StorPoint CD E100 Network CD-ROM Server

User's Manual ver 1.6

Safety Notices

Please observe all safety markings and instructions when using this product.

Caution! - potential hazard that can damage the product.

Important! - potential hazard that can seriously impair operation.

Do not proceed any of the above notices until you have fully understood the implications.

Electromagnetic Compatibility (EMC)

USA - This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference. Shielded cables should be used with this unit to ensure compliance with the Class A limits. CE

Europe - This digital equipment fulfils the requirements for radiated emission according to limit B of:

- SCSI: EN55022/1994, and the requirements for immunity according to EN50082-1/1997 residential, commercial, and light industry

- IDE: EN55022/1994, and the requirements for immunity according to EN50024/1998 residential, commercial, and light industry

Compliance is not valid for unshielded network cables.

Liability

Every care has been taken in the preparation of this manual; if you detect any inaccuracies or omissions, please inform us at an address which can be found in the last appendix of the manual. Axis Communications cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. Axis Communications makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Axis Communications shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Year 2000 Compliance

Axis Communications warrants that the StorPoint CD is Year 2000 compliant.

Axis' Trademarks

DISCO, StorPoint, ThinServer

Trademark Acknowledgments

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Preface

Thank you for purchasing the AXIS StorPoint CD E100 Network CD-ROM Server. This product is developed to make the information stored on CD/DVD-ROMs available to all users on an Ethernet network.

About This Manual

The manual provides introductory information as well as detailed instructions on how to set up and manage the StorPoint CD in various network environments. It is intended for everyone involved in installing and managing the StorPoint CD. To fully benefit from the manual, you should be familiar with basic networking principles.

This manual applies to the AXIS StorPoint CD E100 with software release 5.31 and subsequent releases until otherwise notified.

About Axis

Axis Communications is dedicated to providing innovative solutions for network-connected computer peripherals. Since the start in 1984, it has been one of the fastest growing companies in the market and is now a leader in its field.

ThinServer™ Technology Being the core of all Axis' products, the ThinServer™ technology enables them to act as intelligent file server independent ThinServer™ devices. A ThinServer™ device is a network server which includes "thin" embedded server software capable of simultaneous multiprotocol communication, scalable RISC hardware and a built-in Web server which allows easy access and management via any standard Web browser. The ThinServer™ technology makes it possible to connect any electronic device to the network, thus providing "Access to everything".

Today, Axis Communications is offering the ThinServer™ technology as well as six major ThinServer™ product lines consisting of:

Network Print Servers offer you a powerful and cost-efficient method for sharing printer resources in your network. They connect to any standard printer, featuring high performance, simple management and easy upgrading across the network. The print servers are available in Ethernet, Fast Ethernet and Token Ring versions.

IBM Mainframe and S/3x - AS/400 Print Servers and Protocol Converters includes a wide range of LAN, coax and twinax attached print servers for the IBM host environment. By emulating IBM devices, these servers provide conversion of the IPDS, SCS and 3270DS data streams to the major ASCII printer languages.

Network Attached CD/DVD Servers provide you with a flexible and cost-efficient solution for sharing CD-ROMs, DVD-ROMs and other optical media across the network. They are available in Ethernet, Fast Ethernet and Token Ring versions.

Network Attached Storage Servers make it possible to easily make hard disk storage available in Ethernet networks. Through direct access by clients, yet integrating into existing security schemes, and requiring a minimum of maintenance they also provide a low total cost of ownership for network storage.

Network Camera Servers provide live images using standard Internet technology, thus enabling access to live cameras via any standard Web browser. They offer a perfect solution for remote surveillance over the Internet and their sharp images can bring life into any Web site. These servers support Ethernet as well as PSTN and GSM phone lines.

Network Document Servers enable easy distribution of paper-based information across workgroups and the enterprise. By sending scanned documents to your destination via the Internet/intranet, you will reduce your faxing/mailing costs, as well as save time, thus improving your organization efficiency.

Support Services

Should you require any technical assistance, please contact your local dealer. If your questions cannot be answered immediately, your local dealer will forward your queries through the appropriate channels to ensure you a rapid response.

WWW:	http://www.axis.com
FTP server:	ftp://ftp.axis.com/pub/axis
Support e-mail address:	tech-sup@axis.com

If you are connected to Internet, you can find online manuals, technical support, firmware updates, application software, company information, on any of the addresses listed to the left.

Table of Contents

Section 1 Introduction

AXIS StorPoint CD E100

The AXIS StorPoint CD E100 connects CD/DVD-ROM drives, towers and changers to 10/100 MBit Ethernet networks. All users on the network can share the information on any disc inserted into a connected drive.

The enclosure and connectors are designed for installation into a standard CD-ROM tower. An IDE version, a single and dual SCSI port version are available. It is not possible to mix IDE disks and drives with a SCSI version, or vice versa.

The StorPoint CD is server independent, which means that no software has to be loaded on any server, and no additional software has to be installed on any client.

The StorPoint CD supports hard disk caching which means that the inserted discs can be copied to a hard disk attached to the SCSI or IDE bus. The caching mechanism allows users to access the networked discs at hard disk speed.

The StorPoint CD supports CD-Recordable drives which means that when a CD-Recordable drive is connected to the StorPoint CD, it is possible to format and finalize CD/R and CD/RW discs from the StorPoint CD Web interface.

This table lists the maximum number of drives and discs that can be managed by a single unit:

Max no. of	SCSI	Dual SCSI	IDE
Disc drives	7	14	5
Discs using changers or LUN expanders	56	112	N/A
Hard disks	6	6	7
Discs using hard disk caching	255	255	255

Notes:
- ❏ Throughout this manual, the AXIS StorPoint CD E100 is referred to as simply StorPoint CD.

- ❏ The Basic versions of the StorPoint CD do not support hard disk caching or writing to recordable discs. Thus, all information in this document relating to these functions does not apply to the Basic versions.

Features and Benefits

File Server Independence   The StorPoint CD is connected as a node in a 10 or 100 Mbit Ethernet network. To the network the StorPoint CD acts as a file server. This means that it is independent of other file servers, i.e. the communication takes place directly between the network client and the StorPoint CD. This results in high performance, reliability and independence of other equipment.

Plug and Play   The file server independent approach makes the installation quick and convenient. In most environments the physical connection to the network is the only installation required prior to starting work with the StorPoint CD. No software needs to be installed on clients or file servers. Your computer will see the StorPoint CD as another network file server, and you access it using the standard commands used in your network operating system.

Environments   The StorPoint CD can be used simultaneously from NetWare, Windows, OS/2, DOS, UNIX, Macintosh and Internet/intranet clients. It supports basic messaging and network protocols:

- NCP over IPX
- NCP over IPX/UDP (NetWare IP)
- NCP over TCP/IP (PureIP)
- SMB over NetBIOS/NetBEUI
- SMB over NetBIOS/TCP/IP
- NFS over UDP/IP
- HTTP over TCP/IP
- AFP over AppleTalk
- AFP over TCP/IP.

CD-ROM Tower
with AXIS StorPoint CD E100

OS/2   NetWare   UNIX   Windows   Web Browser   Macintosh

AXIS StorPoint CD E100 User's Manual

Internet/Intranet Web Server	The built-in Web server makes it possible to access data via any standard Web browser, such as Netscape Navigator or Microsoft Internet Explorer. The support includes configuration, management and disc access.
Speed	By using a 32-bit RISC processor and cache memory expandable up to 160 MB, data throughput of up to 2700 kB/sec on a single client, or 4000 kB totally for multiple clients, is obtained – ample speed for demanding CD-ROM applications.
Security	Disc access can be restricted by setting up native access control in all network environments. It is also possible to limit the number of simultaneous users of any disc in order to comply with license agreements.
Maintenance	New software can easily be downloaded to the StorPoint CD's Flash memory by using Windows Explorer drag-and-drop, or over the network using FTP. All updates are free of charge.
Network Management	The StorPoint CD supports the Simple Network Management Protocol, SNMP.
Year 2000	The StorPoint CD is year 2000 compliant.
Hard Disk Caching	The StorPoint CD includes a hard disk caching facility that can copy the inserted discs to attached hard disks. This mechanism will allow faster user access, especially if you are using changers. Furthermore, a cached copy can be accessed even though the original disc has been ejected from the drive.
Easy Network Backup	With the support of writing to recordable discs using simple drag-and-drop, the StorPoint CD makes an excellent backup solution over the network.
Scalable Solutions	If you have more than one StorPoint CD on your network, the AXIS StorPoint DISCO is a convenient tool for locating and accessing the networked CD/DVDs. The AXIS StorPoint DISCO utility can be downloaded free of charge from the Axis Web Site.

The AXIS Online CD

The AXIS Online CD provides an electronic catalogue that includes all of the Axis product software, utilities software, white papers, user documents, technical references etc. It can be used within all of the supported Axis computing environments.

Startup Procedures for Windows

The AXIS Online CD will autostart from a local CD drive on Windows 95/98 and NT platforms. If the CD is located elsewhere on the network, click on the `setup95.exe` file within Windows Explorer to launch the main dialog. Windows 3.x users are required to navigate to the CD root directory and click on the `setup31.exe` file from within the Windows File Manager.

Startup Procedures for Macintosh, UNIX and OS/2

Navigate to the CD root directory and click on the `start.pdf` file from within your preferred file manager application.

Note: ❏ If the Adobe Acrobat Reader 3.0 is not installed on to your system, locate and run the appropriate installer from the `tools/Acrobat/` folder. Refer to the `readme.txt` file for full path name details.

HTML Interface

Click the HTML button from within the main installation dialog to access a Web browser interface to the contents of the AXIS Online CD.

Section 2 Installing the StorPoint CD

This section includes the setup procedures for getting your StorPoint CD up and running:

Stage 1 - Connecting the StorPoint CD to the network

Stage 2 - Assigning an IP address

Stage 3 - Setting system parameters

You should then proceed to the relevant sections of the manual depending on your network environment:

- "Section 3 - *Microsoft & IBM Networks (SMB)*"
- "Section 4 - *NetWare (NCP)*"
- "Section 5 - *UNIX (NFS)*"
- "Section 6 - *Macintosh (AFP)*"
- "Section 8 - *Web Browser (HTTP)*"

Note: ❏ Typically, your StorPoint CD will already be installed in a CD-ROM tower when delivered. However, if required:

- Refer to "*Installing the StorPoint CD in a Tower*" *on page 143* on how to install the StorPoint CD in a CD-ROM tower.
- Refer to "*Connecting the Drives to the StorPoint CD*" *on page 145* on how to connect CD-ROM drives to the StorPoint CD.

Connecting the StorPoint CD to the Network

Before You Begin   Always consult the Network Administrator before making changes to the network configuration.

Procedure   To connect the StorPoint CD to your network, follow these steps:

1. Turn off the power.

2. Connect the network cable to the appropriate connector, i.e. RJ-45 for 100baseTX and 10baseT.

3. Switch on the tower.

The StorPoint CD front panel indicators will flash during power-on and self-test. When the Status indicator stops flashing and turns solid green, the StorPoint CD is ready for use.

Network hub

Network cables

StorPoint CD installed in a CD-ROM tower
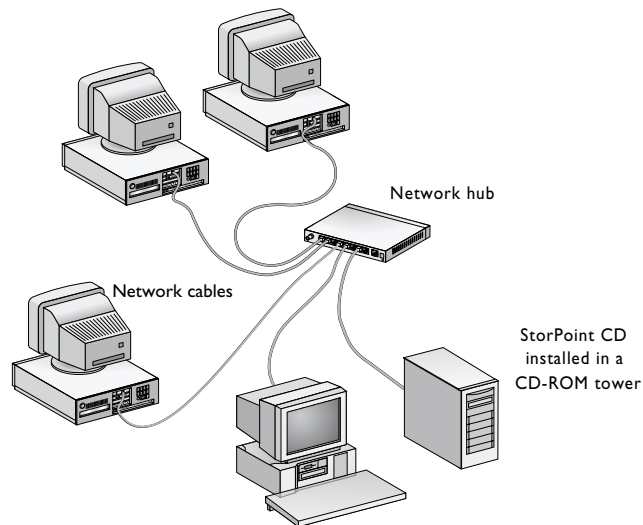
Assigning an IP Address

To establish communication with the TCP/IP network, you must assign an appropriate IP address to your StorPoint CD. For example, this is needed in order to access the StorPoint CD Web interface.

Note: ❏ Setting the IP address is not needed if you are not using IP addressing on your network, i.e. in these environments:

- Windows (SMB over NetBEUI)
- NetWare (IPX)
- Macintosh (AFP over AppleTalk)

You can then proceed directly to the appropriate network environment section of the manual.

**Before You Begin** Make sure the StorPoint CD is powered up and attached to the network.

IP Address Acquire an unused IP address from the Network Administrator, unless you are using DHCP on your network.

DHCP If you are using DHCP, the IP address will be set automatically as soon as you connect the StorPoint CD to the network. To find out which IP address has been assigned to your StorPoint CD, check your DHCP server. If you want to set the IP address manually, you can disable DHCP by setting the appropriate configuration parameter.

System Privileges You will need *root* privileges on your UNIX system and *administrator* privileges on Windows NT.

Ethernet Address Depending on the method you are using, you will need to know the Ethernet address of your StorPoint CD. The Ethernet address is the same as the serial number.

You will find the **serial number** on the labels at the underside of the unit and at the back of the tower.
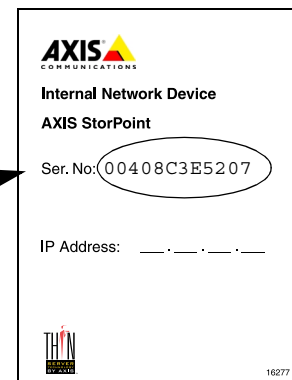
Important! ❏ Do not use the default or example IP address when installing your StorPoint CD. Always consult the Network Administrator before assigning an IP address.

| Methods for Setting the IP Address	You can set the IP address using one of these methods, depending on your network operating environment:

Method	Network environments	See ...
Web browser *	Windows 95/98 and NT	page 14
AXIS IP Installer *	Windows 95/98 and NT, NetWare	page 15
ARP *	Windows 95/98 and NT, NetWare	page 16
	UNIX, OS/2	page 17
DHCP	Windows NT, NetWare, UNIX, Macintosh	page 18
BOOTP	UNIX	page 19
RARP *	UNIX	page 19
Text editor	Macintosh	page 20

*) These methods operate on single network segments only, i.e. they cannot be used over routers.

Note: ❑ When the IP address has been successfully assigned to your StorPoint CD, you can set the **ProtectIP** parameter to `yes` in order to avoid accidental or malicious changing of the IP address. With this configuration, the StorPoint CD will no longer accept a new IP address using the Web browser or ARP method. You will find the **ProtectIP** parameter under the [**IP**] section in the `config.ini` file located in the `System/ServerProperties` folder. Use a text editor to edit the file.

Web Browser

In most Windows environments, you can use a standard Web browser, e.g. Internet Explorer or Netscape Navigator, to set the IP address. Follow these steps:

1. Start your Web browser.

2. In the location/address field, enter the following:
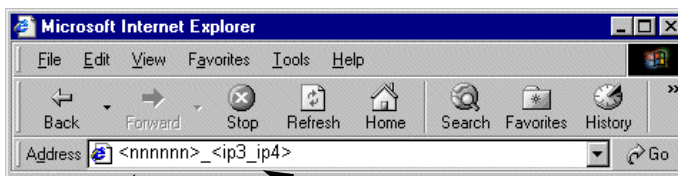
<nnnnnn> are the last six digits of the **serial number**, e.g. *3E5207* for the serial number 00408C3E5207

<ip3_ ip4> the last two groups of the **desired IP address**, e.g. *253_80* for the IP address 192.16.253.80

Note: ❑ On a Class C network, you can enter simply

```
<xxxxxx>_<ip4>
```

where `<xxxxxx>` are the last six digits of the StorPoint CD serial number and `<ip4>` is the last group of the desired IP address.

Example

The serial number of your StorPoint CD is 00408C3E5207 and you want to assign it the IP address 192.16.253.80. Your Windows client has the IP address 192.16.6.40. You enter *3E5207_253_80* in the location/address field. The StorPoint CD will retrieve the first two groups of the IP address from the subnet. The StorPoint CD will retrieve the first two groups of the new IP address from the subnet where the client issues the broadcast.

When the IP address has been successfully set, the **StorPoint CD File View** page will appear in your Web browser.

Important!
❏ You must have the NetBEUI protocol enabled. In Windows 2000, this is **not** the default setting.

❏ The new IP address must be set within 30 minutes after restart.

❏ This method will work for most Windows configurations. However, if you experience problems when using this method, we recommend that you use the AXIS IP Installer for setting the IP address. See "*AXIS IP Installer*" on page 15.

AXIS IP Installer
AXIS IP Installer is an application that allows you to assign IP addresses to your StorPoint CD, find IP addresses of already installed StorPoint CDs and access the StorPoint CD internal Web pages for easy configuration.

The required utility software is available on the AXIS Online CD. It can also be downloaded from the Axis Web Site at http://www.axis.com

Follow these steps to install the AXIS IP Installer:

1. Locate the setup file, Setup.exe, and choose the **Run** option from the Windows **Start** menu.

2. Follow the instructions on the screen.

When finished, the AXIS IP Installer will be available from your Start menu. To run the program, select **Programs | Axis Communications | AXIS IP Installer**.

1. Select the **serial number** of your AXIS StorPoint server in this list.

2. Enter the **desired IP address** in this field.

ARP in Windows 95, Windows 98 and Windows NT

Perform the following commands to download the IP address and verify correct Internet communication in Windows 95/98 and Windows NT.

Start a DOS window and type the following command:

Syntax Windows 95

```
arp -s <IP address> <Ethernet address> <my PC IP address>
ping <IP address>
```

where `<my PC IP address>` is the IP address of your Windows 95 PC.

Example Windows 95

```
arp -s 192.16.253.80 00-40-8c-10-00-86 171.16.6.40
ping 192.16.253.80
```

Syntax Windows 98 and Windows NT

```
arp -s <IP address> <Ethernet address>
ping <IP address>
```

Example Windows 98 and Windows NT

```
arp -s 192.16.253.80 00-40-8c-10-00-86
ping 192.16.253.80
```

The host will return '`Reply from 192.16.253.80 ...`' or some similar message. This indicates that the address has been set and the communication is established.

Notes:

❏ Once the StorPoint CD has established communication using an appropriate IP address, the `arp` command cannot be used to change the address. This is to avoid accidental or unauthorized changes. However, if you restart the StorPoint CD, you can change the IP address within one hour.

❏ Please note that when you execute the `ping` command for the first time, you will experience a significantly longer response time than usual.

❏ If you are using host names, you can map a unique host name to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.

ARP in UNIX and OS/2

Follow these steps to download the IP address and verify the communication in UNIX and OS/2:

1. Type the following command:

```
arp -s <IP address> <Ethernet address> temp
```

2. Ping the unit as follows:

```
ping <IP address>
```

Example:

```
arp -s 192.16.253.80 00:40:8c:10:00:86 temp
ping 192.16.253.80
```

The host will return '`192.16.253.80 is alive`', or some similar message to indicate that the address has been set and the communication is established.

Notes:

❏ Once the StorPoint CD has established communication using an appropriate IP address, the `arp` command cannot be used to change the address. This is to avoid accidental or unauthorized changes. However, if you restart the StorPoint CD, you can change the IP address within one hour.

❏ Please note that when you execute the `ping` command for the first time, you may experience a significantly longer response time than is usual.

❏ If you are using host names, you can map a unique host name to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.

❏ The `arp -s` command may vary from system to system. Some BSD-type systems expect the IP address and Ethernet address in reverse order, whereas IBM AIX systems require the additional argument `ether`. For example:

```
arp -s ether <IP address> 00:40:8c:10:00:86 temp
```

DHCP in Windows NT, NetWare and UNIX

Follow these steps to use the DHCP method:

1. Edit or create a scope in the DHCP manager of the DHCP daemon. For Windows NT servers, refer to the *"Windows NT Resource Kit"* on how to do this.

    The entries made in this scope typically include the following parameters:
    - Range of IP addresses
    - Subnet mask
    - Default router IP address
    - Lease duration
    - Mail server IP address
    - DNS server IP address
    - WINS server IP address(es)
    - Domain name
    - NTP server IP address
    - NDS tree name
    - NDS server IP address(es)

2. Activate the scope.

DHCP is enabled by default. The IP address and all the other settings will be set automatically.

Notes:
- ❏ To fully benefit from DHCP, it is recommended that you use the WINS name resolution protocol available in Windows NT. If you intend to use WINS, at least one WINS server IP address must be included in the scope. Once the IP address is received, the StorPoint CD will register its host name and IP address on the WINS server.

- ❏ You might want to include an SLP scope list and some SLP directory agents in the DHCP scope. However, we recommend that you specify the SLP settings in the StorPoint CD parameter list instead. You can do this via the StorPoint CD Web interface or by editing the config.ini file.

BOOTP in UNIX   Follow these steps to use BOOTP in UNIX:

1. Append the following entry to your boot table (typically `/etc/bootptab`):

```
<host name>:ht=<hardware type>:vm=<vendor magic>:\
:ha=<hardware address>:ip=<IP address>:\
:sm=<subnet mask>:gw=<gateway field>
```

where:

ht =	ether for Ethernet
vm =	rfc1048
ha =	The Ethernet or node address, i.e. the StorPoint CD serial number
ip =	The IP address of the StorPoint CD
sm =	The subnet mask
gw =	The default router address

Example:

```
cdserv:ht=ether:vm=rfc1048:ha=00408c110086:ip=192.36.253.8
0:\
:sm=255.255.255.0:gw=192.36.253.254
```

2. Make sure a unique host name is mapped to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.

3. Start the BOOTP daemon (if not already running), typically by the command: `bootpd -a`

4. Restart the StorPoint CD to download the IP address, default router address and subnet mask.

RARP in UNIX   Follow these steps to use the RARP method in UNIX:

1. Append the following line to your Ethernet address table. This is typically performed using the command `/etc/ethers`:

```
<Ethernet address> <IP address>
```

Example:

```
00:40:8c:10:00:86 192.16.253.80
```

2. If you are using host names, you can map a unique host name to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.

3. If it is not already running, start the RARP daemon. This is typically done using the command `rarpd -a`.

4. Restart the StorPoint CD to download the IP address.

Text Editor in Macintosh

To set the IP address for your StorPoint CD follow these steps:

1. Open the Chooser from the Apple menu.

2. Click the AppleShare icon.
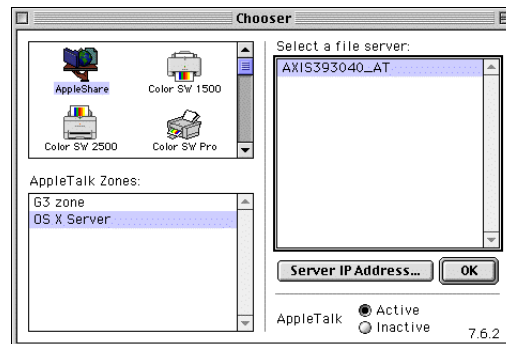
3. From the **Select a file server** list, select AXIS<nnnnnn_AT> where <nnnnnn> are the last six digits of the StorPoint CD serial number.

4. Select **Registered User** and click **Connect**. By default, the Name is set to root and the Password is set to pass.

5. Select the **System** folder and click **OK**.
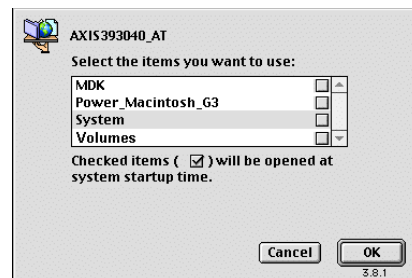
6. Open the **System** icon created on the desktop and select the **Server Properties** folder.

7. Open the config.ini file.

8. In the text editor go to the [**IP**] section and change the Internet address to the required IP address.

9. Go to the [**Server**] section and set Restart = yes to restart the server.

10. Select **Save** from the **File** menu.

System Settings

The StorPoint CD can be configured using one of these tools:

- **Web browser** - The StorPoint CD Web interface, which is the preferred administration tool. Requires the IP address to be set. See description below.

- **Text editor** - The StorPoint CD text files. Refer to "*Text Editor*" on page 119. However, hard disk caching cannot be performed from this interface.

Accessing the StorPoint CD Web Pages

The StorPoint CD Web interface is divided into two parts:

- The **File View** page for browsing and accessing files and folders on the networked discs. This page is available to all users.

- The **Administration** pages for specifying configuration parameters and access rights. These pages are intended for the Administrator only.

You access the StorPoint CD from a standard Web browser:
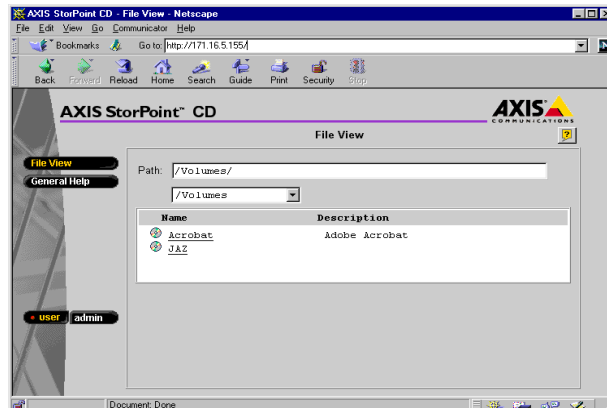
- Netscape Navigator version 4.0 or higher

- Internet Explorer version 4.0 or higher

Follow these steps:

1. Start the Web browser.

2. Enter the name or IP address of the StorPoint CD in the location/address field:

```
http://<IP address>
```

The **File View** page is displayed.

From this page, users can display and access the discs inserted in the connected drives according to the access permissions set up by the Administrator.

3. Click **admin** to access the Administration pages. You will be prompted to supply the Server password the first time during a session. Any user id can be used. The default password is `pass`.

4. The **This StorPoint** page is displayed. From this page you can edit the system settings and display information about the connected drives. You can also view the current configuration settings, shutdown the server, restart the server and restore the factory default settings.
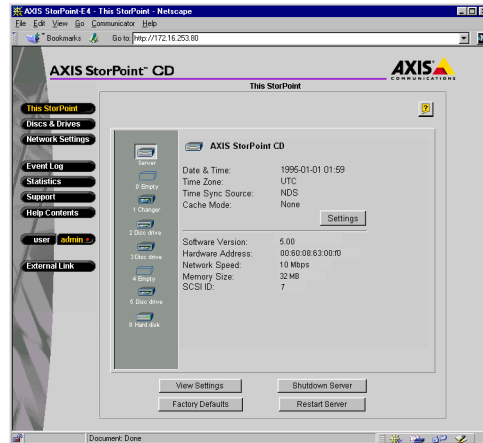
SCSI Server - the icons displayed to the left represent all the units connected to the SCSI bus listed by SCSI ID.
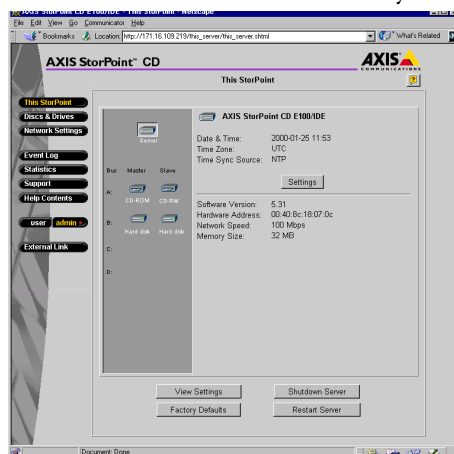
IDE Server - the icons displayed to the left represents all the units connected to the IDE bus listed as Master or Slave for each bus

To display information on a particular device, simply click the corresponding icon:

Server

Disc drive or LUN expander (LUN expander only applies to SCSI)

Changer

Hard disk

Main Menu   From the main menu, you can access the Administration pages:

- **This StorPoint** - System settings and drive information.
- **Discs & Drives** - Managing the drives and the inserted discs. Setting up access rights. Archiving discs to hard disk cache.
- **Network Settings** - Specifying settings for the network protocols used.
- **Event Log** - Viewing the event log that contains occurrences in the StorPoint CD.
- **Statistics** - Displaying statistics on the StorPoint CD.
- **Support** - Trouble shooting, server report, software version, Axis online services, contact information, etc.
- **Help Contents** - Displaying general help information.
- **External Link** - Optional link to a Web site on the Internet or your company's intranet.

Notes: ❏   You can prevent users from accessing the volumes via the Web interface by disabling the Enable access to volumes via Web browser (HTTP) parameter on the **Network Settings - Web (HTTP)** page.

❏   Context sensitive online help is available from all the StorPoint CD Web pages. To access help for a specific page, click Help 🔲 .

Shutting Down the   If you need to shut down the StorPoint CD after the installation, make sure it is
StorPoint CD   shut down safely otherwise you risk loosing data. Do NOT turn off the power before the StorPoint CD has been shut down.

You can shut down the StorPoint CD via its Web interface or by editing the `config.ini` file.

Via the Web Interface   1.   On the **This StorPoint** page, click the **Shutdown Server** button.
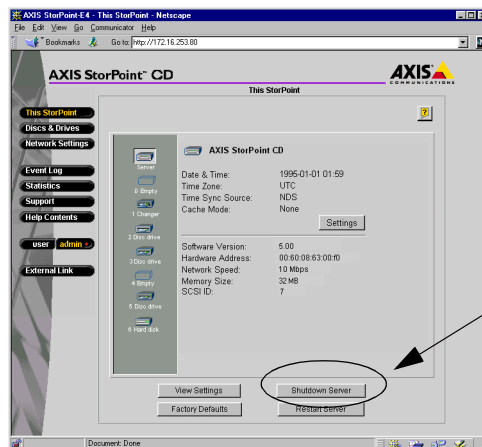
2.   Click **OK** in the confirmation dialog.

Your StorPoint CD will shut down and you can now turn off the power.

Via the config.ini File

1. Locate the `config.ini` file using your standard file manager tool. You will find it in the `Root/System/ServerProperties` folder.

2. Use your preferred text editor and change the `Shut Down` parameter to `yes`. You will find the `Shut Down` parameter under the `[Server]` section.

3. Save the `config.ini` file.

Your StorPoint CD will now shut down and you can then turn off the power.

Server Password

To protect the system files, it is important that you set the Server password. The Server password is used in basically all protocols, i.e. HTTP, NetWare (NCP), Windows (SMB), Macintosh (AFP), SNMP and FTP. For example, a user will be prompted for the Server password when trying to access the Administration Web pages for the first time during a session.

By default, the Server password is set to `pass`.

To set the Server password, follow these steps:

1. On the **This StorPoint** page, click **Settings** to open the **Server Settings** dialog box.

2. Open the **General** page.

3. Specify and confirm the Server password.

4. Click **Close**.

Note: ❑ If you lose the Server password, you must restore the factory default settings. See "*Restoring Factory Default Settings*" on page 124.

Date & Time

1. On the **This StorPoint** page, click **Settings** to open the **Server Settings** dialog box.

2. Open the **Date & Time** page.

3. Specify the time zone in which the StorPoint CD operates. Refer to "*Time Zone Parameter Values*" on page 115.

4. To set the time using a time synchronization source, choose **Automatically** and specify the time source:

Network environment	Time Source:	You must also specify the ...
NetWare IPX	Novell Directory Services (NDS)	**Time Source** parameter on the Network Settings | NetWare page: - SAP or - List of server names.
NetWare PureIP NetWare/IP	Novell Directory Services (NDS)	**Time Source** parameter on the Network Settings | NetWare page: - List of server names or IP addresses.
TCP/IP	Network Time Protocol (NTP) *	**NTP Server** parameter on the Server Settings | Date & Time page: - Name or IP address of the time server.
Windows NT domains	Microsoft Windows NT Network (SMB)	

* **Note:** NTP is not natively supported by Windows NT servers. You will need third party software.
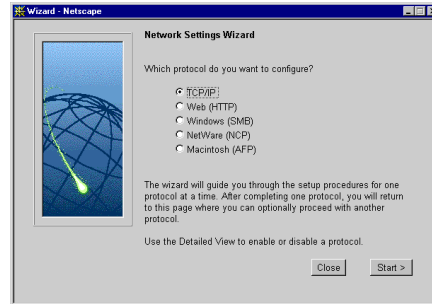
To set the time manually, choose **Manually** and specify the date in yy-mm-dd format, and time in hh:mm:ss format using the 24 hour clock.

5. Click **Close**.

TCP/IP   The installation wizard is a convenient way to specify the Internet-related settings for your StorPoint CD.

1. Click **Network Settings**.

2. Click **Wizard** . The **Network Settings Wizard** dialog appears.

3. Choose **TCP/IP**. Click **Start** to proceed with the installation.

4. Follow the instructions on the screen. When finished, click **Close**.

5. Click **Detailed View** . The **Protocols** dialog box appears.

6. Select the **TCP/IP** tab and verify the settings.

7. Click OK.

Notes: ❑   Context sensitive online help is available for all parameters.

❑   The parameter list is described in detail in "Appendix A - *Parameter List*" .

Section 3 Microsoft & IBM Networks (SMB)

This section outlines the required configuration settings for running the StorPoint CD in the Microsoft and IBM (SMB) network environment, i.e. Windows 95/98, Windows NT, Windows for Workgroups or OS/2. It also describes how to set up access restrictions.

If you are using the StorPoint CD in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- "Section 4 - *NetWare (NCP)* "
- "Section 5 - *UNIX (NFS)* "
- "Section 6 - *Macintosh (AFP)* "
- "Section 7 - *FTP (File Transfer Protocol)* "
- "Section 8 - *Web Browser (HTTP)* "

Network Settings

You do not have to specify any specific settings before you can use the StorPoint CD in the Windows (SMB) environment. However, we recommend that you change some of the default settings, e.g. the SMB server name. You can use the Administration Web pages to configure the StorPoint CD.

SMB Server Name

The default SMB server name is AXIS<nnnnnn>, where <nnnnnn> are the last six digits of the StorPoint CD serial number. This is the name that will be presented to the Windows clients on the network. You can change that name by editing the SMB Server Name parameter.

Recommendation! Choose a more descriptive name for your server, e.g. CD Server.

SMB Protocols

SMB is a protocol that make use of NetBIOS. NetBIOS can be used over several different network protocols. The StorPoint CD supports the following transport methods:

- SMB over NetBIOS/TCP/IP (NBT) - max 1000 users
- SMB over NetBIOS/NetBEUI - max 300 users

Both protocols are enabled by default. However, you can disable the protocols by setting the appropriate configuration parameters.

Access Control

Access control is used for restricting access to the shared discs in the StorPoint CD. In the Windows (SMB) environment you can select whether you want to use user-level or share-level access control.

User-level Access Control

User-level access control allows you to define rights for discs/volumes based on as whom the user logged into the domain. The StorPoint CD will act as a "member server" in the NT-domain and verify the user's identity and group memberships against a domain controller on the network. The advantages with this method are:

- The user is not required to answer to password prompts every time he/she needs to access a protected disc or a volume.
- The network administrator can administer the access rights for discs and volumes using Windows NT's standard administration tools.
- The network administrator can use the native user groups in the domain to set basic security.

Share-level Access Control

Share-level access control is based on different passwords for different shared discs/folders. No verification with domain controllers will take place. This is a good method to use in smaller "workgroup based" networks when there is no domain controller.

Recommendation!

User-level access control is the preferred method to use in Windows NT server based networks.

Wizard

The installation wizard is a convenient way to set up your StorPoint CD for your Windows (SMB) environment and it will guide you through the following:

- Defining your server name and the workgroup/domain you want your StorPoint CD to appear in.
- Defining how you want to control access to shared resources.

To run the Wizard follow the steps outlined below:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.

3. Click **Network Settings**.

4. Click **Wizard** . The **Network Settings Wizard** dialog appears.
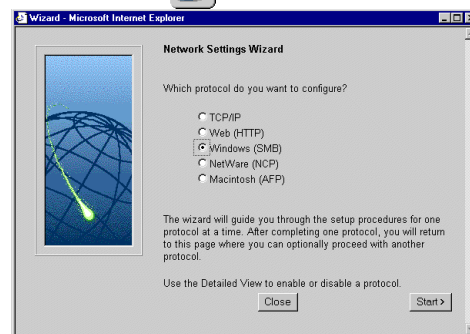
5. Choose **Windows (SMB)**. Click **Start** to proceed with the installation.

6. Follow the instructions on the screen. When finished, click **Close**.

7. Click **Detailed View** . The **Protocols** dialog box appears.

8. Select the **Windows (SMB)** tab and verify the settings.

9. Click **OK**.

Notes:
❏ Context sensitive online help is available for all parameters.

❏ The parameter list is described in detail in "Appendix A - *Parameter List*".

Access Control

The procedures for managing shares depends on the security mode you are using:

• User-level access control in Windows NT networks
• User-level access control in OS/2 networks
• Share-level access control

Verifying the
Security Mode

To verify the security mode setting, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass. To change the Server password, see *"Server Password"* on page 24.

3. Click **Network Settings**.

4. Click **Detailed View** . The **Protocols** dialog box appears.

5. Select the **Windows (SMB)** tab. If you want to change the Security Mode parameter, click **Change...**

6. Click **OK**.

Managing Shares in User-level Access Control

The system files are protected by default. All users that belong to the administrator groups in the domain have administrator rights on the StorPoint CD. All members of the domain have permissions to read and execute files on all the discs.

Important!

❑   You cannot use Server Manager in Windows NT to manage the shares on the StorPoint CD.

Defining Shares

By default, all new discs are shared automatically. If you want to change a share, i.e. remove it or change the name, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass. To change the Server password, see "*Server Password*" on page 24.

3. Click **Disc & Drives**.

4. Locate the resource you want to share, and click **Access Rights** . The **Access Rights** dialog box appears.

5. Open the **Windows Sharing** page.
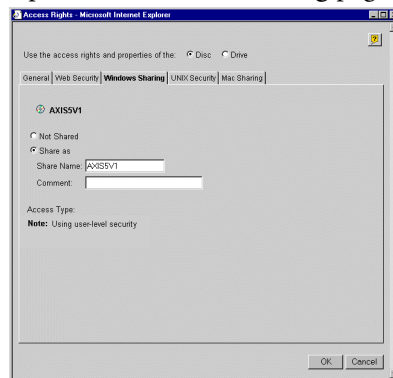
6. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

7. Select the **Share as** radio button, and enter a name in the **Share Name** field.

8. Enter a comment in the **Comment** field.

9. Click **OK**.

Managing
Access Rights in
Windows NT
Environments

In Windows NT environments, access rights are managed from the **Windows NT Explorer**. It is **not** possible to manage access rights from the Windows 95/98 Explorer or from the StorPoint CD Web interface.

Notes:
❏ The access rights are additive which means that the user's access rights are the summary of the rights granted from individual assignments and group memberships.

❏ Files and subfolders on the disc will automatically inherit the same access rights as the root folder.

Follow these steps:

1. In the Windows NT Explorer, select the disc or volume for which you want to change the access rights.
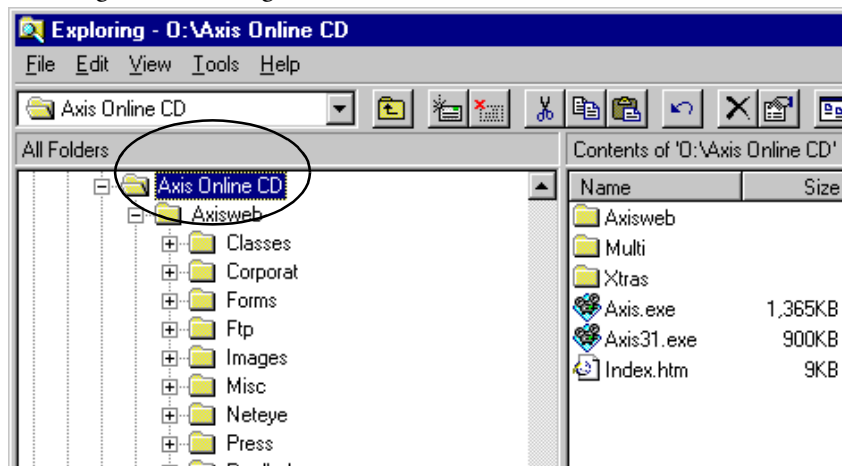
2. Select **Properties** from the **File** menu.

3. Select the **Security** tab, and click the **Permissions** button.
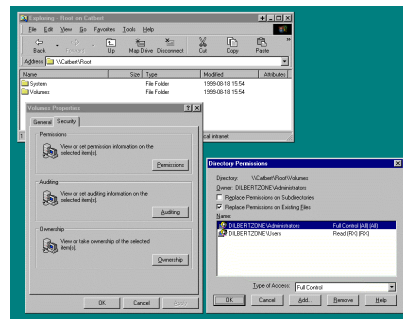
4. Specify the permissions.

5. Click **OK**.

Note:
❏ Access rights work as in any other Windows NT 4 Server. The built-in help in Windows NT 4 is a good place to start learning more about NT security. See access permissions: files, directories.

Managing Access Rights in OS/2 Environments

To manage access rights in OS/2 environments, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.

3. Click **Discs & Drives**.

4. Locate the resource you want to share or protect in the file tree, and click **Access Rights** ⬛. The **Access Rights** dialog box appears.

5. Open the **Windows Security** page.
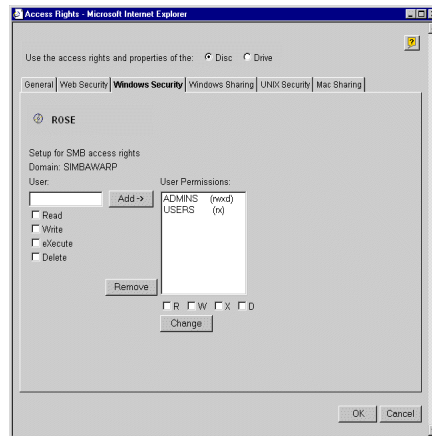
6. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

7. Add permissions for the users and groups you want to grant access.

Notes:

❏ Files and subfolders on the disc will automatically inherit the same access rights as the root folder.

❏ The access rights are additive which means that the user's access rights are the summary of the rights granted from individual assignments and group memberships.

8. Click **OK**.

Managing Shares in Share-level Access Control

By default, all new discs are shared automatically. If you want to change a share, i.e. remove it or change the name, follow the procedure outlined below:

Note: ❏ Macintosh HFS CD-ROM:s are not shared automatically. This can be defined via the Web interface.

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.

3. Click **Disc & Drives**.

4. Locate the resource you want to share or protect in the file tree, and click **Access Rights** . The **Access Rights** dialog box appears.

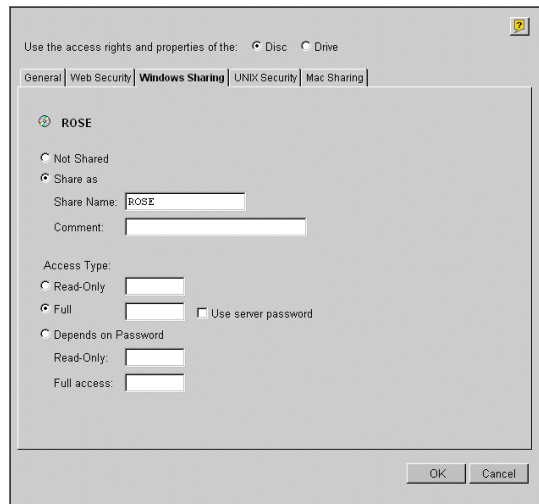5. Open the **Windows Sharing** page.

6. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

7. Select the **Share as** radio button, and enter a share name in the **Share Name** field.

8. Specify the type of access you want the user to have:

   • **Read-Only** to enable users to open and copy documents.
   • **Full** to enable users to change, add and remove files.
   • **Depends on Password** to allow different types of access. Note that you must specify both password fields, otherwise the users will not be prompted for any password.

9. Click **OK**.

Accessing the Discs

The StorPoint CD makes your networked CD/DVD-ROMs available to anyone who has the appropriate privileges on the network. Users will access the StorPoint CD just as any other workstation or file server.

The way you access the StorPoint CD resources depends on your network environment:

Network environments	See ...
Windows 95/98 & Windows NT	page 35
Windows for Workgroups 3.x	page 37
Windows NT 3.51	page 38
OS/2 Warp 4	page 39
IBM Peer for OS/2	page 39
DOS	page 41

Notes:
❑ The examples will assume that you have not changed the default server name. The default server name is AXIS<nnnnnn> where <nnnnnn> are the six last digits of the StorPoint CD serial number. If you have changed the server name, use the new name where the examples refer to the default name.

❑ Depending on the access rights set up by the Administrator, you might be prompted to supply a password or receive a message similar to 'Access is denied' when trying to access a shared resource on the StorPoint CD. The default Server password is pass.

❑ In the Windows 95/98 and Windows NT 4 environments, you can install the AXIS StorPoint Disco utility, which is a powerful Windows application for locating and using CD/DVD-ROMs located on AXIS storage servers, wherever they are on your network. Refer to "*AXIS StorPoint DISCO*" on page 42.

General Disc Settings

To specify the general settings for an inserted disc, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass.

3. Click **Discs & Drives**.

4. Locate the desired disc in the file **Volumes** folder.

5. Click **Access Rights** 🔧. The **Access Rights** dialog box appears:

6. Select the **General** tab. You can specify the following settings:

    *   **Name** - The volume name that will be presented to the clients. If left blank, the volume label will be used.
    *   **Description** - The description that will be displayed in Windows Explorer.
    *   **User Limit** - The number of users that will have access to the disc. To disable this function, enter the value 0 into this field.

7. Click **OK**.

Windows 95/98 and Windows NT 4

Follow these steps:

1. Start the Windows Explorer.

2. Expand the **Network Neighborhood** icon.

3. Expand the **Entire Network** icon. By default, the StorPoint CD appears in the folder that comes first when sorted by name. If the Domain Name is already set, the StorPoint CD will appear in the specified folder.
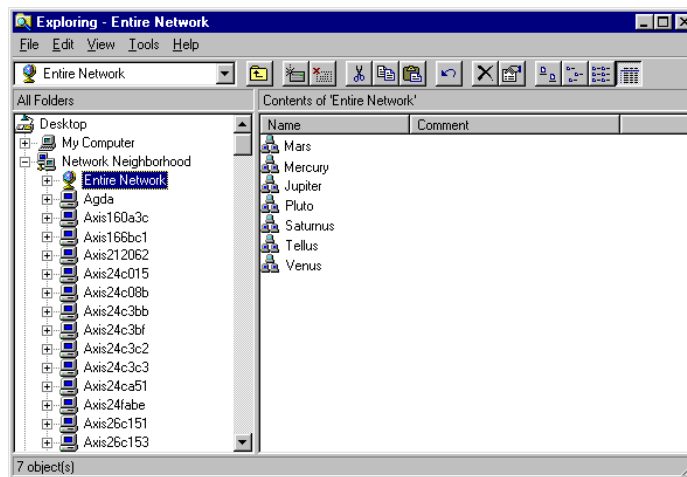
Notes: ❑ Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.

❏ If you cannot find the StorPoint CD under Entire Network, refer to "*Alternative Method* " on page 36.

4. Double click the entry for your StorPoint CD. The default name is Axis<nnnnnn>, where <nnnnnn> are the six last digits of the StorPoint CD serial number.
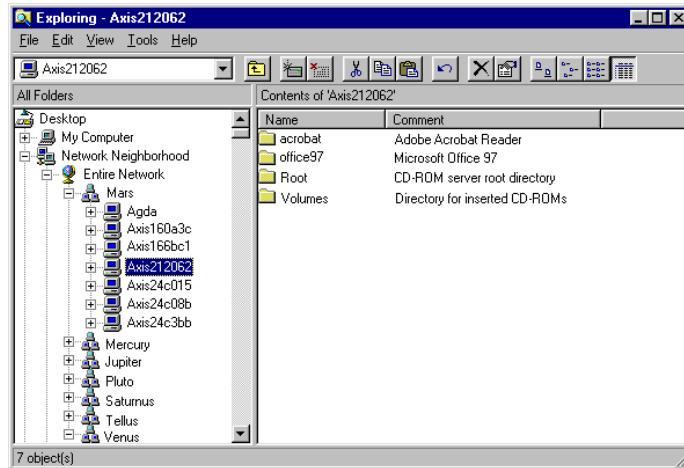
5. To map one of the StorPoint CD resources, locate:

- Root for root level access
- Volumes for access to all the discs
- the volume name for access to an individual disc, e.g. office97

6. Right click the resource and select **Map Network Drive...**

7. Select a drive letter for your StorPoint CD.

8. Check **Reconnect at logon** if you wish to use the resource under the same drive letter the next time you start your computer.

9. Click **OK**. The StorPoint CD is ready for use.

Alternative Method   If you cannot find the StorPoint CD, follow these steps:

1. Start the Windows Explorer from the **Start** menu.

2. From the **Tools** menu, select **Map Network Drive...**
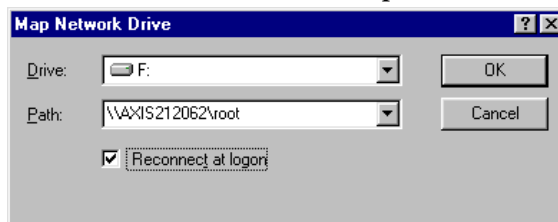
3. Select a drive letter.

4. In the path box, type \\AXIS<nnnnnn>\root, where <nnnnnn> are the six last digits of your StorPoint CD serial number.

5. Check **Reconnect at logon** if you wish to use the resource under the same drive letter the next time you start your computer.

6. Click **OK**. The StorPoint CD is ready for use.

Windows for Workgroups 3.x

In Windows for Workgroups on an SMB client, follow these steps:

1. Start the File Manager.

2. From the **Disk** menu, select **Connect Network Drive…** Double click **Workgroup**. The following dialog is displayed. You may have to click **Browse>>** to see the complete dialog.
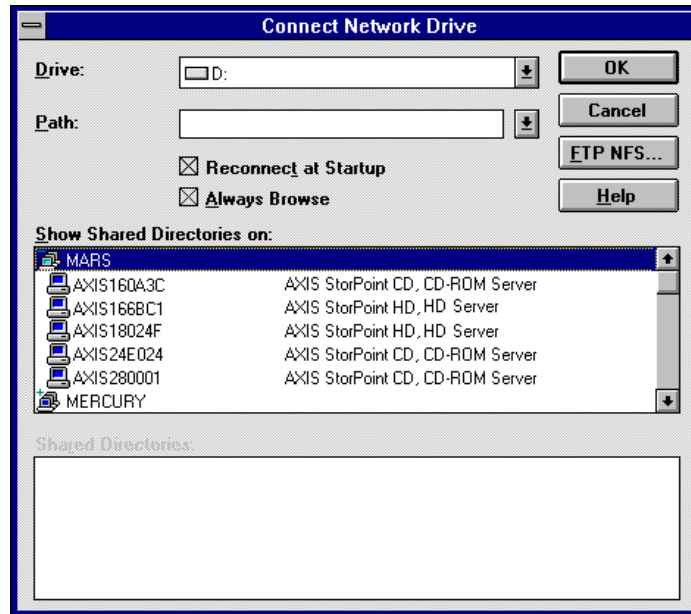
3. In the top listing, double click the entry for your StorPoint CD. The default name is AXIS<nnnnnn>, where <nnnnnn> are the six last digits of the StorPoint CD serial number.
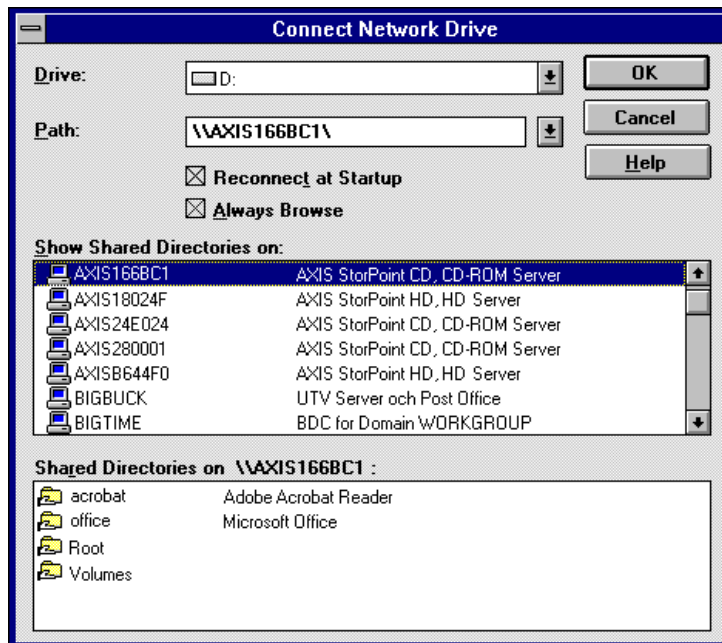
Note: ❏ If you cannot find the StorPoint CD, enter `\\AXIS<nnnnnn>\root`, in the Path box and click **OK**.

4. From the bottom listing, select one of the StorPoint CD resources:

   - Root for root level access
   - Volumes for access to all the discs
   - the volume name for access to an individual disc, e.g. office

5. Select a drive letter.

6. Check **Reconnect at Startup** if you wish to use the resource under the same drive letter the next time you start your computer.

7. Click **OK**. The StorPoint CD is ready for use.

Windows NT 3.51

On Windows NT 3.51 on an SMB client, follow these steps:

1. Start the File Manager.

2. From the **Disk** menu, select **Connect Network Drive…**

3. In the listing, double click the entry for your new StorPoint CD. The default name is AXIS<nnnnnn>, where <nnnnnn> are the six last digits of the StorPoint CD serial number.
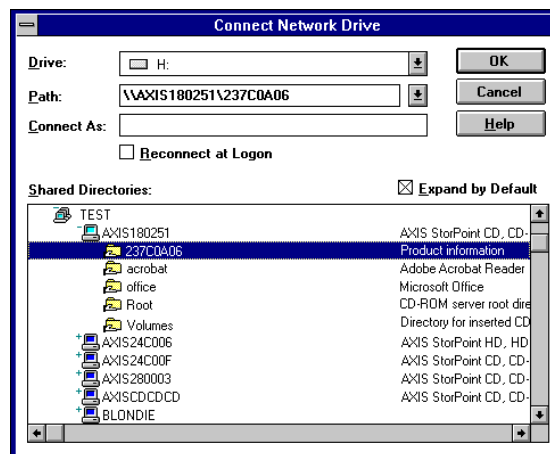
4. To connect a StorPoint CD resource, select:

   - Root for root level access
   - Volumes for access to all the discs
   - the volume name for access to an individual disc, e.g. office

5. Select a drive letter for your StorPoint CD.

6. Check **Reconnect at Logon** if you wish to use the resource under the same drive letter the next time you start your computer.

7. If you wish to connect using a different user name, enter the name in the **Connect As** box. Otherwise, leave the box empty.

Click **OK**. The StorPoint CD is now ready for use.

OS/2 Warp 4

1. Double click the **Connection** icon.

2. Open **Network**, **File** and **Print Client Resource Browser.**
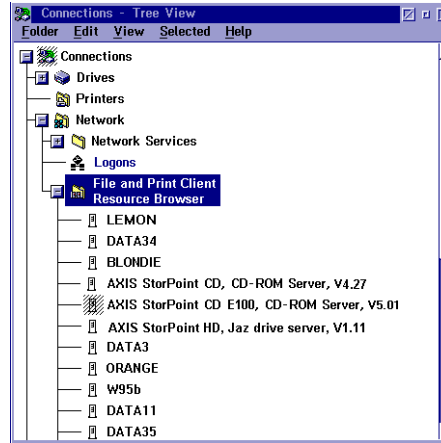
3. Double click your **StorPoint CD**.
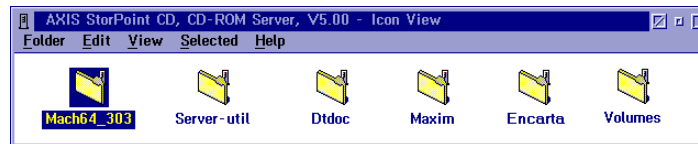
4. Select the resource you want to map to a drive letter.

5. From the **Selected** menu, select **Assign drive**.

IBM Peer for OS/2

Make sure you have IBM Peer for OS/2 installed. If not, see the instructions in "*Alternative Method*" on page 41.

1. Double click the **OS/2 Peer** icon. The **Peer** window is displayed:
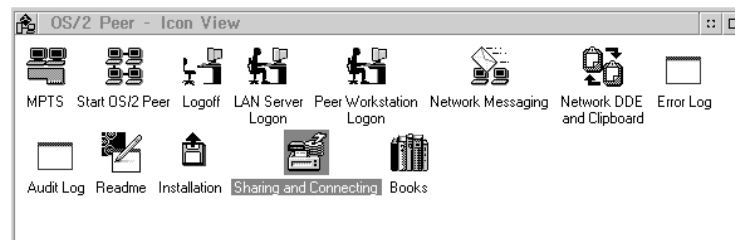
2. Double click the **Sharing** and **Connecting** icon to open this window:
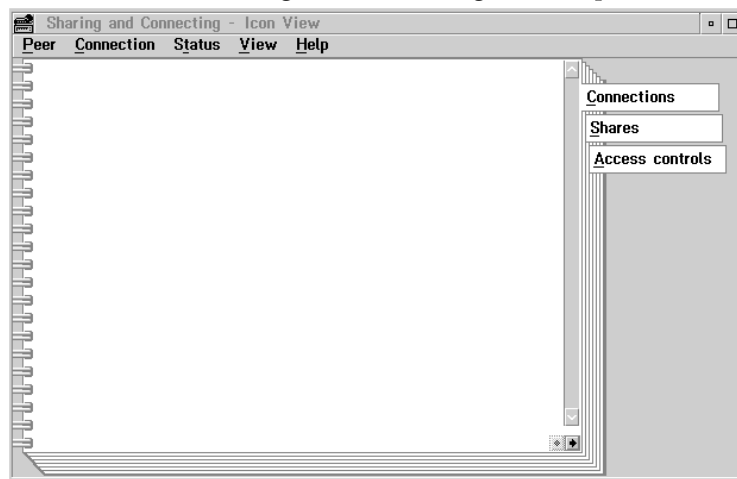
Any active connections you have will be listed in the window.

3. From the **Connection** menu, select **Create**. This dialog is displayed:
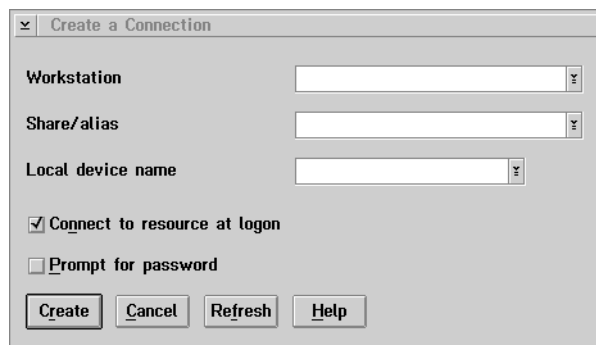
4. In the **Workstation** field, type AXIS<nnnnnn>, where <nnnnnn> are the last six digits of your StorPoint CD serial number.

5. In the **Share/alias** field enter the StorPoint CD resource:

   • Root for root level access
   • Volumes for access to all the discs
   • the volume name for access to an individual disc, e.g. acrobat

6. In the **Local device name** field, select a drive letter for your StorPoint CD.

7. Click **Create**. The StorPoint CD is ready for use.

Note: ❏ The StorPoint CD folders will not be visible on the Desktop in OS/2 versions prior to OS/2 WARP Connect. If you wish to use an earlier version of OS/2, we recommend using third party NFS software to connect to the StorPoint CD.

Alternative Method If you do not have Peer for OS/2, you can map the StorPoint CD to a drive letter using the `net use` command. Follow these steps:

1. Open an OS/2 window.

2. Use the `net use` command to mount the StorPoint CD. At the OS/2 prompt, type:
   `net use <drive letter>: \\AXIS<nnnnnn>\<folder>`
   where <nnnnnn> are the six last digits of your StorPoint CD serial number and `<folder>` is any shared StorPoint CD folder.

3. To make the connections permanent, create or edit your `startup.cmd` file to include your `net use` commands.

DOS Follow these steps:

1. At the DOS prompt, type:

   ```
   net use <drive letter>: \\AXIS<nnnnnn>\<folder>
   ```

   or:

   ```
   net use <drive letter>: \\<IP address>\<folder>
   ```

   where <nnnnnn> are the six last digits of your StorPoint CD serial number and `<folder>` is the StorPoint CD folder you want to map.

2. To make the connections permanent, edit your `autoexec.bat` file to include your `net use` commands.

   Example 1 (Root level access):
   To access the root level of your StorPoint CD with serial number 00408C18025C under the drive letter E, type:

   ```
   net use E: \\AXIS18025C\root
   ```

   Example 2 (Volumes folder access):
   If your StorPoint CD serial number is 00408C18025C, and you want to be able to access all the discs under the drive letter F, type:

   ```
   net use F: \\AXIS18025C\volumes
   ```

   Example 3 (Disc access):
   If your StorPoint CD serial number is 00408C18025C, and you want to map a disc named 44018881 to drive G, type:

   ```
   net use G: \\AXIS18025C\44018881
   ```

Notes:
❏ If you are using DOS within Windows 95 or Windows NT 4, and you wish to access files or directory names longer than 8 characters, you will need to precede these long names with a quote mark ("). For example, to change to the directory called Product Information:

```
G:\AXIS18025C\VOLUMES\>CD "PRODUCT INFORMATION
```

❏ Windows NT gives the additional facility of using the * wildcard. For example, a quick way of changing to the Product Information directory would be:

```
G:\AXIS18025C\VOLUMES\>CD "PRODUCT*
```

AXIS StorPoint DISCO

AXIS StorPoint™ DISCO™ is a convenient end user tool for finding and organizing networked CD/DVDs. It runs in the Windows 95/98/2000 and Windows NT 4 environments.

AXIS StorPoint DISCO will gather all the discs that reside on your Axis Network Storage Servers in a single folder under **My Computer** in Windows Explorer. As the program hides the network topography, the discs will always be easy to find and access. You will no longer need to browse through the entire Network Neighborhood in order to locate the discs you are looking for. You use standard Explorer functions to manipulate the discs.

AXIS StorPoint DISCO version 2.00 is available in two types of installations:

• Standalone
• Client/Server

Standalone The standalone version gives all the users full functionality and allows all users to view all the discs on the network. For small workplaces or single users, this is the recommended setup.

Client/Server The client/server version is divided into one server part and one client part. First the administrator will install the server version locally. The administrator then organizes discs and **launch objects** (see "*Launch Objects*" on page 46) into a number of **public folders**. When the client part has been installed on the client users' computers, the user can select which public folders to use according to their needs. For larger workplaces with a central system administration and many shared discs, this is the recommended setup. See "*Client Installation*" on page 49.

Installing the Software   Follow these steps to install AXIS StorPoint DISCO:

1. Locate and run the setup file, `DiscoSetup200.exe`. The software is available free of charge on the Axis Web site and on the AXIS Online CD.

2. You will be asked where to unpack the setup files. Then the **AXIS StorPoint DISCO Setup Welcome** dialog will then be displayed.

3. Choose which setup type you want to install: **Standalone** or **Client/Server**.

4. Follow the instructions on the screen. When finished, the **Installation Completed** screen is displayed.

The AXIS StorPoint DISCO Folder

When successfully installed, AXIS StorPoint DISCO is available through the **AXIS StorPoint DISCO** folder found under **My Computer** in Windows Explorer.
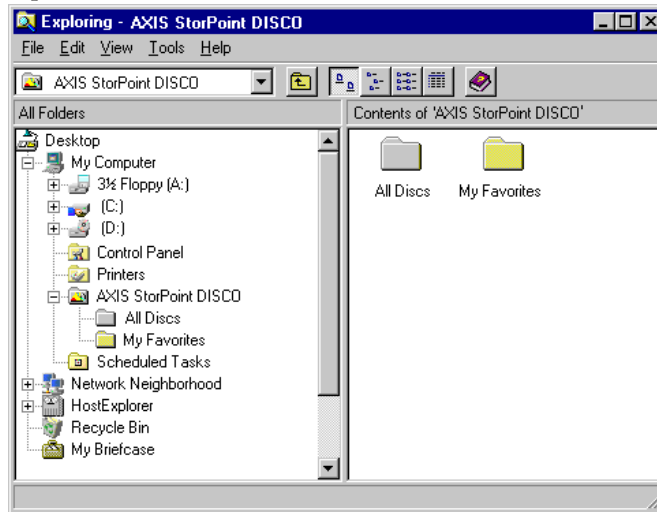
In the standalone and server versions, the **AXIS StorPoint DISCO** folder originally contains two folders:

- **All Discs** - This folder lists **all** the CD/DVDs detected on the network.
- **My Favorites** - This folder is originally empty. It is intended for your favorite discs. It can be renamed or deleted, if desired.

New Folders

To create new folders within the **AXIS StorPoint DISCO** folder, click **File | New | Folder**. Type a name for the new folder, and press **Enter**. You can copy disc titles from the **All Discs** folder to the **My Favorites** folder and to other user folders that you create under the **AXIS StorPoint DISCO** folder.

Shortcuts

To create a shortcut on your desktop to a disc, folder or launch object, right-click the item and select **Create Shortcut on Desktop**.

Finding Discs and Launch Objects

To find specific discs, folders or launch objects within **AXIS StorPoint DISCO**, click **Tools | Find Discs and Launch Objects...** in Windows Explorer.

To find a file on a disc, right-click the disc and select **Find Files on this Disc...** Note that you cannot search the entire network for specific files.

AXIS StorPoint
DISCO Settings

To specify the program settings, click **File | AXIS StorPoint DISCO Settings**.

```
AXIS StorPoint DISCO Settings                        [X]

General | Disc Search | Public Folders | Client Setup |

   [icon]     AXIS StorPoint DISCO


   [✓] Show icon on the taskbar


   [✓] Warn me before AutoMap replaces a drive letter mapping




        [  OK  ]   [ Cancel ]   [ Apply ]   [  Help  ]
```
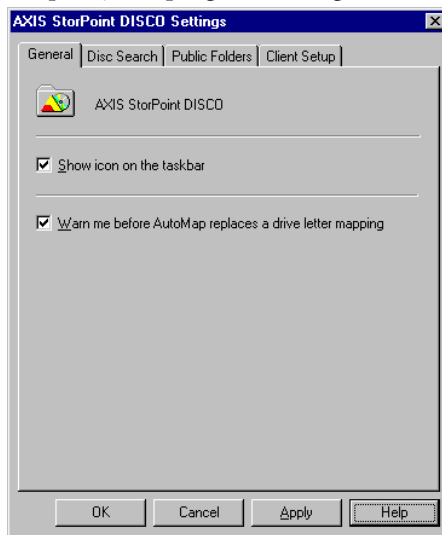
Note: ❏ The dialog contents depends on which version of the **AXIS StorPoint DISCO** you are running. The example above shows the server version.

Automatic Searches

AXIS StorPoint DISCO can automatically scan the network in order to detect the most recently attached storage servers and inserted discs.

To specify how often you want AXIS StorPoint DISCO to perform automatic searches:

1. Click **File | AXIS StorPoint DISCO Settings**.

2. Open the **Disc Search** page, and fill in the desired values for automatic searches.

3. Click **OK**.

Note: ❏ This function is **not** available in the client version.

Manual Searches

AXIS StorPoint DISCO provides two methods to manually initiate searches on the network:

*   **Quick search** – Searches the most recently inserted discs on the previously detected storage servers. Select **Quick Search** from the **View** menu.
*   **Full search** - Searches the entire network for the most recently attached storage servers and inserted discs. Select **Full Search** from the **View** menu.

Notes: ❏ Network searches are performed in the background without decreasing performance. However, it may take several minutes to complete a search on a large network. A full search takes more time to complete than a quick search.

❏ During the search, the AXIS StorPoint DISCO icon on the taskbar will change its appearance to indicate that a search is being performed.

Launch Objects

AXIS StorPoint DISCO version 2.00 includes an application launcher that allows you to create and use **launch objects**. These launch objects are similar to Windows shortcuts, but they have much more functionality. A launch object can:

- Start programs and documents from anywhere on the network
- Automatically map and unmap drive letters
- Initiate a series of actions related to the launched application, e.g. displaying message boxes, parameter lists and file selection dialogs.
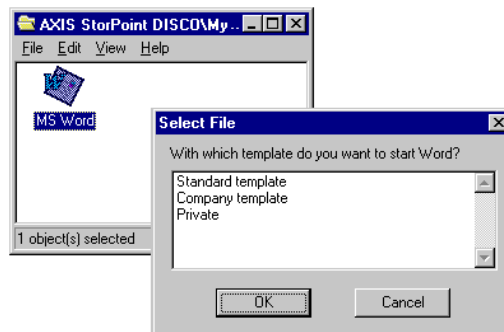
By doing this, programs can be customized to the user's needs at startup. A user might for example want to start a word processor with a specific document template and then save the result on a specific file server on the network. The launch object could then map the file server automatically and open a file selection dialog where the user selects the document template.

Creating a Launch Object

To create a new launch object:

1. Click **File | New | Launch Object** within one of your personal folders. The launch object wizard dialog appears.

2. The wizard includes three screens: **General**, **AutoMapping** and **Actions**. Click **Next** to continue to the next screen. For information on how to fill in the specific fields, click the **Help** button.

Note: ❑ To change any of the settings later, right-click the launch object, and select **Properties**.
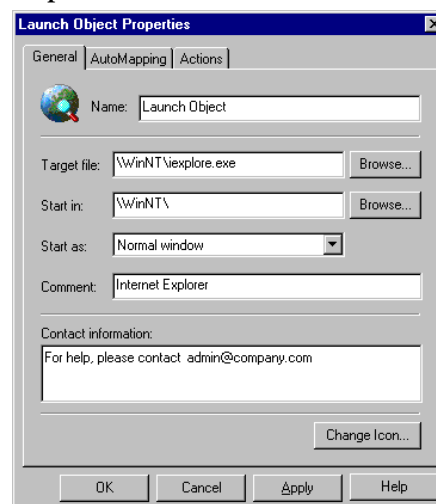
Mapping Discs

It is useful and sometimes necessary to assign (map) a drive letter to a shared networked resource that you connect to often. Some software will not run properly unless it finds data at root level.

Within AXIS StorPoint DISCO, drives letters can be mapped to discs manually or automatically.

Manual Mapping

To map a disc manually, follow these steps:

1. Locate the disc you want to be mapped.

2. Right-click the disc and select **Map Disc...** from the drop-down menu.

3. Select a drive letter for connecting to the disc. The next available drive letter is selected automatically. To specify a different drive letter, type the letter or select one in the list.

4. If you use the resource often, check **Reconnect at logon** to make the connection each time you start your computer.

5. Click **OK**.

Automatic Mapping

Automatic mapping (**AutoMapping**) allows mapping to be performed automatically when you access a disc. With this feature, several discs can share the same drive letter dynamically. Only the most recently accessed disc will be mapped to the drive letter.

AXIS StorPoint DISCO provides two methods for automatic mapping of your networked discs:

• General settings for all discs within an **AutoMap** folder.

• Specific settings for each particular disc within your personal folders.

Notes:
❏ For each drive letter, only one mapping can be enabled at a time. The most recently performed mapping is the one that will be used.

❏ To quickly perform a mapping without opening the disc, right-click the disc and select **QuickMap**.

❏ Automatic mappings can also be performed within a launch object.

AutoMap Folders

An **AutoMap** folder allows you to define AutoMapping settings for all the discs contained within that folder.

To create a new AutoMap folder:

1. Within the AXIS StorPoint DISCO folder, click **File | New | AutoMap Folder**.

2. The **Create New AutoMap Folder** dialog is opened. Select the desired AutoMapping option. These settings will apply to all the discs contained within this AutoMap folder.

Note: ❏ To change the settings, right-click the folder and select **Properties**. Open the **AutoMapping** page.
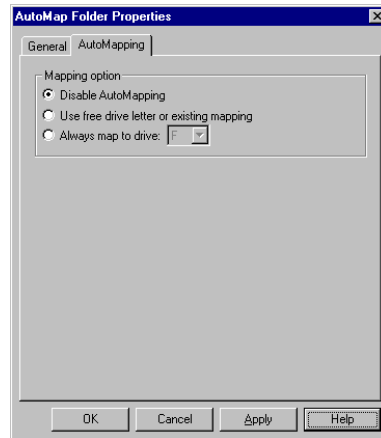
AutoMapping a Particular Disc

To define the AutoMapping options for a particular disc:

1. Right-click the disc and select **Properties**.

2. Open the **AutoMapping** page.

3. Select the desired option by clicking the appropriate radio button. You can select **Map several paths…** to map a set of discs simultaneously.
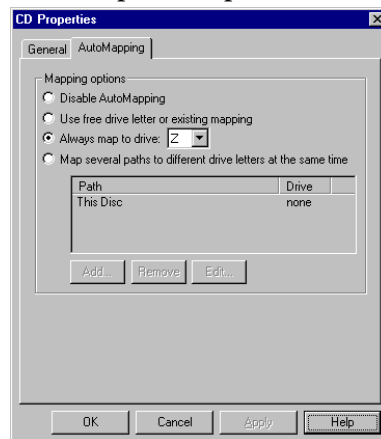
4. Click **OK**.

Client Installation
To set up the client part of the client/server version, you need to carry out the following:

- Create public folders
- Edit the client setup script (optional)
- Install the client version on the client user's computers

Creating Public Folders
A public folder can contain discs and launch objects. The administrator prepares a set of folders and then makes these available as public folders. When a user selects a public folder, the folder will appear in the **AXIS StorPoint DISCO** folder on the user's computer.

To create a public folder:

1. Click **File | Public Folder Settings** to check the settings for public folders.
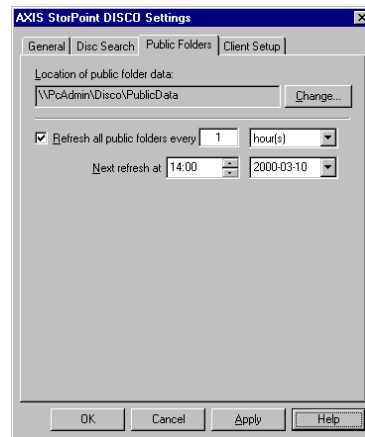
2. On the **Public Folders** page, make sure the network path to the public folder data is specified correctly. The location was specified during the installation. Note that the location must be reachable from the users' computers. If you want to change the path, click **Change**.

3. Click **File | New | Folder** to create a new folder.

4. Specify a descriptive name, and press **Enter**.

5. Select the new folder and click **File | Properties**.

6. On the **General** page, enter a descriptive text in the **Comment** field to indicate its content.

7. Check the **Make folder public** checkbox to make this folder available to the users.

Note: ❑ As opposed to shared folders in Windows, public folders within AXIS StorPoint DISCO will **not** appear in Network Neighborhood.

Editing the Client Setup Script
When the administrator installed the server part of AXIS StorPoint DISCO, the Setup program created a client setup script used for reducing the user interaction during the client installation.

To edit this script:

1. Click **File | AXIS StorPoint DISCO Settings**.

2. Open the **Client Setup** page.

3. Click the **Create Setup Script** button. A wizard will guide you through the screens in the dialog. The script is stored under the filename sscript.ini in the location specified at the top of the page.
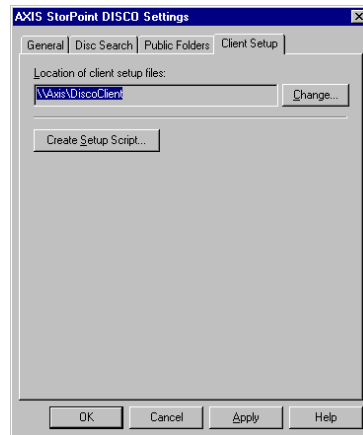
Note: ❑ If you provide all the information in the wizard, the client version can be installed with no or little user interaction. Otherwise, the user will be prompted to make the decisions during the installation.

Installing the Client
Version

Notify the users about where they can find the client installation files on the network and ask them to run the installation program Setup.exe. Or, use your standard procedures for installing new client software on the network. The file location is specified on the **AXIS StorPoint DISCO Settings | Client Setup** page.

Extracting New
Client Setup Files

The client setup files for AXIS StorPoint DISCO was created when the administrator installed the server version. In case these files become damaged, new files can be extracted without reinstalling the server program.

Follow these steps:

1. Open the Windows **Add/Remove Program** dialog.

2. Select **AXIS StorPoint DISCO** and click **Add/Remove.**

3. The **AXIS StorPoint DISCO Setup Maintenance** program is opened. Click **Modify** to generate new files.

Section 4 NetWare (NCP)

This section outlines the required configuration settings for running the StorPoint CD in the Novell NetWare environment, how to set up access restrictions and accessing the discs.

The StorPoint CD supports a maximum of 1000 users in NetWare.

If you intend to use StorPoint CD in a multiprotocol environment, proceed to the other relevant sections in this manual, namely:

*   "Section 3 - *Microsoft & IBM Networks (SMB)* "
*   "Section 5 - *UNIX (NFS)* "
*   "Section 6 - *Macintosh (AFP)* "
*   "Section 7 - *FTP (File Transfer Protocol)* "
*   "Section 8 - *Web Browser (HTTP)* "

Network Settings

The StorPoint CD emulates both a 5.x NDS server and a NetWare 3.x bindery server. It also supports NetWare/IP and PureIP. In NetWare 5 environments, the StorPoint CD can be integrated as any other 5.0 server simultaneously accessed via IPX, NetWare/IP and PureIP.

If your network supports TCP/IP, you can use the Administration Web pages to configure the StorPoint CD.

NetWare Server Name

The default NetWare server name is AXIS<nnnnnn>_NW, where <nnnnnn> are the last six digits of the StorPoint CD serial number. This is the name that will be presented to the NetWare clients on the network. You can change that name by editing the **NetWare Server Name** parameter. It is useful to choose a more descriptive name, e.g. in order to indicate where the unit is located.

Recommendation!

Choose a more descriptive name for your server, e.g. CD Server.

Time Synchronization

Make sure you specify the time synchronization source properly. Refer to "*Date & Time*" on page 25.

Installation as an NDS Server

If used as an NDS server, the StorPoint CD must first be installed in the NDS tree. The most convenient way to do this is using the installation wizard available from the StorPoint CD Web interface, see "*Wizard*" on page 52.

However, if you do not have TCP/IP, you must use a text editor and edit the configuration file manually. Refer to "*Text Editor*" on page 53.

Important!

❑ If you change any of the following parameters after installing the StorPoint CD in the NDS tree, you might need to repeat the installation:

- IP address
- Internal Net Address
- IPX Enable
- PureIP Enable

Requirements

When installing the first StorPoint CD into the NDS tree, it is recommended that you use an account with Supervisor rights to the [Root] of the tree.

The StorPoint CD will extend the NDS schema with a new attribute called AXIS:SPcd:rights which will be added to the NCP Server. The extension is needed for storing configuration data. The StorPoint CD also becomes easier to administrate and more fault tolerant to changes in your NDS tree.

The new attribute will not affect the operation of your NetWare servers. The schema extension has been approved by Novell as part of the YES certification of this product.

Notes:

❑ Adding the schema extension requires Supervisor rights to the [Root] object of the NDS tree.

❑ If you do not have Supervisor rights to [Root] or if schema extensions are not allowed in your NDS tree, you can store the access rights in a file on a NetWare file server. However, you must specify the NDS Rights Storage and NDS Rights File parameters properly. You will need Supervisor rights to the Organizational Unit (OU). After the NDS installation, you must create and assign access rights to the directory on the NetWare file server where the file is stored.

For subsequent installations, Create rights to the context where you want to install the StorPoint CD will be sufficient.

Wizard

The installation wizard is a convenient way to install your StorPoint CD in the NetWare environment.

1. Verify that the NDS tree is synchronized. To do that, you load DSREPAIR.NLM on a NetWare server console in the NDS tree and select Unattended full repair.

Important!

❑ If the NDS tree is not synchronized, do not continue the installation until you have solved the problem.

2. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

AXIS StorPoint CD E100 User's Manual

3. Click **admin**. You will be prompted for the Server password. By default, this is set to pass. To change the Server password, see "*Server Password*" on page 24.

4. Click **Network Settings**.

5. Click **Wizard** 🧙 . The **Network Settings Wizard** dialog appears.
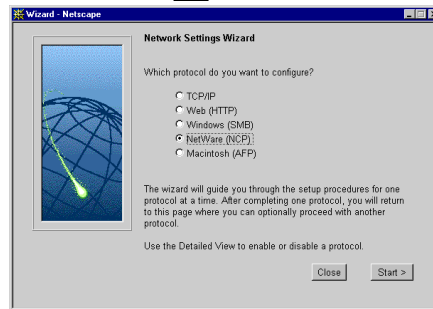
6. Choose **NetWare (NCP)** to set up the StorPoint CD for your NetWare clients. Click **Start** to proceed with the installation.

7. Follow the instructions on the screen. When finished, click **Close**.

8. Click **Detailed View** 🔍 . The **Protocols** dialog box appears.

9. Select the **NetWare** (**NCP**) tab and verify the settings.

10. Click **OK**.

Notes: ❏ Online help 🔵 is available for all parameters.

❏ The parameter list is described in detail in "Appendix A - *Parameter List* " .

Text Editor If you do not have TCP/IP on your network, follow these steps to install the StorPoint CD as an NDS server:

1. Login as Supervisor in bindery mode.

2. Verify that the NDS tree is synchronized. To do that, you load DSREPAIR.NLM on a NetWare server console in the NDS tree and select Unattended full repair.

Important! ❏ If the NDS tree is not synchronized, do not continue the installation until you have solved the problem.

3. Use a standard text editor such as Notepad to edit the configuration parameters. From Windows Explorer or File Manager, locate the StorPoint CD configuration file, `config.ini` which is located in the `System/ServerProperties` folder.
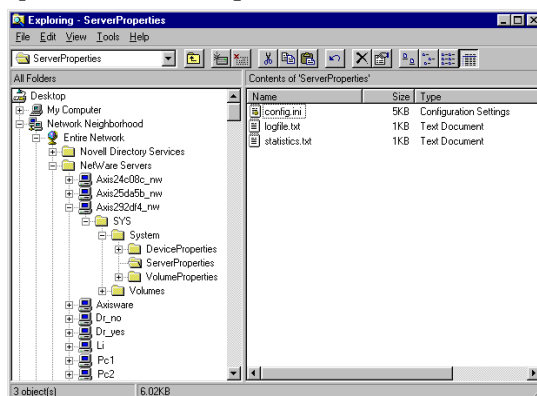
4. Enter the appropriate settings for these parameters:

| Parameter name	Value	Description
[Server]		
TimeZone	=	Must be set to the correct time zone that the StorPoint CD is operating in. See "*Time Zone Parameter Values*" on page 115.
TimeSyncSource	= NDS	Set to *NDS* to enable the StorPoint CD to get its time from the NetWare network.
[NetWare]		
IPXEnable	= yes	Set to *yes* to enable the IPX protocol.
PureIPEnable	= no	Set to *no* to disable PureIP for non-TCP/IP networks.
NDSEnable	= yes	Must be set to *yes* to enable the NDS login.
NDSTreeName	=	The name of the tree where you want to install the StorPoint CD, e.g. *MEDCORP*
NDSServerContext	=	The distinguished name of the context in the NDS tree where you want to install the StorPoint CD, e.g. *Manufacturing.Medtec*
NDSAdminName	=	The distinguished name of a user or administrator with Supervisor or Create rights to the context where you want to install the StorPoint CD, e.g. *Admin.Medtec*
NDSAdminPassword	=	The password of the administrator entered in NDSAdminName shown above. Once written, this password will appear as ********.
NDSInstall	= install	Change this to *install* when you are ready to install the StorPoint CD. The setting f*orced* will overwrite the existing server object without warning.
NDSRightsStorage	= NDS	Set to *NDS* to store the access rights in the NDS tree. Set to *File* to store the access rights in a file on the Novell server. This is necessary if you do not allow schema extensions in your NDS tree, or if you do not have Supervisor access rights.
NDSRightsFile	=	If storing the access rights in a file on the Novell file server, specify the whole path to the file, e.g. *CORPSERVER/SYS:CDSERVER/CDSRV.DAT* The specified directory must exist and the StorPoint CD must have Read, Write, Create, Erase, Modify and File Scan rights. The StorPoint CD will create the file once you start adding trustees.
TimeSyncSources	= SAP	Default is *SAP* for the network agreed time. Alternatively, enter a list of server names to be contacted for time synchronization.

Example (NDS settings):

The StorPoint CD is placed in Eastern United States. The name of your NDS tree is ACMECORP, the name of the context where you wish to install the StorPoint CD is Corp.Acme, and the administrator's name is Admin.Acme. Specify these parameters:

```
[Server]
TimeZone              = US_CAN_Eastern
TimeSyncSource        = NDS
...
[NetWare]
IPXEnable             = yes
PureIPEnable          = no
NDSEnable             = yes
 NDSTreeName          = ACMECORP
 NDSServerContext     = Corp.Acme
 NDSAdminName         = Admin.Acme
 NDSAdminPassword     = secret
 NDSInstall           = install
 NDSRightsStorage     = NDS
 TimeSyncSources      = SAP
```

5. Save the `config.ini` file to start the NDS server installation. The installation takes about 15 seconds, after which users will be able to access the StorPoint CD in NDS mode.

6. Check the `logfile.txt` file to verify that the StorPoint CD was successfully installed. See "*Installation Errors in NetWare NDS*" on page 56.

7. After the installation you must logout and then login again to have all the necessary rights on the StorPoint CD server object and the associated volume.

   Using the NWAdmin, you will find a new server object and corresponding volume object in the context you chose above.
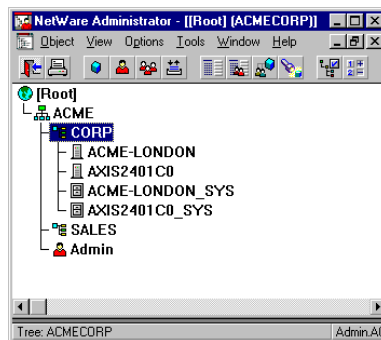
The StorPoint CD installed in the NDS Tree

Note: ❏ You can display Details in NWAdmin to verify the syntax of the `NDSServerContext` and `NDSAdminName` parameters.

Installation Errors in NetWare NDS

If you experience problems when installing your StorPoint CD in a NetWare NDS network, errors that occur will be written to a file named `logfile.txt` located in the `System/ServerProperties` folder. You can display the log file on the **Event Log** page within the StorPoint CD Web interface.

This table comprises a summary of error messages:

Error	Description
Installation failed: NDS tree not found	The server could not find the NDS tree. Verify the spelling.
Installation failed: Administrator object missing	The server could not find the user object specified in the `NDSAdminName` parameter. Verify that you use the correct format, e.g. *admin.acme*. Verify the spelling.
Installation failed: Administrator password is incorrect	The password supplied in the `NDSAdminPassword` password could not be used to login as the user in the `NDSAdminName` parameter. Verify the spelling.
Installation failed: Server context not found	The context specified in the `NDSServerContext` parameter was not found. Verify the spelling.
Installation failed: Insufficient rights to create server object	The specified user in the `NDSAdminName` parameter does not have sufficient rights to create the server object in the specified context.
Installation failed: NDS Server object already exists	You have tried to install the server on top of an existing server object. Set the `NDSInstall` parameter to *forced* to overwrite the existing object.
Installation warning: Could not extend NDS Schema. User xxxxx doesn't have SUPERVISOR rights to the [Root] object.	The administrator who is trying to install the server has insufficient rights for adding the schema extension. Specify a `NDSAdminName` with Supervisor rights to the [Root] object.
Installation warning: Could not extend NDS Schema (class 1) Installation warning: Could not extend NDS Schema (class 2) Installation warning: Could not extend NDS Schema (attribute)	These errors are the result of insufficient rights of the administrator trying to install the server. Specify a `NDSAdminName` with Supervisor rights to the [Root] object.

Installation as a Bindery Server

If used as a bindery server, no specific installation is required prior to using and accessing the StorPoint CD. However, it is recommended that you specify the authentication server.

Access Control

The way you manage security in NetWare depends on the mode you are using:

- NDS mode
- Bindery mode without user authentication
- Bindery mode with user authentication

The StorPoint CD acts as a normal NetWare file server, which means that you use standard procedures such as NWAdmin, SYSCON and Filer for handling security.

Note: ❑ You cannot set up access restrictions for the NetWare environment via the StorPoint CD Web interface.

Access Restrictions in NetWare NDS

In NetWare, access rights for users in bindery mode is separate from users accessing the StorPoint CD in NDS mode. For this reason, we recommend that you disable bindery mode after you have successfully installed the StorPoint CD in NDS and thus allow users to log on in NDS mode only.

Note: ❑ If NDS mode is not functioning, you can always access the StorPoint CD in bindery mode by logging in as Supervisor. This is true even if you have disabled bindery mode.

Default Access Rights

The default access rights protect all the system files, which means that only users with Supervisor privileges on the StorPoint CD have access to those files. However, all users logged into NDS can access the discs. These access rights are set up by the following trustee assignments:

- The Supervisor right from the NDS tree is inherited to all the volumes on the StorPoint CD. All users who have Supervisor privileges in the context in which the StorPoint CD was installed will also have Supervisor privileges on the StorPoint CD.
- The root of the SYS volume has [Public] as trustee, with File Scan, Read, Write, Create, Modify and Erase rights.
- The System folder has all rights, except Supervisor, filtered. Thus all system files are effectively protected from normal users.

Notes: ❑ If the default security is satisfactory to your system, simply do not change anything.

❑ You can change the default trustee assignments using NWAdmin.

Setting Security Rights in NetWare NDS	Because the StorPoint CD acts as a normal NDS file server, its NDS security rights can be set using standard procedures, e.g. ConsoleOne or NWAdmin.

To make **all the discs** available to some users only, follow these steps:

1. Login using an account with Supervisor rights.

2. Start the NWAdmin.

3. Remove the [Public] trustee from the root of the SYS volume.

4. Add the new trustee assignments to the root of the SYS volume.

To restrict access to **a particular disc**, follow these steps:

1. Login using an account with Supervisor rights.

2. Start the NWAdmin.

3. On the resource you want to protect, set an inherited rights filter and filter ALL rights.

4. Add the new trustee assignments to the resource. This makes it available only to the users in the trustee list.

Note: ❏ The NetWare NDS access rights for the StorPoint CD can be set using Security Equivalence, Group, Container, Organization role, and User Objects as with any other NDS file server. There is no difference between how you use NWAdmin to set these access rights for a StorPoint CD, and how you would set the access rights on an NDS file server.

NetWare Bindery Without Authentication	If user authentication is not required, you do not have to specify an authentication server. The Supervisor can login using the Server password. Other users can login without password and will be considered to belong to the EVERYONE group.

No NetWare server licenses are required since the StorPoint CD does not log on to the file server.

If needed, you can use your standard NetWare administration tool, e.g. Filer, to limit access to the StorPoint CD system files to the Supervisor. Unauthorized users will still have guest access to the volumes. This is normally sufficient security for a StorPoint CD.

NetWare Bindery With Authentication	If user access control is required, you must specify an authentication server in the Bind Authentication parameter. The StorPoint CD will need to log on to the authentication server in order to authenticate the user and read which groups the user belongs to. In this case, the authentication server must have a standby license for the StorPoint CD. However, several StorPoint CDs can share this license.

Important! ❏ If "Station Restrictions" are used on the Novell server used for authentication, each user who wants to access the StorPoint CD need at least two concurrent connections to the authentication server.

If a license is not available, the user will still be authenticated but group information cannot be read.

The authenticated users can access the discs according to the access rights set up by the Administrator.

The authentication procedure will not introduce any extra administrator overhead as there is no need for maintaining a separate user database for the StorPoint CD. If the user is defined in the file server that the StorPoint CD uses for authentication, the user will automatically have access to the StorPoint CD.

Authentication to a NetWare 3.x Server

For access to a StorPoint CD connected to a NetWare 3.x server, authentication is done against the user list in the bindery of the NetWare server:

- If a user is on the list, the password will be verified. If the password is correct, the user will be granted access.
- If the password is incorrect, login will fail.

If a user is not on the list, he will not be granted access to the StorPoint CD. However, he could login as 'guest' and get access to volumes that are not protected.

Default Access Rights

The default access rights in NetWare bindery mode are set up by the following trustee assignments:

- The root of the SYS volume has [EVERYONE] as trustee, with File Scan, Read, Write, Create, Modify and Erase rights.
- The System folder has all rights, except Supervisor, filtered. Thus all system files are effectively protected from normal users.

Note: ❏ You can use Filer to change the default access rights.

Setting Security Rights in NetWare Bindery

The security rights can be set using standard procedures, e.g. Filer.

To make **all the discs** available to some users only, follow these steps:

1. Login as Supervisor on the StorPoint CD. In order for Filer to access the StorPoint CD, the client must have an active connection.

2. Login as Supervisor on your NetWare Bindery file server and start Filer.

3. Change the current directory to AXIS<nnnnnn>_NW/SYS:.

4. Remove the [EVERYONE] trustee from the root.

5. Add a new trustee assignment to the root.

To restrict access to **a particular disc**, follow these steps:

1. Login as Supervisor on the StorPoint CD. In order for Filer to access the StorPoint CD, the client must have an active connection.

2. Login as Supervisor on your NetWare Bindery file server and start Filer.

3. Change the current directory to AXIS<nnnnnn>_NW/SYS:.

4. On the resource you want to protect, set an inherited rights filter and filter ALL rights.

5. Add the new trustee assignment to the resource. This makes it available only to the users in the trustee list.

Note: ❏ The NetWare bindery access rights for the StorPoint CD can be set using Group and User Objects as with any other file server.

❏ You can always access the StorPoint CD using the user name Supervisor and the password specified by the Server Password parameter. By default the password is `pass`.

Accessing the Discs

The StorPoint CD makes your networked CD/DVDs available to anyone who has the appropriate privileges on the network. Users will access the StorPoint CD just as any other workstation or file server.

You use your standard NetWare client to access the networked discs:

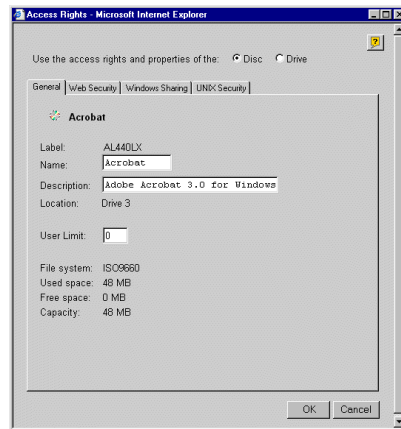| Network environments	See ...
Windows 95/98 and Windows NT 4 (NDS)	page 62
Windows 95/98 and Windows NT 4 (Bindery)	page 64
Windows for Workgroups 3.x (NDS)	page 66
Windows for Workgroups 3.x (Bindery)	page 68
Windows NT 3.51 (NDS)	page 70
Windows NT 3.51 (Bindery)	page 70
DOS	page 72

Notes:
❏ The examples will assume that you have not changed the default server name. The default server name is AXIS<nnnnnn>_NW, where <nnnnnn> are the six last digits of the StorPoint CD serial number. If you have changed the server name, use the new name where the examples refer to the default name.

❏ Depending on the access rights set up by the Administrator, you might be prompted to supply a password or receive a message similar to 'Access is denied' when trying to access a shared resource on the StorPoint CD. The default Server password is pass.

❏ In the Windows 95/98 and Windows NT 4 environments, you can install the AXIS StorPoint Disco utility, which is a powerful Windows application for locating and using CD/DVDs located on AXIS storage servers, wherever they are on your network. Refer to "*AXIS StorPoint DISCO*" on page 42.

General Disc Settings

To specify the general settings for an inserted disc, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass.

3. Click **Discs & Drives**.

4. Locate the desired disc in the file **Volumes** folder.

5. Click **Access Rights** ⟨icon⟩. The **Access Rights** dialog box appears:

6. Select the **General** tab. You can specify the following settings:

   • **Name** - The volume name that will be presented to the clients. If left blank, the volume label will be used.

   • **Description** - The description that will be displayed in Windows Explorer.

   • **User Limit** - The number of users that will have access to the disc. To disable this function, enter the value 0 into this field.

7. Click **OK**.

Windows 95/98 and Windows NT 4 (NDS Mode)

In Windows 95/98 and Windows NT on a Novell NetWare client for NDS, follow these steps to map the StorPoint CD:

1. Start the Windows Explorer.

2. Expand the **Network Neighborhood** icon. The available resources are displayed:
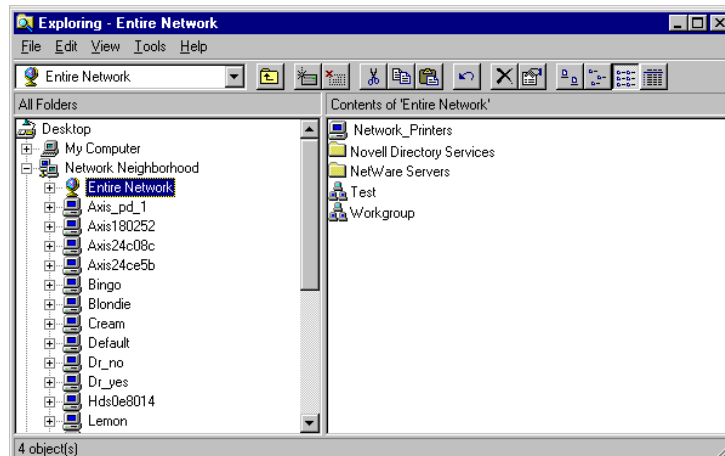
Note: ❑ Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.

3. Expand the **Entire Network** icon and open the Novell Directory Servers folder.
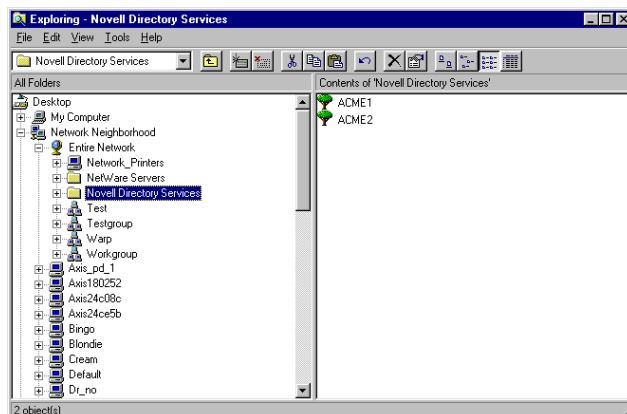
4. Locate your StorPoint CD. The default name is AXIS<nnnnnn>_NW_SYS, where nnnnnn are the last six digits of the StorPoint CD serial number. Expand the **Volumes** folders to display all the discs
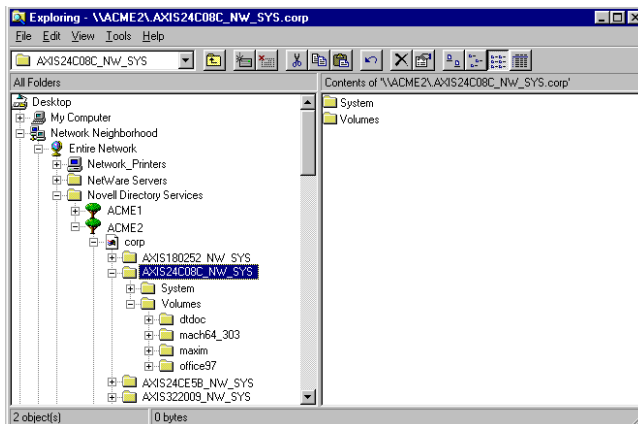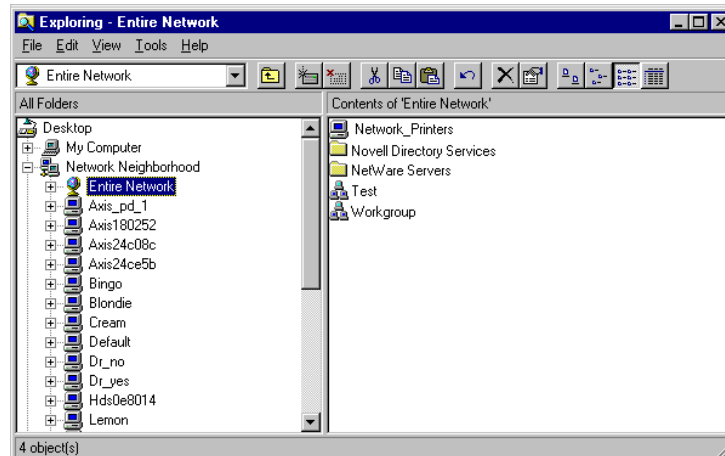

5. To map a StorPoint CD resource to a drive letter, select:

    • AXIS<nnnnnn>_NW_SYS for root level access
    • Volumes for access to all the discs
    • the volume name for access to an individual disc, e.g. office97

6. Right click the resource and select **Map Network Drive...**

7. Select a drive letter for your StorPoint CD.

8. Check **Reconnect at logon** if you wish to use the resource under the same drive letter the next time you start your computer.

9. Click **OK**. The StorPoint CD is ready for use.

In Windows 95/98 and Windows NT on a Novell NetWare client for bindery mode, follow these steps to map the StorPoint CD:

1. Start the **Windows Explorer**.

2. Expand the **Network Neighborhood** icon. The available resources are displayed:

Note: ❑ Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.

3. Expand the **Entire Network** icon and then open the **NetWare Servers** folder.
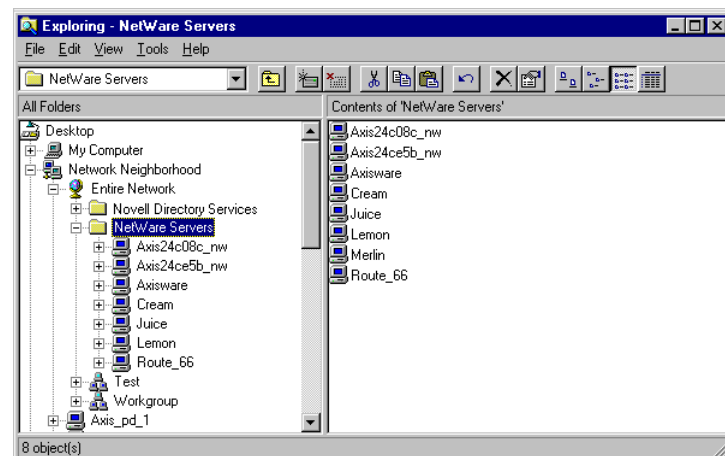
4. Double click the entry for your StorPoint CD. The default name is Axis<nnnnnn>_nw, where <nnnnnn> are the six last digits of the StorPoint CD serial number.

5. In bindery mode, you will be prompted to enter user name and password, unless you are already logged on.

6. Once you are logged on to the StorPoint CD, expand the **SYS** and **Volumes** folders to display all the discs:
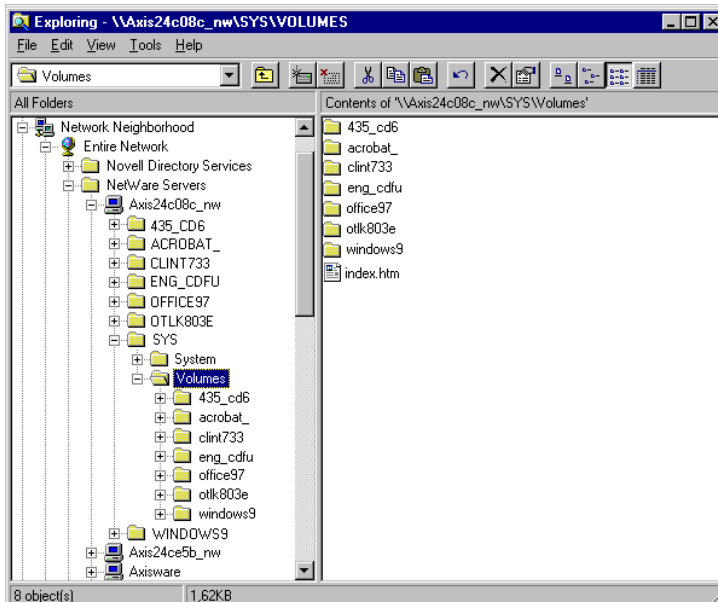
Note: ❑ If the Show All Volumes parameter is set to yes, the individual discs will be shown at the same level as SYS. Some applications will not run properly unless the data is stored at root level. To avoid such problems, assign a drive letter to that particular volume.

7. To map a StorPoint CD resource to a drive letter, locate:

    • SYS for root level access
    • Volumes for access to all the discs
    • the volume name for access to an individual disc, e.g. office97

8. Right click the resource and select **Map Network Drive...**

9. Select a drive letter for your StorPoint CD.

10. Check **Reconnect at logon** if you wish to use the resource under the same drive letter the next time you start your computer.

Click **OK**. The StorPoint CD is ready for use.

Windows for Workgroups 3.x (NDS Mode)

In Windows for Workgroups on a Novell NetWare client for NDS, follow these steps:

1. Start the File Manager and select **Network Connections** from the **Disk** menu. If you also have Microsoft Network installed, you may have to click the **NetWare...** button.

2. Click the **NetWare Connections** button on the toolbar. A screen similar to this is displayed:
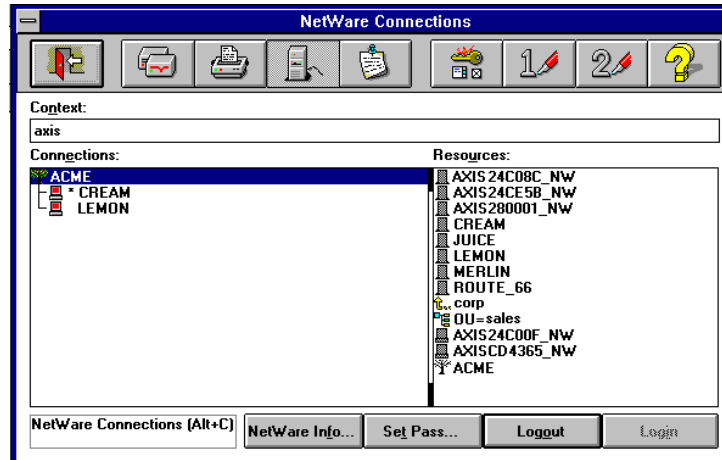
3. Select the entry for your StorPoint CD. The default name is AXIS<nnnnnn>_NW, where <nnnnnn> are the last six digits of the StorPoint CD serial number.

4. Click the **Login** button.

5. Once you are logged in to the StorPoint CD, click the **Drive Connections** button on the toolbar. This screen is displayed:
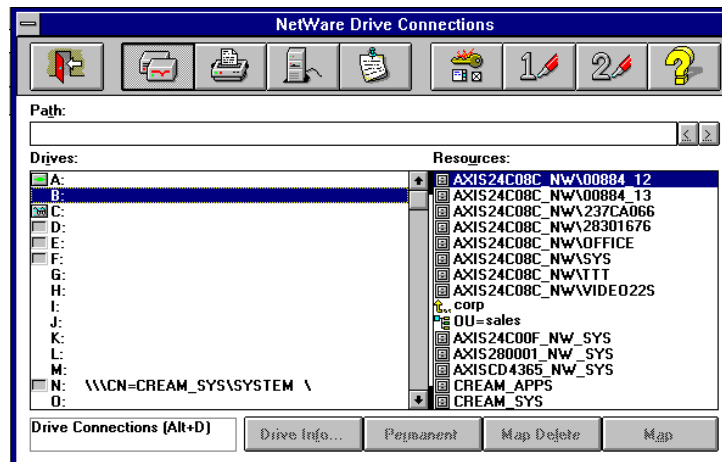
Note: ❑ If the **Show All Volumes** parameter is set to yes, the individual discs are shown at the same level as SYS. Some applications will not run properly unless the data is stored at root level. To avoid such problems, assign a drive letter to that particular disc.

6. Double click AXIS<nnnnnn>_NW_SYS and then VOLUMES to display this screen:
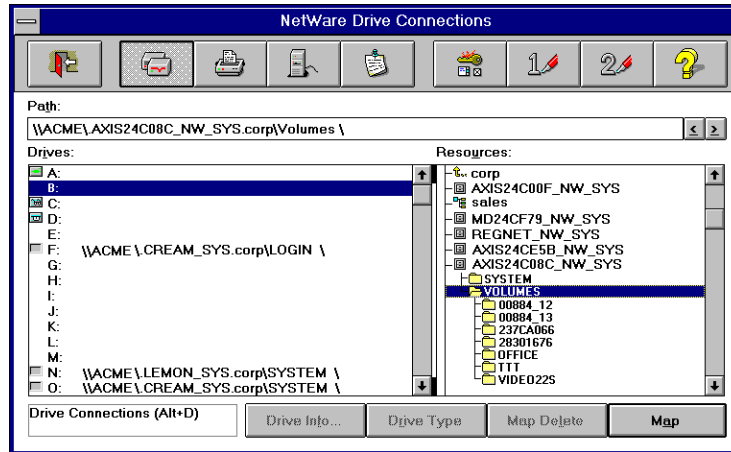
7. Select a drive letter in the **Drives** listing.

8. In the Resources listing, select a StorPoint CD resource:

    • AXIS<nnnnnn>_NW_SYS for root level access
    • Volumes for access to all the discs
    • the volume name for access to an individual disc, e.g. OFFICE

9. Click **Map** to map the StorPoint CD to the selected drive letter.

10. Click **Permanent** if you wish to use the resource under the same drive letter the next time you start you computer.

11. Click the **Exit** button on the toolbar. The StorPoint CD is ready for use.
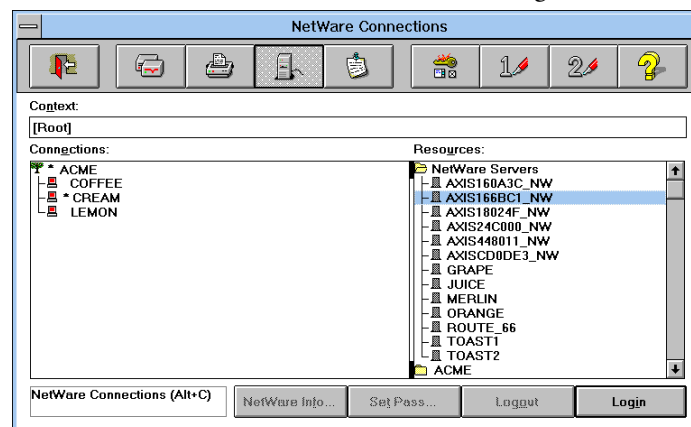
Windows for Workgroups 3.x (Bindery Mode)

In Windows for Workgroups on a Novell NetWare client for bindery mode, follow these steps:

1. Start the File Manager and select **Network Connections** from the **Disk** menu. If you also have Microsoft Network installed, you may have to click the **NetWare...** button.
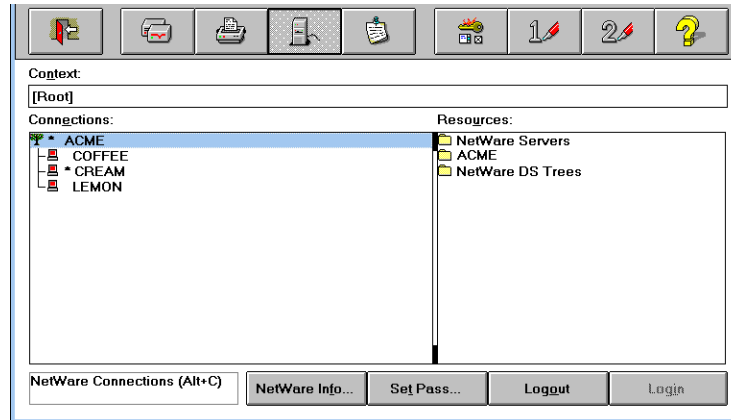

2. Click **NetWare Servers** in the **Resources** listing.

3. Locate the entry for your StorPoint CD. The default name is AXIS<nnnnnn>_NW, where <nnnnnn> are the last six digits of the StorPoint CD serial number. Use drag-and-drop to move the StorPoint CD to the **Connections** listing.

4. You will be prompted for user name and password. By default the password is set to `pass`.

5. Click **Drive Connections**. Double click AXIS<nnnnnn>_NW\SYS and then open the VOLUMES folder.
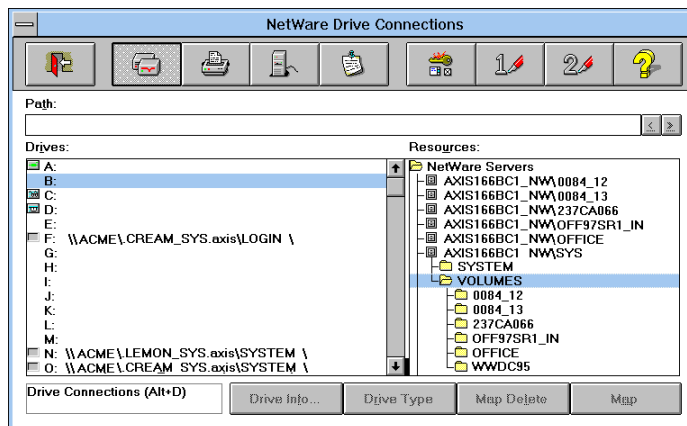
Note: ❏ If the **Show All Volumes** parameter is set to yes, the individual discs are shown at the same level as SYS. Some applications will not run properly unless the data is stored at root level. To avoid such problems, assign a drive letter to that particular disc.

6. Select a drive letter in the **Drives** listing.

7. In the **Resources** listing, select a StorPoint CD resource:

    • AXIS<nnnnnn>_NW\SYS for root level access
    • VOLUMES for access to all the discs
    • the volume name for access to an individual disc, e.g. OFFICE

8. Click **Map** to map the StorPoint CD to the selected drive letter.

9. Click **Permanent** if you wish to use the resource under the same drive letter the next time you start you computer.

Click the **Exit** button on the toolbar. The StorPoint CD is ready for use.

Windows NT 3.51 (NDS Mode)	On Windows NT 3.51 on an Novell NetWare client for NDS, follow these steps:

1. Start the File Manager.

2. From the **Disk** menu, select **Connect Network Drive…**

3. In the listing, open the **Novell Directory Servers** folder.

4. Open the NDS tree and the context in which the StorPoint CD is installed. The default name is AXIS<nnnnnn>_NW_SYS, where <nnnnnn> are the six last digits of the StorPoint CD serial number.
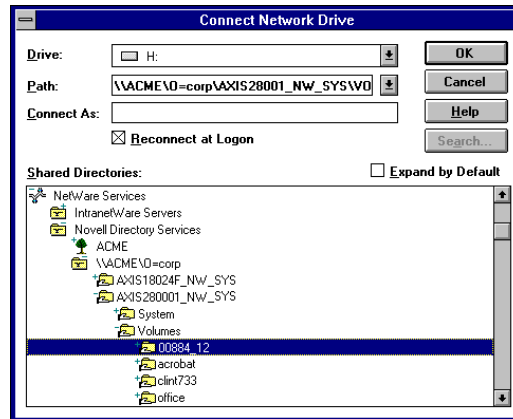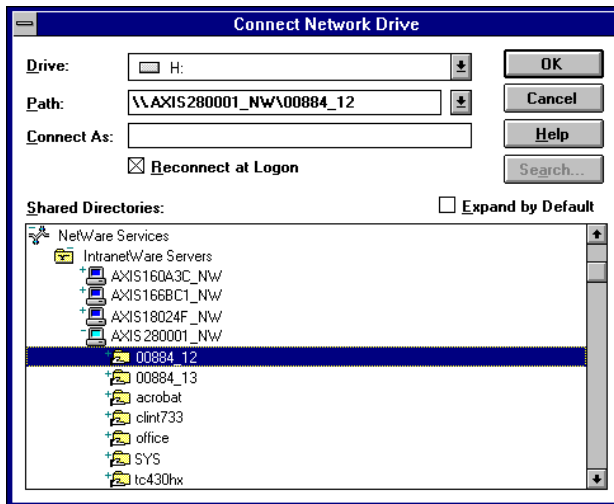

5. To connect a StorPoint CD resource, select:

   • SYS for root level access
   • Volumes for access to all the discs
   • the volume name for access to an individual disc, e.g. office

6. Select a drive letter for your StorPoint CD.

7. Check **Reconnect at Logon** if you wish to use the resource under the same drive letter the next time you start your computer.

8. If you wish to connect using a different user name, enter the name in the **Connect As** box. Otherwise, leave the box empty.

9. Click **OK**. The StorPoint CD is now ready for use.

Windows NT 3.51 (Bindery Mode)	On Windows NT 3.51 on an Novell NetWare client for bindery mode, follow these steps:

1. Start the File Manager.

2. From the **Disk** menu, select **Connect Network Drive…**

3. In the listing, open the **IntranetWare Servers** folder.

4. Double click the entry for your new StorPoint CD. The default name is AXIS<nnnnnn>_NW, where <nnnnnn> are the six last digits of the StorPoint CD serial number.

5. In bindery mode, you will be prompted to enter your user name and password, unless you are already logged in.

6. To connect a StorPoint CD resource, select:

   • SYS for root level access
   • Volumes for access to all the discs
   • the volume name for access to an individual disc, e.g. office

7. Select a drive letter for your StorPoint CD.

8. Check **Reconnect at Logon** if you wish to use the resource under the same drive letter the next time you start your computer.

9. If you wish to connect using a different user name, enter the name in the **Connect As** box. Otherwise, leave the box empty.

Click **OK**. The StorPoint CD is now ready for use.

DOS   When you are using DOS in NetWare, you use the `map` command to mount the StorPoint CD. Follow these steps:

1. At the DOS prompt of a NetWare file server, type:

```
map root <drive letter>:=AXIS <nnnnnn>
/<volume name>:<folder>
```

where `<nnnnnn>` are the six last digits of your StorPoint CD serial number and `<folder>` is the StorPoint CD folder you want to map.

2. To make the connections permanent, edit your `autoexec.bat` file to include your map commands.

Example 1 (Root level access):
To access the root level of your StorPoint CD with serial number 00408CCD000B under the drive letter E, type:

```
map root E:=AXISCD000B_NW/SYS:
```

Example 2 (Volumes folder access):
To access all the discs of your StorPoint CD with serial number 00408CCD000B under the drive letter F, type:

```
map root F:=AXISCD000B_NW/SYS:/VOLUMES
```

Example 3 (Disc access):
If your StorPoint CD serial number is 00408CCD000B, and you want to map a disc named 44018881 to drive G, type:

```
map root G:=AXISCD000B_NW/SYS:/VOLUMES/44018881
```

Note: ❏ If the **Show All Volumes** parameter is set to yes, individual discs can be mapped at SYS level. Some applications will not run properly unless the data is stored at root level. To avoid such problems, you can map drive G directly to the volume named 44018881. Type:

```
map root G:=AXISCD000B_NW/44018881
```

Note: ❏ For more options, refer to the MAP command help.

Section 5   UNIX (NFS)

This section outlines the required configuration settings for running the StorPoint CD in the UNIX (NFS) environment, how to set up access restrictions and how to mount the StorPoint CD resources.

Note: ❏ Make sure you have set the Internet address as described in "*Assigning an IP Address*" on page 13.

If you are using the StorPoint CD in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- "Section 3 - *Microsoft & IBM Networks (SMB)* "
- "Section 4 - *NetWare (NCP)* "
- "Section 6 - *Macintosh (AFP)* "
- "Section 7 - *FTP (File Transfer Protocol)* "
- "Section 8 - *Web Browser (HTTP)* "

Network Settings

Use the Administration pages within the StorPoint CD Web interface to configure the StorPoint CD.

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the User ID and the Server password. By default, these are set to `root` and `pass`. To change the Server password, see "*Server Password*" on page 24.

3. Click **Network Settings**.

4. Click **Detailed View** 🔍 . The **Protocols** dialog box appears.

5. Select the **UNIX (NFS)** tab and specify the settings.

6. Click **OK**.

Notes: ❏ Context sensitive online help 🔲 is available for all parameters.

❏ The parameter list is described in detail in "Appendix A - *Parameter List* " .

Access Control

To grant access to the StorPoint CD resources in the UNIX (NFS) environment, you add clients with specific host names or IP addresses to the NFS export list. You can also specify a range of IP addresses.

1. Click **Discs & Drives**.

2. To make all of the discs available to some clients only:

   • Locate the **Volumes** folder in the file tree.

   To protect one or several resources, but grant access to the other resources:

   • Locate the resource you want to protect in the file tree.

3. Click **Access Rights** .

4. Open the **UNIX Security** page.
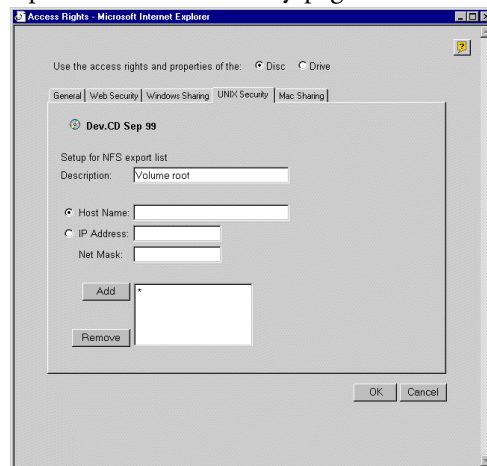
5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

6. Optionally fill in a description of the shared resource in the Description field. This text will appear in the directory listing on the NFS clients. If left blank, the list of clients that are allowed to mount the exported resource will appear instead.

Note: ❏ HFS files are not exported automatically. This has to be defined via the Web interface.

7. Choose whether you want to add a host name or an IP address.

Notes: ❏ When specifying a host name, you can use these wildcards:

   * which represents any number of characters, except dots (...).
   A single * implies any host name.

   ? which represents one character, except dot (.).

❏ You can specify an IP address/subnet mask pair in order to export the resource to an IP subnetwork.

8. Specify the new entry and click **Add** to add it to the NFS export list.

9. Click **OK**.

Note: ❏ Per file access control is configured by using native utilities such as chown, chgrp and chmod, on the mounted exports.

Accessing the Discs

The StorPoint CD integrates into your network operating system just like any other file server. Thus you can use standard commands to access it.

To access the discs from your UNIX applications, you must first mount the StorPoint CD to make the data available to your system. Some applications will not run properly unless the data is located at root level. Discs that include such applications must therefore be individually mounted.

Note: ❏ You will need root privileges to mount the StorPoint CD.

To access the StorPoint CD resources from a UNIX client, follow these steps:

1. Create a directory for the StorPoint CD.

```
mkdir <directory>
```

Example:

```
mkdir /storpoint_sales_dept
```

2. Display the export list.

```
showmount -e <IP address>
```

3. Mount the resource.

```
mount <IP address>:<resource> <directory>
```

where `<IP address>` is the IP address or host name

Example 1 (Root):

```
mount 192.16.253.80:/ /storpoint_sales_dept
```

Example 2 (Volumes directory):

```
mount 192.16.253.80:/volumes /storpoint_sales_dept
```

Example 3 (Disc):

```
mount 192.16.253.80:/volumes/acrobat
/storpoint_sales_dept
```

Notes: ❏ To increase performance, you can set the buffer size to 8192 as an option in the mount command on most UNIX systems, e.g.

```
mount -o rsize=8192 <IP address>:<resource>
<mountpoint>
```

❏ Different UNIX systems may have different mount command options. See the manual page on the client system.
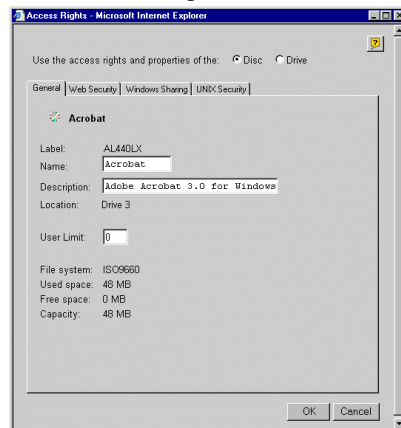
NFS for PC

The StorPoint CD can also be accessed using third party NFS software for PC computers. If you run a TCP/IP network, this is an alternative to SMB. Refer to the NFS software documentation for instructions on how to mount the StorPoint CD.

General Disc Settings

To specify the general settings for an inserted disc, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`.

3. Click **Discs & Drives**.

4. Locate the desired disc in the file **Volumes** folder.

5. Click **Access Rights** . The **Access Rights** dialog box appears:

AXIS StorPoint CD E100 User's Manual

6. Select the **General** tab. You can specify the following settings:

   • **Name** - The volume name that will be presented to the clients. If left blank, the volume label will be used.

   • **Description** - The description that will be displayed in Windows Explorer.

   • **User Limit** - The number of users that will have access to the disc. To disable this function, enter the value 0 into this field.

7. Click **OK**.

Section 6 Macintosh (AFP)

This section outlines the required configuration settings for running the StorPoint CD in the Macintosh (AFP) network environment. It also describes how to set up access restrictions.

If you are using the StorPoint CD in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- "Section 3 - *Microsoft & IBM Networks (SMB)*"
- "Section 4 - *NetWare (NCP)*"
- "Section 5 - *UNIX (NFS)*"
- "Section 7 - *FTP (File Transfer Protocol)*"
- "Section 8 - *Web Browser (HTTP)*"

Network Settings

No specific settings are required to make use of the StorPoint CD in the Macintosh (AFP) environment. However, you might want to change some of the default settings, e.g. the AFP server name or the authentication server settings.

If you have set an IP address, you can use the Administration Web pages to configure the StorPoint CD via a standard Web browser. The installation wizard will guide you through the procedure. See "*Wizard*" on page 79.

If you do not use TCP/IP and Web browsers on your network, you can edit all the parameter settings by modifying the [AFP] section in the config.ini file.

Note: ❏ See "*Text Editor in Macintosh*" on page 20, for more information on how to locate and modify the config.ini file.

AFP Protocols   The StorPoint CD supports the following transport methods:

- AFP over TCP/IP - max 255 users
- AFP over AppleTalk - max 125 users

Both protocols are enabled by default. However, you can disable the protocols by setting the appropriate configuration parameters.

AFP Server Name   The default AFP server name is AXIS<nnnnnn>AT, where <nnnnnn> are the last six digits of the StorPoint CD serial number. This is the name that will be presented to the Macintosh clients on the network. You can change that name by editing the AFP Server Name parameter. It can be useful to choose a more descriptive name, e.g. in order to indicate where the unit is located, or for what it is used.

Recommendation!   Choose a more descriptive name for your server, e.g CD Server.

Zone | A zone is a logical grouping of AppleTalk networks on a LAN or WAN. There can be multiple networks within a zone and, in some cases, multiple zones assigned to a network segment. An AppleTalk router is responsible for assigning zone information to the AppleTalk networks to which it is attached. You specify the zone by editing the Zone Name parameter.

Access Control | Access control is used for restricting access to the shared volumes and discs on the StorPoint CD. In the Macintosh (AFP) environment you can select whether you want to use an authentication server or passwords for access control. You choose which method to use by enabling/disabling the Use Authentication Server parameter.

Authentication Server | When using an authentication server, all user names and passwords will be verified against the authentication server. The user will then be granted access to specific resources depending on the permissions set for the user names used at logon.

Note: ❏ Any Macintosh computer can be defined as the Authentication Server provided it has file sharing enabled. This means the user names defined on the authentication server can be used also for the StorPoint CD.

To use this method for access control, you must enable the Use Authentication Server parameter. How to specify the permissions is described in "*Authentication Server*" on page 81.

Passwords | When using passwords, the user will be prompted for the password when trying to access the volume. The user will then be granted access to the volume and all its subfolders. You can define different passwords for specific resources.

To use passwords for access control, the Use Authentication Server parameter must be disabled. This is the default setting. How to specify passwords is described in "*Passwords*" on page 82.

Recommendation! | Using an authentication server for access control is the preferred method for Macintosh-based networks.

Wizard | The installation Wizard is a convenient way to set up your StorPoint CD for your Macintosh (AFP) environment. It will guide you through the following:

• Defining your server name and the zone you want your StorPoint CD to appear in.
• Defining how you want to control access to shared resources.

To run the Wizard, follow the steps outlined below:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, the User Name is set to root and the Server password is set to pass.

3. Click **Network Settings**.

4. Click **Wizard** . The **Network Settings Wizard** dialog appears.
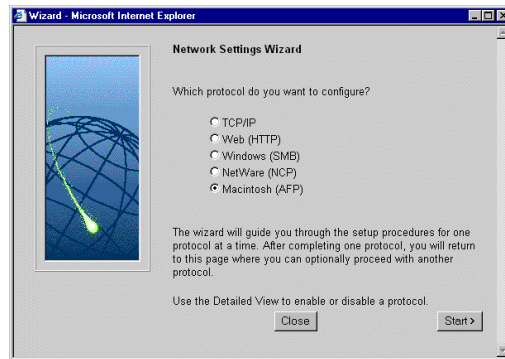
5. Choose **Macintosh (AFP)**. Click **Start** to proceed with the installation.

6. Follow the instructions on the screen. When finished, click **Close**.

7. Click **Detailed View** . The **Protocols** dialog box appears.

8. Select the **Mac (AFP)** tab and verify the settings.

9. Click **OK**.

Notes:
❑ Context sensitive online help is available for all parameters.

❑ The parameter list is described in detail in "Appendix A - *Parameter List*".

Access Control

In the Macintosh (AFP) environment, you have these options for access control:

•   Authentication server on page 81, or

•   Passwords on page 82.

You first configure the StorPoint CD for the method you want to use, see "*Access Control*" on page 79. By default the authentication server is disabled and no password is used. Consequently, Root and Guest can login and access all the shared volumes.
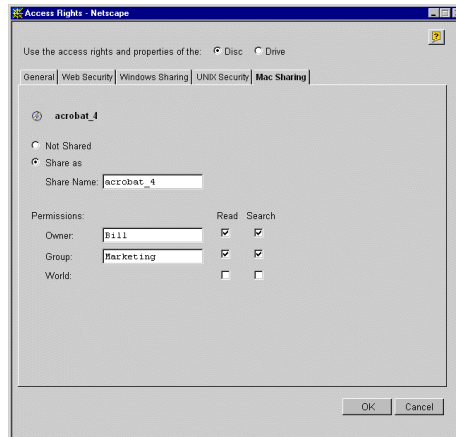
Authentication Server   Make sure the StorPoint CD has been configured to use an authentication server, see page 79.

To specify permissions for the user names defined on the authentication server, follow these steps:

1. From the Administration Web pages, click **Discs & Drives**.

2. Locate the volume you want to protect in the file tree.

3. Click **Access Rights** 🔑.

4. Open the **Mac Sharing** page.

5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

6. Select the **Share as** radio button, and enter a share name in the **Share Name** field.

7. Specify the name of the user you want to define as volume owner and the group to which the owner belongs. Note that the volume owner can only belong to one group. World includes all other users.

8. Check the permissions you want the users to have:

   • **Read** - Read files.
   • **Search** - List files and folders.

*Recommendation!*   Use the same setting for Read and Search.

9. Click **OK**.

Passwords

Make sure the StorPoint CD has been configured to use passwords, see page 79. By default, all users will have access to all the discs. The system files are protected by the Server password.

To change the settings:

1. From the Administration Web pages, click **Discs & Drives**.

2. Locate the volume you want to share in the file tree.

3. Click **Access Rights** 🔑 .
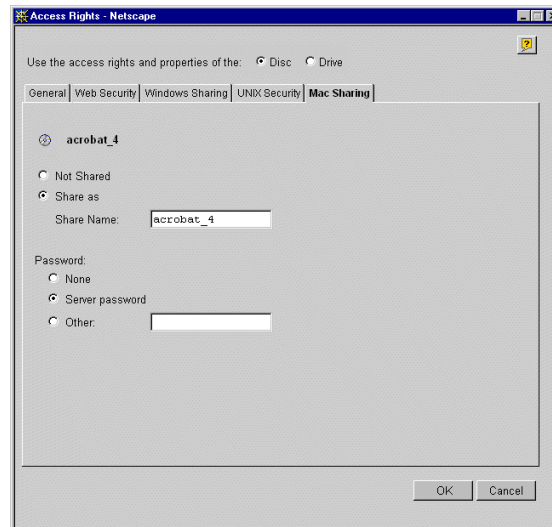
4. Open the **Mac Sharing** page.

5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

6. Select the **Share as** radio button, and enter a share name in the **Share Name** field.

7. Select the desired password option:

   - **None** - if you do not want to use passwords for protecting the resource.
   - **Server password** - if you want use the Server password for protecting the resource.
   - **Other** - if you want to specify a password in addition to the Server password.

8. Click **OK**.

Accessing the Discs

To mount the StorPoint CD on a Windows network from a Macintosh, follow these steps:

1. Open the **Chooser** from the **Apple** menu.

2. Click the **AppleShare** icon.
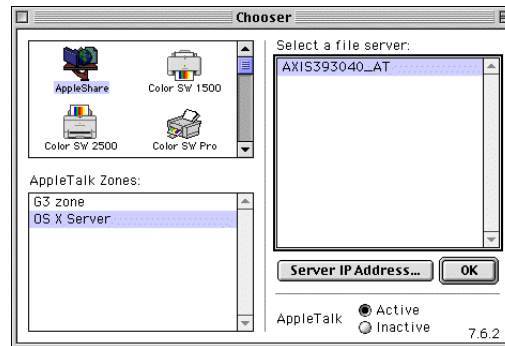
3. Depending on which AFP protocol you are using:

    • If you are running **AFP over AppleTalk**, select the name of your StorPoint CD from the **Select a file server** list. The default name is AXIS<nnnnnn>AT where <nnnnnn> are the last six digits of the StorPoint CD serial number. Click **OK.**

    • If you are running **AFP over TCP/IP**, click **Server IP Address...** and enter the IP address of your StorPoint CD in the popup dialog. Click **Connect**.
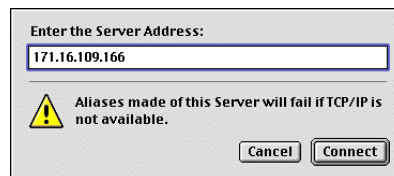
4. Select **Guest**, or **Registered User** if you are using an authentication server.

5. Click **Connect.**

6. Choose the access point:
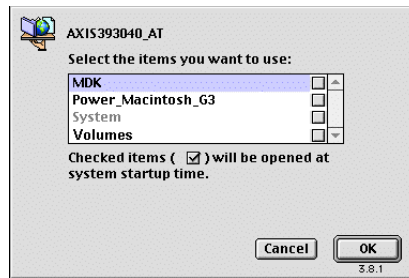
    - The volume name for access to an individual disc.
    - The **Volumes** folder for access to all the shared discs.
    - The **System** folder is always present and contains system configuration files.

7. Click **OK**.

8. An icon representing the shared resource will appear on your desktop.

Section 7 FTP (File Transfer Protocol)

This section describes how to configure the StorPoint CD for FTP.

The StorPoint CD can be used as an FTP server, i.e. it is possible to use the File Transfer Protocol (FTP) to put and get files. You can use FTP for:

• Upgrading the firmware
• Accessing the mounted discs

Note: ❏ The FTP protocol is always enabled in the StorPoint CD.

The following FTP commands are supported:

```
 get     put     dir     cd      pwd
```

If you intend to use StorPoint CD in a multiprotocol environment, proceed to the other relevant sections in this manual, namely:

• "Section 3 - *Microsoft & IBM Networks (SMB)*"
• "Section 4 - *NetWare (NCP)*"
• "Section 5 - *UNIX (NFS)*"
• "Section 6 - *Macintosh (AFP)*"
• "Section 8 - *Web Browser (HTTP)*"

Network Settings

Use the Administration pages within the StorPoint CD Web interface to specify the FTP settings. Follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass. To change the Server password, see "*Server Password*" on page 24.

3. Click **Network Settings**.

4. Click **Detailed View** 🔍. The **Protocols** dialog box appears.

5. Select the **FTP** tab.
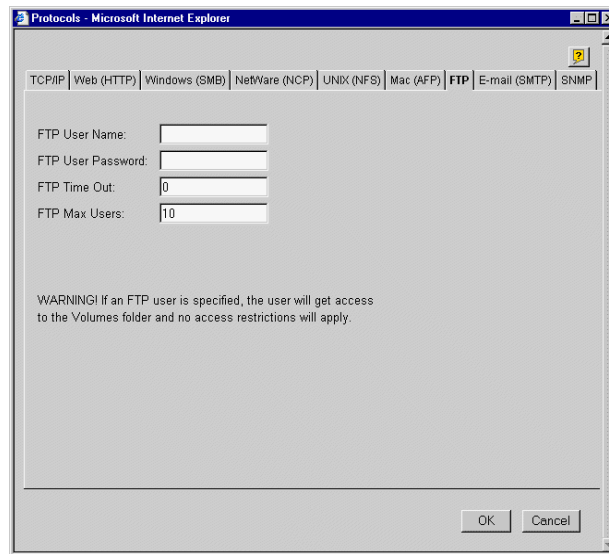
6. Optionally specify an alternative **FTP User Name** and **FTP User Password**. If you leave the fields empty, only the Server password can be used for logging in to the StorPoint CD via FTP.

   Other optional settings for FTP are:

   - **FTP Time Out**, which specifies the time in seconds of inactivity after which an FTP session is closed down.
   - **FTP Max Users**, which specifies the maximum number of simultaneous FTP sessions.

7. Click **OK**.

Notes: ❑   Context sensitive online help ☑ is available for all parameters.

   ❑   The parameter list is described in detail in "Appendix A - *Parameter List* " .

Access Control

You can always use the user name root in combination with the Server password for logging in to the StorPoint CD via FTP. This will grant access to all the resources in the **Volumes** folder, all the configuration files in the **System** folder and flash loading. This type of access is intended for the Administrator only.

However, if you want users to have the possibility to log in via FTP you can specify an alternative FTP user name and password on the **Network Settings - FTP** page. When users log in to the StorPoint CD using this user name, they will get unlimited access to the **Volumes** folder, but no access to the **System** folder.

Warning! ❏ A user logging in with the FTP user name and password will automatically get access to the **Volumes** folder, i.e. all the discs and their contents. **No** access restrictions will apply.

Section 8 Web Browser (HTTP)

This section describes how to configure the StorPoint CD for use via its Web interface.

The StorPoint CD supports HTTP over TCP/IP, which means that it works as a Web server available on the Internet and intranets.

If you are using the StorPoint CD in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- "Section 3 - *Microsoft & IBM Networks (SMB)* "
- "Section 4 - *NetWare (NCP)* "
- "Section 5 - *UNIX (NFS)* "
- "Section 6 - *Macintosh (AFP)* "
- "Section 7 - *FTP (File Transfer Protocol)* "

Network Settings

You use the Administration Web pages to configure the StorPoint CD.

Wizard The installation wizard is a convenient way to set up your StorPoint CD for your network environments.

1. Click **Network Settings**.

2. Click **Wizard** 　. The **Wizard Network Settings** dialog appears.
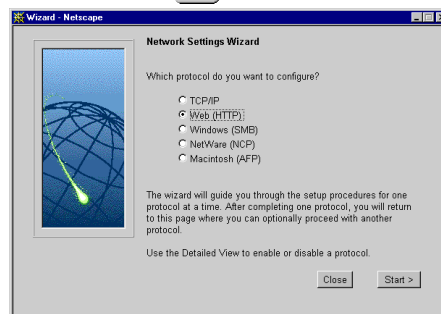
3. Choose **Web (HTTP)**. Click **Start** to proceed with the installation.

4. Follow the instructions on the screen. When finished, click **Close**.

5. Click **Detailed View** 　. The **Protocols** dialog box appears.

6. Select the **Web (HTTP)** tab and verify the settings.

7. Click **OK**.

Notes: ❑ Context sensitive online help 　 is available for all parameters.

❑ The parameter list is described in detail in "*Parameter List*" on page 111.

External Link

You can add a customized link on the **File View** page. For example, you might want to provide a link to a page on your company's intranet with guidelines on how to access the discs on the StorPoint CD.

Follow these steps:

1. Click **Network Settings**.

2. Click **Detailed View** 🔍 .

3. Select the **Web (HTTP)** tab.

   • In the URL to Page field, specify the full path to the page, e.g. `http://www.company.com`.

   • In the URL to Image field, optionally specify a link to an image to be used as a button for the customized link. Specify the full path, e.g. `http://www.comp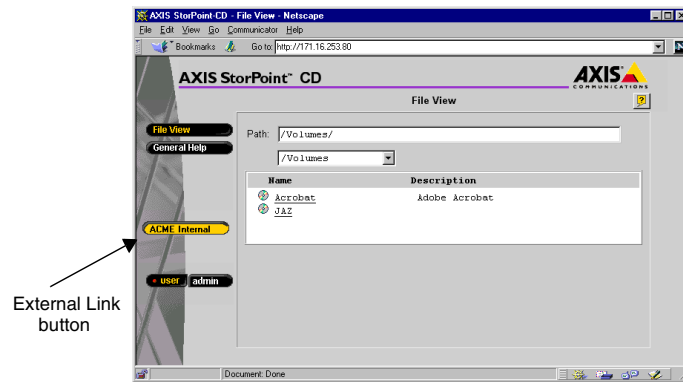any.com/images/image.gif`, or the path relative to the URL of the page, e.g. `images/image.gif`. If you leave the field blank, a standard button will be used.

External Link
button

Access Control

All users will always have access to the StorPoint CD **File View** page. However, individual discs can be protected by password. If required, you can limit Web browser access to the Administration pages only.

Use the Administration pages within the StorPoint CD Web interface for access control. Refer to "*Accessing the StorPoint CD Web Pages*" on page 21.

Note: ❏ The Server password implies full access to the StorPoint CD, regardless any additional password set for particular discs. To change the Server password, see "*Server Password*" on page 24.

Discs & Drives

To restrict user access to a particular disc:

1. Click **Discs & Drives**.

2. Locate the disc you want to protect in the file tree.

3. Click **Access Rights** 🔧 .

4. Select the **Web Security** tab.
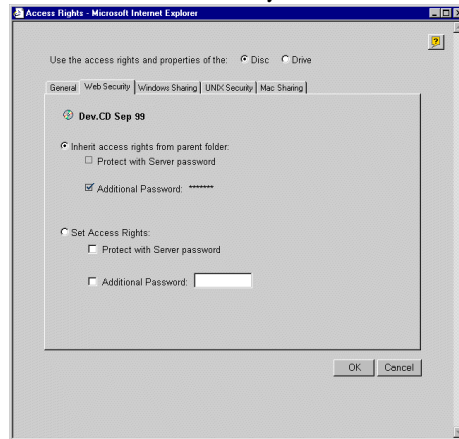
5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.

6. Select **Set Access Rights**. Optionally specify an additional password. Note that the Server password is always valid.

7. Click **OK**.

Disable User Access   To disable user access from the Web browser and thus limit access to the Administration pages only, follow these steps:

1. Click **Network Settings**.

2. Click **Detailed View** .

3. Open the **Web (HTTP)** page.

4. Uncheck the **Enable access to volumes via Web browser (HTTP)** check box.

5. Click **OK**.

Accessing the Discs

To access the discs from a Web browser, follow these steps:

1. Start the Web browser.

2. Enter the name or IP address of the StorPoint CD in the location/address field.

3. This brings you to the **File View** page of the StorPoint CD:
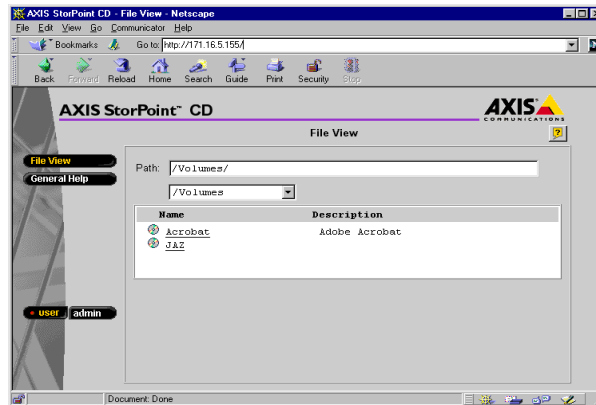
4. This page lists all the shared discs. You might be prompted to supply a password in order to access a particular discs. We recommend that you add this page as a bookmark in your Web browser.

Section 9   Recordable Discs

If you have connected a CD-Recordable drive to your StorPoint CD, users can copy data to recordable discs, such as CD-R and CD-RW discs. To limit the number of users, this function can be protected by password.

This section outlines the procedures for using recordable discs with your StorPoint CD.

Notes: ❏ The Basic versions of the StorPoint CD do not support writing to recordable discs.

❏ If you experience problems with writing data to a disc, see "*Errors when Writing Data to a Disc*" on page 129.

Copying Files to Recordable Discs

Follow these steps:

1. Insert a CD-R or CD-RW disc into the CD-Recordable drive.

2. Start the Web browser and enter the IP address of your StorPoint CD in the location/address field.

   The StorPoint CD **File View** page is displayed.
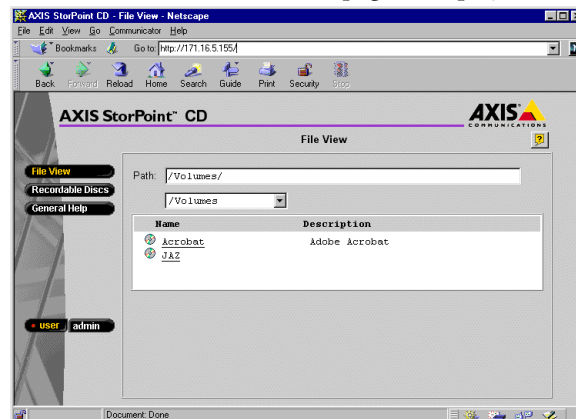
   If you have a CD-Recordable drive connected to your StorPoint CD, the **Recordable Discs** button appears in the main menu.

3. Click **Recordable Discs**. The **Recordable Discs** page is displayed. From this page you have access to the **Format Disc** and **Finalize Disc** dialogs.

The IDE version lists the drives as Master or Slave for each bus.

Formatting the Disc

Before you can start copying files to your disc, it must be formatted.

1. In the list, your unformatted disc will appear without a name and with status **Unformatted**. Click [icon] to open the **Format Disc** dialog.

2. Enter a name for your disc in the **Name** field.

3. Click **OK**. A progress bar will appear on the screen while your disc is being formatted.

When the progress bar disappears, you can start copying files to the disc.

Notes:
❑ Formatting a CD-R and a blank CD-RW will take about 20 seconds. Reformatting a CD-RW can take up to 80 minutes depending on writing speed and the amount of data previously stored on the disc.

❑ Any data stored on the disc will be erased when the disc is formatted.

Copying Files

To copy data to the formatted disc:

1. Open the Windows Explorer, or the file manager tool you normally use. Locate the formatted disc. You will find it under the **Volumes** folder.
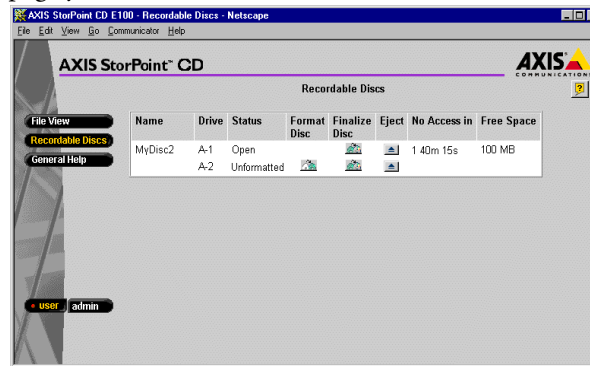
2. Copy the files to your disc.

3. Return to the **Recordable Discs** page.

Finalizing the Disc

When you have finished copying files to the disc, you must finalize it to make it readable by other computers. This will also close the recording session and prevent future recordings to the disc. The time it takes to finalize the disc depends on how many files and directories you have copied to it.

To finalize the disc:

1. Click [icon] to open the **Finalize Disc** dialog.

2. Click **OK**.

Your disc is now finalized and can be read by other computers.

Notes: ❏   It is not possible to copy files to a finalized disc.

❏   If your disc is a CD-RW, you can reformat the disc and re-use it for copying.

Setting a Password

You can protect the **Recordable Discs** page with a password in order to limit the number of users who have access to this page.

To set a password, follow these steps:

1. Start the Web browser and enter the IP address of your StorPoint CD in the location/address field.

   The StorPoint CD **File View** page is displayed.

2. Click **admin**. You will be prompted for the Server username and password. By default, these are set to root and pass. On the **This StorPoint** page, click the **Settings** button,

3. Select the **Recordable Discs** tab.
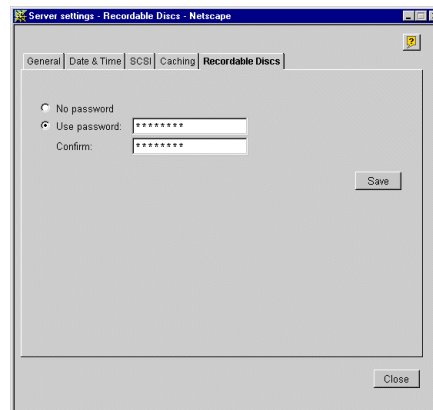
4. Enter a password in the **Password** field and confirm it in the **Confirm** field.

5. Click **Save**.

The user will now be prompted for this password when trying to access the **Recordable Discs** page.

Section 10 Hard Disk Caching

Note: ❏ The Basic versions of the StorPoint CD do not support hard disk caching.

This section describes how to use hard disk caching with your StorPoint CD.

Hard disk caching means that the inserted discs can be copied to a hard disk attached to the SCSI bus or the IDE bus.

StorPoint CD

Hard disk

The caching mechanism of the StorPoint CD involves both directory caching and complete mirroring (copying). It allows users to access the networked discs at hard disk speed.

You manage the hard disk caching facility via the StorPoint CD Web interface.
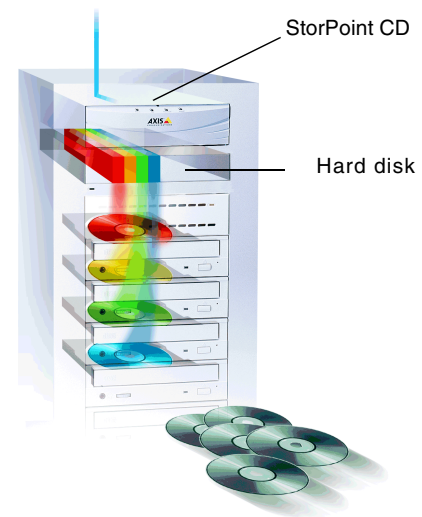
Disc Changers Because of the relatively long time needed to change discs in a changer, the data transfer rate may become unacceptably low when two users simultaneously attempt to read different discs. Hard disk caching will thus significantly increase the access speed if you are using changers.

Archiving The hard disk caching facility allows you to archive the cached discs, i.e. keep the cached discs stored on the hard disk even if the original discs are ejected from the drives. You can archive up to 255 volumes.

Capacity The number of discs that can be cached depends on the size of the hard disks as well as the size of the individual discs. About 90% of the disk space can be used for caching. For example, a 4.3 GB hard disk will allow six 650-MB discs to be cached. However, if each disc contains only 100 MB, about 38 discs can be cached on the hard disk.

A 650 MB disc is cached on the hard disk in less than six minutes.

Note: ❏ Avoid turning off the power supply during hard disk caching. However, should this happen, the StorPoint CD will restart caching the disc/discs automatically when the power supply has been restored.

Caching Options

Hard disk caching with the StorPoint CD has two main purposes:

- Increasing performance
- Archiving discs on the hard disk

Performance Caching

For performance caching, you specify the cache mode on the **This StorPoint | Server Settings | Caching** page. These options are available:

- **None** - The disc will not be cached.
- **Partial** - Information about the directory structure and files are cached on to the hard disk, but no actual data. This speeds up the directory browsing, especially with the use of disc changers. Optionally select how much space to allocate to file caching. The file cache is a separated part on a hard disk where disc files may be cached. The more hard disk space allocated to file caching, the larger files can be stored in the file cache.
- **Mirror** - A copy of the disc is created on the hard disk, and thus increasing performance, especially with multiple users or frequent access of multiple files. This method takes more time to carry out when a new disc is inserted. The mirroring will be performed in the background. Until a disc has been completely cached on the hard disk, the disc will be accessible from the disc drive. If there is not enough room on the hard disk to mirror all required discs, it is advisable to only mirror the most frequently used discs and enable the file cache. The most frequently used non-mirrored disc files will then be placed in the file cache. The file caching option is only available for Partial caching.

For more information, see "*Using Hard Disk Caching for Increased Performance*" on page 99.

Archiving Discs

The archiving option is only available from the **Discs & Drives** page:

- **Archive** - This option does the same as Mirror and in addition makes the created image persistent on the hard disk. The archived disc will be accessible to the users even if the original disc has been ejected from the drive. Archiving can be performed manually or automatically for one or more drives.

For more information, see "*Using Hard Disk Caching for Archiving Discs*" on page 100.

Verifying the Hard Disk

The caching facility requires at least one hard disk to be connected to the SCSI bus or the IDE bus. The StorPoint CD will automatically format hard disks and use them for hard disk caching. You can connect up to six or seven hard disks to your StorPoint CD depending on model.

Follow these steps to verify that a valid hard disk is connected to your StorPoint CD:

1. Start your Web browser and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server username and password. By default, this is set to `root` and `pass`. To change the Server password, see "*Server Password*" on page 24.

3. On the **This StorPoint** page, click the hard disk icon to verify that the StorPoint CD has detected a hard disk that can be used for hard disk caching.

4. Information about the hard disk will be displayed to the right.

   If the hard disk has been used before and includes a partition table it needs to be formatted before it can be used for hard disk caching. Click **Format** to do that. The formatting will remove all the information currently cached on the hard disk. This is not something you would normally want to do.

Using Hard Disk Caching for Increased Performance

To use hard disk caching to increase performance, follow these steps:

1. Start your Web browser and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server username and password. By default, this is set to `root` and `pass`. The **This StorPoint** page appears.

3. Click **Settings** and select the **Caching** tab.

Note: ❏ The **Caching** tab only appears if at least one hard disk has been connected to the StorPoint CD.

4. Select the default cache mode: None, Partial or Mirror. For Partial, select the size of the file cache from the drop down list.

5. Make the required selections by checking the appropriate checkboxes. Click **Save**.
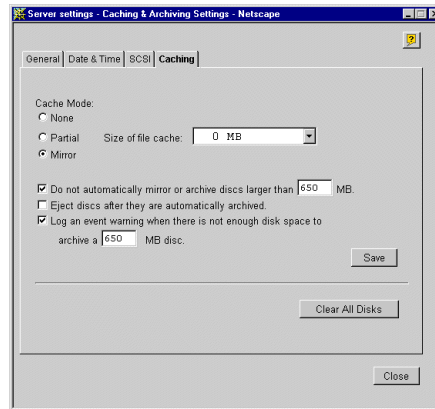
New discs will automatically be cached according to this setting when inserted.

Notes: ❏ If the cache mode has been set to **Mirror**, but there is not enough disk space or the **Do not automatically mirror or archive discs larger than xxx MB** option has been set to smaller than the current disc size, the cache mode for the disc will be **Partial**. Consequently, some of the files on the disc may be placed in the file cache.

❏ You can click the **Clear All Disks** button to clear the hard disk cache of data.

Using Hard Disk Caching for Archiving Discs

To use the hard disk caching for archiving discs, follow these steps:

1. Start your Web browser and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server username and password. By default, this is set to `root` and `pass`.

3. Open the **Discs & Drives** page. This page includes three views that you can select from the drop down list:

   • **Discs and File System** view
   • **Drives** view
   • **Cached Discs** view

The Discs and File System View

Manual archiving is managed from the **Discs and File System** view.
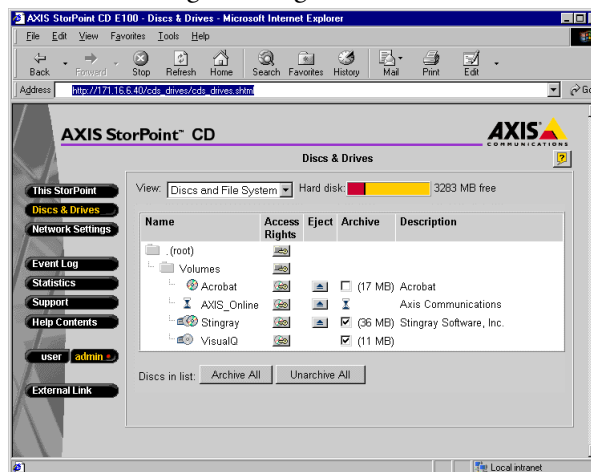
The **Hard disk** bar at the top of the page shows how much of the total hard disk space that is currently being used for archived copies and cached data. The free space available for archiving new discs is noted next to the bar. If you have more than one hard disk attached to the StorPoint CD, the size of the largest disc that can be archived will be displayed below the bar. For more information about free hard disk space, go to the **Statistics** page.

The table lists:

- inserted discs
- inserted archived discs
- archived discs that are currently not inserted
- inserted mirrored disc
- discs that are currently being cached.

Note: ❑ Discs with multiple file systems are displayed as two discs in the **Discs and File System** view.

Manual Archiving | Check the **Archive** checkbox to copy the disc to the hard disk. Unarchiving a disc causes it to go back to the global setting mode. At the bottom of the page, you can click **Archive All** or **Unarchive All** to affect all the discs simultaneously.

Note: ❏ This checkbox only appears if there is a hard disk connected to the StorPoint CD.

Access Rights | Click the **Access Rights** icon to display the **Access Rights** dialog box where you can set properties such as sharing options, user limits and access rights. Click ⬚ to set the access rights for the root or the volumes folder. Click ⬚ to set the access rights for the disc.

Eject | Click ⬚ to eject a disc. Note that the disc will be ejected even if the disc is in use or the drive is locked. However, a message will be displayed if you try to eject a disc that is currently in use.

Note: ❏ This function does not apply to changers.

Description | Add a text describing the disc contents in the **Access Rights** dialog box. Display this dialog box by clicking the **Access Rights** icon.

The Drives View | Automatic archiving is managed from the **Drives** view.
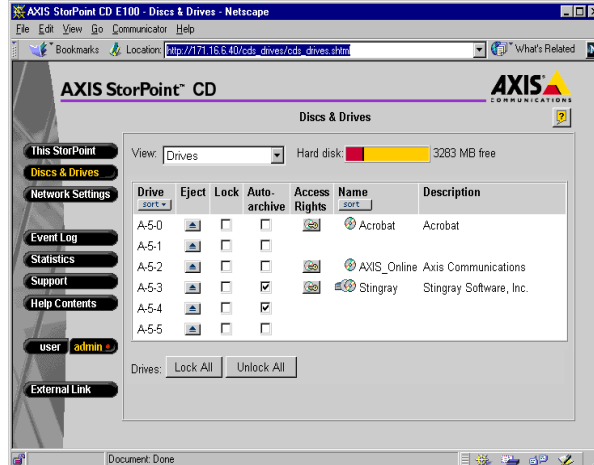
SCSI Server - the **Drive** column lists all the drives by SCSI ID. In case of a Dual SCSI server, A or B will be displayed to indicate which bus the drive is connected to. If a LUN based device like a changer is attached, the LUN will also be displayed. "A-6-0" indicates SCSI ID 6, LUN ID 0 on bus A.
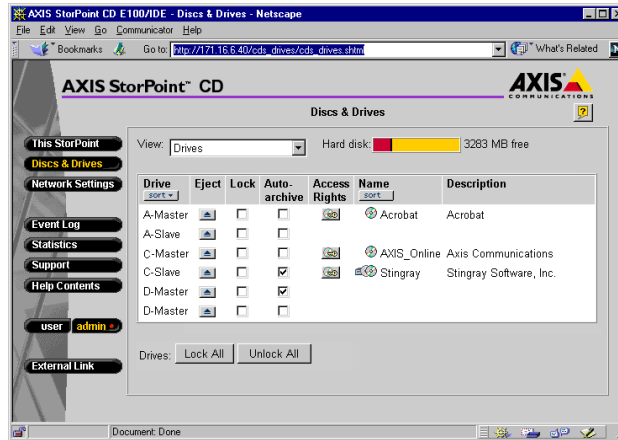
IDE Server - the **Drive** column lists all the drives by location. If a LUN based device like a changer is attached, the LUN will also be displayed. "A-Master-0" indicates the device connected as Master, LUN ID 0 on bus A.

Note: ❑ Discs with multiple file systems are displayed twice with the same drive number in the **Drives** view.

Automatic Archiving	Check the **Auto-archive** checkbox to automatically archive all discs that will be inserted into this drive.

Note: ❑ This checkbox only appears if there is a hard disk connected to the StorPoint CD.

Eject	Click ⏏ to eject a disc. Note that the disc will be ejected even if the disc is in use or the drive is locked. However, a warning message will be displayed if you try to eject a disc that is currently in use.

Lock	Check the **Lock** checkbox to lock a drive. At the bottom of the page, you can click **Lock all** or **Unlock All** to affect all the drives simultaneously. When the drive is locked it cannot be ejected with the eject button on the physical drive. However, it can still be ejected from the **Discs & Drives** page.

Sorting	Click **Sort** to sort the items by Drive or Name, respectively.

|	
Access Rights	Click the **Access Rights** icon to display the **Access Rights** dialog box where you can set properties such as sharing options, user limits and access rights. Click 🔑 to set the access rights for the root or the volumes folder. Click 🔑 to set the access rights for the disc.

Note: ❑ You can click the **Stop Archiving** button to immediately interrupt all current caching jobs. To restart archiving, check the appropriate Archive/Auto-archive checkbox(es) again.

Shared Drive	Click the **Access Rights** icon to display the **Access Rights** dialog box. Select if you want to use the access rights and properties of the Disc or the Drive by checking the appropriate checkbox. By selecting **Drive**, all discs inserted into the drive become accessible under the drive's name and inherit the drive's access rights and properties.

Notes: ❑ When a disc is inserted into a shared drive and then is archived, the disc copies the drive's access rights but keeps its original name.

❑ When a disc in a shared drive is archived, or if a previously archived disc is inserted into a shared drive, the drive icon will indicate that the disc in the drive is not accessible under the drive's name. This is because the disc is already archived under its original name.

The Cached Discs View

This view provides an overview of all cached ⊙ and mirrored 🗂 discs that are not inserted.
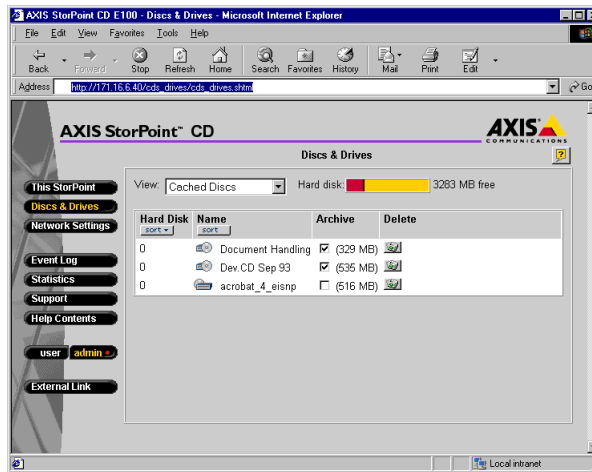
When an un-inserted mirrored disc is deleted it is removed from the list on this view.

Note: ❑ The IDE Server will list the location of the hard disks. e. g. A-Master.

Hard Disk Full

If a hard disk becomes full and you want to cache another disc, you must first free some space on the hard disk. To do this, go to the **Discs & Drives** page, select the **Discs and file system** view and locate an archived disc that is currently not inserted ⊙ . Uncheck the **Archive** checkbox. Consequently, this disc will no longer be accessible to the users.

Section 11 Monitoring the StorPoint CD

This section describes the following monitoring tools:

Tools	See ...
Event log	page 105
Statistics	page 106
E-mail	page 107
SNMP	page 107
AXIS ThinWizard - a tool for locating and managing all the AXIS servers on your network	page 109

Event Log

The event log is stored in the `logfile.txt` file located in the `System/ServerProperties` folder. In the event log, the StorPoint CD writes information such as:

🔲 Information, e.g. completed tasks

⚠️ Warnings, e.g. hard disk full

🛑 Errors, e.g. installation failures

To display the event log, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the password, see "*Server Password*" on page 24.

3. Click **Event Log**.
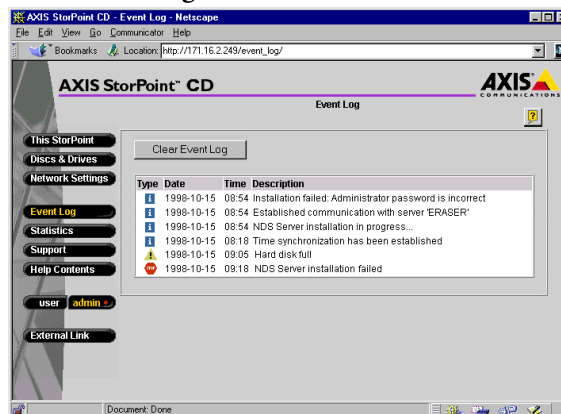
All events are viewed in the same order as they entered the log.

Notes:
🔲 If a synchronization source has been found or if the correct date and time have been set manually, date information will appear in the log file.

🔲 When the server is restarted, a sub-set of critical events will remain in the event log.

🔲 Click **Clear Event Log**, to clear the event log of events.

Statistics

To display the statistics:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass. To change the server password, see "*Server Password*" on page 24.

3. Click **Statistics**.
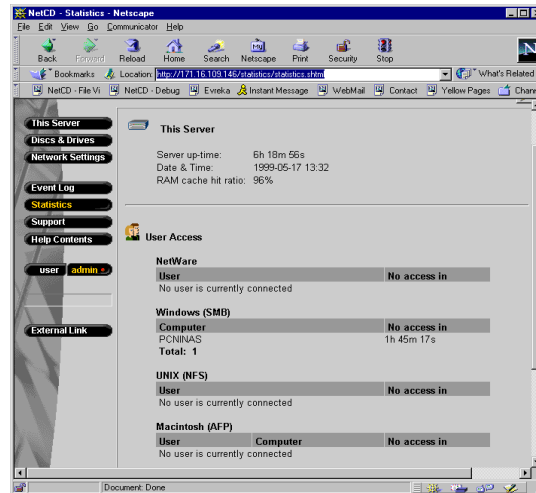
The StorPoint CD presents statistics such as:

*   Server up-time.
*   Cache hit ratio in the RAM cache.
*   List of users who are currently connected to the StorPoint CD in each particular network environment.
*   Available space on the attached hard disk(s).
*   List of cache state and the number of times a disc has been accessed.

Note: ❏ The hard disk information appears only if you have attached a hard disk to the SCSI bus or the IDE bus.

E-mail (SMTP)

To specify the settings for your e-mail facilities:

1. Start your Web browser and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to pass. To change the server password, see "*Server Password*" on page 24.

3. Click **Network Settings** within the Administration Web pages.

4. Click **Detailed View** . The **Protocols** dialog box appears.

5. Select the **E-mail (SMTP)** tab. Specify the settings for the mail server.

6. Enter the Administrators e-mail address.

7. Select mail log events from the **Mail Log Events** drop down list. These will be sent to the e-mail address specified above. Click **OK**.

SNMP

You can use SNMP (Simple Network Management Protocol) for remote monitoring of the StorPoint CD.

General Information   SNMP refers to a set of standards for network management, including a protocol, a database structure specification, and a set of data objects. The StorPoint CD SNMP implementation runs in the TCP/IP environment.

The management is handled by NMS (Network Management System) software running on a host on your network. The NMS software communicates with network devices by the means of messages, which are references to one or more objects.

A message can be a question or an instruction to a device, or an alarm triggered by a specific event in a device. Objects are contained in data bases called MIBs (Management Information Base), where MIB-II is a standard database.

The StorPoint CD supports all relevant parts of MIB-II. It also includes a private enterprise MIB, the AXIS MIB, which is described below.

System Requirements   In order to make full use of the SNMP support, you will need an NMS software that allows you to install private enterprise MIBs.

The AXIS MIB   The AXIS MIB includes a large number of objects that can be categorized as follows:

- Menu objects - used for viewing and changing the StorPoint CD configuration from the NMS program.
- Status and administration objects - used for monitoring the StorPoint CD and storing parameter settings.
- Trap objects - used for alarm at various error conditions.

To add the AXIS MIB to your NMS software:

1. Get the MIB file from the following location:

   ftp://ftp.axis.com/pub/axis/software/cd_srv/utility/mib/

2. Install the AXIS MIB according to instructions in your NMS software documentation.

For technical details, view the MIB file `axis_cd.mib` using a text editor.

SNMP Settings   To configure your StorPoint CD for SNMP:

1. Start your Web browser and enter the name or IP address of the StorPoint CD in the location/address field.

2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the server password, see "*Server Password*" on page 24.

3. Click **Network Settings**.

4. Click **Detailed View** .

5. Select the **SNMP** tab.
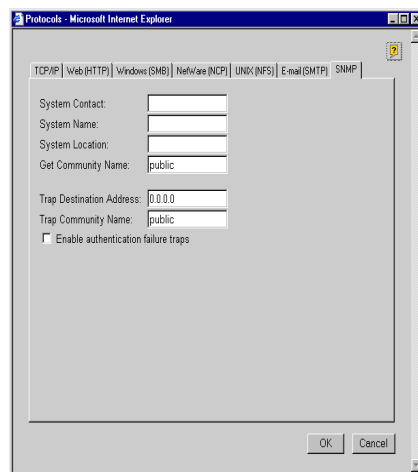
6. Specify the settings, and click **OK**.

AXIS ThinWizard

AXIS ThinWizard provides a convenient interface for locating and managing all the AXIS servers on your network. AXIS ThinWizard runs on Windows NT, Windows 95/98 and UNIX.

Note: ❑ AXIS ThinWizard requires the IP address of your StorPoint CD to be set. Refer to "*Assigning an IP Address*" on page 13.

Installing AXIS ThinWizard

The AXIS ThinWizard is included on the AXIS Online CD. The required software can also be downloaded from the Axis Web Site free of charge. An installation wizard will guide you through the installation procedures.

Accessing AXIS ThinWizard

Follow these steps to access the AXIS ThinWizard:

1. Make sure an AXIS ThinWizard server is running on your network.

2. Start the Web browser and enter the name or IP address of the AXIS ThinWizard server in the location/address field. If the AXIS ThinWizard server is installed on a port other than port number 80, you must add the port number to the URL:

```
http://<IP address>:<port number>/
```

Example:

```
http://192.16.253.80:8011/
```

3. The AXIS ThinWizard start page appears.
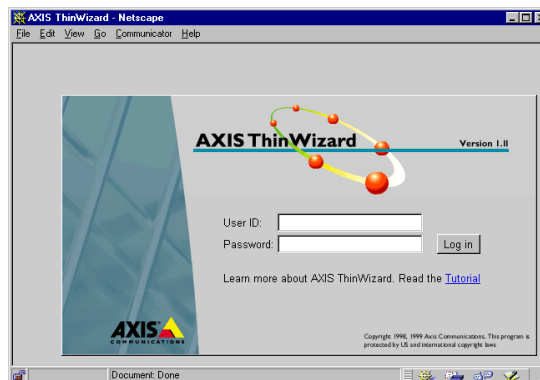
4. Enter your user ID and password and click **Log in**.

Creating a Network Group

Before you can access your StorPoint CD via AXIS ThinWizard, you must first create an appropriate network group. A network group is defined by the specific IP address ranges and server types i.e. storage servers, print servers etc. that are included.

Follow these steps to create a network group:

1. Click **Network Groups** in the AXIS ThinWizard main menu.

2. Click **Create**.

3. The Create Network Group page opens. Type a name for the new network group.

4. Specify the IP address ranges and AXIS server types to be included in the network group. If you are only interested in storage servers, deselect all options but the **Storage Servers** option.

5. Click **OK** to create the network group.

Note: ❑ You can create as many network groups as you need.

Accessing the StorPoint CD

Follow these steps to access the StorPoint CD Web pages via AXIS ThinWizard:

1. Click **Manage Network** in the AXIS ThinWizard main menu.

2. Select the network group that includes your StorPoint CD from the pull-down list.

3. All the detected AXIS servers included in the network group are listed.
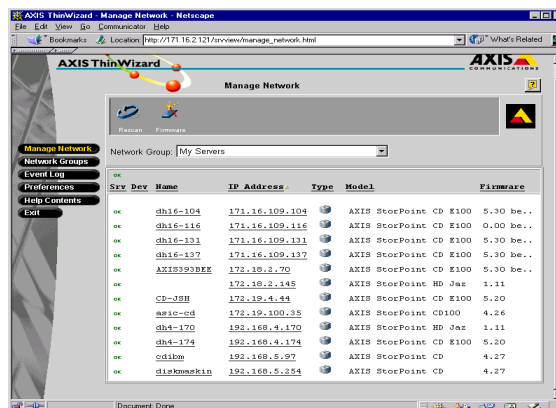
4. Click the IP Address link of your StorPoint CD. The StorPoint CD **File View** page appears.

Note: ❑ The AXIS ThinWizard can also be used for upgrading the StorPoint CD software. Refer to "*Upgrading the Firmware*" on page 135.

Appendix A Parameter List

This section includes the StorPoint CD parameter list. It also explains the StorPoint CD directory structure and how to edit the configuration settings.

The Configuration File

This table shows the parameter list stored in the `config.ini` file located in the `System/ServerProperties` folder, see the "*Directory Structure*" on page 116. The middle column shows the default values, when applicable. The right-hand column gives a brief description of the parameters.

Note: ❑ Parameters denoted by an asterisk (*) are not available in the Basic versions of the StorPoint CD.

Parameter name	Value	Description
[Server]		
HardwareAddress	= 00:40:8c:11:00:86	The StorPoint CD hardware address. Default is the *serial number*. You can set a Locally Administrated Address. The value shown is an example only.
Date	= 99-11-01	yy-mm-dd, enter the date followed by ! to set manually
Time	= 12:00:00	hh:mm:ss, enter the time followed by ! to set manually
FactoryDefaults	= no	Set to *configuration*, *volumeProperties* or *all*.
Restart	= no	Set to *yes* to restart the StorPoint CD.
TimeZone	= UTC	Must be set to the time zone that the StorPoint CD is operating in. Refer to "*Time Zone Parameter Values*" on page 115.
TimeSyncSource	= NDS	Specifies the time source for the StorPoint CD. Set to *NDS* for NetWare IPX. Set to *NTP* for NetWare PureIP, UNIX and SMB over TCP/IP. Note that you will need third party software on your Windows NT server to obtain support for NTP. Set to None for manually setting the time.
ServerPassword	= pass	The Supervisor, Administrator or Root user password used for basically all protocols; i.e. HTTP, NetWare bindery, SMB user level, SNMP and FTP. Once written into the configuration file, the password will not be shown but replaced with *'s, representing each letter of the password.
Shut Down	= no	Set to *yes* to shut down the StorPoint CD.
NetworkSpeed	= auto	The network speed. Set to *10*, *100* or *auto*. Default is *auto*, which means that it is automatically detected by the StorPoint CD.
NetworkDuplex	= auto	The network duplex. Set to *full*, *half* or *auto*. Default is *auto*, which means that it is automatically detected by the StorPoint CD.
CDWritePassword*	=	Optional password used for protecting the Recordable Discs page. Set to *yes* or *no*.
[SCSI]		
SCSITermination	= on	Always *on*.
JukeBoxLockTime	= 0	Specifies the maximum duration for a data read operation during multiple access requests to prevent disc changer fluttering. Default is *0* seconds which disables the function.
Disconnect_Reselect	= on	Set to *off* to disable the disconnect/reselect function in the disc drives.
BusMode	= Asynchronous	Specifies the transfer mode on the SCSI bus: *Asynchronous*, *Synchronous*, *Fast-10 or Ultra*.
[IDE]		
JukeBoxLockTime	= 0	Specifies the maximum duration for a data read operation during multiple access requests to prevent disc changer fluttering. Default is *0* seconds which disables the function.
[IP]		

Parameter name	Value	Description
InternetAddress	= 192.36.253.80	The StorPoint CD IP address.
DefaultRouter	= 0.0.0.0	The IP address for the default router. All traffic directed outside the local network (according to the NetMask) is sent to the default router. Any re-routing via other routers is done automatically. The default *0.0.0.0* indicates that no default router is set.
NetMask	= 0.0.0.0	Used to determine when the traffic should be sent via a router. For example, the normal class C mask is 255.255.255.0. The default *0.0.0.0* indicates that automatic router sensing is used.
BOOTPEnable	= yes	Enables BOOTP IP address setup.
DHCPEnable	= yes	Enables DHCP IP address setup.
RARPEnable	= yes	Enables RARP IP address setup.
DomainName	=	Name of the domain to which the StorPoint CD belongs.
PrimaryDNS	= 0.0.0.0	The IP address of the primary DNS server. Used for identifying computers with names instead of IP addresses.
SecondaryDNS	= 0.0.0.0	The IP address of the secondary DNS server, should the primary DNS server be unavailable or disconnected.
NTPServer	=	Name or IP address for the NTP server.
EnableWINS	= no	Enables WINS over NetBIOS/TCP/IP.
PrimaryWINSserver	= 0.0.0.0	The IP address of the primary WINS server.
SecondaryWINSserver	= 0.0.0.0	The IP address of the secondary WINS server, if required.
ProtectIP	= no	Protects the StorPoint CD from changing the IP address using the ARP or Web browser method. Default is *no*, which allows the IP address to be set within 30 minutes from restart.
SLPDirectoryAgent1	= auto	The IP address or DNS name of an SLP directory agent.
SLPDirectoryAgent2	= auto	The IP address or DNS name of an SLP directory agent.
SLPScopeList	= DEFAULT	The SLP scope to which the StorPoint CD belongs. SLP scopes are used for collecting services into logical or administrative groups. Specify the scope names in a list separated by commas, i.e. *scope1,scoper2,scope3...* The default value *DEFAULT* means that no specific scope will be configured.
[HTTP]		
HTTPEnable	= yes	Enables HTTP. Set to *no* to restrict users from accessing the CD-ROMs from a Web browser.
EnableMediaAccess	= yes	Enables access to the inserted discs. When set to *no*, only administration is available from HTTP.
ExternalLink	=	Specifies the URL to a customized link, e.g. to your company's Web site. The link will be available from the StorPoint CD Web interface.
ExternalImage	=	Specifies the URL to the image that will indicate the customized external link.
[FTP]		
FTP User name	=	Alternative user name for accessing the StorPoint CD Volumes folder via FTP.
FTP User password	=	Once written into the configuration file, the password will not be shown but replaced with *'s, representing each letter of the password.
Timeout in seconds	= 0	The time of inactivity in seconds after which an FTP is closed down.
FTP Max Users	= 10	The maximum number of simultaneous FTP sessions.
[SMB]		
SMBEnable	= yes	Enables SMB.
ServerName	=	The server name in the SMB environment. Default is *AXIS<nnnnnn>* where *nnnnnn* are the last six digits of the serial number.
ServerPassword	= pass	The Supervisor, Administrator or Root user password used for basically all protocols; i.e. HTTP, NetWare bindery, SMB user-level, SNMP and FTP. Once written into the configuration file, the password will not be shown but replaced with eight *'s, representing the password.
Domain/GroupName	=	Name of theStorPoint CD workgroup in SMB. If not specified, the StorPoint CD will appear in the workgroup that comes first in alphabetical order.
SecurityMode	= shareLevel	Specifies the security mode used in SMB: *userLevel* or *shareLevel*.

Parameter name	Value	Description
NTDomainInstallation	= no	Set to *yes* when you want to install the StorPoint CD in an NT domain.
EnableNBT	= yes	Enables SMB over NetBIOS/TCP/IP.
NBTscopeID	=	Defines the NetBIOS scope to which the StorPoint CD belongs.
EnableNetBEUI	= yes	Enables SMB over NetBIOS/NetBEUI.
NetBEUIFrameType	= auto	If set to *auto*, 802.2 or DIX will automatically be selected by scanning the network. If required, the frame type can also be set to either *802_2* or *dix*.
[NFS]		
NFSEnable	= yes	Enables NFS.
DefaultUid	= -2	Default user id to be used when authenticating PCNFSD clients. Disable by setting the parameter to *0* (zero).
PCNFSDAuthentServer	= 0.0.0.0	The IP address of the PCNFSD authentication server used for authenitcating PCNFSD clients. The default *0.0.0.0* disables the function.
ExportVolumes	= yes	Enables export of each new disc inserted as a mount point. If you restore the factory default settings, all the currently inserted discs will be exported.
LowerNonCase	= yes	Set to *yes* to displays non-case sensitive file systems in lower case.
[SNMP]		
GetCommunityName	= public	Specifies the community that has read only access to all supported SNMP objects except writeCommunity, SupervisorPassword and ftpPassword. It corresponds to the readCommunity SNMP object.
TrapDestination	= 0.0.0.0	Specifies the IP address which SNMP traps are sent to. It corresponds to the trapAddress SNMP object. Default is *0.0.0.0*, i.e. all SNMP traps are disabled.
TrapCommunityName	= public	Specifies the community for all generated SNMP traps. It corresponds to the trapCommunity SNMP object.
SystemContact	=	Optional entry which should be in plain text and may be used to show the name of the system contact person.
SystemName	=	Optional entry which should be in plain text and may be used to show the name of the location of the system.
SystemLocation	=	Optional entry which should be in plain text and may be used to show the name of the location of the system.
AuthenticationTrap	= disabled	Disables the SNMP authentication failure traps. It corresponds to the snmpenableAuthenTraps (MIB-II) SNMP object.
[NetWare]		
NWEnable	= yes	Enables NetWare support.
IPXEnable	= yes	Enables the IPX protocol.
Frame_802.2	= auto	Enables the 802.2 frame type.
Frame_802.3	= auto	Enables the 802.3 frame type (Ethernet versions only).
Frame_EthernetII	= auto	Enables the Ethernet II frame type (Ethernet versions only).
Frame_SNAP	= auto	Enables the SNAP frame type.
NetWareIP_Enable	= no	Enables NCP over IPX/UDP (NetWare/IP).
NetWareIP_DSS_Server	=	The IP address of the DSS server.
PureIPEnable	= yes	Enables NCP over TCP/IP (PureIP).
ServerName	= AXIS<nnnnnn>_NW	NetWare server name to be presented to the NetWare clients. Default is AXIS<*nnnnnn*>_NW where *nnnnnn* are the last six digits of the serial number.
InternalNetAddress	= nn-nn-nn-nn	Internal network address. Default is *nn-nn-nn-nn* where *nnnnnnnn* are the last eight digits of the serial number.
BurstMode	= on	Enables burst mode.
ShowAllVolumes	= yes	Shows all drives and discs also at SYS level.
BinderyEnable	= yes	Enables bindery mode login. When using NDS, set to *no* to increase system security. The Supervisor can always login in bindery mode even if this parameter is set to *no*.
BindAuthentication	=	Name or IP address of the server used for authenitcating clients.
NDSEnable	= yes	Enables NDS mode.
NDSTreeName	=	Name of the tree where you wish to install the StorPoint CD.
NDSServerContext	=	Distinguished name of the context in the NDS tree where you wish to install the StorPoint CD, e.g. *Corp.Acme*.

Parameter name	Value	Description
NDSAdminName	=	Distinguished name of a user or administrator with Supervisor or Create rights to the context where you want to install the StorPoint CD, e.g. *Admin.Acme*.
NDSAdminPassword	=	Password for the administrator defined in NDSAdminName. Once written into the configuration file, the password will not be shown but replaced with *'s, representing each letter of the password.
NDSInstall	= no	Set to *install* when you are ready to install the StorPoint CD in NDS, or *forced* to overwrite the NDS server object.
NDSRightsStorage	= NDS	Set to *NDS* to store the access rights in the NDS tree. Set to *File* to store the access rights in a file on the Novell server. This is necessary if you do not allow schema extensions in your NDS tree, or if you do not have Supervisor access rights.
NDSRightsFile	=	If you have set NDSRightsStorage to *File*, specify the whole path to the file on the Novell file server using this syntax: *SERVER/VOLUME:DIR/.../FILE.DAT* where *SERVER* is a NetWare server name or IP address. The specified directory must exist and the StorPoint CD must have Read, Write, Create, Erase, Modify and File Scan rights. The StorPoint CD will create the file once you start adding trustees.
TimeSyncSources	= SAP	For IPX, use *SAP* or specify a list of time server names to be contacted for time synchronization. For PureIP and NetWare/IP, specify a list of server names or IP addresses. Default is *SAP* for the network agreed time.
[AFP]		
AFPEnable	= yes	Enables AFP.
AppleTalk_Enable	= yes	Enables AFP over AppleTalk.
AFPIP_Enable	= yes	Enables AFP over TCP/IP.
ServerName	=	The server name in the AFP environment. Default is *AXIS<nnnnnn>* where *nnnnnn* are the last six digits of the serial number.
ZoneName	=	The zone name to which the StorPoint CD server belongs.
AuthenticationServer	=	Name of the server used for authenitcating clients.
AuthenticationEnable	= no	Enables the authentication server. Default is *no*.
[SMTP]		
Primary Mail Server	= mail	Name or IP address of the primary mail server.
Secondary Mail Server	=	Name or IP address of the secondary mail server.
Administrator Address	=	The administrator's e-mail address.
Mail Log Events	= no	*No* means that no log events will be sent via e-mail to the administrator. *Error* means that only errors will be sent to the administrator. *Warning* means that only warnings will be sent to the administrator. *All* means that all logged events will be sent via e-mail to the administrator
[HDCache]*		
CacheMode*	= mirror	The default caching method to be used each time you insert a new disc in one of the drives. *None* means no caching. *Partial* means that the directory structure is cached to allow fast file browsing. *Mirror* means complete caching. The hard disk will contain a complete copy of the mirrored disc.
ClearAllDisks*	= no	Set to *yes* to remove all information from the hard disk.
EnableMaxAutoArchiveSize*	= no	Set to *yes* to enable the *Max Auto Archive Size* option.
MaxAutoArchiveSize*	= 650	Specifies the maximum disc size to auto archive.
AutoEject*	= no	Set to *yes* to enable the *Auto Eject* function.
EnableLowDiskWarning*	= yes	Set to *no* to disable the *Low Disk Warning* option.
LowDiskTreshold*	= 650	Specifies for which disc size a low disk warning shall be displayed.
FileCacheSize*	= 0	Specifies how much of the disk space to use for caching. Default is *0* which disables the function.
[END]		

Time Zone Parameter Values

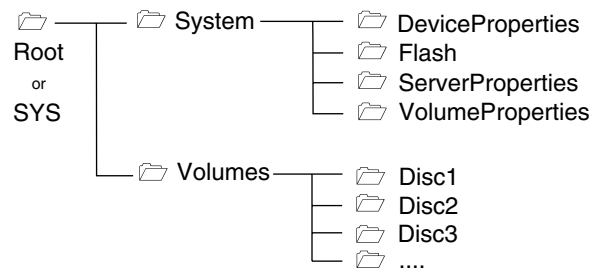This table lists the time zone as the number of hours +/- UTC.

TimeZone parameter value	Hours +/- UTC	TimeZone parameter value	Hours +/- UTC
UTC	0	GB_Eire	0
UTC+1_(No_DST)	1	Western_Europe	0
UTC+2_(No_DST)	2	Iceland	0
UTC+3_(No_DST)	3	Central_Europe	1
UTC+4_(No_DST)	4	Poland	1
UTC+5_(No_DST)	5	Eastern_Europe	2
UTC+6_(No_DST)	6	Turkey	3
UTC+7_(No_DST)	7	Western_Russia	3
UTC+8_(No_DST)	8	US_CAN_Eastern	-5
UTC+9_(No_DST)	9	US_CAN_Central	-6
UTC+10_(No_DST)	10	Saskatchewan	-6
UTC+11_(No_DST)	11	US_CAN_Mountain	-7
UTC+12_(No_DST)	12	US_Arizona	-7
UTC-1_(No_DST)	-1	US_CAN_Pacific	-8
UTC-2_(No_DST)	-2	US_Alaska	-9
UTC-3_(No_DST)	-3	US_Aleutian	-10
UTC-4_(No_DST)	-4	Cuba	-5
UTC-5_(No_DST)	-5	Egypt	2
UTC-6_(No_DST)	-6	Libya	1
UTC-7_(No_DST)	-7	Sudan	2
UTC-8_(No_DST)	-8	Tunisia	1
UTC-9_(No_DST)	-9	Brazil_Noronha	-2
UTC-10_(No_DST)	-10	Brazil_Sao_Paulo	-3
UTC-11_(No_DST)	-11	Brazil_Manaus	-4
UTC-12_(No_DST)	-12	Brazil_Rio_Branco	-5
		Chile	-4
		Chile_Easter_Isl	-7
		Paraguay	-4
		Aust_Adelaide	9h30m
		Aust_Darwin	9h30m
		Aust_Hobart	10
		Aust_Perth	8
		Aust_Sydney	10
		New_Zealand	12
		Afghanistan	4h30m
		Armenia_Azer	4
		Burma	6h30m
		China_PRC	8
		India	5h30m
		Iran	3h30m
		Iraq	3
		Jordan	2
		Kazak_Kirgi	6
		Lebanon	2
		Syria	2

UTC = Universal Time Coordinated, which used to be known as Greenwich Mean Time (GMT), i.e. the local time at the Greenwich meridian (zero degrees longitude).

DST = Daylight Saving Time. No_DST means that automatic adjustment for DST is not included. The parameter values shown to the right include adjustments for DST.

Directory Structure

The StorPoint CD will appear to your system as a file server. Like any other file server it has a directory structure where files are stored. The directory structure of the StorPoint CD is outlined below:

```
📁 ──────┬── 📁 System ──────┬── 📁 DeviceProperties
Root      │                  ├── 📁 Flash
 or       │                  ├── 📁 ServerProperties
SYS       │                  └── 📁 VolumeProperties
          │
          └── 📁 Volumes ────┬── 📁 Disc1
                             ├── 📁 Disc2
                             ├── 📁 Disc3
                             └── 📁 ....
```

The purpose of each folder is explained on the following pages.

The System folder

The System folder includes configuration information about the StorPoint CD, e.g. configuration settings, connected drives, inserted discs, access rights etc. It contains these subfolders:

- **DeviceProperties** - Includes one text file for each connected drive, i.e. CD/DVD-ROM drives and hard disks.

- **Flash** - When updating the firmware, the file with the latest firmware version is copied into this subfolder.

- **ServerProperties** - Includes the configuration parameter list, event log and statistics files.

- **VolumeProperties** - When a disc is inserted into a connected drive, a text file for that disc will be created. If specified, the volume name will be used. If no volume name has been specified, the volume label will be used instead. If the disc does not have a volume label, the StorPoint CD will use a unique eight digit number. If the disc is blank or uses an unknown file system, the text file will be named `unknown##.txt`.

The Volumes Folder

When a disc is inserted into a connected drive, a subfolder for that volume will be created in the Volumes folder. The files on that disc are accessed through this folder. By default, the Volumes folder is available to all users. However, the Administrator can set a password to protect it.

The names of the subfolders found under the Volumes folder will comply with the following rules:

• If the Administrator has specified a volume name, this name will be used.

• If no volume name has been specified, the volume label held on the disc will be used.

• If the disc does not have a volume label, and no volume name has been set, the StorPoint CD will automatically allocate a name of the form cd_<nnnnnnnnn>, where <nnnnnnnn> is a unique eight digit number.

• If two inserted discs have the same volume name, the StorPoint CD will add the suffix _a to the name of the second one. If two inserted discs are identical, the StorPoint CD will mount only the first one.

Often the volume label is not a good representation of the disc contents. A volume name is a convenient way of setting a more significant or recognizable name.

Important! ❑ If you wish to run an application that is stored on a disc or searches for its associated files on a disc, you cannot set a volume name because the application will not recognize that name.

Editing the Configuration Parameters

Web Browser

If your network supports TCP/IP, you can display and edit the StorPoint CD parameter list using a standard Web browser:

• Netscape Navigator version 4.0 or higher, or

• Internet Explorer version 4.0 or higher

Note: ❑ You must first assign a valid IP address as described in "*Assigning an IP Address*" on page 13.

To access the StorPoint CD Home Page from your Web browser, you simply enter the URL of the StorPoint CD, i.e. the name or IP address, in the location/address field.

Example:

```
http://192.16.253.80
```

FTP You can retrieve the configuration parameters of your StorPoint CD using the File Transfer Protocol (FTP). FTP is supported by most operating environments.

Follow these instructions:

1. Log in to the StorPoint CD with the command:

```
ftp <IP address>
```

where `<IP address>` is the name or IP address of your StorPoint CD.

2. You will be prompted for user id and password. Use the user id `root`, which has the default password `pass`.

3. *Windows 95 only:* Change directory not to overwrite any of your system files. See the caution note below.

4. To access the configuration file, type:

```
get config.ini
```

5. Edit the `config` file using any text editor. In the Windows 95/98 and Windows NT environments, you can for example use Notepad. Once the editing is complete, save the file as `config`.

6. To upload the configuration file to the StorPoint CD, type

```
put config.ini
```

7. To exit FTP, type the command `quit`, `bye`, or `exit`.

Caution! ❑ Windows 95 has a directory called `config` that contains important system files. It is therefore important to change to another directory using the `cd` command before modifying your StorPoint CD configuration file from within the Windows 95 environment. Failure to do this may result in some of your system files to be overwritten.

Text Editor

If you do not have TCP/IP on your network, you can edit the StorPoint CD parameter list and access control parameters via the text files. Use your preferred text editor to make updates to the files.

You submit the new settings to the StorPoint CD by simply saving the files. To activate the new settings it is necessary to restart the StorPoint CD. You can do this by setting the Restart parameter to `yes`.

Important!

❏ Do not restart the StorPoint CD in the middle of the NDS installation.

Configuration Settings

The StorPoint CD configuration settings are stored in the `config.ini` file located in the `System/ServerProperties` folder.

Example:

```
; AXIS StorPoint CD Parameter List, V5.31

[Server]
HardwareAddress       = 00:40:cc:24:c3:0c
Date                  = 99-11-01
Time                  = 08:54:37
FactoryDefaults       = no
Restart               = no
TimeZone             = UTC
TimeSyncSource        = None
ServerPassword       = ********
Shut Down             = no
NetworkSpeed          = auto
CDWritePassword      = ********

[SCSI]
SCSITermination       = on
JukeBoxLockTime       = 0
Disconnect_Reselect   = on
BusMode               = Asynchronous

[IP]
InternetAddress       = 192.16.253.80
DefaultRouter         = 192.16.1.1
NetMask               = 255.255.0.0
BOOTPEnable           = yes
DHCPEnable            = yes
RARPEnable            = yes
...
```

Access Control Parameters

The StorPoint CD access control parameters are stored in separate text files for each shared resource. These text files are located in the `System/VolumeProperties` folder.

Notes:

❏ The text files cannot be used for setting up access rights for NetWare. Instead, you can use standard NetWare tools such as NWAdmin or Filer.

❏ The text files cannot be used for setting up NT user-level rights for SMB. Instead, you can use the Windows NT Explorer.

Example:

```
...
; Explanations:
;    [W] - Writable
;    [R] - Read-only

--- Identification ---
[R] Volume name = Root
[R] Volume label = Root
[R] Volume serialnumber = 00000001
[W] Volume description =
...
; Access rights
...
--- Windows Sharing ---
...
File       = /
Share name            = Root
Comment               =
AccessRight           = Full-Server-Password
Read-Only Password    =
Full Access Password  =

[END]
```

Important! ❑ When editing the file, be sure that the equal sign and the parameter values are separated by a space.

❑ Do not remove the `[END]` marker from the file.

Appendix B Troubleshooting

This section provides useful information to help you resolve any difficulty you might have with your StorPoint CD, namely:

Problem	See ...
The front panel indicators	page 122
Restoring the factory default settings	page 124
Running a diagnostic test	page 126
Errors when accessing the StorPoint CD or an inserted disc	page 127
Errors when Writing Data to a Disc	page 129
Low transfer rates when using disc changers	page 128
Problems connecting to the StorPoint CD in a PureIP environment	page 130
Problems running CD-ROM software	page 130
Difficulties locating the StorPoint CD in NetWare	page 130
Insufficient access rights in NetWare NDS	page 131
Name resolution problems in Windows (SMB)	page 132
Problems locating the domain controller in Windows) SMB	page 133

Notes:
❏ You will find more useful information such as technical notes and support FAQs on the Axis Support Web at http://www.axis.com/techsup/.

❏ You can also go to the StorPoint CD's Support page, to solve any problems you may have seeing your devices and discs in your StorPoint CD, finding your StorPoint CD in the network or installing your StorPoint CD in NetWare. From this web page you can also produce a Server Report which includes technical information about your StorPoint CD.

❏ To receive update information about Axis products, services and software updates by e-mail, you can subscribe to the AxisNews mailing list at http://www.axis.com/services/axisnews.htm

The Front Panel Indicators

The front panel indicators show the status of the StorPoint CD. The indicators have the following functions:

- **Status** - Flashes during startup. When the StorPoint CD is ready for use, the light turns solid green.
- **SCSI/Drive** - Flashes to indicate activity on the SCSI/IDE bus.
- **Network** - Flashes to indicate the presence of network traffic.
- **Power** - Indicates that power is connected to the StorPoint CD. This LED should always remain lit and is only used to indicate power is present in the StorPoint CD unit.

Normal Conditions

The Power LED is controlled by hardware and is always green when power is connected. When the system starts running after startup, the Status LED turns solid green. The SCSI/Drive and Network LEDs are turned off.

This table shows the other front panel indicators under normal conditions:

Event	Status LED	SCSI/Drive LED	Network LED
Initial power to unit.	GREEN	GREEN	GREEN
Power-up and self-test, approx. 30 seconds.	GREEN	GREEN	GREEN
Firmware preparation	GREEN		
Firmware startup.	GREEN *		
Startup sequence OK.	GREEN		
Normal operation.	GREEN		
Writing to the SCSI/IDE bus.		AMBER *	
Reading from the SCSI/IDE bus.		GREEN *	
100 Mbit packet arrived.			GREEN *
10 Mbit packet arrived.			AMBER *
Flash loading in progress.	AMBER *		

* Flashing, short interval.
** Flashing, long interval.

Error Conditions This table shows various error conditions:

Event	Status LED	SCSI/Drive LED	Network LED
New firmware required. Flash loading via FTP possible.	AMBER **		
Illegal serial number. Return unit.	RED *		
Error in Flash PROM. Return unit.	RED **		
Error in DRAM. Return unit.	RED **		
Error in DRAM expansion module. Replace DIMM module.	RED / AMBER		
Fatal SCSI/IDE error. Return unit.		RED	
Drive disconnected or not working properly.		RED *	
The network connection is down.			RED

* Flashing, short interval.
** Flashing, long interval.

Status Indicator Red If the Status indicator turns red, this indicates a serious error in the hardware. If this happens, contact your dealer and return the unit for replacement.

Restoring Factory Default Settings

If required, you can restore the factory default settings to your StorPoint CD. This might be needed if you have disabled all the network protocols, or if you have lost the Server password.

You can use any of these methods:

- Web browser
- Config.ini
- Push button

Step by step instructions for each method are given below.

Caution! ❏ The node address, the Hardware Address parameter, will remain unchanged, but all other parameters will be restored. You will thus need to re-assign the IP address in order to re-establish the Web browser connection.

Web Browser To restore the defaults settings using a Web browser:

1. Start the Web browser.

2. Enter the name or IP address of your StorPoint CD in the location/address field.

3. Click **admin**. You will be prompted for the Server password. By default, this is set to pass.

4. Click **This StorPoint**.

5. Click **Factory Defaults**.

6. Select the required factory default option.

Note: ❏ If you select the **Configurations** or the **All** option, you will need to re-assign the IP address as described in "*Assigning an IP Address*" on page 13.

7. Click **OK**.

The factory default setting will now be restored and the StorPoint CD will automatically restart.

Config.ini

To restore the defaults settings using the `config.ini` file:

1. Locate the `config.ini` file using your standard file manager tool. You will find it in the `Root/System/ServerProperties` folder.

2. Use your preferred text editor and change the `Factory Defaults` parameter to `configuration`, `volumeProperties` or `all`. You will find the `Factory Defaults` parameter under the `[Server]` section.

3. Change the `Restart` parameter to `yes`. You will find the `Restart` parameter under the `[Server]` section.

4. Save the `config.ini` file.

The factory default setting will now be restored and the StorPoint CD will automatically restart.

Push Button

To restore the default settings using the Push button:

1. Shut down the StorPoint CD.

2. Use a thin object, e.g. a pen to press and hold the Push button.

3. Switch on the StorPoint CD.

4. Wait until the Status indicator flashes yellow (one flash/second).

5. Let go of the button at least two seconds.

6. Press and hold the Push button again until the Status indicator shows a steady yellow light. This may take 5-6 seconds.
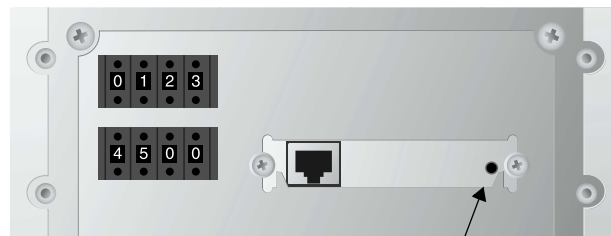
Push button

7. Restart the StorPoint CD by switching the server off and on. The StorPoint CD is now reset to factory default settings.

Running a Diagnostic Test

The StorPoint CD Web Pages include a diagnostic test that you can run in order to check the memory and the performance of the connected drives.

Before You Begin   Note the following:

- Users that are currently accessing the StorPoint CD will be interrupted.
- The diagnostic test is only available the first hour after startup.
- If you want to repeat the test, you must first restart the StorPoint CD.
- In order to test the data transfer performance of a drive, a disc including a file larger than 10 MB must be inserted.

Procedure   To perform the diagnostic test, follow these steps:

1. Start the Web browser, and enter the URL of the Diagnostics page in the location/address field:

```
http://<IP address>/this_server/diag.shtml
```

   Example

```
http://192.16.253.80/this_server/diag.shtml
```

2. The **Diagnostics** page appears:
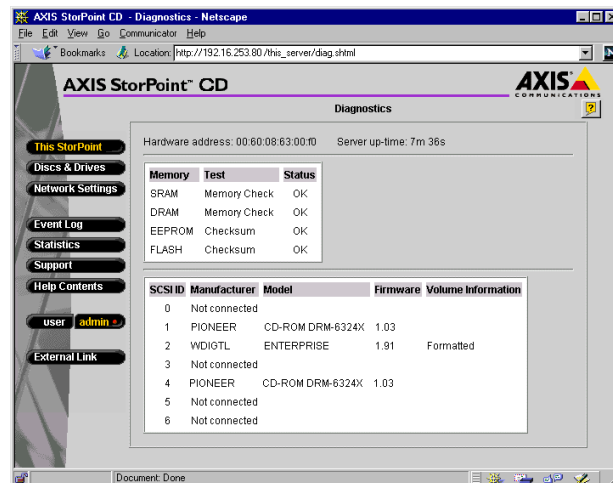
   Make sure a suitable disc is inserted into each of the drives you want to test.

3. Start the diagnostic test by simply reloading/refreshing the **Diagnostics** page. The test takes a few minutes to complete.

4. Reload/refresh the page once again to display the results.

Errors when Accessing the StorPoint CD or an Inserted Disc

If you get error messages when trying to access the StorPoint CD or a disc:

LED Indicators   Consult the error table in section "*Error Conditions*" on page 123 to see if the front panel indicators can help you identify the problem.

SCSI Chain   Check the SCSI chain and ensure that all the drives are switched on and that only the last unit is terminated.

IDE Connector   Check that no device has been configured as Slave with no Master and ensure that all the drives are switched on.

IP Address   If using TCP/IP, make sure that you have assigned a unique and valid IP address to the StorPoint CD. If you have changed the IP address, try restarting the StorPoint CD.

SMB Protocol   In the Microsoft & IBM networking environments, verify that the SMB protocol is enabled.

WINS Database   If using WINS, check that the StorPoint CD is registered in the WINS database. If it is, there is probably a problem with the name resolution on your network.

NDS Installation   If you have changed any of the following parameters after installing the StorPoint CD in the NDS tree, you might need to repeat the installation in order to connect to the StorPoint CD:

- IP address
- Internal Net Address
- IPX Enable
- PureIP Enable

Discs   Check that the disc is not scratched or damaged in any way. Verify that the disc works when inserted into the CD drive of a regular PC. If you are using packet writing software or DVDs, make sure that the disc has an ISO 9660 compatible header.

Problems Finding a Wide-SCSI Hard Disk

The StorPoint CD is a narrow (8-bit) device. However, most hard disks are wide (16-bit) devices.

When you connect a wide-SCSI hard disk to your StorPoint CD, you will need an active converter in order to terminate the high data byte.

Important! ❏ Make sure the converter **actively** terminates the high byte. Do not use the converter on the last device in the SCSI chain. The last device should be a narrow device, e.g. a CD/DVD drive.

Low Transfer Rates when Using Disc Changers

Disc changer flutter can occur if a user requests access to a disc when another user is already reading data from another disc. The changer may then attempt to service both requests by repeatedly changing between the two discs and transferring a small amount of data each time. Because of the relatively long time needed to change discs, the data transfer rate to both users will become unacceptably low.

The JukeBox Lock Time parameter in the StorPoint CD configuration file specifies how long a user has exclusive access to a disc during a data read operation. This is to prevent disc change flutter in order to optimize access speed when many users are accessing different discs in the same changer.

The JukeBox Lock Time parameter will ensure that when there are simultaneous requests for access to different discs, a sizable block of data is transferred to each user before the access is changed.

• If the JukeBox Lock Time parameter is set too low, the data transfer rate will be unacceptably low.

• If the JukeBox Lock Time parameter is set too high, the disc drive will time-out on a second user's request before the first user's access is completed. This will result in users receiving a 'CD-ROM not available' notice.

The default setting is 0 seconds which disables this function.

Note: ❏ If you attach a hard disk drive to the StorPoint CD SCSI bus or IDE bus, you can benefit from the hard disk caching facility described in "Section 10 - *Hard Disk Caching*" .

Errors when Writing Data to a Disc

The writing speed is by default set to the maximum speed for the currently used drive. If you experience problems when writing data to a disc, changing the writing speed might solve your problem.

To change the writing speed, follow these steps:

1. Start the Web browser and enter the IP address of your StorPoint CD in the location/address field.

    The StorPoint CD **File View** page is displayed.

2. Click **admin**. You will be prompted for the Server username and password. By default, these are set to `root` and `pass`.

3. On the **This StorPoint** page, click the **Disc Drive** icon that corresponds to the CD-Recordable drive on the **This StorPoint** page. The **Disc Drive** view will be displayed.

4. Click the **Change** button. The **Set Writing Speed** dialog appears on the screen.
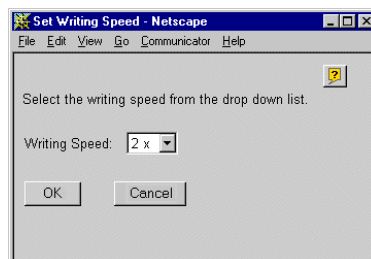
5. Select the required writing speed from the drop-down list and click **OK**.

The selected writing speed will now be displayed on the **Disc Drive** view.

Problems Running CD-ROM Software

Drive Letter Mapping   If you have inserted a CD-ROM successfully, but the software on it refuses to run or produces error messages, the software may expect the CD-ROM data to be at root level. This is often the case with installation programs.

In the NetWare and Microsoft & IBM networking environments, you then need to map that disc to a drive letter of its own. In NetWare, the Show All Volumes parameter must be enabled.

MSCDEX Driver   Some CD-ROMs, e.g. the single user version of "Computer Select", requires the MSCDEX (Microsoft CD-ROM Extension) driver. The volume is usually released in a network version as well. Axis has developed two MSCDEX emulation programs:

- AXCDEX for Windows 95
- AXISCDEX for Windows for Workgroups

The required software is available on the Axis Web Site at http://www.axis.com/products/software. The MSCDEX emulation makes a CD-ROM on the StorPoint CD look as if it was locally connected to the PC.

Single User Version   If the CD-ROM is a single user version, refer to your software license for the terms of use. You can restrict the number of simultaneous users to one by setting the User Limit parameter. Refer to "*General Disc Settings*" on page 34.

Default Names   Some applications look for information on the CD-ROM using its default name - if you have set a volume name it may not recognize the disc and fail to run.

Difficulties Locating the StorPoint CD in NetWare

There are basically two different frame types on Ethernet networks, Ethernet II or IEEE 802.3. The IEEE 802.3 frame can be encapsulated in an IEEE 802.2 LLC frame or a SNAP frame. All four frame types are enabled by default with the value `auto`, which means that your StorPoint CD automatically adapts to the frame type used on the network. This will meet most requirements. Frame types that are not in use in your network will not be used by the StorPoint CD.

However, depending on your network, you may want the StorPoint CD not to operate on some frame types. If your network has multiple sections with different frame types on some of the sections, then the StorPoint CD might log on to the wrong network section and adapt to a frame type incompatible with the intended network section. For this reason, you have the option to disable those frame types by changing the parameter from `auto` to `off`.

Alternatively, it is possible to use the eight digit network number appropriate to your segment of the network, in the form xx-xx-xx-xx (e.g. 00-3F-B5-01). In all normal cases this will not be necessary since autodetection will handle most cases. However, this must be done by directly editing the `config.ini` file located in the `System/ServerProperties` folder using a text editor. Although you cannot enter the network number from a Web browser, you can display the frame type and change the value to `auto` or `off`, if required.

Problems Connecting to the StorPoint CD in a PureIP Environment

SLP Parameters

In the PureIP environment, make sure your StorPoint CD is properly configured for SLP. SLP (Service Location Protocol) is a protocol for locating resources in IP networks.

You can specify a SLP scope list and directory agents for the StorPoint CD. From the StorPoint CD Web interface, you find the SLP settings on the **Network Settings | Detailed View | TCP/IP** page.

Note:
❏ If you are using DHCP on your network, the SLP parameters can also be included in the DHCP scope. However, we recommend that you specify the SLP settings in the StorPoint CD parameter list instead.

Time Synchronization

Make sure you have specified the time synchronization source properly. Note that in the PureIP environment, you **cannot** use SAP for automatic time synchronization. You can specify the name or IP address of the time server. You find the time source setting on the **Network Settings | Detailed View | NetWare** page.

Insufficient Access Rights in NetWare NDS

When you install the first StorPoint CD in the NDS tree, the StorPoint CD will extend the NDS Schema with a new attribute. This is needed in order to store the NDS access rights in the NDS tree. To carry out the schema extension, you must use user account with Supervisor rights to [Root] object of the NDS tree.

If you do not have Supervisor rights or if schema extensions are not allowed in your NDS tree, you can instead store the NDS access rights in a file on a Novell file server.

Follow these steps:

1. Create a directory on the Novell server where you want to store the access rights.

2. Make sure that your NDS tree is synchronized.

3. Install the StorPoint CD as described in "*Installation as an NDS Server*" on page 52. Make sure you set the NDS Rights Storage parameter to File and specify the name of the file where you want to store the access rights on the Novell file server.

4. Logout and login again in order to obtain all the necessary rights on the StorPoint CD server object.

5. Start NWAdmin. The server object just created will appear in the context where you installed the StorPoint CD.

6. Add the StorPoint CD server object as a trustee with Read, Write, Create, Erase, Modify and File Scan rights to the directory where you want to store the access rights.

The StorPoint CD will create the file once you start adding trustees.

Name Resolution Problems in Windows (SMB)

If you cannot find your StorPoint CD on your Windows (SMB) network, the reason might be a name resolution problem.

Find Computer

When you have installed the StorPoint CD, it takes a while before it shows up in the browser list in Network Neighborhood. You can either just wait for the browser list to be updated, or you can accelerate the process using the **Find Computer** function available in Windows 95/98 and NT. Alternatively, you can perform a manual mapping, e.g. use the command NET USE X: \\AXISnnnnnn\Volumes.

Flush Name Cache

Use the command NBTSTAT -R to flush your machine's name cache.

Workgroup

Note that the StorPoint CD cannot be a master browser server in a workgroup. It is not possible to place the StorPoint CD or a group of StorPoint CD servers in a single workgroup without Windows machines running file and/or print sharing.

Use WINS or LMHOST

If you are using NBT and try to access the StorPoint CD over a router, e.g. the StorPoint CD is located on a segment remote from your computer, you must use WINS or LMHOST. The recommended method is WINS. Provided that you have set the WINS parameters correctly, you should be able to access the StorPoint CD over routers. If this fails, check the following:

1. Make sure the StorPoint CD has been registered in your WINS database located on the Windows NT server. If the StorPoint CD is registered and you still cannot see or access it over the Network Neighborhood, you probably have other name resolution problems on your network.

2. Ping the unit via its IP address to make sure that you have TCP/IP connectivity.

3. Ping the unit using the SMB server name (NetBIOS) to check that the name resolution works.

4. If you are using WINS, try a "static mapping" where you connect the IP address of the StorPoint CD to its NetBIOS name. Note that if you used DHCP, you should add a reservation where you connect the MAC address of the StorPoint CD to a reserved IP address. It is often recommended that you use these types of settings for server equipment. Refer to your Windows NT server manuals for more information on this.

Problems Locating the Domain Controller in Windows (SMB)

If there is a problem locating the primary domain controller when using user-level security mode in Windows (SMB), all users will be denied access to the StorPoint CD.

Web Browser You can verify the configuration settings from the StorPoint CD web interface. Within the Administration Web pages, click **Network Settings**, **Detailed View**, and select the **Windows (SMB)** tab to do that.

Local Administrator Account In Windows NT, you can correct the problem by logging on to the StorPoint CD as local administrator. Note that the local administrator is not the same as an Administrator with an account on the domain.

In the **Map Network Drive** dialog, specify the following:

Path:	The StorPoint CD name
Connect as:	Server name\Administrator
Password:	The password set in the ServerPassword parameter

Example:
The host name of the StorPoint CD is `cdserv`.

Path:	`\\cdserv\root`
Connect as:	`cdserv\Administrator`

Note: ❏ In Windows 95, you cannot tell the SMB client to change domain and user when you are already logged in. Therefore, you cannot use the local administrator account to solve domain problems in the Windows 95 environment.

Appendix C   Upgrading the StorPoint CD

This section includes the following information:

Task	See ...
Obtaining new software	page 134
Upgrading the firmware	page 135
Extending the RAM memory	page 138

Obtaining New Software

The following software for the StorPoint CD can be updated free of charge:

- The StorPoint CD software held in Flash memory
- AXIS WinPoint
- AXIS StorPoint Disco
- AXIS ThinWizard

Note: ❏   New software updates are announced in the AxisNews mailing list.

Over the Internet   You may wish to check the Axis Web Site at http://www.axis.com/, where you can download the latest versions of the software. A link to the Axis Web Site is available from the StorPoint CD's Home Page.

Anonymous FTP   You can also get files and information through anonymous ftp: log in to ftp.axis.com and go to the /pub/axis directory.

Your Dealer   Contact your dealer to check if there has been any new issues of the software. You should have your present version numbers ready to compare against the latest software issues from Axis.

Upgrading the Firmware

Using Windows Explorer Drag-and-Drop

The StorPoint CD firmware can easily be upgraded by using the Windows Explorer drag-and-drop.

To upgrade using Windows Explorer, you need the following:

• The file with the new StorPoint CD software. The name of this file is of the form `product_version.bin`, e.g. `cde100_531.bin` for the StorPoint CD software release 5.31.

• A computer running Windows Explorer.

Follow these steps to upgrade the StorPoint CD by using drag-and-drop:

1. Start the Windows Explorer.

2. Find the StorPoint CD.

3. Expand the **Root** and **System** folders.

4. Copy the new firmware file to the **Flash** folder.

```
            ┌─ System ─┬─ DeviceProperties
 Root       │          ├─ Flash
  or        │          ├─ ServerProperties
 SYS        │          └─ VolumeProperties
            │
            └─ Volumes ─┬─ Disc1
                        ├─ Disc2
                        ├─ Disc3
                        └─ ....
```
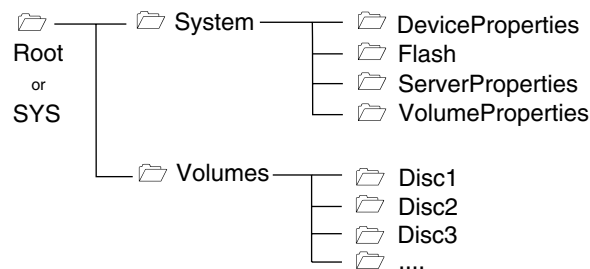
5. Wait for the copy to complete.

Caution! ❏ The StorPoint CD will automatically restart when the upgrade is complete. It is very important that you do NOT press the Power button during the upgrade.

Using AXIS
ThinWizard

The AXIS ThinWizard enables batch upgrading of several AXIS servers. The program retrieves the new software from the Axis Web Site automatically.

For more information about AXIS ThinWizard, refer to "*Event Log*" on page 105.

Follow these steps to upgrade the StorPoint CD using AXIS ThinWizard:

1. Start the Web browser and enter the name or IP address of the AXIS ThinWizard server in the location/address field.

Note: ❏ If the AXIS ThinWizard server is installed on a port other than 80, you must add `:<port number>/` to the URL.

Example:

```
http://192.16.253.80:8033/
```

2. Log in to AXIS ThinWizard.

3. Click **Manage Network** in the main menu.

4. Select the network group that includes your StorPoint CD. Note that you can only update servers that are included in the selected network group.

5. All the detected servers included in the network group are listed. Click Firmware to start the Upgrade Wizard.

6. Follow the instructions on the screen in order to complete the installation.

Using FTP

The StorPoint CD firmware can easily be upgraded over the network using FTP on a TCP/IP network. You will need the following:

• The file with the new StorPoint CD software. The name of this file is of the form `product_version.bin`, e.g. `cde100_531.bin` for the software release 5.31 for the Ethernet version of the StorPoint CD.

• A computer on the network with TCP/IP and FTP.

• The StorPoint CD must also be installed on the network with TCP/IP as described in "*Assigning an IP Address*" on page 13.
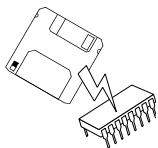
Follow these steps to upgrade the StorPoint CD using FTP:

1. Go to the folder that contains the file you are going to download.

2. Log in to the StorPoint CD with the command:

```
ftp <IP address>
```

where `<IP address>` is the name or IP address of your StorPoint CD.

3. You will be prompted for user id and password. Use the user id `root`, which has the default password `pass`.

4. To change to binary transfer mode, issue the command:

```
bin
```

5. Issue the command:

```
put <software name> flash
```

where <software name> is the name of the new software, e.g. cde_500.bin.

6. Wait for the flash memory load to finish. This normally takes 1 to 4 minutes. The unit will then automatically restart with the new StorPoint CD software.

7. Log out using the command quit, bye or exit depending on your FTP version.

Caution! ❏ Be careful not to interrupt the file transfer. If the flash loading fails, the StorPoint CD will not be accessible from the other protocols such as Windows (SMB), Web browser (HTTP) etc. However, you can still access it via FTP in order to carry out the upgrading once again.

Extending the RAM Memory

This section describes how to increase the performance of your StorPoint CD by adding extra memory.

The basic 32 MB of RAM can be increased up to 160 MB. The extra cache memory will speed-up data flow rates, especially when several users are accessing the same disc.

Memory Modules   You can add one module of either 32, 64 or 128 MB in size.

32 Mbyte Module
- 144-pin 8-byte SO DIMM
- 4Mx16 EDO DRAM based (4 pcs.)
- 3.3V
- 50 ns
- 4k refresh cycles
- A0-A11 address inputs

Use one of these modules or equivalent:

Manufacturer	Type
Admor Memory	P/N AD32-SO4643E
Centon	P/N CAX4MX64-5EVDG
Samsung	P/N KMM466F404BS2-L5
Toshiba	P/N THL64V4075ATG-5
Viking	P/N VC4641U4EN3-HT01
Golden RAM	P/N 92G7342
QAX100	64bit EDO

64 Mbyte Module
- 144-pin 8-byte SO DIMM
- 4Mx16 EDO DRAM based (8 pcs.)
- 3.3V
- 50 ns
- 4k refresh cycles
- A0-A11 address inputs

Use one of these modules or equivalent:

Manufacturer	Type
Admor Memory	P/N AD64-SO8643E
Centon	P/N CAX8MX64-5EVDG
Samsung	P/N KMM466F804BS1-L5
Toshiba	P/N THL64V8015ATG-5
Golden RAM	P/N 76H0268
QAX100	64bit EDO

128 Mbyte Module
- 144-pin 8-byte SO DIMM
- 16Mx8 EDO DRAM based (8 pcs.)
- 3.3V
- 50 ns
- 4K refresh cycles
- A0-A11 address inputs

Use one of this module or equivalent:

Manufacturer	Type
Centon	P/N CAX16MX64-5EVDG
QAX100N	64bit EDO
QAX100	64bit EDO

Installation Procedure

Follow these steps to add the memory module:

1. Unplug the power supply from the StorPoint CD.

2. Remove the server casing.

Front

Position X4
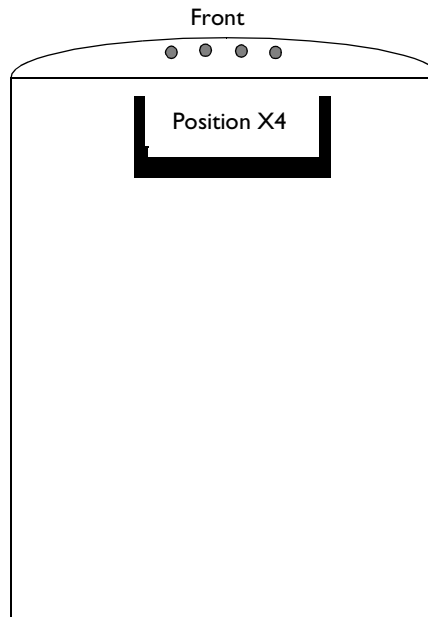
3. Mount the memory module by sliding it into the X4 socket at an angle of 45 degrees. Once the module is fully inserted, press it downwards towards the PCB, until the socket locks the module into place.

Caution! ❏ Always use an antistatic bracelet when handling the memory modules.

4. Replace the server casing.

5. Power up the StorPoint CD. The new memory module is automatically identified and the usage optimized by the StorPoint CD.

Appendix D Tower and Drive Installation

This appendix includes the procedures for installing the StorPoint CD in a tower and connecting the drives.

Hardware Inventory

Unpack and inspect all parts for damage. Contact your dealer if anything is missing. All packaging materials are recyclable.

The standard delivery includes the following:

Hardware	Description	Part Number
CD-ROM Server	AXIS StorPoint CD/T E100 Ethernet	0088-001-01
	AXIS StorPoint CD/T E100 Ethernet Dual SCSI	0089-001-01
	AXIS StorPoint CD/T E100/Basic Ethernet	0110-001-01
	AXIS StorPoint CD/T E100/Basic Ethernet Dual SCSI	0111-001-01
	AXIS StorPoint CD/T E100 IDE	0101-001-01
4 Screws, **2 Screws**	(To attach the server unit)	15163 11998
Product Label	(To be attached to the back of the tower.)	16277
Network Connection Board		16273
Shielded Cat 5 Cable	(To connect the server unit and the network connection board)	16283
CD-ROM	AXIS Online CD ver. 5.5	17145
Printed Material	AXIS StorPoint CD E100 User's Guide 1.5	17286

Physical Description

Familiarize yourself with your StorPoint CD. This information provides a useful reference during the installation.

SCSI Server
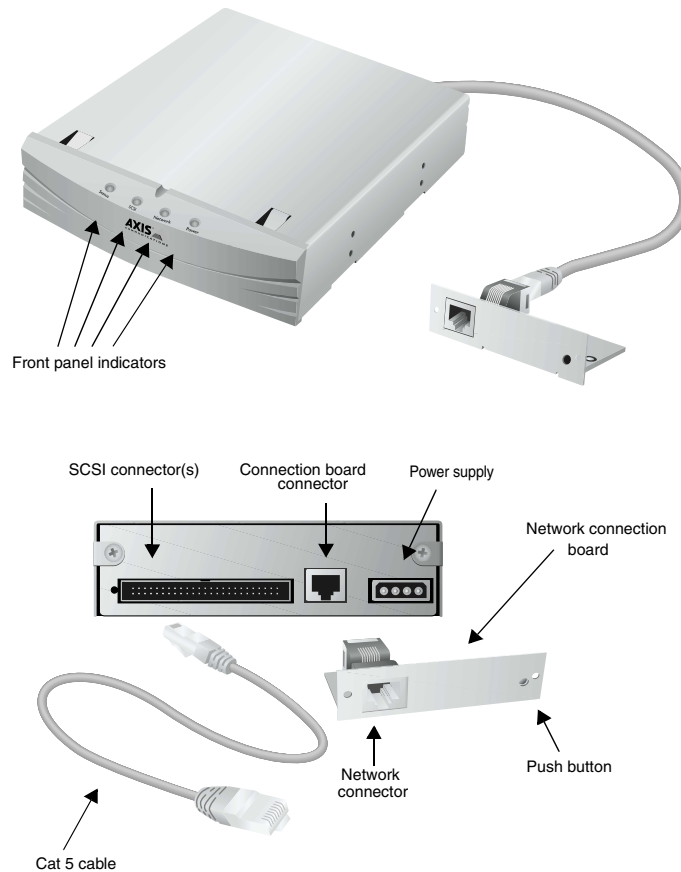
Front panel indicators

SCSI connector(s)   Connection board connector   Power supply

Network connection board

Network connector

Push button

Cat 5 cable

Network Connector
The StorPoint CD is equipped with a 100baseTX connector. The internal network connector will automatically adjust to 10baseT or 100baseTX, full or half duplex mode. Use a Category 5 UTP cable for the 100baseTX operation.

Note: ❏ When the StorPoint CD has been installed in a tower, the network connector is found on the network connection board that appears at the back of the tower. Note that the network cable cannot be connected directly to the server unit.

SCSI Connector
The StorPoint CD has a SCSI connector for connecting disc drives, jukeboxes, changers and LUN expanders. The dual SCSI version is equipped with two SCSI connectors.

Push Button
The Push button is used for restoring the StorPoint CD parameters to the factory default settings. See "*Restoring Factory Default Settings*" on page 124.

LED Indicators The StorPoint CD front panel indicators show the status of the unit. The indicators have the following functions:

- Status - Flashes during startup. The light turns solid green when the StorPoint CD is ready for use.
- SCSI - Flashes to indicate disc access.
- Network - Flashes to indicate the presence of network traffic.
- Power - Remains on to indicate that power is present in the unit.

Refer to "*The Front Panel Indicators*" on page 122 for a list of error conditions.

Serial Number The StorPoint CD serial number is found on the labels at the underside of the server unit and at the back of the tower.

IDE Server

Front panel indicators

IDE connector(s)   Connection board connector   Power supply

Network connection board

Network connector   Push button

Cat 5 cable

Network Connector The StorPoint CD is equipped with a 100baseTX connector. The internal network connector will automatically adjust to 10baseT or 100baseTX, full or half duplex mode. Use a Category 5 UTP cable for the 100baseTX operation.

Note: ❑ When the StorPoint CD has been installed in a tower, the network connector is found on the network connection board that appears at the back of the tower. Note that the network cable cannot be connected directly to the server unit.

IDE Connector The StorPoint CD has IDE connectors for connecting disc drives, jukeboxes, changers and LUN expanders. Three of the four connectors are placed under the cover.

Push Button The Push button is used for restoring the StorPoint CD parameters to the factory default settings. See "*Restoring Factory Default Settings*" on page 124.

LED Indicators The StorPoint CD front panel indicators show the status of the unit. The indicators have the following functions:

- Status - Flashes during startup. The light turns solid green when the StorPoint CD is ready for use.
- Drive - Flashes to indicate disc access.
- Network - Flashes to indicate the presence of network traffic.
- Power - Remains on to indicate that power is present in the unit.

Refer to "*The Front Panel Indicators*" on page 122 for a list of error conditions.

Serial Number The StorPoint CD serial number is found on the labels at the underside of the server unit and at the back of the tower.

Installing the StorPoint CD in a Tower

The StorPoint CD is installed in standard 5.25 inch towers.

Caution! ❏ To avoid the risk of electrical chock or other injury, disconnect power from the tower before removing the chassis.

If not already installed in a tower when delivered, follow these steps:

1. Prepare the tower for the installation, e.g. by removing the chassis.

2. Make a note of the serial number of the StorPoint CD, or attach the enclosed product label to the back of the tower. The serial number is found on the underside label of the StorPoint CD and will be needed during the TCP/IP configuration.

3. Slide the StorPoint CD into the tower.

4. Fix the StorPoint CD with the four screws supplied. Use the upper or lower holes depending on type of tower and mounting.

Caution! ❑ The length of the screws must not exceed 0.2 inch (5 mm). If they do, the internal components of the StorPoint CD may be damaged.

5. Attach the power cord to the StorPoint CD. The power supply connector is a standard PC 4-pin power supply connector (12 and 5 V DC). Hence, the power supply available in the tower can also be used to supply the StorPoint CD.

6. Connect the external network connector board to the StorPoint CD using the shielded CAT 5 cable.

Important! ❑ It is not possible to connect an RJ-45 cable directly between the back of the StorPoint CD server unit and the hub.

7. Mount the board on the back of the tower. The mounting plate on the board fits into the standard Centronics cut-out available on most towers.

8. Attach the product label to the back of the tower.

Connecting the Drives to the StorPoint CD

A single StorPoint CD can service up to 7 or 14 CD/DVD-ROM drives or up to six or seven hard disks, depending on model.

- **SCSI Server** - The SCSI bus allows 7 drives to be connected to the StorPoint CD. Each unit on the SCSI bus must have a unique SCSI address. To work properly, the bus must be electrically terminated at both ends.

  If you want to use the hard disk caching facility, you must connect 1 to 6 hard disk units to the StorPoint CD. The StorPoint CD will automatically format the hard disks detected on the SCSI bus.

- **IDE Server** - The IDE bus allows 8 drives to be connected to the StorPoint CD. Each unit on the IDE bus must be assigned as Master or Slave.

  If you want to use the hard disk caching facility, you must connect 1 to 7 hard disk units to the StorPoint CD. The StorPoint CD will automatically format the hard disks detected on the IDE bus.

Caution! ❑ Always make sure that power is not connected to the StorPoint CD or any of the drives when making changes to the SCSI chain. The SCSI bus or IDE bus may become damaged if you connect or disconnect any units when the power is on.

Dual SCSI Version It is recommended that the dual SCSI version of StorPoint CD is installed in a 14 bay tower, i.e. all the drives are housed in the same enclosure with the SCSI cables built-in.

Note: ❑ However, if you are using two separate towers, we recommend that the cable from the StorPoint CD to the second tower complies with the following maximum cable length requirements:

- The cable from the StorPoint CD to the connector leaving the first tower should not exceed 60 cm.
- The cable connecting the two towers should not exceed 50 cm.

Connecting the SCSI Drives To connect the SCSI drives to the StorPoint CD, follow these steps:

1. Connect the SCSI cable to the SCSI connector on the StorPoint CD.

2. Connect the SCSI cable to the drive(s).

3. Set a unique SCSI address 0 through 6 for each of the connected drives. The dual SCSI version has two separate buses with addresses 0 through 6 available on each. Refer to the drive documentation for instructions on how to set the SCSI address on your drives.

Note: ❑ The SCSI address of the StorPoint CD is 7, and cannot be changed.

4. Connect an external, preferably active, SCSI terminator to the last drive in the SCSI chain. If there is only one drive, it is the last one in the chain and must be terminated. The StorPoint CD has built-in SCSI termination which is always switched on. Therefore, the server must be physically located at one end of the chain. This is the case for both the single and dual SCSI versions.

Note: ❏ Do not terminate the drives placed between the StorPoint CD and the last drive.

5. Switch the power on to the whole of the tower.

6. The StorPoint CD front panel indicators will flash during power-on and self-test. When the Status indicator stops flashing and turns solid green, the StorPoint CD is ready for use.

Connecting the IDE Drives

To connect the IDE drives to the StorPoint CD, follow these steps:

1. Connect the IDE cable to the IDE connector on the StorPoint CD.

2. Connect the IDE cable to the drive(s).

3. Assign each of the connected drives to Master or Slave. Refer to the drive documentation for instructions on how to set the device type for your drives.

Note: ❏ The server must be physically located at one end of the cable.

4. Switch the power on to the whole of the tower.

5. The StorPoint CD front panel indicators will flash during power-on and self-test. When the Status indicator stops flashing and turns solid green, the StorPoint CD is ready for use.

Appendix E Technical Specifications

Supported Systems	
Novell NetWare	NetWare 3.11, 3.12, 4.10, 4.11 and 5.0.
Microsoft Windows	Windows for Workgroups, Windows 95, Windows 98, Windows NT, Windows 2000.
OS/2	OS/2 Warp 4, IBM Peer for OS/2.
TCP/IP	Supports all UNIX/Linux dialects through NFS over UDP/IP on TCP/IP networks.
Macintosh	Mac OS 7.x, 8.x using AppleShare 3 or later.
Web Browser	Internet/intranet over HTTP 1.0 and HTML 2.0 compatible browsers.
Supported Protocols	
Novell NetWare	NDS, NCP (IPX, NetWare/IP and PureIP).
Windows and OS/2	SMB over NetBIOS/NetBEUI, SMB over NetBIOS/TCP/IP, WINS/NBNS.
UNIX	NFS over UDP/IP, TCP, ARP, RARP, BOOTP, DHCP, SNMP, FTP.
Macintosh	AFP over AppleTalk, AFP over TCP/IP.
Web Browser	HTTP over TCP/IP.
Network Management	SNMP MIB-II and private enterprise MIB. Platform independent configuration and management via standard Web browser.
Security	
Novell NetWare	Encrypted passwords. Authorization via file server, including NDS.
Windows and OS/2	User-level or share-level access control.
UNIX	NFS version 2, PCNFSD authentication via file server.
Macintosh	Encrypted passwords. Password for individual/all discs. User level authentication via file server.
Web Browser	Password.
Supported File Systems	High Sierra (HSF), ISO 9660, Multisession, ISO 9660 with Rock Ridge or Joliet extensions, ISO 9660 level 3 support (used by most DVD-ROM, CD/RW and CD-R packet write), ISO 9660 with Apple extensions, HSF, CD-UDF version 1.0 and 1.5.
Software Updates	Flash memory allows central and remote updating of the StorPoint CD software over the network using Windows Explorer drag-and-drop or FTP over TCP/IP.
Performance	Data throughput up to 4000 kB/sec.
Hardware	CPU: 32 bit RISC controller (ETRAX 100). Flash memory: 4 MB. RAM: 32 MB, expandable up to 160 MB.
Attachments	RJ-45 (for 100baseTX and 10baseT).
SCSI CD/DVD-ROM Drive Connections	Up to 7 SCSI CD/DVD-ROM drives (14 for the dual SCSI version). Changers are supported.
IDE CD/DVD-ROM Drive Connections	Up to 8 IDE CD/DVD-ROM drives.
Hard Disk Caching	
Caching Options	Performance caching (Partial, Mirror, None) Archiving (Manual, Automatic)
Caching Speed	Mirror/Archive caching performance: 6 min/650 MB.
Compatible CD-ROM Drives	Standard SCSI or IDE CD-ROM drives. Towers and jukeboxes with LUN based addressing.
	Support for firmware upgrade to Pioneer Disc Changer DRM-6324X via the StorPoint CD Web interface.

SCSI Hard Disk Drive Connections	6 hard disk drives for caching of CD/DVD-based data.
Connector	Narrow 50-pin header.
Speed	Asynchronous (< 5 MB/sec), synchronous (5 MB/sec), fast SCSI (10 MB/sec) or ultra fast SCSI (20 MB/sec).
IDE Hard Disk Drive Connections	7 hard disk drives for caching of CD/DVD-based data.
Connector	Four 40 pin header.
Speed	DMA Mode 2 (16.67 MB/s), PIO Mode 4 (16.67 MB/s).
Power Supply	Via 4-pin power connector: 12V DC (0.5 A) and 5V DC (2 A).
Dimensions	Height: 1.7 in (4.3 cm), Width: 5.9 in (14.9 cm), Depth: 8.8 in (22.4 cm).
Weight	1.5 lbs (0.7 kg).
Environmental	
SCSI	Temperature: 40-105°F (5-40°C).
	Humidity: 20-80% RHG, non-condensing.
IDE	Temperature operational: 40-105°F (5-40°C). Temperature shipping/storage: -4 - 140°F (-20 -60°C).
	Humidity operational: 8 - 80% Humidity shipping/storage: 5 - 80%
Year 2000	The StorPoint CD is year 2000 compliant.
Approvals	
EMC	SCSI - CE: EN 55022/1994, EN 50082-1/1997. FCC Subpart B Class A. IDE - CE: EN 55022/1994, EN 55024/1998. FCC Subpart B Class A.
Safety	EN 60950, UL1950. Approved power supply for all countries.
Warranty	3 years. 5 years if a member of the Axis User Group.

All specifications are subject to change without prior notice.

Appendix F   Glossary

AFP
: AppleTalk Filing Protocol. A network file system that supports HFS specific entities, such as data forks and finder metadata.

AIX
: Advanced Interactive eXecutive. A version of the UNIX operating system from IBM that runs on various IBM computers including Mainframe systems.

ARP
: Address Resolution Protocol. A protocol within TCP/IP networks that allows a host to find the physical address of a node on the same network. ARP cannot be used over routers.

BOOTP
: Boot Protocol. A TCP/IP protocol, which allows an Internet node to discover certain startup information such as its IP address. A request made to an active BOOTP daemon initiates a search of the Boot Table for an entry matching the unit's Ethernet address. If a matching entry is found, the daemon then downloads the IP address to the device.

BSD
: Berkeley Software Distribution. The University of California, Berkeley additions to the UNIX operating system.

DHCP
: Dynamic Host Configuration Protocol. A system based on network interface card addresses for allocating IP addresses and other configuration information for networked systems. It provides automatic but temporary assignment of IP addresses from a central pool.

Distinguished Names
: Names in the NDS Directory tree have two name types: typeful or typeless. A typeful name includes the name types (OU, O, etc.) when identifying the distinguished name of the object. A typeless name excludes the name types. You can use either syntax when specifying the parameters.

Example 1 (`NDSServerContext` **parameter syntax):**
Typeful distinguished name: `.OU=Corp.O=Acme`
Typeless distinguished name: `.Corp.Acme`

Example 2 (`NDSAdminName` **parameter syntax):**
Typeful distinguished name: `.CN=Admin.O=Acme`
Typeless distinguished name: `.Admin.Acme`

Tree Name = ACMECORP

Objects in an NDS Directory Tree

DNS	Domain Name Service. Reflects the server names and addresses within a network.
DSS	Domain SAP/RIP Services. Provides a source of SAP/RIP information in a NetWare environment.
DVD	Digital Versatile Disk. An optical disk that store up to 16 times more information than a standard CD-ROM disk. Developed for video, multimedia etc.
FAT	File Allocation Table. A file system originally invented for the DOS operating system.
Flash Memory	Flash Memory is a memory chip that, like ordinary ROM memory, keeps its contents even when the power is turned off. What makes it unique is the possibility to erase its contents and write new data to it. The software that runs on your StorPoint CD is stored in Flash Memory, i.e. when software updates are available, you can update the StorPoint CD without having to replace any parts.
FTP	File Transfer Protocol. The TCP/IP protocol used for logging into a network and transferring files.
HFS	Hierarchical File System. This is a file system used om Macintosh discs.
HTML	Hypertext Markup Language. A standard hypertext language used for creating Web pages and other hypertext documents.
HTTP	Hypertext Transfer Protocol. The TCP/IP protocol for Web based communication.
IDE	Integrated Device Electronics. A high-speed parallel interface, used to connect a computer to peripheral devices using channels.
IP	Internet Protocol. The TCP/IP session-layer protocol that regulates packet forwarding by tracking Internet addresses, routing outgoing messages and recognizing incoming messages.
LED	Light Emitting Diode. The LED indicators on the StorPoint CD front panel indicate the status of the unit.
MIB	Management Information Base. A database of network configuration information used by SNMP and CMIP to monitor or change network settings.
NCP	NetWare Core Protocol. Network clients use the NCP to request services of servers, and servers use NCP to provide services, such as file and print services.
NDS	NetWare Directory Services. Manages network resources such as NetWare servers and volumes.
NIS	Network Information Services. The security and file-access databases on UNIX systems, previously known as Yellow Pages.

NTP   Network Time Protocol. Used by Internet time servers and their peers to synchronize clocks, as well as automatically organize and maintain the time synchronization subnet itself.

RARP   Reverse Address Resolution Protocol. A TCP/IP protocol governing the translation of a Data-Link Control (DLC) address to an IP address. A request made to an active RARP daemon initiates a search of the Ethernet Address Table for an entry matching the unit's Ethernet address. If a matching entry is found, the daemon then downloads the IP address to the device. RARP operates within a single network segment only, i.e. it does not work over routers.

RISC   Reduced Instruction Set Computing. A processor that recognizes only a limited number of assembly-language instructions.

SAP   Service Advertising Protocol. A network name advertising service that e.g. file servers can use for advertising their existence to network clients.

SCSI   Small Computer System Interface. A high-speed parallel interface, used to connect a computer to peripheral devices using just one port.

SLP   Service Location Protocol. A protocol used for advertising and discovering network services, e.g. printers and CD servers.

SMB   Server Message Blocks. A protocol that makes use of NetBIOS.

SNMP   Simple Network Management Protocol. A TCP/IP protocol for managing and monitoring nodes on a network.

TCP   Transmission Control Protocol. The connection-oriented, transport-level protocol used in the TCP/IP suite of protocols.

UDF   Universal Disk Format. A specification developed by OSTA (Optical Storage Technology Association) for use in optical storage devices. The file format for DVD.

UNIX   A 32-bit multitasking, multiuser operating system originally developed by AT&T.

URL   Uniform Resource Locator. A way of specifying the location of publicly available information on the Internet.

WINS   Windows Internet Name Service. Allows Windows-based clients to locate NetBIOS resources on TCP/IP networks. When using TCP/IP, the computer name must be resolved to an IP address. WINS is designed to eliminate the need for broadcasts in order to resolve computer names to IP addresses. It provides a dynamic database that maintains computer name to IP address mappings.

Wizard   A form of user assistance that automates a task through a dialog with the user in order to speed up operation. These tasks are typically complex and require experience.

Index