SIEMENS

SIMATIC

A&D DataManagement Client

Software Installation Manual

Valid for

	Version
A&D DataManagement Client	V6.2.2.0

07/2011

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠DANGER
indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠WARNING
indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠CAUTION
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

CAUTION
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

NOTICE
indicates that an unintended result or situation can occur if the relevant information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

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The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

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We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Content

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1 A&D DataManagement

About this Operator Manual

This Software Installation Manual for the A&D DataManagement (ADDM) application is a part of the ADDM installation CD. It is not available separately.

1.1 Overview

A&D DataManagement (ADDM) is the data storage system for your control components.
ADDM manages the data and programs of the components used in a simple manner via one uniform operator interface.

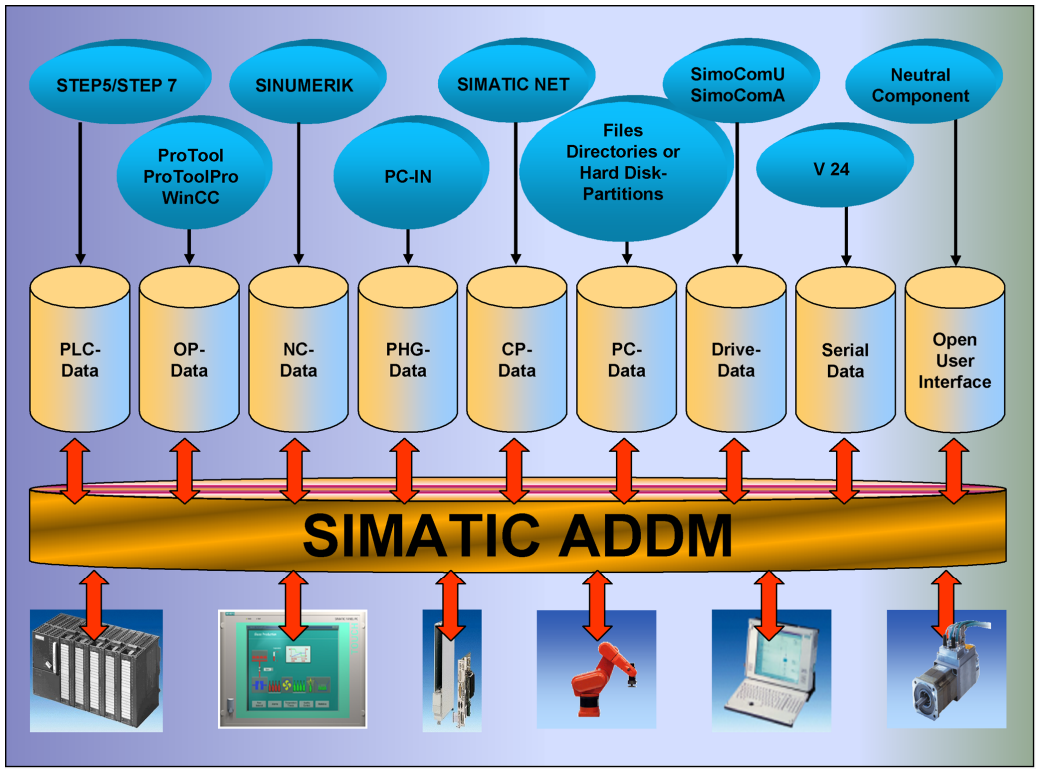


Fig. 1-1: Uniform operator interface for all control components

A&D DataManagement gives you independence from configuration tools, data types and formats. It creates an exact image of your production facility.

Even complex production lines can be easily imaged in clearly understandable directory trees. The display is based on the Windows Explorer from Microsoft. The navigation is not oriented on abstract data structures, but on real conditions.

Identical components can be supplied with identical data. The standardization of the configuration makes service and maintenance easier.

Features

- Production-oriented structure: uncomplicated overview, easy to handle
- Reduced plant downtimes for replacing defective hardware components
- (fast disaster recovery)
- Increased security and availability of all data stocks
- Works with already existing standard configuration tools
- Supports as standard a multitude of components
- No special knowledge needed, for example of programming.

A&D DataManagement increases plant availability

Replacement components are promptly supplied with the relevant data. There is no time-consuming parameterizing and configuring.

In this context, it is irrelevant whether you need to copy over individual files or complete hard disk partitions in the form of a compressed image file (imaging).

High safety level with A&D DataManagement - company wide

A&D DataManagement allows you to store data centrally on servers and mass storage systems. You can therefore integrate your entire data stock into highly available client-server architectures and fault tolerant online storage. This enables the plant control to provide the highest possible safety standards for your data.

A&D DataManagement provides extensive options for drive-independent DataManagement:

- Data can be stored online on a server.
- Removable disks may be used.
- Loading data and settings after component replacement.
- Backup of complete hard disks or hard disk partitions (imaging).
- Restoration of hard disks or partitions from an image file.
- Reloading to an unpartitioned and unformatted hard disk.
- Logging of all modifications in a logbook.

1.2 Which components does ADDM support?

Supported hardware components

All the relevant data and programs of the components, which are integrated into ADDM, can be managed, backed-up and loaded. ADDM uses the existing connections and communications.

NCU	SINUMERIK 840D/840Di/810D powerline, PLC-Data via S7-CPU
MCU	MCU 172A, PLC-Data via S7-CPU
S5	90U, 95U, 100U via AS511; 115U, 130W, 130WB, 135U, 155U via AS511 or SINEC H1
S7	S7-300, S7-400, WIN AC, WIN AC RTX
C7	C7-623, C7-626, C7-633, C7-634, C7-635 OP Mono, C7-635 TP B Mono
CPs	CP342-5, CP343-1,CP443-1, CP443-5
OPs	For supported OPs, read the ProSave documentation, please.
MPs	For supported MPs, read the ProSave documentation, please.
TDs/TPs	For supported TDs/TPs, read the ProSave documentation, please.
Drives	SIMODRIVE 611 universal HRS/universal E HRS/digital via NCU, SIMODRIVE POSMO A/CD/CA/SI
	COMBIMASTER, MASTERDRIVES and SIMOREG via DriveES
HMI DOS	DOS-Package for OP 031
Serial interface	V.24-Interface (RS-232 C)
Path	Folders, Files
PCIN	HPU, OP 030, MMC 100, MMC 100.2
HD	Complete hard disks or partitions
PCIN	HPU, OP 030, MMC 100, MMC 100.2
Neutral	Neutral component

Supported software tools

- IBN611D, Mini-DNC
- SimoComU/A
- MCU-PIT
- STEP 7, NCM
- ProTool (others SIMATIC HMI OPs in preparation)
- ProSave for OPs
- Transline 2000 Setup Tool for HMI DOS and HMI PRO
- General V.24 transfer (RS-232 C)
- General software tools with an open interface

1.3 How does A&D DataManagement work?

A&D DataManagement manages the data and programs existing in the production facilities in a uniform plant structure. To do this, it represents the structure of your production facility as a directory tree in the interface, which is based on the WINDOWS Explorer. You manage the data and programs existing for each control component via this plant structure–and backup or load as required.

For this ADDM uses the existing standard software tools for the components. You can thus manage the data both with the standard software tool and with the A&D DataManagement software.

In order to enable fast disaster recovery, defective components are replaced by new ones. Then the previous parameterization is loaded into the component concerned with ADDM.

1.3.1 Hardware connection for fast recovery

The hardware connection for restoring the parameterizing is made in various ways, depending upon the defective control component.

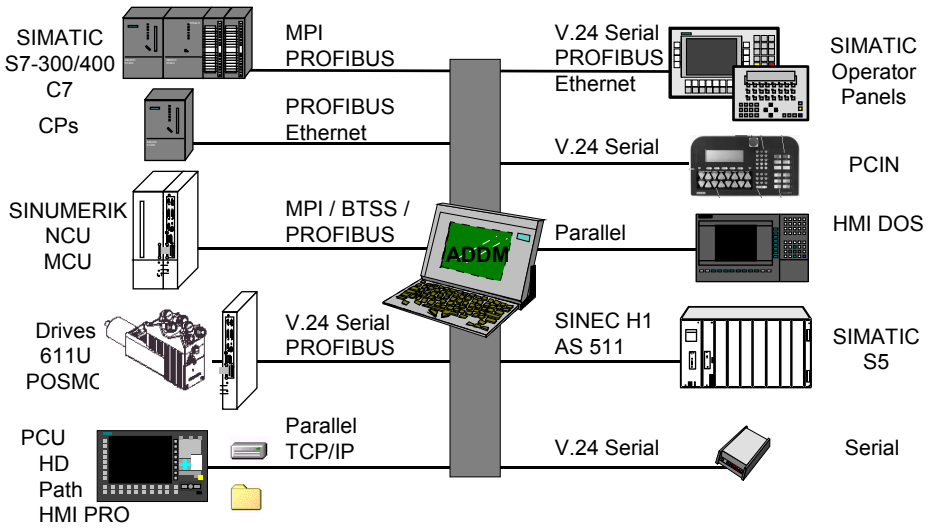


Fig. 1-2: Hardware connections for fast recovery

MCU, NCU, S7-CPU, drives

MCU, NCU and S7-CPU are loaded directly over the MPI connection.
Moreover, NCUs, drives and S7-CPUs can also be addressed via PROFIBUS links.

Operator Panels

All operator panels
- OPs
- TDs
- TPs
- MPs

are connected over the serial interface (RS-232-C).

A defective operator panel is replaced by a new one.

If necessary, connect the operator panels to be loaded via the serial interface to the ADDM computer.

PCIN

The operator panels for SINUMERIK HPU, OP 030, MMC100 und MMC100.2 are loaded via serial interface. Other operator systems of SINUMERIK are PC-based operator panels with implemented hard disks.

S5-CPU

The S5-CPU can be reached via SINEC H1 or the serial interface AS511. An appropriate CP is needed in the rack of the SIMATIC S5 and in the PG/PC for communication via H1.

HMI DOS

The HMI DOS operator interface is linked to the ADDM computer via the Interlink (parallel or serial interface).

Hard disks

Complete hard disks are loaded under ADDM via the parallel interface (not under Windows NT 4.0 or Windows 2000 and Windows XP) or via the TCP/IP network.

Neutral component

The neutral component allows integrating miscellaneous software tools by an easy way into ADDM. This software tools need an interface for the communication with ADDM.
Further, the neutral component allows the integration of prepared operating system calls. You can thus, for example, integrate FTP.

SINUMERIK component

The SINUMERIK component allows ADDM to generate NC and PLC series startup files.

Miscellaneous

Even older control systems and non-Siemens systems can be connected to ADDM. In such cases, the crucial factor is whether the systems use standard transfer mechanisms. Older SINUMERIK systems such as the 3/8, 810, 820, 850 and 880 systems use a serial interface without a protocol for data output. Machine data, for example, are output via this interface. ADDM can receive and store data with the serial component. After the data exchange, this data can be transferred to the systems again.

Systems such as SINUMERIK 840C have a PC, which can be backed up and loaded with the DOS drivers Interlink and Interserv. These drivers were components of the Microsoft MSDOS operating system and are therefore subject to the relevant licensing laws. For this reason, these drivers are not supplied with ADDM.

If these drivers are present on the backup computer, ADDM can recognize this serial or parallel coupling and backup and reload data via the path component.

1.3.2 Backup concept

ADDM supports different hardware configurations for backing up configuration and system data:

- ADDM (client) runs on a mobile network computer, which stores the backup data on a central server. Via this computer it is possible to transfer the data between hardware components and server.

- ADDM (client or agent) runs on stationary network computer (e.g. operator panels) and is connected to the automation component. The computer has also access to the server in the same way as the mobile computer.

The following applies to both solutions:
The ADDM project and the STEP7 project must lie on a common drive for both solutions!

ADDM Agent in stationary network computers takes the communication with the automation components. That means an agent can be installed on an operator panel. All data transfer functions via network are possible without a complete client installation is necessary on the operator panel.

ADDM on a network computer

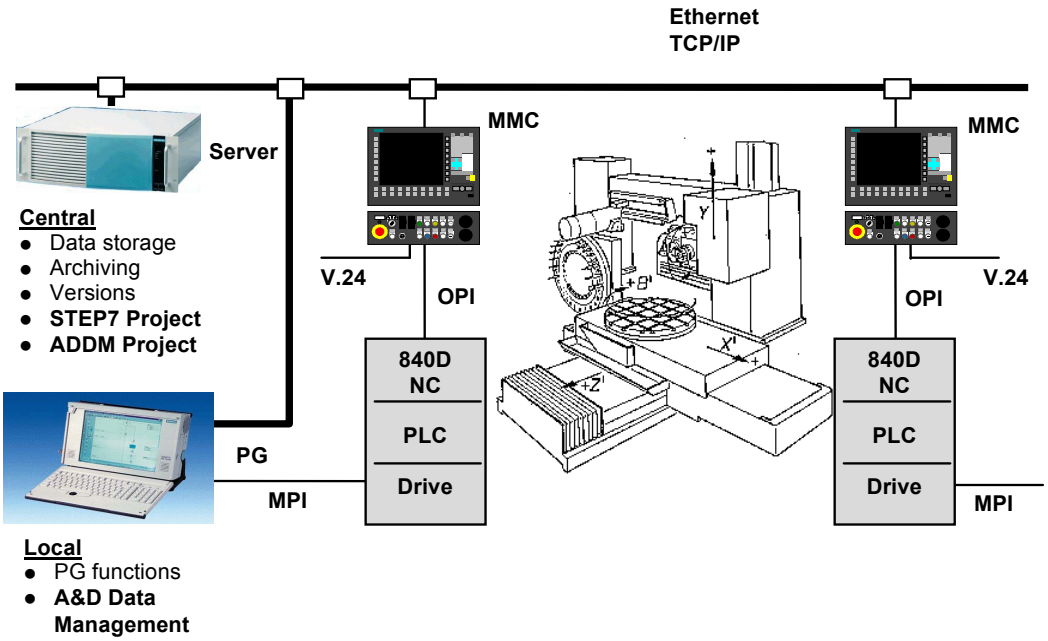


Fig. 1-3: ADDM as a network station

ADDM single user version

ADDM runs on a PC directly on the automation system. Here, the computer is not integrated into a network. In this case, ADDM supports the following backup concepts:
Backup on a mobile ADDM computer.

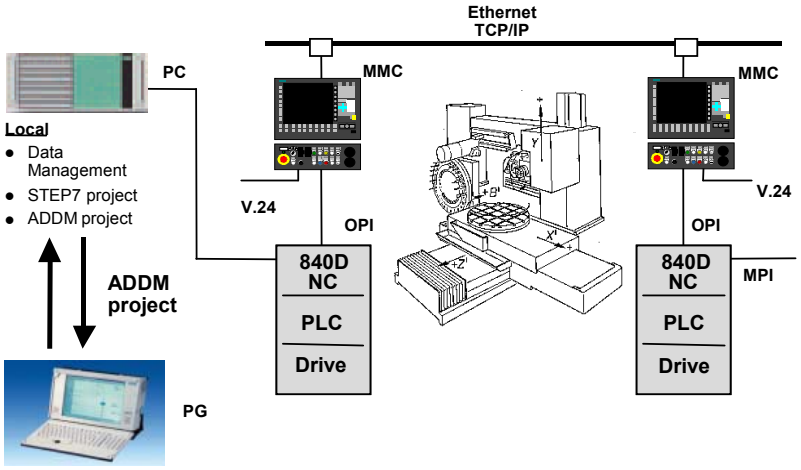


Fig. 1-4: Mobiler ADDM computer

Subsequently, link the mobile backup computer to a highly available network server, and transfer the STEP7 directory and the ADDM project on to it.

Backup on a portable removable data carrier
E.g.: LS120, CD, MOD, USB stick, external hard disk.

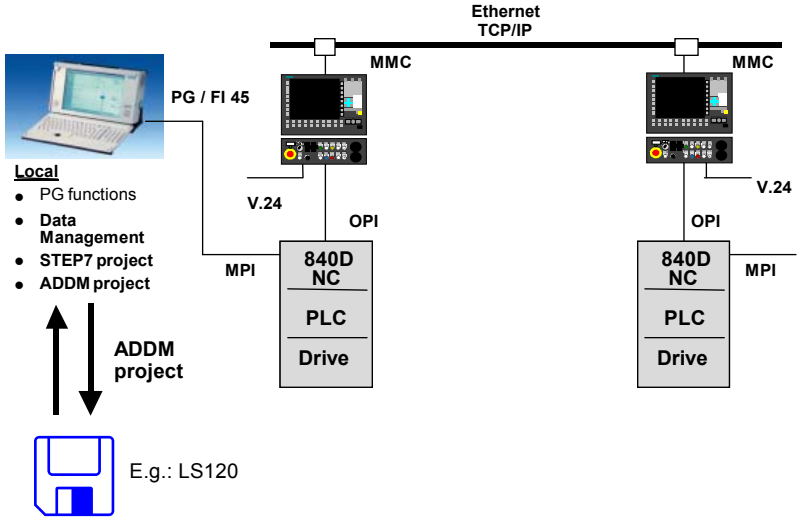


Fig. 1-5: Copying configuration data to portable media

Subsequently, link the mobile backup computer to a highly available network server.

Notice

Complete paths (path component) and hard disks (HD component) are always backed up directly in the ADDM project. The projects can therefore quickly become too large for removable data carriers.

1.4 Installing A&D DataManagement

Hardware requirements

ADDM Client is a 32 bit application requiring an MS Windows XP.
The hardware requirements depend on the operating systems used and are also stated for the use of the relevant operating system.

Memory requirement

- ADDM requires approx. 40MB free storage space on your hard disk.
- In addition, MS Windows XP require storage space for the swap-file on the hard disk (typically drive C:)
- Other Windows applications running simultaneously with ADDM (e.g. MS Word) require additional storage space on the hard disk for the swap file.

You set the required swap file size as follows:

1. Open the System Properties dialog via the MS Windows task bar: Start → Settings → Control Panel → System.
2. Select the "Performance" tab and click on the "Change" button in the Virtual Memory field.
3. Set the "Size of swap file" to the value recommended by the operating system.

Ensure that there is sufficient storage space on the drive with the project data. Project data can be destroyed if the storage space becomes insufficient during an operation.

If possible, do not store the project data on the same drive as the Windows-swap file.

Software requirements

- ADDM must have STEP 7 V5.1, service pack 1 or higher.

Further software packages are required for individual components:

- The MCU172A (MCU component) can be backed up, loaded and compared via MPI (only FM-POS data). The MCU-PIT application version 4.1 or higher is needed to load and backup the MCU172A. It is not possible to run MCU-PIT and ADDM simultaneously. However, data backed up with ADDM can be processed with MCU-PIT. The same conditions apply to ADDM in connection with MCU-PIT.
  Please refer to the description of MCU-PIT.

- Interlink is required for the transfer to the operator panel OP 031(HMI DOS component). To do this, the AUTOEXEC.BAT must contain a reference to the Interlink directory.
  For new PGs this is: C:\WINDOWS\COMMAND\OLDDOS.
  Interlink is only available under MS Windows 9x, not under other MS Windows operating systems.

Backing up OPs, TPs und MPs via ProSave

ADDM enables OPs, TPs and MPs to be backed up and loaded with ProSave. ADDM installs the ProSave software on the back up computer and uses the ProSave functions. The data are backed up and loaded according to the selected settings. The following data can be transferred, irrespective of the OP selected:

- All OP data
- Recipes
- Passwords
- Firmware/configuration

However, the backed up data cannot be processed by ProTool, see subsection 2.4.6 for detailed information on the use of ProSave.

Update registry

A&D DataManagement makes entries in the Windows registry during installation. These entries are required for proper operation of the software. If the PC works in different modes (e.g. with and without a network) with different registries, then A&D DataManagement must be registered for both of these modes.
To do this, install A&D DataManagement again in the same directory in the second mode, just to update the registry.

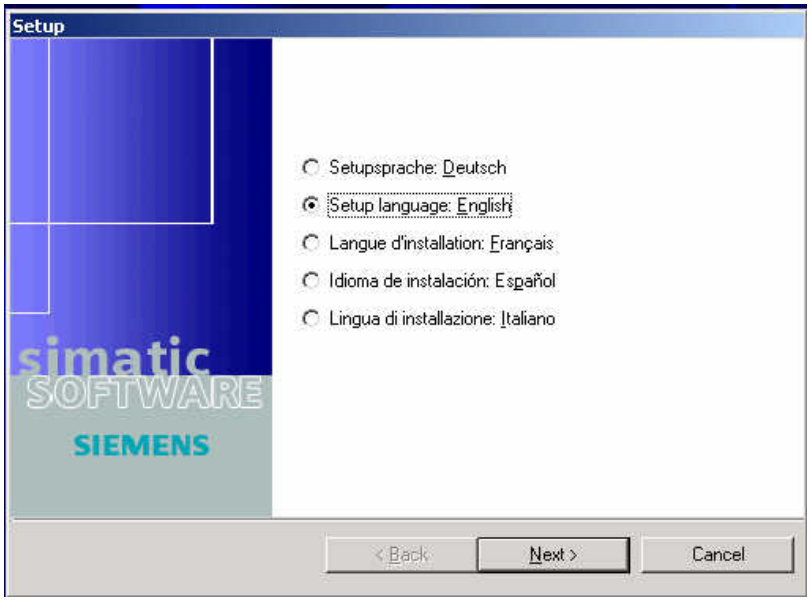
Note

Alternatively you can export the registry and import it into the second mode. This procedure is only recommended for experienced users as a faulty registry can destroy your Windows installation.

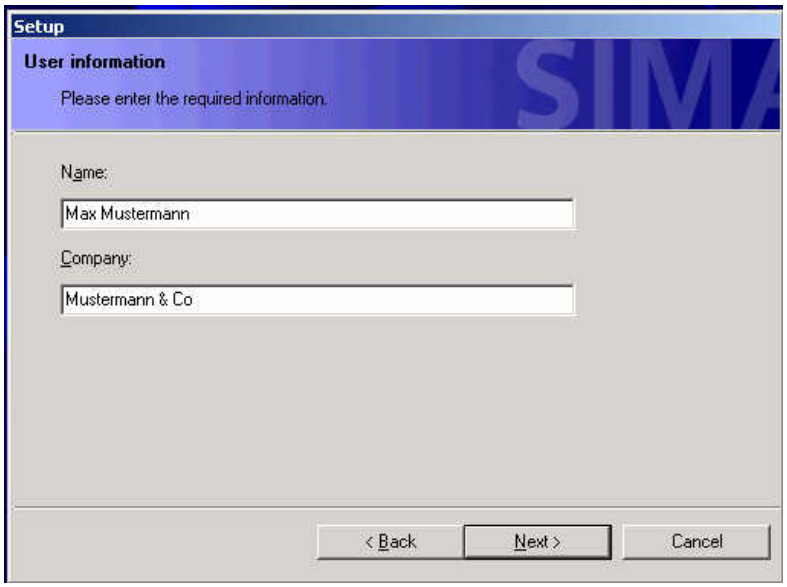
1.4.1 Installation from the setup frame

1. Start the installation of the setup frame by calling "setup.exe" on the CD supplied.
   Follow the instructions displayed on the screen.

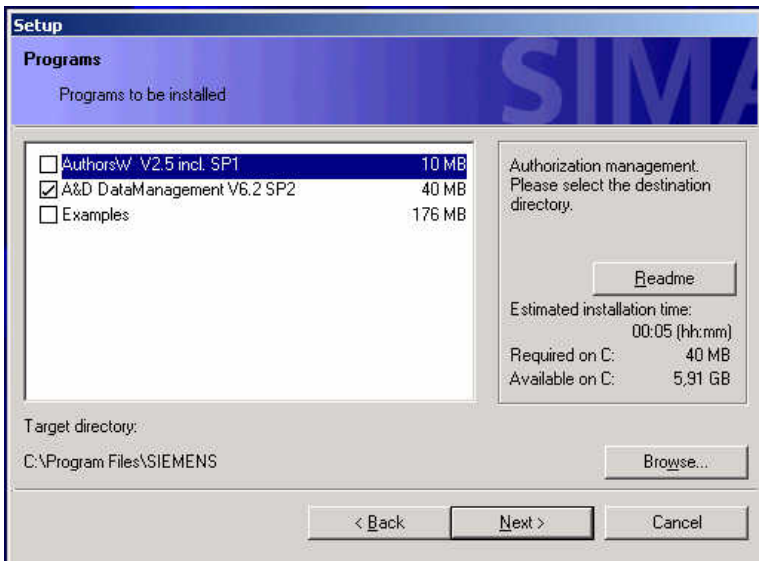
2. Select the desired language version for A&D DataManagement during the setup.
   For using the required language in ADDM, the additional setting must be done in "SIMATIC Manager Step 7" menu Option → Customize… → Language.



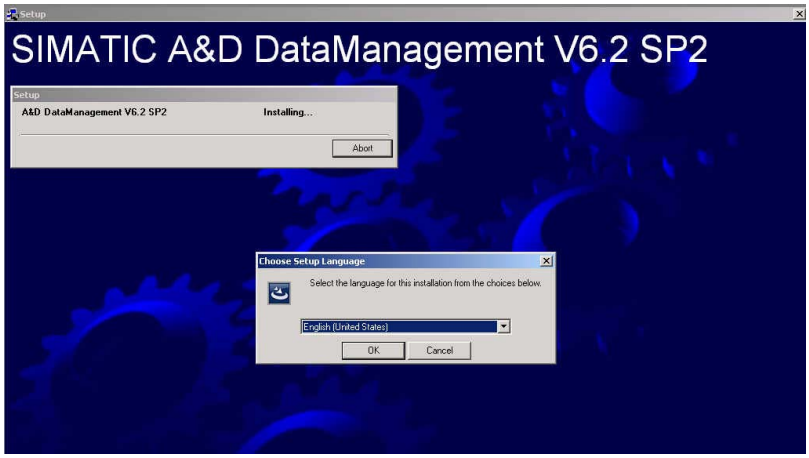
3. Then enter the user information User Name and Organization Name.



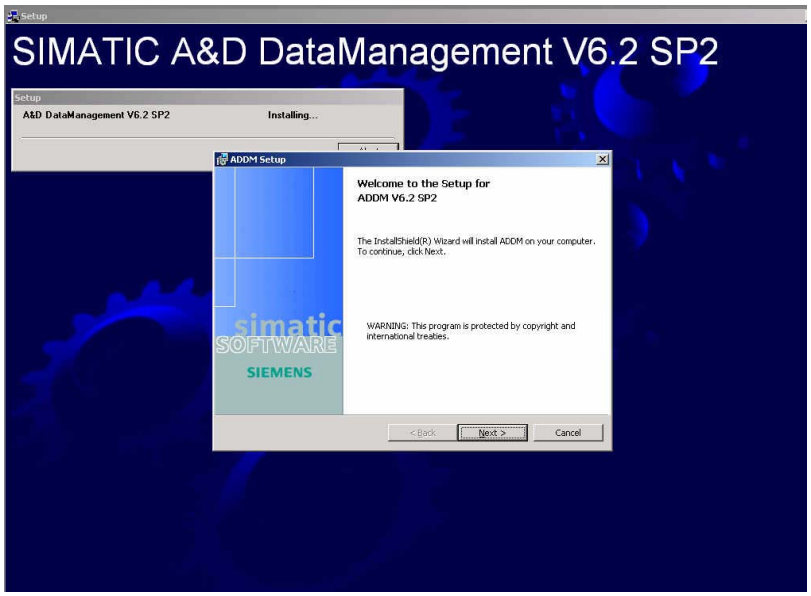
4. ADDM offers different components which you can select for installation.



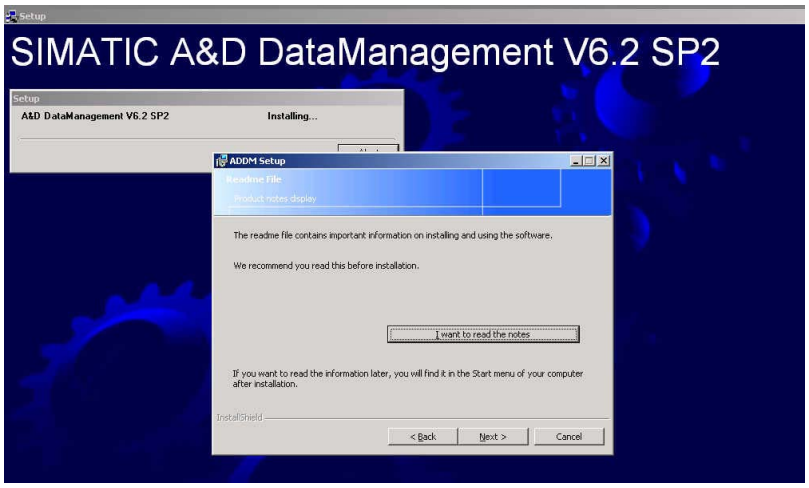
5. During the setup, select the requested language version.



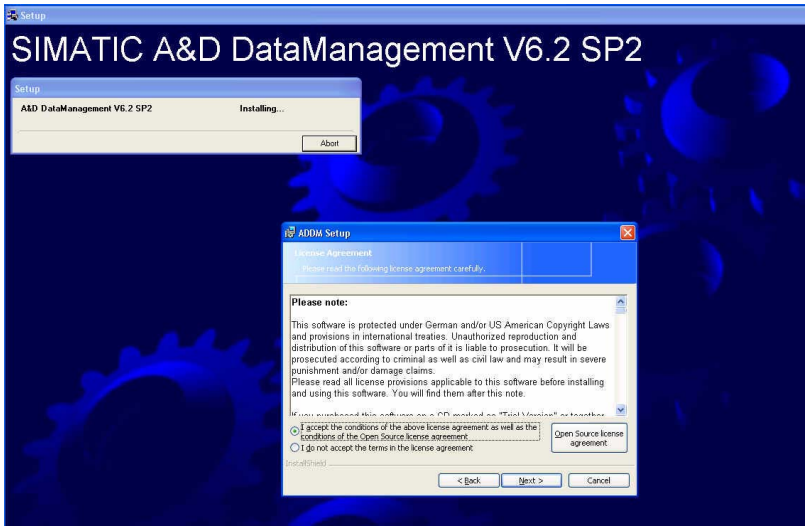
6. Select "Next >" to continue the setup.



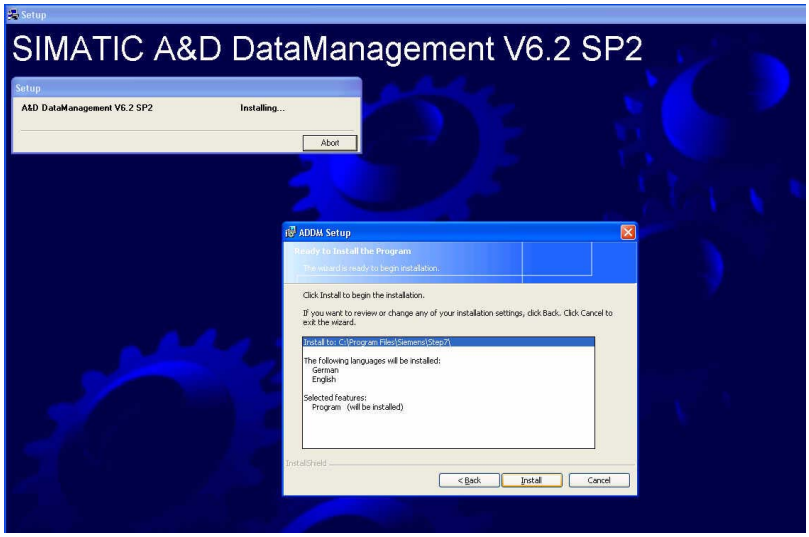
7. Read the installation notes. Press "Next" to continue the setup.



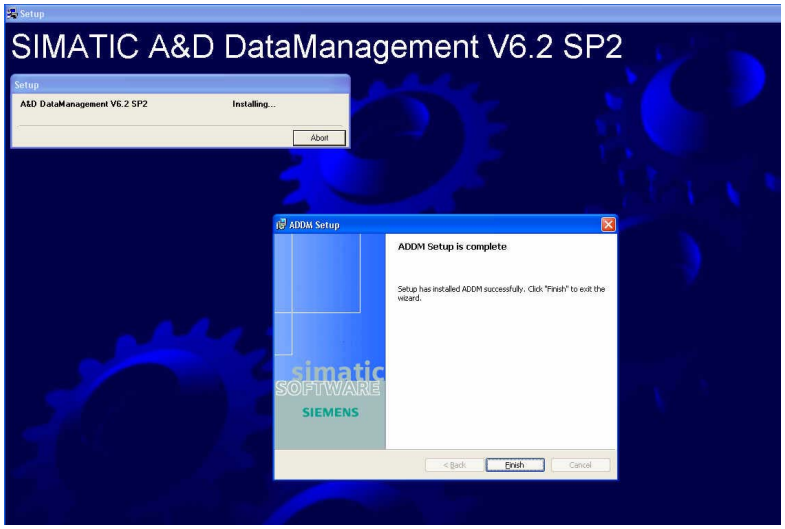
8. Before you continue the installation, carefully read the conditions of the license agreements and accept them.



9. With "Install", ADDM installs the previously selected components.



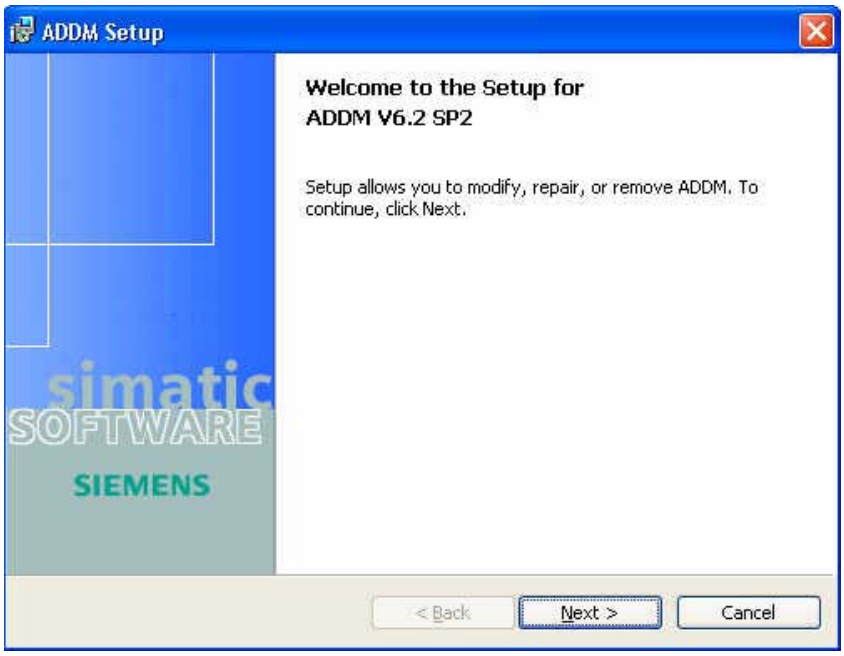
10. ADDM is fully installed on your computer after this step.
    ADDM installation informs you if it's necessary to reboot the computer.



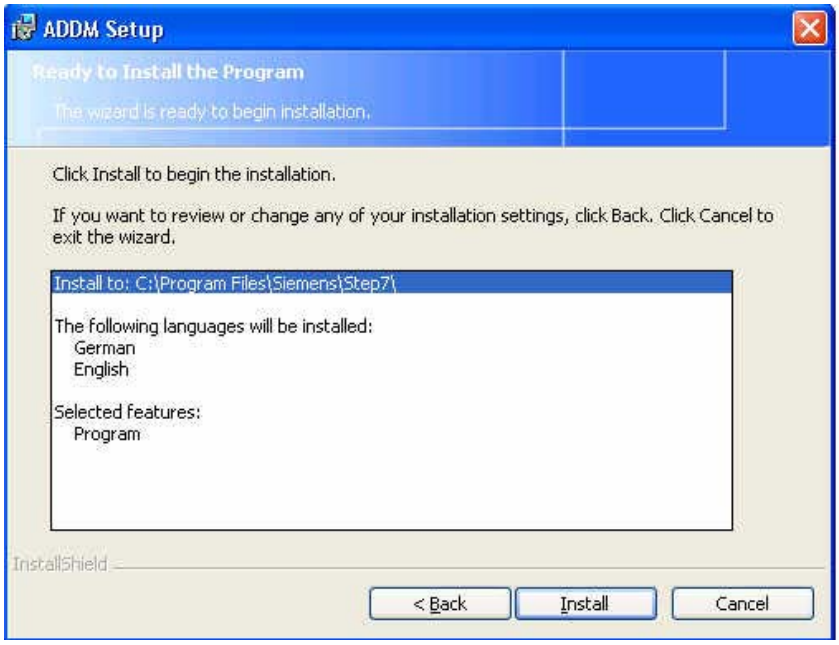
1.4.2 Installing the product setup

1. Start the installation of the product setup by calling file ADDM/Disk1/setup.exe on the CD supplied.
   Follow the instructions displayed on the screen.

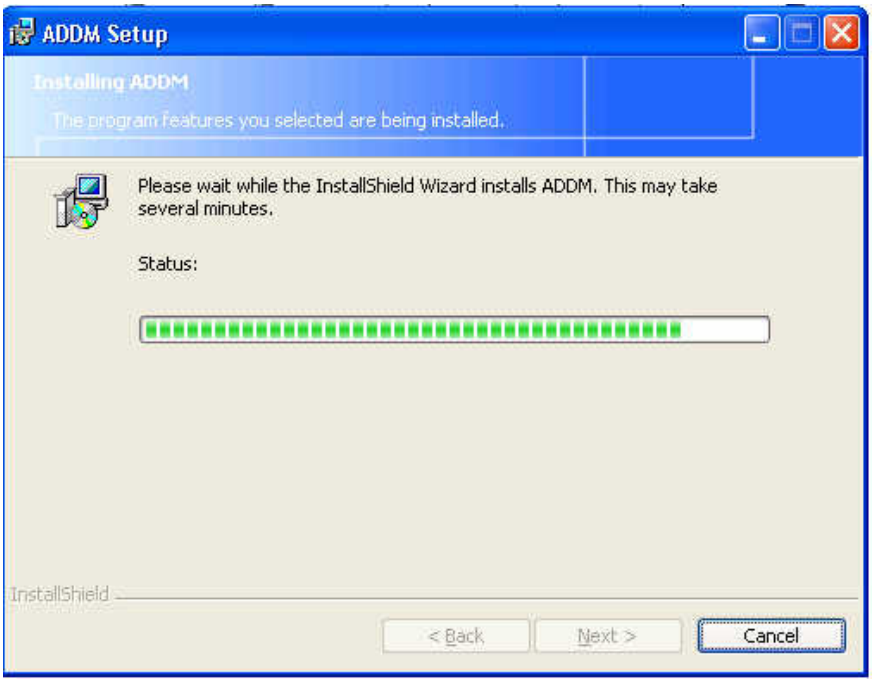
   Press “Next >“ to continue the setup.



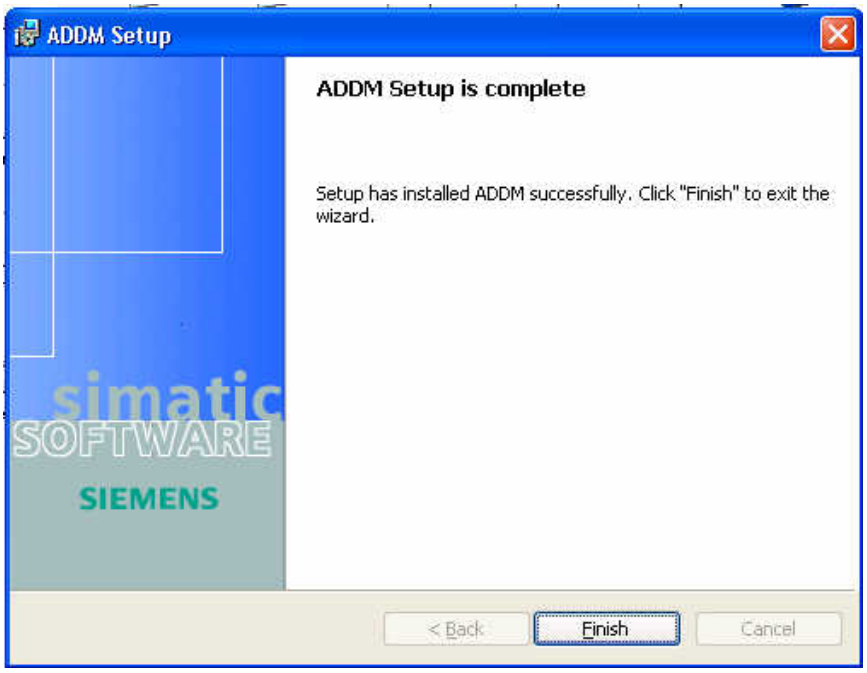
2. Check your settings.
   Press “Install“ to start the installation process.



3. The installation progress is displayed during the installation.



4. Press “Complete“ to terminate your installation..



5. ADDM is fully installed on your computer after this step.
ADDM installation informs you if it’s necessary to reboot the computer.

1.4.3 Installing ADDM Single User

If you want to work with the ADDM single-user version, you must authorize the ADDM Client. The necessary program is available on the "ADDM Single User" disk, which is supplied together with the single-user license.

Authorization is carried out with AuthorsW, as already known from STEP7. Unrestricted working with the ADDM single-user version is possible only when this authorization has been carried out.

In the case of client server operation, the authorization of the server is checked.

1.4.4 Installing ADDM Agent

ADDM Client-server or Single User version have the possibility to communicate with several ADDM Agents. On stationary computers (e.g. operator panels) in machines the memory space is mostly limited. An ADDM Client needs the STEP7-software in the background. This complete installation on operator panels is not possible. In this case the ADDM Agent will be installed on the operator panel. The ADDM Agent is the helping hand of the ADDM Client/Single User.

The installation is done in the same way as the ADDM Client/Single User installation.

References

For details see Software Installation Manual "A&D DataManagement Agent".

2

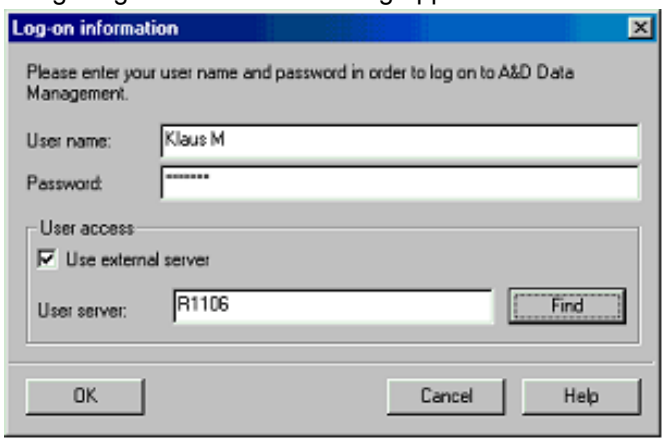
2 Operating A&D DataManagement

The operation of ADDM software is divided into four main steps:

- Imaging the plant structure
- Assigning hardware components
- Defining properties of the hardware components
- Backing up and loading configuration data.

2.1 User log on

The following "Log-on information" dialog appears after ADDM starts.



1. Enter "User name" and "Password".
2. Disable the "Use external server" option in the single station version so that the local user management is accessed.
   This option is automatically enabled in the client-server installation.
3. The name of the server on which the user management runs appears in the "User server" field.

Starting ADDM for the first time

Enter the following when you start ADDM for the first time after installation:

User name	"Administrator"
Password	"Administrator"

Notice

After the user manager has been started for the first time, the administrator should change the password of the administrator. Moreover, more than one administrator should have access rights. Lost passwords can no longer be read back.

You can now create new users and user groups and assign them appropriate rights, see section 2.11 User management.

Then restart ADDM and log yourself on as a newly created user.

Notice

You cannot create your own projects in ADDM until you have created a new user and then restarted. The administrator can only manage users, he/she cannot edit ADDM projects. The administrator has all rights as standard.

In the single user version, the user management can be deactivated via the menu Tools → Settings.

Logging a new user on

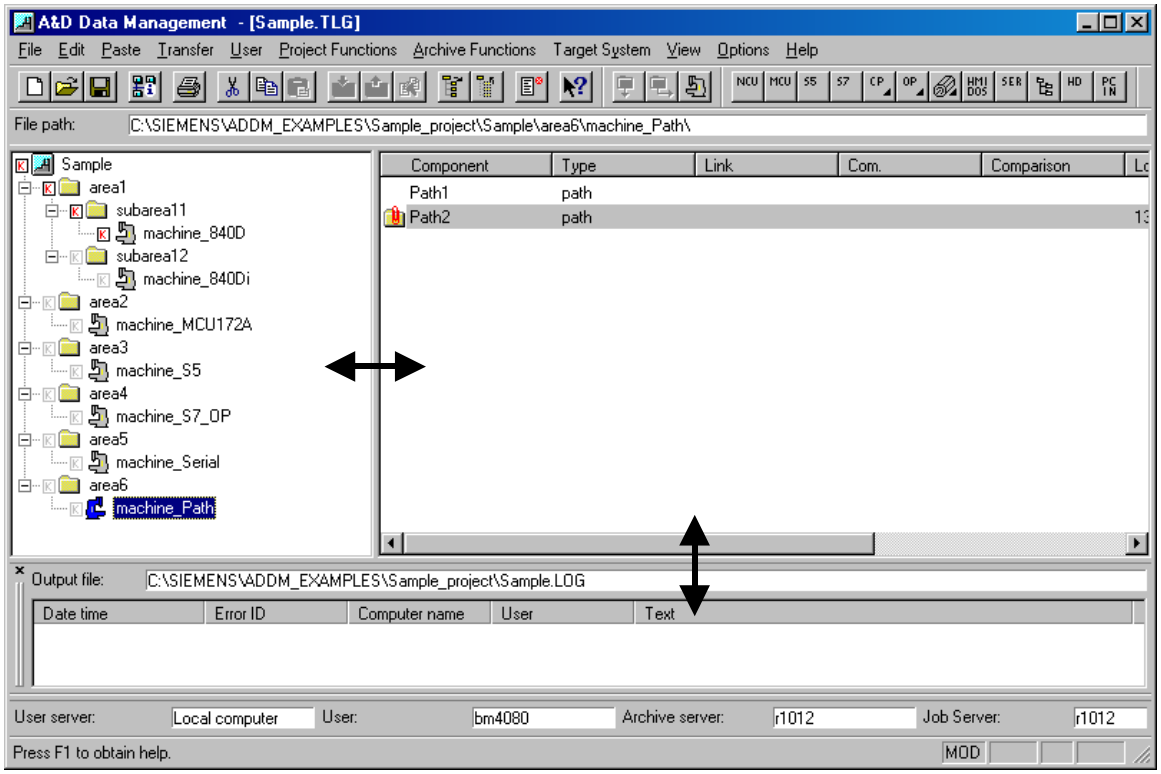
Select the User → Log on... menu to log yourself on as a new user without leaving the ADDM application.
The above Log-on information dialog appears, and you can log yourself on as a new user to work with ADDM.

Basic information about the human-machine interface

The ADDM interface is subdivided into three main windows. The window areas can be moved respectively to other with the mouse (see arrow). All actions in ADDM are performed by operations in this interface.

The action may take place via the menu bar or via the buttons. As a result of the selection in the windows, some functions may be grayed out. This means that these functions are disabled.

The actions possible with a particular selection are shown in black script in the menus or their buttons are shown in color. If the mouse pointer is held still over a button, a text appears alongside the mouse pointer explaining the button"s function.



- The left-hand window contains the directory structure of a production line. The data is assigned via this structure. Areas, subareas and machines can be set up. The machines constitute the lowest level. The machines contain components, which contain the actual data

- The components are stored in the right-hand window. These components contain the backed up data. The data transfer information is also stored under the components. This is necessary if a component can be accessed via different transmission paths. As well as the names of the components, this window also contains the data of the back up, the last comparison or the last loading procedure.
  If data are linked to the component by pointers (links), the link is displayed in the right-hand window.
  This symbol indicates that an additional safety back up has been made in the component in addition to the normal data backup. This is particularly advantageous if it is not desired that automatically scheduled backups overwrite the originally backed up data.

- In the lower window, ADDM provides the information of the logbook file (log file) of the current session. All the actions performed in ADDM are entered in the log file. Transfers, comparisons and changes in the structure are thus recorded with date, time and user. If errors occur during a data transfer, then these are also stored in the log files. This makes a subsequent diagnosis easy.

Note

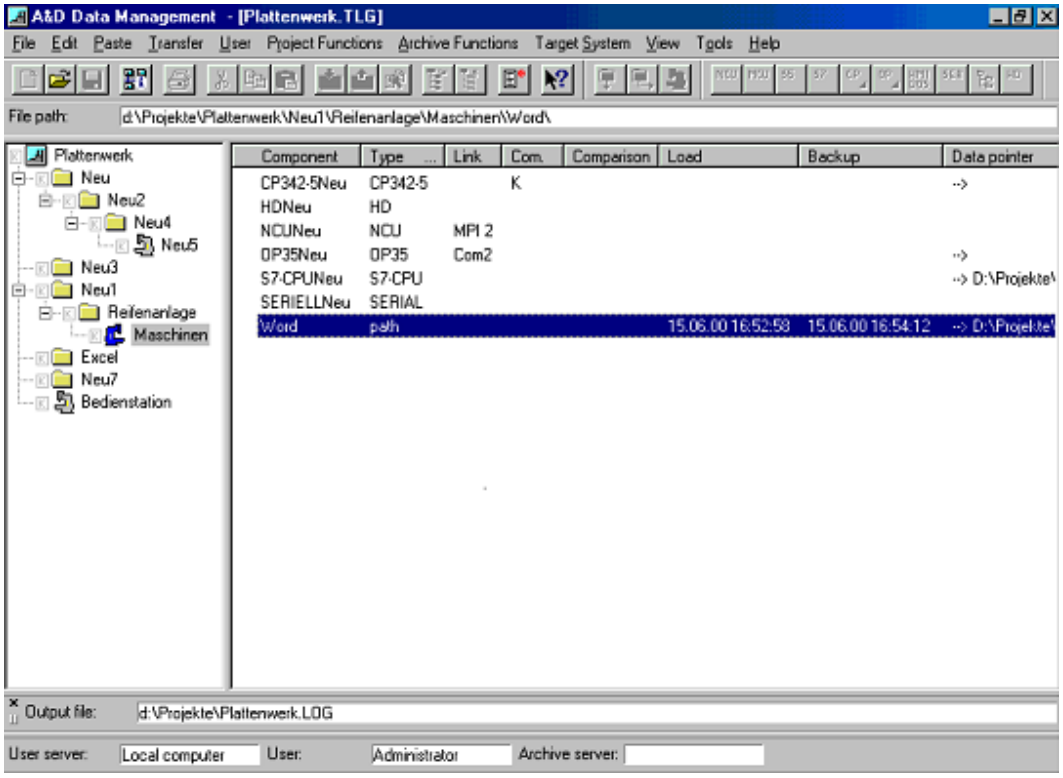
ADDM uses the associated communication mechanisms to communicate with the various components. Information and error messages are reported by the drivers to ADDM and displayed on the human-machine interface. While doing so, corresponding error codes are provided for detailed diagnosis by SIEMENS.

The following sections in this documentation contain more detailed information about operation.

2.2 Specifying the plant structure

You model the plant structure of your production facility in the form of a directory tree in the main window of the ADDM application.

The operation of the main window is based on the WINDOWS Explorer interface.



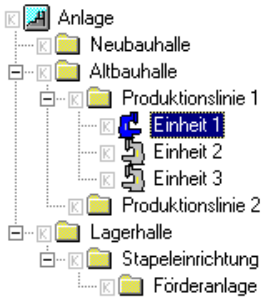
Creating a new project

1. Select the File → New... menu to create a new project. ADDM creates an empty project with the name "Unnamed".

2. Rename the unnamed project as, for example, Plant by double clicking or using the Object properties context menu.

Imaging the plant structure

In order to image the plant structure in ADDM, create a corresponding directory for each level of your production facility.



Construct it using the following hierarchy:
Plant – Area – Subarea – Unit.

For example, the highest level, "Plant", represents the entire works.

The "Areas" level contains the New hall, Old hall and the Warehouse.

In this example, the "Subarea" level consists of production line 1, production line 2 and the stacking facility.

The lowest level of the tree represents the individual "Units" (or machines). Elements on the lowest level are also referred to as physical assets in this connection.

The designation of each tree entry can be freely selected in the "Object properties"context menu.

Copying/insert a subproject

You spool a complete ADDM project onto an exchangeable data carrier as follows, see subsection,1.3.2 Backup concept:

1. Select the Project functions → copy/insert subproject.

2. Select the target directory on the removable data carrier.
   This ensures that the data carrier contains the ADDM project (plant topology) and the STEP7 projects.

Copying/insert a subproject

You copy a subproject or a unit as an other ADDM project:

1. Select the subproject or the unit.

2. Select the Project functions → copy/insert subproject.

3. Select the target/source in the target/source project.

2.3 Assigning control components

After imaging the plant structure, the control components have be assigned to the units. The various control components are located within the unit.
The various control components are located within the unit:

You assign a new control component to a unit as follows:

1. Select the relevant unit.
2. Click on the component button in the button bar on the right.
3. Choose one of ADDM supported components, see chapter 1.2 Which components does ADDM support?.
4. For example, click on the  button to assign a S7-CPU.
   With double click on the inserted S7-CPU "Properties of the component" dialog opens.
5. Assign a name to the new component, e.g. "S7-CPU".
6. Click on "OK".
   The new component, e.g. "S7-CPU", is assigned to the relevant unit.

Details of each component

The list on the right displays additional details about each component:

- The Component field contains the freely allocated name of the component
- The Type field contains the component type
- The Link field shows the hardware link of the component to the ADDM computer.
- The Comparison time field shows the timestamp of the last comparison.
- The Loading time field shows the timestamp of the last load.
- The Backup time field shows the timestamp of the last backup.
- The Data pointer field shows the paths of the pointered projects.
- The user sees immediately if, for example, a S7 component is not pointered.

You sort the lists according to the currently selected field with the View → Sort menu.

You can save the current sort with the View → Save menu.

Editing a project

You can cut and paste components, units and whole areas.

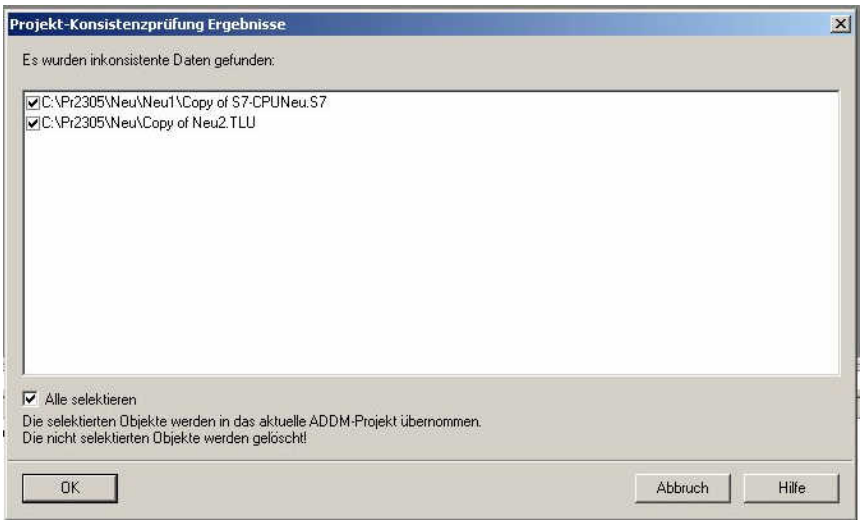
Components, which are no longer needed, can be deleted. To delete, ADDM moves the components into the WINDOWS Recycle bin. The linked data stocks are not deleted.

Note

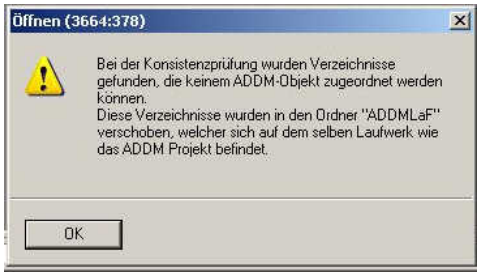
If you have made changes to the plant structure, you must first save them before you can load or backup the corresponding control components.

Project – Consistency check upon project start

When opening a project, all file and directory entries are checked within the project. The files in the directory or directories are analyzed.
The following screen is displayed if files are existing, but not the relevant directories.
You can choose whether you wish to delete the file or create a corresponding directory.

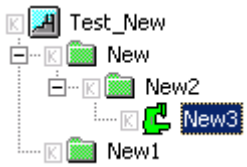


Superfluous directories for which there is no file within the project are deleted.



Disable objects for editing

Before control components can be assigned or changed the area or unit must be disabled for editing by the user. On creating a new ADDM project the locking mechanism is done by ADDM automatically. Disabled parts of a project are displayed in a green colour. Opens another user the same project, the disabled parts are displayed in red.

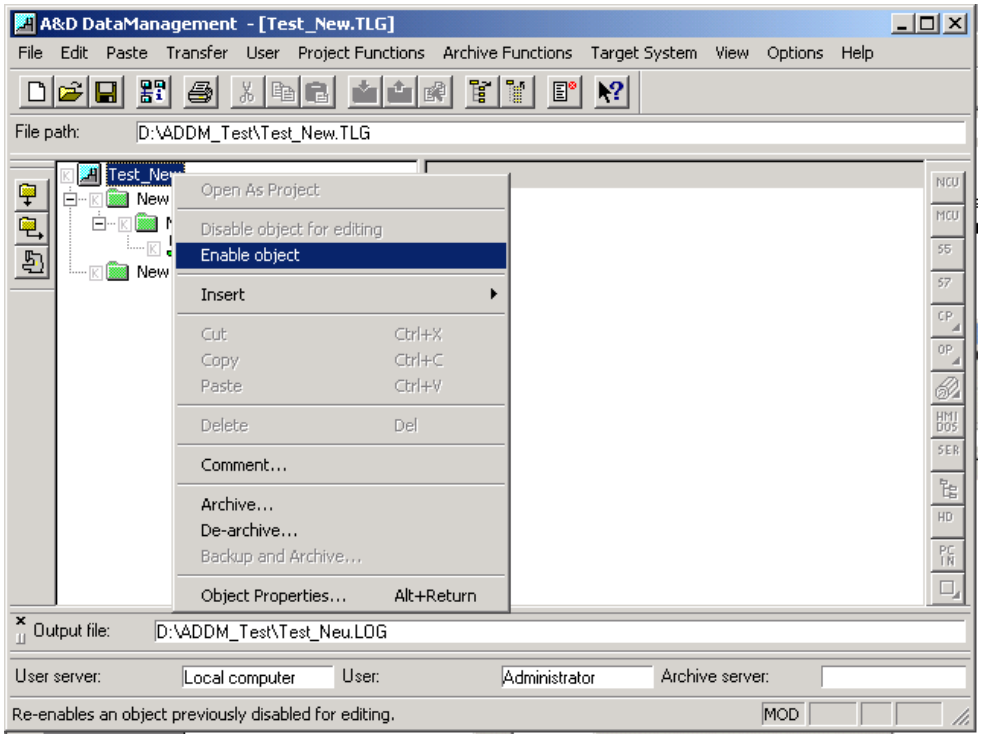


Red marked objects cannot be handled or changed by the user. A data transmission into disabled objects is blocked by ADDM. The reason is, that no data can be going lost.

Disabled objects in an ADDM-project are enabled again automatically when ADDM will be closed by the user.

Enable objekt

If the changes are finished in the ADDM-project, the disabled objects have to be enabled again. The disabling or enabling is done in the tree view of ADDM by marking the object with the mouse. After that, please select the menu Edit → Enable object. If an object will be enabled, also all objects below the enabled one will be enabled too.



The function is also reachable with the right mouse button.

After the objects are enabled, they will be displayed in normal colour. The red or green indication will be switched off and data transmissions from or into an object are possible again.

Note

Without an enable off disabled objects no backup, loading and compare is possible. For setting the disabling or enabling the ADDM user needs project rights.

Attention

The function "Disable object for editing" is available from version 5.2 of ADDM. On using of minor versions of ADDM, an access to disabled objects is possible. A data transmission into disabled objects in this case is not blocked. The higher security level for the data is only valid with V5.2.

2.4 Specifying the properties of the control components

You reach the "Properties of the component" dialog by double clicking on the relevant component, or via the "Object properties" context menu (right mouse button).

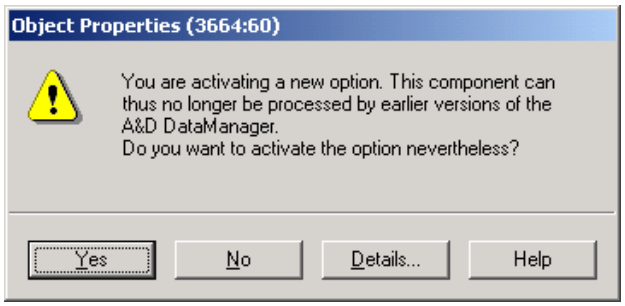
The general statements about each component comprise:

- The internal "name" of the particular component.
  This can be changed.

- An additional "Remark" with a maximum of 255 characters.

The specific properties of each control component are described in the following.

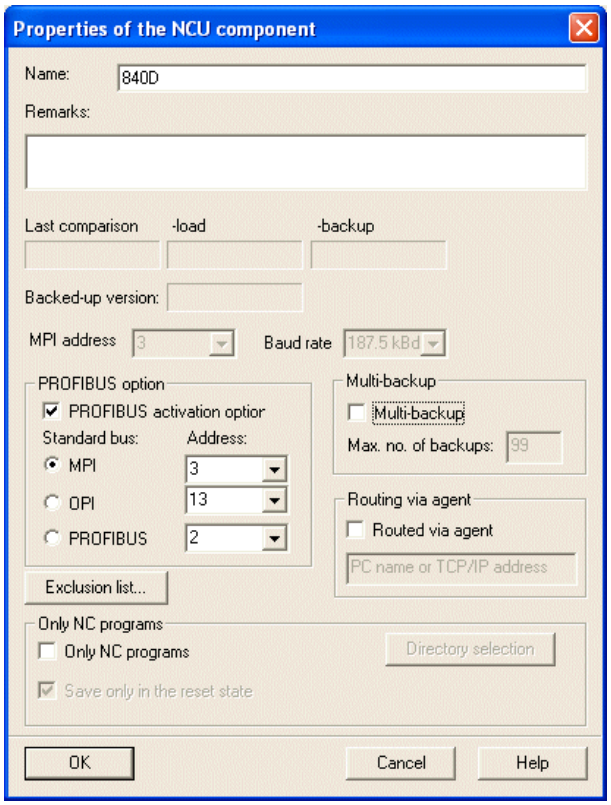
In the properties of the control components options may be activated. Following message box occurs on activating such an option



If such an option is activated, the component is visible in a minor version of ADDM. But working with the component is not possible with any minor version.

2.4.1 NCU component

The NCU SINUMERIK 810D/840D/840Di machine tool control can be loaded, backed up and compared. Additional to these functions safety backups can be made into this component.



The Properties of the NCU component dialog box contains the following information:

- Name:
  Freely allocated name of the component.
- Remarks:
  Freely editable field for user texts.
- Last comparison
  Date and time of the last occasion when the online data was compared with the offline data (for source data and memory dump).
- - load
  Date and time of the last occasion when the offline data was transferred to the controller (for source data and memory dump).
- - backup
  Date and time of the last occasion when the NCU data was backed up.

Note

In the ADDM list overview, the date of the last backup is displayed by definition in the source data. Please note that backups are never performed as source data. For this reason, this time stamp is not provided.

- MPI/OPI
  MPI (or OPI) address of the NCU
  ADDM subsequently creates a link to the NCU SINUMERIK with the MPI (OPI) address.
  A communication error occurs if the stated address is not present (error 286).
- Baud rate
  Baud rate for the transfer.

ADDM stores the information in the "MMC.INI" file when loading or backing up.

Notice

It is essential to parameterize the interface on the PG/PC in the Tools → Set PG/PC interface menu before transferring via MPI, OPI and PROFIBUS. This resetting does not take place automatically.

It is preferable to load and backup the NCU over the MPI interface. If you use the OPI interface, you must still change to the MPI interface to transfer the entire S7 data.

Caution

Check the MPI address before starting the download. If the MPI address is not set correctly, the data may be transferred to the wrong hardware.

Note

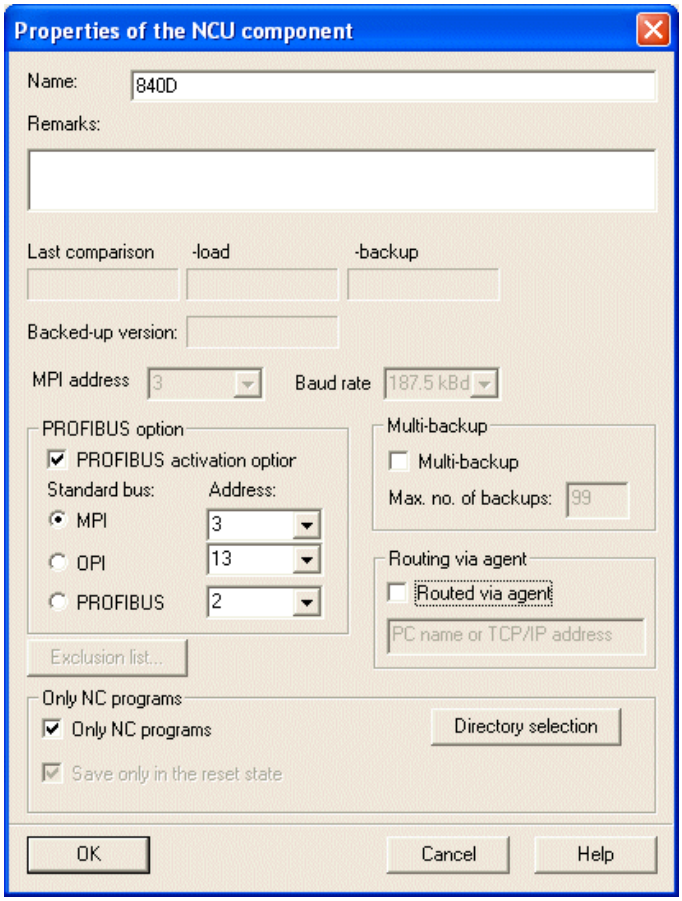
ADDM backs up all the data stored in the NCU. These are essentially machine data, setting data, drive machine data, compensation values, cycles, subroutines, main programs and work piece data. Data which has been swapped out to the operator panel (MMC) has to be backed up separately.

Note

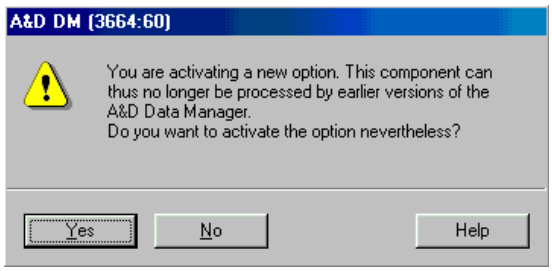
Create a separate S7 object for an S7 PLC integrated into the SINUMERIK, see subsection 2.4.4 S7 Component.

PROFIBUS option

The NC can also be backed up and loaded with the PROFIBUS activation option via the CP342-5 or the integrated PROFIBUS interface. Loading is supported from CP version 1.31 and higher.



Activating the "PROFIBUS" option will mean that older versions of ADDM will no longer be able to edit the NCU component. Accordingly, you receive the following warning:



Note

Before transferring via PROFIBUS, it is essential to set the interface of the PG/PC to PROFIBUS in the Tools → Set PG/PC interface menu.

NCU adresses

Table 2-1: Default settings of the bus addresses

Connection	SW version	NCU address	PLC address	Baudrate
OPI	V 3.4.07	13	13	1.5 mbaud
MPI	V 3.4.07	13	2	187.5 kbaud
OPI	ab V 3.5	13	13	1.5 mbaud
MPI	ab V 3.5	3	2	187.5 kbaud

From NCU software version 3.5 and higher, the address of the NCU is automatically set to PLC-ADR + 1 when the PLC address is changed.

Example:
If the PLC address is changed to 8, the NCU is given the address 8 + 1 = 9 from the perspective of the MPI. From the perspective of the OPI, the address of the NCU remains 13, but it can also be changed.
Enter the correct NCU address in the Properties of the NCU component dialog.

Tips for the NCU

In addition to the NC, the NCU component also contains an S7-PLC. The memory addresses of the S7-PLC are determined by the data of the NCU. Therefore, when loading the NCU, load the NCU first and then the S7-CPU.

The communication between the NCU and its components requires resources. The number of these resources is limited. So, if all resources are occupied, ADDM may send a communication error message. In this case, one can release resources by removing the operator panel plug (only on point to point coupling between ADDM computer and NCU).

Attention

During the operation of a NCU, data can be changed by the operator or the by the control itself. In this case a started data transfer could be interrupted with communication errors, because an access from ADDM is blocked by the NCU. If a communication error occurs, the backup has to be repeated absolutely. If not, the changed data in the NCU are not backed up.

In order to backup, load or compare an NCU, all channels must be in the RESET state. If this is not the case, then this can result in inconsistent data. If all of the channels are in the RESET state, then start with the backup operation. The progress dialog box showing the NC backup operation is always shown. This means that every operator can see that presently a backup is being made. If not all of the channels are in the RESET state, then an error message is returned to the calling program (Agent or ADDM Client) and displayed.

If the backup task is controlled by the job, then the job is interrupted with error state -2. This means that the job is repeated after a pre-set time. If the maximum number of repeats has been reached and the NCU has still not been backed-up, the job is terminated and the next time that it will be executed is calculated. In this case, the NCU was not backed-up in the backup cycle that expired.

NCU versions

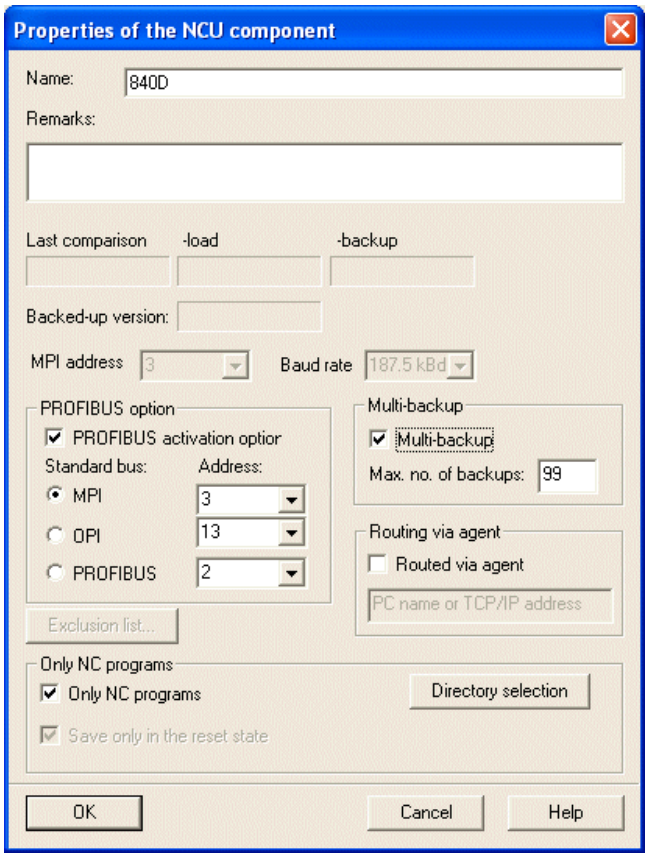
The following restrictions apply to loading and backing up the NCU component via the PROFIBUS coupling:

Table 2-2: Modules used

Modules used	MPI		OPI		PROFIBUS	
	load	backup	load	backup	load	backup
NCU 573 4.03.12 CP 342-5, release 50	☑	☑	☑	☑	Not possible	☑
NCU 573 4.03.12 CP 342-5, release 130	☑	☑	☑	☑	☑	☑
NCU 571 3.06.11 CP 342-5, release 120	☑	☑	☑	☑	Not possible	Not possible
NCU 571 3.07.14 CP 342-5, release 130	☑	☑	☑	☑	☑	☑
NCU 571 3.07.14 CP 342-5, release 50	☑	☑	☑	☑	Communication error 1090, red LED CF lit on NC	☑

Multibackup option

The Multibackup option enables additional backups to be made in ADDM to the normal data backup. This is useful when the system has been modified. In this case, the data change very frequently. The original data are retained and all the steps in the modifications can be backed up.



When Multibackup is activated, the number of back ups to be stored by ADDM can be specified in the Max. no. of backups input box. ADDM takes this specification into consideration when backing up, and saves a new, separate back up. If the max. no. of backups is reached, the data starts to be saved in the oldest backup. This old data is then overwritten. Up to 99 backups can be stored in ADDM in this way. (Please also refer to Subsection 2.5.2 Creating an ADDM boot disk or USB Flash Drive).

Routing via agent option

With the option "Routed via agent" the NCU is also connectable via a network computer installed with ADDM Agent. For that, the name or the TCP/IP-address of the computer with ADDM Agent has to be declared. To the Agent computer connected is the real component. In case of a NCU it could be the operator panel of the SINUMERIK.

Only NC programs

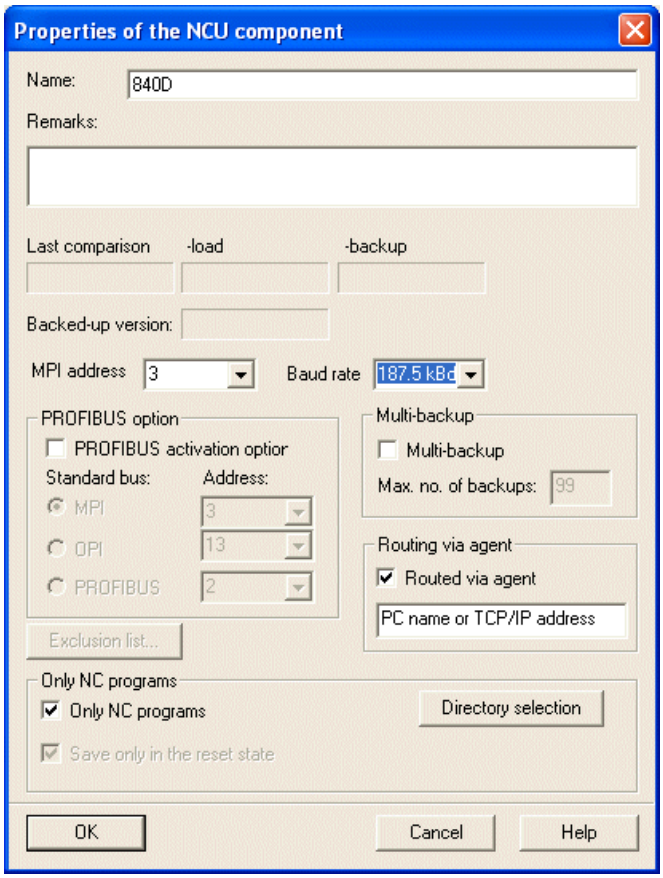
If the checkbox "Only NC programs" is activated, instead of the classic backup (all NCU data is saved), only NC programs are backed-up, loaded and compared.

Caution

If you change between the classic, complete backup and only backing-up NC programs – or vice versa – then all of the previous backups that were made are deleted.

We recommend that you only backup in the reset state. The reason for this is that backups carried-out during production can result in data inconsistency!

This is the reason that the checkbox Save only in the reset state is set as standard.



When the "Directory selection" button is pressed, the "NCU directory selection" dialog box is opened.

Here, a checkbox is used to select which directories on the NCU should be taken into account when backing-up.

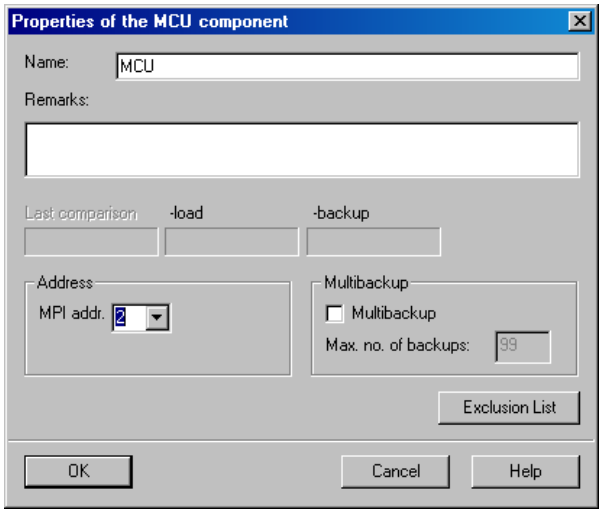
2.4.2 Single axis control MCU

The single axis control MCU 172A has an integrated position control and its own S7-CPU.

An MCU object is set up to manage the data for position control and drive. The machine and drive data, the NC programs, the data for the set-up mode and the tools offsets are stored in the MCU object which has been set up. The integrated S7-CPU must be managed via an S7 component. The MCU 172A can be loaded, backed up and compared.

Note

The MCU-PIT V4.1 application must be installed on the backup computer in order to use this function with the "MCU 172A". The MCU_PIT runs only under Windows 9x and NT.



Set the MPI address of the MCU, which is to be edited in the "MPI addr." list.

Several MCUs can be set up in an MPI grouping. ADDM then transfers the data to and from the relevant configured MPI address.

Notice

It is essential to parameterize the interface on the PG/PC in the Tools → Set PG/PC interface menu before transferring via MPI, OPI and PROFIBUS. This reset does not take place automatically.

Caution

Check the MPI address before starting the download. If the MPI address is not set correctly, the data may be transferred to the wrong hardware.

The "Multibackup" function enables the user to store up to 99 memory dumps of the component. The number is specified in "Max. no. of backups:", also see subsection 2.4.1 and subsection 2.6.2.

The data backed up with ADDM can also be edited with the MCU-PIT application. Data changed in this way can be transferred to the MCU again with ADDM.

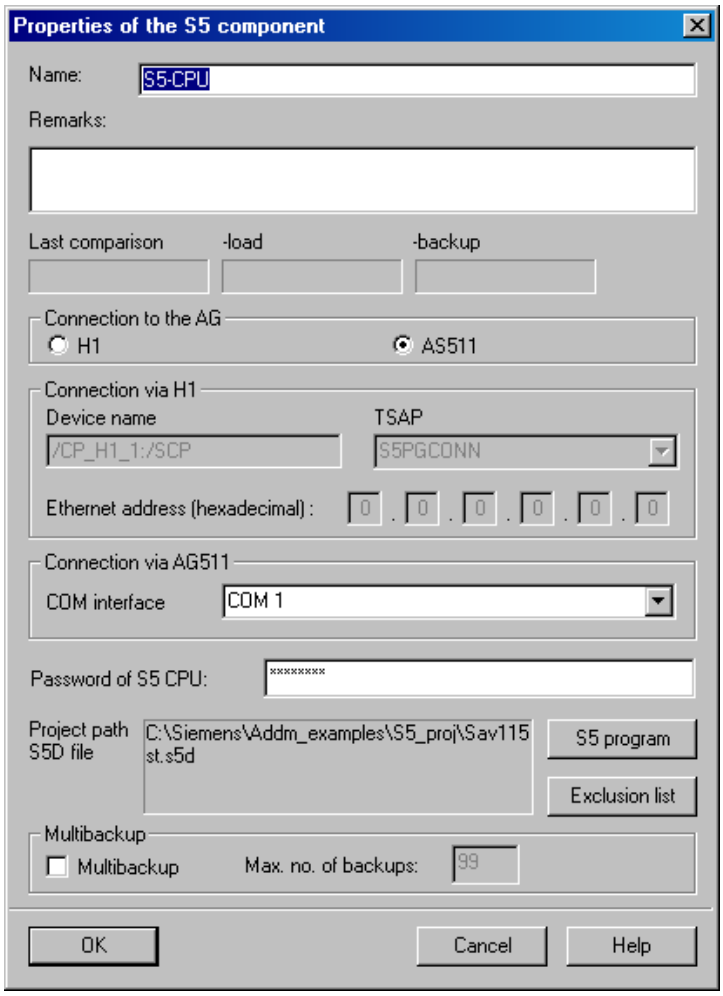
Notice

MCU PIT must not be running during transfer of the MCU data with ADDM.

2.4.3 S5 Component

The S5 component may be backed up, loaded or compared.

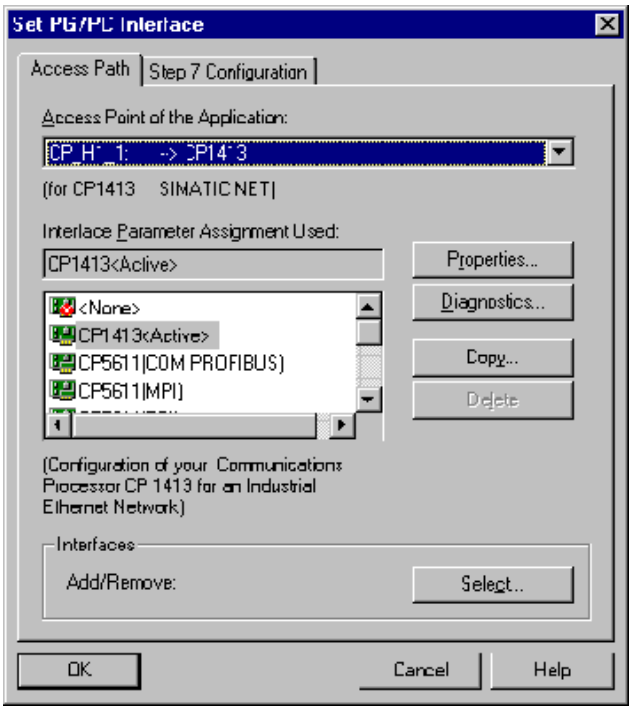
A safety backup can also be made in the component.



The Properties dialog of the S5 component contains the following fields:

- Name:
  Freely allocated name of the component.
- Remarks:
  Freely editable field for user texts.
- Last comparison
  Date and time of the last occasion when the online data was compared with the offline data (for source data and memory dump).
- -load
  Date and time of the last occasion when the offline data was transferred to the S5 controller (for source data and memory dump).
- -backup
  Date and time of the last occasion

- Connection to the AG
  The transmission mode is selected here. Via the SINEC H1 bus or via the AS511.
- Connection via H1
  (Only activated if "Connection to the PLC" "H1" is selected.)
- Device Name:
  Default "/CP_H1_1:/SCP"
  This setting defines the access point to the application. The setting is independent of "Set PG/PC interface"; this enables access to S5 hardware via H1 as well as to S7 hardware via MPI.

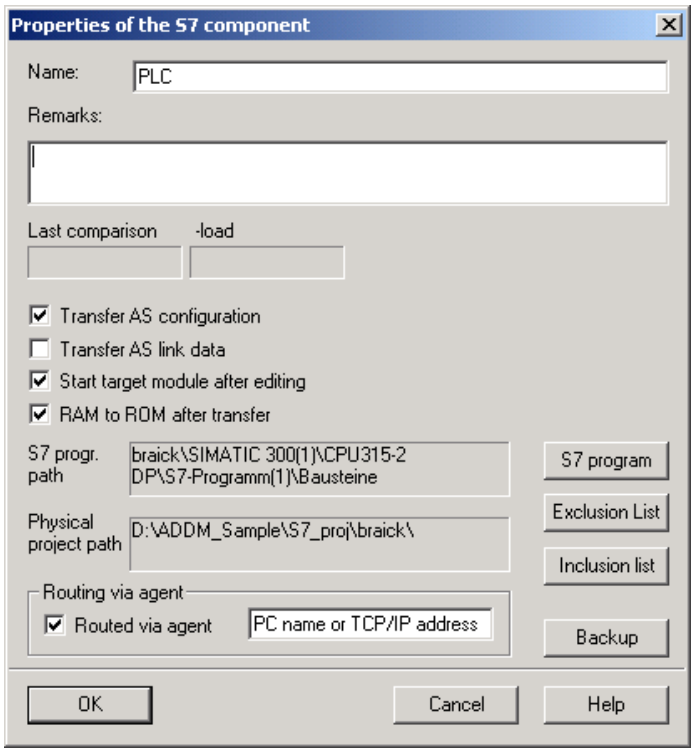


- TSAP
  (Transport Service Access Point) connection point between CP and CPU: "S5_PGDIR" for a coupling via backplane bus, "S5PGCONN" for a coupling via "monkey swing". (see CPxx manual)
- Ethernet address
  6 digit Ethernet address of the CP.
  Notice: The Ethernet address must be unique, specified by a configuration tool for S5 and loaded directly into the CP (launching the CP).
- Link via the AS511
  (Only activated if "Link to the AG" "AS511" is selected.)
- COM interface
  Interface selection for direct coupling of AG-PG/PC.
- Password for the S5 CPU
  If the S5 CPU is protected by a password, it can be entered here.
  Notice: this option is not supported by all S5 CPUs.
- Project path S5D file
  Reference to the STEP5 project path under which the STEP5 project (*.S5D) is stored.

- S5 program button
  Selects the path of the STEP5 project with a file browser. Acceptance is possible by double clicking on the STEP5 project file.
- Multibackup
  This option enables the user to store up to 99 memory dumps of the component. The number is specified in Max. no. of backups, also see Subsection 2.4.1 and Subsection 2.6.2.
- "OK" button
  Transfers the entry and acknowledges the dialog positively.
- Cancel button
  Discards the entries and acknowledges the dialog negatively.
- "Hel2 button
  Help for the current entry fields.

2.4.4 S7 Component

All S7-300, S7-400 CPUs and the PC-based Win AC controls belong to the S7-CPUs.



Because of the source data concept, the "S7-CPU" is only loaded and compared. The "S7-CPU" is stopped before the transfer and then restarted afterwards. However, there is an option of creating a backup of a "S7 CPU".

The Properties of the "S7 component" dialog enables the following settings to be made:

- "Transfer AS configuration" option.
  You transfer the hardwarecomponent, created with "HW config", to the automationsystem (from the SDBs of the STEP7 project) with this option.

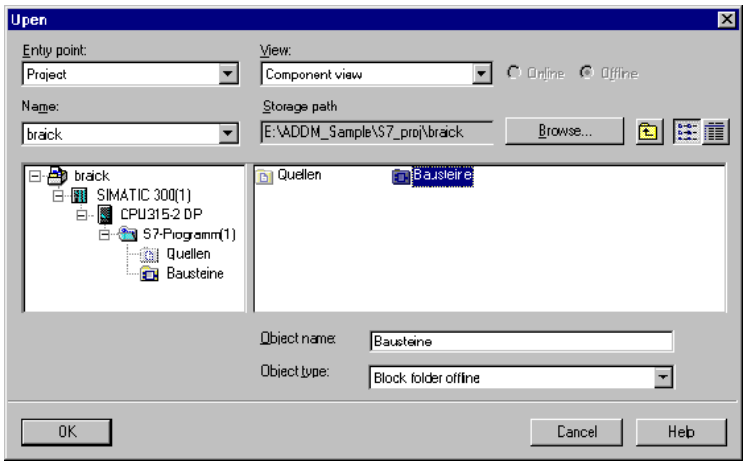
- "Transfer AS link data" option.
  If FDL links have been configured; these are also transferred when the S7 CPU is being loaded. This option can only be activated in V2 STEP7 projects. In V3 STEP7 projects, this information is transferred together with the AS configuration (SDB).
  The link data are also loaded with the transfer to the CP342-5 component.
- "Start target module after editing" option.
  You should always activate this option, so that ADDM automatically starts the CPU after the transfer.
- "RAM to ROM after transfer"option.
  ADDM automatically stores the data here in the case of modules with integrated FLASH.
- With the setting "Routing via agent" the CPU will be contacted via an installed ADDM Agent on an operator panel. For this function the name or the TCP/IP address of the Agent computer has to be declared.
- The "CPU Password" setting stores the password for access to password-protected CPUs.
  The date and time are stored if the transfer is successful.
- You create a reference to an S7 project with the "S7 program" button.
  You store the S7 project itself in a directory (e.g. S7_projects) on the same drive as the ADDM project.

Notice

A reference (pointer) to an S7 project must not be made from various ADDM projects. Failure to observe this requirement may lead to loss of data in connection with the Copy part projects and Archive functions.

Creating a reference to an S7 project

ADDM loads the data from a stated S7 project into the S7-CPU. A back transfer into the S7 project is blocked to prevent the source data being inadvertently overwritten.
ADDM requires a reference to the relevant S7 project in order to transfer the data.



1. To do this, select the S7 project in the Open dialog of the S7 browser.

2. Assign the storage path of the corresponding source project with the "Browse" button.

3. The reference is stored in ADDM by selecting a ”Block” object in the right-hand area of the display.
   The browser is then closed automatically.

S7 source data

Source data maintenance is traced in S7 projects. This has the advantage that not only the PLC programs are kept in the S7 projects but also the higher-level data for the PLC. This includes, for example, variable tables and structures, connection data between CPUs via MPI, PROFIBUS or Industrial Ethernet etc. Every CPU can thus be accessed with a programming device, irrespective of the chosen connection in a networked system. However, this requires source data maintenance in the S7 project. The higher-level data is not stored on the CPU. Back loading the CPU data into the project would lead to a loss of information. Therefore it is impossible to back load into the S7 project with ADDM.

S7-backup

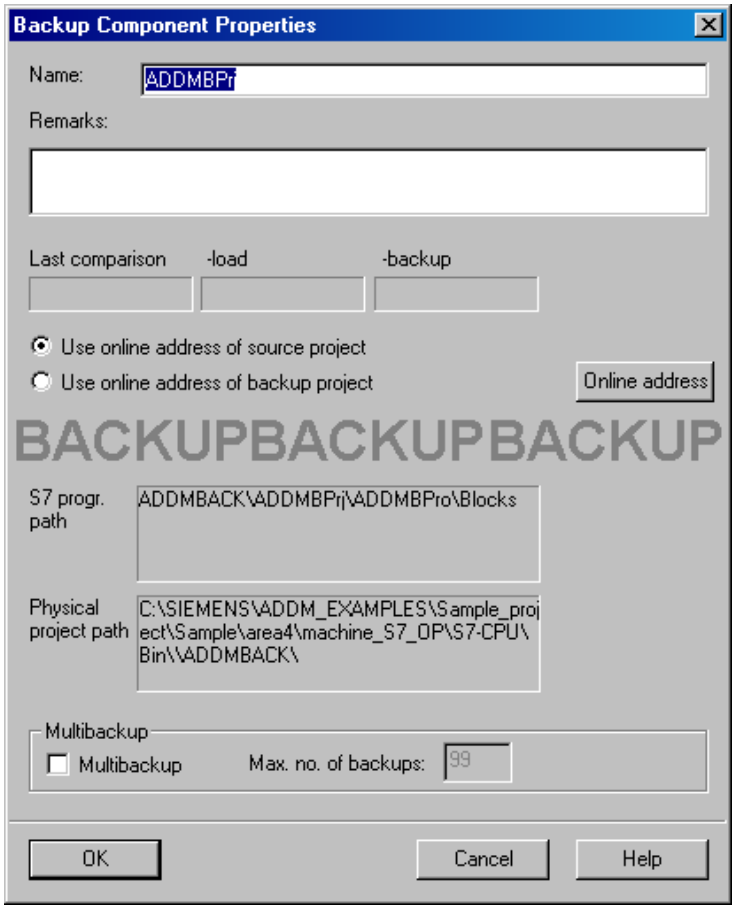
Nevertheless, in various applications, there is a need to back up the data contained in the S7 CPU. This includes data generated by controller modules, or recipes optimized by an operator during the work. It is possible to define an S7 backup so that this data can be backed up despite the source data concept.

Note

If data is backed up in an S7 backup, ADDM reads back all program data of the S7-CPU. Other fitted modules, such as CPs, must be backed up separately

Properties of the S7 backup

Clicking on the "S7 Backup" button in the properties of the S7 component opens another properties window.



The specifications required for the S7 backup are made in this properties window. As back loading the S7 data from the CPU into the source project (see S7 source data) is not permitted in ADDM, ADDM creates a separate S7 project in the ADDM structure. The S7 data are backed up in this project.
The date and time are stored in the case of a successful transfer or when a comparison is made.

Note

With some CPUs, data or programs stored in the read only memory of the CPU are also backed up. These blocks cannot be loaded back.

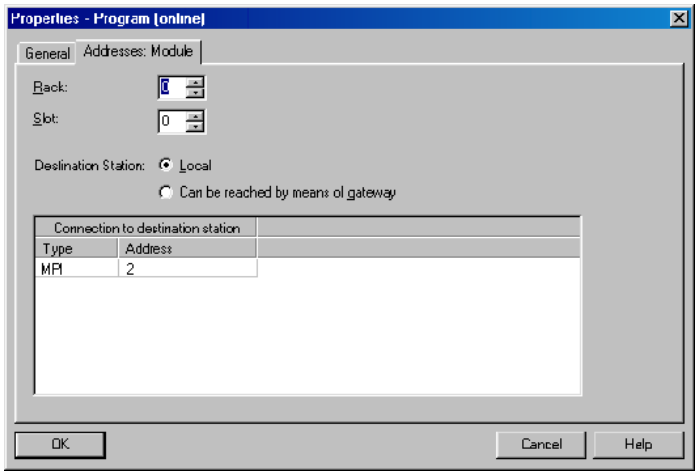
The following settings are offered:

- Use the online address of the source project:
  If there is a pointer to an S7 source project in the properties of the S7 component, ADDM uses the access addresses stored in the S7 source project for online access to the S7 CPU.

- Use the online address of the backup project:
  If an S7 source project does not exist, then the access paths must be defined in the backup project. This setting must be selected for this purpose. The setting option is thus activated via the Online Address button. Actuating the button opens Program Properties.

- Multibackup:
  This option enables the user to store up to 99 memory dumps of the component, also see subsection 2.4.1 and subsection 2.6.2.

Properties Program (online) - local

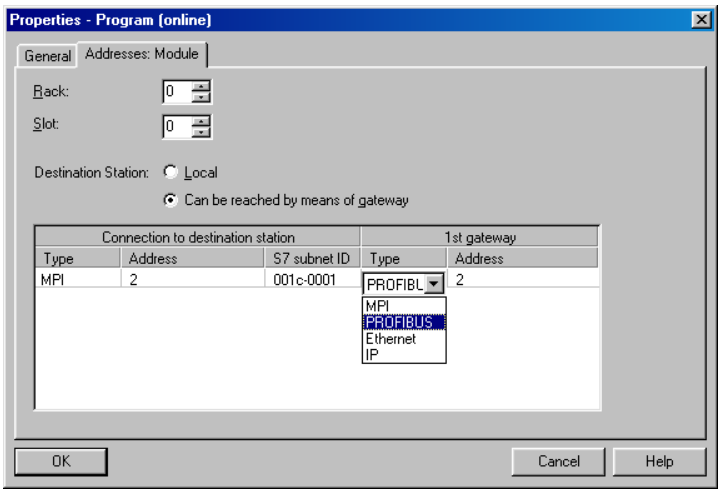


The settings for online access are made in this window. The Local setting defines a direct access to the S7-CPU via the MPI address. The address must be known to the user. If this information is lacking, the address can be found in ADDM with the Display Accessible Nodes function. The address is entered in the "Connection to destination station" under address.

Properties Program (online) via network access

An online access via networks is achieved by selecting Accessible via Network Transition. The following information is required for this purpose:

- As a rule, rack 0 and slot number 2 are the correct settings for the access.
- The MPI address of the CPU is stated under "Type".
- The "Address" of the network node over which ADDM is to make the access has to be entered. This may be an S7 CPU, a PROFIBUS CP or an Ethernet CP. The S7 subnet ID must be stated as well as this address information.



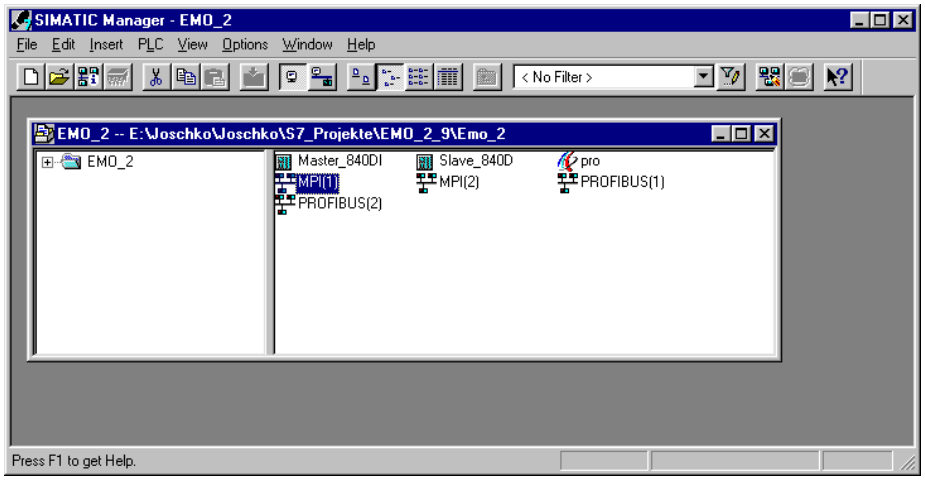
Note

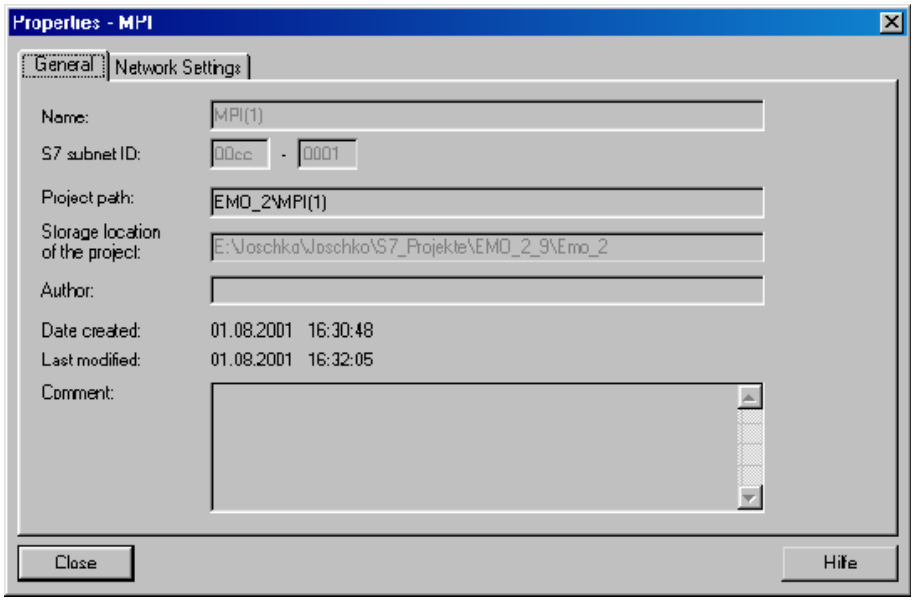
These settings can only be made if the "Use Online Address of the Backup Project" has been selected in the properties of the S7 back up component.

Caution

A faulty statement of addresses or S7 subnet ID may lead to accessing an incorrect network node. This may destroy valuable data or cause damage to the system when downloaded.

Query Subnet ID



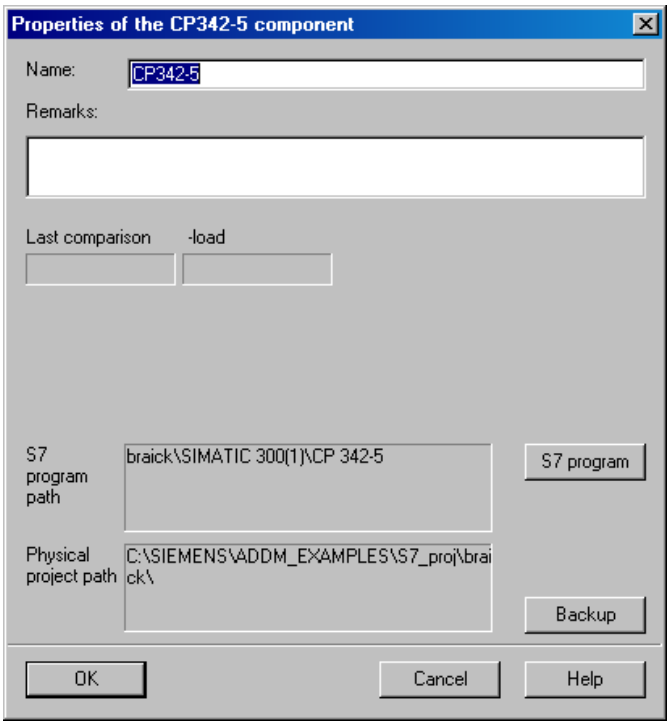


In the "Accessible via Network Transition" procedure, access is made from a higher-level network to a lower-level network (subnet). When configuring networks, STEP7 automatically assigns a subnet identification, the S7 subnet ID, to differentiate the networks. This information is essential for online access to network nodes in the subnets. The information may be queried in the SIMATIC Manager via the object properties of the network.

The above window is displayed by selecting the relevant network icon and selecting the object properties. The S7 subnet ID shown there can now be entered in the properties for the access via networks.

2.4.5 Communication modules CP342-5, CP343-1, CP443-1, CP443-5

CP data is edited and stored in S7 projects, so CPs can be loaded and compared. ADDM therefore needs a reference to the corresponding S7 project directory.



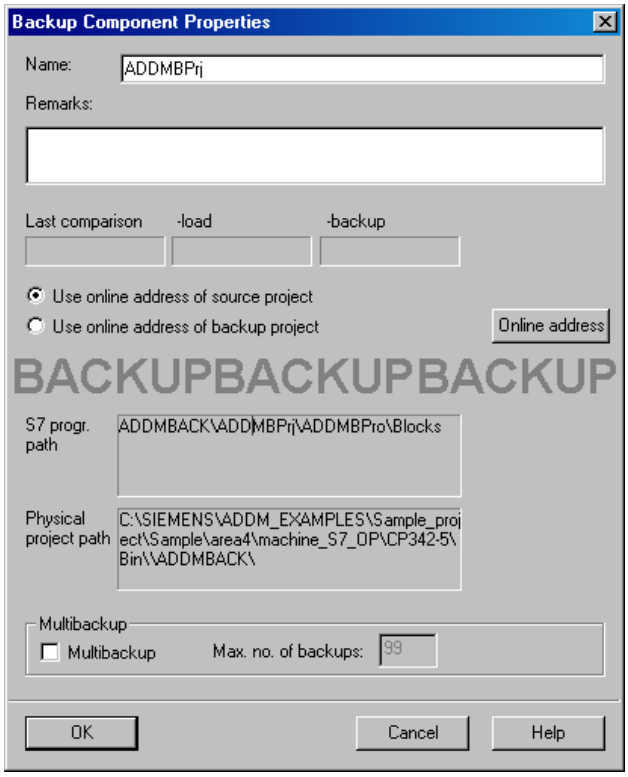
1. Click on the "S7 program" button and select the S7 project directory.
2. The reference to the CP communication module is not made to the S7 program but to the CP data.
   ADDM transfers the data from the stated directory

Note

Always set the interface of the PG/PC in the Tools → Set PG/PC interface menu item before the transfer to the component.

Properties of the CP342-5 backup

A CP342-5 can be backed up with the backup function. Clicking on the "Backup" button opens the following Properties window:



The specifications required for the CP backup are made here. As back loading of the CP data into the source project is not permitted in ADDM, ADDM creates a separate S7 project in the ADDM structure. The CP data are backed up in this project. The date and time are saved in the case of a successful transfer or a comparison.

The following settings are available:

- Use online address of source project
  If there is a pointer to an S7 source project in the properties of the CP component, ADDM uses the access addresses stored in the S7 source project for the online access to the S7-CPU.

- Use online address of backup project
  If there is no S7-source project, the access paths must be defined in the backup project. This setting must be selected for that purpose. This activates the setting option via the Online address button. Clicking on this button opens Program Properties and enables the addresses to be defined. The procedure and dialogs are the same as for backing up an S7 component.

- Multibackup
  This option enables the user to store up to 99 memory dumps of the component, also see subsection 2.4.1 and subsection 2.6.2.

CP342-5 in V2 STEP7-project

STEP7 projects Version V2 store the data of a CP in the hardware data of the CPU. Therefore create a reference to the S7-CPU.

ADDM opens the HW config tool under STEP7 to load V2 STEP7 projects into the CP. Select the corresponding CP from the table in this tool and start the loading procedure. Only at this point, the SDBs, which are already available in a V3 STEP7 project, are generated. Therefore, the loading process must be triggered out of HW Config.

ADDM automatically detects whether it is a V2 or V3 STEP7 project.

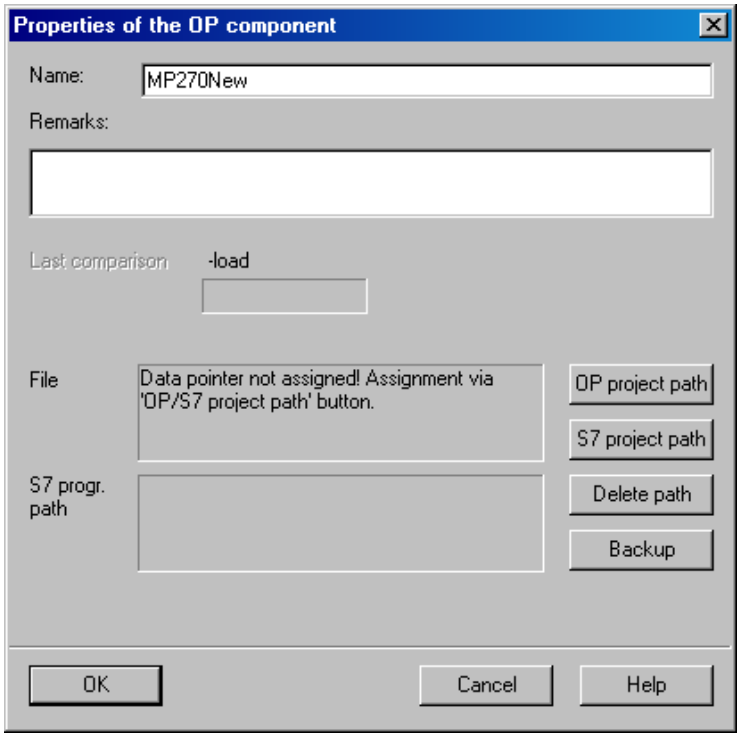
If so-called FDL links are set up in addition to normal master-slave data, then ADDM also transfers them when loading the CP.

Note

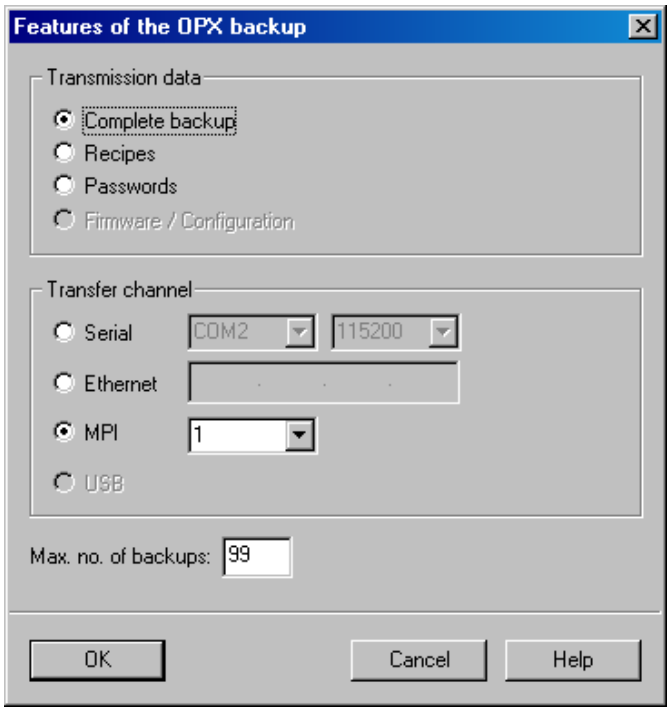
This data is also transferred when loading the S7-CPU if the "Transfer AS link data" option is selected.

2.4.6 OP, TP and MP operator panels with ProSave

In ADDM, operator panels can be backed up, loaded and compared via ProSave software. ProSave is also installed during the installation of ADDM.



The function can be activated with the "Backup" button in the Properties of the OP Component. If the button is coloured grey, the selected OP does not support the backup function.
On clicking "Backup" the following dialog opens:



The data can be backed up, loaded and compared. In so doing, it must be borne in mind that, of course, only that data can be transferred back to the OP, which had previously been backed up. The following transfers can be defined:

- "Complete backup" backs up all the data of the OP.
- With the "Recipes" setting, only the recipe data of the OP is backed up.
- "Passwords" enables passwords to be backed up.
- With some OPs, the "Firmware" of the OP can be backed up (e.g. OP 17).

The specification in the "Transfer channel" determines the type of connection to the operator panel

- "Serial" links the OP via the serial interface. The COM port and the data transfer rate must be specified for the backup computer.
- Some OPs, primarily the PC-based OPs, have an "Ethernet" interface. This may be used for data transfer. Select Ethernet if the OP supports this function. The TCP/IP address of the OP must be entered for this purpose.
- Enter the "MPI" address for a link via MPI/PROFIBUS.
- The "Max. no. of backups" enables the user to store up to 99 memory dumps of the component, see also subsection 2.4.1 and subsection 2.6.2.

Possible connections from all OPs

In this table all possible connections and there necessary settings are listed:

OP	Seriell 9600	Seriell 19200	Seriell 38400	Seriell 57600	Seriell 115200	Ethernet	MPI	USB
OP3	1	0	0	0	0	0	1	0
OP7	1	1	1	0	0	0	0	0
OP15	0	0	0	0	0	0	0	0
OP17	1	1	1	0	0	0	0	0
TD17	1	1	1	0	0	0	0	0
OP25	0	0	0	0	0	0	0	0
TP27-6	0	1	1	1	0	0	0	0
TP27-10	0	1	1	1	0	0	0	0
OP27	0	1	1	1	0	0	0	0
OP35	1	1	1	1	0	0	1	0
OP37	0	1	1	1	0	0	0	0
TP37	0	1	1	1	0	0	0	0
C7-626	0	0	0	0	0	0	0	0
C7-633	1	1	1	0	0	0	0	0
C7-634	1	1	1	0	0	0	0	0
new:	0	0	0	0	0	0	0	0
TP070	1	1	1	1	1	0	0	0
TP170A	1	1	1	1	1	0	1	0
TP170 MICRO	1	1	1	1	1	0	0	0
TP170B MONO	1	1	1	1	1	1	1	0
TP170B COLOR	1	1	1	1	1	1	1	0
OP170B	1	1	1	1	1	1	1	0
Mobile Panel 170	1	1	1	1	1	0	1	0
C7-635 OP MONO	1	1	1	1	1	1	1	0
C7-635 TP B MONO	1	1	1	1	1	1	1	0
TP270 6"	1	1	1	1	1	1	1	1
TP270 10"	1	1	1	1	1	1	1	1
OP270 6"	1	1	1	1	1	1	1	1
OP270 10"	1	1	1	1	1	1	1	1
MP270B	1	1	1	1	1	1	1	1
MP270	1	1	1	1	1	1	1	1
MP270B 6"" TOUCH	1	1	1	1	1	1	1	1
MP270B TOUCH	1	1	1	1	1	1	1	1
MP370	1	1	1	1	1	1	1	1
MP370 TOUCH	1	1	1	1	1	1	1	1
MP370 15" TOUCH	1	1	1	1	1	1	1	1
OP77B	1	1	1	1	1	0	1	1
OP 73	0	1	1	1	1	0	1	0

OP	Seriell 9600	Seriell 19200	Seriell 38400	Seriell 57600	Seriell 115200	Ethernet	MPI	USB
OP 73 micro	0	1	1	1	1	0	0	0
OP 77A	0	1	1	1	1	0	1	0
TP 177A 6"	0	1	1	1	1	0	1	0
TP 177 micro	0	1	1	1	1	0	0	0
TP 177B mono DP	0	1	1	1	0	0	1	1
TP 177B color PN/DP	0	1	1	1	0	1	1	1
OP 177B mono DP	0	1	1	1	0	0	1	1
OP 177B color PN/DP	0	1	1	1	0	1	1	1
Mobile Panel 177 DP	0	1	1	1	0	0	1	0

Please refer to ProSave for transmission options for other devices.

2.4.7 Drive component

Selecting the drive

The following drives can be managed, backed up, loaded and compared with the drive component under A&D DataManagement.

- SIMODRIVE 611Universal, 611Universal e
- POSMO CA
- POSMO CD
- POSMO SI
- POSMO A 75W, 300W.

Provided that Drive ES version 5.3 or above is installed, drives from the

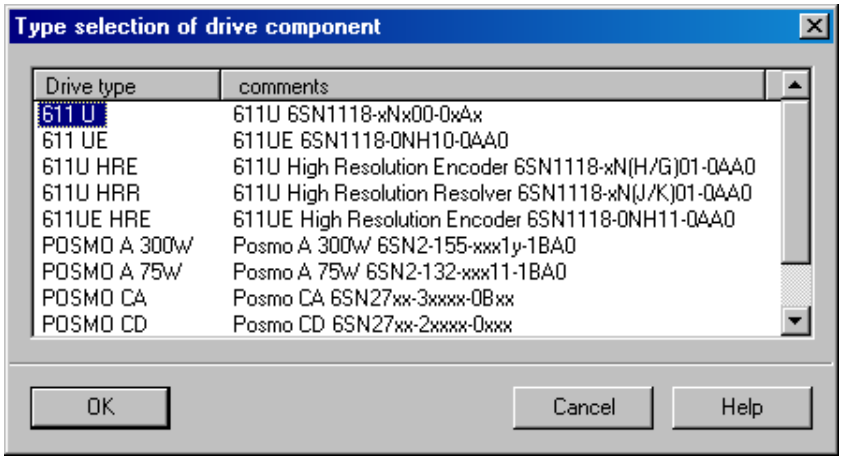
- Combimaster
- MASTERDRIVES
- SIMOREG

families can be managed, saved, loaded and compared, as long as they can be integrated in a Step7 project.

As well as the backed up data, the drive component can contain safety backups.

These drives have their own closed-loop computer and work in conjunction with S7 controls or with the SINUMERIK 840Di. The control system and drive generally exchange their data over the PROFIBUS DP. Certain versions of the SIMODRIVE 611Universal can also be controlled as a stand-alone device via terminals.

Selecting the motor symbol or the Insert → Drive menu displays the following selection list of the drive component. A double click on the desired drive, and ADDM inserts the drive into the list. Double clicking on the inserted drive component opens the properties dialog.



Before a data transfer will be started, the drive type is checked by ADDM. If a difference is found, the transmission will be aborted by ADDM with an error message.

From the ADDM version 5.2 the drive type check is done as well, but now the user may decide if the transfer should be aborted or not. So in a configured 611U type it"s possible to backup the data of a real 611UE type.

Drive interfaces

The coupling to the drive for the data backup with ADDM may take place over various interfaces depending upon the drive or drive variant used. The matching transfer cable is then required for this purpose. The following interfaces are available for data exchange.

- RS-232, serial
- PROFIBUS DP

SimoComU/A

The software packages SimoComU/A are available for starting up the drives. These software packages are needed for processing the drive components with ADDM on the backup computer. SimoComU/A are supplied on the installation CD. The SimoComU/A software provides their own user interface for starting up and maintaining the drives. ADDM uses the up and download functions of the SimoComU/A software in the background. This means that the SimoComU/A interface remains invisible while operating with ADDM. However, all the backed up drive data can be processed and of course changed with SimoComU/A..

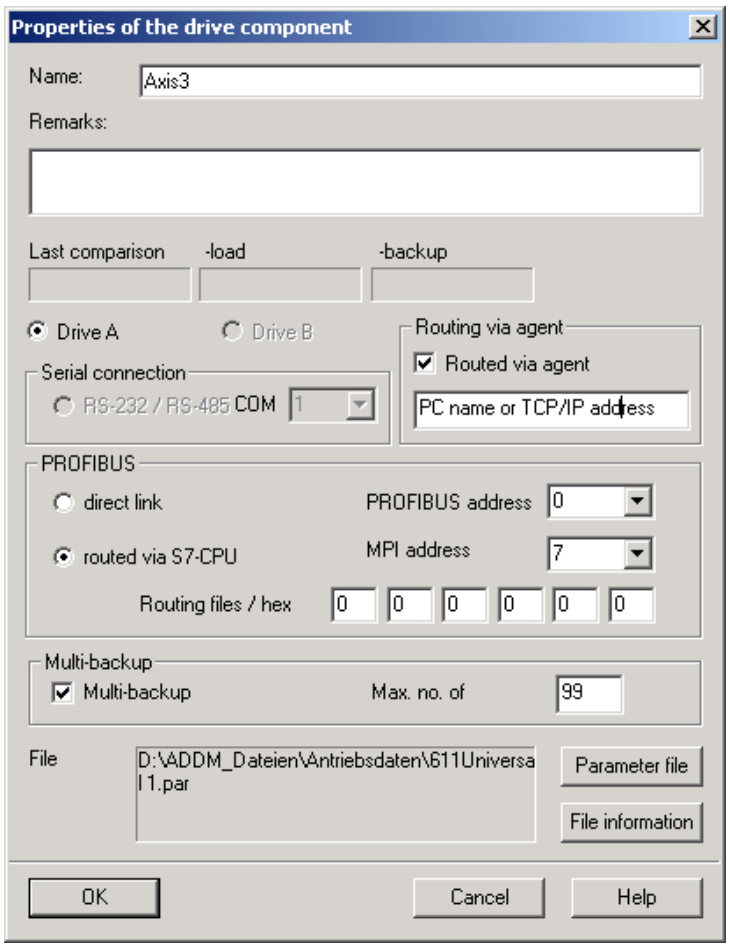
Caution

The SimoComU/A software may be installed in different versions on the same computer. For using in correlation with ADDM, only the actual version of SimoComU/A should be installed once. Older versions must be removed from the computer before using ADDM.

DriveES

The DriveES software package is provided for starting up the drives in the Combimaster, MASTERDRIVES and SIMOREG families. The software package is required for processing drive components with ADDM on the backup computer. DriveES is not supplied on the installation CD. The DriveES software provides its own user interface for starting up and maintaining the drives. ADDM uses the up and download functions of the DriveES software in the background. This means that the DriveES user interface remains hidden while operating with ADDM. However, all the backed up drive data can be processed and of course changed with DriveES..

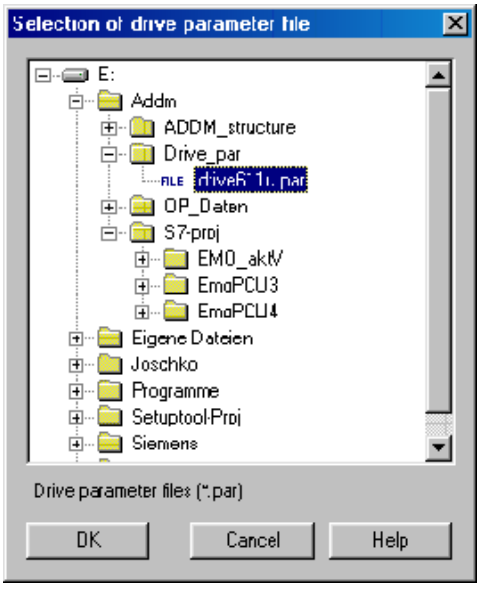
Properties of a SIMOCOM U/A drive



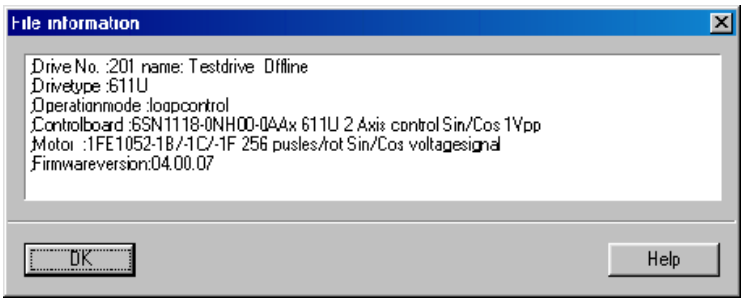
The Properties dialog of the drive component contains the following fields:

- Last comparison
  Date and time of the last occasion when the online data was compared with the offline data.
- -load
  Date and time of the last occasion when the offline data was transferred into the drive.
- -back up
  Date and time of the last occasion when the drive data was backed up.

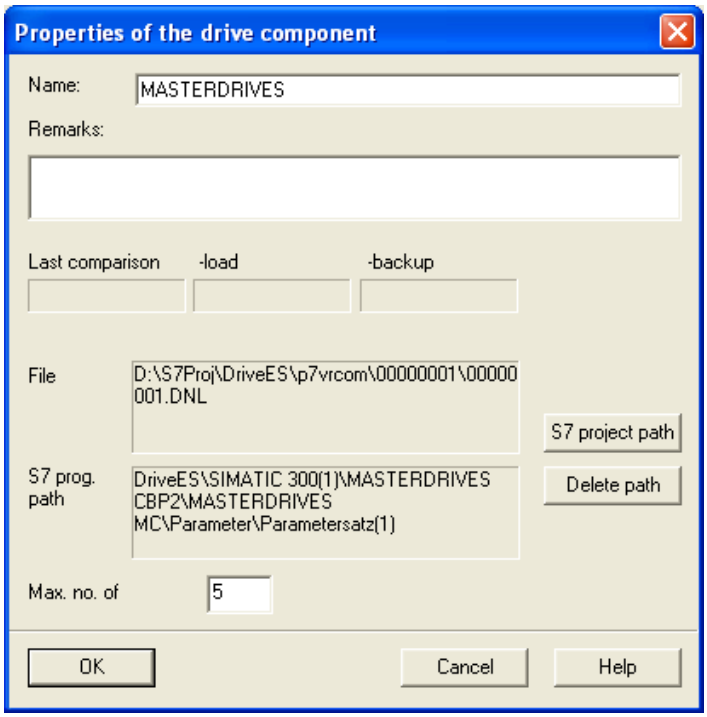
- Drive A – Drive B
  The Simodrive 611 Universal drive can be supplied with either one or two axes on a module. On modules with two axes, these axes are distinguished by being named drive A and drive B. This can be set in ADDM.
- Routing via agent
  With this setting the drive is connectable via a network computer with ADDM-Agent. For this the name or the TCP/IP address of the computer has to be declared.
- RS-232 / RS-485
  The 611U and 611UE drives are loaded, compared and backed up via the RS-232 / RS-485. The COM1/2 interface of the backup computer has to be set. The transfer may also be made over the PROFIBUS with an optional expansion module.
- PROFIBUS
  When the PROFIBUS is used as a transmission route, the coupling to the drive may be made in various ways.
  If the backup computer is connected directly to the PROFIBUS segment of the drives (direct connection), the PROFIBUS address set for the drive must be stated in order to gain access.
  If the backup computer is connected via a SIMATIC S7 or a higher-level PROFIBUS segment (routed via S7 CPU), the subnet ID of the network segment and the MPI address of the S7 CPU must be stated. In the STEP7 project, the subnet ID information can be queried via the SIMATIC Manager.
- Multi-backup
  This option enables the user to store up to 99 memory dumps of the component. The number is specified in Max. no. of backups, also see subsection 2.4.1 and subsection 2.6.2.
- Parameter file
  In ADDM, the button for selecting the parameter file sets a pointer to the drive start up data. Actuating the button opens a browser for navigating to the drive data. The data is generated and stored with the SimoComU/A software package.



- File information
  Information about the parameter file can be called with this button. This serves for linking the correct drive file.Datei-Info.



Properties of a DriveES drive



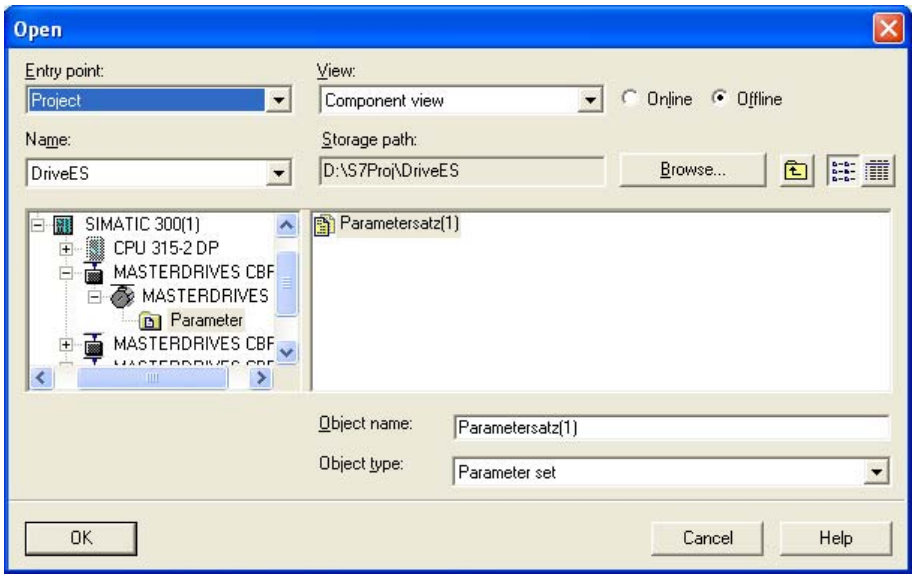
The Properties dialog of the DriveES drive component contains the following fields:

- Last comparison
  Date and time of the last occasion when the online data was compared with the offline data.
- -load
  Date and time of the last occasion when the offline data was transferred into the drive.
- -backup
  Date and time of the last occasion when the drive data was backed up.
- File
  Reference to the physical project path for the parameter file on the storage medium.

- S7 progr. path
  Reference to the STEP7 project path under which the STEP7 project is stored along with the DriveES drive that was configured there.

- Max. no of
  The maximum permissible number of backups is specified here.

- S7 project path
  DriveES manages the drives connection data in a Step7 project. To transfer the data, therefore, ADDM requires a reference to the corresponding S7 project.



- Select the S7 project in the S7 browser"s Open dialog.

- Using the "Browse…" button, assign the storage path of the corresponding source project.

- The reference is saved in ADDM by selecting a parameter set in the right-hand display area.
  The browser then closes automatically.

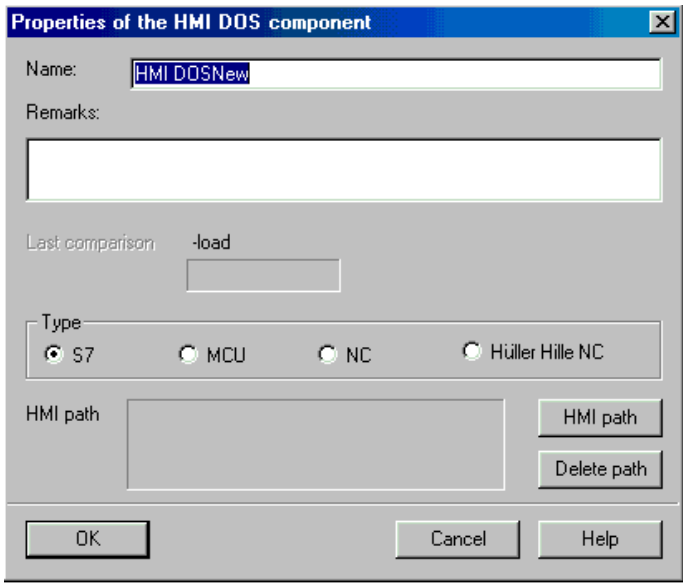
- Delete path
  Deletes the S7 project path.

2.4.8 HMI DOS OP 031 operator panel

The HMI DOS operator panel OP 031 is loaded via Interlink.

Switch the operator panel into transfer mode before the transfer. To do this, the OP is explicitly configured, or you branch into the Load menu with power ON and key <6>.
See the OP 031 operator manual for more details.

The data is packed after you have acknowledged the query, and the MMC goes into server mode



Select the Type of operator panel to be configured. ADDM supports the following types:

- S7
- MCU
- NCU
- Hüller Hille NC

ADDM enables operator panel texts, configurations and HiGraph diagnostic data to be stored

- in the plant structure
- in any directory on the same drive.

In order to find the texts in any directory on the same drive again, create a reference to it with the aid of the HMI path button. ADDM then transfers the operator panel texts from the stated directory.

Note

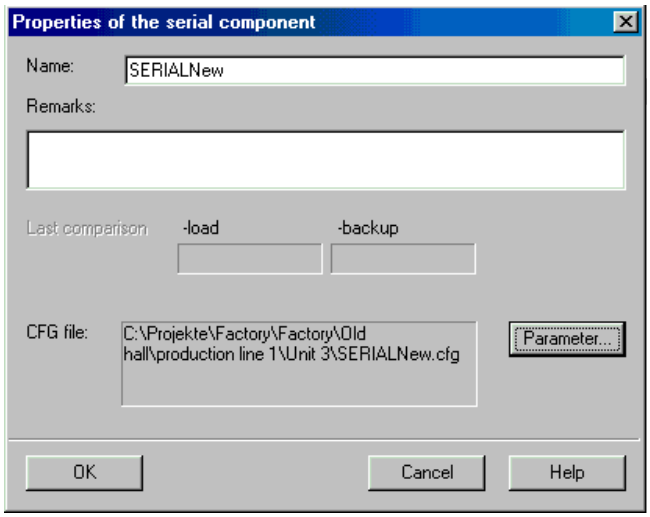
The operator panel texts must be stored according to the defined directory structure of the DOS package. Only in this way can ADDM find the user texts, configurations and diagnostics data, and load them onto the operator panel.

2.4.9 Serial component

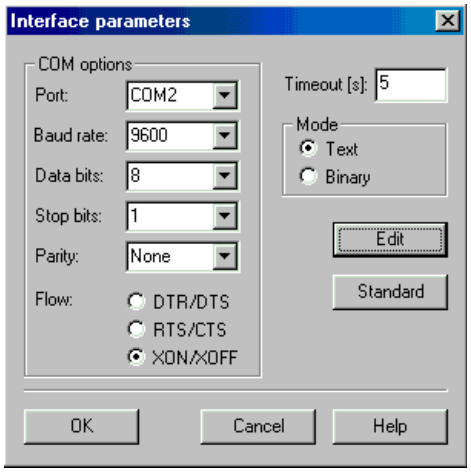
Devices with a RS-232 interface can also be backed up with ADDM.
The prerequisites for this are that:

- The data is transferred without a protocol
- The data are stored in a file.

The serial component can be loaded and backed up.



You open the "Interface parameters" dialog with the "Parameter..." button.

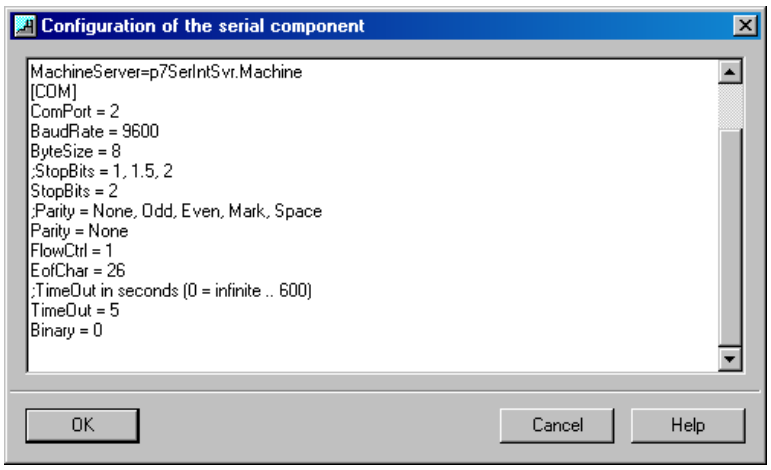


You define the settings for the "Serial interface" in the "Interface parameters" dialog.
Set the maximum permissible transfer time in the "Timeout (s)" field.

Notice

Make absolutely sure that the Timeout value is set correctly.

You change into the parameter text display with the "Edit” button.
Here, you enter details of the relevant interface.

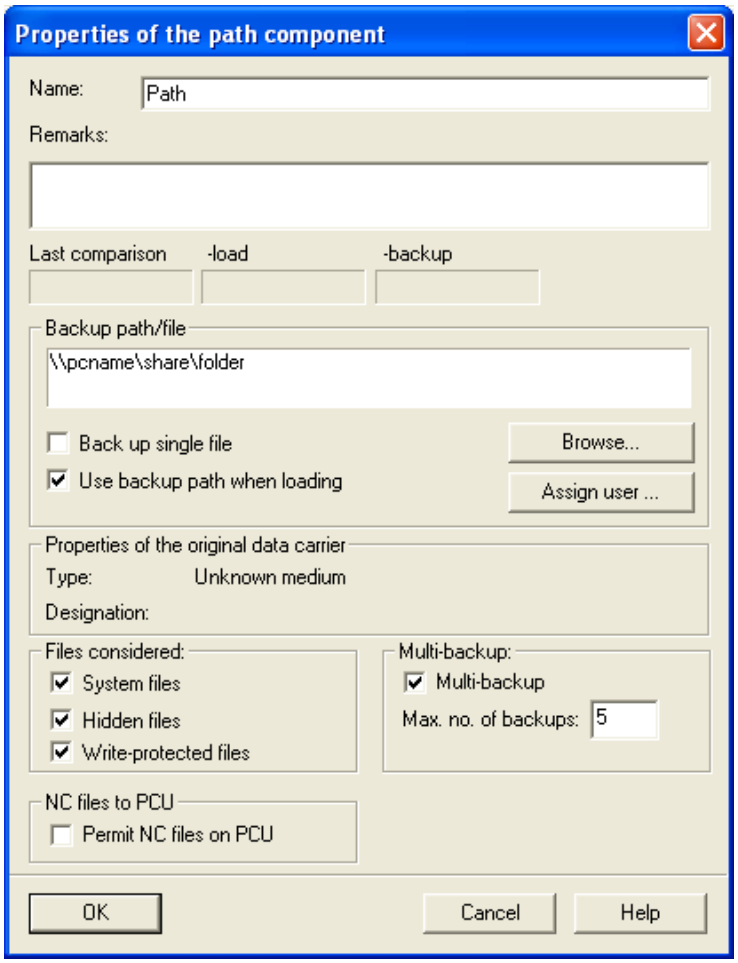


ADDM stores the settings of the serial interface in a file, for example in "Serial.cfg”.
You can still change all the parameters directly before the data transfer.

If the serial interface does not output an EOF (end of file) during the backup, then ADDM ends the transfer after this time and saves the data.

2.4.10 Path component

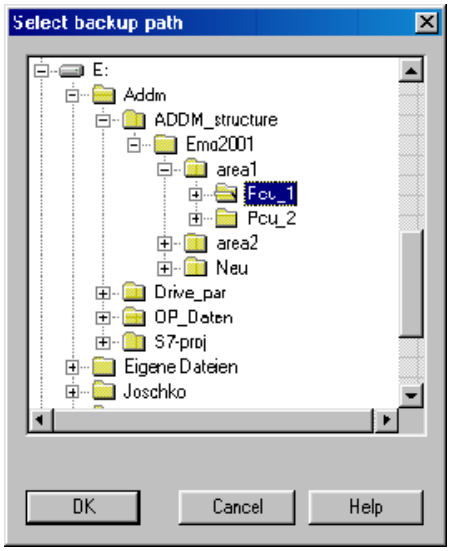
The path component enables any directory tree to be backed up, loaded and compared via ADDM. The only condition is that the source and target drives are linked with the ADDM computer.



- Assign a "name” (max. of 32 characters) to the zip archive to be backed up.
- Describe the contents to be backed up in more detail in the "Remarks” field.
- In the area "Backup path/file” the share a pc name can be given in manually (UNC path). With this UNC path a logical drive connection is not any more necessary. The access to the defined pc or path is sometimes only for certain users allowed in the network. In this case an allowed user can be assigned.
- With "Back up single file", a single file can be backed up in a directory. The path desired for the loading procedure is stored in ADDM with the Use backup path when loading option. Without this option, you must navigate to the desired target directory when loading.

- The "Multi-backup" option enables the user to store up to 99 memory dumps of the component.
- The "Permit NC files on PCU" option allows a user with the Maintain NC files right to perform the NC files function on the PCU with this component.

The "Find…" button selects the browser for navigation.



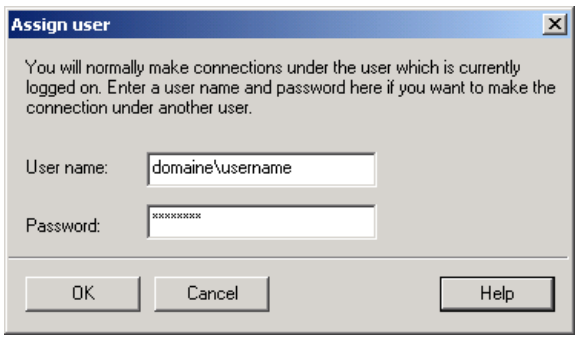
All drives are offered for defining the backup path, including the linked network drives. After the drive or directory has been selected, the path is stored with the "OK" button.

Notice

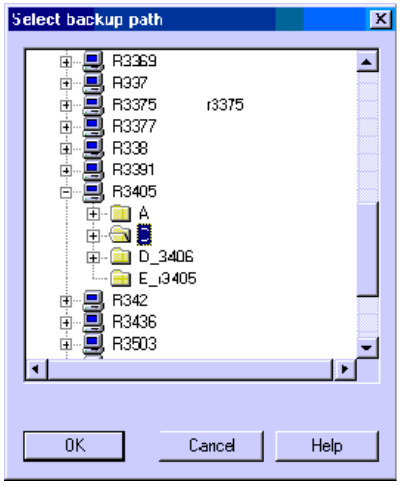
If the stored path lies on a network drive linked to the backup computer, it must be ensured that this network drive is also linked to the backup computer during the loading procedure.

Assign user

The button "Assign user..." opens the following dialog. There the allowed user will be assigned with his password. So that a not authorized user may backup or load the defined file or path.



If the backup computer is linked to a network, the backup path may also lie in a network computer. ADDM displays all accessible network computers for selection in the browser. Access to the current computer must however be permissible for the user on the backup computer. That"s not needed if an authorized user is assigned by the button "Assign user...".



Backup

You backup a path component with the Transfer → Hardware to PC (backup) menu.

Select the directory to be backed up in the "Backup the path component" dialog. The original path and all files and directories lying under it are packed in a *.zip archive file, and stored in the ADDM project directory.

Load

You load a path component with the Transfer → PC to hardware (load) menu.

Select the target directory for restoring the backed up files in the "Load the path component" dialog. The archive file is unpacked in this directory.

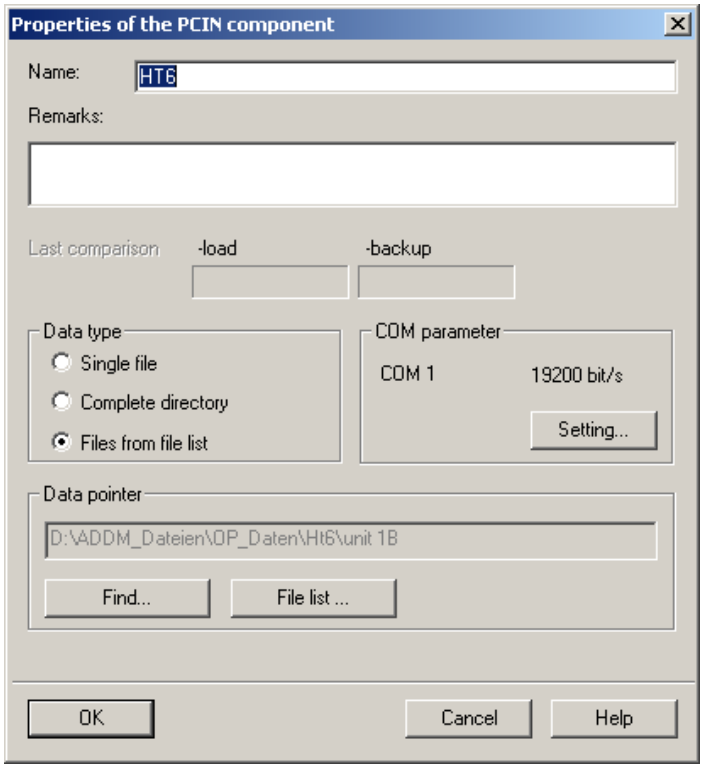
2.4.11 PCIN component

The PCIN is a component, which is embedded in ADDM, it can also be addressed serially. This component uses special protocols so that the "serial component" cannot be used for data transfer.
With the PCIN component, the following products can be supplied with their data:

- PC box MMC100 without hard disk
- PC box MMC100.2 without hard disk
- Operator panel OP 030
- Hand-held programming unit HPU
- Hand-held terminal HT 6

Properties of the PCIN component

Double clicking on the installed PCIN component opens the properties dialog.

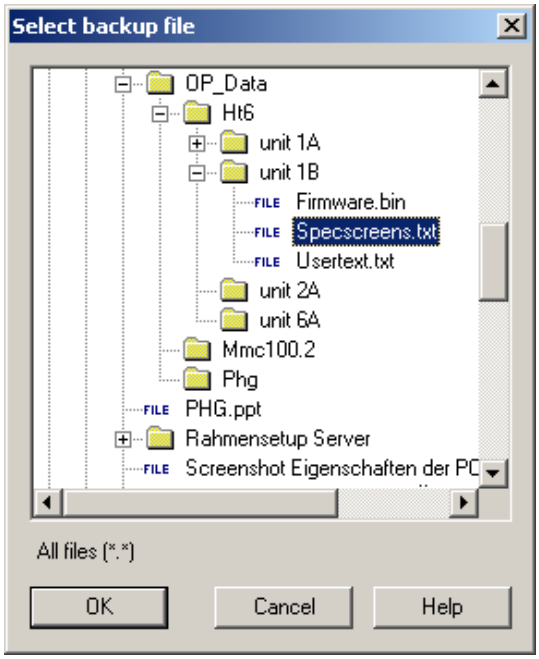


- Enter the name of the component in the "Name" input field (max. of 32 characters).
- Additional notes about the component may be entered in the "Remarks".
- The PCIN component can be loaded and backed up.
- The control panels of the PCIN component can be supplied with various data. The software version may be updated via a "config.bin" file, or user texts or images may be loaded on the control panel. The user texts or images are provided by the machine manufacturer.

- Because of the various possibilities of data provision, ADDM offers the user a simple choice of loading options via the "Data type". Only a single file, a complete directory, or several files from a file list may be transferred.

Select data

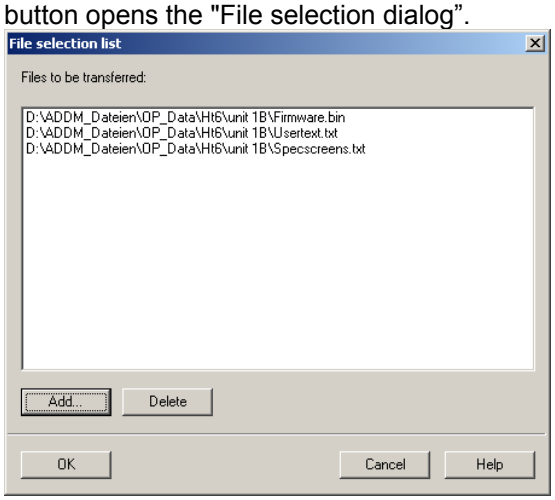
The data is selected with the "data pointer".
The dialog is opened with the "Find" button.



The file browser is used for the selection. The OK button transfers the data into the data pointer and closes the dialog

Creating a file list

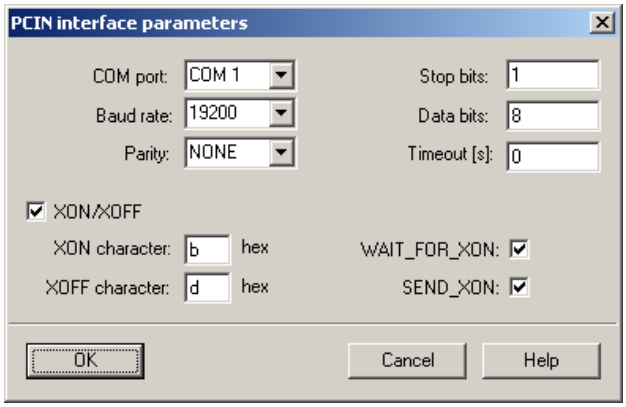
A file list can be simply created with the File list button. Pressing the "File list" button opens the "File selection dialog".



The list of files is created with the "Add" button. This opens the same file browser described under "Select file". The file is selected in the same way. Pressing the OK button transfers the file into the list. ADDM closes the dialog and stores the list in the list window.
List elements can be deleted from the file list by selecting them and then pressing "Delete".

Setting COM parameters

Selecting the Setting button in the COM parameter area enables the transfer parameters to be set.



The parameters have to be set according to the settings of the current target device. Ensure that the settings in ADDM are the same as the settings in the target device.

Notice

If ADDM and the target device are set differently, there will be a data transfer error as the data transfer cannot run properly.

Coupling to the backup computer

The PCIN component is linked to the backup computer by a standard serial cable. The cable is connected to the COM1 or COM2 port of the backup computer and to the serial interface of the HPU. The MMC 100 or MMC 100.2 components are standard PCs without hard disks but with a COM port.

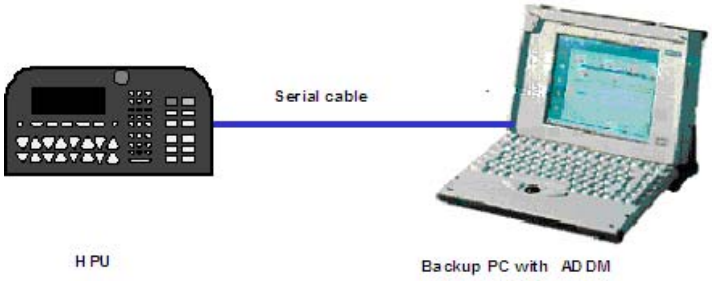


Fig. 2-1: Projektierungsdaten auf portable Medien kopieren

Necessary settings for HPU

For transferring the system software to the HPU, the following settings are necessary:

XON = 11
XOFF = 13
Parity = EVEN
Baud rate: 9600 - 57600 BAUD

Additionally, a file list with the following structure must be created:

sys_code.bin
sysfile.bin
projdata.bin
projtext.bin
alarmtext.bin
config.bin

All files should be taken from the directory HPU_DVK/FLASHBIN. For transferring parts of the system software, the following files in the list shown must be also transferred.
If only alarm texts have to be transferred, the list is as follows:

alarmtext.bin
config.bin

Necessary settings for MMC 100.2

For transferring the system software to the MMC 100.2, the following settings are necessary:

XON = 11
XOFF = 13
Parity = NONE
Baud rate: 19200 BAUD

Additionally, a file list with the following structure must be created
(C:\temp\sys) sys_0000.bin
sys_0001.***
.
sys_00XY.***
*** : .bin or .exe
XY : 57 for system data
45 for application data

The end numbers 57 or 45 are valid for tested software version 5.3.12 from the MMC 100.2.
The files should be taken from the directory "mmc100pj.sys\temp" resp. "mmc100pj.app\temp". First the system data should be transferred and then the application data. If the system data are already loaded, modified application data may also be transferred

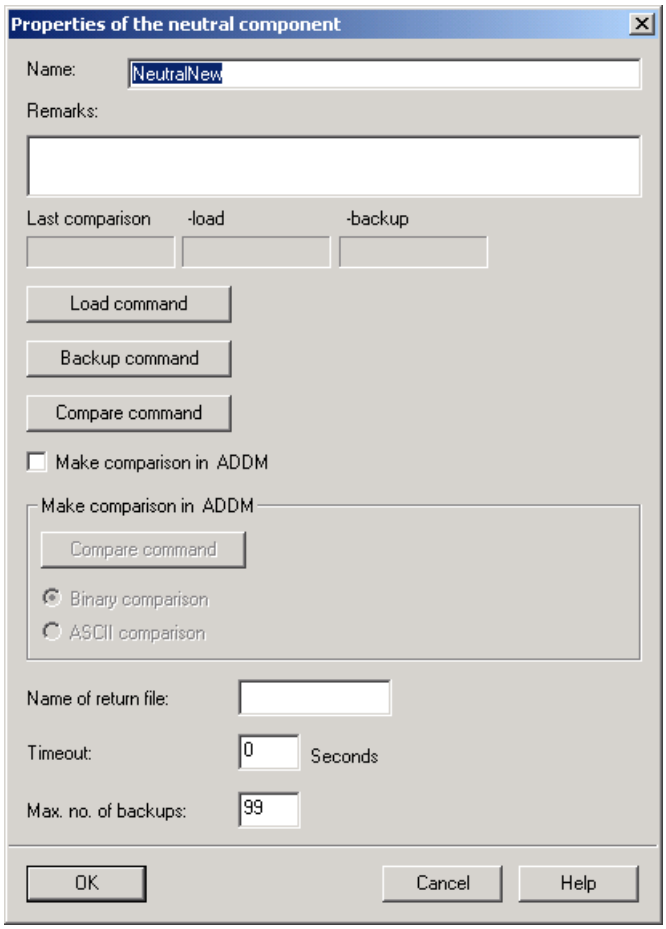
Procedure for creating a file list

On the disk drive, where the ADDM project data is located, a directory (e.g. C:\temp\sys) has to be created. Out of the system- or application directory (e.g. A:\mmc100pj.sys\temp) the files must be transferred into the created directory. With the function "ADD" (file selection list) the files must be added separately into the file selection list.

2.4.12 Neutral component

The neutral component offers the possibility to adapt foreign applications to ADDM by an easy way. The application must have a command interface or allows to be controlled via batch files.

Properties dialog box of the neutral component



The neutral component is used to "remotely control" applications with ADDM that do not have an interface to ADDM. In this case, the application must able to be called via the command lines or to be controlled using batch files.

The parameters of the neutral components are individually listed below:

- Name:
  Freely assignment component name.

- Remarks:
  Field for user texts that can be freely edited.

- Last comparison
  Date and time of the last comparison between online data and source data.

- -load
  Date and time that offline data was last loaded into the target system.

- -backup
  Date and time that online data was last transferred from the target system into the backup PC.

- Load command
  This button opens a dialog box in which a command line can be entered to load or to call a batch file to download the data into the hardware.

- Backup command
  This button opens a dialog box in which a command line can be entered to backup or to call a batch file to save data in the backup PC.

- Compare command
  This button opens a dialog box in which a command line can be entered to compare or to call a batch file to compare online data with offline data. In this case, a comparison is made in the called third-party application. The result of the comparison is either transferred to ADDM via a return file or, after a successful comparison, the user must click on the comparison result in a dialog box.

- Checkbox "Make comparison in ADDM"
  When this checkbox is activated, the comparison run is not carried-out in a third-party application, but instead, in ADDM.

- Compare command
  This button can only be used if the checkbox "Make comparison in ADDM" is activated. This button opens a dialog box in which a command line can be entered to temporarily save online data or to call a batch file to temporarily upload online data. In order that ADDM finds this data to make a comparison, the space retainer %TEMPPATH% must be specified in the upload target path.

- "Binary comparison" option button
  This option button specifies as to whether the temporarily saved data should be compared in the binary format. As a comparison result, an overview with all files is opened that indicates any differences.

- "ASCII comparison" option button
  This option button specifies whether the temporarily saved data should be compared in the ASCII format. As a comparison result, an overview with all files is opened that indicates any differences. The appropriate file can be opened by double clicking on it and the differences are highlighted in color.

- Name of the return file
  Name of the return file which is used to return the value from the called application to ADDM. The contents of the return file describe the result of the action as follows:
  [Returncode]#error textwhereby the gate symbol (#) is used as separator.

  The value [Returncode] can assume the following values:

  <0: Error code of the application.

  =0: The action was successfully completed.

  =1: The action was successfully completed and there were no differences.

  =2: The comparison was successfully completed and there were differences.

  =3: Undefined state.

  If this field is empty, then after the action has been completed, ADDM opens a dialog box in which the user must define the comparison result.

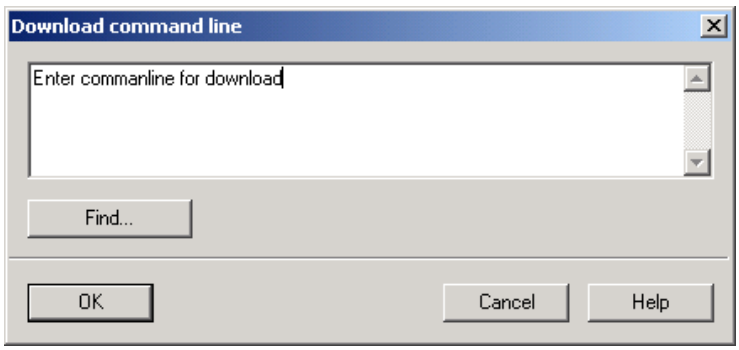
- Timeout:
  Time in seconds until the action is interrupted.

- Max. no. of backups:
  Defines the maximum number for the memory dumps. If this number has been reached, the next time that a memory dump is created, the oldest memory dump is overwritten.

- Checkbox: Routed via Agent
  By activating this option, the command line of the neutral component is not executed at the ADDM computer but is routed via "Agent" computer. The "Agent" computer is defined in the appropriate field by entering the IP address or the computer name.

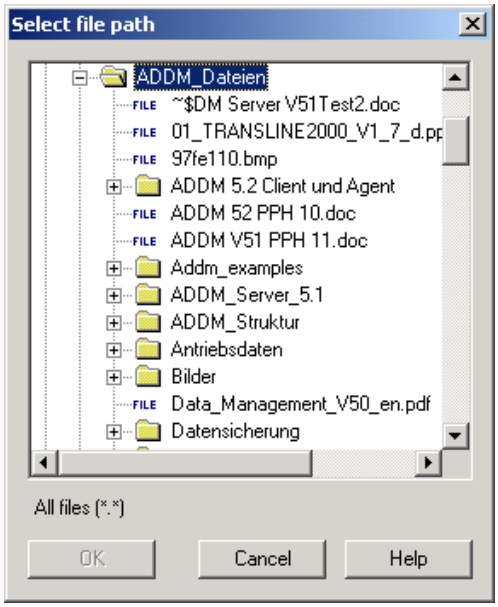
Load command

On clicking the button "Load command" the appropriate dialog will be opened.



The command can be defined in the input area. If a command is defined, no direct disk drive name should be given in within the command line. Another ADDM-Client (computer) may have a different drive indication for the same drive.
In this case the function is not working, because the drive name will be not found.

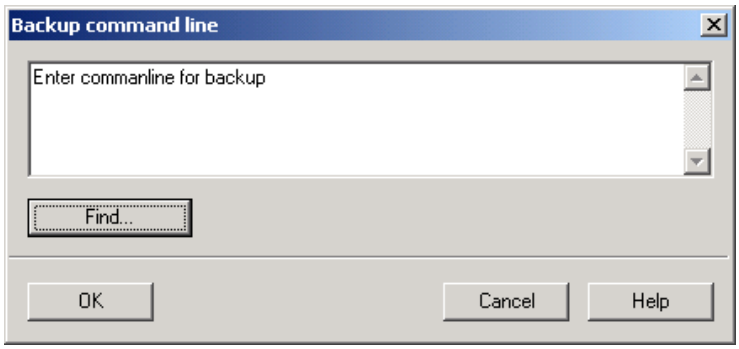
With the button "Find…" a browser opens and allow you to navigate into directories and select files with commands for execution.



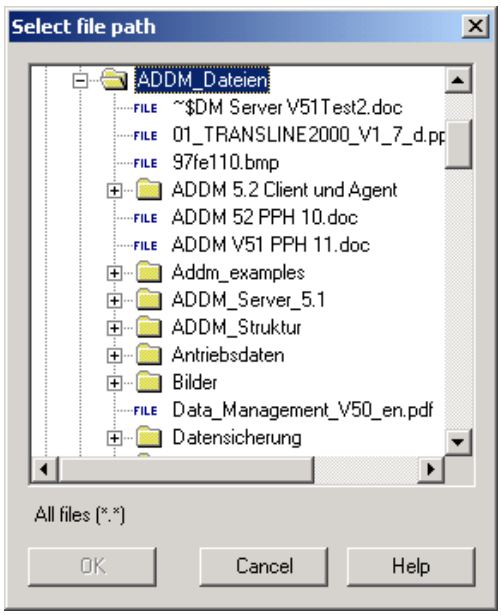
A selection of a file will close the browser dialog and the information is stored in the command window.

Backup command

The button Backup command opens the dialog for defining the command for backup.



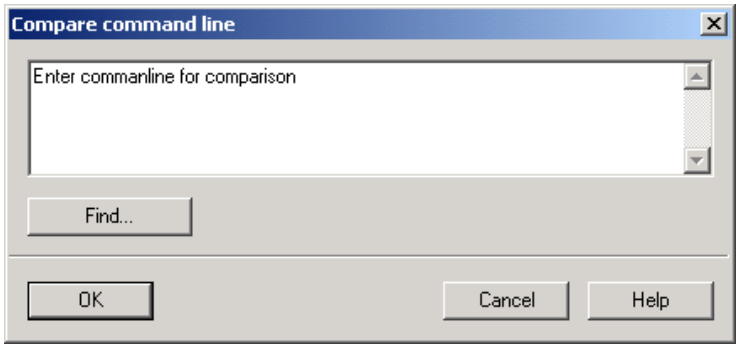
In the same way as at the Command load a browser can be opened with the button "Find...".



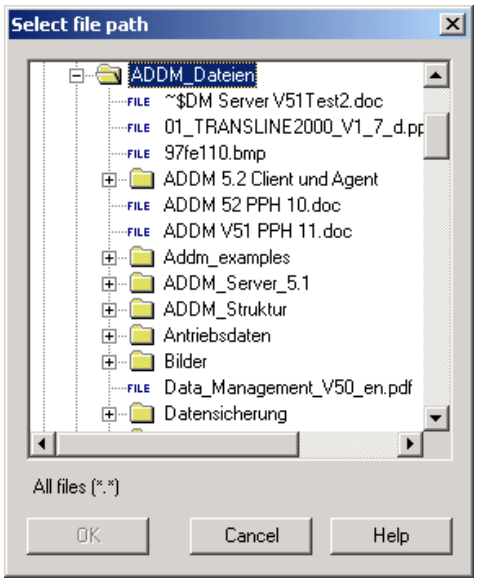
A selection of a file will close the browser dialog and the information is stored in the command window.

Compare command

The button "Compare command" allows the definition of the command compare. In this case the application, which is called via the command, have to do the comparison independent.



The button "Find..." opens the file browser as well.

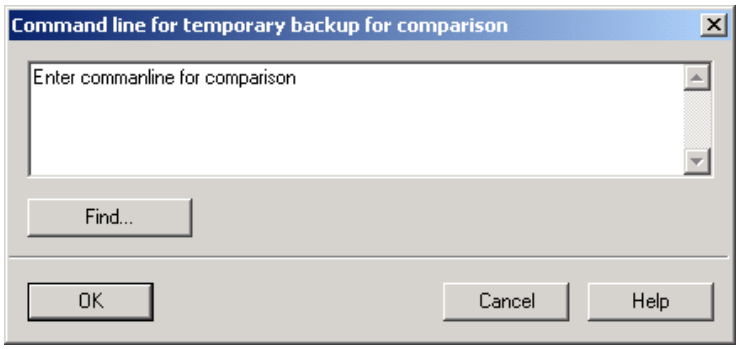


A selection of a file will close the browser dialog and the information is stored in the command window.

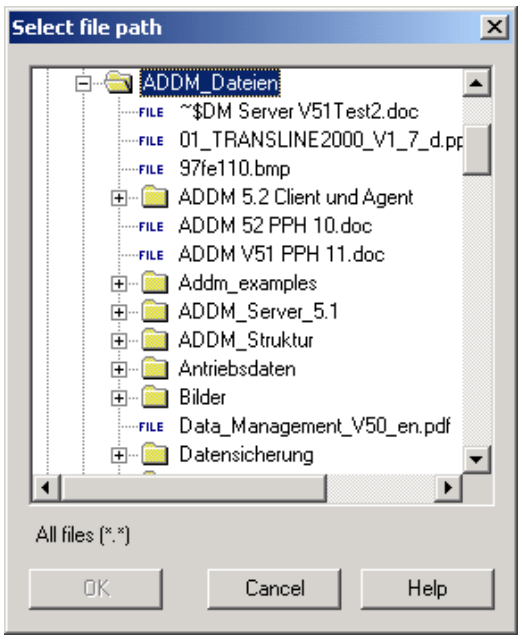
Comparison executed by ADDM

If the application has no possibility of comparison, ADDM can carry out the compare. For that the flag comparison executed by ADDM have to be set.

With the button "Compare command" the command dialog will be opened.



In the same way as at the other commands a browser can be opened with the button "Find....".



A selection of a file will close the browser dialog and the information is stored in the command window.

Comparing binary or ASCII

With the selection "Compare binary" or "Compare ASCII" in ADDM will be defined in which way the comparison should be done.
On comparing binary data ADDM takes the data as an executable program code.
On selection comparing ASCII ADDM compares the data as a text (characters).
This data also ca be displayed in ADDM.

Returnfile

Here will be defined the name of the Returnfile. Via this file the called application sends return values to ADDM. The content of the Returnfile describes the results of the execution as follows:

[Returncode]#Errortext

The sign number (#) is in this case a sign for separation.

The returncode may have following values:

<0: Errorcode of the application.

=0: The execution was succeeded.

=1: The comparison was succeeded and no differences were found.

=2: The comparison was succeeded and differences were found.

=3: Undefined state.

If there is no information after the execution, ADDM opens a dialog box in which the user has to decide how the result of the comparison was.

The "Timeout" defines the time in seconds after the execution will be aborted.
The "Max. no. of backups" defines the max. number of backups, which should be done by ADDM. If the max number of backups is reached, ADDM overwrites the oldest backup at the next executed backup.

Routing neutral components

The special feature when routing neutral component is that the absolute paths in the command line must refer to the hard disk of the Agent component. The only exception to this rule is the path to the batch file.

An example:
The command line to save neutral components is as follows:

```
"D:\Batches\Upload.bat"
"D:\Verzeichnis1\Verzeichnis2\*.*" "%DATAPATH%"
"%COMPPATH%Returnfile.txt"
```

The associated batch file "Upload.bat" copies everything from the directory "D:\folder1\folder2" into the target directory of the neutral component represented by the space retainer "%Datapath%". This means the path of the source data or the appropriate backup path. The third parameter defines that the result of the copy in a return file with the name "Returnfile.txt" should be entered in the component path.

The backup task is executed as follows:

- After establishing contact to the Agent computer, the batch file is copied to the Agent computer in the directory "C:\Neutralbatch".
- The space retainers "%Datapath%" and "%COMPPATH%" are replaced by "C:\Neutraldata".
- After this, the batch file is run on "C:\Neutralbatch".
- The files from "D:\folder1\folder2" on the Agent computer are copied into the directory "C:\Neutraldata" and then the result of the copy operation is written into the file "C:\Neutraldata\Returnfile.txt".
- The ADDM Client now retrieves all files – with the exception of the file "Returnfile.txt" - onto the ADDM Client computer and copies them into the data directory or the backup directory of the components.
- Finally, the Agent computer downloads the file "Returnfile.txt" onto the ADDM Client computer and saves it in the component directory where it is evaluated.
- Before completing the backup operation, directories "C:\Neutraldata" and „C:\Neutralbatch" on the Agent computer are deleted.

Information on "Routing via Agent"

When routing, the required data are first copied to the Agent computer. To do this, two directories are set-up on the Agent computer:

C:\Neutralbatch	for batch files
C:\Neutraldata	for net (useful) data and for the return file

This means that the space retainer "%DATAPATH%" must always be specified as source for net (useful) data. The reason for this is that this space retainer is replaced by "C:\Neutraldata" on the Agent computer.

Example of a batch:

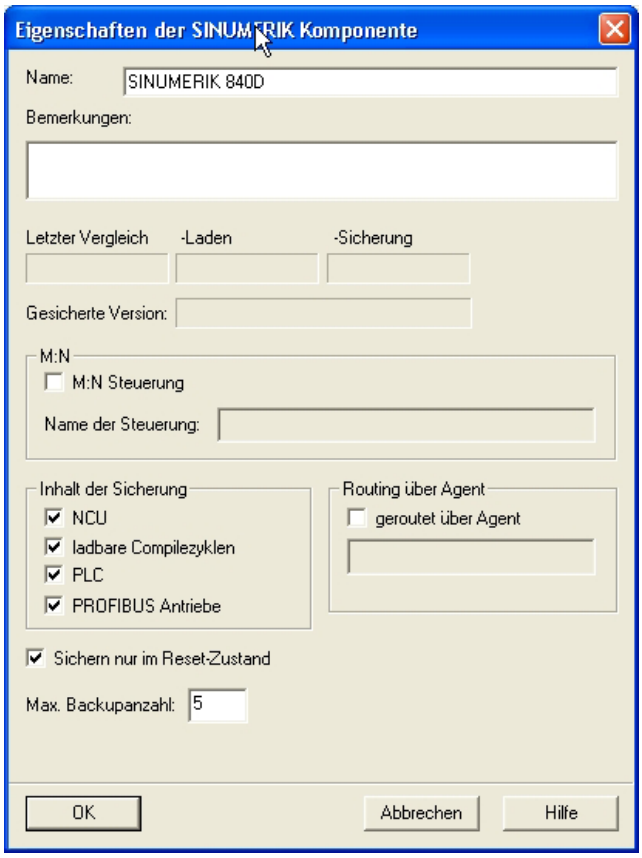
```
Rem %1
Rem %2
Rem %3
Xcopy /E %1 %2
Echo 0#Dingdong>%3
```

2.4.13 SINUMERIK components

The SINUMERIK component is saved (backed-up) and loaded from HMI → Services via the ARCHIVE function. The comparison with the HMI archive is realized offline with a temporarily generated ADDM archive.

Note

To ensure that the backup or loading process runs smoothly, an HMI Advanced must be started on that computer which is connected with the NCU.



The "Properties of the SINUMERIK component" dialog box contains the following information:

- Name:
  Freely assignable component name (max.32 characters).
- Remarks:
  Field for user texts that can be freely edited.
- Last comparison
  Date and time that online data were last compared with offline data.
- -load
  Date and time that data were last downloaded into the component.
- -backup
  Date and time that NCU data were last backed-up.

Addressing

The NCU or PLC are addressed via the parameters set in HMI Advanced.

Caution

If, while a SINUMERIK is operational, data is changed either from the SINUMERIK itself or from the operator.

In this case, a backup already started via ADDM may be ended with errors. The reason for this is that the ADDM cannot access data. If a communications error occurs, the backup must be unconditionally repeated otherwise the modified data cannot be backed-up.

In order to backup (archive), load or compare an NCU, all channels must be in the RESET state. If this is not the case, then this can result in inconsistent data. If all of the channels are in the RESET state, then start with the backup operation. The progress dialog box showing the NC backup operation is always shown. This means that every operator can see that presently a backup is being made. If not all of the channels are in the RESET state, then an error message is returned to the calling ADDM Client and displayed.

If the backup task is controlled by the job, then the job is interrupted with error state -2. This means that the job is repeated after a pre-set time. If the maximum number of repeats has been reached and the NCU has still not been backed-up, the job is terminated and the next time that it will be executed is calculated. In this case, the NCU was not backed-up in the backup cycle that expired.

M:N

For M:N configurations, the "M:N controller” checkbox must be activated. This defines which controls are to be accessed and the "Name of the controller” must be entered in the appropriate input field.

Contents of the backup

Checkboxes NCU, loadable compile cycles, PLC and PROFIBUS drives are used to define which components should be the contents of the backup of the SINUMERIK components. Every component can be backed-up independently of the others. A dedicated archive file is generated for each component of the backup.
If the NC does not contain any compile cycles or drive data, but the appropriate selection was made, the following applies:

- An alarm is only output to indicate that this component was not able to be backed up if at least one additional component was successfully backed up.
- If a partial backup is not possible, because e.g. only compile cycles are selected, then the backup is exited with error.
- If an error other than "Data do not exist" occurs, then the backup is always exited with an error.

Notice

If the M:N option is activated:

- The backup options "Loadable compile cycles" and "PROFIBUS drives" are grayed out.
- If, during the backup, ADDM detects that the NC is an 840D sl, backup is interrupted and an error message is output.

Option, Routing via agent

SINUMERIK can also be addressed via a computer with ADDM Agent in the network using Routing via agent. To do this, the computer name or the TCP/IP address of the Agent computer should be specified via which this component is connected.

Notice

For "Routing via agent", HMI Advanced is expected on the PCU 50!

Save only in the reset state

Caution

We recommend that data is only backed-up in the reset state. The reason for this is that backups carried-out during production can result in data inconsistency! This is the reason that the backup checkbox "Save only in the reset state" is set as standard.

Max. no. of backups

The number of backups to be saved from ADDM is defined in the input field "Max. no. of backups". When saving, ADDM takes into account what has been specified and saves a new backup separately. If the "Max. no. of backups" is reached, data is saved in the oldest backup. This data is then overwritten. This means up to a maximum of 99 backups can be backed-up in ADDM , also refer to chapter 2.5.2.

2.5 HD component

You backup complete hard disk contents in compressed image files with the HD component. These are stored on the ADDM computer in the directory of the HD component (Backup). On loading the image files are also transferred back to hard disk of the destination computer (Restore).

The software supplied with ADDM also includes Symantec Ghost V 8.2 (inc. Ghost Explorer). The documentation for all Ghost tools is supplied with ADDM.

2.5.1 HD Component via network for MS DOS

HD component via network

The "computer to be backed up" (e.g. MMC) is networked with the ADDM computer under MS DOS.

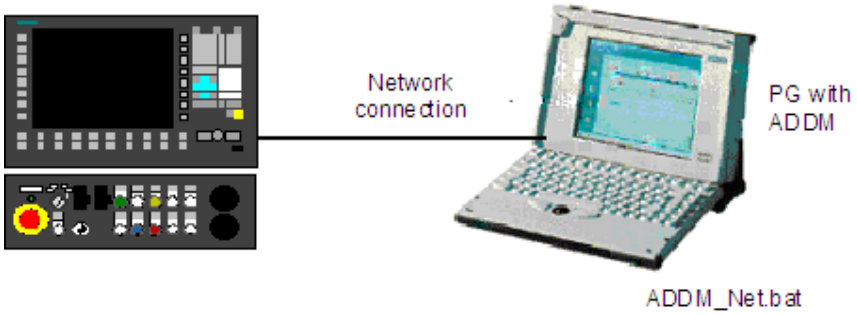
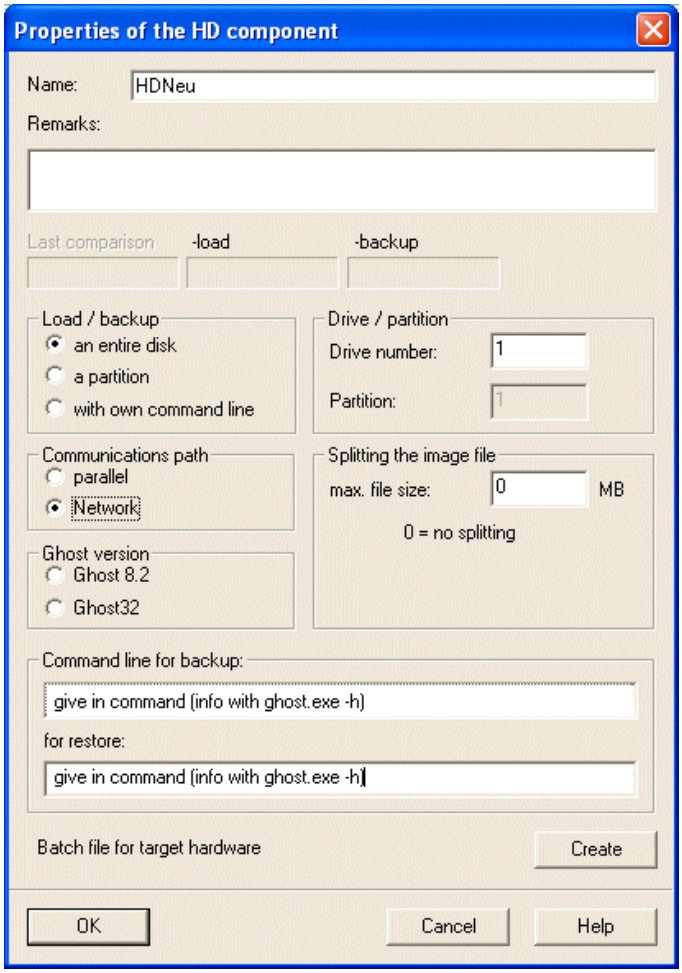


Fig. 2-2: HD component via network

You can load the network driver for MS DOS required to do this in three ways:

- from a boot disk
- from a bootable CD-ROM
- from a bootable USB flash drive
- locally from a hard disk

Properties of the HD component



Backing up or loading an HD component via the network consists of several indexing steps.
In this section all of the indexing steps are described in detail.

Connecting the computers

If the two computers are not already connected in a shared network (workgroup or domain), the computers are connected as follows:

- Without hub via a direct twisted pair cable.
- With hub via two patch cables

1. Then, under Start → Settings → System control → Network → Identification, ensure that the ADDM computer does not log on to a domain after booting.

2. Assign the ADDM computer to a workgroup with the "Modify...” button.

Selecting the network protocol

If the computers are physically connected, select the corresponding network protocol as follows:

1. Under Start → Settings → System control → Network, set the ADDM computer as a Client for Microsoft networks.

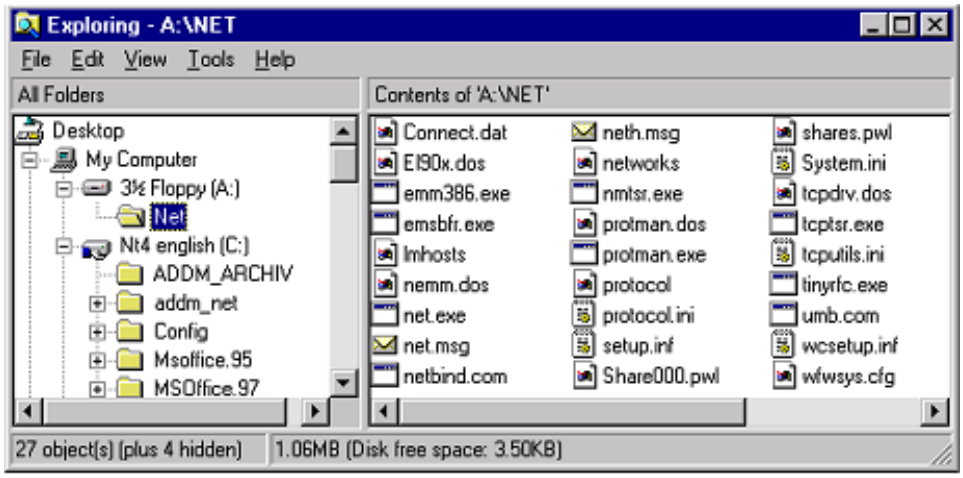
2. On the ADDM computer, set the same network protocol as on the computer to be backed up.
   If you save the ADDM project on a high-availability network server, this must also support the same network protocol.

Installing NetBEUI for a Windows XP system

If you use a ServicePC with Windows XP, the "NetBEUI" protocol must be post-installed.
You can find a description of how to do this at:
http://support.microsoft.com/kb/301041/en-us

Boot disk for use with ADDM

The following example describes a boot disk for communication via the "NetBEUI" protocol.
This is then adjusted for use with ADDM.



The "AUTOEXEC.BAT" file on your boot disk must contain the contents of the "ADDM_Net.bat" batch file created by ADDM.

1. To do this, write the following content into the lines of the generated "Autoexec.bat" file from the entry a:\net\net start:

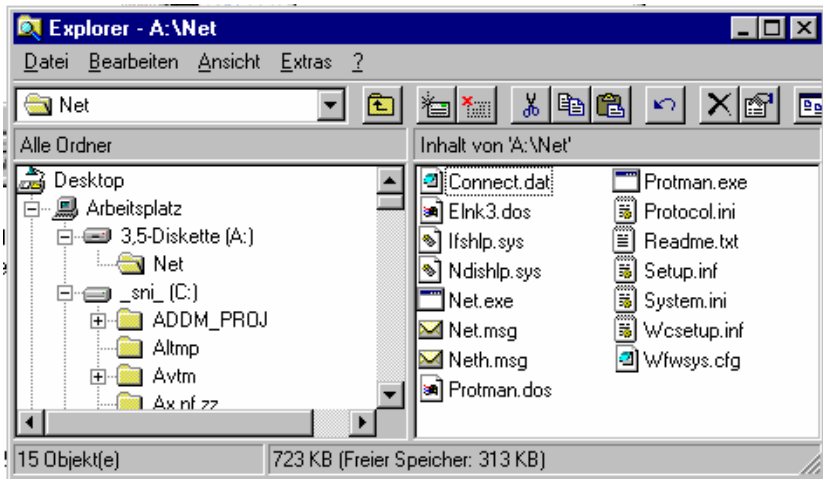
```
@echo off

strings ADDMNAME = ask Please insert the name of your
ADDM-Computer:

strings USER = ask Please insert your User-Name:

net\net start
```

```
net\net logon %USER% /savepw:no

net\net use x: \\%ADDMNAME%\ADDMHDSHARE

x:\ADDM.bat
```

The batch file generates a temporary "X" network drive with the name "ADDMHDSHARE" (where the Ghost image is stored) and a "Z" network drive with the name "HDEXESHARE" (where the ghost.exe file is started).

2. Copy the "Strings.com" file retrospectively to the disk. You are now in the ADDM installation directory.

3. If your network card was not available when the boot disk was created, copy the DOS driver of the network card into the "Net" directory on the boot disk.



Adapting Protocol.ini

The following example uses the driver "ELNK3.dos" for the "3C509" 3Com network card. If you use a different network card, replace the "ELNK3" entries in the Protocol.ini file with the DOS network driver of your card.

```
[network.setup]
version=0x3110
netcard=i$ELNK3,1,I$ELNK3,1
transport=ms$ndishlp,MS$NDISHLP
transport=ms$netbeui,MS$NETBEUI
lana0=i$ELNK3,1,ms$netbeui
lana1=i$ELNK3,1,ms$ndishlp

[i$ELNK3]
DRIVERNAME=ELNK3$

[protman]
drivername=PROTMAN$
PRIORITY=MS$NDISHLP
```

```
[MS$NDISHLP]
drivername=ndishlp$
BINDINGS=i$ELNK3

[ms$netbeui]
drivername=netbeui$
SESSIONS=10
NCBS=12
BINDINGS=i$ELNK3
LANABASE=
```

Adapting System.ini

1. Please replace the entry "netcard=elnk3.dos" in section [network drivers] of the "system.ini" file with the name of your driver.
2. Please ensure that "autologon=no" has been entered. In case the ADDM computer is located within a domain, please enter the domain name under "logondomain=...".

```
[network]
filesharing=no
printsharing=no
autologon=no
computername=
lanroot=a:\NET
username=
workgroup=WORKGROUP
reconnect=no
directhost=no
dospophotkey=N
lmlogon=0
logondomain=WORKGROUP
preferredredir=full
autostart=full
maxconnections=8

[network drivers]
netcard=elnk3.dos
transport=ndishlp.sys,*netbeui
devdir=a:\NET
LoadRMDrivers=yes

[Password Lists]
```

Load network driver with a bootable CD-ROM

Create a boot disk for a Microsoft network client, and adapt this to ADDM:

1. Adapt the paths from the disk drive to the CD-ROM drive.
2. Copy the complete disk to the CD-ROM.

Load network driver locally

Proceed as described below if the hardware you are going to back up does not have a disk drive/CD-ROM drive, and you want to boot the "hard drive from a DOS partition”.
The detailed procedure depends greatly on your system/network environment, and cannot be described completely for all configurations.

1. Create a DOS boot directory on the hard disk.
2. Copy the necessary network drivers for MS DOS to the hard disk via the Interserver/Interlink
3. Copy the necessary DOS boot files into the directory.
4. Match the paths and drivers to the boot files.

Note

If the network driver is loaded locally, an error occurs if the components for the MS network client under DOS do not match the current version of the "command.com” command interpreter.

Start transfer

1. Select the Transfer ... menu on the ADDM computer for the actual load or backup process.
   The "Backup HD" message appears.

2. Start the computer to be backed up with the prepared boot disk.
   If you load the network driver locally, change into the DOS Shell in the Net directory and start the "ADDM_Net.bat” batch file there.
   The password query appears for logging on to the MS network client under MS DOS.

3. On the computer to be backed up, enter the name of the ADDM computer, your user name and your password.
   The computer and user names to be entered are displayed on the ADDM computer.
   The network connection is made under MS DOS and the relevant image file is transferred.

2.5.2 Creating an ADDM boot disk or USB Flash Drive

Requirement

This procedure is particularly relevant for HD components without a service menu or ServiceCenter Backup-Restore (not for PCU 50).

Overview

If you know which network card is installed in the computer to be backed up (for which the boot medium was created) the driver can be copied from the drivers\network directory into the cabs\drivers\ndis directory.

Note

After creating the boot disk, the driver should be removed from the cabs\drivers\ndis directory, as otherwise it will be copied every time a disk is created. (Bear in mind the storage space!).

The "Program" directory is located on the ADDM software CD under the following path: AddOn\Bootservice:

1. Open a command line using Start → Execute → cmd.

2. In the command line, switch to the "Program" directory and execute the following command:
   `bfd msnet`

   Then the creation of the boot disk/USB Flash Drive is started.

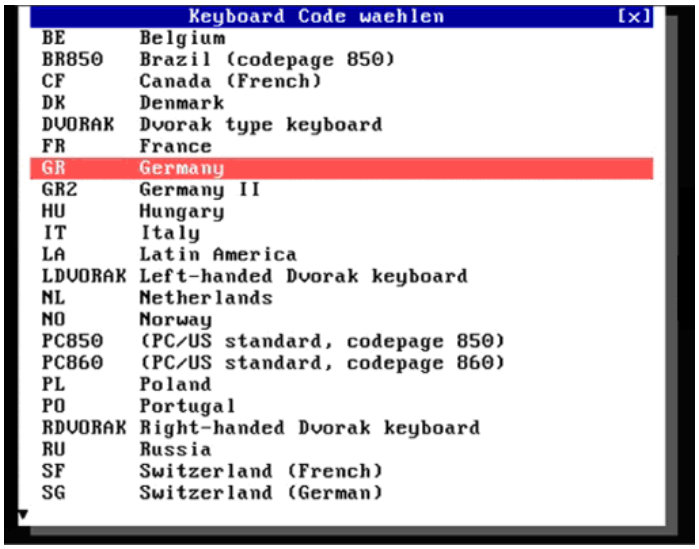
Creating an ADDM boot disk/USB flash drive

To create a boot disk/USB flash drive:

1. Boot the appropriate computer with the created boot disk/USB Flash Drive. During this, ensure that booting the disk or USB Flash Drive is activated as the first option in BIOS (see comments).

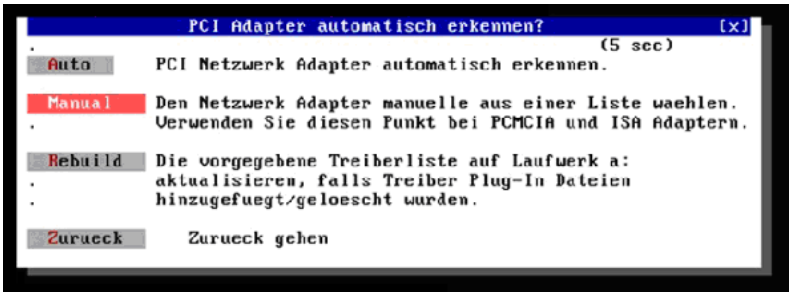
2. Enter the desired option when selecting the language.
   First some drivers are loaded, a RAM disk is created and some tools are copied.

3. The first time the user is asked to make an entry is when selecting the keyboard code.
   This is where you select the desired setting, e.g. default: GR Germany

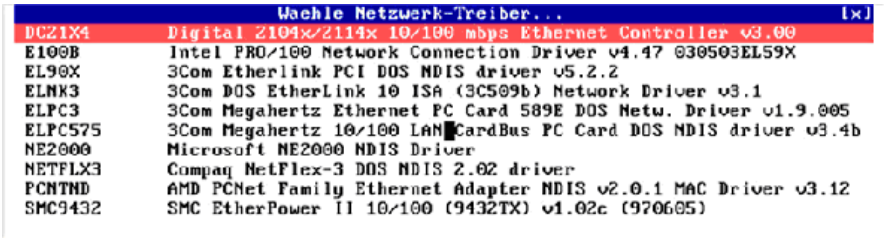


The following message appears:

4. Proceed as instructed in this message, otherwise the keyboard code setting cannot be saved.
   The keyboard driver and a mouse driver are then loaded.
   The start of the Microsoft network client is prepared.

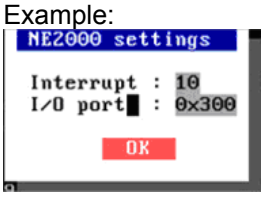


5. Select the desired point.
   A list of the available driver files on the disk is provided under "Manual" and one of these can be selected:

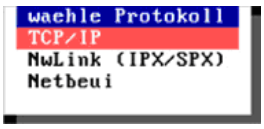


   After selecting the network driver, this is unpacked onto the RAM disk. On some drivers it is also necessary to enter some hardware parameters. If you know these, please enter them. Otherwise accept the standard parameters.

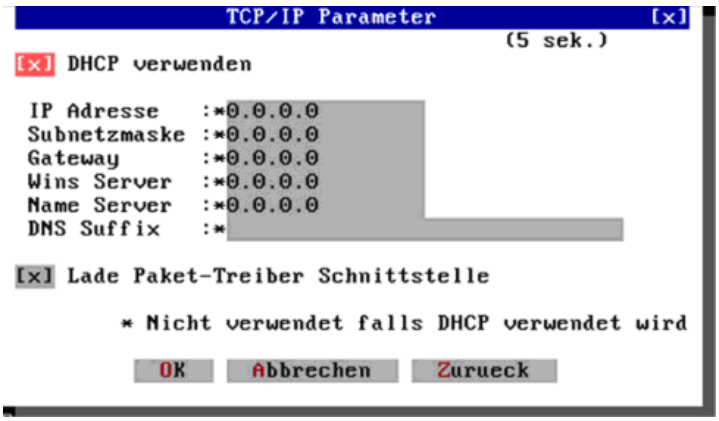
   Example:



6. Select the network protocol (default is TCP/IP).



7. If TCP/IP is selected, the corresponding settings are applied.
   The addresses for the available network must be entered.
   If the computers automatically receive their addresses via DHCP, select Use "DHCP".



8. The ADDM PC and ADDM user must then be entered as specified in ADDM.

9. The computer name, workgroup and domain are the most important entries in the identification dialog.

   - The ADDM user should be entered under "Logon as" and the password for this user may be entered under "Password". The settings on the right-hand side open the respective files specified for checking and editing and are therefore only intended for use by network professionals.
   - A percentage by which the CPU can be throttled can be entered under "CPU speed", as Divide by Zero errors can occur on processors > 500 MHz (only use when the error occurs!)

10. When memories are selected in the identification settings, a profile is created. A profile name must first be entered.

11. A few more settings are then applied to the profile

- Under "Network adapter detection mode" you enter whether the network driver should be displayed again when the disk is rebooted and this profile is used (Prompt), whether auto-detection should be started immediately (Auto), whether the list of available drivers should be displayed (Manual) or whether the previously selected driver should be used automatically (here: NE2000).

- If there is a cross next to "Skip TCP/IP settings", this dialog is not displayed and the saved values are automatically used.
  The same applies to "Skip identification dialog".

- Due to the fact that it is saved as plain text, "Save password" can pose a security risk, but is available as an option.

- In the "Timeout" dialog you can enter the amount of time after which the entry dialogs should be automatically closed.

- The write protection message, which you will already be familiar with from the keyboard code, is then displayed.A few more settings are then applied to the profile.

12. Return to the identification settings and confirm with "OK". The network is then initialized and, when everything has been started correctly, the password for setting the ADDM shares is requested.

13. Finally, Ghost is started and the desired action (backup or load) is performed.
    After Ghost is completed, a prompt is displayed and the computer can be restarted or controlled from the DOS Prompt.

Note

If something needs to be changed on the boot disk (in particular msnet), or a separate network boot disk needs to be used, the following commands must be executed after the network is set up:

```
net\net logon %p_addmuser% /savepw:no
net\net use x: \\%p_addmserver%\ADDMHDSHARE
x:\ADDM.bat
```

The "net" command must be available in the directory of the current drive, as it is also accessed via this path in the ADDM.bat batch file generated by ADDM. Therefore it is also important that this batch file is executed by the drive with net\net via the `x:\ADDM.bat` command!

Comments

- During setup, all network drivers are copied from drivers\network (around 1.5 MB). Further network drivers can be added to this directory provided that these are packaged as CAB files and, along with the DOS driver (.dos), contain an .ini file, an ndis.pci and an ndis.txt file (see existing drivers).

- If you wish to use a USB boot medium, this must be supported by the mainboard of the computer. For this, the USB boot medium is connected when the computer is switched off and then configured in the BIOS. Depending on the BIOS, this must appear in the boot sequence on the hard disks or disk drives, or you can choose between USB-HDD, USB-ZIP, USB-FDD or USB-CDROM.
  Depending on the USB medium, a test must be carried out to determine which of the aforementioned settings works. In some cases, booting from the USB flash drive may not work, as the mainboard ↔ USB flash drive combination is not compatible or mainboard/BIOS does not allow a USB medium to be booted.

- If several profiles are stored on a boot medium, the selection can be cancelled when the list is displayed by pressing the <ESC> button and a new profile can be created.

2.5.3 Adding additional languages to the ADDM boot medium

Overview

There are basically two different language files:

- a file for the installation procedure (located in the BFD main directory)
- a file for the boot disk (located in the BFD\disk1 directory)

Both files have the same structure, an entry must simply be made in different batch files.

Structure of the *.lng language file

The various languages are stored in simple text files. The ID for each language must be an abbreviation with as few characters as possible, e.g. "de.lng" for German.

Some structure rules must be adhered to within such files:
At the start there is a header with general information.

```
# ------------------------------------------------------
# Language File for bfd.cmd
#
#  → German ←
#
# ------------------------------------------------------
```

The header is optional, i.e. it does not have to be entered. If, however, a header is used, it must have a similar format.

Then come the individual texts and menus:
These are simply numbered consecutively and, for an improved overview, the respective text number is used as a prefix.
This number is also used to identify the text in the batch file.

Example:

```
# 1 Copyright
1~
1~BFD, Build Floppy Disk, v1.0.7
1~Copyright (c) 2002 Bart Lagerweij. Alle Rechte vorbehalten.
1~Dieses Programm ist freie Software.
1~Benutzung und Weitergabe nach den Richtlinien der NU2
Lizenz
1~(siehe nu2lic.txt oder http://www.nu2.nu/license/).
1~
1~Bearbeitet von Siemens A&D SE SH2
1~
```

The first line contains the aforementioned ID. A designation can also be added, but this may only be used as an overview and has no function.
Then comes the actual text, which can consist of several lines.

First, the text number is entered as a prefix in every line, with the separating character ~. It is vital to retain this format, as the display may otherwise be incorrect.

Translated into English, the above text would look like this:

```
# 1 Copyright
1~
1~BFD, Build Floppy Disk, v1.0.7
1~Copyright (c) 2002 Bart Lagerweij. All rights reserved.
1~This program is free software.
1~ Use and/or distribute it under the terms of the NU2
License
1~(see nu2lic.txt or http://www.nu2.nu/license/).
1~
1~Modified by Siemens A&D SE SH2
1~
```

Inserting variable text

The separating character ~ can also be found in some parts of the text. This means that a variable is inserted at this point in the display.

Example:
```
4~AUTOEXEC: Es wird von~gebootet
```

A later instance of this line could look like this:
```
AUTOEXEC: Es wird von A: gebootet
```

A variable is inserted in place of the ~ in the batch code.
Depending on the language, a variable may have to be inserted at different points in the text. A ~ must always be entered at the appropriate point (without spaces).

The above example in English:

```
4~AUTOEXEC: Booted drive is~
```

In English, the variable (drive letter) is located at the end of the sentence, which means that the ~ must also be placed at the end.

There are also variables (enclosed by % signs) at various points in the language files. These must be used in exactly the same format in the new language, and integrated in the text:

```
26~ Verwende (gespeicherten) Code "%xkeyb_kc%"
```

Language-dependent menus

The boot disk menus are also shown in the language files. All text components can be adapted accordingly. The language-independent parts, e.g. those that represent variables, must not be changed and are marked in bold.

Example:

```
# 130
130~:w_tcp "TCP/IP Parameter" [x]
130~ (%p_timeout% Sek.)
130~[!] use DHCP
130~
130~ IP Adresse   :*[$ p_ip,15!     ]
130~ Subnetzmaske :*[ $ p_subnet,15!]
130~ Gateway      :*[$ p_gway,15    ]
130~ Wins Server  :*[$ p_wins,15    ]
130~ Name Server  :*[$ p_dns,15     ]
130~ DNS Suffix   :*[$ p_domain,30  ]
130~
130~[!] Load driver interface package
130~
130~        * Not used if DHCP is used
130~
130~        [ OK ] [ Cancel ] [? Back ]
130~::
```

The first line contains a marker for the tool used to created a menu window from this text (here: :`w_tcp`). This text must not be changed!
Then follows the text for the title bar of the window, which should be translated.
Any text that is not preceded or enclosed by % signs should be translated.

Adding a new language

Creating the disk in bfd.cmd:
The following code appears at the start of the batch file:

```
rem Set language file
echo Sprache / Language:
echo ------------------------
echo.
echo     d - Deutsch
echo     e - English
echo.
bin\bchoice -c:de -d:d Bitte waehlen / Please choose:
if errorlevel 1 goto :_en
:_de
set bfd_lng=de.lng
goto :_cm
:_en
set bfd_lng=en.lng

:_cm
```

With this, the language selected is displayed and set according to the selection. If a new language is now added (e.g. Italian), the displayed text and selection option must first be adapted:

```
rem Set language file
echo Sprache / Language:
echo ------------------------
echo.
echo     d - Deutsch
echo     e - English
echo     i - Italiano
echo.
bin\bchoice -c:dei -d:d Bitte waehlen / Please choose:
```

Then the following instructions are added according to the selection:

```
if errorlevel 1 goto :_en
if errorlevel 2 goto :_it
:_de
set bfd_lng=de.lng
goto :_cm
:_en
set bfd_lng=en.lng
goto :_cm
:_it
set bfd_lng=it_lng

:_cm
```

With "`if errorlevel 2 goto :_it`" the program jumps to :_it and the variable `bfd_lng` is set to it.lng. The errorlevel depends on the position of the corresponding key in bin\bchoice -c:dei …. As the key for Italian (i) is located in the 3rd position here, errorlevel 2 indicates the selection of the i key (counting begins at 0).

Before making any changes, do not forget to insert a `goto :_cm` before the last speech mark (here :_en) and before the new mark.
Any other languages can be added in this way.)

Explanatory text for the boot disk

autoexec.bat (/disk1) works in the same way as bfd.cmd, except for the fact that here the selection command is choice rather than bchoic:

```
bin\choice -c:de Bitte waehlen / Please choose:
Datei <Sprache>.id
```

An .id file, which is stored in the BFD\disk1 directory, must exist for each language. This file contains an explanatory text for the boot disk, which looks like this:

```
-------------------------------------------
ADDM 1.0
-------------------------------------------
Zum Sichern und Wiederherstellen von
Symantec Ghost-Images mit Hilfe von
ADDM.
-------------------------------------------
```

The explanation can be extended in any way, although the version number may not be changed without a valid reason.
The ".id" file must have the same name as the .lng file, e.g. "de.id" for German.

2.5.4 Backup and loading with PCU 50 V1 and V2 via the network

A so-called "Twisted pair crossed 10baseT/100baseTX Ethernet cable" is required for a direct connection (without HUB) between the PCU 50 and the ADDM computer via an Ethernet cable.

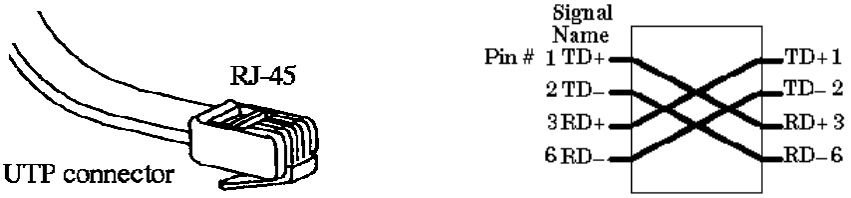


Fig. 2-3: PCU 50 via the network

NETBEUI network protocol

The same network protocol must be used on the ADDM computer as is used on the PCU 50. For this, use the NETBEUI protocol. If this is not yet installed on the ADDM computer, proceed as follows:

1. The NetBEUI protocol must be postinstalled on a ServicePC with Windows XP. You can find a description of how to do this at: http://support.microsoft.com/kb/301041/den-us

2. Proceed as follows on ServicePC with Windows NT4.0: Start → Settings → Control Panel → Network → Protocols → Add → NetBEUI-Protocol → OK.
   If necessary, the Windows CD is then requested and the network protocol installed. The network protocol will become active after a restart.

3. Start the service menu on the PCU 50:

```
SERVICEMENU V02.04.00

PLEASE SELECT:

1 Install/Update SINUMERIKM System
2 SINUMERIK Tools and Options
3 DOS Shell
4 Start Windows (Service Mode)
5 SINUMERIK System Check
7 Backup/Restore
8 Start PC Link

9 Reboot (Warmboot)
A Actionlog

Your choice [1,2,3,4,5,6,7,8,9,A]?
```

4. Select <7> (Backup/Restore) and finish your entries with the enter key.

```
PLEASE SELECT:

1 Harddisk Backup/Restore with GHOST
4 Partitions Backup/Restore with GHOST (locally)
5 ADDM Backup/Restore

9 Return to Main Menu

Your choice [1,4,5,9]?
```

5. Select <5> (ADDM Backup/Restore) and finish your entries with the enter key.

```
CURRENT NETWORK SETTINGS:

Machine Name          : PCUxxxxxxx
USER name             : ADDM_USER
Transport protocol    : NETBEUI
Logon to domain       : No
ADDM Computer         :

    PLEASE SELECT:

    1 ADDM-Harddisk Backup,  Mode PARALLEL
    2 ADDM-Harddisk Restore, Mode PARALLEL

    3 ADDM-Harddisk Backup/Restore, Mode NETWORK
    4 Change Network settings

    9 Back to previous Menu

Your choice [1,4,5,9]?
```

6. Select <4> (Change network settings) and finish your entries with the enter key.

```
CURRENT NETWORK SETTINGS:

Machine Name          : PCUxxxxxxx
USER name    : ADDM_USER
Transport protocol    : NETBEUI
Logon to domain       : No
ADDM Computer         :

    PLEASE SELECT:

    1 Change Machine Name (for DOS Net only)
    2 Change User name
    3 Toggle Protocol (NETBEUI or TCPIP)
    4 Toggle logon to domain (Yes or No)
    7 Change ADDM Computer name

    9 Back to previous Menu

Your choice [1,2,3,4,5,7,9]?
```

7. Select <2> (Change user name) and enter your user name of the ADDM computer (e.g. sh3152). Close the entry with the enter key.

8. Then select <3> (Toggle protocol (NETBEUI or TCPIP)) and set to the NETBEUI protocol.

9. Select the setting "No" under <4> (Toggle logon to domain (Yes or No))

10. Enter the name of the ADDM computer under <7> (e.g. R1106).
Close the entry with the enter key.

11. Then select <9> (Back to previous menu) and close the entry with the enter key. Answer the next question "Save network parameters: [Y,N]?“ with "Y“.
That saves your settings on the hard disk of the PCU 50.

```
CURRENT NETWORK SETTINGS:

Machine Name  : PCUxxxxxxx
USER name             : sh3152
Transport protocol    : NETBEUI
Logon to domain       : No
ADDM Computer         : R1106

      PLEASE SELECT:

      1 ADDM-Harddisk Backup,  Mode PARALLEL
      2 ADDM-Harddisk Restore, Mode PARALLEL

      3 ADDM-Harddisk Backup/Restore, Mode NETWORK
      4 Change Network settings

      9 Back to previous Menu

  Your choice [1,4,5,9]?
```

12. Select <3> (ADDM Hard Disk Backup/Restore, Mode NETWORK). Close the entry with the enter key.

```
      ADDM-Harddisk Backup/Restore finished
      Now the system will be rebooted!!!

  Press any key to continue . . .
```

The PCU 50 can be rebooted after the Backup/Restore has been completed successfully. The current time stamp is entered on your ADDM computer under Backup/Load.

TCP/IP network protocol

If you would like to use the TCPIP protocol instead of the NETBEUI protocol, please ensure that this protocol is already installed on the ADDM computer. Then set the TCPIP parameters in the service menu of the PCU 50.

Menu			Function		
7	**Backup/Restore:**				
	5	ADDM Backup/Restore			
		3	ADDM-Harddisk Backup/Restore, Mode NETWORK		
		4	**Change Network Settings**		
			1	Change Machine Name (for DOS-Net only)	
			2	Change User Name	
			3	Toggle Protokoll	
			4	Toggle logon to domain (Yes or No)	
			5	Change Domain Name	
			6	**Change TCP/IP settings**	
				1	Toggle "Get IP Addresses" (automatically / manually)
				2	Change IP Address
				3	Change Subnetmask
				4	Change Gateway
				5	Change Domain Name Server
				6	Change DNS Extension
				9	Back to previous menu
			7	Change ADDM Computer name	
			9	Back to previous Menu	
		9	Back to previous Menu		
	9	Back to previous Menu			

2.5.5 Backup and loading with PCU 50.3 via the network

Requirement

With SINUMERIK solution line, the "Eth 2" adapter for a PCU 50.3 is already assigned in the system network. The "Eth 1" interface is therefore used for backup and loading. "Eth 2" can also be used with SINUMERIK powerline.
This chapter describes a data backup via "Eth 1".
Service PG/PCs have the following connection options:

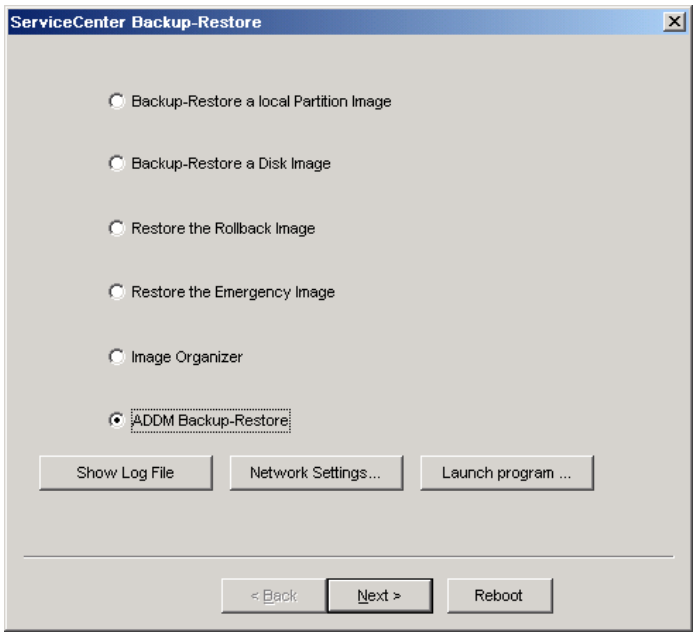
- PCU on "Eth 1" direct with a crossed Ethernet cable.
- PCU on "Eth 1" via a switch with a non-crossed Ethernet cable..

Data backup and loading

Start the ServiceCenter Backup-Restore:

- During booting via the "invisible" entry under SINUMERIK (select with "Cursor down").
- With this link on the Service desktop

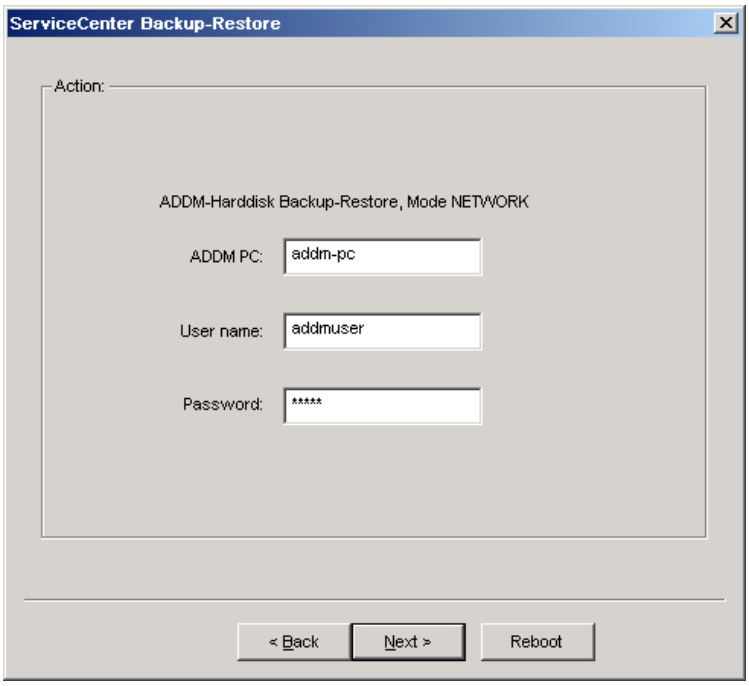
The following dialog opens:



1. Select the option "ADDM Backup-Restore".

2. If necessary, check the network settings by pressing the "Network Settings" button.

3. "Next >" confirms your selection and opens the following dialog:



4. Enter the requested access data here as identification.

5. After clicking on "Next >" the entries are checked. The connection data is then displayed for information purposes. The "Options" cannot be selected.

6. Clicking on "Finish" starts the Ghost backup.

2.5.6 Creating an ADDM boot medium using PE Builder

Requirement

This procedure is valid for HD components, e.g. StandardPC, and not for PCU 50 systems. The boot medium can be a CD ROM or a USB flash drive.

The PE Builder can be used with the following Windows systems:

- Windows XP Home Edition (Service Pack 1 or higher)
- Windows XP Professional (Service Pack 1 or higher)
- Windows Server 2003, Web Edition
- Windows Server 2003, Standard Edition
- Windows Server 2003, Enterprise Edition

Caution

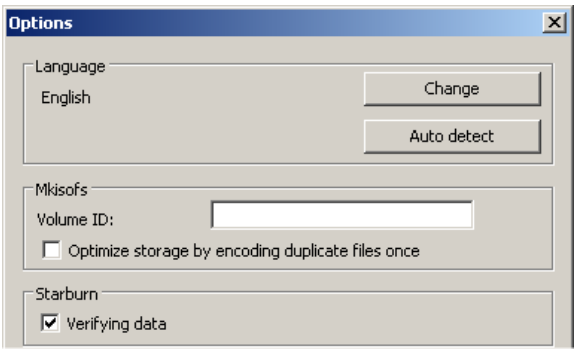
The license conditions defined in the pebuilder.txt file apply. The file is contained in the zip archive.
You can find additional information in the online help for the PE Builder and on the Internet at: http://www.nu2.nu/pebuilder/.

Selecting a language

To create a boot medium with PE Builder, unzip the "pebuilder3110a.zip" archive on the CD supplied to a local directory of your choice.

1. Start the "pebuilder.exe" program.
   The default language is English.

2. To switch to another language, select "Options" in the "Builder" menu (or "PE Builder").



3. After clicking on "Change", select a language from the language directory.
   The selected language becomes active after the program is restarted.

Adapting the boot medium for ADDM

In the "autorun.cmd" boot medium file, the following file is called up.

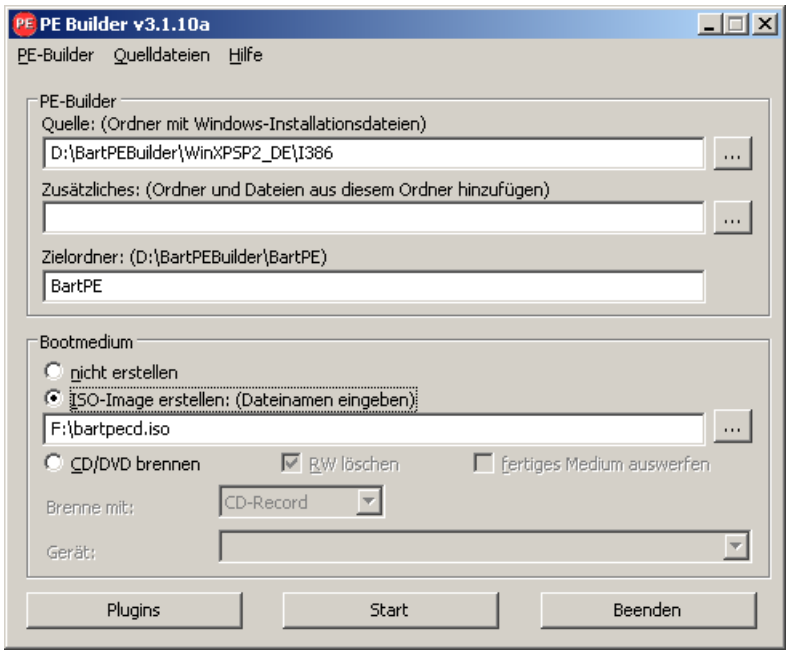
1. Insert the following command in the autorun.cmd file located in the …\BartPEBuilder\plugin\autorun directory:

   ```
   start startaddm.cmd
   ```

2. Prepare a file "startaddm.cmd" with the following contents

   ```
   @echo off
   echo Please insert the name of your ADDM-Computer:
   echo Bitte geben Sie den Namen von ihrem ADDM-Computer
   ein:
   SET /P ADDMNAME=
   ping -n 2 %ADDMNAME%
   echo.
   echo Please insert the name of your USERNAME:
   echo Bitte geben Sie ihren Benutzernamen ein:
   echo [domain\user or %ADDMNAME%\user]
   SET /P USERNAME=
   net use q: \\%ADDMNAME%\ADDMHDSHARE /USER:%USERNAME%
   q:\addm.bat
   pause
   ```

Making bootmedium



1. Under "Source", select the drive with the installation CD or a local directory/network path in which the source files are located.

2. Alternatively, under "Additional" you can select a local directory or a networkpath with the directories and files that you want to add.

3. Under "Target folder", enter the name for the directory in which the files copied by the PE Builder are saved. This directory is provided as a subdirectory for the PE Builder directory.

   If you require an absolute path, the "Absolute output path" function must be activated under "Options".

4. To create an ISO process image, select "ISO image:" and enter a suitable path and file name in the text field.

   If you activate the "Burn CD/DVD" option, the PE Builder will also burn a CD or DVD. If, under "Burn with:", you select "CD Record" rather than "Starburn", just one CD will be burnt (no DVD).

5. Start the process with the "Start" button.

   An output window opens displaying the progress. After the process has been successfully completed, the following information is displayed

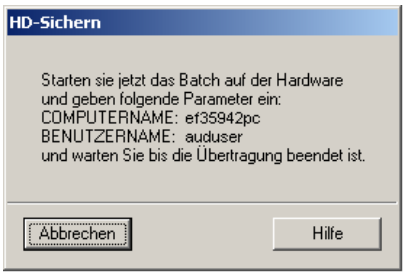
```
...
Building ISO image done
Building done
Saved this log to: ...
```

2.5.7 Backup and loading with PE Builder

Start transfer

For backup and saving, proceed as follows:

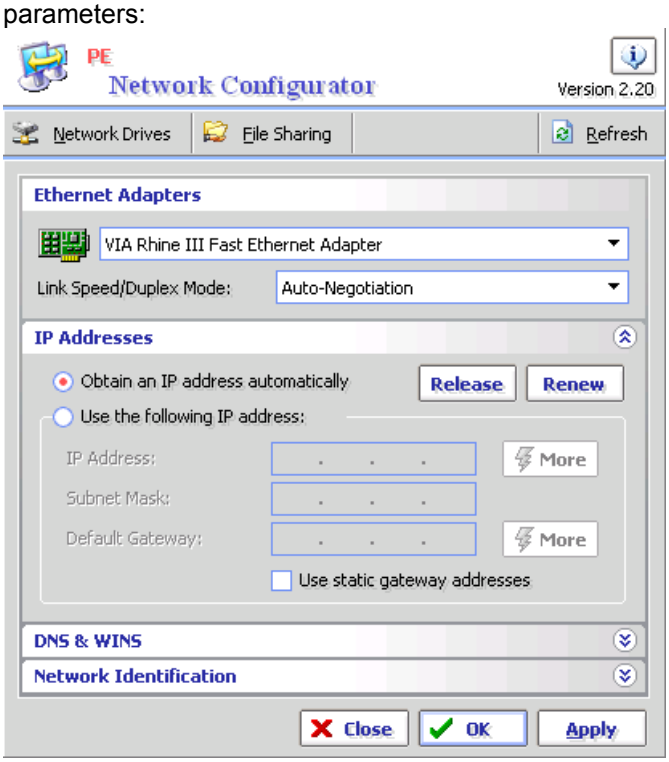
1. On the ADDM computer, select the "Transfer" menu or click on the corresponding symbol.
   The following message appears:



   The computer and user names to be entered on the computer to be backed up are displayed here.

2. Start the computer that is to be backed up with the bartpecd.iso ISO image generated by the boot D/DVD (see previous chapter).

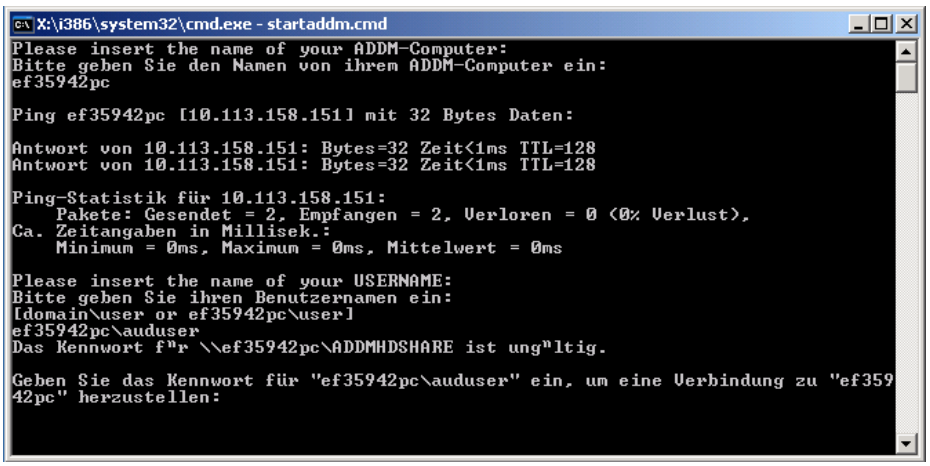
3. The following dialog opens for setting and checking the connection parameters:



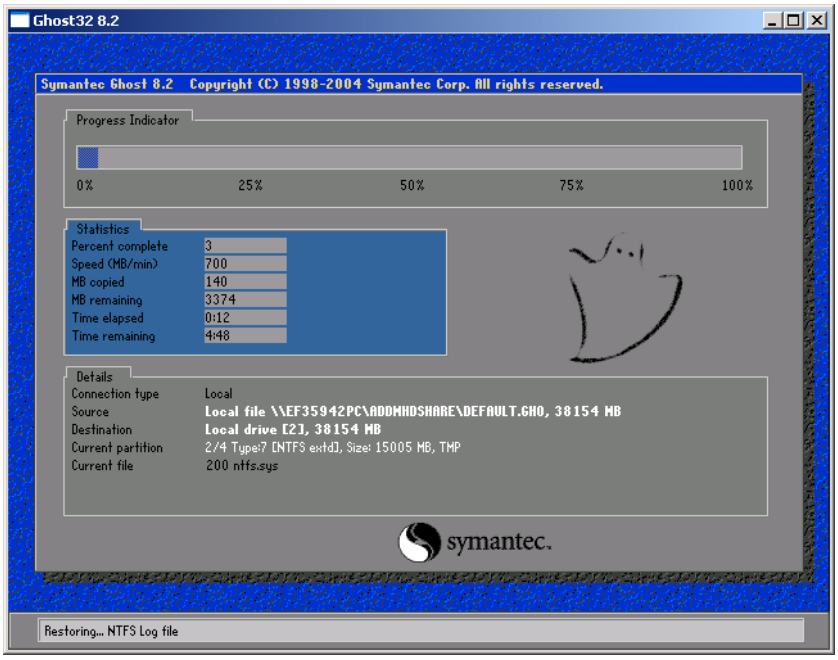
Ethernet Adapters	Several network cards are available, select the desired card or keep the default setting.
IP Adresses	The IP address can be automatically obtained via DHCP (Obtain an IP address automatically) or you can enter an IP address (Use the following IP address).

4. Confirm with "OK".

5. On the computer that is to be backed up, enter the "name" of the ADDM computer, your "user name" and "password".



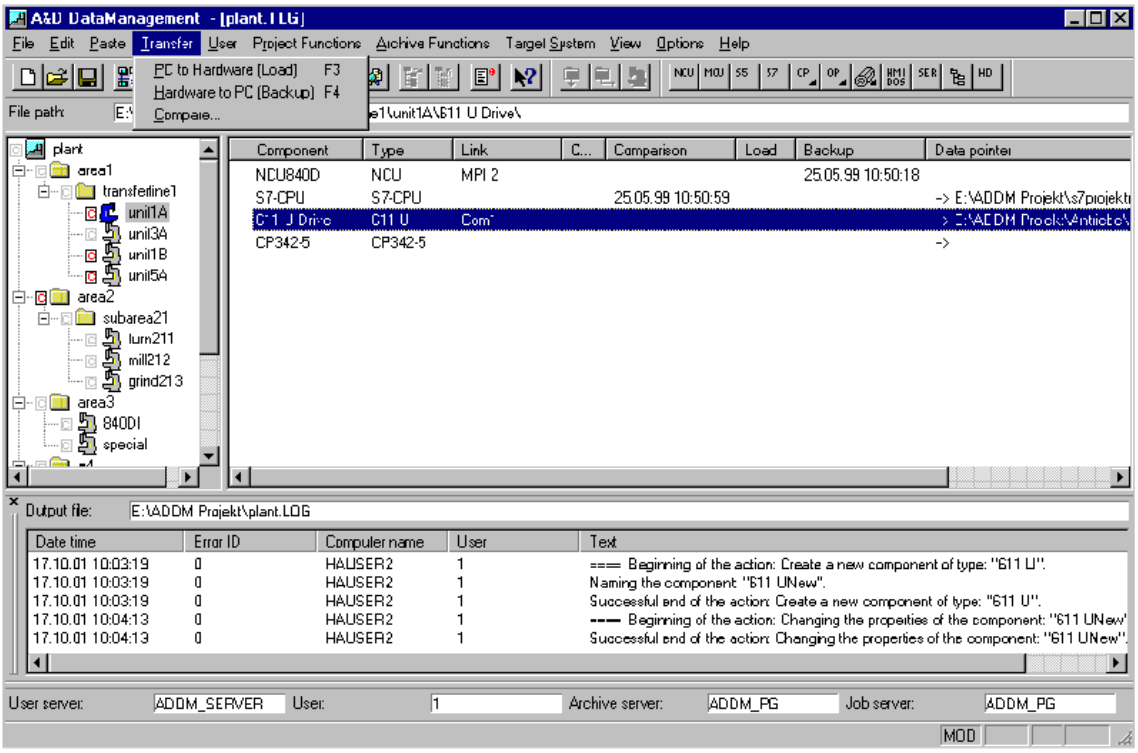
The network connection is created, Ghost32 is started automatically and the Image file is transferred.



2.6 Transferring data

2.6.1 Selecting the transfer in ADDM

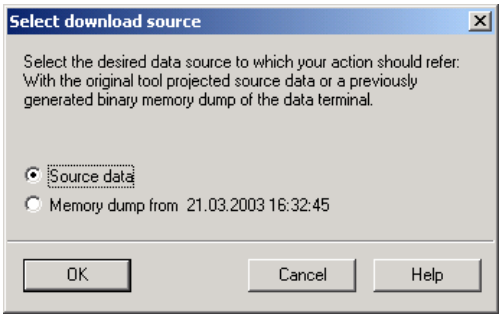
Configuration data are transferred as follows:



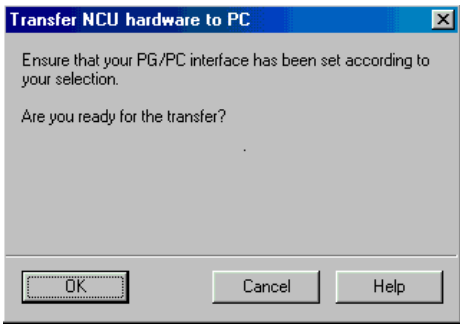
1. First save all changes you have made to the plant structure in the File "menu". A transfer to the component cannot be made before this has been done.

2. Select the appropriate target component in the right-hand window, for example the entry "Path1 – path". A data transfer cannot be made without having selected a component in the right-hand window.

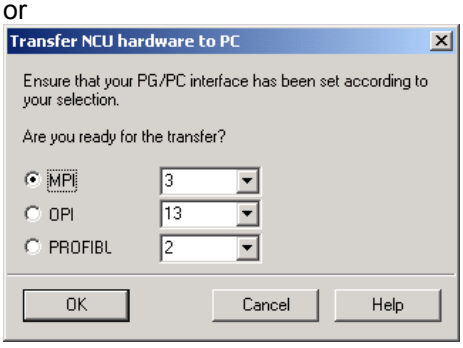
3. Select a transfer direction in the Transfer menu.
ADDM automatically displays the transfer direction possible in each case. An impossible transfer is greyed out and cannot be selected. Appropriate selection dialogs appear according to the component and transfer direction. As a rule, either the download source (which data should be loaded?) or the upload destination (where should the backup stored?) has to be specified. The data transmission link may be queried in a further dialog.



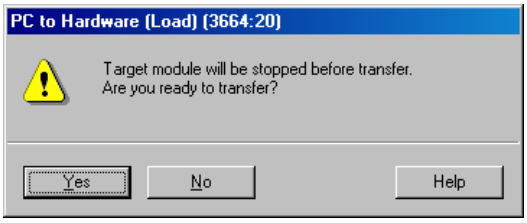
then



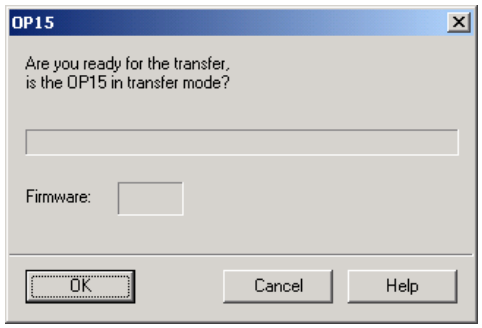
or



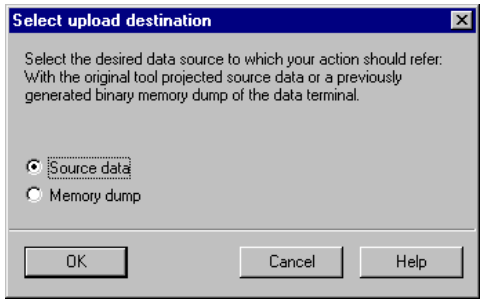
or



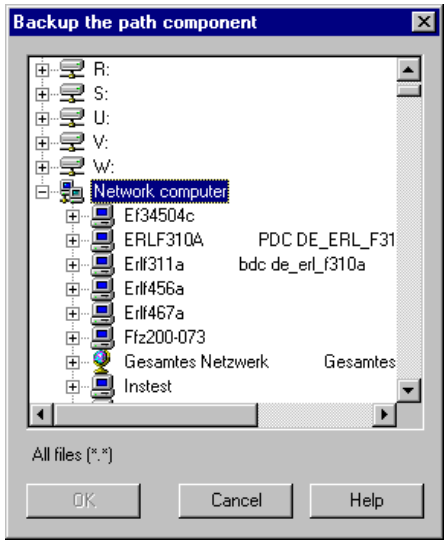
or



or



or



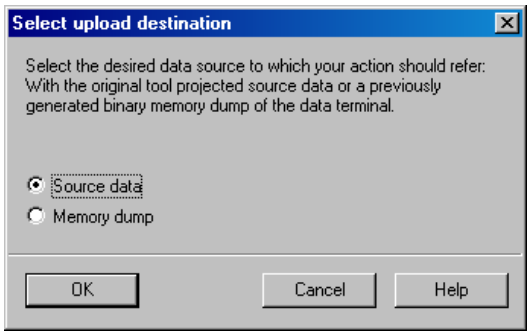
If necessary, you can change the "transfer parameters" again here.
Some data transfers are time critical (e.g. OP 15). For this reason, other actions (e.g. changing task, moving the window etc.) are not permitted during the transfer, as otherwise the data transfer could fail.

The date and time are stored after an error-free transfer. Therefore, always make sure that you have set the system clock in the backup computer correctly.

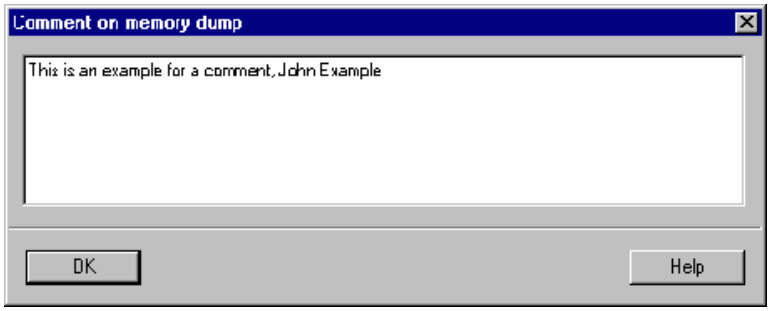
2.6.2 Transfer with the use of multibackups

Almost all components can be backed up in ADDM with multibackups. This means that the user can make up to 99 backups with ADDM. This backup feature is mainly useful when a system or machine is modified and so new data are being created daily. The multibackup is set up in the Property dialogs of the components.

The data transfer is preset by selecting the upload destination. The upload destination defines how the data has to been stored by ADDM. On selection of Source data the data are stored in the source data area. Source data only can be stored once. Multibackups can only be made by means of memory dumps

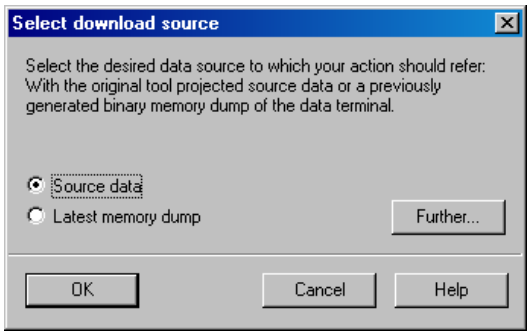


After the data backup has been made through ADDM, a comment must be entered for the memory dump (backup). Clear, useful information should be entered here. If there are up to 99 backups stored, this will be the only means of finding the right data backup when a fault occurs.

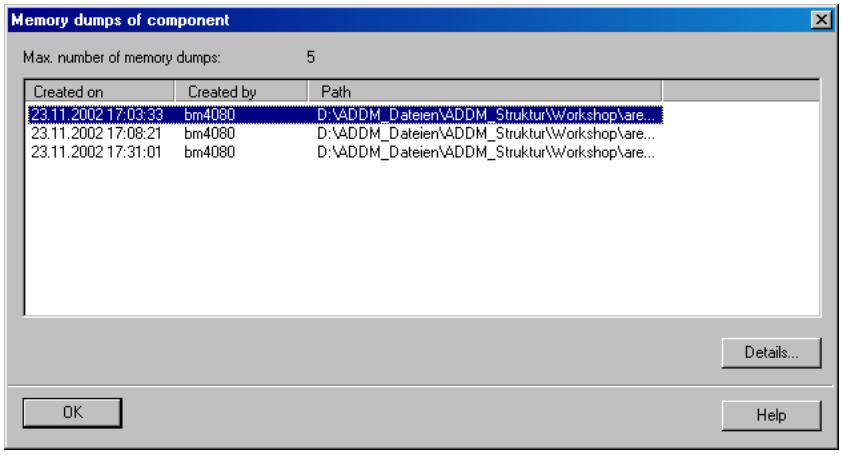


The comment entered cannot be subsequently modified.

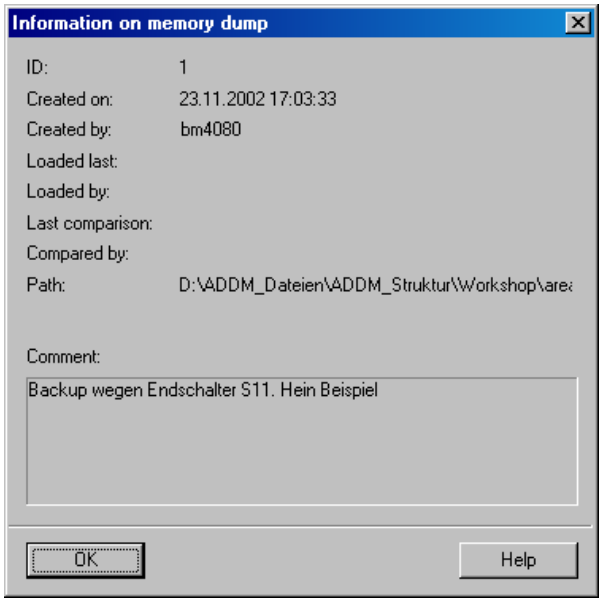
If the data are to be reloaded, ADDM automatically offers the "Latest memory dump".



Click on "Further..." and ADDM shows the memory dumps already stored.



The "Details..." button opens an information box about the selected memory dump.



The date and time when the memory dump was made are displayed.
The creator is indicated by the login name of the ADDM user.
The last load or comparison time, and the user who performed the action are also displayed.
Apart from the data, the comment is the most important user information for identifying a backed up memory dump.

Note

Please note that memory dumps (backups) often cannot be edited. This means that the comment is the only unambiguous identifying feature of the memory dump.

2.6.3 Cable connections for the transfer

Basics

ADDM combines various products for data backup and data management. For which ADDM uses the data transfer mechanisms already implemented in the products or systems. Therefore, although the user interface for data transfer in ADDM is always the same, the cable connections to the individual products are quite different. The various cable connections, which may occur when using ADDM, are described in the following.

Which cable connection is required?

The cable connections required depend upon the component to be backed up. The cable to be used to connect the component can be found in either the properties of the component concerned or in the section "How does A&D DataManagement work?".
This section also provides information about the characteristics of the cable connections and the options, which the various cable connections offer.

MPI, OPI, PROFIBUS

All SIMATIC-S7 controls and their special versions, which also include the SINUMERIK 840D and the MCU 172A, are addressed directly over the MPI interface.
This interface is physically a PROFIBUS interface, but with a defined number of nodes and a fixed data transfer speed of 187.5 kbaud.
The OPI is also used with SINUMERIK controls. This interface is, like the MPI interface, a PROFIBUS interface, but with a 1.5 Mbaud data transfer rate. Some CPUs have PROFIBUS interfaces onboard as well as the MPI interface, or PROFIBUS CPs can be plugged in. In such cases, the CPU is accessible both via MPI/OPI as well as via PROFIBUS.

An appropriate interface card and a matching MPI cable are required for coupling the backup computer in all cases. A connection to the components, which the MPI, OPI or PROFIBUS require, is impossible without this hardware.

V24 COM1/2 ports

The RS-232-C ports are very frequently used communication interfaces in the PC world. As a rule, these ports are present on every PC and are named COM1 or COM2. There is an interface component located behind which can transfer a byte of the PC serially via a cable to a second COM port. This means that the bits are transferred one after the other (serially). The COM ports are synchronized by a leading start bit and by one or more following stop bits.

As the data transfer is defined via voltage levels, the distance between the devices must not be too great, or a suitably low data transfer rate must be selected.

ADDM uses the serial coupling to all SIMATIC OPs. These devices generally have the RS-232 interface on board. The date transfer speed depends to a great extent upon the industrial environment and upon the quality of the cable used.

The serial coupling (component) can also be used for backing up older SINUMERIK controls or non-Siemens systems. The data must be transferred in several packets, depending upon the parameterization of the control. If the control permits all the data to be output at once, ADDM can store this in a file and can transfer it back to the control in case of disaster recovery.

LPT1 parallel port

The parallel port is one of the standard interfaces of a PC, however, under certain circumstances, it may no longer be possible to fit this interface into newer PCs. The interface is also frequently referred to as the Centronics interface because this interface, which was named after a printer manufacturer, became a worldwide standard. This interface transfers a byte in parallel and thus offers the opportunity of transferring data significantly faster than is possible with the serial interface.

The DOS drivers, Interlnk and Intersvr provide the option of coupling two PCs by means of a parallel null modem cable between their LPT1 ports. In this case, one PC is driven as host (Intersvr) and the second PC as client (Interlnk). In the client, the drives of the host are shown as removable data carriers. This enables simple data exchange by direct access. The use of these drivers is subject to the licensing agreement from Microsoft and their function is subject to additional conditions. For example, it is technically impossible to use these drivers with the WINDOWS NT operating system.

Interlink drivers

You need the Interlink drivers: INTERLNK.EXE and INTERSVR.EXE in order to activate the Interlink connection. These drivers are stored in a directory on the PC (e.g. C:\OLDDOS). The CONFIG.SYS file must now contain the following entry:
`DEVICE:=C:\OLDDOS\INTERLNK.EXE`

This loads the driver into the PC"s memory during boot up. If the PC is connected to another PC via a parallel cable, and this PC runs as host ("INTERSVR.EXE" started), the two PCs link up automatically. The first three drives of the host are linked.

Note

It is important that the drives linked via Interlink are FAT16 drives. The data transfer does not function correctly with other formats.

Network connection

The most frequent link between computers is probably the network connection. A network is the interconnection of computers via special network cards, which enable a correspondingly high data transfer speed between the computers. The data transfer rate is normally at least 10 Mbaud, as a rule it is higher. This enables even large quantities of data to be transferred in a reasonable time. As PC based devices are being used ever more frequently in the industrial environment, coupling via networks for data backup is becoming ever more predominant. However, a simple coupling between PCs and existing networks is not possible because networks have to have specific security mechanisms.

One does not have access to an existing network, even when the essential hardware, such as network cards and patch cables, is present and functional. The computer and the network card must be known to the network, and the system administrator must have assigned appropriate rights to the PC and user.

Note

Contact your system administrator regarding network accesses.

When using ADDM, the network connection can fulfill two different tasks:

- In the client-server application, the network connects the backup computer to the server. ADDM stores the backup data on the server, and fetches the desired data from the server.
- With PC based systems, such as SINUMERIK operator panels, the network connection also takes over the task of transferring the data to the new component for restoration after replacement of a component.

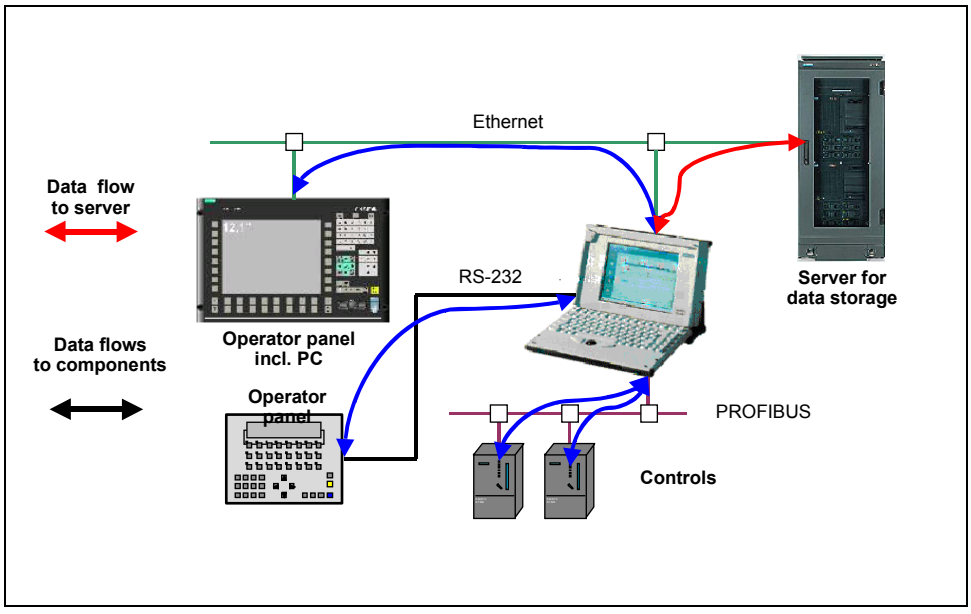


Fig. 2-4: PC based Systems

With the ADDM client-server application, several cable connections are often used simultaneously on the backup computer. The S7 controls can be connected online via an MPI or PROFIBUS, and the same time the backup computer is connected to the network.

USB connection

The Universal Serial Bus is a Microsoft specification, which enables peripheral devices to be connected to a PC in a simple manner. The devices can be plugged in and unplugged during operation. Two computers can also be linked to one another by special cables via the USB. This enables data transfer rates of 4 Mbaud. This connection replaces the Interlink connection, which was used in the past. The USB uses the same network protocols as the network connection. The same release mechanisms also apply. The USB does not function under WIN NT.

PC card slot

Various devices in the industrial environment offer data backup on PC cards. This means that the device data can be backed up on a PC card when the PC card is plugged into the device. . This is available as standard with SIMATIC OPs, for example. The user plugs the PC card into the slot, and can backup the data onto the PC card by operator action on the OP. The backed up data can now be read in again onto a new device.

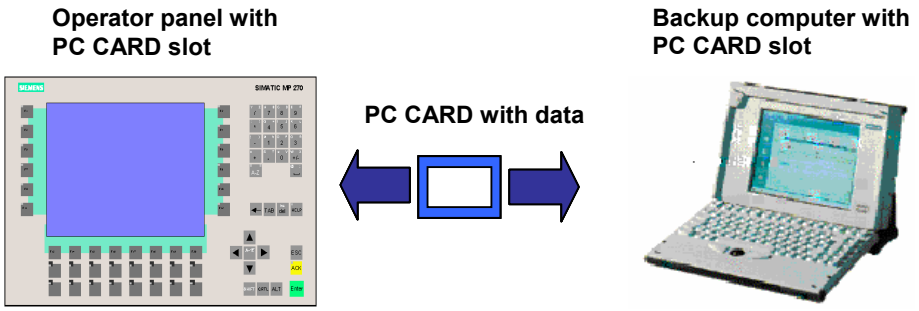


Fig. 2-5: Systems with PC CARD

It is advantageous to back up the data in ADDM if there are a large number of devices in a production facility. If the data is stored on the PC card as a file system, ADDM can read this data via the path component and back it up in the data structure in packed form.

The path component is very flexible. This gives the user the option of backing up every file system, provided that it is visible under the operating system used.

Infrared connection

Portable PCs are sometimes used as backup computers with ADDM. These laptops often have an infrared interface for data communication between peripheral devices, such as Palm or mobile telephone. However, two laptops can also be coupled via the infrared interface without any difficulty.

The infrared interface of the laptop must be activated to use this facility. Operating systems such as WINDOWS 98 and 2000 support this function. If the interface is active, the user can exchange data between the PCs providing that the devices are within the receiving radius of the infrared interfaces.

This data can, of course, also be backed up in ADDM and transferred back again, providing that the infrared interface connection is reestablished.

2.7 Comparison functions

General

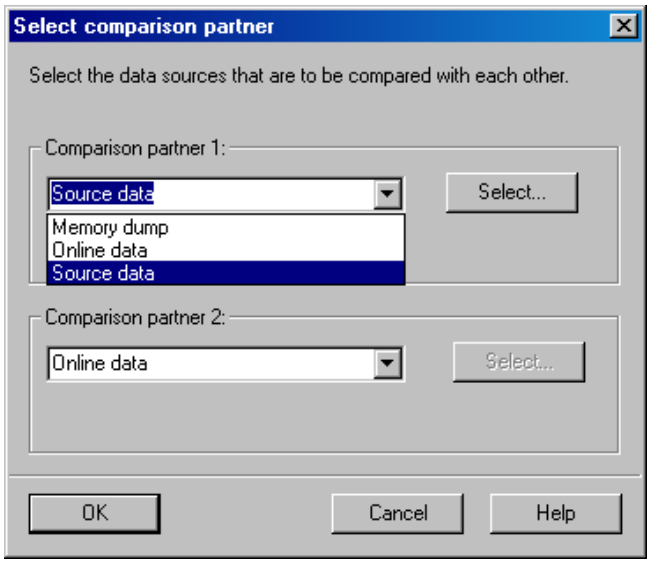
The comparison functions can be used to compare the data stored in ADDM with the online data. As the components may also contain data, which changes frequently, a special Exclusion list function is implemented in ADDM for some components. Data, which is not relevant for the comparison, may be put in the exclusion lists. This makes a meaningful comparison possible and ensures easy updating of the databases.

Multibackup

As well as the backed up source data, there is an option to create backups for most components. These multibackups are stored in the data structure of ADDM, and can be reloaded later to make a recovery. In order to be able to update these data, a comparison can also be made for these data.

Select comparison partner

As the data of a component may be multiply stored in ADDM, the data for comparison has to be selected. Click on the Comparison button and ADDM opens the following dialog.

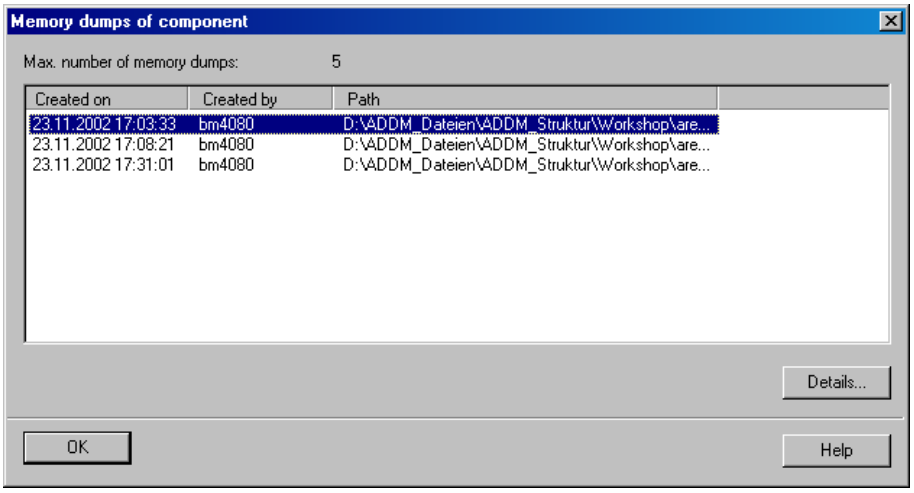


The list box enables the data to be selected for each comparison partner:

- "Online data" are data, which are stored in the destination hardware. To make a comparison, ADDM reads the data out of the hardware and compares them.

- "Source data" are frequently a component"s configuration data, e.g. S7 projects. These data are usually linked to the ADDM component by pointers. ADDM uses the first back up of a component as source data, and this is used as a reference for the comparisons.

- The "backups" and multibackups are referred to as memory dumps by ADDM. When selecting the memory dump, ADDM uses the latest backup and displays its date of creation. Clicking on the Select... button opens the dialog for selecting the memory dumps.

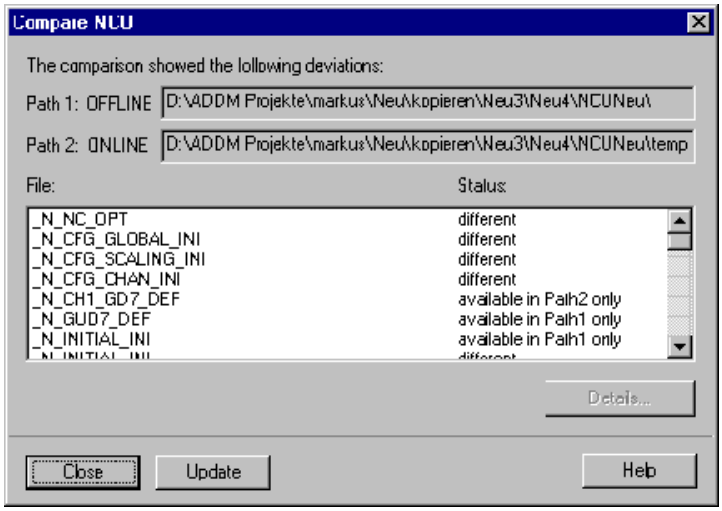


- In this way, the backed up data can be compared with the online data, or two backups can be compared with each other offline for all components, which are capable of backup and multibackup.

2.7.1 Comparing the NCU component

Results

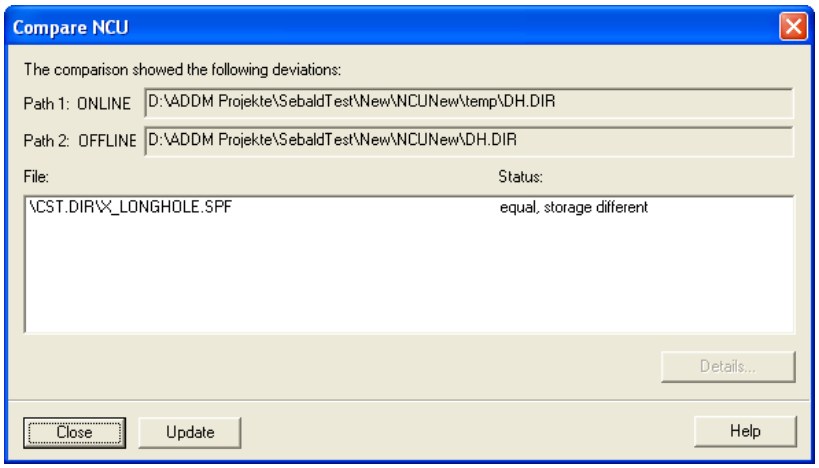
When comparing the NCU components, ADDM reads out the NCU data and compares it with the stored data. The differences are listed in an overview.



Selecting the files in the list and the "Details..." button causes ADDM to open the two different files alongside each other.

Results only for NC programs

When comparing NC programs, ADDM reads-out data from the NCU and compares this data with the data that has been backed-up. The differences are listed in an overview. The following additional differences can occur:



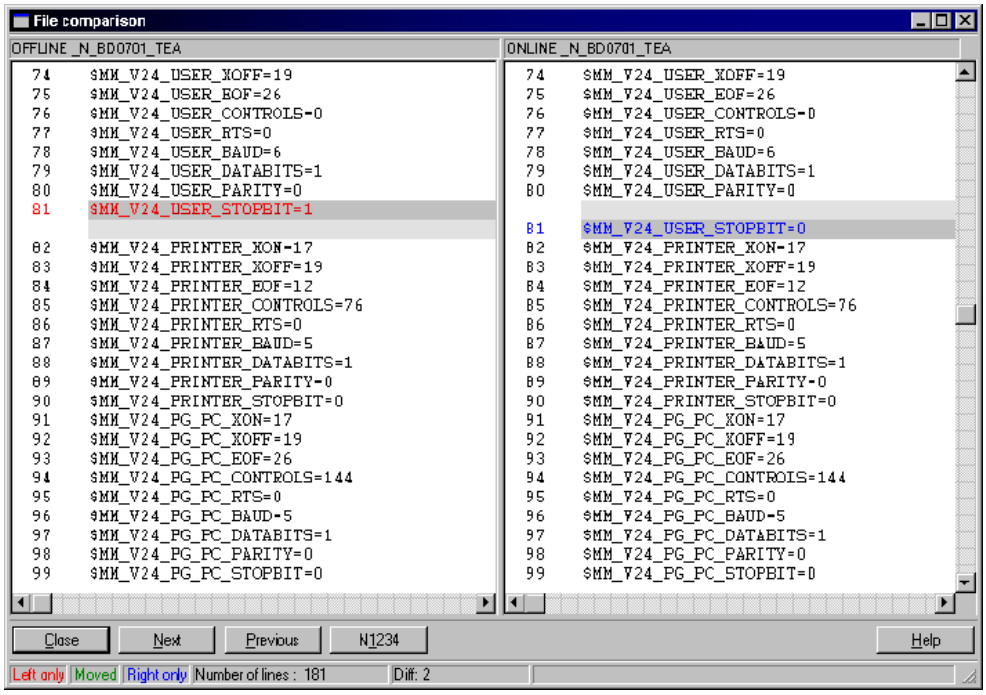
- equal, storage different
  This means that for the two files that have been compared, the contents are identical but they are stored at different locations (NC or data management of HMI).

- different, storage different
  This means that the two files that have been compared with one another, the contents differ from one another and they are stored at different locations (NC or data management of HMI).

- When the files are selected in the list and the "Details..." button pressed, ADDM opens the two different files next to one another. This function is only available if different contents were identified in the files being compared.

Data comparison

The offline and online data are shown alongside each other in the data comparison. ADDM lists the different files goal-oriented and colour coded. In so doing, missing lines are filled out with empty lines. This makes the differences and correspondences very quickly and easily recognizable.



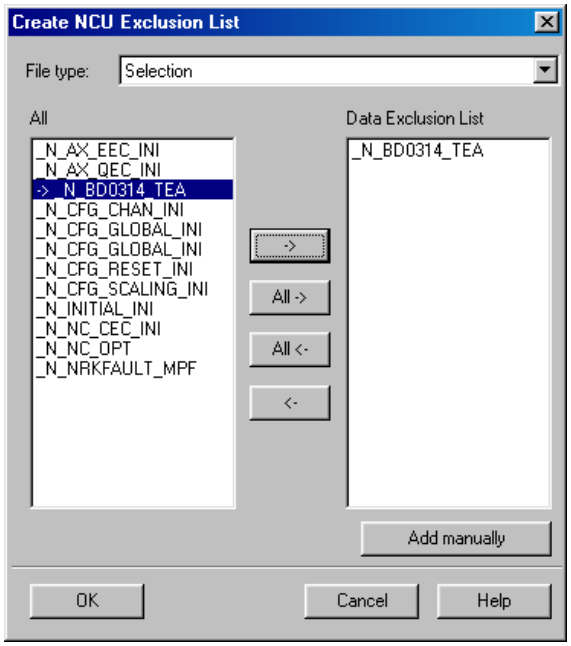
The code sequences in NC programs are given block numbers (N1234) to make them easier to read. The block numbers can be renumbered with the control editor. If this is the only change made to an NC program, ADDM detects that the whole NC program is different as regards data backup. However, the actual code sequences remain unchanged.

- For this case, the "N1234" button can be used to require ADDM to ignore the block numbers in the comparison. Now, only the code sequences will be compared and the actual differences marked.

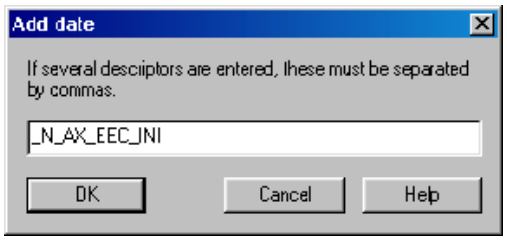
- In larger files, you can jump to the next or previous difference with the "Next" and "Previous" buttons.

Defining the exclusion list

Data may be excluded from the comparison with the exclusion list function. As a rule, this concerns data, which changes during operation.



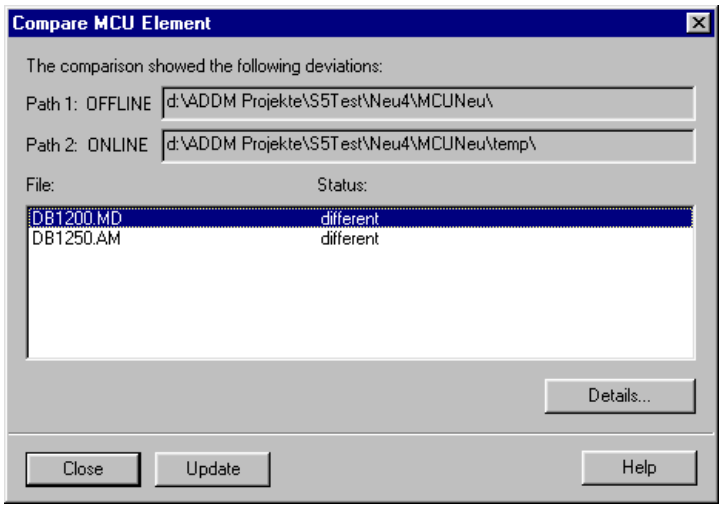
You transfer blocks which are only present online into the list with the "add manually" button.



2.7.2 Comparing the MCU component

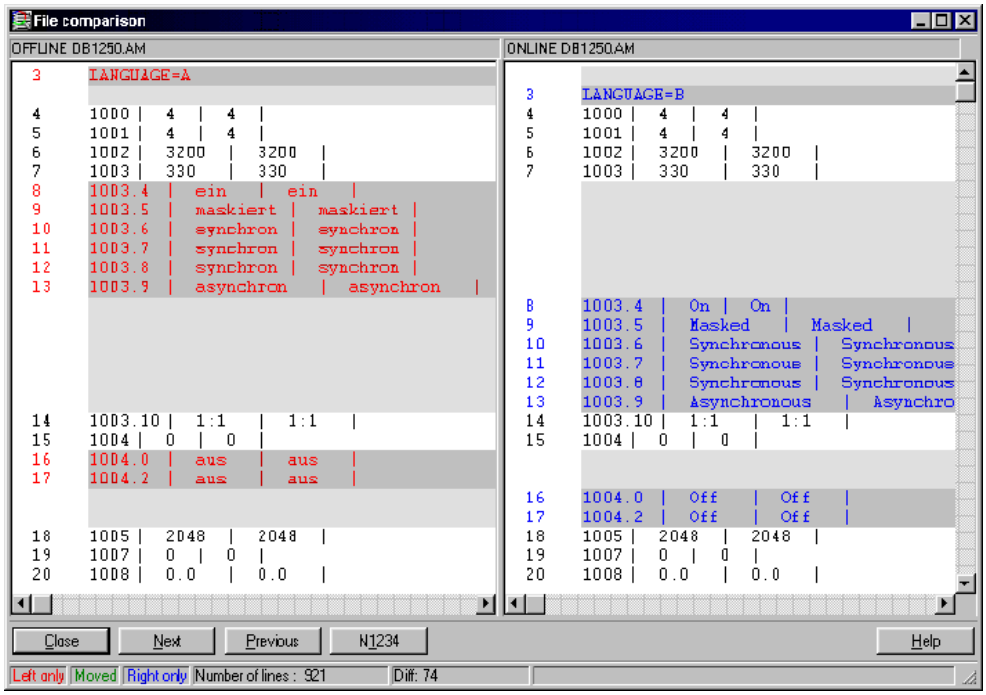
Results

In the case of the MCU 172A, ADDM compares all the data that is stored in the positioning part of the MCU. This does not include the S7 programs. These can be compared via the S7 component.



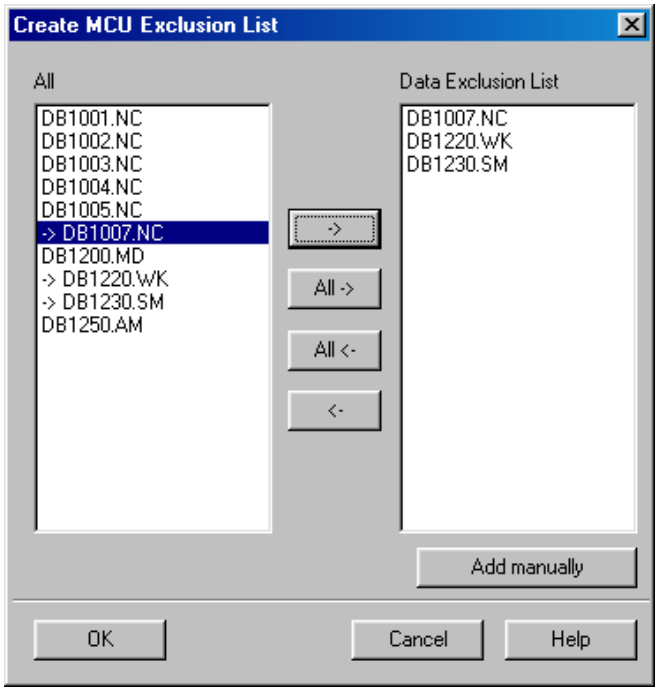
Data comparison

The differences between the online and offline data are displayed by selecting the files and pressing "Details...".

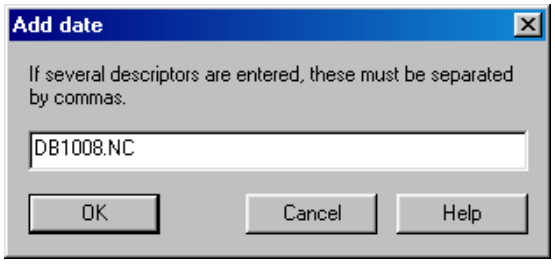


Defining the exclusion list

In the case of the MCU 172A as well, the exclusion list enables irrelevant data to be excluded from the comparison. This often includes the tool offsets. The PLC program of the MCU frequently overwrites this data.



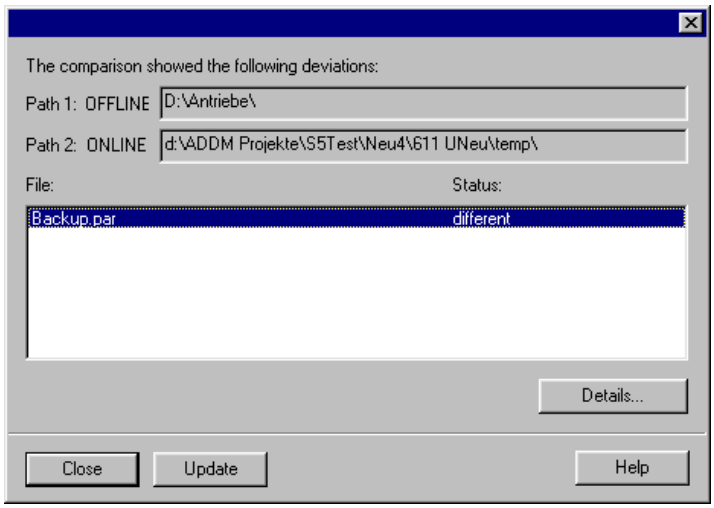
You transfer blocks which are only present online into the list with the "add manually" button.



2.7.3 Comparing the drive component

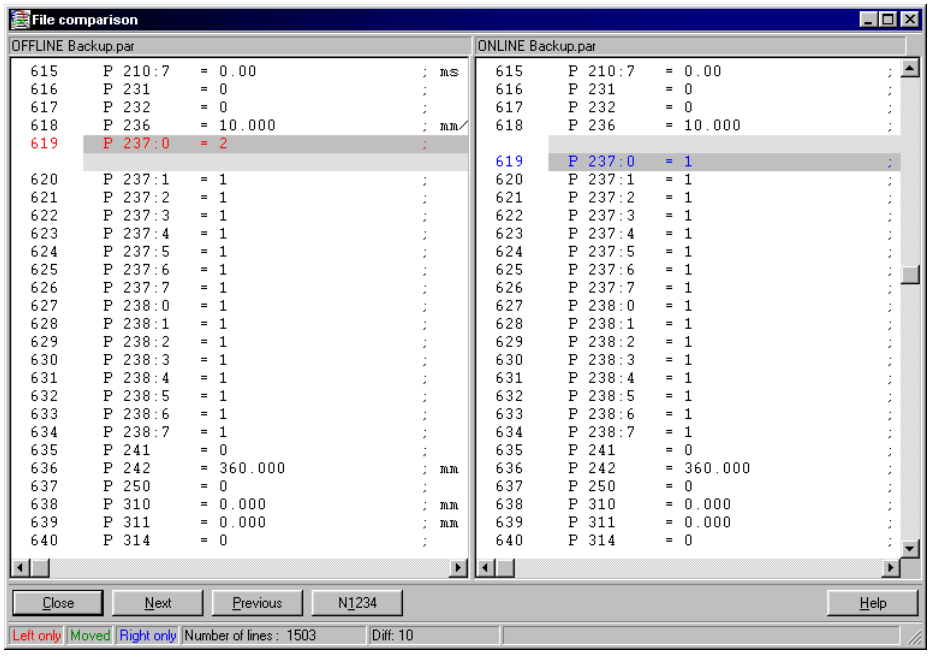
Results

In the case of the drive component, ADDM compares all the data of the drive. As in the case of drives all the data is stored in one file, as a rule only one file is shown as the result.



Data comparison

The "Details..." show the differences in the drive data. However, a correction can only be made in SimoComU.

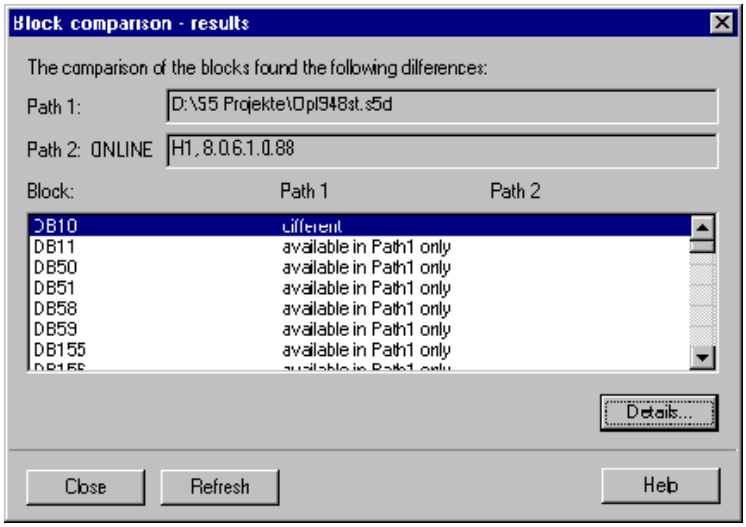


There is no exclusion list as only one file is read in the case of a drive.

2.7.4 Comparing the S5 component

Results

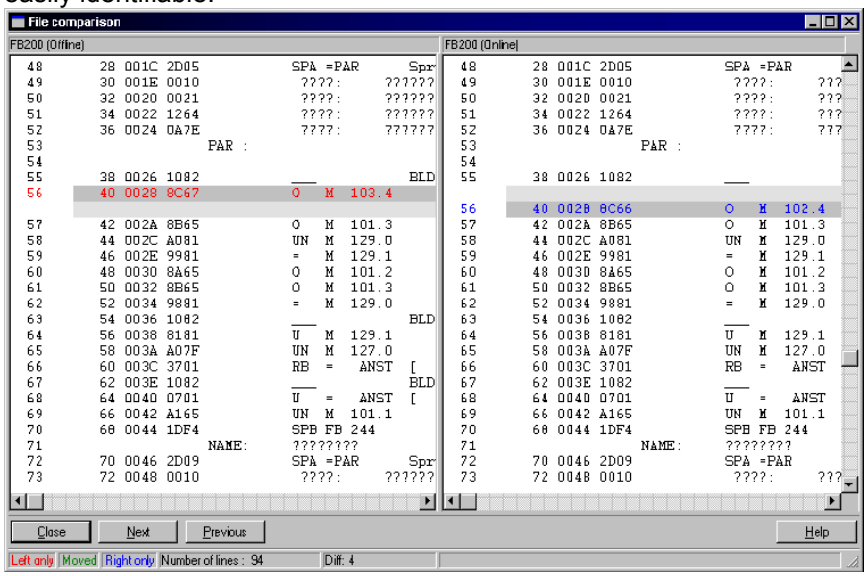
The offline data can be compared with the data in the S5 with the S5 CPU comparison.



When the "Details" button is actuated, ADDM evaluates the data of the selected object and displays the differences.
The block information is shown in an overview in the details. The blocks are displayed at code level with the "Go to..." button.

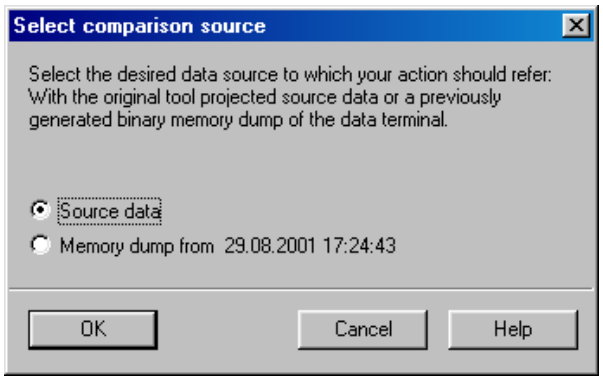
Go to...

ADDM displays the offline and online blocks alongside each other in the data comparison window. The differences are colour coded and the side by side alignment is goal-oriented. ADDM automatically fills non-existent lines in a block with empty lines. This makes identical and differing code sequences quickly and easily identifiable.

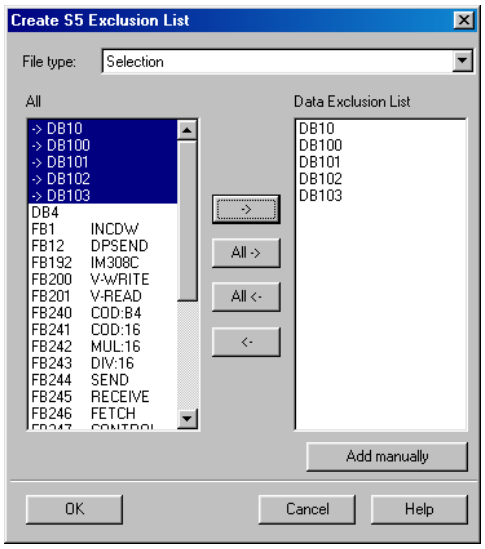


Select comparison source

A source data project and a separate backup project of a memory dump may be present in the data stored in ADDM. Therefore, before making the comparison, ADDM asks the user, which stored data, should be subject to the comparison.

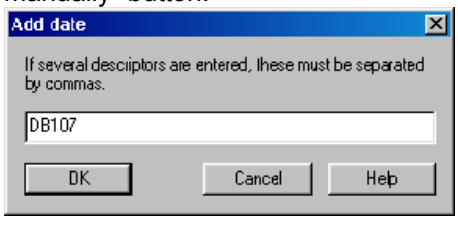


Defining the exclusion list



A list which excludes blocks from the data comparison can be generated in ADDM with the "Exclusion list" button. As a rule, those blocks which are frequently changed by the program during operation are put into the exclusion list. ADDM compares all blocks, which are not listed in the exclusion list. In this way, newly added blocks and changed code blocks are detected. The data backup is no longer current and can be updated.

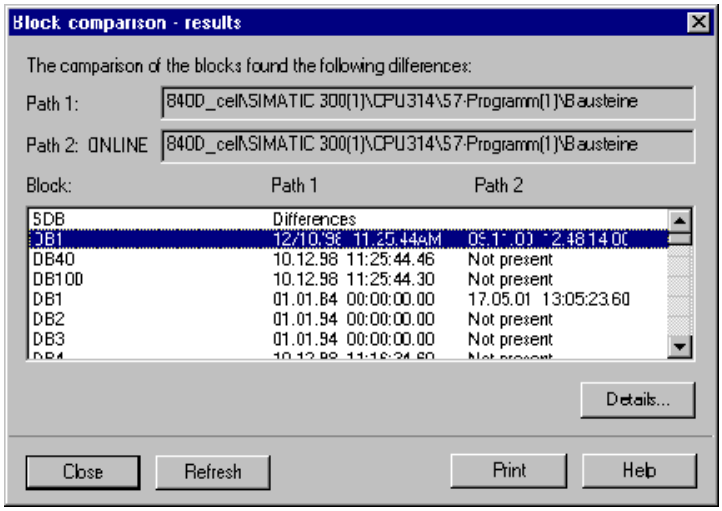
You transfer blocks which are only present online into the list with the "add manually" button.



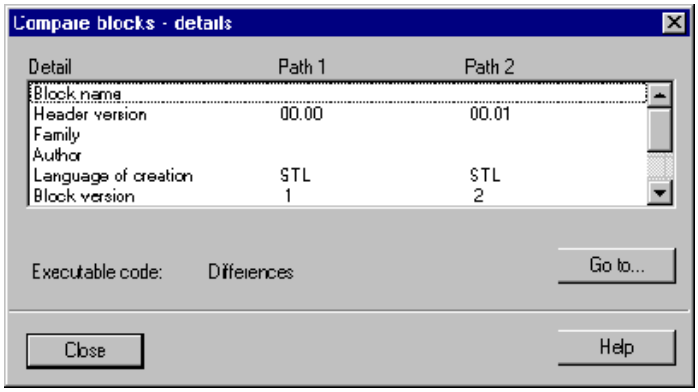
2.7.5 Comparing the S7 CPU

Results

ADDM compares the blocks of the offline project with the data in the S7 CPU. In so doing, a freely definable Exclusion list is taken into consideration.



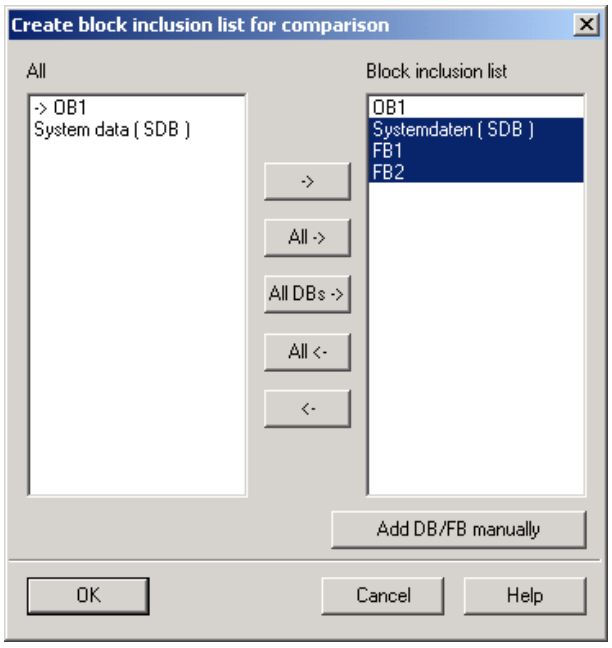
Actuating the "Details..." button causes ADDM to display the differences between the blocks.



The "Go to..." button is used to open the STEP7 editor if there are differences in the code. The editor shows the differences.

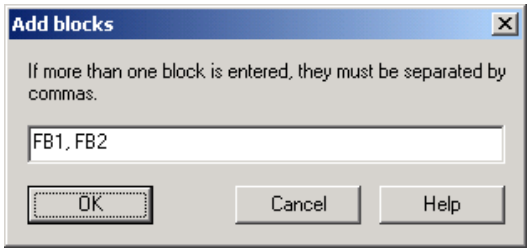
Defining the inclusion list

Create an inclusion list in ADDM in order to make a limited comparison between S7 project and online data.
All in the list entered blocks will be compared by an automatic compare from the job server.



The left list shows all the blocks from the linked S7 project. With the buttons selected blocks can be moved into the "Inclusion list".

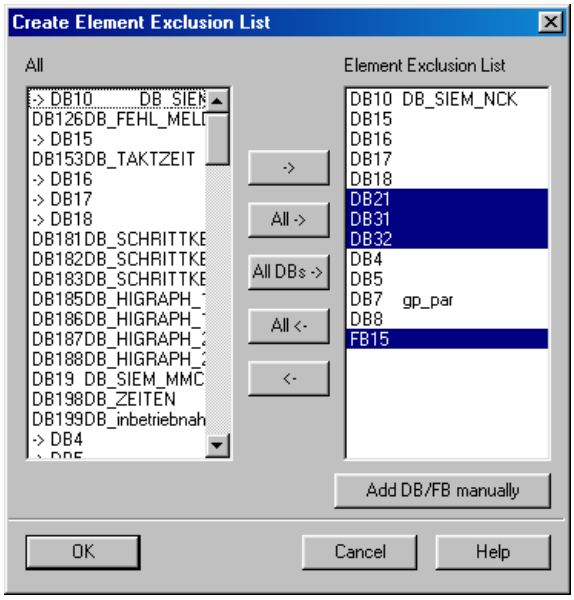
You transfer blocks which are only present online into the list with the "manually add blocks" button



Defining the exclusion list

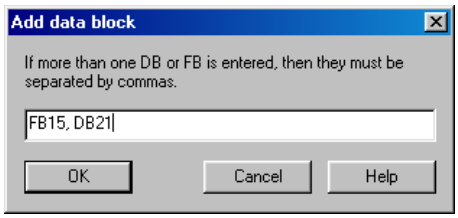
"Create an Exclusion list" in ADDM in order to make a limited comparison between S7 project and online data.

The blocks entered in the list are excluded when the limited comparison is selected. All the "newly added" blocks are displayed with this comparison



The list on the left shows all the blocks of the linked S7 project. You move the selected blocks into the "Element Exclusion List" with the buttons.

You transfer blocks which are only present online into the list with the "Add DB/FB manually" button.



If a manual compare is executed, the user will be asked for using the existing inclusion list. On confirming with "Yes", ADDM uses this list.
On confirming with "No", ADDM asks for using the existing exclusion list. Confirmation with "Yes" takes the list for compare.
Are both questions confirmed with "No", the compare will be started without any list.

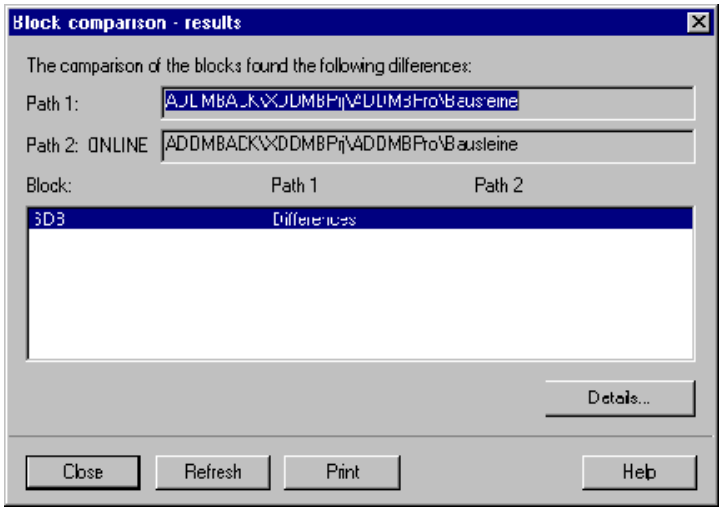
Comparison per job

When comparing S7 components per job, initially, the source data is compared with the online data. If the result of the comparison is negative, then the last memory dump is compared with the online data.

2.7.6 Comparing CPs

In the case of S7 data, ADDM can compare the CP components with one another. In order to be able to do this, the data of the CPs must not be stored in the S7-CPU. The CPs differ in their "system data blocks".

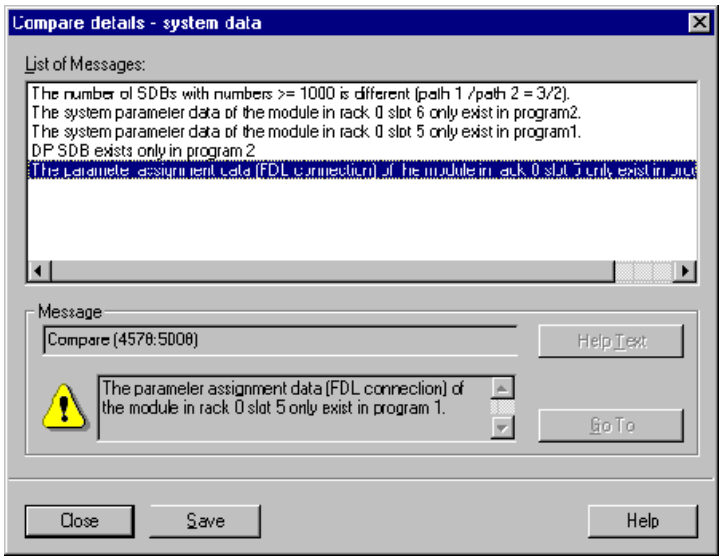
Results



After comparison ADDM shows the results.

Details...

Clicking on the button "Details..." a detailed information about the differences is given out. The system data are not displayed.

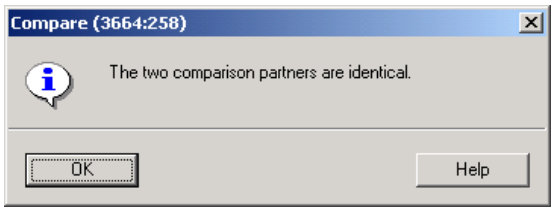


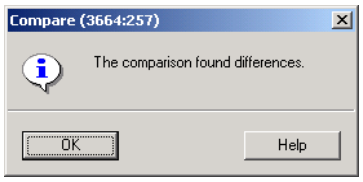
2.7.7 Comparing OPs

ADDM can compare the OP data, which has been backed up with ProSave. The download archives generated with ProTool cannot be compared.

Results

ADDM compares the data of the backup with the data in the OP.



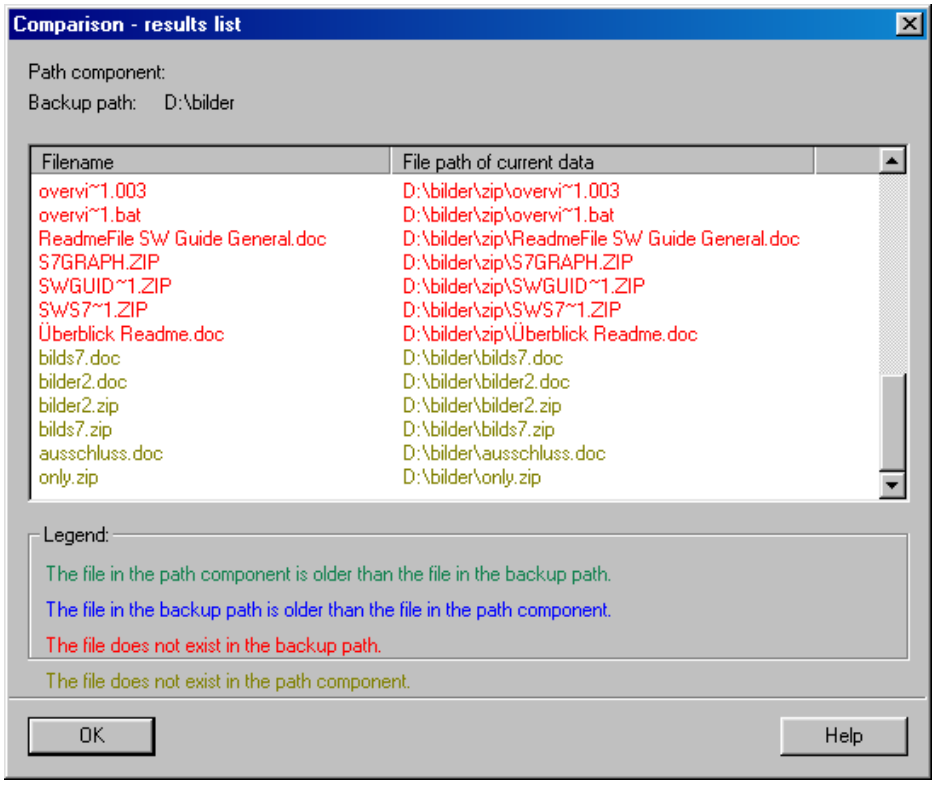


As the data of the OP are binary data and cannot be edited, the Exclusion list function is not required.

2.7.8 Comparing the path component

Results

The time stamps of the packed files are used in the comparison of the path component. ADDM then lists the files in the results lists. All files of a PC or drive are backed up in the path component. These data are often binary data files and are not to be displayed with text editors. For this reason, a detail comparison is not provided in ADDM.



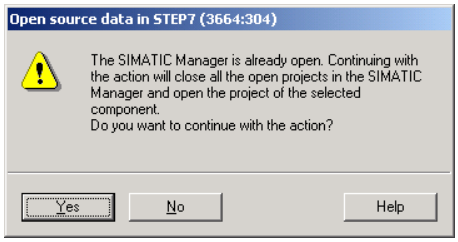
ADDM shows the status of the files compared in the list by means of colour coding. The legend states the meaning of the colours.

2.8 SIMATIC S7 functions

Further functions for using the S7 CPU control component are described in the following.

2.8.1 Opening the data with STEP7 software

A S7 component has a pointer to the source data of a STEP7 project. ADDM can open this STEP7 project with SIMATIC Manager. Please select in the menu Edit → Open source data in STEP7.... If SIMATIC Manager is already started, following message box will be displayed.

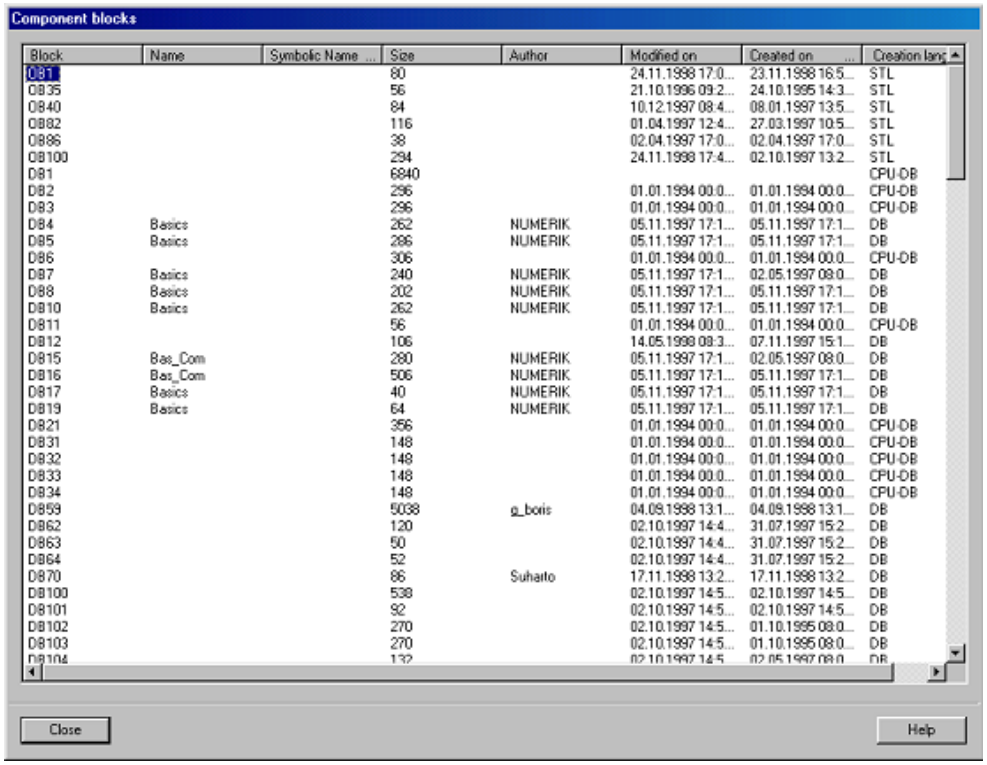


If this message is confirmed with "Yes", all already opened STEP7 projects will be closed. After that, the project of the selected component will be opened.

All data can be handled as usual. Please notice that changes in the source data are not transferred automatically into the hardware component. Therefore the data have to be transferred also into the hardware.

2.8.2 Displaying blocks and files from a S7

The "Component blocks" menu displays the content of the project in the case of S7 CPU objects.



You obtain the details about the particular block with the right mouse button. You can open the selected block or display its properties.

2.8.3 Transferring the configuration to new hardware

Proceed as follows to transfer configuration data to new hardware:

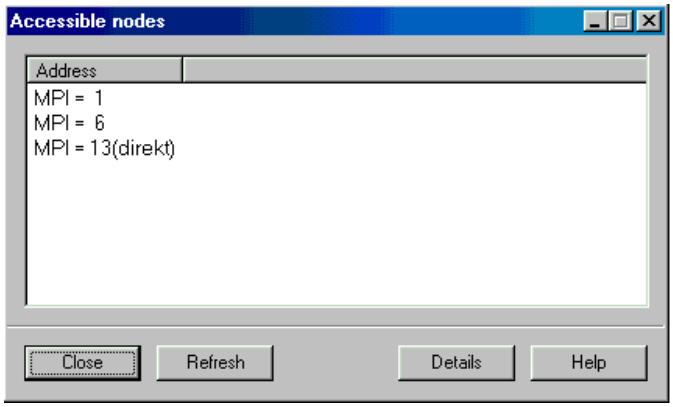
1. Select an "S7" component.
2. Select "Transfer the configuration to new hardware" in the context menu. ADDM then lists all accessible nodes.
3. Select a target CPU and click on "OK".
   The program block is transferred to the selected component.
4. If an S7 CPU is exchanged, the data is transferred to the "CPU address" configured in the "Offline project". If the address stored there is not the default address 2, then ADDM issues an error message.

Danger

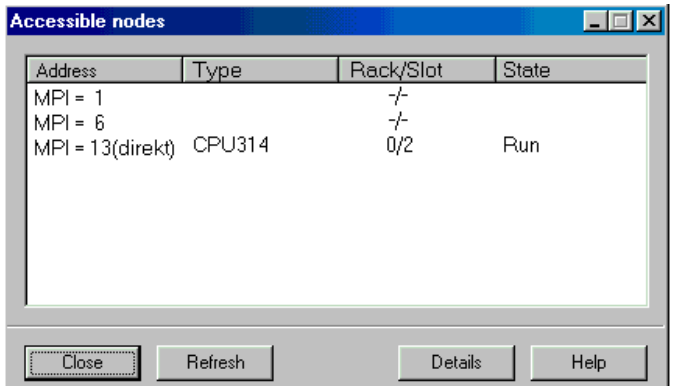
Use the "Transfer the configuration to new hardware" function very carefully. It overwrites the configuration settings on the target component.

2.8.4 Displaying accessible nodes

The Target system → Display accessible nodes menu displays all nodes accessible online via an MPI, OPI or PROFIBUS interface.
All the nodes found in the network are listed.



The "Details" button displays more details about all nodes:



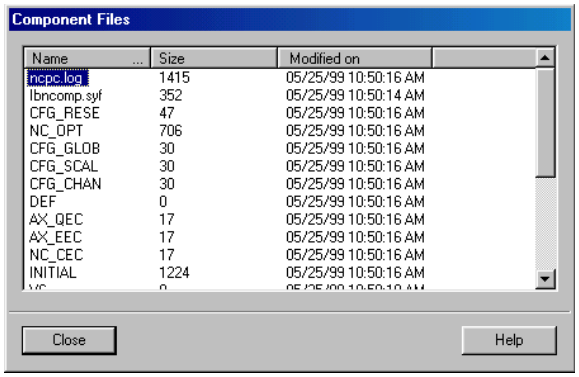
Nodes, which do not transmit an appropriate response, are displayed without any information. An error message is not output.

2.9 Handling of Files/Blocks

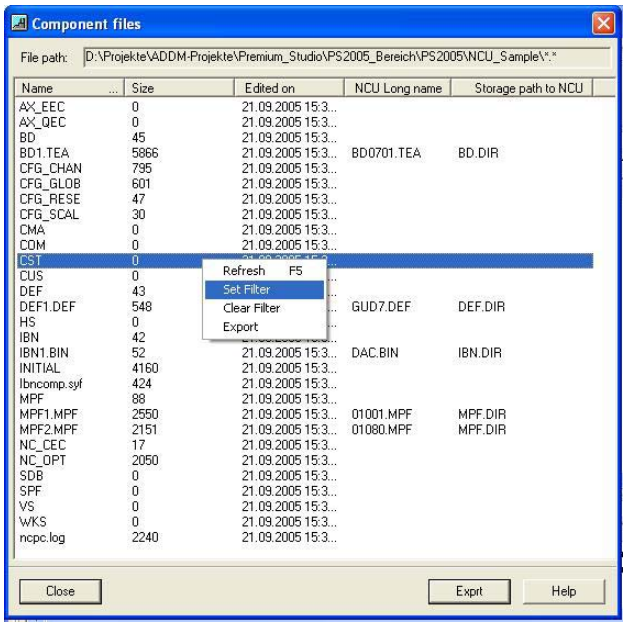
The function Display Files/Blocks is not available at all components. The function should help to analyze the data and keep them actual. For data protection a change of the data is not possible.

2.9.1 Display Files/Blocks of a NCU

For an NCU object, the backed up contents of the ADDM directory are listed. This enables the backed up files to be checked.



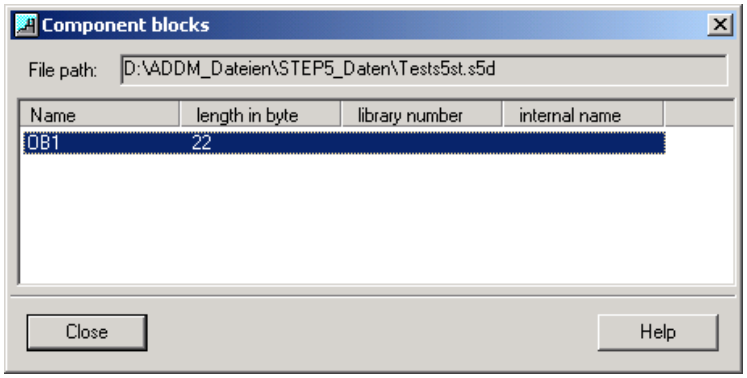
For protection of the data an opening of the files is not possible. The date and time stamps of the files are listed for checking.



The right “maintain NC-programs” enables you to export marked files.
When the target directory has been specified, the selected files are copied to this target directory. While copying, the file names are changed to the long names of the NC files, so that the NC files can be stored in the target directory as “Longname.Ending”. Directory structures are taken into account and mapped to the target directory.

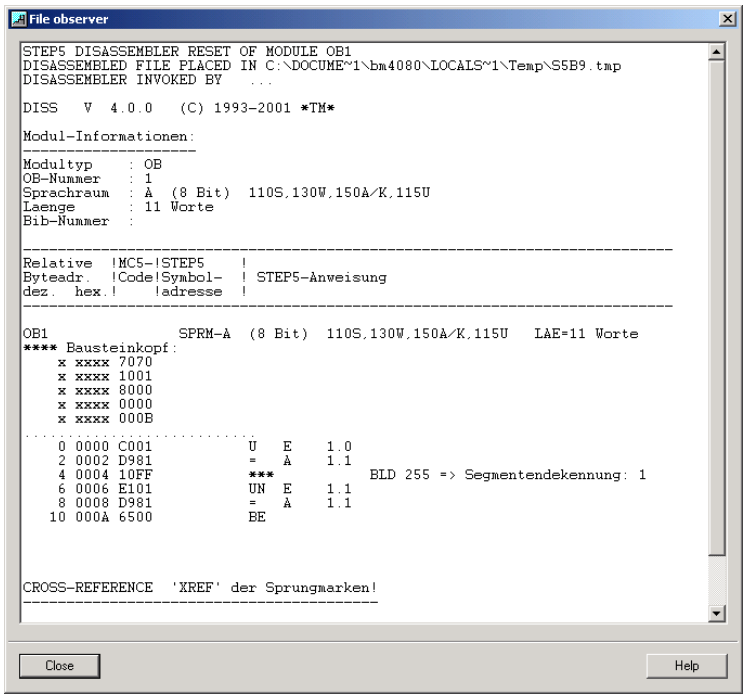
2.9.2 Display Files/Blocks of a S5

The displaying of a SIMATIC S5 operates in the same way as a SIMATIC S7. The selection of "Display Files/Blocks..." opens following dialog. The relevant block may be selected and opened in the listing.



For selection please mark the block with the mouse. The right mouse button brings up the popup menu "Display Module".

The Block will be disassembled and displayed. The dialog has only display functionality. An editing is not allowed for data protection.



2.9.3 Displaying files and blocks of an HD component

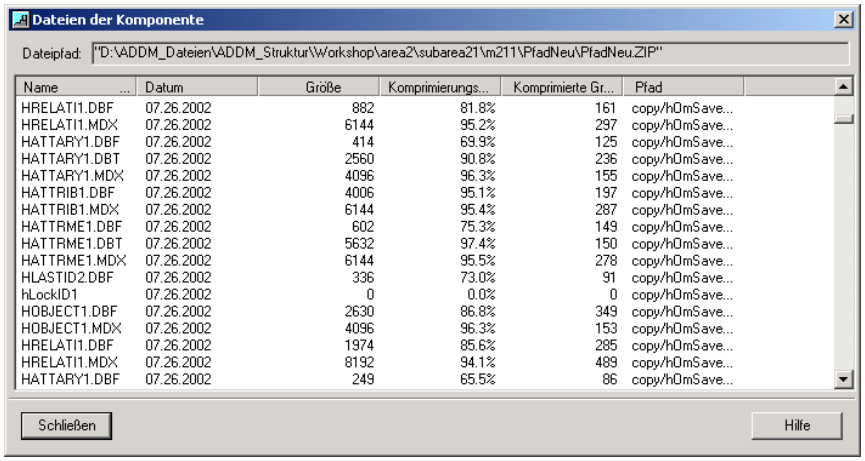
For an HD component, the function "isplay Files/Blocks" pens the last Ghost backup in the Ghost Explorer.

Caution

As long as Ghost Explorer has not completely opened the Ghost Image, it is not permissible to close Ghost Explorer.
If Ghost Explorer is closed prematurelythis can mean that both the Ghost Explorer as well as also the ADDM will no longer be able to be controlled.

2.9.4 Display Files/Blocks of a path component

The function displays a listing of the zipped files with details of a path component.



2.9.5 Export Contents of a Path Component

If the function “Export Contents” is called on one of the selected path components, it is possible to choose whether the ZIP file could be copied to the target directory with data compression, or whether only single files are to be copied to an export directory.

To export single files, mark the files to be exported and click on “Export”. A directory browser then appears for entering the export directory as target directory.

2.9.6 Displaying files and blocks of an SINUMERIK component

Display files/blocks for a SINUMERIK component lists the backed up archive files and provides details about the data. A maximum of four files are displayed here depending on which contents of the NCU were backed up:

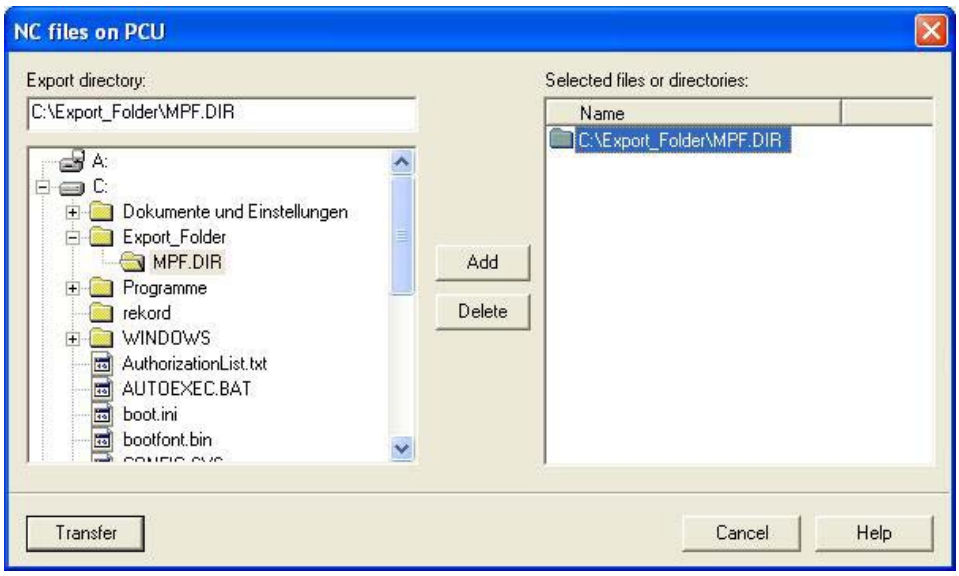
- ADDM_NCU.ARC Backup of the NCU
- ADDM_PLC.ARC Backup of the PLC
- ADDM_CC.ARC Backup of the loadable compile cycles
- ADDM_DRV.ARC Backup of the PROFIBUS drives

The selected file can be opened by clicking with the righthand mouse key on the menu entry “open data.

Note

The SinuComARC software, Version 02.02.02 or higher is required to open archive files. This software is not included in the scope of supply of ADDM and must be separately purchased, e.g.:
SinuCom commissioning and service tools software 7.5 SP2,
single license, on DVD, 6FC5250-7AY00-5AG0

2.9.7 NC-Files to the PCU



This dialog can be used to transfer files and directories from the export directory to a PCU.

In order to transfer files or directories to a PCU, they must be selected in the left-hand window.

Click on “Add” to add the selected objects to the list of selected files or directories.

Transfer with the NCU component

The files or directories selected for transfer are transferred via the Agent computer configured in the NCU component settings.

Transfer with the path component

The system obtains information on the target directory from the properties of the path component. The connection to the target directory is established under the user login defined under "Options - Properties - NCU". This function requires Windows NT 4.0 or higher on the ADDM Client computer, as the Windows 9x and ME operating systems do not support "connect as". If no user or password has been defined, a message appears and the action is cancelled.
The "Maintain NC files" user right is required to transfer files to the PCU.

A collision check is carried out in two steps prior to data transfer:

Step 1:
It is checked whether the target directory contains files with duplicate names. If files already exists in the target directory, a files list is displayed and date transfer is aborted. The seconds step is not carried out until the collision check has been successfully completed and no duplicated are found.

Step 2:
If the collision check performed in Step 1 detects no collisions, a temporary NCU dump is produced and compared to the files transferred in the export directory. When the NC programs are loaded, they are displayed in a list and the transfer procedure aborted.

Only the file names are compared. The contents of the files are not compared.

During collision checking and transfer, a progress bar informs the user about the transfer status.

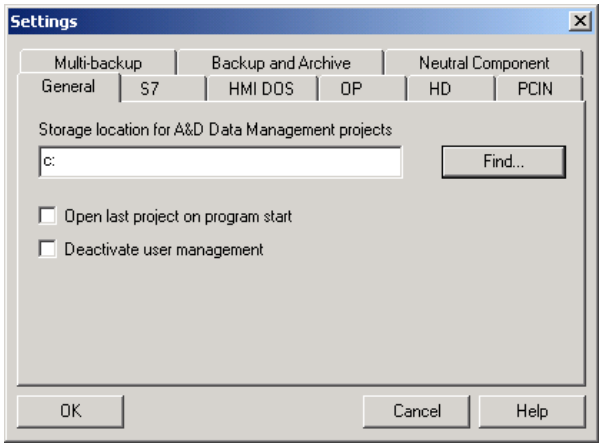
On successful completion of data transfer, the contents of the export directory are deleted.

2.10 Standard functions

2.10.1 Basic settings

You make the various basic settings in the "Settings" dialog

Editor settings

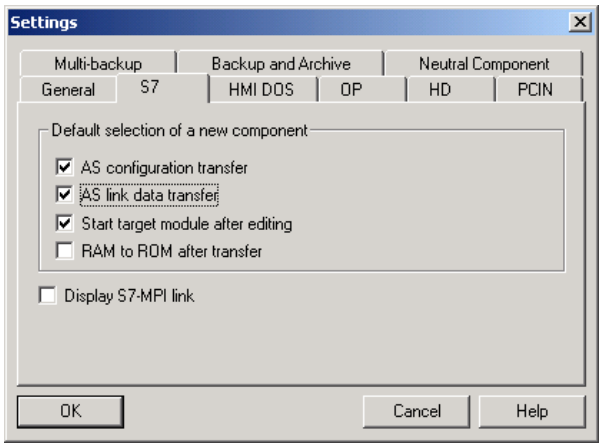


Define the default drive in the "Storage location for ADDM projects" field. ADDM offers this drive the first time a new project is created or shows this drive when a project is opened.

If the checkbox "Open last project in Program start" is checked, the last project opened is loaded automatically on program start.

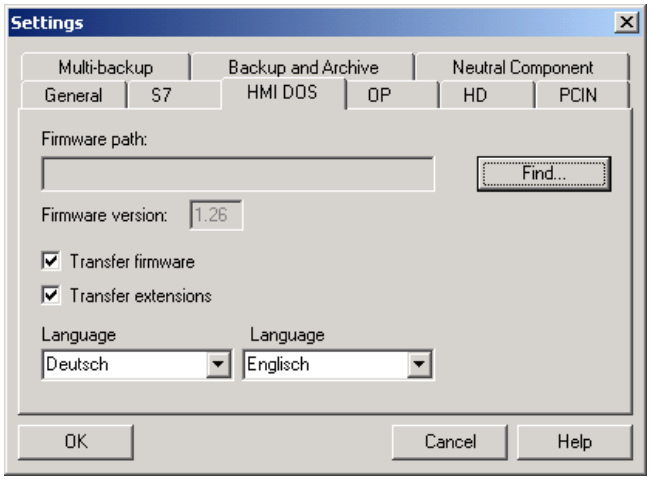
The lower checkbox disables the User Management in the single-user version.

S7 settings



For S7 objects, ADDM can display the MPI links configured in STEP7. This information is read out of the STEP7 project. Disable this option to improve the running characteristics of ADDM.

HMI DOS settings



Define the default settings for transferring DOS packages to operating panels (OPs) here.

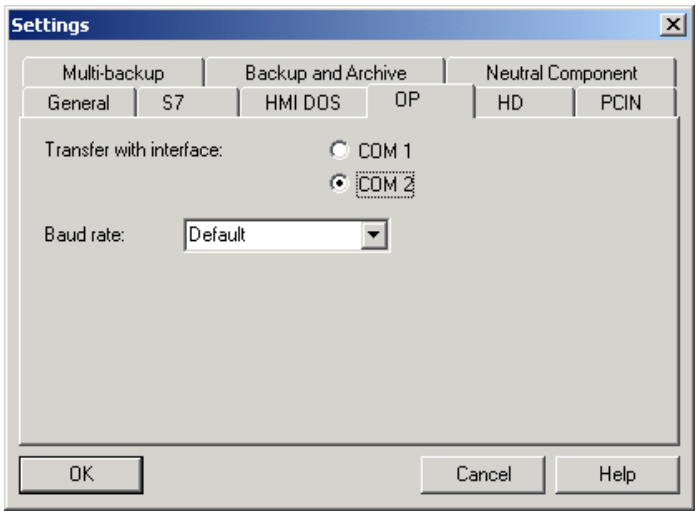
Define the "firmware version" used for the DOS transfer and the path of the application in the Firmware version and "Firmware path" fields.

Select the two options underneath if you also want to transfer the Firmware and the Extensions in addition to the display texts.

Select the particular language versions which you want to transfer to the OP 031 in the "Language 1" and "Language 2" drop-down list boxes.

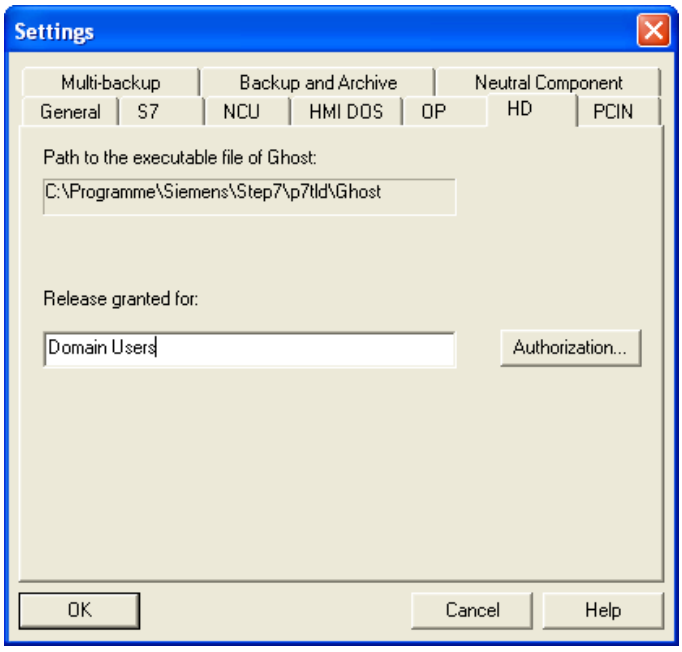
You can also change these settings immediately before the transfer.

OP settings



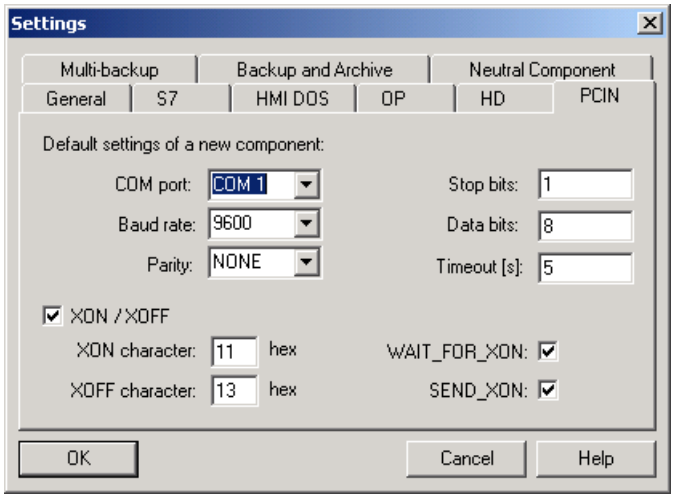
Select the PC Interface for the transfer to the SIMATIC OP 15 operator panels here. The setting is made centrally for all OPs in this window.
In addition, define the "Baud rate" for the transfer to the OP 15.

HD settings



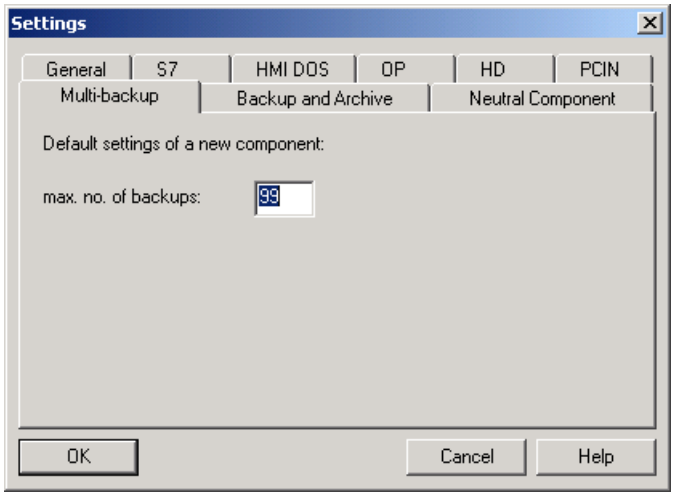
The output field shows the path of the Ghost application supplied on the ADDM computer.
When the "Authorization…" button is pressed, the dialog window "Authorization for HD releases" is opened, which lists all users and user groups that a release can be granted for.

PCIN settings



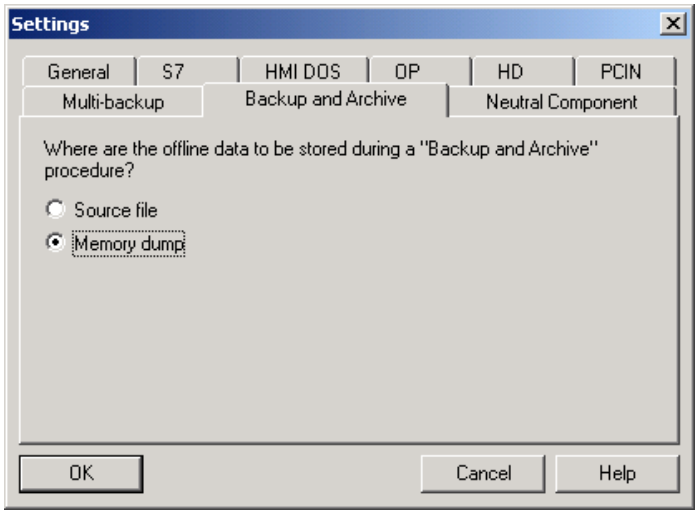
Specify the default data transfer settings in the dialogs for the PCIN component. The transfer parameters can be separately set for each PCIN component in the properties.

Multibackup settings



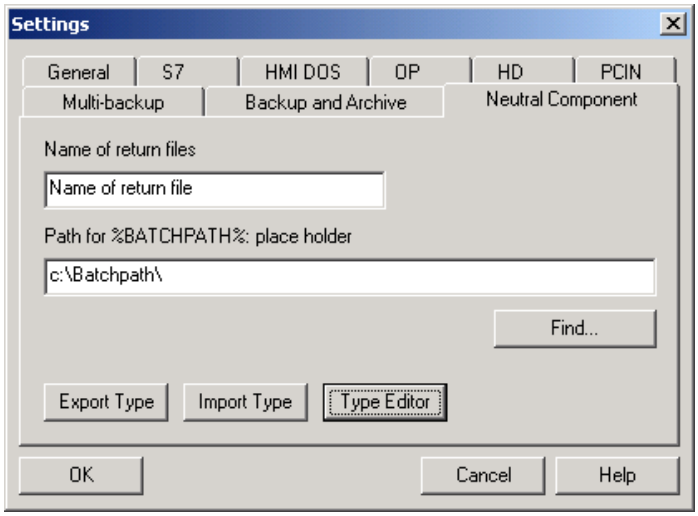
The default setting of the maximum number of backups is set in the settings for using the "Multi-backup" function. This setting is used as the basic value, however the user can set a different number in each component.

Backup and Archive



For the function "Backup and Archive" can be defined if a backup should be stored as a source data or as a memory dump. On components, which do not allow storing the data in the source data area (e.g. S7 or S5), the data are stored in every case as a memory dump.

Neutral Component



The settings of a neutral component defines the name of the returnfile. The data exchange between an unknown application and ADDM is done via this returnfile.

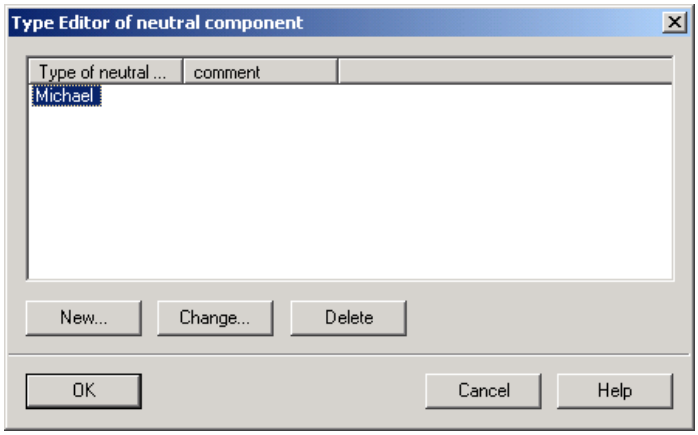
The path information for the representative %BATCHPATH% can be stored. This information is taken for loading, backing up and comparison. In this path could be stored batch files, scriptings or executable programs for loading, backing up or comparison.

The button "Export type" opens a Windows standard browser. There you define the target directory and the file name for exporting the type file.

The button "Import type" opens a file browser for selection of an ini-file with the information of new types

Type editor of the neutral component

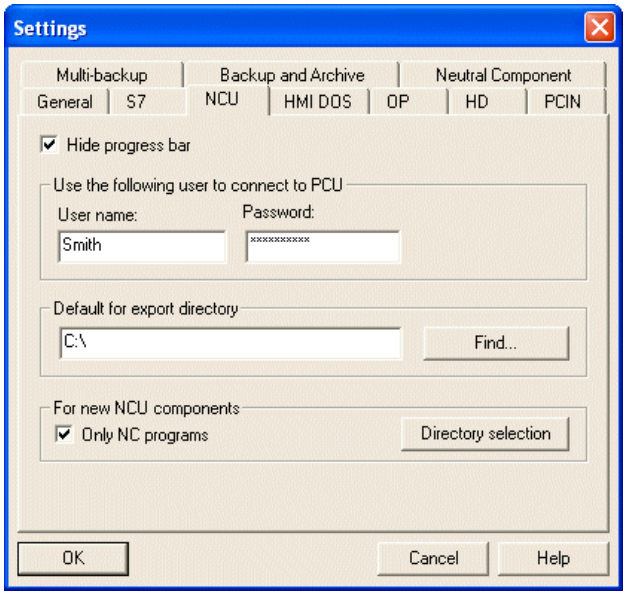
The button "Type editor" opens the dialog "Type editor of neutral component". There it"s possible to change already existing types or to create new ones. That means, a user have the possibility to define new the properties of the neutral component with all needed commands and store this as a new type. On assigning a new neutral component into a machine, all types of neutral components are available.



Note

Changes on a type of the neutral component don"t overtake the changes into neutral components of the same type in already existing ADDM projects. The properties of the already configured neutral components in existing ADDM projects remain in the status before the changes.

NCU component



- Hide progress bar
  When data is being transferred on or to the NCU, a progress dialog box is displayed that shows the status of the data transfer. The progress dialog box can be suppressed by setting the control box Hide progress bar.

- Use the following user when connecting to the PCU
  The user and password stored here are used when the "NC files to PCU" function is used with the path component.

- Default setting for the export directory
  This is the default setting for the export directory of the path and NCU component. If a path or NCU component is selected and the Export contents function is opened, the user will see this directory as the default in the directory browser that appears.

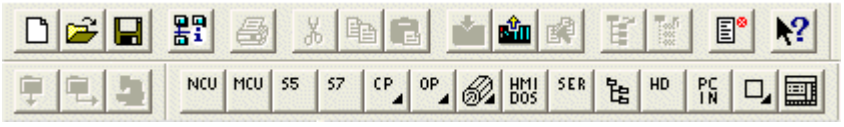
Notice

This setting is valid for all NCU components in the open ADDM project and is saved on this computer for all ADDM users.

- For new NCU components
  When setting the checkbox "Only NC programs" for new NC components, it is defined that only NC programs will be backed-up. By calling the dialog box NCU directory selection using the button "Directory selection" you can pre-define which individual program types these are.

2.10.2 Moving menu bars

The ADDM menu bars can be moved with the mouse. The user can move the bars to various places.

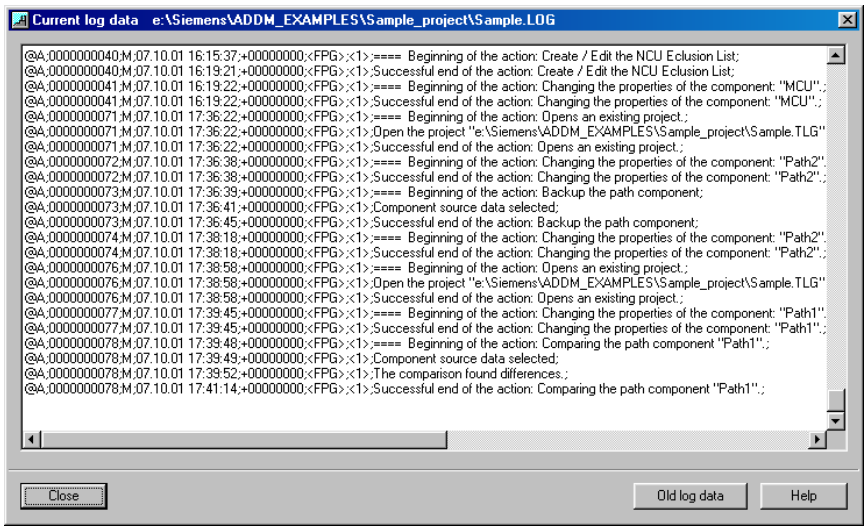


2.10.3 Logging actions (Logfile)

ADDM logs all actions in log files. This allows faults and errors to be analyzed later when errors occur.
The user can open the log file but cannot make any changes. ADDM creates the log file when a project is created and stores this in the same directory as the project.

Note

Log files are linked to the ADDM project. This means that a log file can only be opened if a project is open in ADDM. An attempt to open a log file without a project being open returns the error message "File cannot be opened".



New functions

- The log file may achieve a maximum size of 128KB (formerly 30KB). The file is then closed, changed into an "oldfile“ and a new log file is created. If this log file also reaches the maximum size, the "oldfile“ is deleted and the log file renamed "oldfile“.

- The log file can be read into Excel as a file to evaluate and further process the data. When opening the file in Excel, select "Separate" and the Semicolon as the separator.

- The code "@A" indicates the start of a message line. ADDM then enters the message ID. Messages which belong together can thus be identified. Alternating message entries may occur when several users work with the data inventories.

- There are the following entry codes:
  - M = Message
  - W = Warning
  - T = Trace
  - E = Error

- The date and time follow any appended error code.

- The computer and login name enable the logged action to be traced back and so help to answer any queries.

- The plain text of the message completes the line, ADDM does not insert any semicolons into the text. Semicolons are used as separators and the last one closes the lineDas Logfile kann eine maximale Dateigröße von 128 kByte (früher 30 kByte) erreichen. Danach wird das File geschlossen, in ein "oldfile" geändert und ein neues Logfile angelegt. Ist dieses Logfile ebenfalls auf die max. Größe angewachsen, wird das "oldfile" gelöscht und das Logfile in "oldfile" umbenannt.

Compatibility with older ADDM versions

An older ADDM can only read a log file with a maximum size of 30KB.
A version >V5.1 therefore immediately closes a log file of over 30KB and saves it as an "oldfile“. Only the first 30KB of an "oldfile" can be displayed.

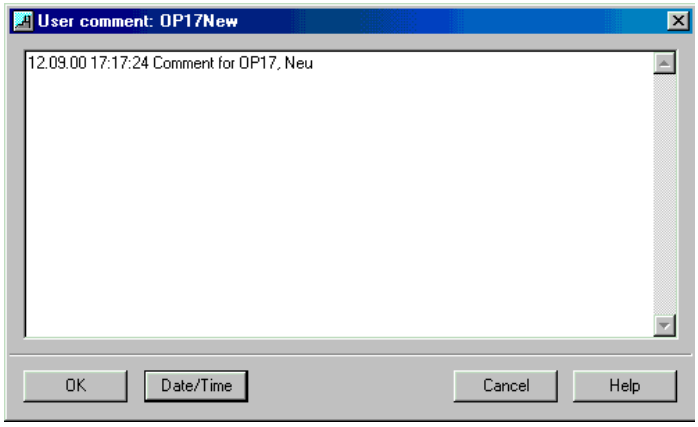
In older versions of ADDM, logfiles are created in the level in which the project/part project was opened. With V5.1 and higher, the log file is always kept in the topmost project level. The logfiles of the older versions are not entered in the topmost log file of the V5.1.

A part of the ADDM main project is transferred to a computer by "Copy part project". A new log file is created during work on this part project. This log file is not added to the log file of the main project when the part project is transferred back into the main project.

2.10.4 Entering a user comment

As well as automatically logging actions, you can also add user comments.
The comment window is opened by clicking on the "K" in the directory tree or by selecting the component, pressing the right mouse button and selecting "Comment..." in the menu.

The actions can be date and time stamped. The comment text can be changed at any time.

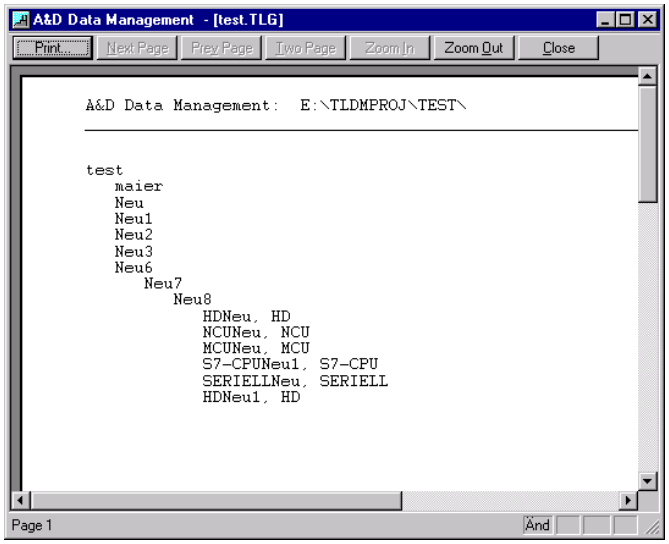


Comments are automatically word wrapped. The word wrap is made automatically when the window size is changed.
The size of the comments is limited to 16KB. No further comments are possible beyond this point.

You receive the message "The file is too large to open". In this case, open the file and delete part of the comments.
You can then continue to work normally.
If you do not delete anything, then the last data entries are lost.

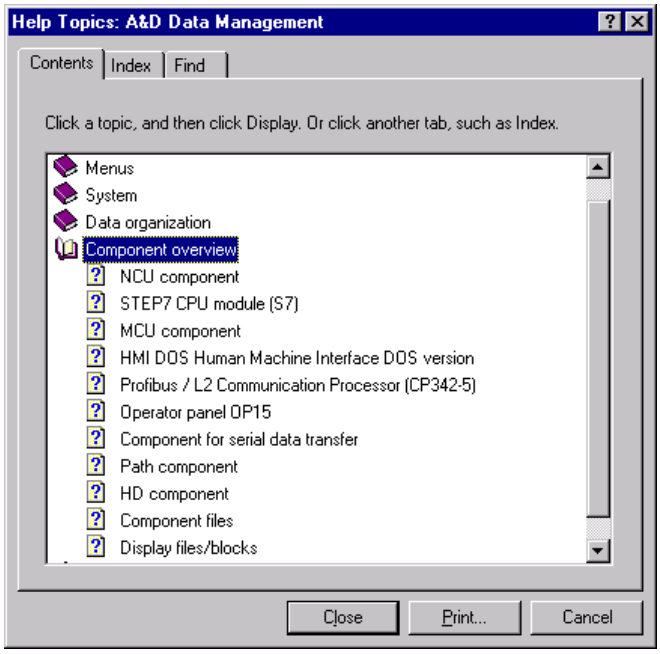
2.10.5 Printing

The plant structure displayed in ADDM can be printed out for documentation purposes. To do this, select the File → Printing menu.
You can see a preview of the page with the File → Print preview menu.



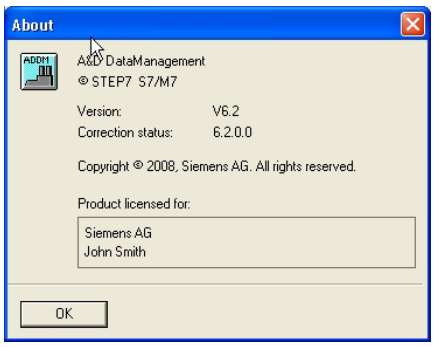
2.10.6 Online-Hilfe

Online Help is integrated into A&D DataManagement. The Online Help enables the user to obtain help appropriate to each topic.



2.10.7 The About window

The Help → About menu shows the version number of the currently installed version.

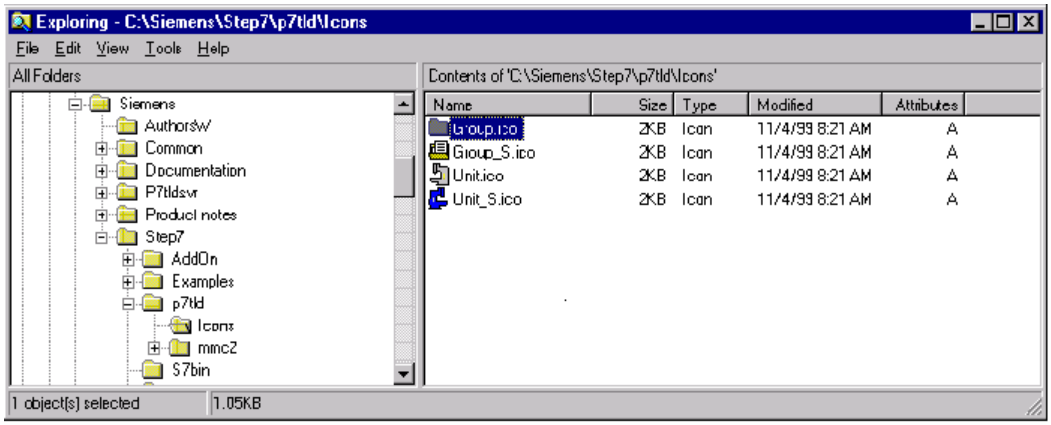


2.10.8 Changing icon files

The A&D DataManagement directory tree is represented by standard symbols. However, the user also has the option of changing the ADDM symbols (icons). The symbols are located in the directory:

LW:\...\Siemens\Step7\p7tld\Icons\

LW	drive on which ADDM was installed
\...\	directory specified according to user"s desire
\Siemens\Step7\P7tld\	installation directory of ADDM
\Icons\	directory where icon files are stored



The symbols (icons) can be changed with an icon editor and adapted to the needs of the user. The icon files are loaded by ADDM on every start. An exchange becomes effective the next time that ADDM is started.

Note

Please ensure that the changed files are stored in the icon directory with the appropriate names. ADDM assigns the corresponding function to the icons according to the file names. Changing the file names of the icon files is not permitted.

2.10.9 Remote maintenance options

Generales

The components can be accessed via remote management with A&D DataManagement.
In general, one decides whether the remote maintenance takes place within a works over the network in the works, or whether it is to be performed from the outside via telephone or the Internet.
In the case of internal remote maintenance, the accesses are mostly controlled and clarified by the system administration of the network. In the case of external accesses, the company must control the releases for whoever would like to perform the remote maintenance.

Principle

The technical procedure is the same for both types of access. As a rule, software is used which transmits an image of the user interface of a PGs/PCs to a second computer. Now, everything that happens on the maintenance PG/PC can be followed on this second computer. The keyboard signals are also transmitted. This enables remote control of the maintenance PG/PC.
However, as only the screen contents and keyboard are transmitted, the quantity of data is limited, and remote maintenance can even be performed over analog telephone networks.

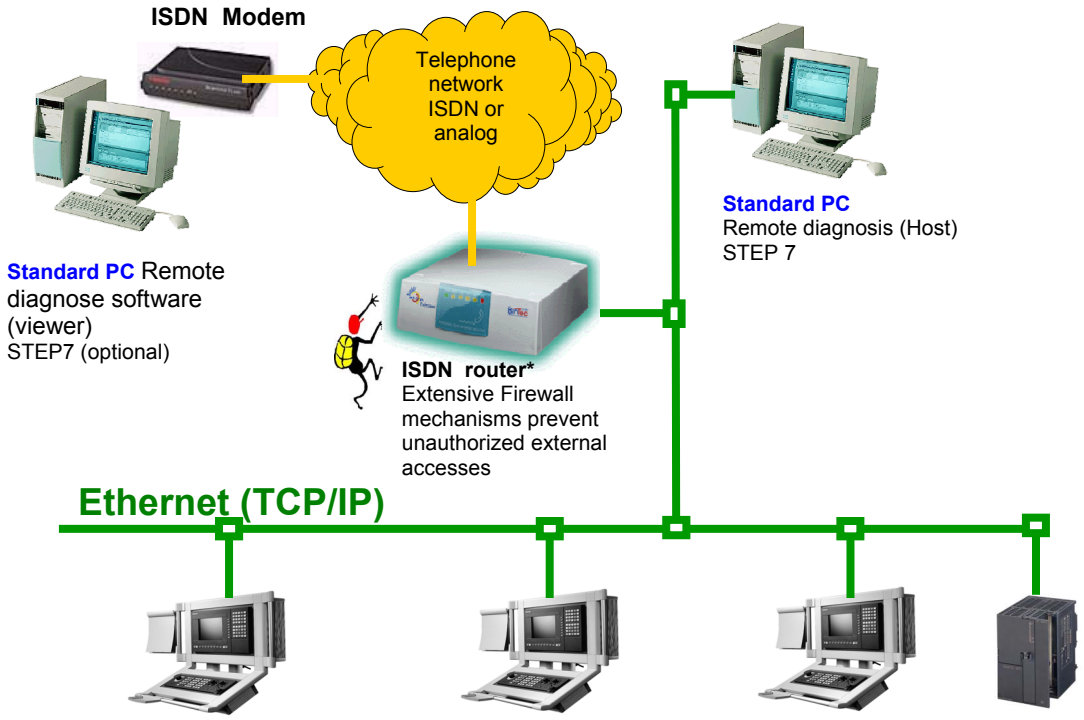


Fig. 2-6: Remote maintenance (extern)

Software

The remote maintenance software consists of two parts. The host is installed on the PG/PC which is connected to the control unit. The Viewer is used on the remote PC. The Viewer depicts the screen of the maintenance PG/PC.

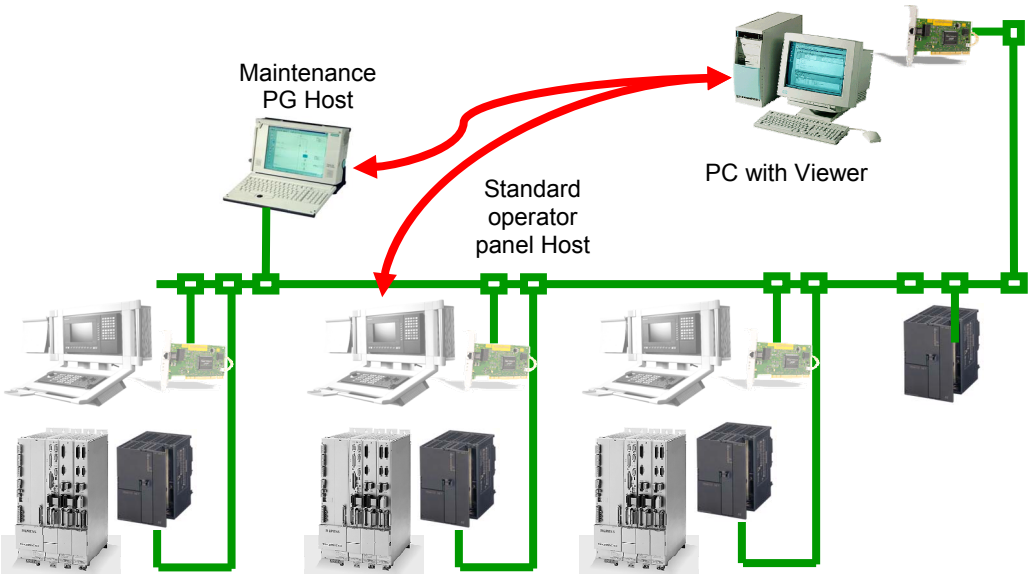


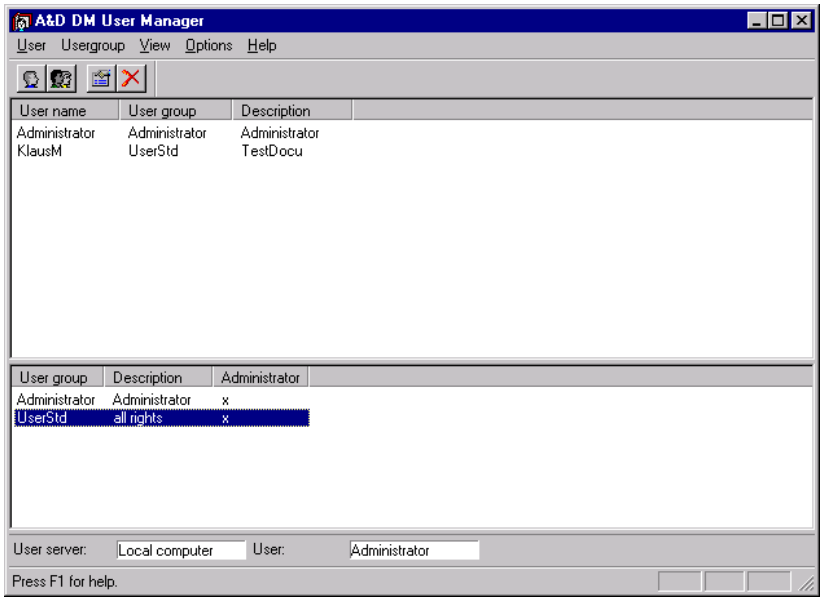
Fig. 2-7: Remote maintenance (intern)

The transfer of the signals enables remote maintenance for the control concerned. All the ADDM functions can be performed with the remote maintenance PC.

The SIEMENS groups supply the appropriate software for the remote maintenance. Please contact the relevant group about the use of this software.

2.11 User management

Use the User Manager to manage the users. To do this, select the User → call user manager ... menu.
The "A&D DM User Manager" dialog appears.

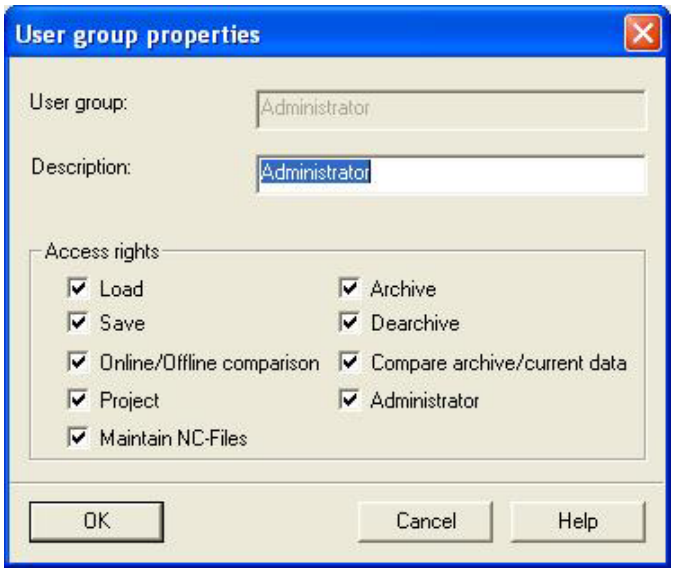


The following steps are required to assign user rights:

- Create a new group with group rights
- Create a user and assign to a group

2.11.1 Creating a new group

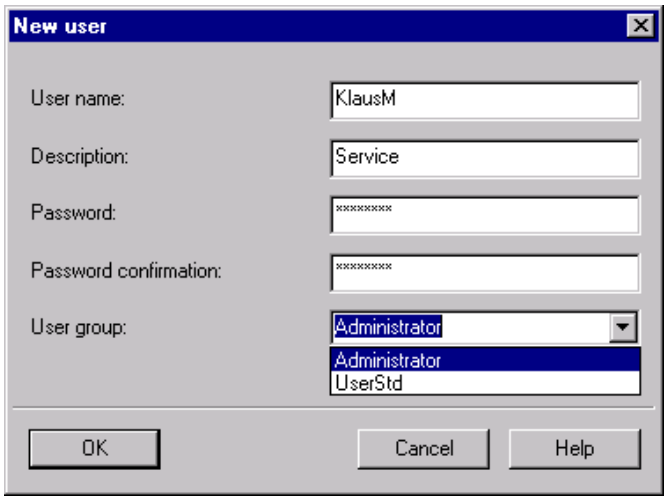
Select the User Group → Add menu in the User Manager. The "New user group" dialog appears.



1. Assign a name in the "User group" field, for example "service".
2. Specify the user group in more detail in the "Description" field, for example "all service technicians, no comparison / administrator".
3. Activate the appropriate "Access rights" for this user group.
4. Confirm your entries with "OK".
   The new user group is created and entered in the User group list.

2.11.2 Creating a new user

Select the User → Add menu in the User Manager.
The "New user" dialog appears.



1. Assign a "User name".
2. Specify the user in more detail in the "Description" field.
3. Enter the "Password" and the "Password confirmation".
4. Assign the user to a "User group".
5. Confirm your entries with "OK".
   The new user is created and entered in the User list. It receives all the rights of the group to which it has been assigned.

2.12 Archive functions

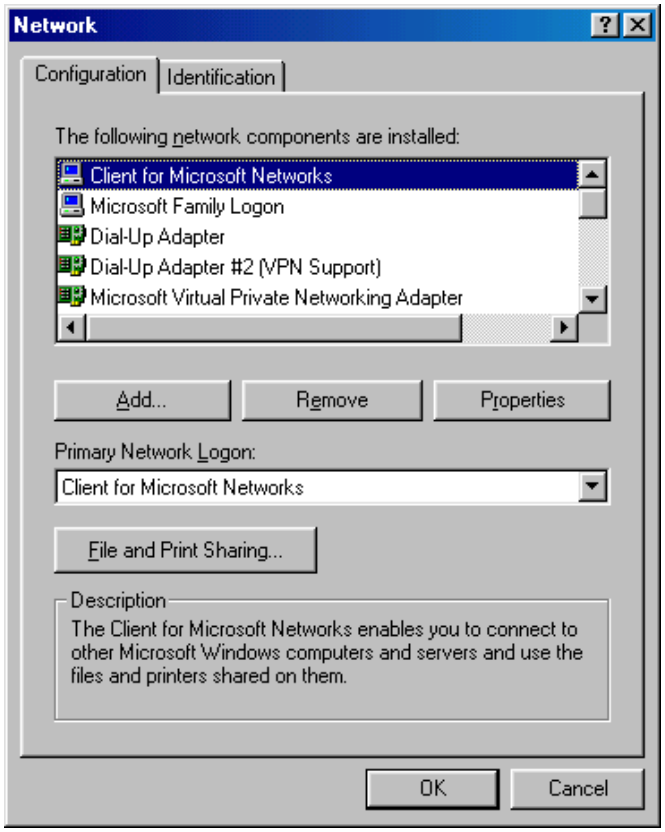
Archiving ADDM projects is only supported in V4.0, Client-Server or higher.

Check the "Use external server" checkbox in the Log On dialog to use the archive function.

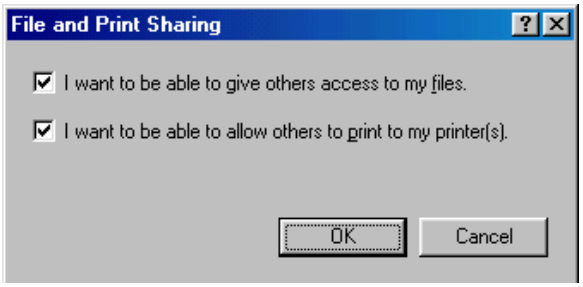
2.12.1 File and print sharing

For using the functions Archiving and Dearchiving there is to set the File and Print Sharing.
In WINDOWS NT the setting is done automatically.
In WIN95, WIN98 and WINDOWS Me the settings must be done by the user.

With button Start → Settings → Systemproperties → Network the following dialog will be opened:



With selection the button "File and Print" sharing it is possible to set the File and Print Sharing.



Note

Without setting the File and Print sharing the functions Archiving and Dearchiving are not possible.

2.12.2 Archiving functions of the Client

The archive manager is the platform for managing archives. The archive manager is part of ADDM Server and is only started on the server.
The archive function can be started in the ADDM Client by selecting "Archive Functions" in the menu bar.

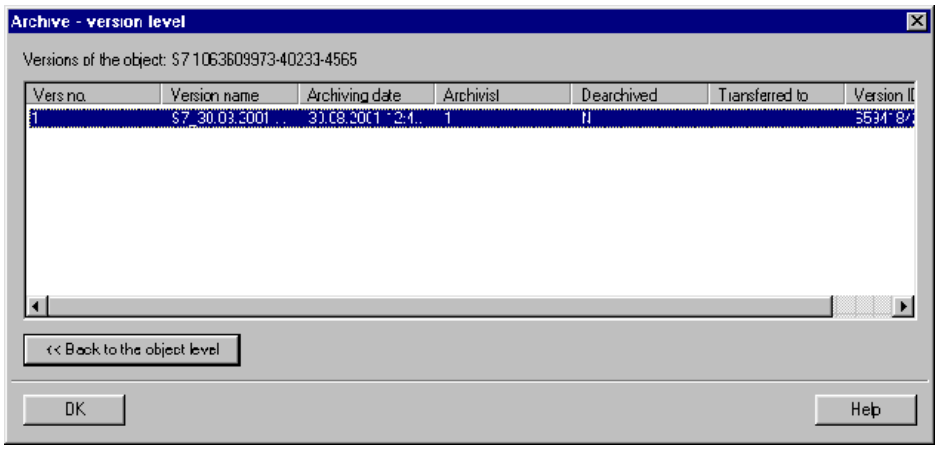
The Client allows the user the following archiving functions:

- Displaying version numbers
- Archiving
- Comparing
- Displaying the archive content
- Dearchiving
- Selecting the archive server.
- Backup and Archive

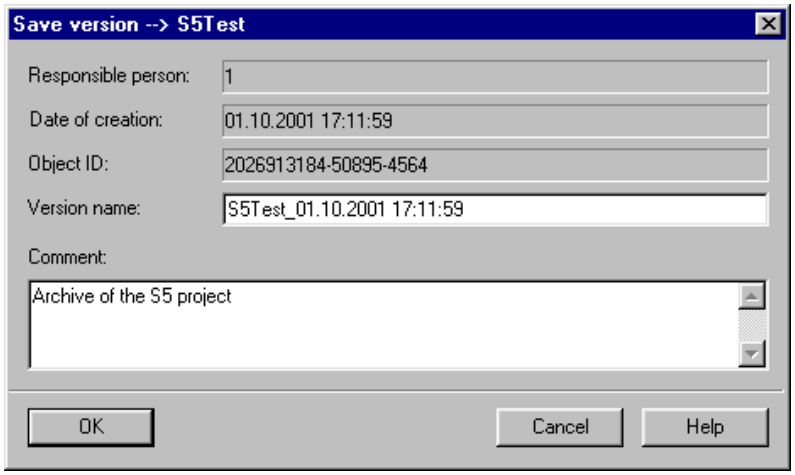
Deleting and swapping out archives are functions which are reserved for the archive manager and they cannot be selected in ADDM Client.

2.12.3 Archiving

When generating the archives, ADDM allocates an identification to the archives and versions. These identifications are unique and unmistakable. This excludes the possibility of confusing or mixing data.



In order to generate an archive, the desired machine or unit, subarea or area in the left-hand window is simply selected in the ADDM directory tree. ADDM shows the following dialog when Archive Functions → Archiving is selected:



The user must make an entry in the Comment field before the version is archived. This is intended to require the user to enter a meaningful description of the version, so that later it can be seen why the version was generated. However, ADDM does not check the sense of the entry.

Note

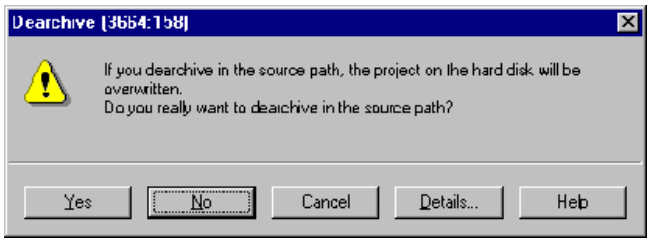
Please note that ADDM compresses and may relocate the files when archiving. Therefore the files to be archived must not be opened. This particularly applies to STEP7 projects.

ADDM generates the desired archive when "OK" is clicked on. The validity of the links to the machine /unit is checked first. In the case of STEP7 links, a check is made in the STEP7 project to see whether additional units in ADDM are pointered to the same project. If this is the case, the archive cannot be generated on this level, and the user must select one level higher in the directory tree.

When archiving projects, ADDM assigns timestamps for the times of comparison, loading and backing up. The timestamp consists of a date and a time.

2.12.4 Dearchiving

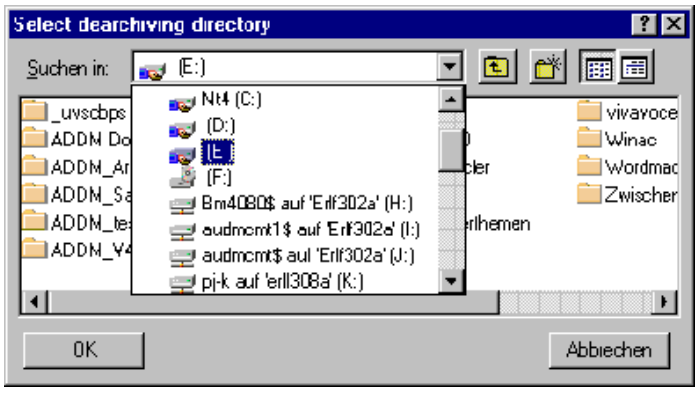
You dearchive archived ADDM projects with this function. ADDM queries the dearchiving location when dearchiving.



Caution

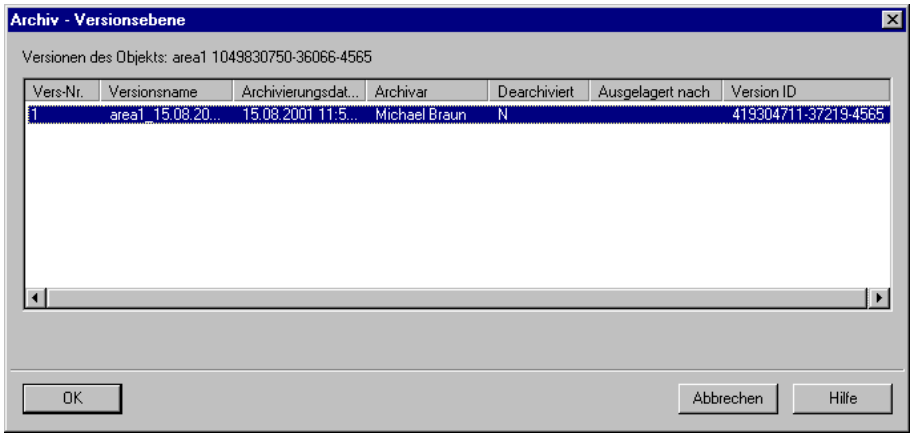
Current data will be overwritten if you dearchive into an ADDM project which is being used. In this case all backups will be erased from the components which have the same name. Be very careful when using this function.

The user can select the dearchiving location by selecting "No". ADDM then opens a navigation browser for making the selection.
ADDM dearchives the data into the selected drive and directory. In so doing, the linked files and their directories are also recreated. You should dearchive onto an empty drive in order to avoid conflicts.



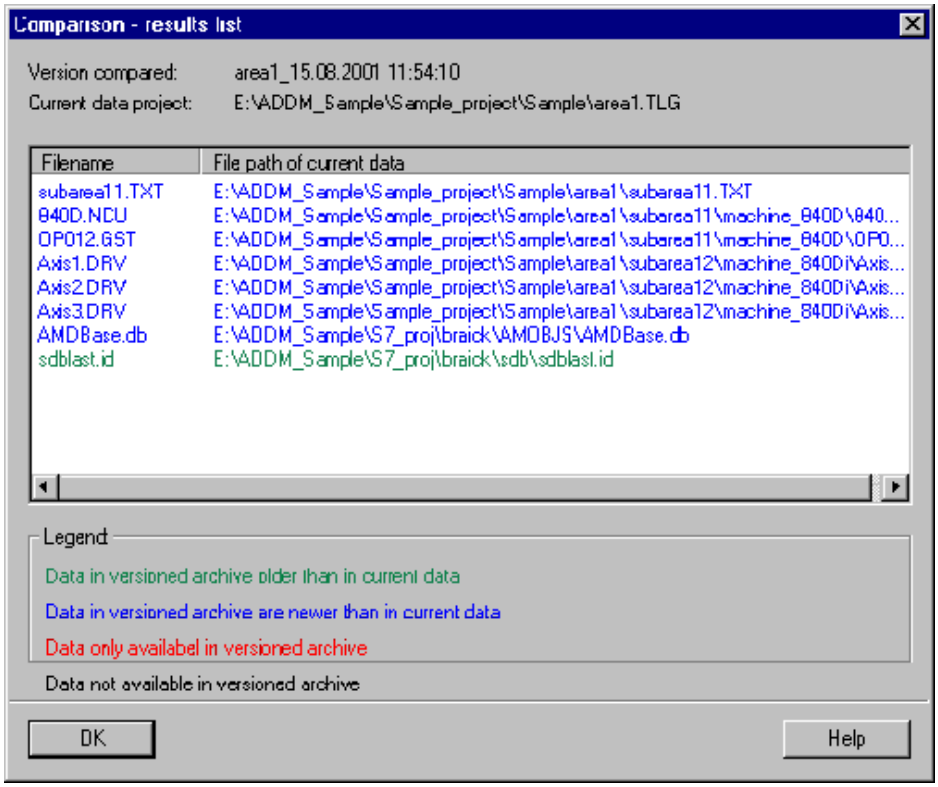
2.12.5 Displaying the archive content

You display the content of an archive with this function.



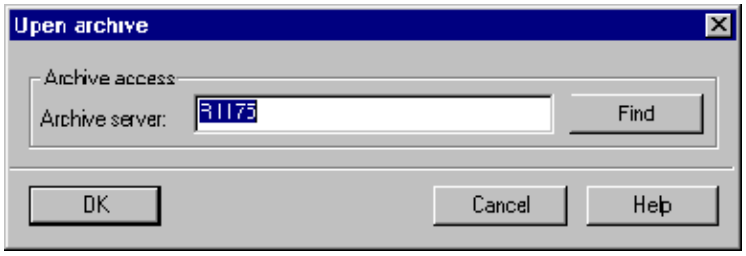
2.12.6 Comparing archives

You use this function to compare the content of an archive with the currently loaded project. A results list is output if there are differences.



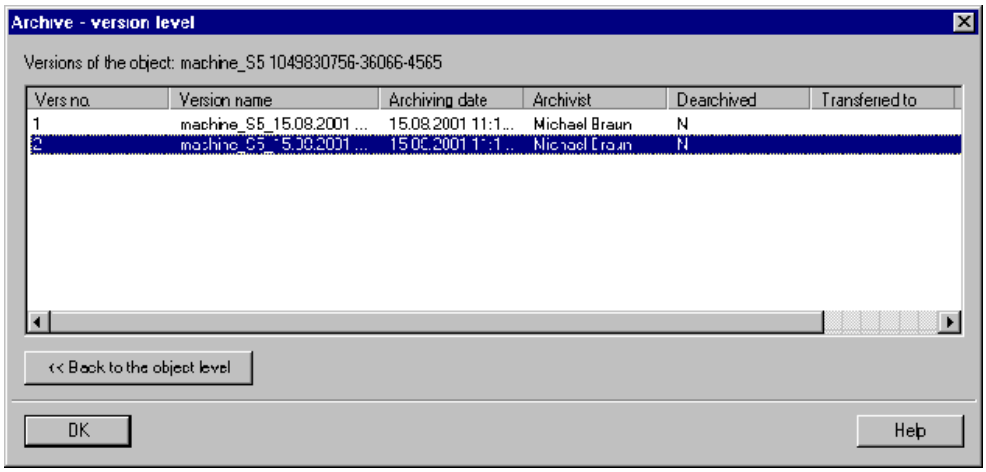
2.12.7 Selecting the archive server

You use this function to change the archive server in order to access another archive. ADDM provides the option of setting up several archive servers. The archives are stored on the archive servers.



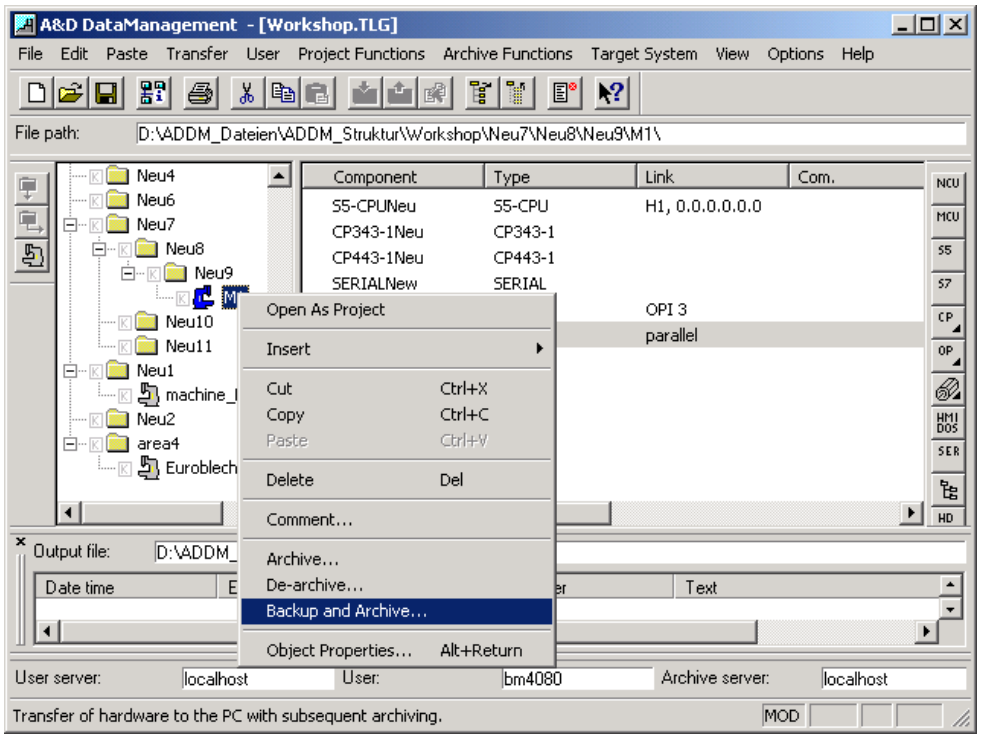
2.12.8 Displaying versions

This function supplies the version number of the currently selected component in the ADDM project tree.
You receive an error message if the component does not support version numbers.
The properties of an archive can also be displayed. Double-clicking on the archive displays the information window.



2.12.9 Backup and Archive

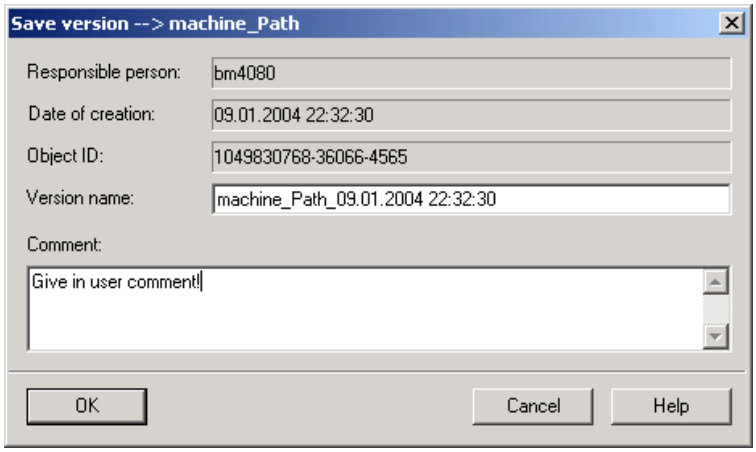
This function Backup and Archive combines the backup of all components of a unit (machine) and after the backup procedure the creating of an archive from the backed-up unit.



1. For that please select the unit in the tree of the actual project. Pushing the right mouse button opens the popup menu.

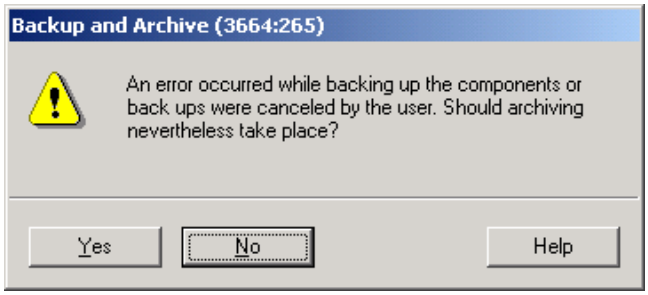
2. There you select the menu point "Backup and Archive..." and confirm the selection with the left mouse button. (In the main menu "Archive Functions" you will find the same function).
   Now ADDM starts the backup procedure for each component of the selected unit. The execution is done in order of the component list in the right window. That each backup ends successful, all cable connections between component and ADDM computer must be done before.
   These dialogues from the data transmissions are exactly the same one as the dialogues from each single started backup procedure of the components. Further information you"ll find in chapter 2.5.6.
   If an error occurs during the data transmission, it can be acknowledged by "OK" button.
   After that ADDM continues the data transmission with the next component.

3. If all data transmissions are completed, the archiving of the selected unit will be started. The user must enter a comment for identifying the archive in the comment area. It is the same as at the normal archive function. Please, give in exact information about the creating of the archive.



4. If errors had occurred during the backup procedures, the user will be asked for creating an archive.

5. On confirming with the "No" button, the archive function will be cancelled and the upper dialogue doesn"t appear.



2.13 Job server

2.13.1 General

ADDM offers the user the use of a job server in the Client-Server application. ADDM can automatically compare the data of the components of an ADDM project at defined times via the job server. ADDM can create a safety backup if a comparison reveals a difference.

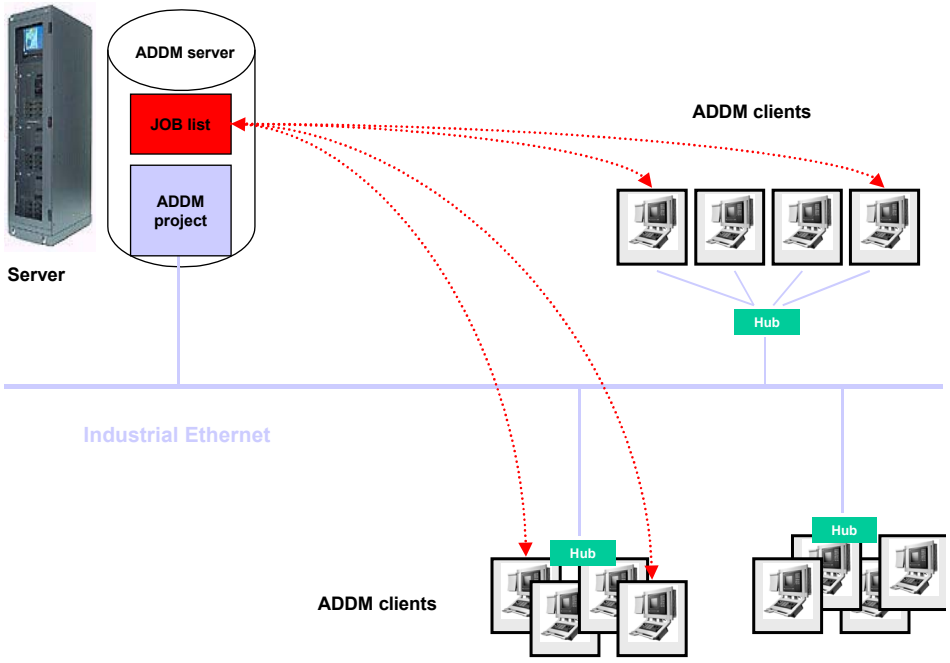


Fig. 2-8: Job server

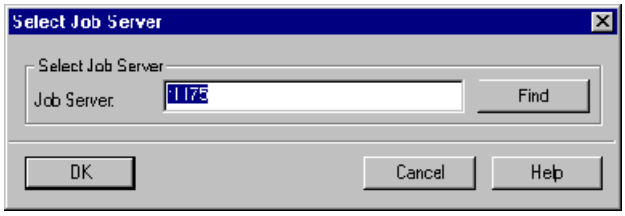
The Job list containing the desired Jobs is created via the clients. When the time entered has been reached, the Job server gives the client the Job which has to be done. The actual Job is performed by the client. The client reports the result of the Job to the Job server. Depending upon the type of Job, the Job server now order the client to take actions.

If an operator panel (OP) of the control is used as the ADDM client, the data of the control (e.g. NCU) can be compared with the data backed up on the server without further operator action. The Job server can order the client to make a "safety backup" if a difference is found between the online and offline data. The client creates this backup.

2.13.2 Opening the Job server

The Job server has a Job manager for administering the Jobs. The Job manager is started and operated exclusively on the server.

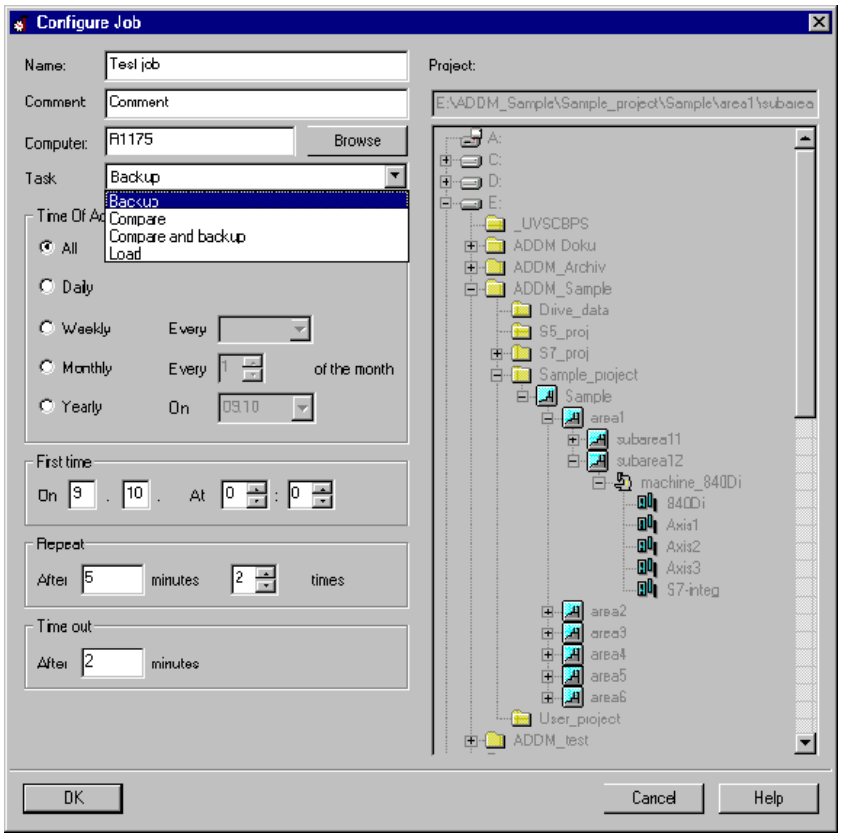
Jobs are created directly by operator action in the ADDM Client. A link to the Job server must be created via Edit Menu → Select Job Server in order that Jobs may be created.



The link is created by selecting the server. ADDM Client now communicates with the stated Job server. There may be several Job servers in the network.

2.13.3 Create Job

ADDM opens the following dialog when in the Edit Menu → Create Job is selected:



The inputs and selections in the window define the Job criteria. In general, the user must select the ADDM project for the Job. The specific components appropriate for the Job have to be selected. The selection can be made very easily by means of the tree.

- The user enters the name of the Job under "Name".
  The Job is run in the Job server under this name. A name may only be allocated once.

- The "Comment" is used to give a description.

- The client to be addressed is defined under "Computer". The name of the client computer which the user is currently using is normally entered there. However, this can also be used to define Jobs for other clients.

- The "Task" defines the actions to be performed for the Job server. Downloads, comparisons, backups and backups by different compare can be entered.

- The user can specify the desired time schedule under "Time of Action".

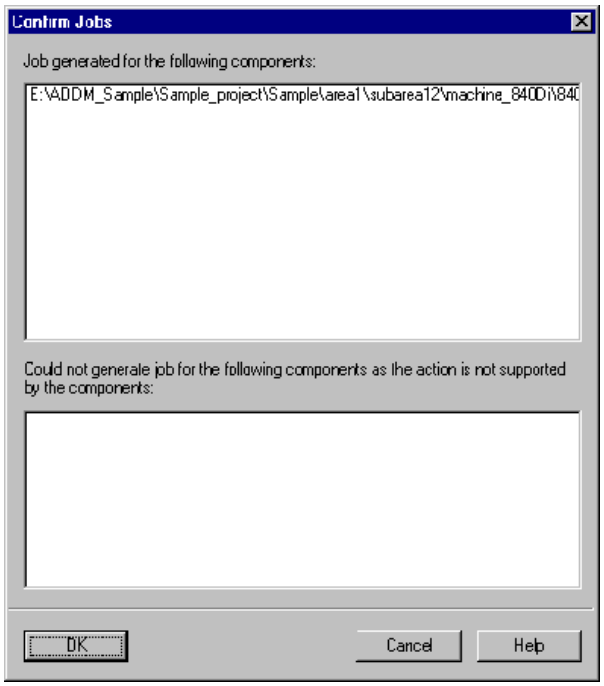
- The entry "First time" specifies the first date and time of the Job.

- If the client is not accessible at the due date and time, the user can, under "Repetition", set the number of repetitions and the time interval between the repetitions.

- The "Timeout" parameter specifies how long the Job server must wait for the client. If the client does not report before this time expires, the Job server enters an error, and repeats the Job after the repetition time has expired.

2.13.4 Confirm Job

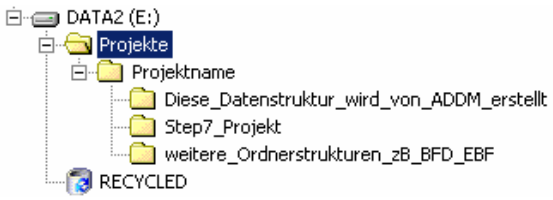
The Job is transferred to the Job server with "OK" (closes the dialog) or "Apply" (window remains open) after all the entries have been completed.
The Job server then gives the client a confirmation of the Job.



2.14 Notes and tips

Own project directory

Store each ADDM project in its own directory.
This directory must be created with the Explorer before creating an ADDM project.



Note

The location of the ADDM project can only be selected when it is saved for the first time. Thereafter, the projects can only be transferred to other drives with the "Copy Project/Part Project" function.

The project data of A&D DataManagement, the STEP7 projects and other data should each be stored in its own subdirectory:
All data are copied when copying the whole Project name directory. ADDM updates the drive at every program start, and finds the data. If the structure and data are stored separately, there is a danger that a part of the data will be forgotten when copying or that the directory names stored in ADDM will no longer match the current names.

- S7 projects and ADDM projects should lie on the same drive.
- Error loading the MCU172A
  This can occur if the previously edited MCU was not measured in mm, and you load rotary axes in degree or axes in inch.
  The blocks are nevertheless read in without error if you acknowledge the message with "OK". The new system of units is activated after restarting the MCU, and the error messages are deleted.
- Special characters in project and directory names
  These are not permitted. The DOS conventions must be observed when using another program developed under MS DOS to access structures created by A&D DataManagement.
- Write access
  ADDM writes to the current drive during operation.
- Deleting components
  This is done in ADDM by moving the items concerned to the WINDOWS "Recycle" bin. The data can thus be restored if necessary.

Caution

Be very careful when deleting components! Restoring from the Recycle bin alone does not yet make the data stocks available in ADDM again.

- NC controls
  such as System 7, SIN3/8, PRIMO S or even non-Siemens systems can be loaded and backed up with the serial component. Single files and NC programs can also be stored.

- SINUMERIK 840C
  has its own MMC based on FLEXOS or WIN3.1. The data backup for this system can be interexchanged by means of Valitek streamer on Interlink. This means that the MMC of the 840C can be backed up and loaded via the path component. The following steps have to be carried out:
  - Boot 840C in service mode
  - Select PC-Link
  - Link PG/PC with the MMC via parallel cable
  - Boot PG/PC (Interlink driver must be linked in Config.sys)
  - PG/PC links LW by means of Interlink
  - Start ADDM
  - Load/backup with path component.

- Non-Siemens systems (robot controls)
  can also frequently be backed up or loaded via the path component. In this case, one merely has to ensure that the control is connected by standard links to the PC. For example, the may be an Interlink connection, network connection or a USB connection. The system must be recognizable as a drive in the ADDM computer.
  One can navigate to and backup the data of the control to be backed up via the path component.

Caution

The design of ADDM allows, that different users are able to load, backup and compare components in one ADDM-project at the same time. On changing project data of an ADDM project, please take care, because no multi user functionality in this case is available. If changes on the project data are done by more than one user at the same time, the last saved structure is overtaken from ADDM.
Changes on the structure of ADDM is only allowed by one user at the same time.

A

A Appendix

A.1 Glossary

Term	Meaning
ADDM	Frequently used abbreviation of **A**&**D** **D**ata**M**anagement
AS	**A**utomation **s**ystem, term for SIMATIC controls (S7) (was used in the past for **A**n**s**chaltung (interface module), e.g. AS511)
AS511	**A**n**s**chaltung (interface) 511, name for the programming interface of the SIMATIC controls (S5).
CD	**C**ompact **Disk**, storage medium for data.
Component	Devices, units application programs which are part of an automated system. In this standard, the term only refers to PLC systems offered on the manufacturer's list.
CP	Communication module (e.g. CP342-5), interface module for PLC/CP for connecting to a network.
CPU	Central Processing Unit, central processor of a system, this term is often used for the central unit of a SIMATIC S7
CPU address	The CPU address of the MPI interface has the number 2 when the CPU is delivered. The S7-CPUs are supplied with data and brought into operation via the MPI interface.
DP	Dezentrale Peripherie (distributed I/O, term for a bus protocol with PROFIBUS.
Exclusion list	Makes possible a qualified comparison between S7 project and online data.
FAT	**F**ile **A**llocation **T**able, term for the contents directory of a data storage medium. Each operating system has used a different FAT.

Term	Meaning
FDL	**F**ield **D**ata **L**ink designates level 2 (according to ISO reference model) with PROFIBUS and uses defined protocols.
GHOST	Accessory program from SYMANTEC for backing up complete hard disk contents (images).
Hardware component	Devices and units within an automated system. Includes all the control components from SIEMENS for the automation area.
HD	**H**ard **D**isk of a PC or computer
HMI DOS	Human Machine Interface DOS, unit operator panel, operating and monitoring products/systems at Siemens
HT 6	Handheld Terminal 6, handheld unit for SINUMERIK
Highly-available server	The concepts for central backup on network servers differentiate between error resistant error tolerant failure tolerant disk storage systems. The failure tolerant systems are the safest.
HMI DOS	**H**uman **M**achine **I**nterface DOS, operator panel of units, operating and monitoring products/systems from Siemens.
IBN611D	Start-up tool for the SIMODRIVE 611D and SINUMERIK 840D/8110D drive systems
Image	Mirrored hard disk
MCU	**M**otion **C**ontrol **U**nit, single-axis control MCU 172A
MCU PIT	**P**rogrammier- und **I**nbetriebnahme**t**ool (programming and start-up tool for the MCU 172A single axis control.
MMC	Control unit running under Windows, enables manufacturers' own operating systems to be configured.
MP	**M**ulti**P**anel, operator panel with basic operating system WINDOWS CE.

Term	Meaning
MPI	The **M**ulti**P**oint **I**nterface is the SIMATIC S7 programming device interface. It enables programmable modules, text displays (TDs) and operator panels (OPs) to be reached from a central location. The nodes on the MPI can communicate with one another.
NCM	**N**etwork **C**onfiguration **M**anager, tool in STEP7 for configuring networks
NCU object	**N**umerical **C**ontrol **U**nit, machine tool control
Offline project	Offline designates the state in which the programming device is not connected (physically, logically) to the automation system.
Online data	Online designates the state in which the programming device is (physically, logically) connected to the automation system.
OP	**O**perator **P**anel
PG	Programmiergerät (programming device)
HPU	Handheld programming unit for SINUMERIK
PLC	**P**rogrammable **L**ogic **C**ontrol → **SPS**
PROFIBUS	**P**ROcess **F**ield **B**US, specially developed field bus for connecting controls and peripheral devices with one another. The bus is based on the RS-485 interface and is a logical token bus with a token passing procedure.
ProSave	Backup software for OPs, MPs and TPs
ProTool	Configuring software for creating images for OPs and TPs
RS-232	Interface specification of a RS-232 interface
RS-485	Interface specification of a serial interface in which the data transfer is based on a 7mA current loop. (e.g. PROFIBUS)
SDB	**S**ystem **D**ata **B**lock
SimoComU/A	Start up software for the drive component. The software is controlled by ADDM for accessing the drives.
SINEC	Term for SIEMENS Ethernet-based network
Software component	Application programs and system data for configuring the control components used.
SPS	**S**peicher**p**rogrammierbare **S**teuerung → PLC

Term	Meaning
TCP/IP	**T**ransport **C**ommunication **P**rotocol / **I**nternet **P**rotocol Data exchange procedure and protocol for Ethernet networks
TD	**T**ext **D**isplay, display system, similar to an OP but without a complete keyboard
TP	**T**ouch **P**anel, display system, similar to an OP but with a touch display