- **Wireless Professional CPC**

Operating Instructions

Documentation for software version 2.3, as at: 03.12.2021
Technical and editorial content subject to change without notice

Contents

1 General Information

The Wireless Professional CPC is an embedded computer with a separate power supply in the DIN-rail housing and features a Linux operating system as well as the Wireless Professional software.

The Wireless Professional CPC is intended for use in a network (LAN) in conjunction with a remote access point; it satisfies the requirements of an automatic test system in accordance with EN 62034.

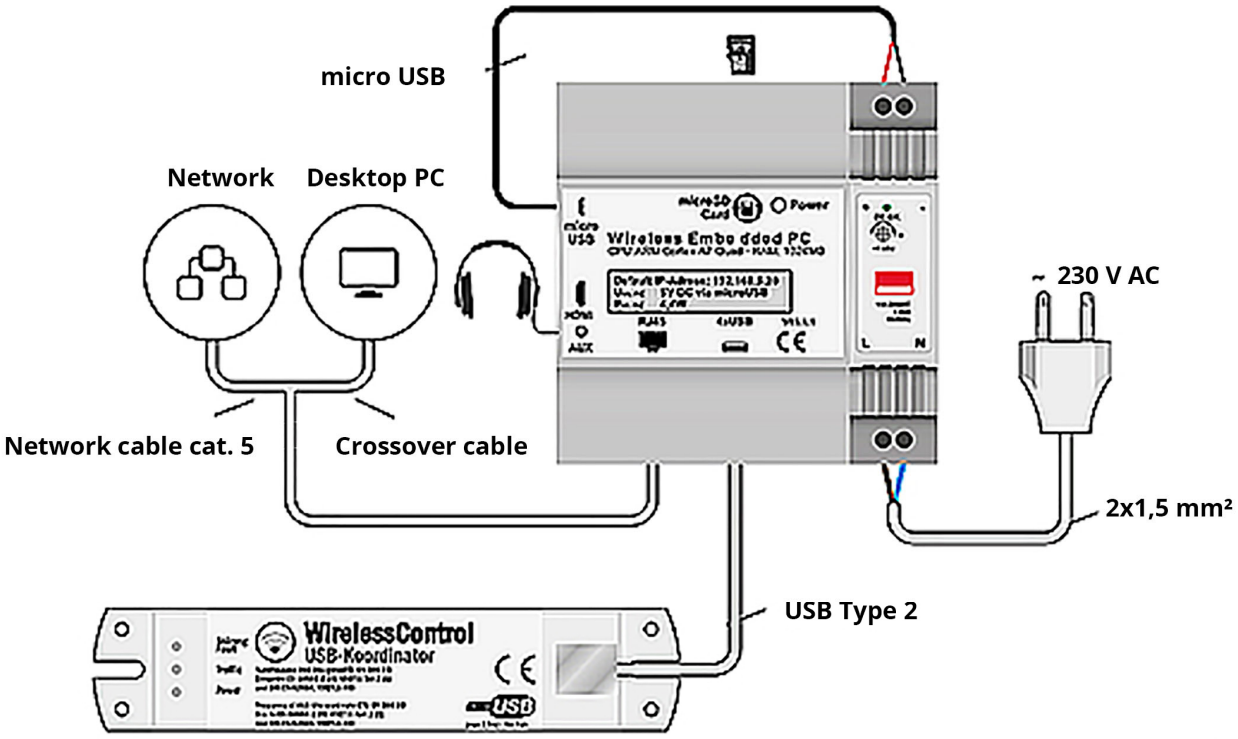
Note: The HDMI interface is deactivated and does not therefore work!

Note: This documentation is stored at /home/alarm/wldoku.

2 Technical Data

Processor chip set	ARM Cortex-A53 quad
Processor clock speed	1.2 GHz
RAM	1024 MB
LAN	10/100
Power consumption	max. 5 W
Dimensions	H 92mm x W91mm x D56mm including power supply
Type of mounting	DIN-rail

3 Connection Diagram



4 Establishing Remote Connection with the Wireless Professional CPC

To be able to establish a remote connection with the Wireless Professional CPC, the power supply of the Wireless Professional CPC must be connected to the mains power supply. A connection also needs to have been established with the local network via the RJ-45 network socket on the Wireless Professional CPC.

Ex factory, the Wireless Professional CPC has a preset fixed IP address and an active DHCP client. Factory setting: **192.168.5.20**.

Note: To be able to access the CPC, the PC used must be in the same IP address range as the CPC or have an active route into the CPC's address range.

Note: If several Wireless Professional CPCs are to be operated in the same network, they should be started up one after another. After each Wireless Professional CPC has been connected, its IP address should be changed before the next one is connected to the network.

The Wireless Professional CPC uses a program called **TigerVNC** for remote access. This program is not dependent on any one platform.

To connect, a VNC Viewer is launched on a device, such as a Windows PC (hereinafter also referred to as client). The TigerVNC Viewer is used in this example.

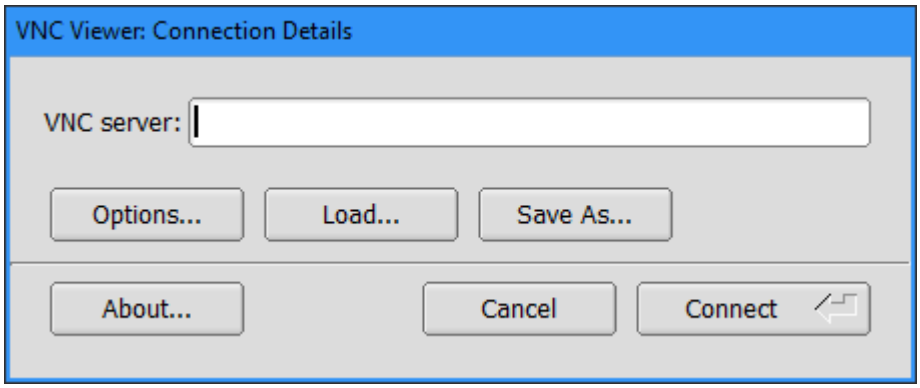


Figure 1: TigerVNC launch window

To establish a connection, you will need to enter the IP address of the destination device (hereinafter also referred to as VNC host). The access port should be entered after a colon.

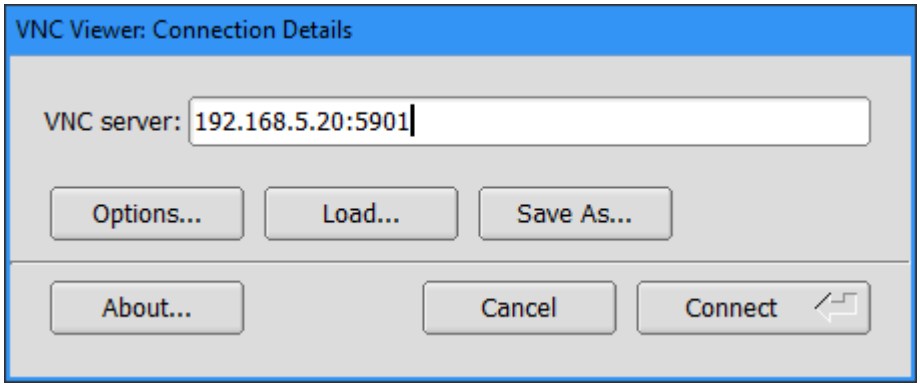


Figure 2: Launch window with connection parameters

In this example, the CPC still has the initial IP address **192.168.5.20**; after the IP address, you can see the port **5901**.

The Connect button is pressed to establish the connection.

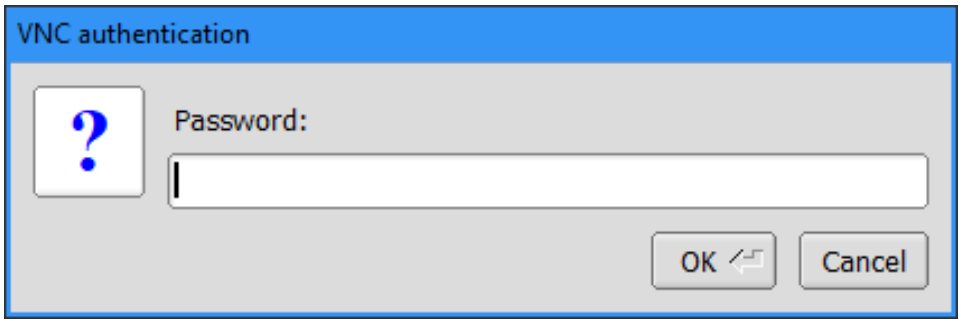


Figure 3: Entering connection password

You are prompted to enter a connection password to establish the connection. This is set to “123456” ex factory.

Once the password has been entered and confirmed, a virtual desktop appears and you can use the Wireless Professional software on this as you usually would.

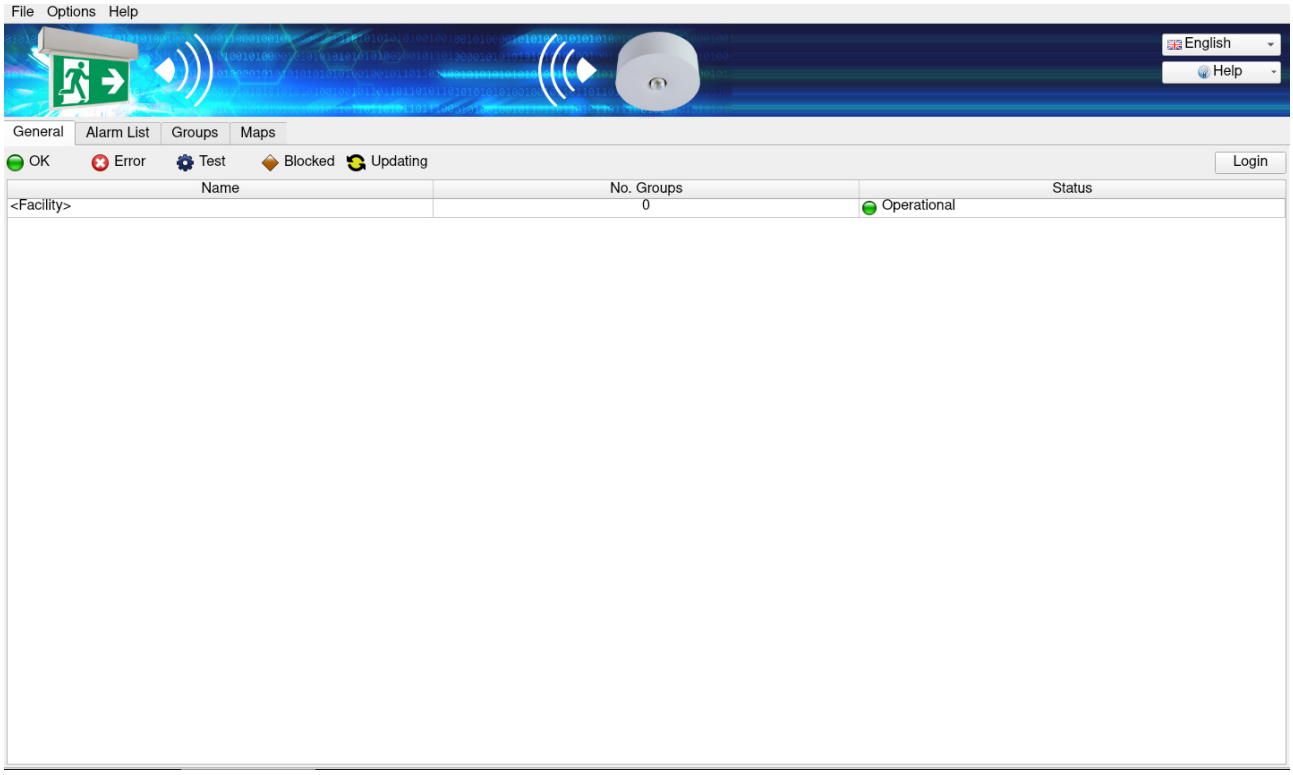


Figure 4: Virtual desktop and Wireless Professional user interface

5 Changing Connection Password

The VNC connection password can be adapted individually. In order to do this, you will need to launch a remote connection with the CPC. If the Wireless Professional software is running in full-screen mode, this should be exited by pressing the “Alt” + “Enter” key combination or via the **Toggle Fullscreen (“Kiosk mode”)** menu item, which can be accessed from the Help button in the banner.

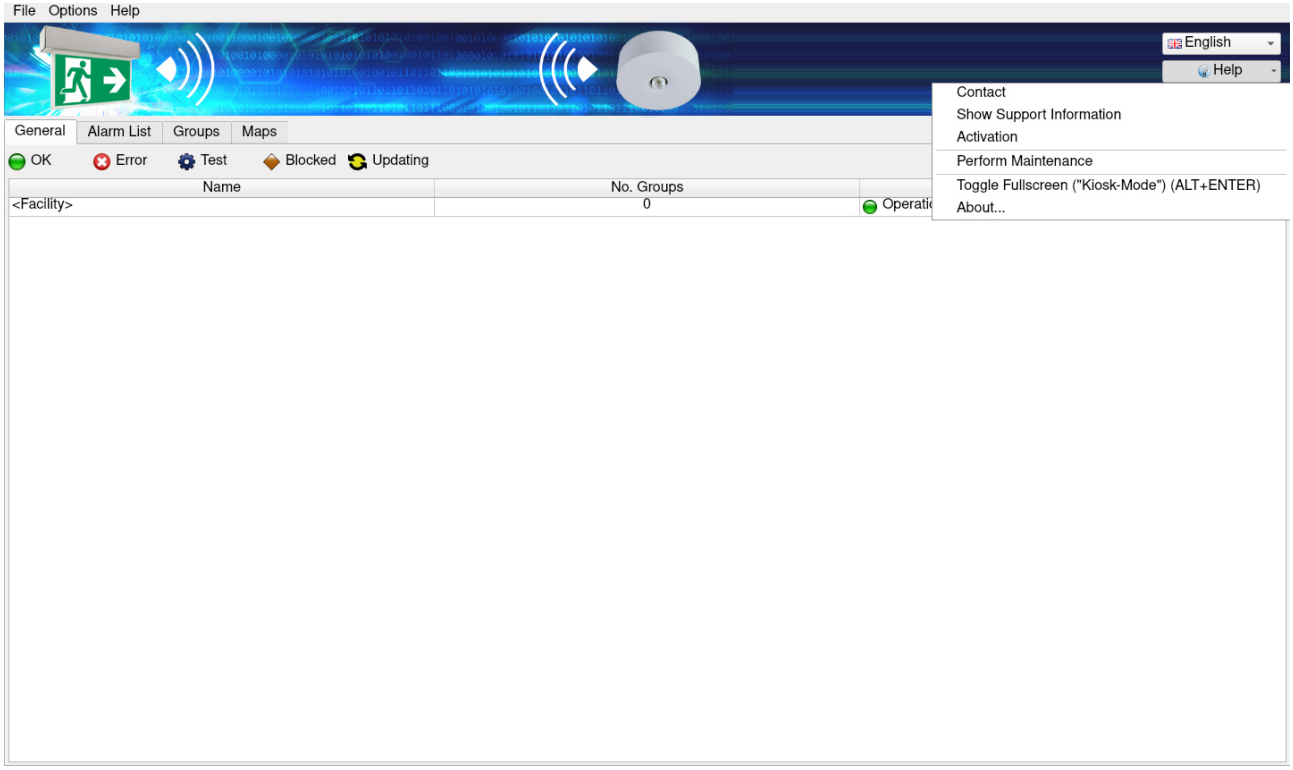


Figure 5: Exiting Wireless Professional CPC full-screen mode

To change the VNC connection password, launch the “LXTerminal” console program from the Wireless Professional CPC start menu (bottom left in the Linux task bar, the LXTerminal program can be found under the “System tools” menu item).

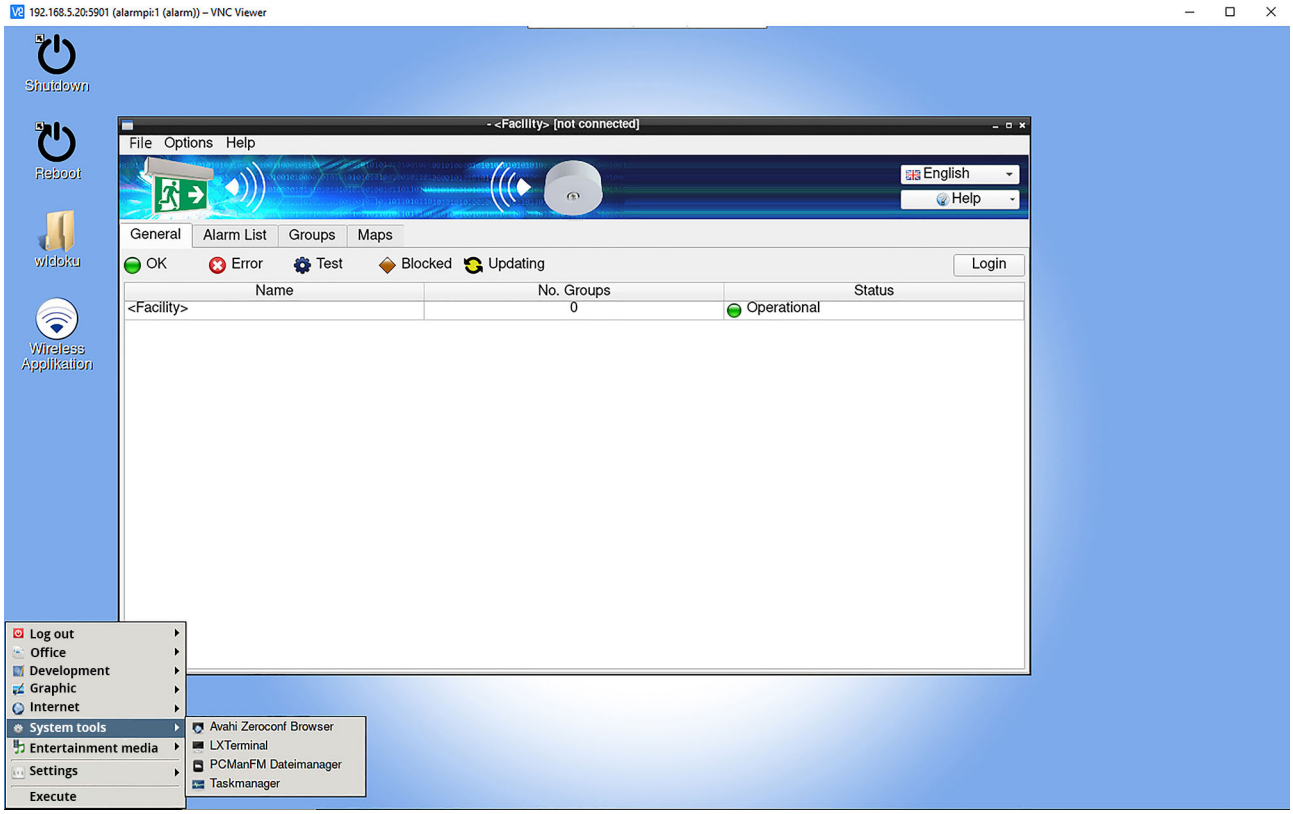


Figure 6: CPC start menu and calling up the LXTerminal console.

A console window with an entry prompt appears. The command line “vncpasswd” is entered and confirmed with **Enter**.

You are asked to enter the new password (prompt reads: “Password:”). This has to be entered twice in succession (each time followed by **Enter**, the second time, the prompt reads: “Verify:”). The password is not visible as you enter it and has to contain at least 6 characters.

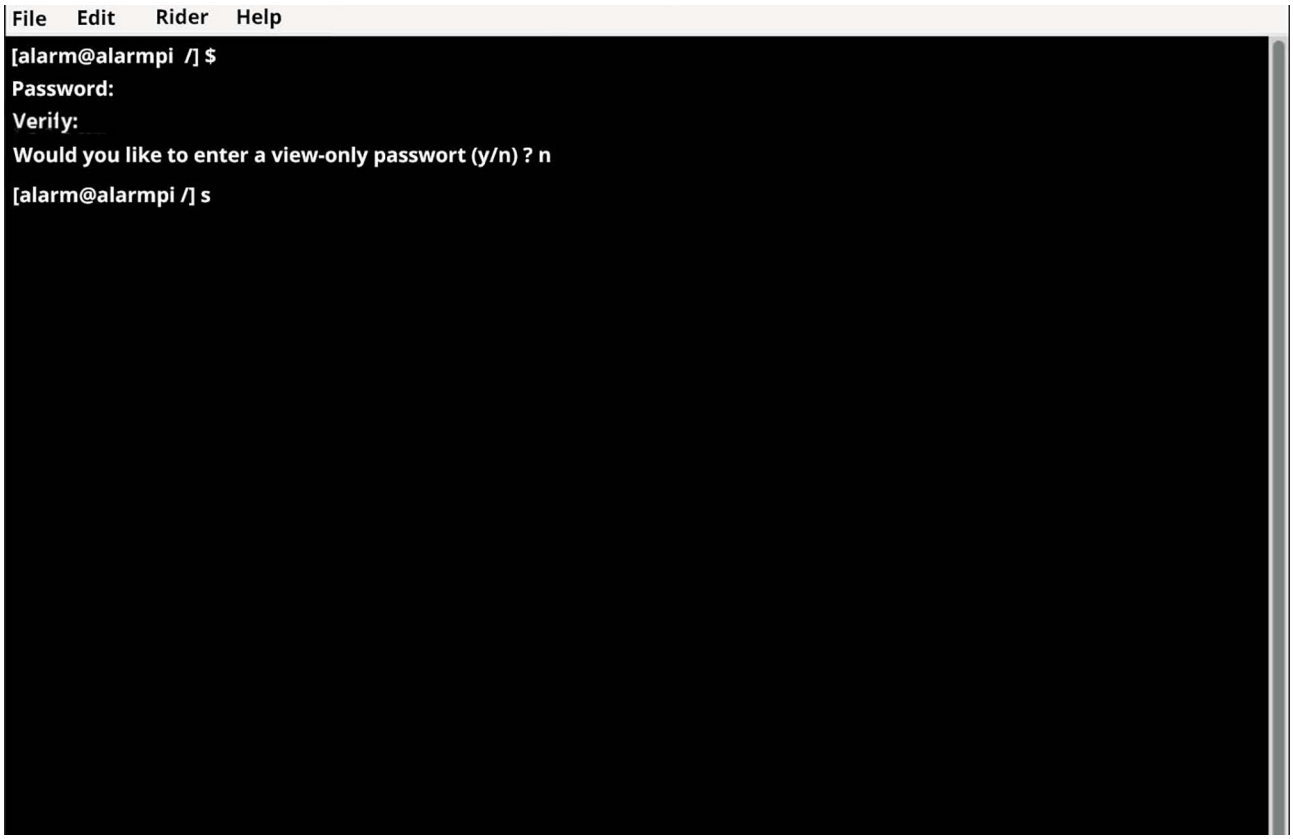


Figure 7: CPC with open LX Terminal after the VNC password has been changed

Once you have entered the password for a second time, you can assign a password for limited access ("view-only"). If you would like to do this, respond to the question "Would you like to enter a view-only password?" by entering "y" and type in the "view-only password". This also has to be entered twice and must be different to the full-access password. If you do not want a view-only password, simply press "n".

The console window can be closed using the "exit" command or by clicking on the "x" in the top right.

Once the password has been changed, the remote connection is retained; only once you have closed this are you able to establish a new remote connection with this Wireless Professional CPC using the new password.

6 Changing IP Address

The Wireless Professional CPC has a static IP address. This is set to **192.168.5.20** ex factory. Dynamic assignment of the IP address via DHCP is also activated.

To change the static IP address, you will need to launch a remote connection with the CPC.

If the Wireless Professional software is running in full-screen mode, this should be exited by pressing the "Alt" + "Enter" key combination or via the **Toggle Fullscreen ("Kiosk mode")** menu item, which can be accessed from the Help button in the banner. See Figure 5: Exiting Wireless Professional CPC full-screen mode

The "LXTerminal" console program should be launched from the Wireless Professional CPC start menu (bottom left in the Linux task bar; the LXTerminal program can be found under the "System tools" menu item).

Enter the command line "nano /etc/dhcpcd.conf" and confirm with **Enter**. This launches the Nano text editor and automatically loads the Ethernet configuration file.

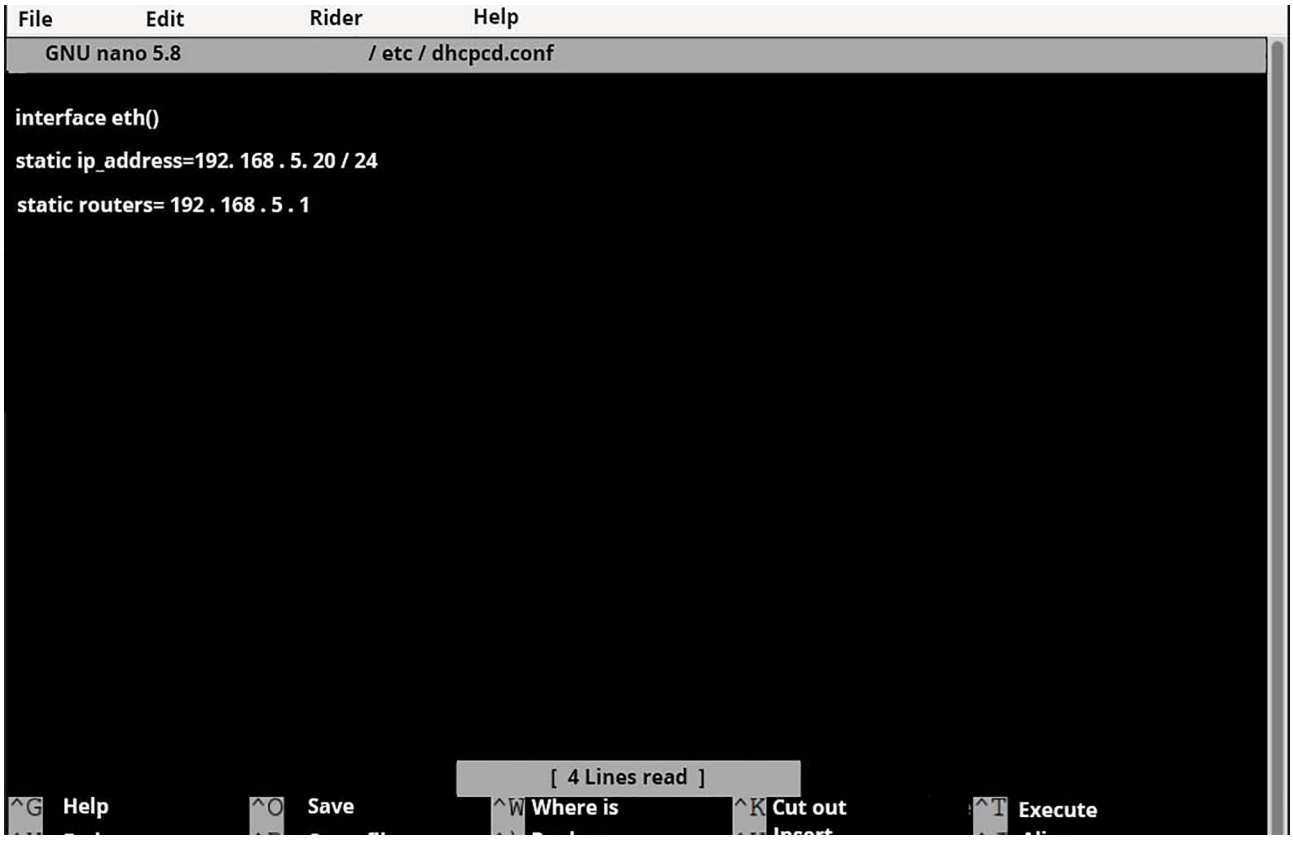


Figure 8: Changing CPC IP address

The IP address you want should be entered in the line "static ip_address=". Use the "Ctrl" + "x" key combination to exit the editor. As you exit, you will be asked whether you want to save the changes. Confirm this by entering a "y" (in the German version: "j").

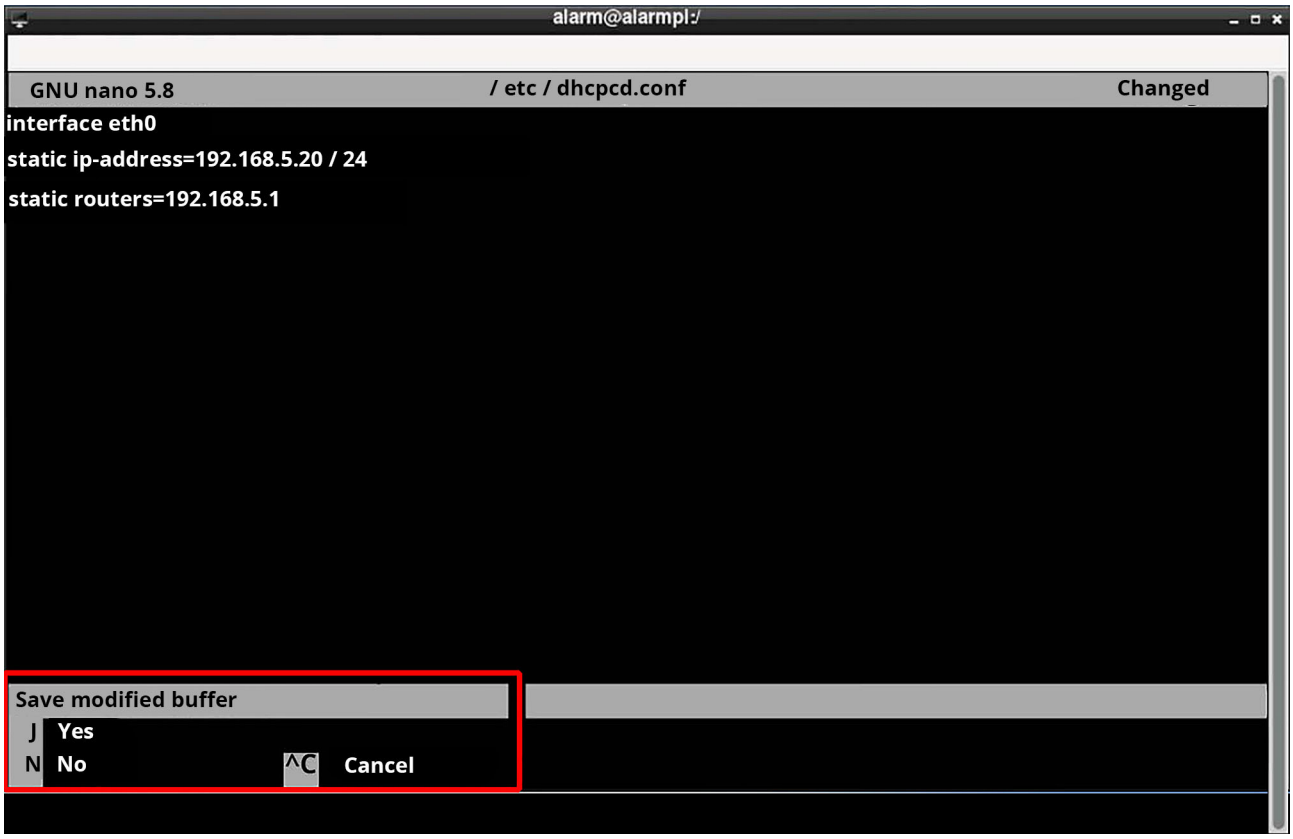


Figure 9: CPC saving the IP settings when exiting the editor

The console window can be closed using the “exit” command or by clicking on the “x” in the top right.

The Wireless Professional CPC now has to be restarted for the changes to be adopted. This can be done using the “Reboot” link on the desktop or by going to “Logout > Reboot” in the start menu.

Figure 10: CPC start menu "Logout"

The link closes the Wireless Professional software if it is still running. The Wireless Professional CPC is now powered down and restarted. When powering down, the remote connection is automatically interrupted.

7 Changing Standard Gateway

To change the gateway's IP address, proceed as described in Section 6, only the "static routers=" line is changed and the IP address of the gateway entered here instead.

8 Changing CPC System Language

To change the system language, you will need to launch a remote connection with the CPC.

If the Wireless Professional software is running in full-screen mode, this should be exited by pressing the "Alt" + "Enter" key combination or via the **Toggle Fullscreen ("Kiosk mode")** menu item, which can be accessed from the Help button in the banner. See Figure 5: Exiting Wireless Professional CPC full-screen mode.

The "LXTerminal" console program should be launched from the Wireless Professional CPC start menu (bottom left in the Linux task bar; the LXTerminal program can be found under the "System tools" menu item).

The command line "sudo /home/alarm/scripts/set_language.sh "xx_XX .UTF-8 UTF-8"" is entered and confirmed with **Enter**. Once confirmed, the script to change the system language is run. The script file must be run with the corresponding country code in the file name for the desired language, see table below.

!Important: the expression "xx_XX .UTF-8 UTF-8" must be in inverted commas!

Language	Country code	Expression
German	de_DE	sudo /home/alarm/scripts/set_language.sh "de_DE .UTF-8 UTF-8"
English	en_US	sudo /home/alarm/ scripts /set_language.sh "en_US .UTF-8 UTF-8"
Swedish	sv_SE	sudo /home/alarm/ scripts /set_language.sh "sv_SE .UTF-8 UTF-8"

Once the script file has been run, the CPC must be restarted in order for the new language to be adopted.

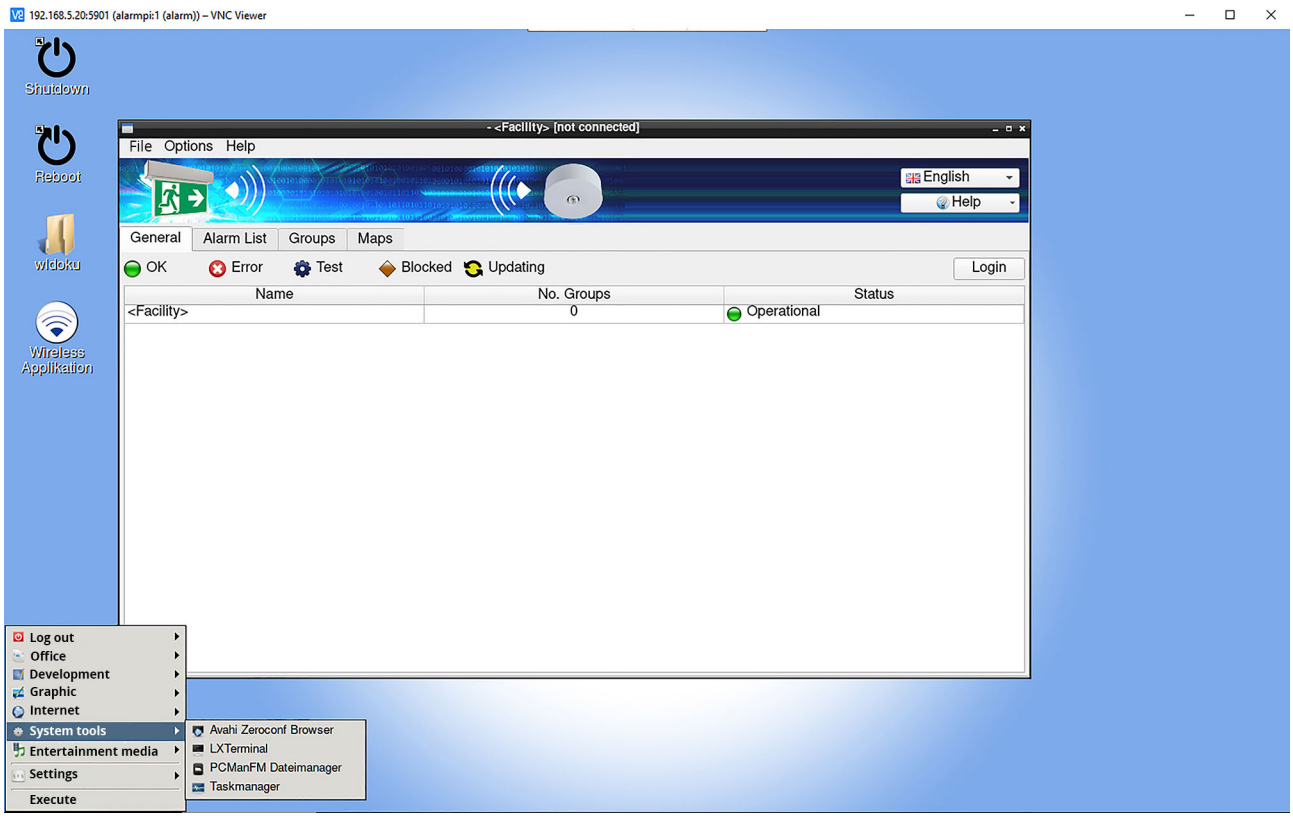


Figure 11: Selecting terminal program

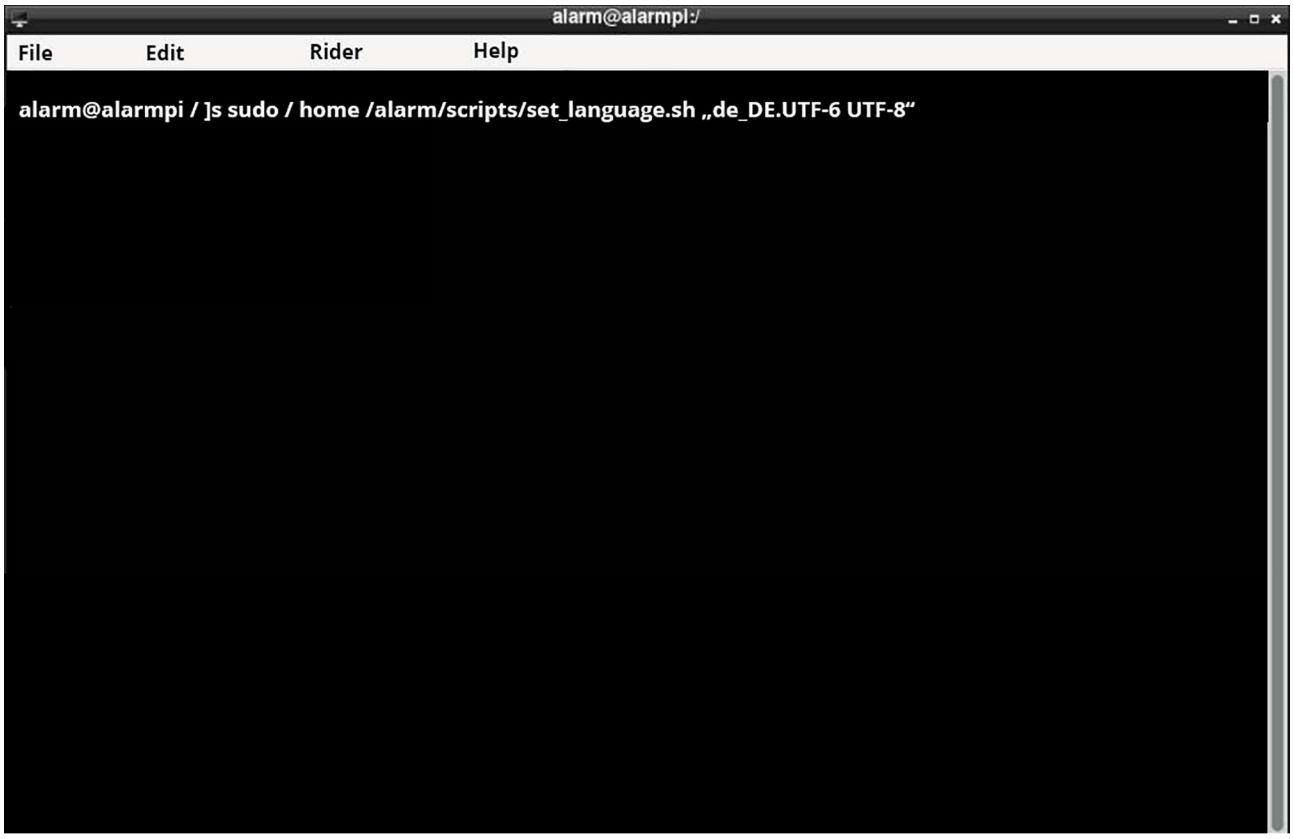


Figure 12: Entering command line

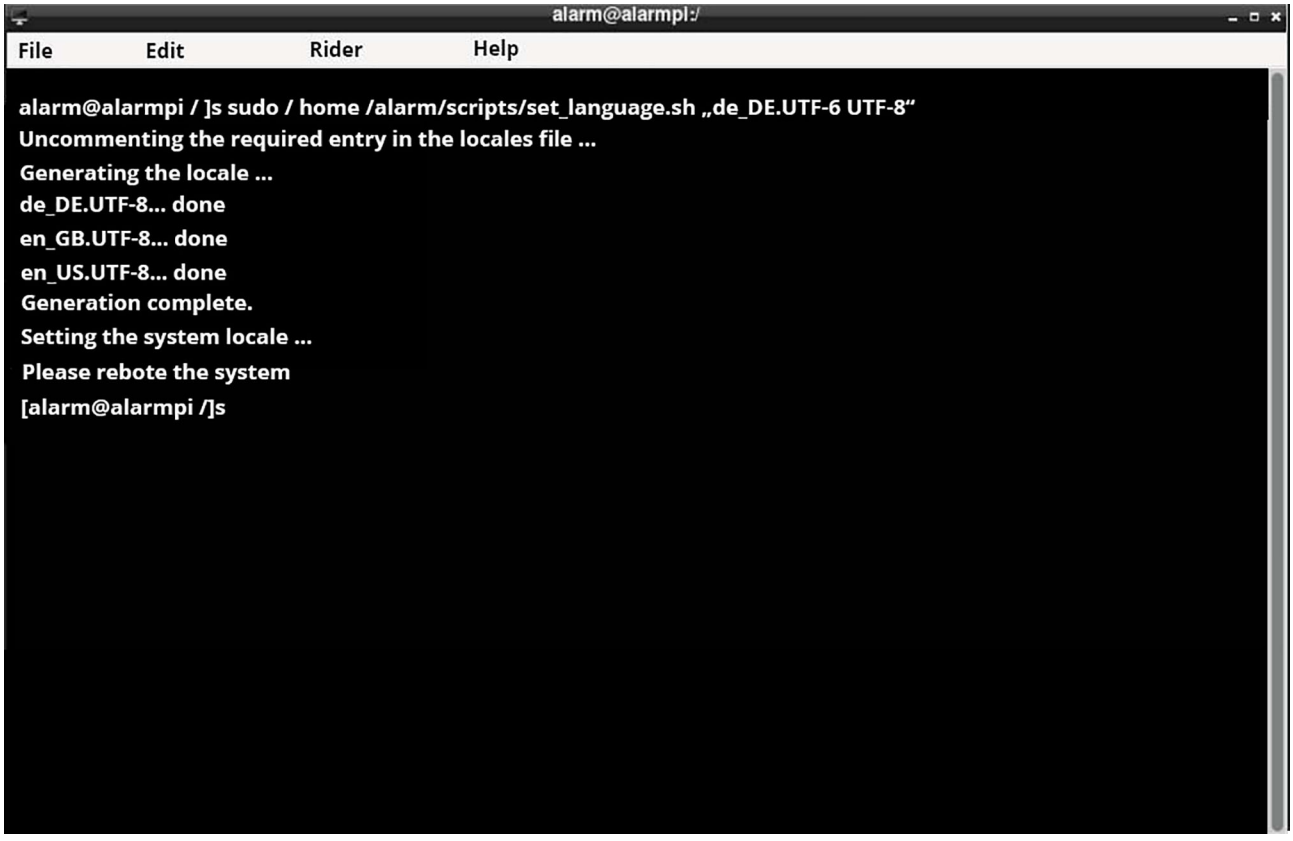


Figure 13: Language changed

9 Setting Wireless Professional CPC Date and Time

To change the setting for date and time, you will need to launch a remote connection with the CPC.

If the Wireless Professional software is running in full-screen mode, this should be exited by pressing the "Alt" + "Enter" key combination or via the **Toggle Fullscreen ("Kiosk mode")** menu item, which can be accessed from the Help button in the banner. See Figure 5: Exiting Wireless Professional CPC full-screen mode

The "LXTerminal" console program should be launched from the Wireless Professional CPC start menu (bottom left in the Linux task bar; the LXTerminal program can be found under the "System tools" menu item).

The command line "sudo hwclock --systohc" is entered and confirmed with **Enter**. The command line "sudo hwclock –set –date="dd/mm/yyyy HH:MM:SS" then has to be entered and you should replace the "dd/mm/yyyy HH:MM:SS" expression with the current date and time.

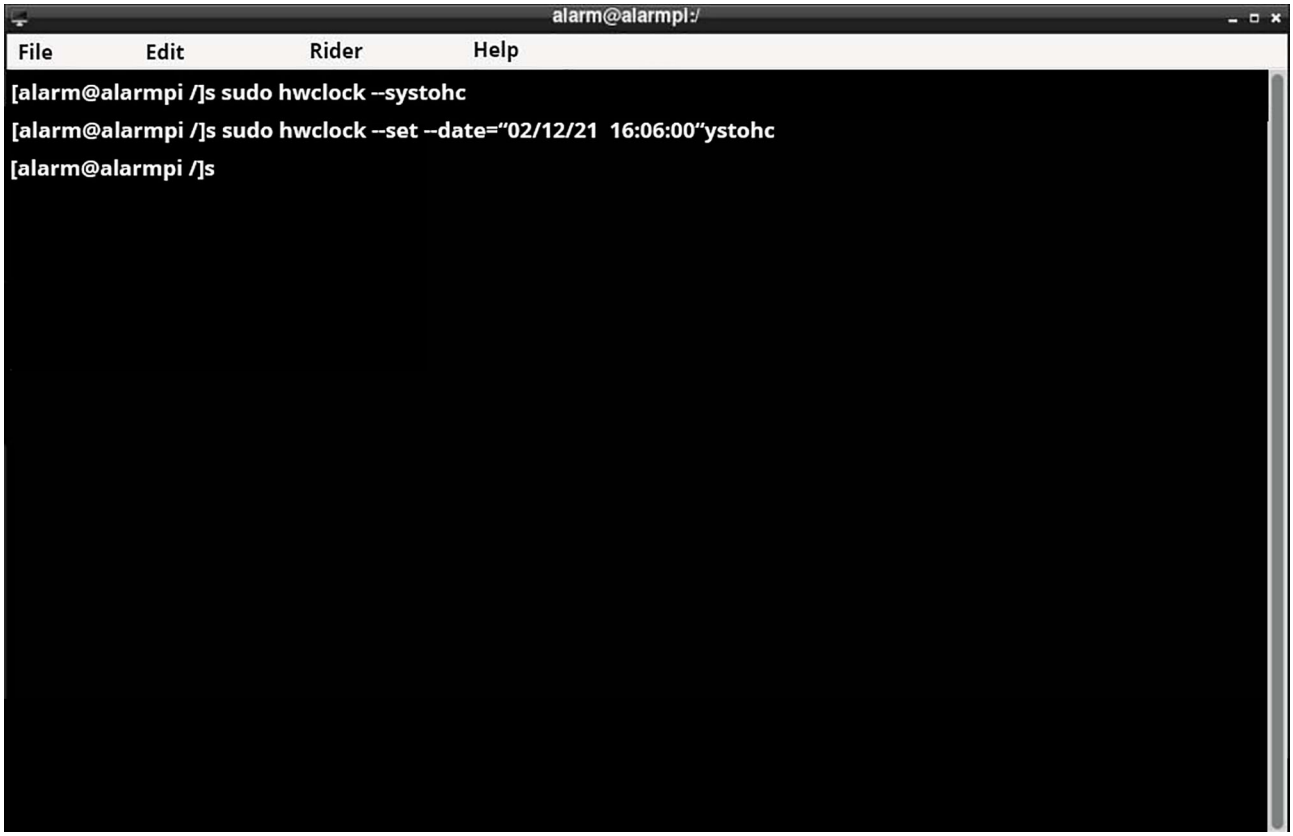


Figure 14: Setting new date and time

In this example, 02/12/2021 is set as the date and 16:06:00 as the time.

10 Wireless Professional Backup

10.1 Backup via USB stick (directly on device)

A backup of the Wireless Professional CPC can be produced directly on the device using a special backup USB stick, which is available as an accessory. This type of backup is recommended because it is fully automatic. The process involves creating a log file and configuration files for the operating system are backed up at the same time.

The backup is fully automatic. All you need is headphones or a loudspeaker with a 3.5mm jack in order to hear the audio signals which are emitted during the backup process to indicate the backup status.

The headphones should be plugged in before the backup USB stick. As soon as the operating system detects a backup USB stick, a sound is output to indicate detection (two chimes).

During the backup, the Wireless Professional CPC emits a recurring sound (fading base tone).

Once the backup is complete, the Wireless Professional CPC emits a recurring melody comprising 3 tones in succession. The sound only stops once the backup USB stick is removed from the Wireless Professional CPC.

Should an error occur meaning that it is not possible for a backup to be copied onto the backup USB stick, an error sound is emitted repeatedly (high-pitched tone).

Once the operating system detects that the backup USB stick has been removed, a sound is emitted to indicate that this is the case.

A separate folder is created on the backup USB stick for each backup. The folder has the IP address of the device, followed by the date and time of the backup, as its name.

Name	Änderungsdatum	Typ	Größe
192.168.5.20_2021-02-09-15_54_57	09.02.2021 15:55	Dateiordner	
192.168.5.20_2021-07-20-13_15_11	20.07.2021 14:15	Dateiordner	
192.168.5.20_2021-07-28-14_42_41	28.07.2021 15:42	Dateiordner	
192.168.5.20_2021-07-28-15_15_11	28.07.2021 16:15	Dateiordner	
192.168.5.20_2021-08-26-10_36_01	26.08.2021 11:36	Dateiordner	
192.168.5.20_2021-10-04-15_21_01	04.10.2021 16:21	Dateiordner	
backupDriveID	29.04.2021 17:18	Datei	1 KB

Figure 15: Backup folder on a backup USB stick

Name	Änderungsdatum	Typ	Größe
data	09.02.2021 15:55	Dateiordner	
ip	09.02.2021 15:55	Dateiordner	
locales	09.02.2021 15:55	Dateiordner	
logs	09.02.2021 15:55	Dateiordner	
maps	09.02.2021 15:55	Dateiordner	
vnc	09.02.2021 15:55	Dateiordner	
wldoku	09.02.2021 15:55	Dateiordner	
Version	09.02.2021 15:55	Datei	1 KB

Figure 16: Contents of a backup folder

In addition to the Wireless Professional reference data and log files, the backup also contains operating system parameters.

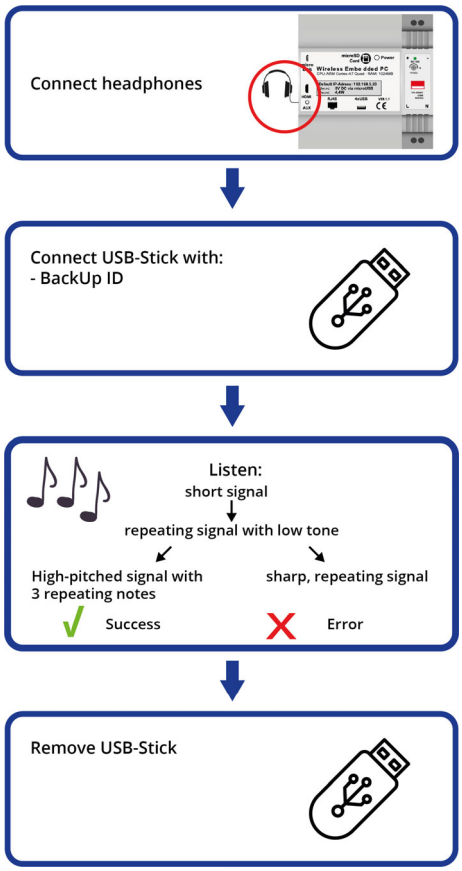


Figure 17: Schematic diagram of the backup process

11 Restoring Backup Data

Backup data is restored to the Wireless Professional CPC using a special recovery USB stick, which is also available as an accessory. Restoration with the recovery USB stick is fully automatic and restores not just the Wireless Professional reference data and log files but also the configuration files of the operating system.

11.1 Restoring Backups on a Backup USB Stick

You will need the following to restore data:

- a recovery USB stick
- a backup, which was produced with a backup USB stick
- headphones with 3.5mm jack
- a PC or other device, which can be used to copy data from the backup USB stick to the recovery USB stick

The backup data, which has been backed up using a backup USB stick, must be transferred to the recovery USB stick. This can be done using a Windows PC, for example.

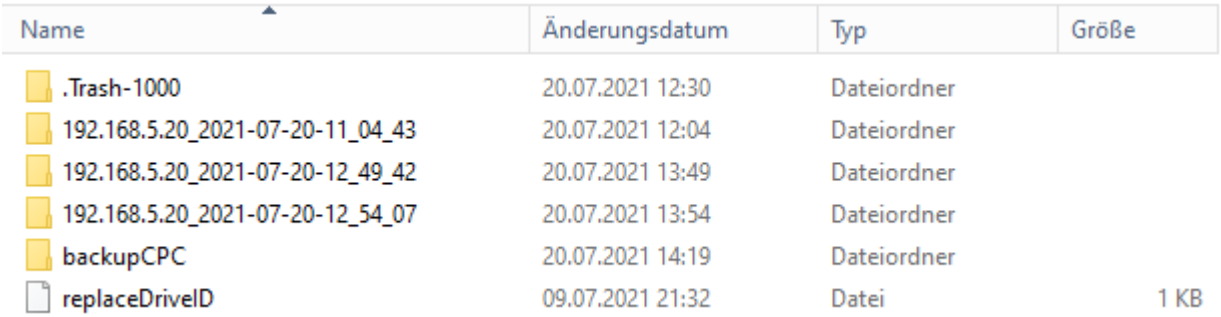


Figure 18: Recovery USB stick with backup folders

The contents of a backup folder (see Figure 16: Contents of a backup folder) must be copied into the “backupCPC” folder. Once the data has been copied into the folder, the recovery USB stick is removed from the device.

Important: The “backupCPC” folder must not be renamed or moved!

The headphones are now connected to the Wireless Professional CPC. Once this has been done, the recovery USB stick is plugged into a free USB port. As soon as the operating system detects a backup USB stick, a sound is output to indicate detection (two chimes).

During recovery, the Wireless Professional CPC emits a recurring sound (fading base tone).

Once recovery is complete, the Wireless Professional CPC emits a recurring melody comprising three tones in succession. The sound only stops once the recovery USB stick is removed from the device.

Should an error occur meaning that recovery is not possible, an error sound is emitted. A log file is created in the folder /home/alarm/scripts/logs on the Wireless Professional CPC and may be useful in finding the cause of the problem.

Once the operating system detects that the recovery USB stick has been removed, a sound is emitted to indicate that this is the case. Once the recovery USB stick has been removed, Wireless Professional CPC automatically runs a reboot to read in the changed data.

For checking purposes, we recommend checking that restoration has been successful by establishing a VNC connection to the device and checking the data.

11.2 Restoring Backups not Created using a Backup USB Stick

We no longer recommend this kind of recovery because it has proven to be very prone to mistakes. If you are not able to recover data using the method described in the “Wireless Professional Software Update” chapter, we would recommend contacting a service partner.

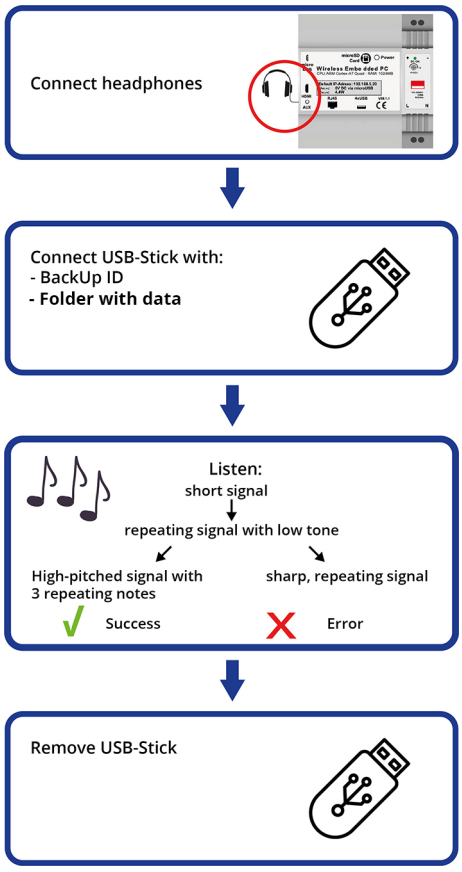


Figure 19: Schematic diagram of the restoration process

12 Wireless Professional Software Update

The operating system installed on the Wireless Professional CPC and the Wireless Professional software must be matched to one another. The operating system is therefore updated along with the Wireless Professional software.

12.1 Updating to Release 2.3 or Higher Versions

If the operating system and Wireless Professional application are to be updated on an existing Wireless Professional CPC, the following tools are needed:

1. headphones with 3.5mm jack
2. an SD card reader with USB port
3. an SD card which has had the Wireless Professional 2.3 CPC image loaded onto it

It is essential that the SD card is changed when updating the Wireless Professional software to version 2.3. A manual Linux update and a manual update of the Wireless Professional software are not possible.

To undertake the update, proceed as follows:

1. Establish a VNC connection with the Wireless Professional CPC
2. Close the Wireless Professional application
3. Close the VNC connection with the Wireless Professional CPC
4. Disconnect the Wireless Professional CPC from the power supply
5. Remove the existing SD card from the SD card slot
6. Insert new SD card (release 2.3 of the Wireless Professional application) into the SD card slot
7. Connect headphones with the Wireless Professional CPC
8. Restore the Wireless Professional CPC's power supply
9. At the end of the booting process, the Wireless Professional CPC emits a sound
10. Plug old SD card into card reader
11. Plug card reader into a free USB socket
12. The Wireless Professional CPC emits a sound when the card reader has been recognised
13. The SD card is read and the Wireless Professional reference data and log files are copied automatically as are the Linux configuration files. While the files are being read and copied, the Wireless Professional CPC emits a sound (fading base tone).
14. Once the process is complete, the Wireless Professional CPC emits a recurring melody comprising three tones. The sound only stops once the backup USB stick is removed from the device.
15. Disconnect card reader from USB port. Successful disconnection is indicated by a sound.
16. The Wireless Professional CPC now automatically runs a reboot to apply the changed configuration files. After the reboot, the device can be connected under the same static IP address as before the SD card change.
17. Establish a VNC connection with the Wireless Professional CPC
18. Check Wireless Professional-settings (these should not have changed)

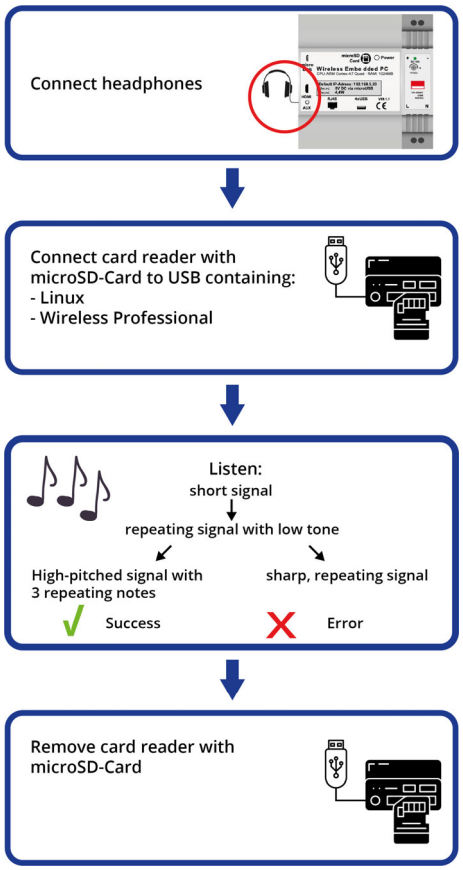


Figure 20: Schematic diagram of the software update

13 Remote Facilities

You access the **Remote Facilities** view by selecting the **Remote Facilities** tab in the **Installation** view.
In addition to its own devices, the Wireless Professional software can also monitor a Wireless Professional control centre connected via Ethernet.

Note: Ensure that the paths to the VNC Client and web browser are stated correctly.

Note: We would recommend Chromium as the web browser. Midori and Firefox are also available.

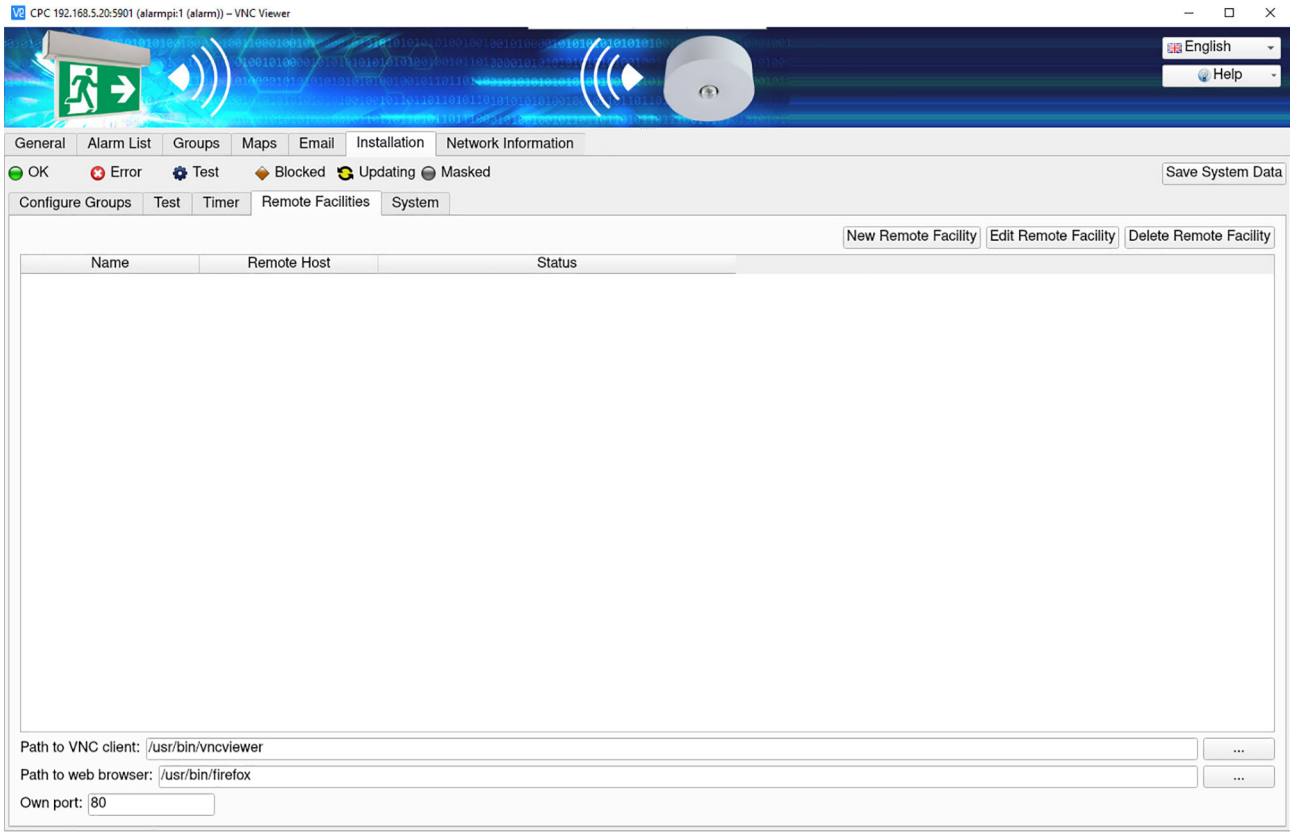


Figure 21: Remote Facilities view, installer user level

The New Remote Facility button opens the window for configuring networked systems.

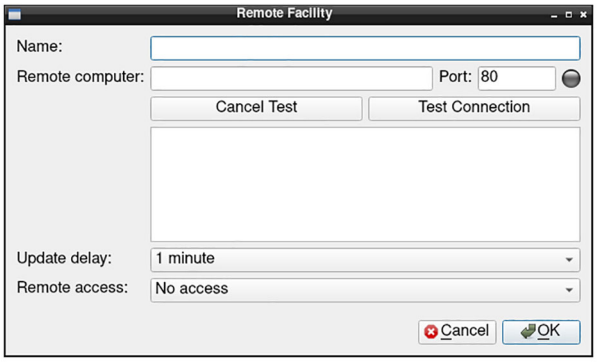


Figure 22: Input box for remote facility

Enter any name for the system you want to monitor (for example: WLTOUCH 1st floor). In the "Remote computer" box, enter the IP address or device name of the system in question. Then select the Test Connection button to test the connection to it.

Once the connection to the system you want to monitor is established successfully (), configure the update delay. This is used to set how often data from the remote system is queried. You can choose between 10 seconds, 1 minute and 10 minutes.
When VNC access is activated, you can establish a direct connection with the system in question and operate it using remote control by double-clicking or tapping on it twice. For the remote connection, you will need:

- the TigerVNC server to be running on the device you want to monitor
- TigerVNC Viewer to be installed (pre-installed) on the device you want to monitor

Once all the configurations are complete, confirm with OK.

Note: A remote facility may be a system from the multiControl *plus* series (XML version 1) or a Wireless Professional system. The type of remote access can also be selected.

Figure 23: Connection test for remote facility

All the systems to be monitored are listed along with their name, IP address and status. The configuration menu of the system in question can be called up again and edited by selecting the Edit Remote Facility button. Systems highlighted accordingly can be removed from monitoring by selecting the Delete Remote Facility button.

The VNC Viewer's file path can be selected using the button in the bottom right. The VNC Viewer folder is located at /usr/bin/vncviewer by default. Select the vncviewer.exe file and click on Open. If the installation path differs from the default one, select the path accordingly.

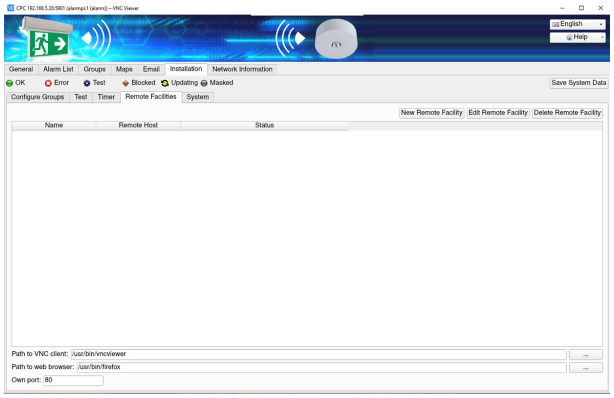


Figure 24: Overview of remote facilities

The number of systems which can be monitored is limited to 1 by default and can be extended by means of activation (see Section 5.15 in the Wireless Professional software manual).
For more information about extending the system, please contact your distributor.

In the **General** view, along with the main system you will now also see the systems to be monitored by the main system.

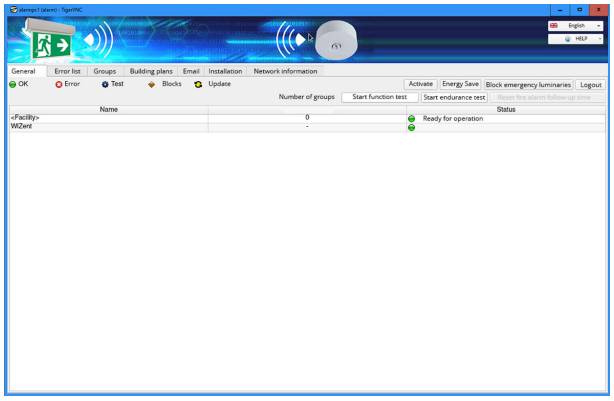


Figure 25: Monitoring remote facilities

Remote access to the system in question is established by double-clicking or tapping twice in the “No. Groups” or “Status” column of the respective system.

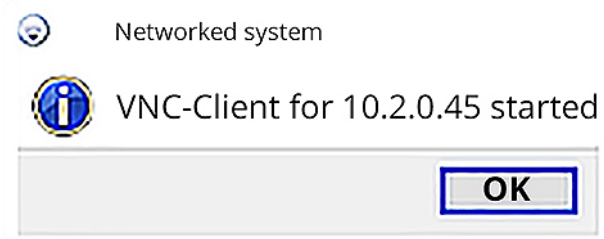


Figure 26: VNC Client started

When the password prompt appears, unless you have changed it, enter the default password “123456” and confirm with OK.

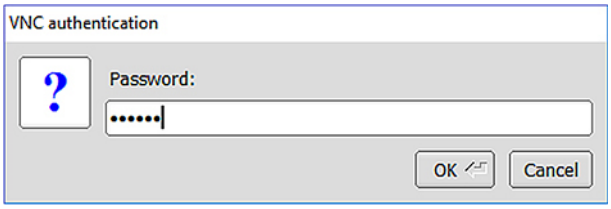


Figure 27: Entering password for VNC Client

You now have complete access to the remote system in the window now on screen.

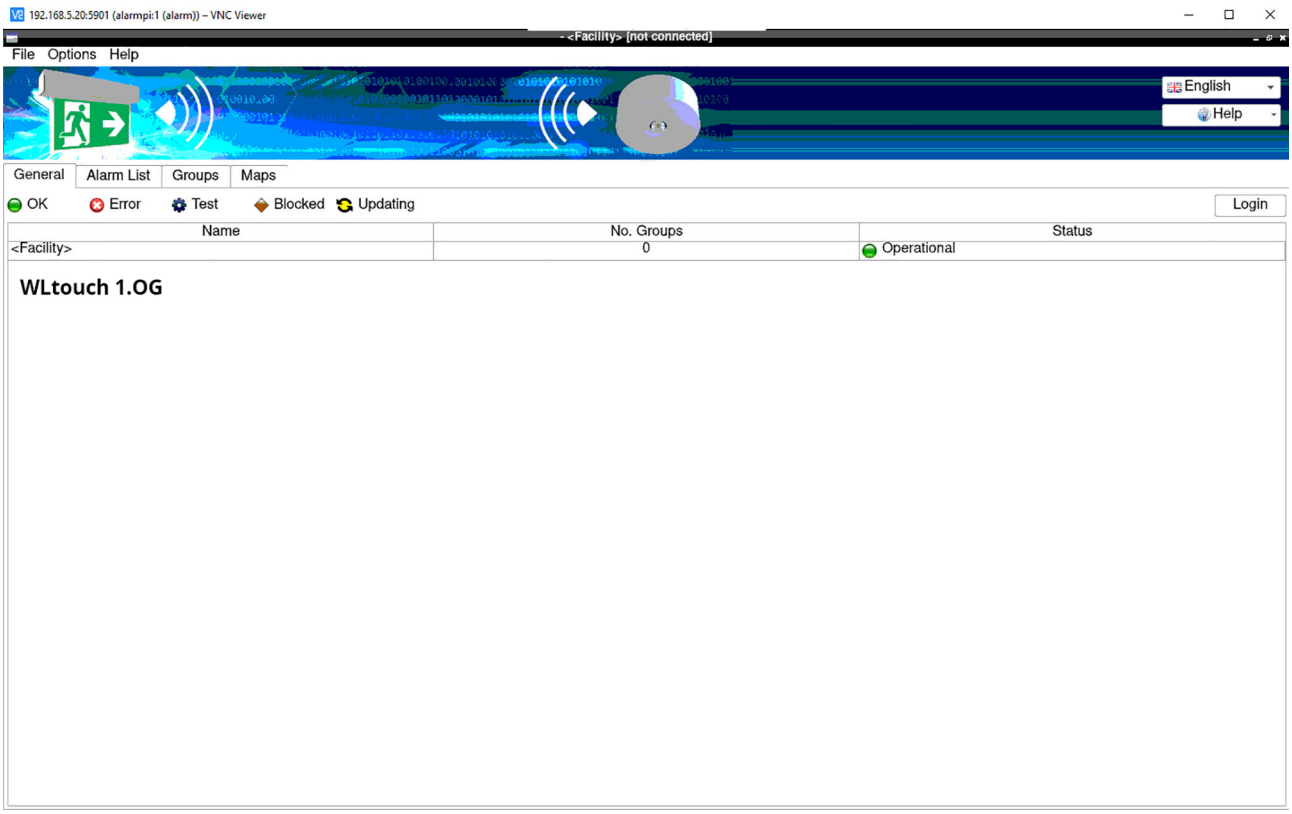


Figure 28: Access to remote facility

14 Wireless Professional Maps

To save a map on the Wireless Professional CPC, it must be copied into the CPC file system using an FTP program such as “WinSCP” or “FileZilla”.

In this example, the “WinSCP” program is used to explain how to store maps in the file system of a Wireless Professional CPC.

When “WinSCP” is launched, the registration window opens automatically.

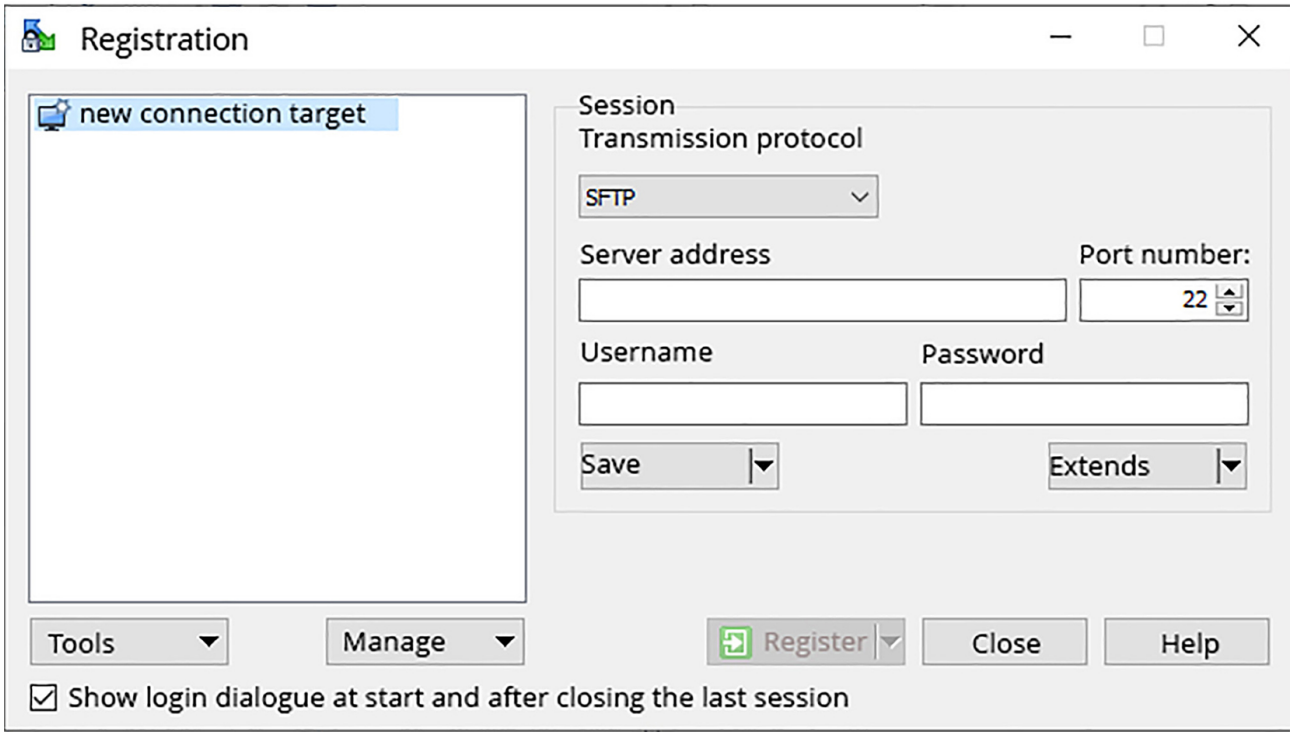


Figure 29: WinSCP registration window

The IP address of the Wireless Professional CPC on which maps are to be stored is entered in the “Server address” box. The value of 22 in the “Port number” box is not changed. “**root**” is entered in the “Username” box

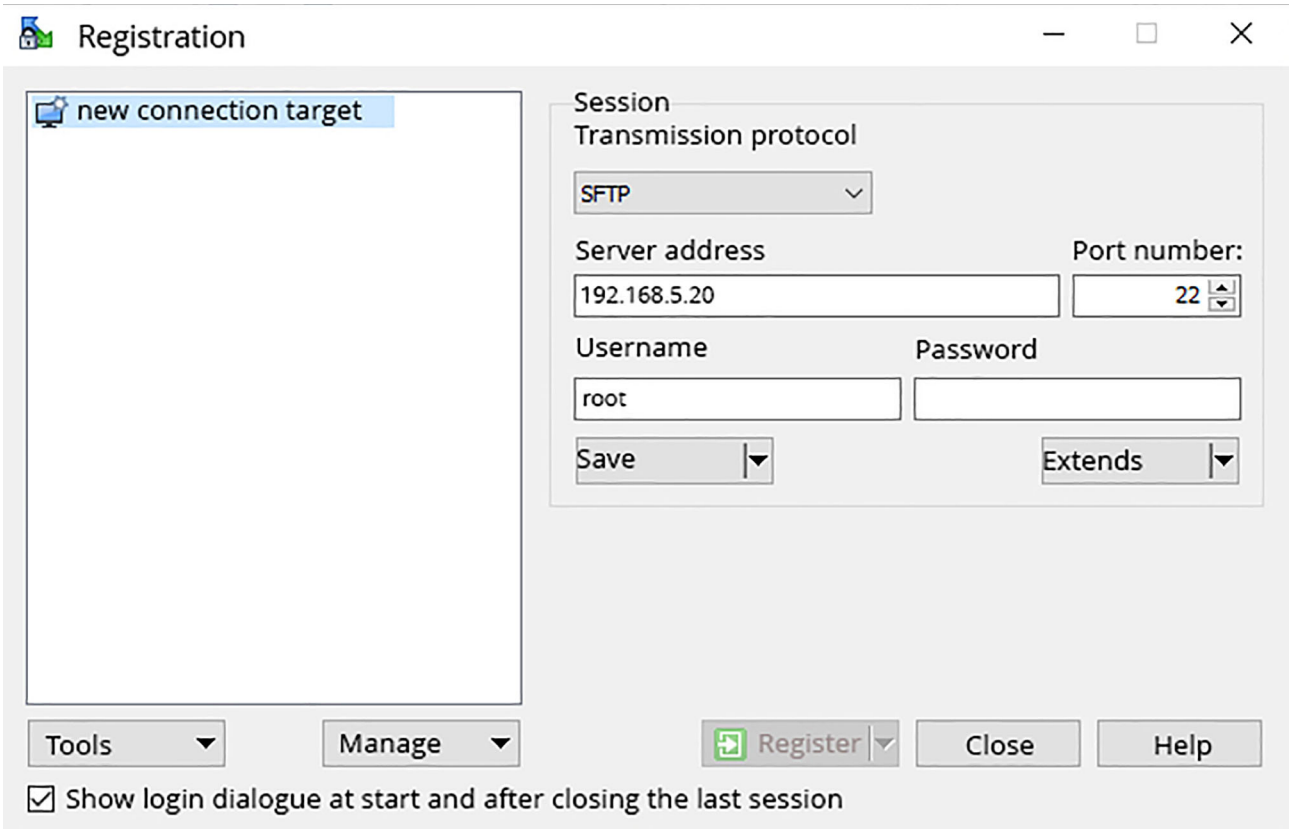


Figure 30: WinSCP with completed registration page

Once all boxes have been completed, a connection to the Wireless Professional CPC is established using the Register button. The Connection window then opens and a password has to be entered.

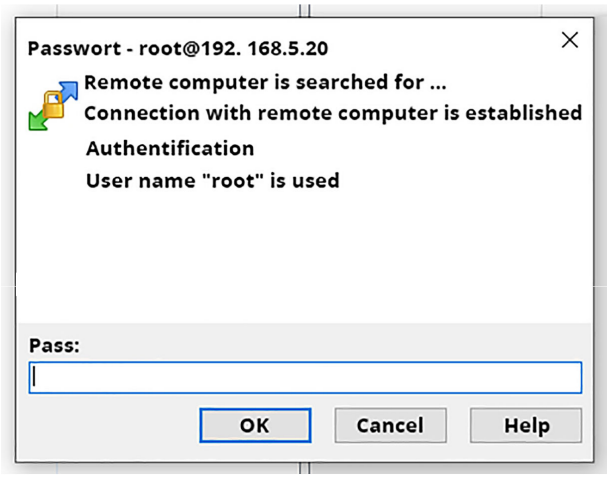


Figure 31: Connection window

The password "**root**" is entered in the "Pass" box and confirmed with the OK button

The transfer window is now displayed.

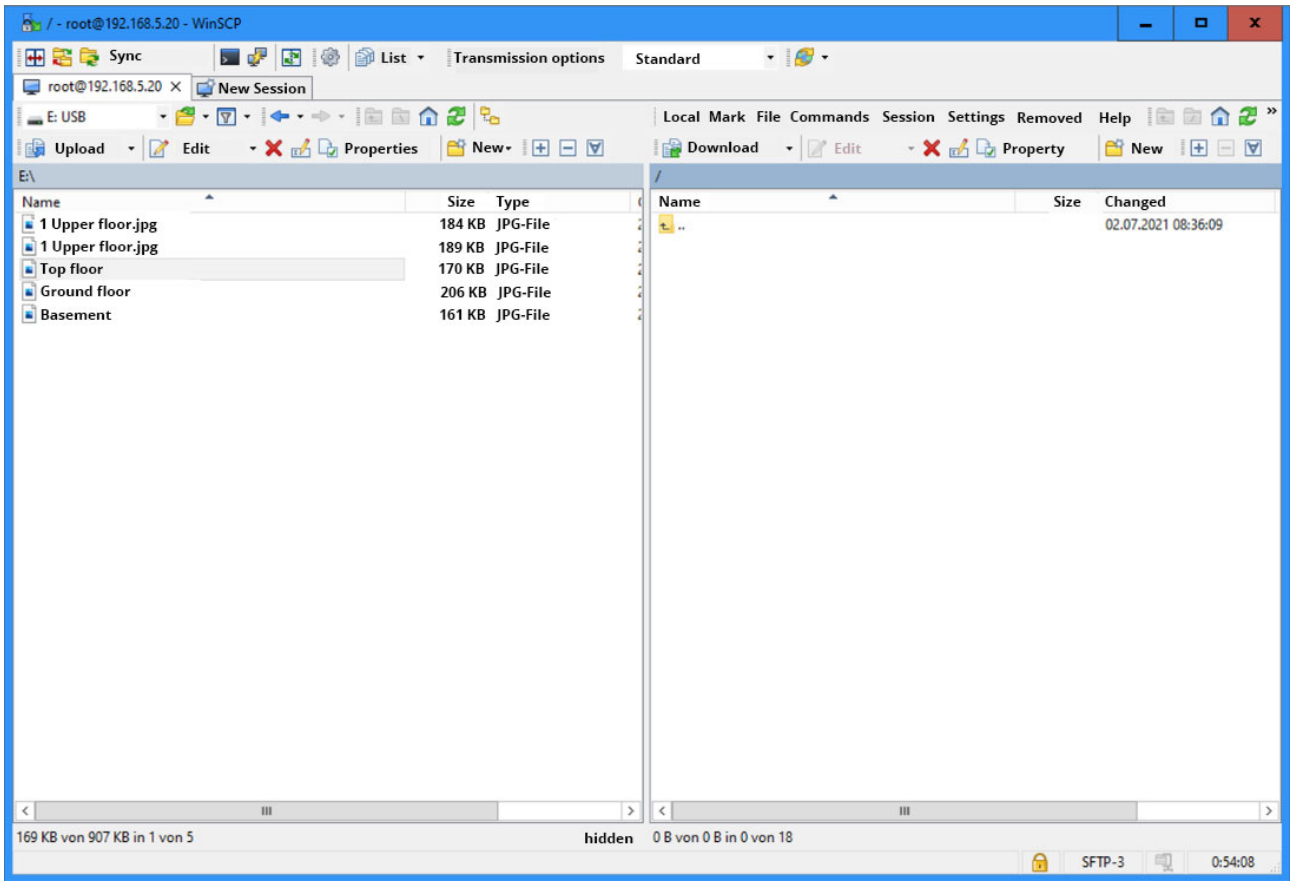


Figure 32: WinSCP transfer window

The file system of the device on which "WinSCP" is run is shown on the left-hand side. The file system of the Wireless Professional CPC is shown on the right-hand side.

In this example, a USB stick on which the map has been saved is selected on the left. The contents of the "/root" folder are shown on the right-hand side.

The maps should be located in the "**/home/alarm/maps"** folder because this is automatically backed up too during a backup with a backup USB stick.

To exit the "/root" folder, click on the folder icon with the arrow ( ) displayed in the folder.

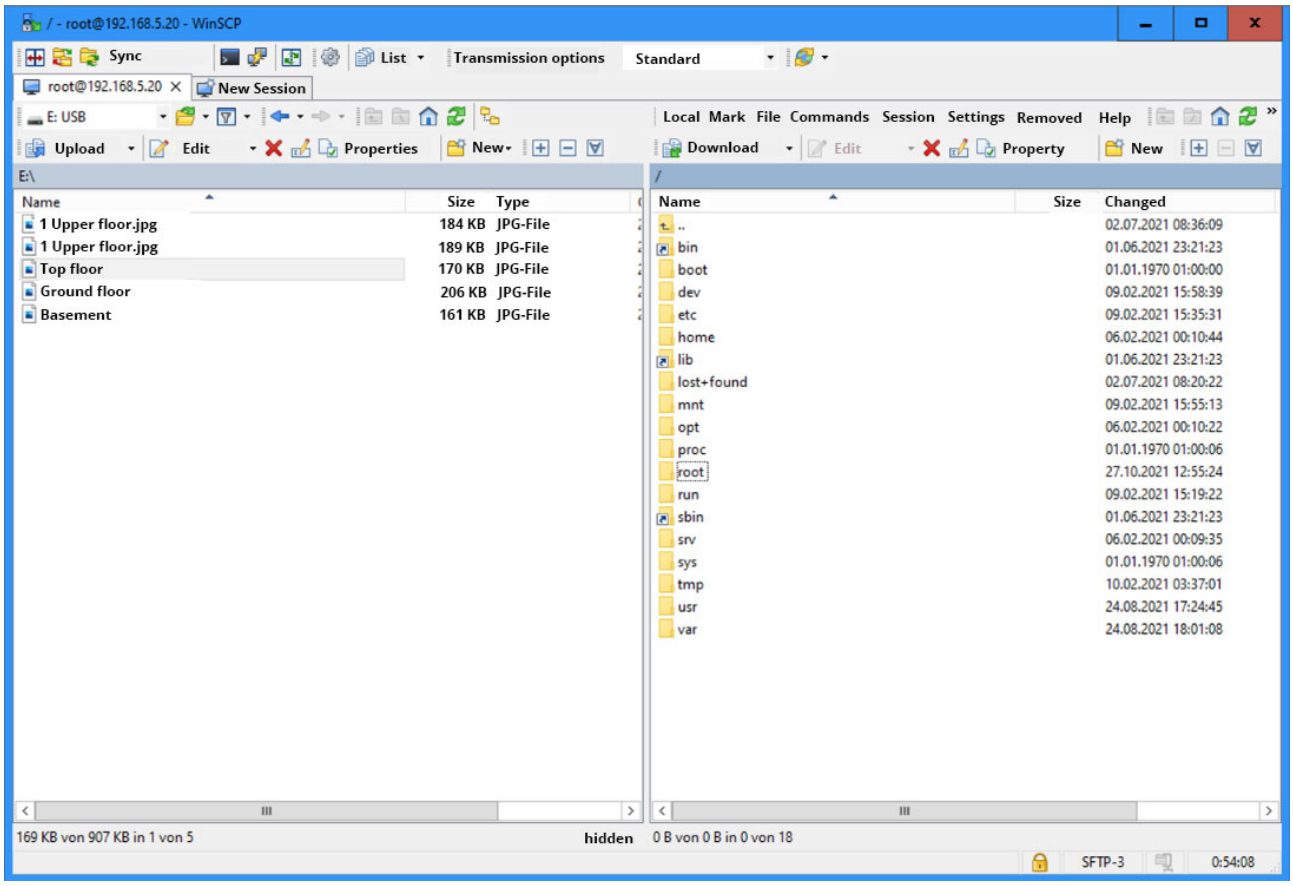


Figure 33: WinSCP overview of CPC file system

You can now select the "/home" folder and navigate to the aforementioned file path.

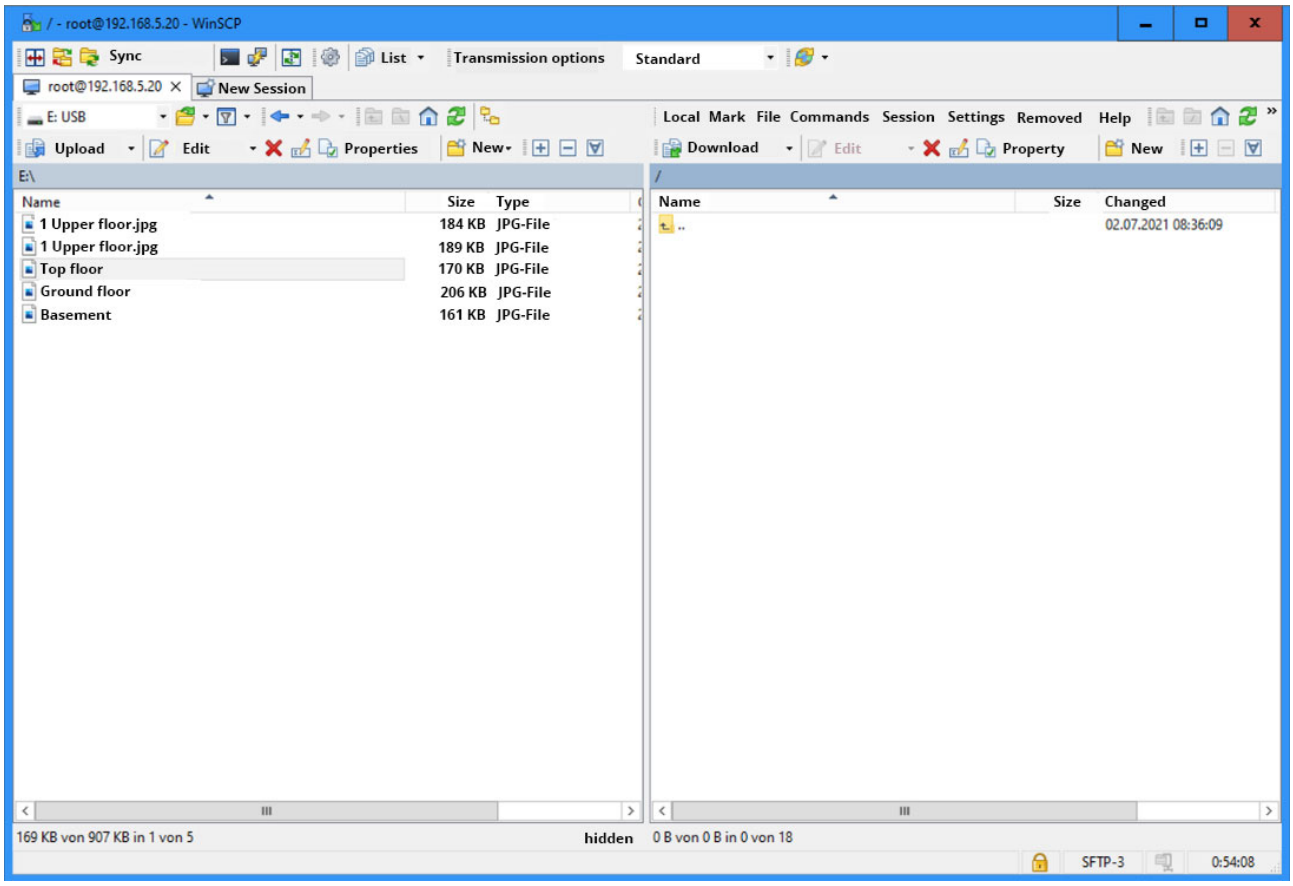


Figure 34: WinSCP overview of CPC file system

The files on the left-hand side can be individually moved to the right by means of drag&drop or can be copied to the CPC using the Upload button. Several files can also be highlighted and transferred to the CPC. Refer to the operating instructions for the operating system on the computer on which “WinSCP” is run for details of how to highlight files.

If the files are copied using drag&drop , there is no prompt for input.

Warning: Please note that together all maps should not take up more than 50MB of memory space. Each individual map must not be any bigger than 100 mega pixels.

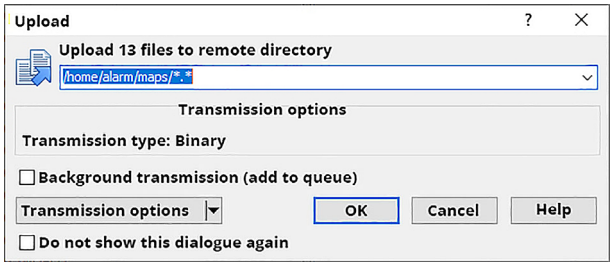


Figure 35: WinSCP upload window

If you use the Upload button, the upload must be confirmed with OK.

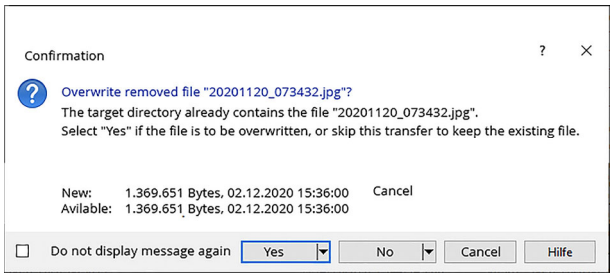


Figure 36: WinSCP overwriting existing file

If files of the same name already exist on the CPC, these may be overwritten or the process may be aborted.

15 FAQ

15.1 Timer/device detail windows are displayed so big that they can no longer be used

Windows on the VNC Client device are displayed so big that they cannot be used because the buttons are no longer displayed, for example.

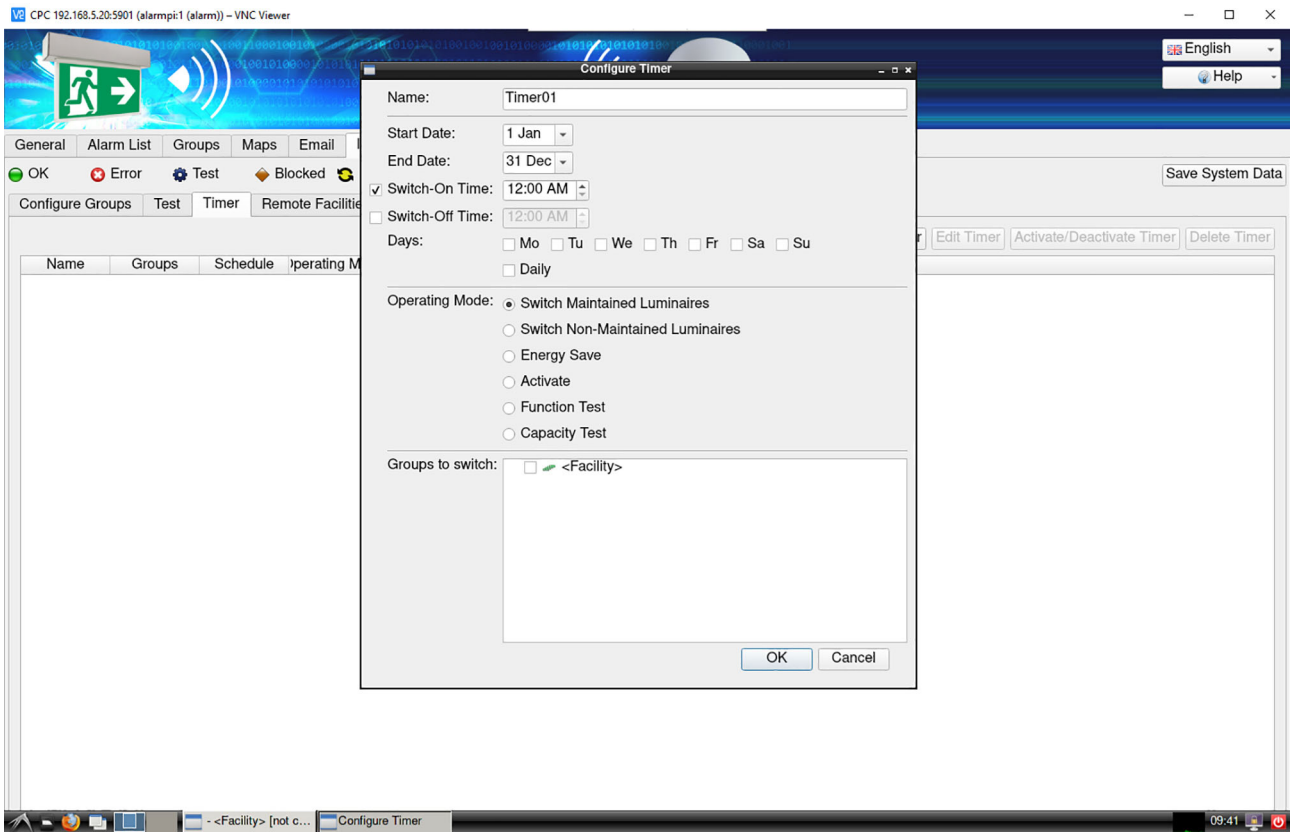


Figure 37: VNC Client showing timer window with concealed buttons

This display is not an error in the CPC but is due to how things are displayed on the client system. The Windows screen scaling has been set too high (125% or more). The problem can be remedied by reducing the scaling factor.

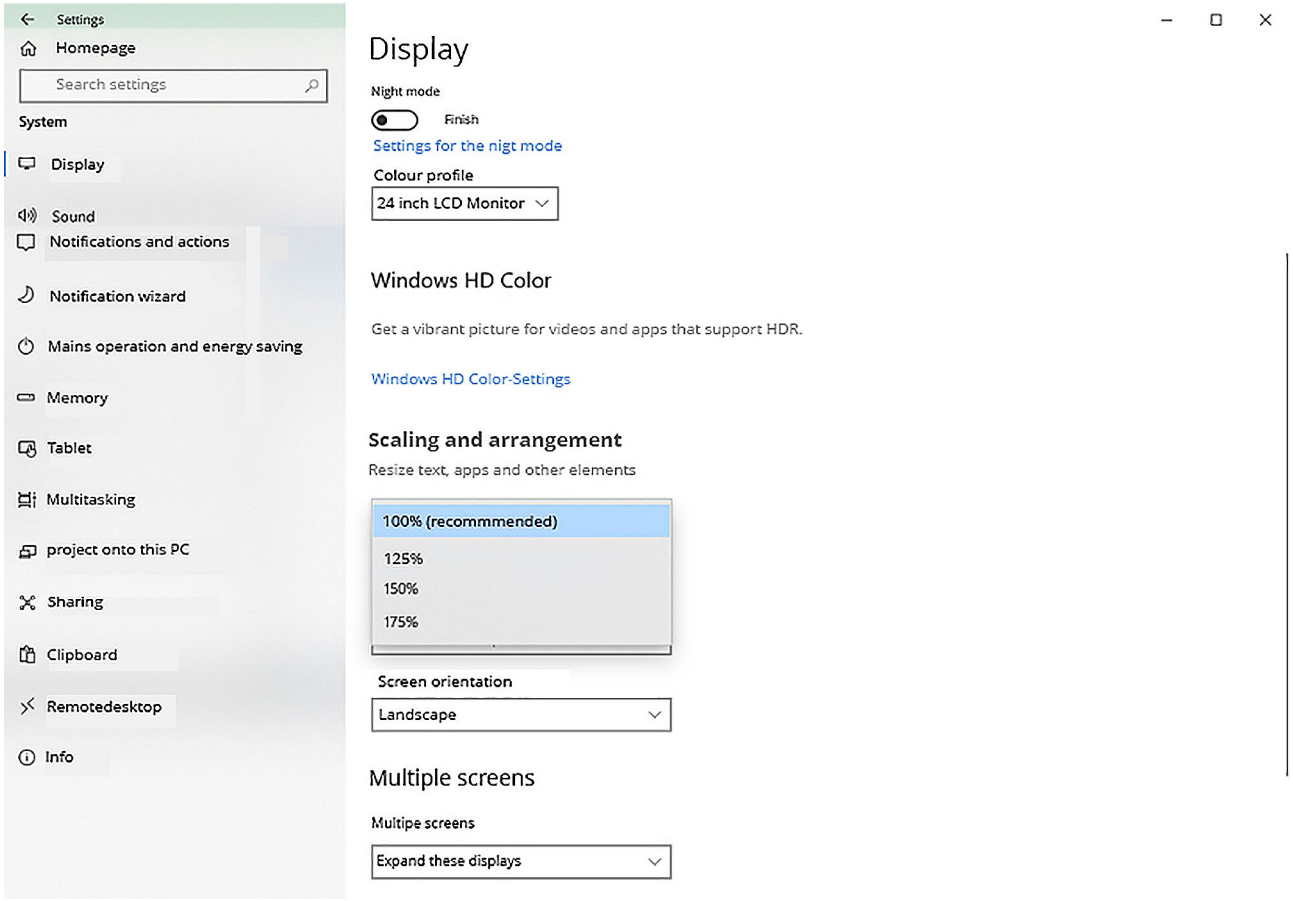


Figure 38: Adjusting screen scaling

The scaling should be adjusted in the Windows settings. The scaling is set in the **Display** menu item.

16 Revision History

WirelessControl – Installation and Software Operation		
Date	Software version/Revision	Comments/Important changes compared to the previous version
19/05/2016	1.0	Creation
23/01/2017	1.1	"Changing CPC System Language" added
24/04/2017	1.1.1	Corrections
18/05/2017	1.1.2	Connection diagram added
21/06/2018	1.2	"Remote facilities" section added
07/08/2019	1.2.1	Changes to connection diagram
03.12.2021	2.3	Backup & recovery via USB stick added, changes to content for software release 2.3

17 Contact Information

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