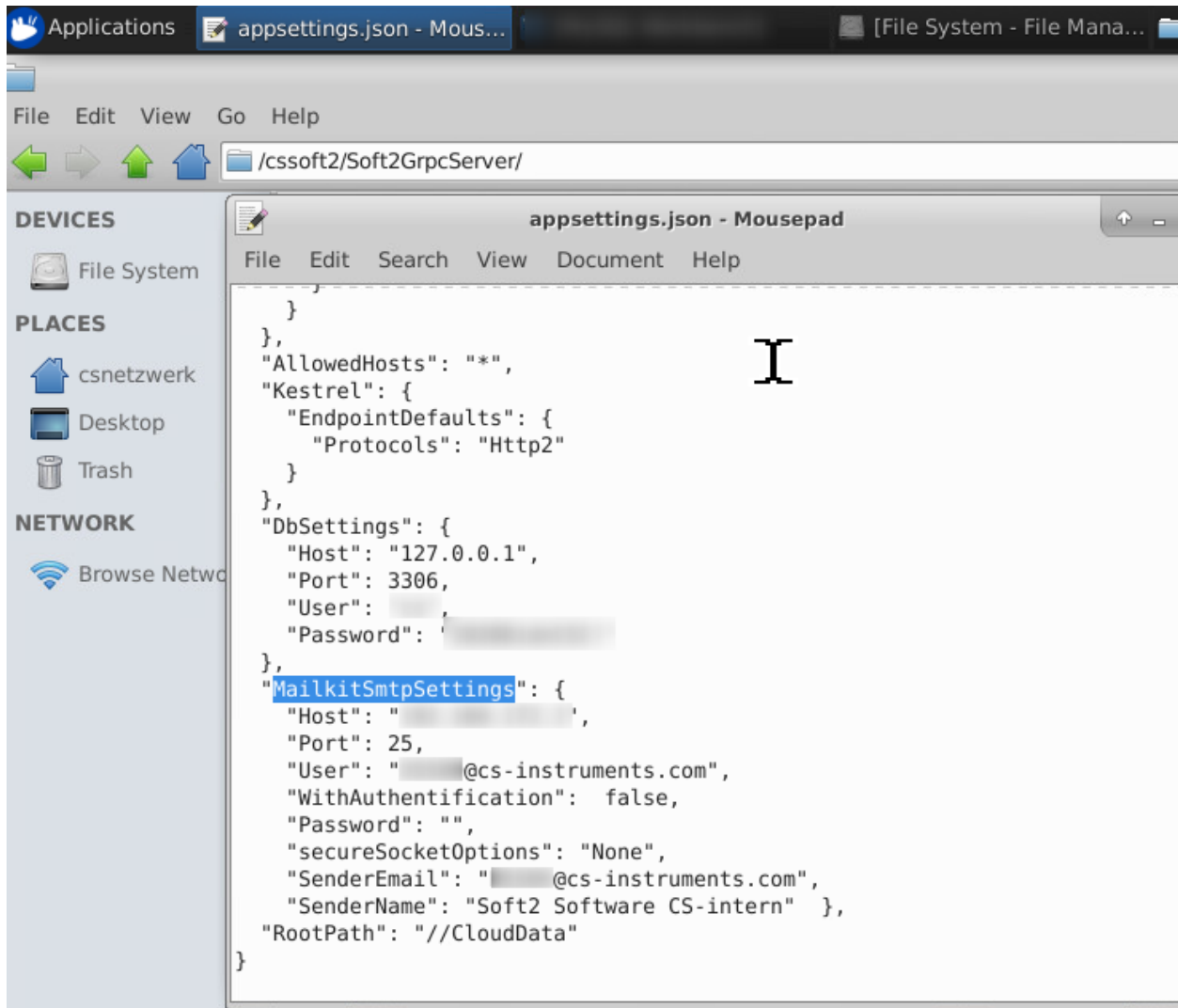
The assigned IP address must be excluded from the address assignment on the DHCP server.

As described below for the installation on Windows Server platforms, the MySQL DB is also installed here with the corresponding users and databases.

5.2 Configuring e-mail dispatch in the server

In a Json configuration file the e-mail access data are to be entered.
Under Linux the file is stored here:

/cssoft2/Soft2GrpcServer and is called appsettings.json:



In the MailkitSmtpSettings parameter, enter the data as follows:

Host:	IP address of the smtp server for sending e-mails
Port:	SMTP port
User:	Username for sending the email via this SMTP server
WithAuthentication:	With or without authentication (true or false)
Password:	User password
secureSocketOptions:	
SenderEmail:	E-mail sender address
SenderName:	Plain text for the sender address

Example:

```
"MailkitSmtpSettings": {  
  "Host": "192.168.178.1",  
  "Port": 25,  
  "User": "csnetwork@cs-instruments.com",  
  "WithAuthentication": true,  
  "Password": "strong-Password!!",  
  "secureSocketOptions": "None",  
  "SenderEmail": "csnetwork@cs-instruments.com",  
  "SenderName": "Soft2 Software CS-intern" },
```

After depositing, the server must be restarted.

This completes the configuration and installation of the server.

5.3 Installing client application on a Windows PC

To do this, start the file "CS Network setup.exe".

After completion, the software can be started. Only now can the initial configuration be carried out.