

Application description • 07/2015

Transmitting HMI data to an external monitor

SINUMERIK 828D, SW 4.5 SP3

Warranty and liability

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1 Accessing a SINUMERIK 828D

1.1 Remote maintenance

Using the "Remote diagnostics" function, you can access the SINUMERIK control system to be maintained from any location. Assuming that the control system is integrated in a network, remote maintenance can be carried out without any problem. There are various options of connecting external devices with SINUMERIK. This depends on the existing network structure. The easiest way of reading out data from a SINUMERIK control system is to connect the control with an external PC via an Ethernet cable.

VNC Viewer is used to access the SINUMERIK control system; this software must be installed on the PC being used. In the following, a connection is to be established between a SINUMERIK 828D control system and a commercially available notebook. Using the interfaces/ports available at the notebook (HDMI, VGA, etc.), the screen that is generated can be transferred to an external monitor.

Figure 1-1 Accessing a SINUMERIK 828D using UltraVNC Viewer



2 Using VNC software to access a SINUMERIK 828D

2.1 Overview

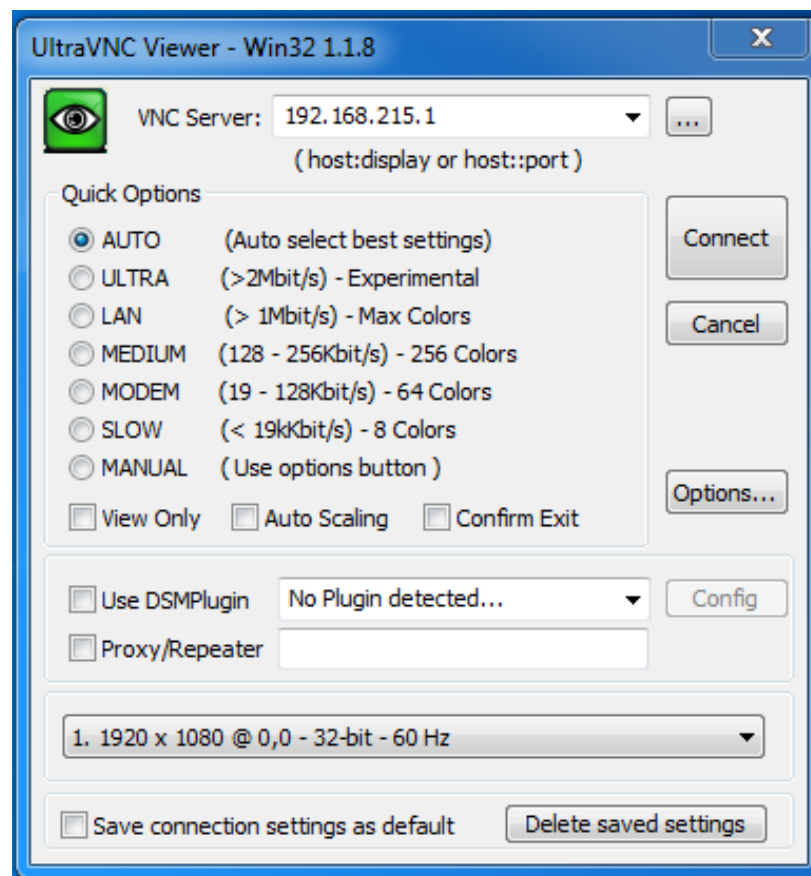
Virtual Network Computing (VNC) is a software that displays the screen contents of a remote computer (VNC server) on a local computer (VNC Viewer).

The keyboard and mouse movements of the local computer are sent to the remote computer. This means an operator at a remote computer can operate without having to be locally on site. A connection between VNC Viewer and the server makes sense in order to operate HMI applications, for example. This means that many services in the IT domain can be executed using the VNC protocol.

In order to be able to access a SINUMERIK control system, the control must be connected to the computer being used in a network. This is possible using a direct connection or via a TCP IP connection (via the Internet). The settings, which must be made at the SINUMERIK or at the computer being used in order to establish a basic connection between a SINUMERIK 828D and a notebook, are described step-by-step in the following.

Knowledge about setting up networks, configuring firewalls and setting up routers with NAT is not necessary in order to use the application.

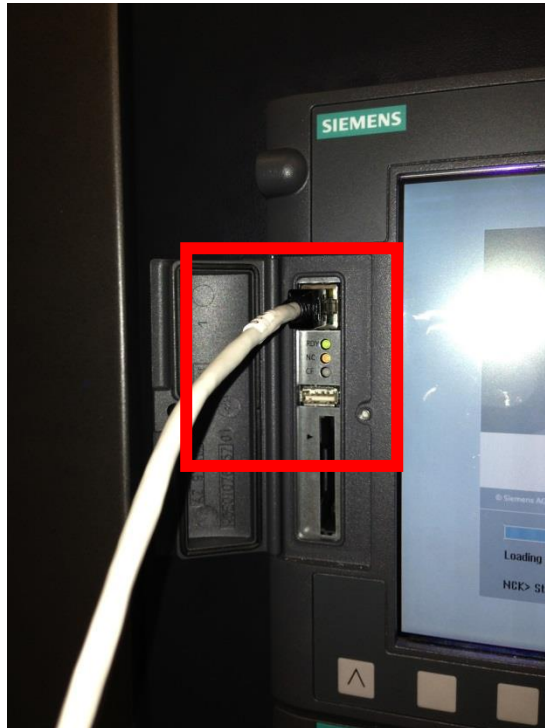
Figure 2-1 Login screen form of the UltraVNC Viewer



2.2 Settings at the SINUMERIK

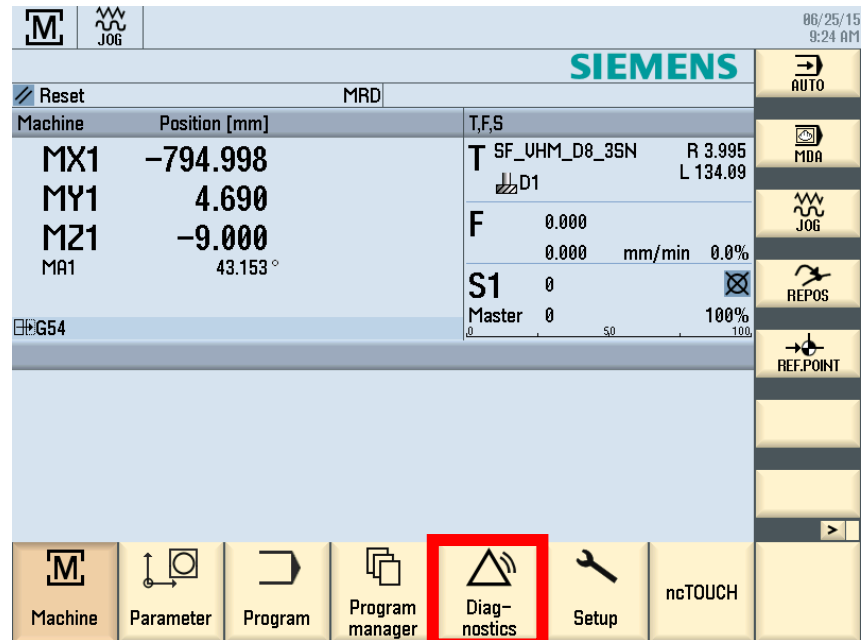
To establish a connection between a SINUMERIK and a computer, the following settings must be made at the SINUMERIK. The basic precondition is the physical connection between the computer and the control system. A network cable must be connected at the front of the SINUMERIK 828D at port X127.

Figure 2-1 Front view of a SINUMERIK 828D



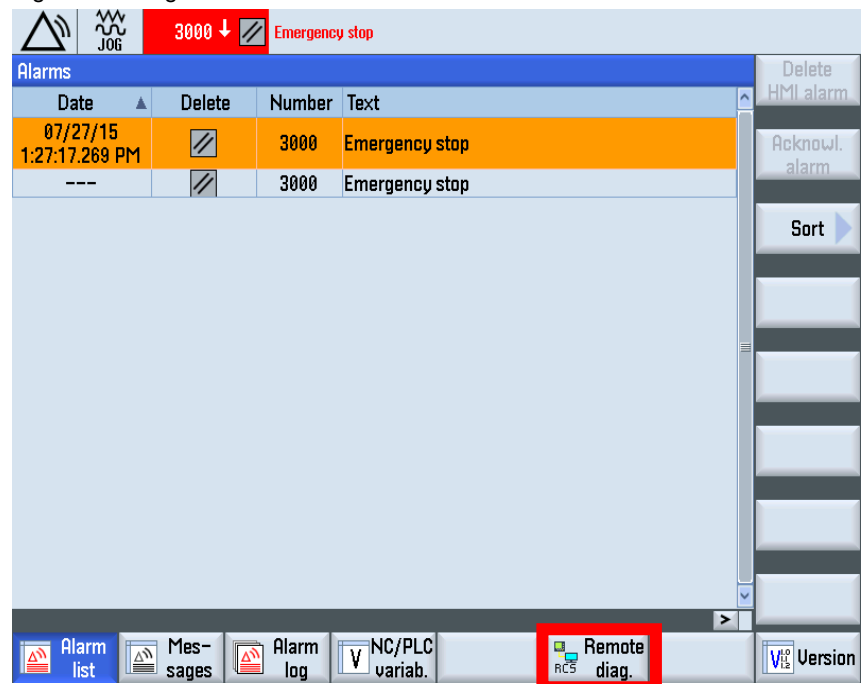
The navigation starts in the basic machine screen, where the "Diagnostics" softkey must be actuated.

Figure 2-2 Basic machine screen of the SINUMERIK



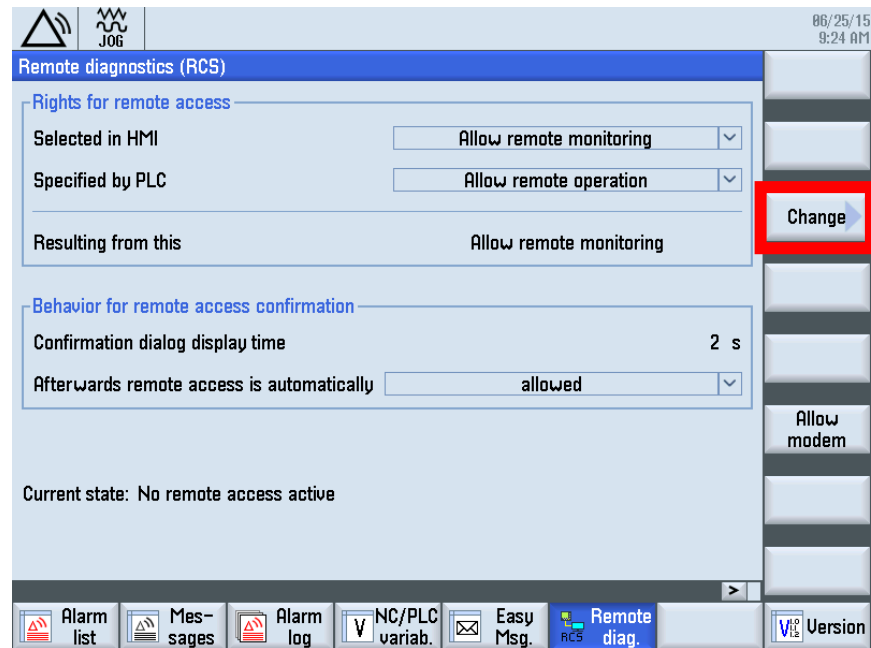
The operator then navigates to "Remote diagnostics".

Figure 2-3 Diagnostics menu in SINUMERIK



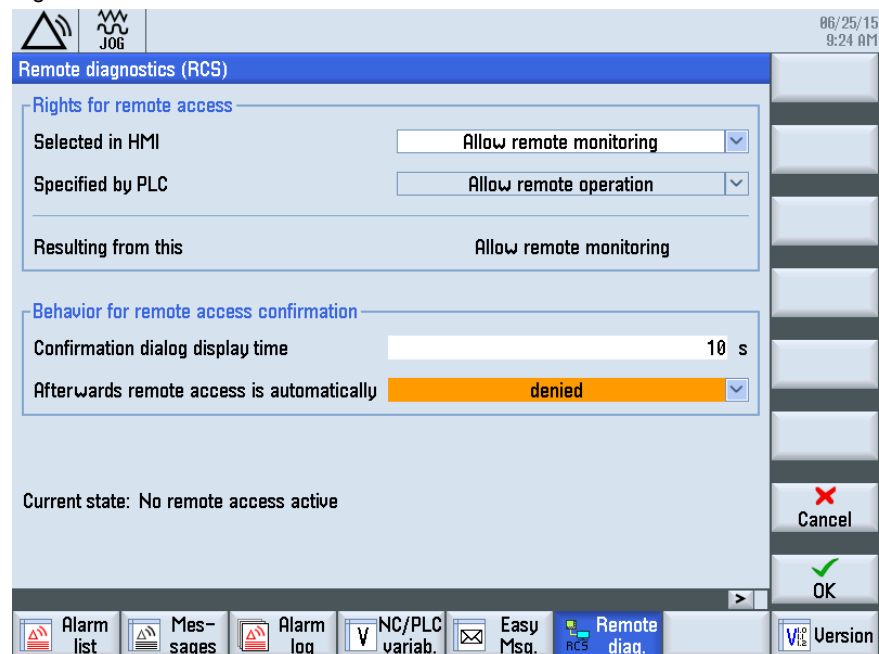
By actuating the "Change" softkey (Fig. 2-4), the rights relating to the remote access and the response when actuating remote access can be modified.

Figure 2-4 Remote diagnostics menu



The following settings can be accepted as shown in Figure 2-5. This is realized by actuating the "OK" softkey.

Figure 2-5 Remote maintenance menu



2.3 Settings at the computer

When remotely accessing a SINUMERIK from a PC, additional settings must be made at the PC. To do this, the properties of the LAN port (Fig 2-6) are opened. You can find these in the Windows start menu under Control Panel in the Network and Sharing Center. The TCP/IP properties of the Local Area Connection should be selected, and it must be ensured that the IP address is automatically retrieved (Fig. 2-7). The network cable should then be connected to port X127 of the PC.

Figure 2-6 Selecting the Internet Protocol

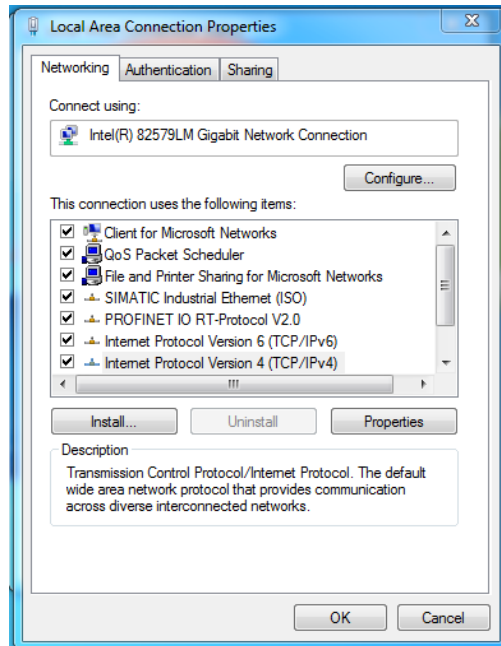
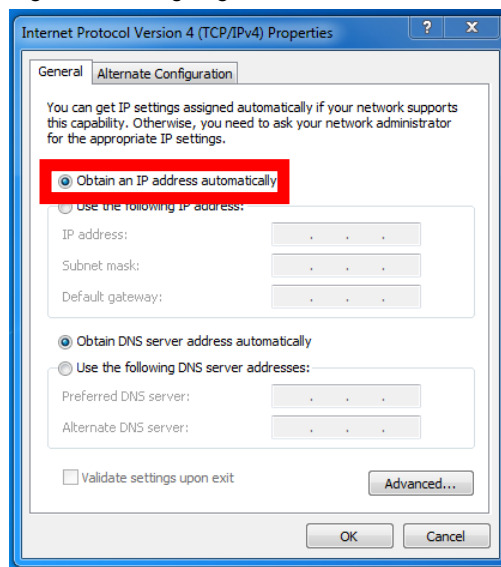
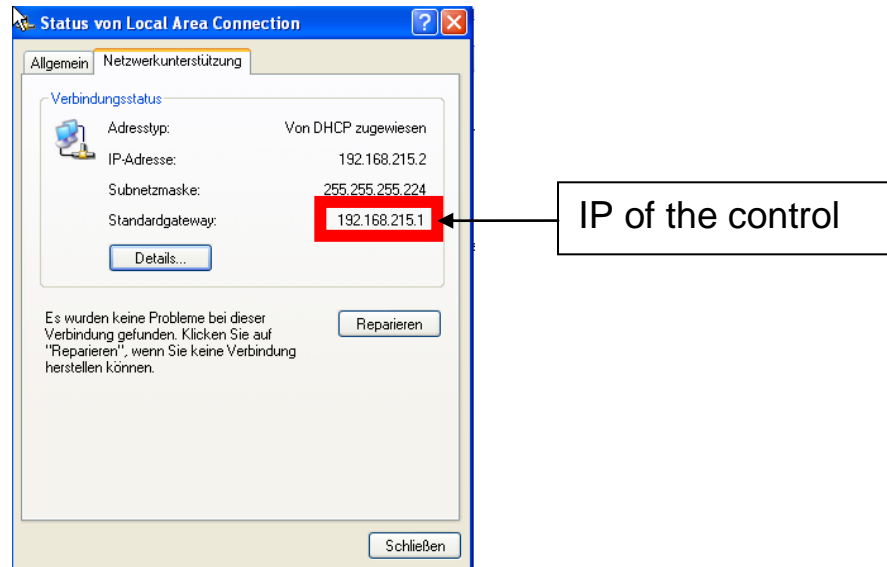


Figure 2-7 Assigning the IP address



You can see the status of the Local Area Connection Port under Network Support. The assigned IP address and the IP address of the control can be viewed.

Figure 2-8 Display of the connection status between PC and control

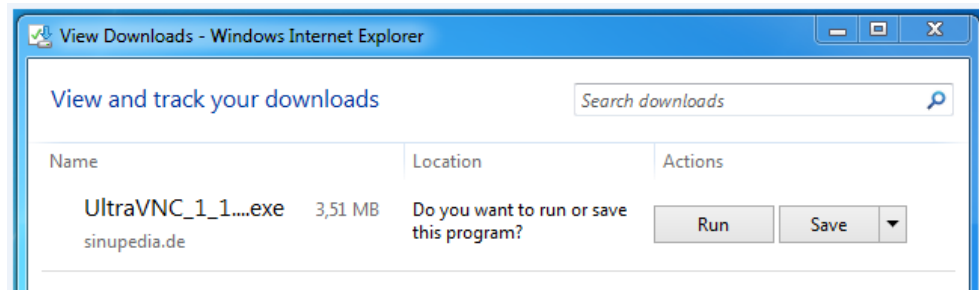


2.3.1 Installing the Ultra Viewer software

The UltraVNC Viewer software must be installed on the PC. The following diagrams 2-9 to 2-20 show the operator the installation, step-by-step. Two different versions (for windows 32 and 64 bit) of the UltraVNC Viewer are available through the Siemens "Sinupedia" Internet page.

- [UltraVNC Windows 32bit](#)
- [UltraVNC Windows 64bit](#)

Figure 2-9 Downloading the UltraVNC Viewer



After you have selected the language for the setup, installation is started by pressing the "OK" softkey (Fig. 2-10). The installation is menu prompted and provides the operator with the appropriate installation instructions.

Figure 2-10 Selecting the installation language

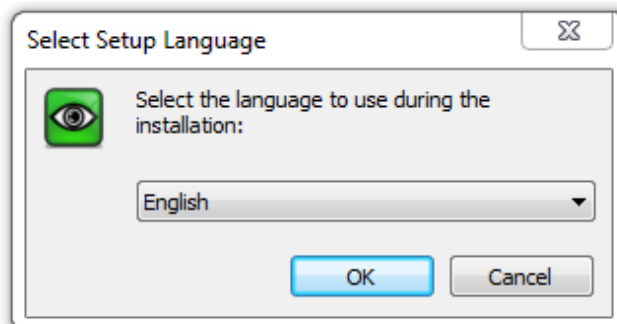


Figure 2-11 Setup Wizard for the UltraVNC Viewer

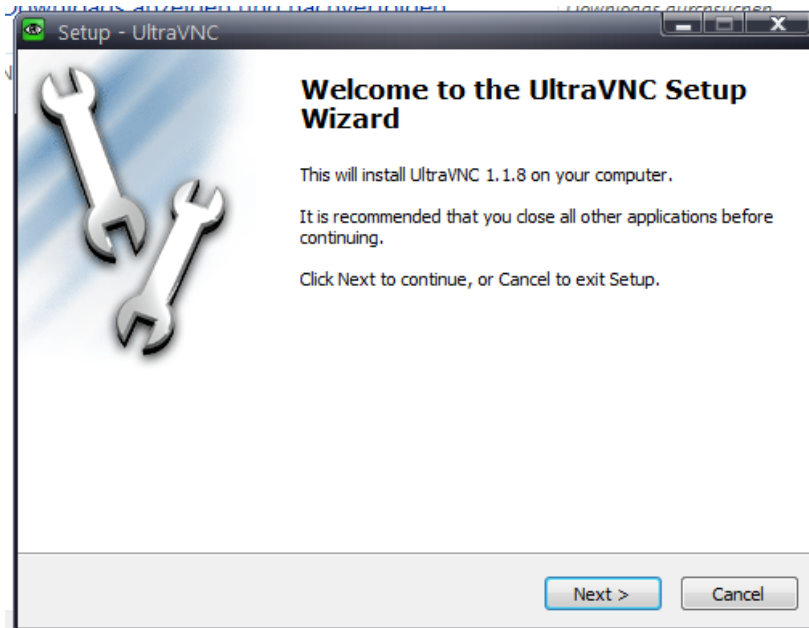


Figure 2-12 Accepting the license conditions

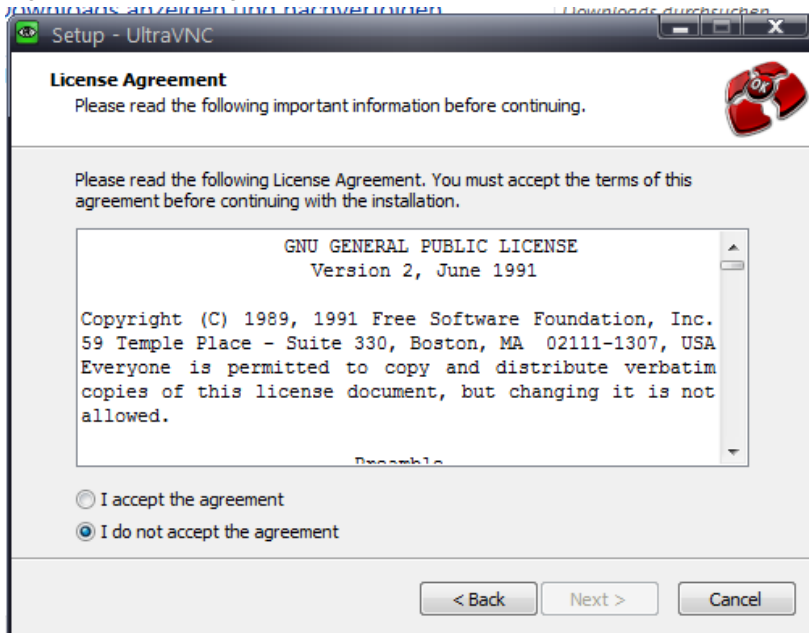


Figure 2-13 Information for installing the UltraVNC Viewer

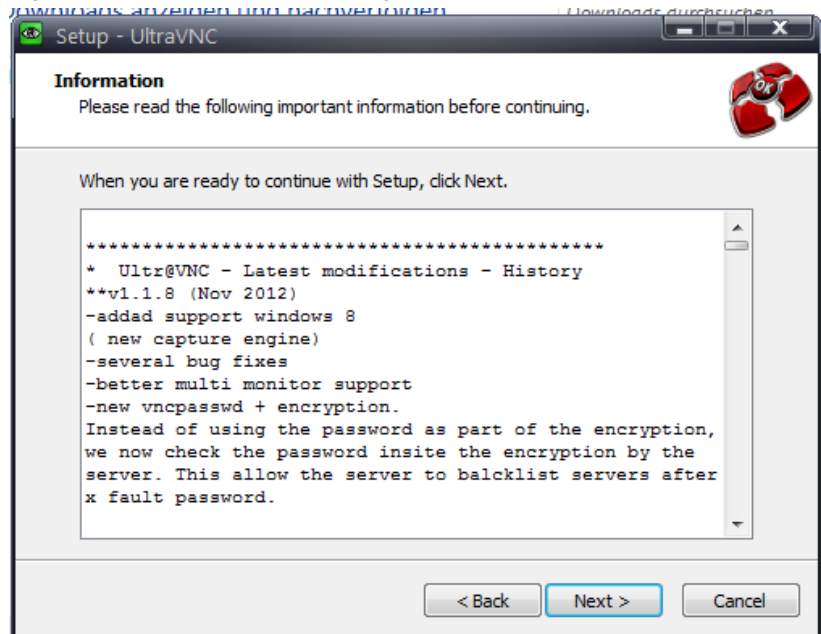


Figure 2-14 Selecting the target folder for the installation

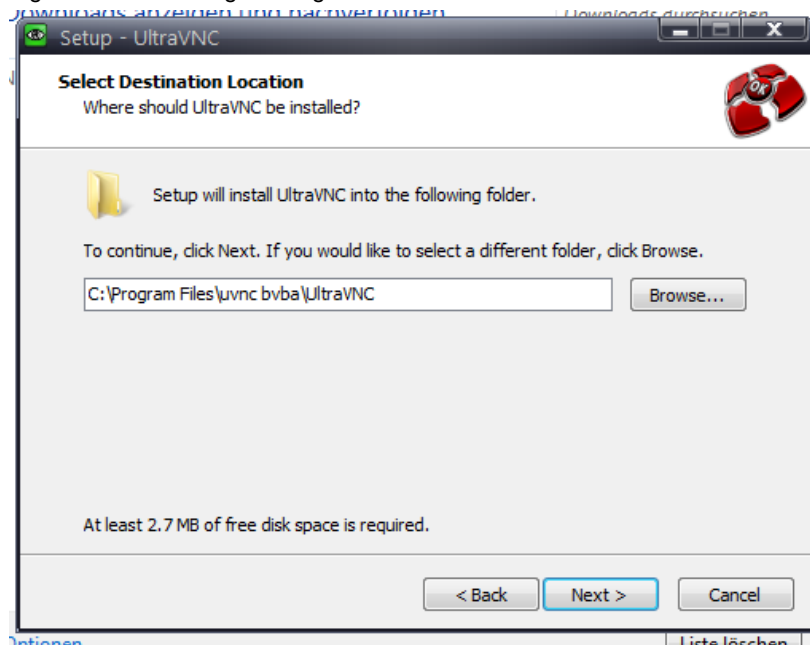


Figure 2-15 Selecting the components for installation

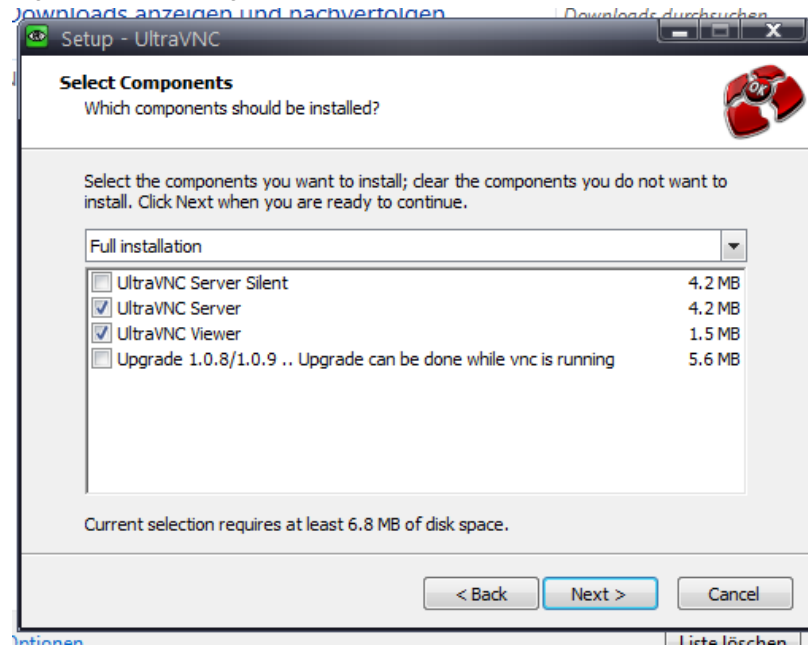


Figure 2-16 Creating the program link

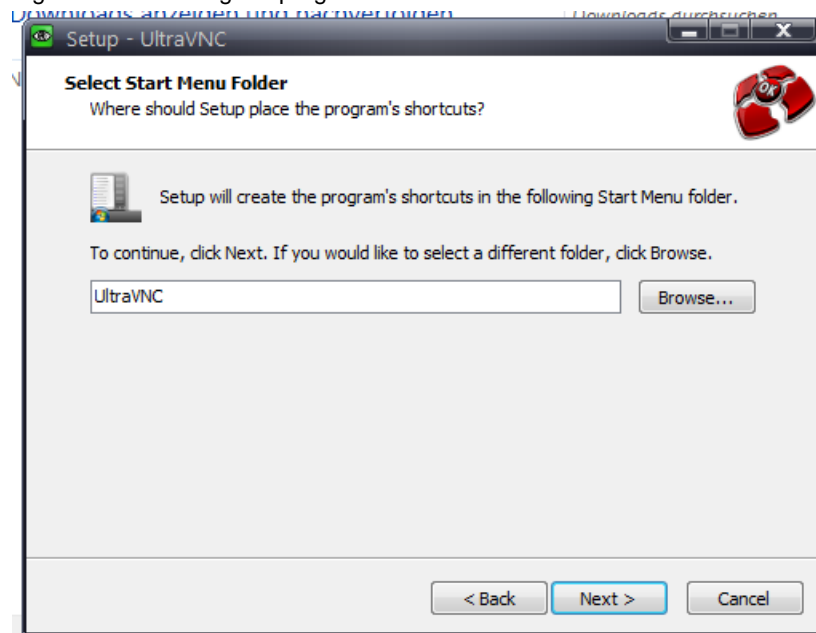


Figure 2-17 Selecting additional tasks of the UltraVNC Viewer

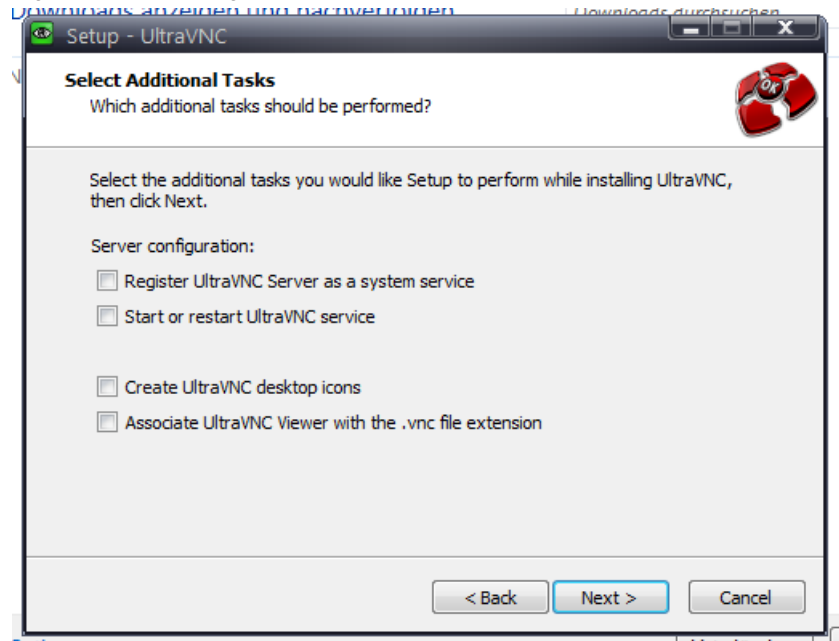


Figure 2-18 Confirming the data for the final installation of the UltraVNC Viewer

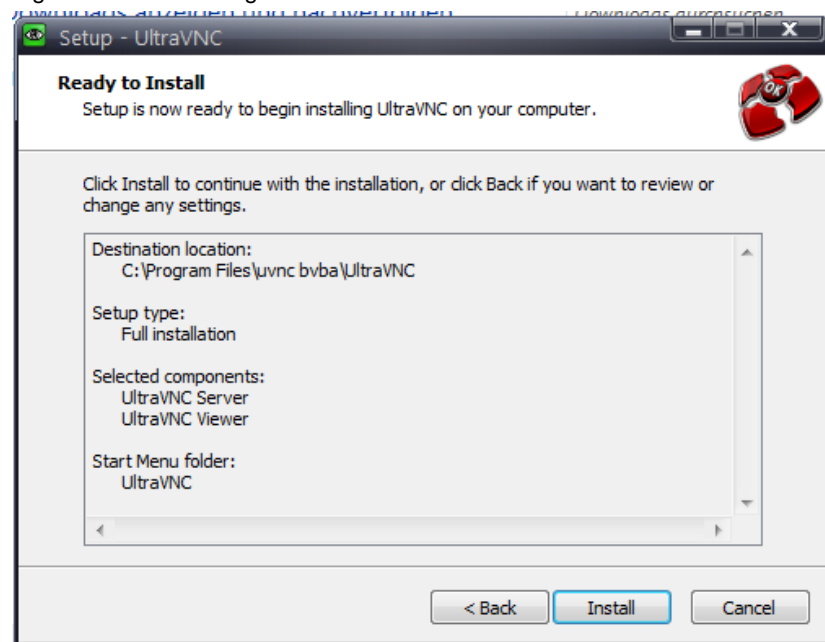


Figure 2-19 General information for the setup of the UltraVNC Viewer

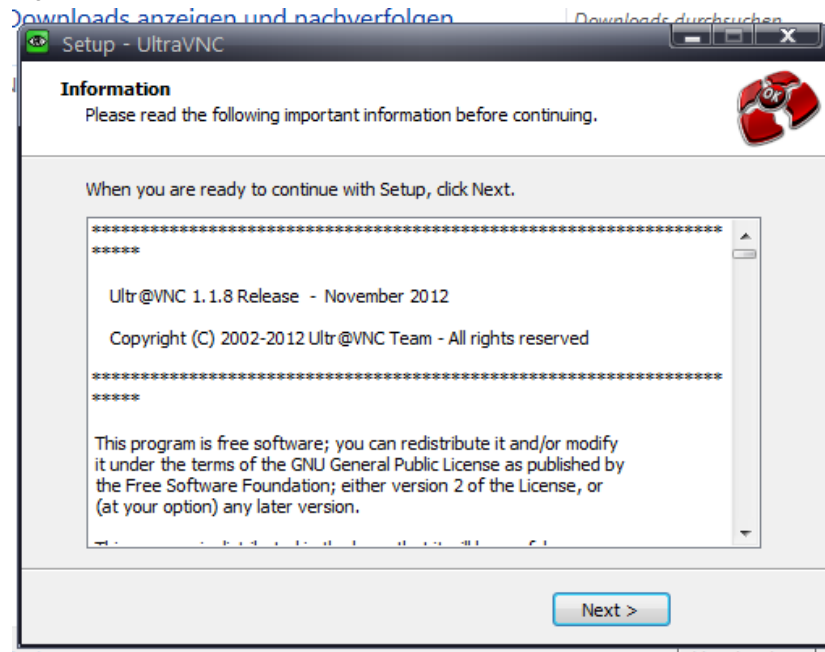
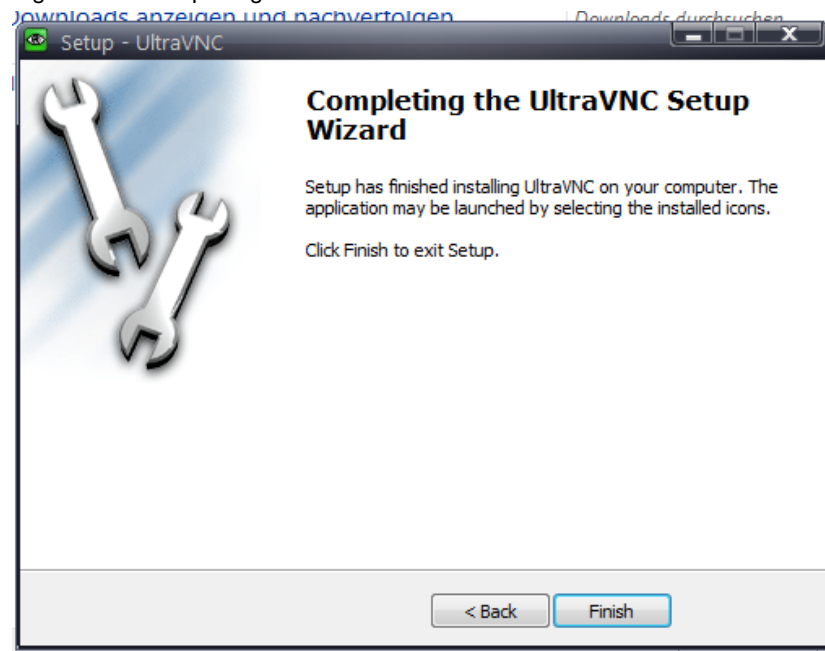


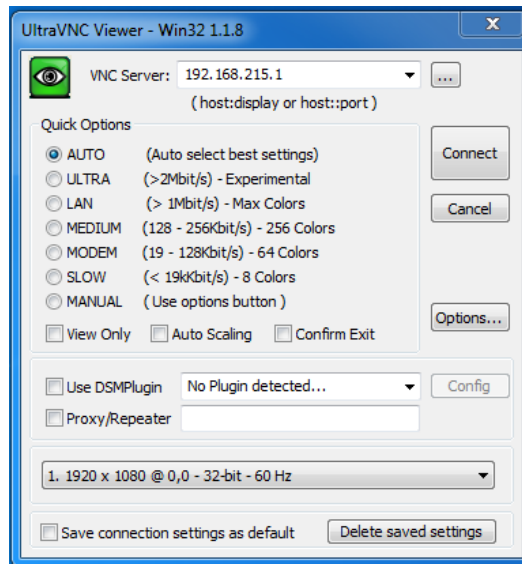
Figure 2-20 Completing installation



2.3.2 Settings in the UltraVNC Viewer software

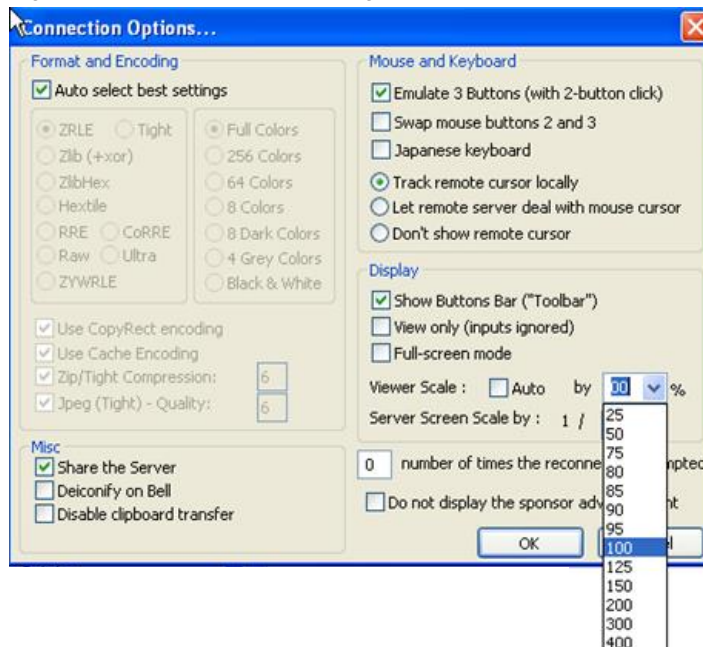
The UltraVNC Viewer must be opened, and the IP address of the control entered (Fig. 2-21).

Figure 2-21 Starting window of the UltraVNC Viewer



The screen content can be scaled under Options, for instance.

Figure 2-22 Possibilities for setting various UltraVNC Viewer options



A password prompt can appear after pressing the "Connect" button (Fig. 2-21). The password to be entered is "password".

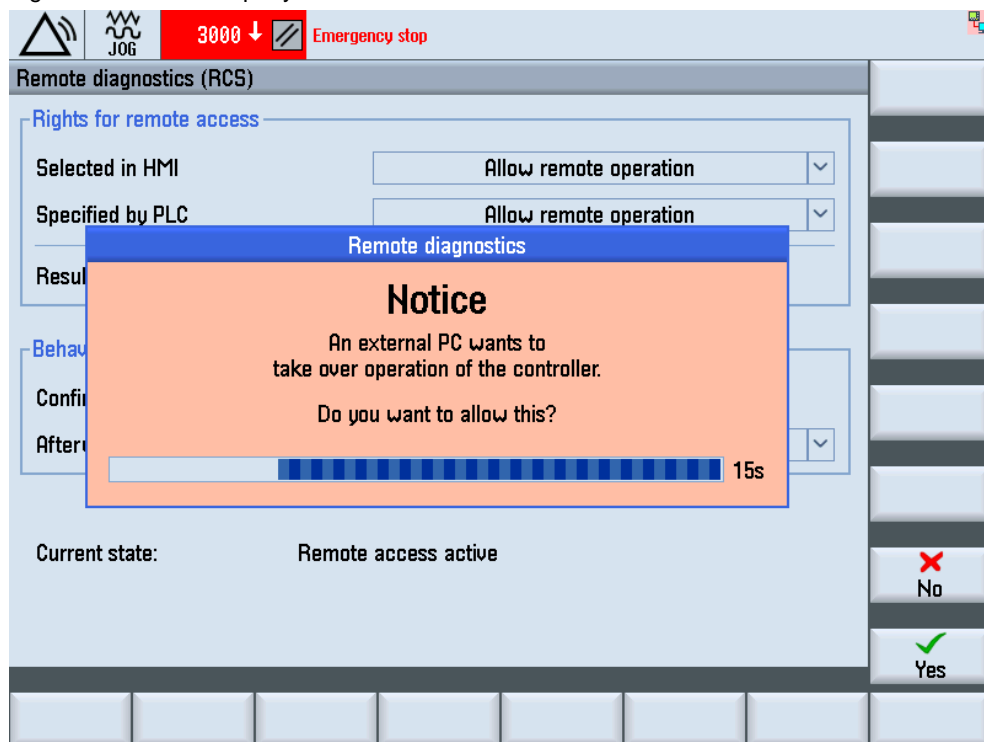
Figure 2-23 UltraVNC Viewer authentication



2.3.3 Confirming the release

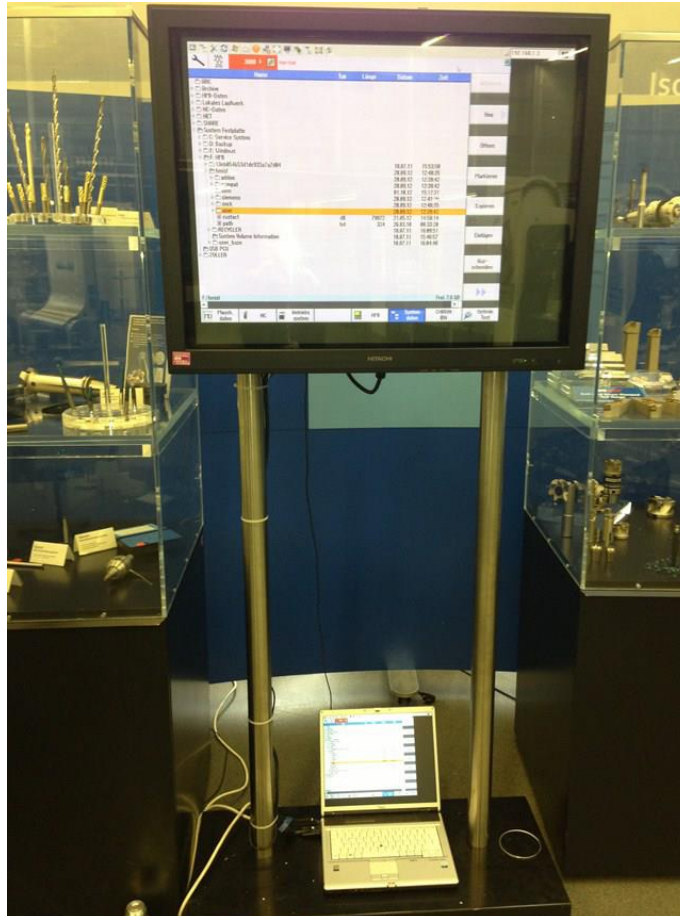
The final prompt must be confirmed within ten seconds on the SINUMERIK control by pressing "OK". Once this has been correctly done, the operator can access a SINUMERIK 828D control from an external PC.

Figure 2-24 Connect query on the SINUMERIK side



The PC screen (system data in the commissioning menu) is displayed on an external monitor or PC projector using a video output (VGA, HMI, etc.).

Figure 2-25 Output of the SINUMERIK user interface on an external screen



2.4 Problems that might occur

If an UltraVNC Viewer connection was not able to be established, then the SINUMERIK firewall settings should be checked. To do this, in the basic machine screen, using the "Commissioning" softkey, the operator navigates to "System data" (Fig. 2-27). It is preconditioned that the manufacturer password has been set.

Figure 2-26 Basic machine screen to select various processing menus

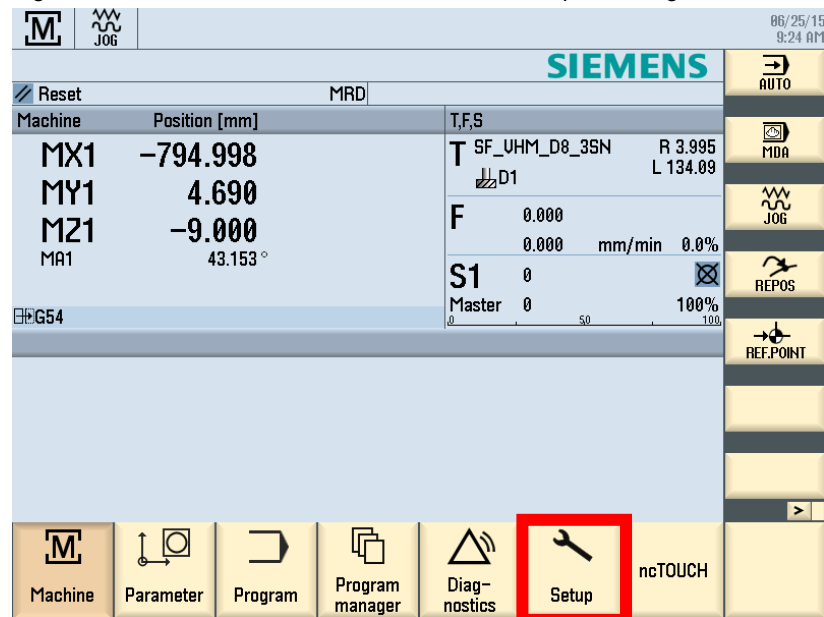
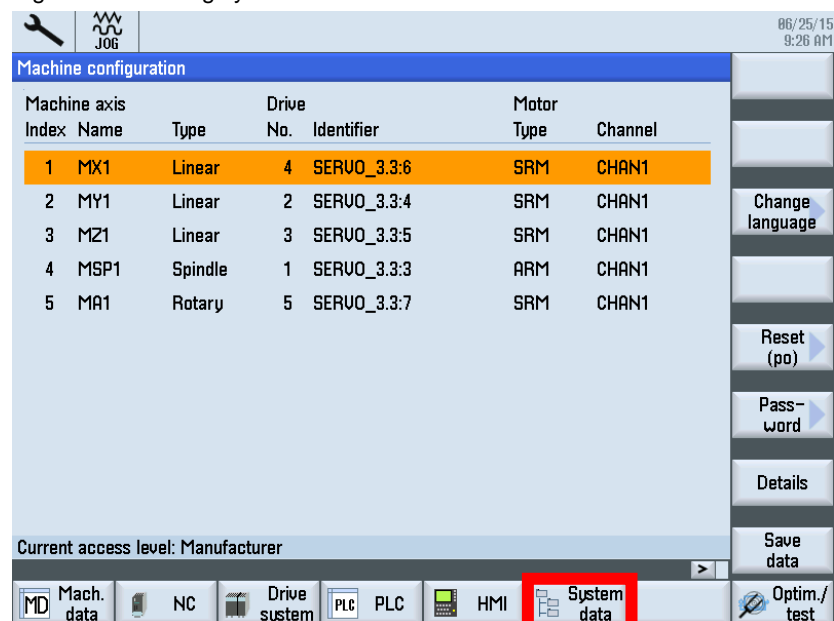
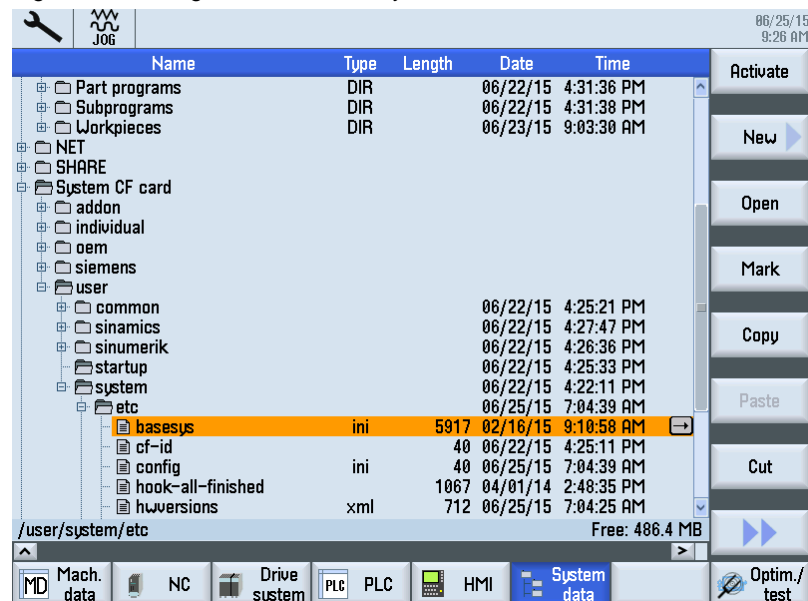


Figure 2-27 Calling system data



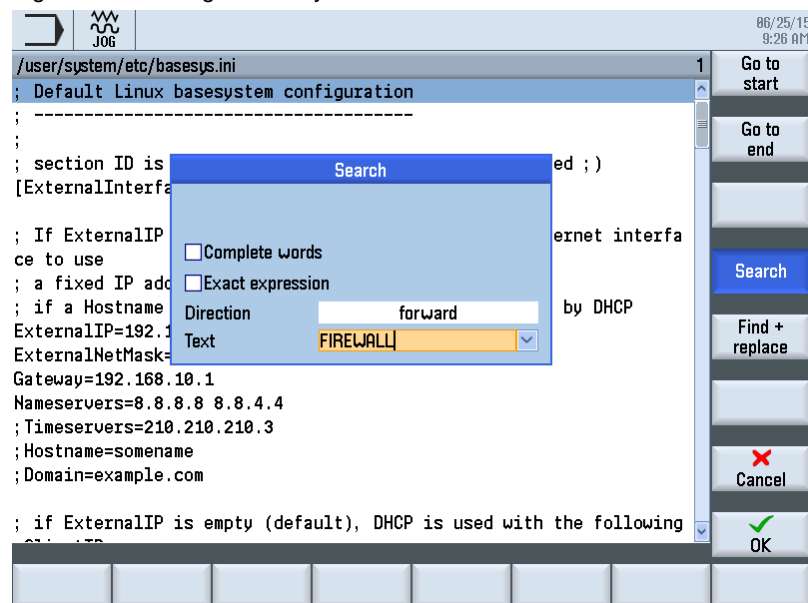
The basesys.ini file is in the system data manager (Fig. 2-28).

Figure 2-28 Navigation to the basesys.ini file



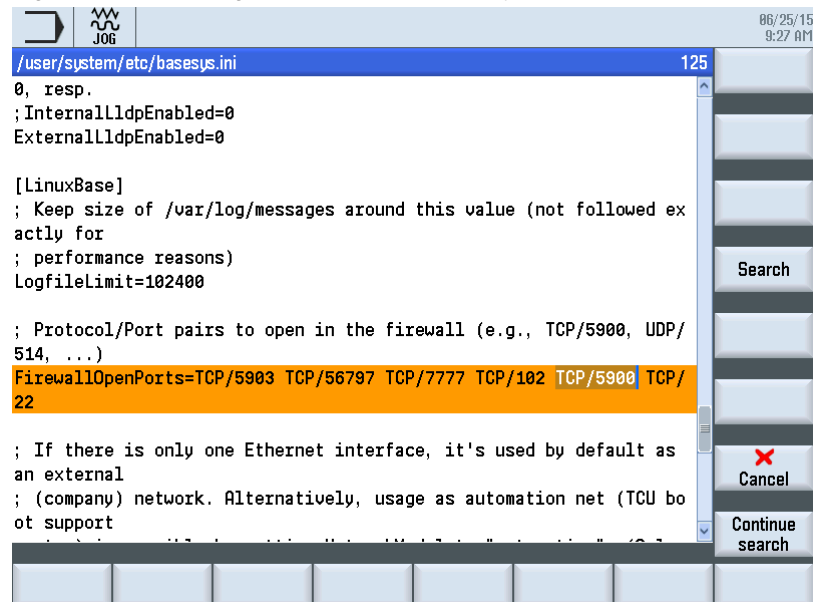
This file (basesys.ini) must be opened and in the file, a search made for the "Firewall" term (Fig. 2-29).

Figure 2-29 Calling the basesys.ini file



The firewall port is activated, by removing the semicolon of the selected line, as can be seen in Fig. 2-30. The basesys.ini file is closed, and the machine switched off. The change that has been made becomes effective the next time that the control powers up (boots). The SINUMERIK user interface is to be displayed on the external monitor.

Figure 2-30 Activating the firewall in the basesys.ini file



3 Contact

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4 History

Table 4-1

Version	Date	Modifications
V1.0	07/2015	First version