PROCOM TECHNOLOGY

CD Tower Ethernet 3 User's Guide

Revision A01
December 1999
Document #MN04045

Document History

Revision	*Action*	*Date*
A01	Initial Release	12/99

Radio/TV Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

If interference is noticed, consult your computer system user's guide for radio interference information. Generally, eliminating the interference involves reorienting the antenna, moving the computer away from the receiver or plugging the receiver into a different outlet from that of the computer.

The FCC has prepared a booklet titled "How to Identify and Resolve Radio-TV Interference Problems" which you may find useful. It is available from the US Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

Canadian Department of Communications Compliance Statement:

This equipment does not exceed Class A limits per radio noise emissions for digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception, requiring the owner or operator to take whatever steps are necessary to correct the interference.

Avis de conformite aux normes du ministere des Communications du Canada:

Cet equipment ne depasse pas les limites de Classe A d'emission de bruits radioelectriques pour les appareils numeriques telles que perscrites par le Reglement sur le brouillage radioelectrique etabli par le ministere des Communications du Canada. L'exploitation faite en milieu residentiel peut entrainer le brouillage des receptions radio et television, ce qui obligerait le proprietaire ou l'operateur a prendre les dispositions necessaires pour en eliminer les causes.

Declaration of Conformity

(according to ISO/IEC Guide 22 and EN 45014)

Manufacturer's Name: Procom Technology, Inc.

Manufacturer's Address: 1821 E. Dyer Road
Santa Ana, CA 92705, USA

declares that the product:

Product Name: CD-ROM Storage Array Server Units

Type of Product: Information technology equipment

Equipment Class: Commercial and light industrial

Model Number(s): CDT14 Series: C14-xx-xx[1], C14L-xx-xx, C12-Hx-xx, CF12P1-xx-xx, CF14P2-D2-xx, CS14P1-32-14, CS12P1-H4-12, C14E2-16x-10, C14E2-16x-14, C14T2-16x-14, C14T2-32-14, C14E3-xx-x

CR8D-xx-x Series: CR8D-4x-K, CR8D-8x-K, C7E3-xx-x[1]

Year of Manufacture: 1999

conforms to the following Standards:

Safety: EN 60950: 1988 + A1, A2

EMC: EN 55022: 1993 Class A
EN 50082-1: 1992
IEC 801-2: 1984, 8kV, A.D.
IEC 801-3: 1984, 3V/m, 27 MHz. - 500MHz.
IEC 801-4: 1988, 0.5kV Signal Lines, 1kV AC Mains

Supplementary Information:

"The product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC."

[1] The "x" in the model designation may be any alphanumeric character denoting minor mechanical options.

Manufacturer's Contact: Alan Bliss, Engineering Manager
Procom Technology
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Printed in U.S.A.

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Appendix C – Upgrading the CD Tower Ethernet 3

Appendix D – Technical Specifications

Chapter 1

Introduction

Thank you for purchasing a Procom Technology's CD Tower Ethernet 3. This product line is the result of future-thinking hardware and software engineers working to provide the ultimate in a CD Tower subsystem. It can be easily connected to your network and ready for use in minutes. And, its firmware uses the standard NCP, SMB and NFS file systems, so there is no need to install an additional CD-ROM networking application.

This chapter provides general information about the CD Tower, including features, requirements and specifications. For more information about the CD Tower's CD devices, refer to the specification sheet included in your package. The specification sheet contains information about using the CD devices and performance characteristics.

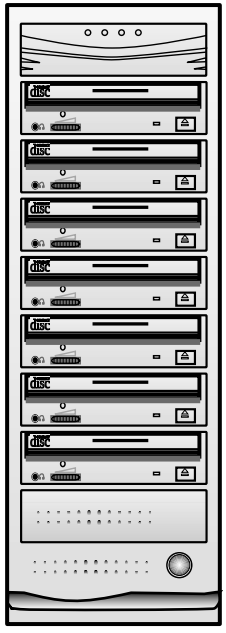
About the CD Tower Ethernet 3

The CD Tower Ethernet 3 connects to 10/100 MBit Ethernet networks. All users on the network can share the information on any disc inserted into a connected drive.

Throughout this manual, the CD Tower Ethernet 3 is referred to as simply CDT-E3.

The CDT-E3 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.

*Some CDT-E3 models are equipped with a **"DVD-ROM drive,"** as well as a **"CD loading device,"** hence, will accommodate both media types.*



C7E3 Front View

C14E3 Front View

Features and Benefits

File Server Independence

The CDT-E3 is connected as a node in an Ethernet network. To the network the CDT-E3 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 CDT-E3. 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 CDT-E3. No software needs to be installed on clients or file servers. Your computer will see the CDT-E3 as another network file server, and you access it using the standard commands used in your network operating system.

Environments

The CDT-E3 can be used simultaneously from NetWare, Windows, OS/2, DOS, UNIX and Internet/intranet clients. It supports basic messaging and network protocols:

- NCP over IPX and IP
- SMB over NetBIOS/NetBEUI
- SMB over NetBIOS/TCP/IP
- NFS over UDP/IP
- HTTP over TCP/IP

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

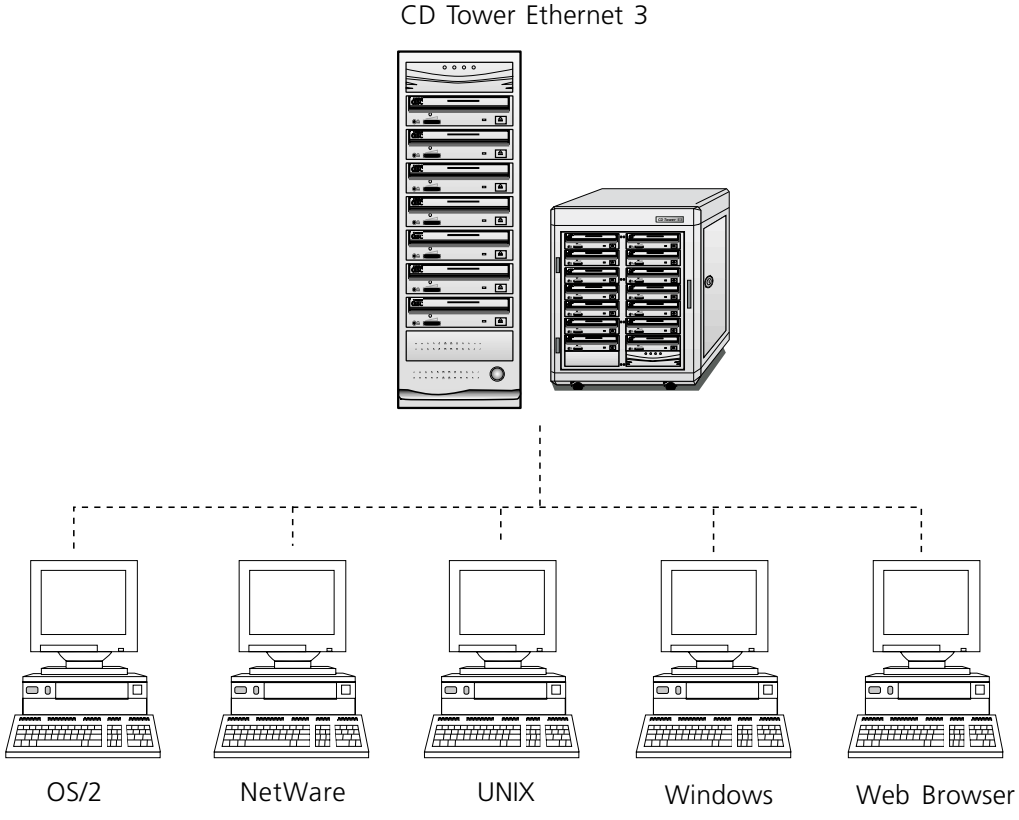
By using a 32-bit RISC processor and cache memory expandable up to 160 Mbytes, data throughput of up to 2700 kbytes/sec is obtained – ample speed for demanding CD-ROM applications.

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 CDT-E3's Flash memory over the network using FTP. All updates are free of charge.



Network Management

The CDT-E3 supports the Simple Network Management Protocol (SNMP).

Year 2000

The CDT-E3 is year 2000 compliant.

Conventions Used in this Manual

This manual was designed to make it easy for you to find the information you need quickly. To help guide you on your way, familiarize yourself with the following icons.

Warning! Indicates steps or procedures that could result in personal injury or death if not followed.

Caution! Indicates steps or procedures that could result in loss of data or damage to hardware if not followed.

Warns you that antistatic grounding procedures should be followed before continuing the installation.

Points out a section where you may need the help of trained technical support personnel, or gives information on how to contact other resources.

Reminds you to keep the screws you are removing in the procedure, as you will need them again to complete the installation or replacement.

Tip: Points out a helpful procedure or process that might otherwise be overlooked.

Note: More fully explains a point in the text which might be missed or need further clarifying.

Click	Press the left mouse button.
Enter	Words in **boldface** type represent keystrokes, menu items, window names or mouse commands.
C:	Disk drives, such as drive A, drive C or network drives, are referred to as A:, C:, etc.
`admin`	Words in **`boldface Courier`** type indicate commands or prompts provided by the computer or server.
admin	Words in ***italic Galliard*** type indicate commands you should type.

Where to Go from Here

Chapter 2 – Installation

This chapter provides instructions for installing the CDT-E3 and connecting it to the network.

Chapter 3 – Configuring the CDT-E3

This chapter outlines the required configuration settings for running the CDT-E3.

Chapter 4 – Accessing the Disks

This chapter provides instructions for choosing access points when mapping the CDT-E3 as well as instructions for accessing resources via your network operating system.

Chapter 5 – Monitoring the CDT-E3

This chapter provides instructions for monitoring the CDT-E3.

Appendix A – Parameter List

This appendix contains the CDT-E3 parameter list, an explanation of the directory structure, and directions for editing the configuration settings .

Appendix B – Troubleshooting

Use this appendix if you encounter a problem when operating the CDT-E3.

Appendix C – Upgrading the CDT-E3

This appendix provides information for upgrading the firmware.

Appendix D – Technical Specifications

This appendix contains information about physical and environmental characteristics of the CDT-E3, as well as its power requirements.

Appendix E – Glossary

Use this appendix as an information tool to define any unfamiliar words found in this user's guide.

Appendix F – Index

Use this listing to find the location of a subject or procedure.

Contacting Procom Technology's Technical Support Team

We hope the instructions available in this user's guide are complete and clear enough to meet your needs. If you need further assistance, please contact Procom Technology.

We take pride in providing highly responsive, world-class service to ensure the highest levels of ongoing customer satisfaction with our premium products.

For technical problems requiring on-site service, Procom Technology provides professional, experienced field engineers, who work closely with our Technical Support Engineers for total solution support. For more information about purchasing an on-site service package for your CDT-E3, please contact your sales representative or reseller, or call 800-800-8600.

You can contact Procom Technology's Technical Support Engineers in a variety of ways:

- The Procom Technology Technical Support Line can be reached at **800-800-8600** or **949-852-1000**; M-F: 6:00 a.m. to 6:00 p.m., PST.

- Procom Technology Technical Support Engineers can be reached via email at:

  tech-support@procom.com

- If you wish to send a fax to Procom Technology's Technical Support Team, the facsimile can be reached 24 hours a day at **949-261-6452**.

- Technical Support information, including specifications, jumper settings, files and Frequently Asked Questions can be obtained from our Technical Support web site at:

  http://www.procom.com/homepage/tech/wbhetech.html

- Information about the CDT-E3 may be obtained from the Procom Technology World Wide Web site at:

  http://www.procom.com

Chapter 2

Installation

This section includes the basic setup procedures for getting your CDT-E3 up and running:

- Connecting the CDT-E3 to the network
- Assigning an IP address
- Setting basic system parameters

Network Connector

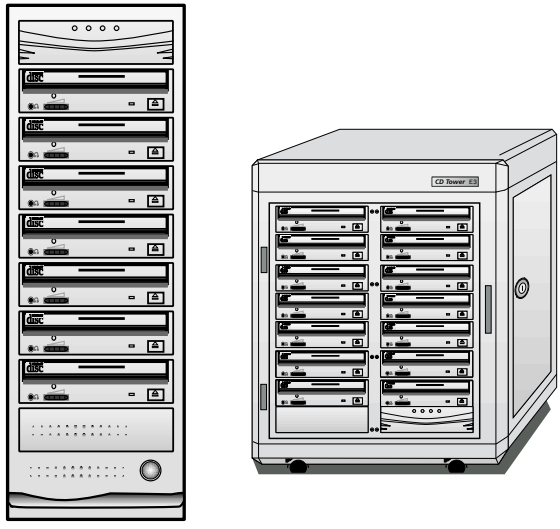
The CDT-E3 is equipped with a 100baseTX connector. The internal network connector will automatically adjust to 10baseT or 100baseTX, full or half duplex mode. Use a Category 5 UTP cable for the 100baseTX operation.

LED Indicators

The CDT-E3 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 CDT-E3 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* in *Appendix B: Troubleshooting* for a list of error conditions.



Connecting the CDT-E3 to the Network

Before you begin, always remember to consult the Network Administrator prior to making changes to the network configuration.

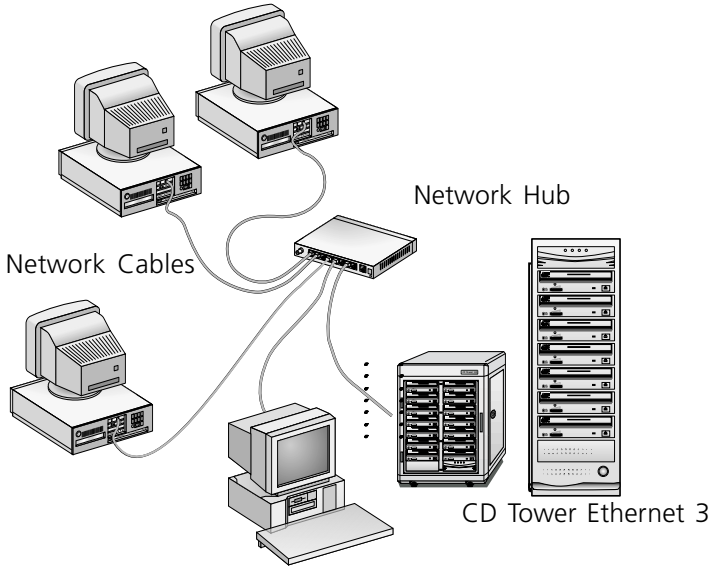
To connect the CDT-E3 to your network, follow these steps:

1. Select the proper voltage. The Voltage Selector switch can be set to 115 or 230V. The default is 115 volts which is standard in the United States. If you are using the CDT-E3 outside of the United States, please set the switch to the appropriate setting for your country.

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

3. Switch on the tower.

The CDT-E3 front panel indicators will flash during power-on and self-test. When the **Status** indicator stops flashing and turns solid green, the CDT-E3 is ready for use.



Assigning an IP Address

The CDT-E3 supports HTTP over TCP/IP, which means that it works as a Web server available on the Internet and intranets. To establish communication with the TCP/IP network, you must assign an appropriate IP address to your CDT-E3. For example, this is needed in order to access the CDT-E3 Web interface.

If you are not using IP addressing in your network environment, i.e. if you are using the CDT-E3 in Windows (SMB over NetBEUI) or NetWare (pure IPX), you do not need to set the IP address. You can then proceed directly to Chapter 4: Accessing the Discs*, or to the description of the NetWare NDS installation* Installation as an NDS Server *in* Chapter 3.

Before you begin, make sure the CDT-E3 is powered up and attached to the network. In addition, please note the following:

- Unless you are using DHCP, you must acquire an unused IP address from the Network Administrator.
- You will require *root* privileges on your UNIX system and *administrator* privileges on the Windows NT servers.
- Depending on the method you are using, you will need to know the Ethernet address of your CDT-E3. The Ethernet address is located at the rear of the tower on a seperate label.

Caution! *Do* ***not*** *use the default or example IP address when installing your CDT-E3. Always consult the Network Administrator before assigning an IP address.*

Methods for Setting the IP Address

The table below lists the methods you may use to set your IP address based on your network operating environment. Download the IP address to your CDT-E3 using the method appropriate for your system.

The ARP and RARP methods operate on single network segments only, i.e. they cannot be used over routers.

Method	Network Environments	See . . .
ARP	Windows 95/98 and NT, NetWare	page 18
DHCP	Windows NT, UNIX	page 19
BOOTP	UNIX	page 20
RARP	UNIX	page 21

ARP in Windows 95/98 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> <w95host IP address>, where *<my PC IP address>* is the IP address of your Windows 95 PC.

ping <IP address>

Example Windows 95:

arp -s 192.36.253.80 00-40-8c-10-00-86 171.36.6.40

ping 192.36.253.80

Syntax Windows 98 and Windows NT:

arp -s <IP address> <Ethernet address>

ping <IP address>

Example Windows 98 and Windows NT:

arp -s 192.36.253.80 00-40-8c-10-00-86

ping 192.36.253.80

The host will return **`Reply from 192.36.253.80 . . .`** or a similar message. This indicates that the address has been set and the communication is established.

Once the CDT-E3 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 CDT-E3 , 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 192.36.253.80 00:40:8c:10:00:86 temp

ping 192.36.253.80
```

The host will return **`192.36.253.80 is alive`**, or some similar message to indicate that the address has been set and the communication is established. Once the CDT-E3 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 CDT-E3 , 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

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"* for instructions about 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

2. Activate the scope.

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

To benefit fully 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 CDT-E3 will register its host name and IP address on the WINS server.

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 Ethenet

   vm = rfc1048

   ha = The ethernet or node address of CDT-E3

   ip = The IP address of the CDT-E3

   sm = The subnet mask

   gw = The default router address

   Example:

```
cdserv:ht=ether : vm=rfc1048:\
:ha=00408c110086:ip=192.36.253.80:\
: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 CDT-E3 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:10:00:86 192.36.253.80

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 CDT-E3 to download the IP address.

Basic System Settings

The CDT-E3 can be configured using one of these tools:

- **Web Browser** - The CDT-E3 Web interface, which is the preferred administration tool. Requires the IP address to be set. See description below.
- **Text Editor** - The CDT-E3 text files. Refer to *Text Editor* in *Chapter 3*.

Accessing the CDT-E3 Web Pages

The CDT-E3 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 CDT-E3 from a standard Web browser:

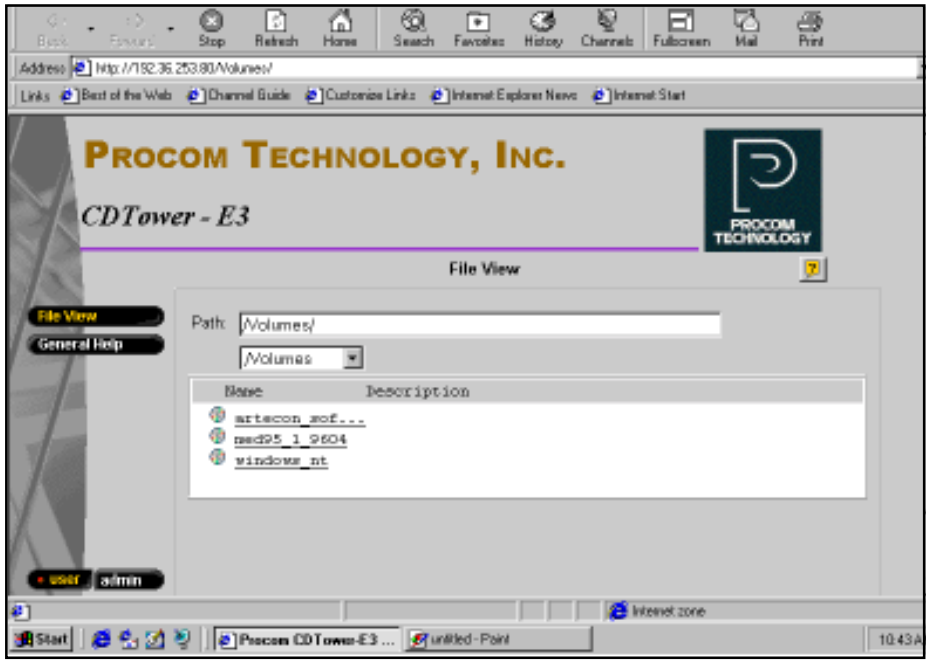
- Netscape Navigator version 3.0 or higher
- Internet Explorer version 3.0 or higher

To access the Web pages, follow these steps.

1. Start the Web browser.
2. Enter the name or IP address of your CDT-E3 in the location/address field:

   http://<IP address>

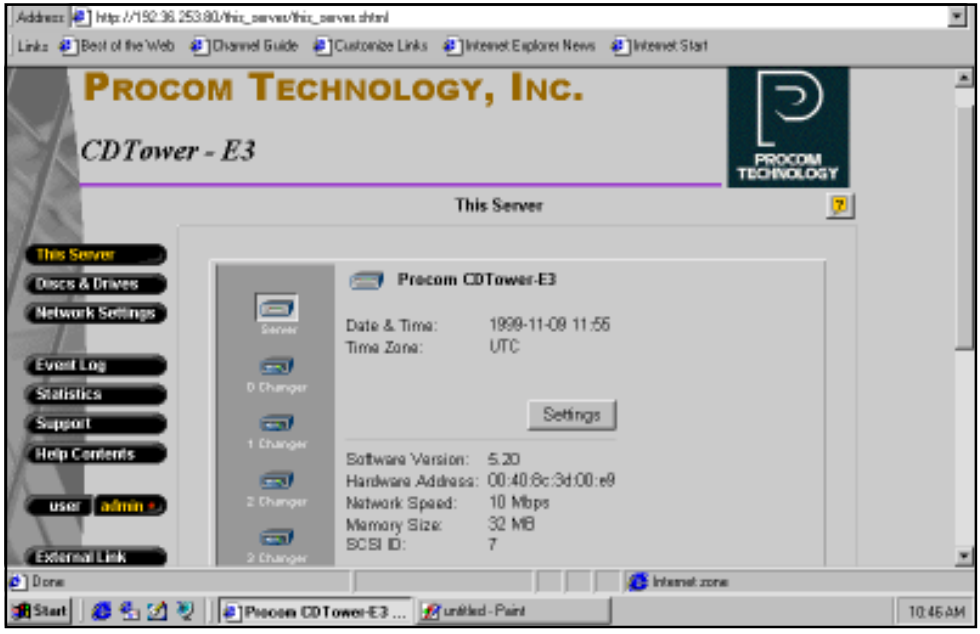
The CDT-E3 Home Page is displayed.



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**, while the default Admin is **admin**.

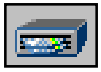
4. The **This Server** page appears:



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.

The icons displayed to the left represent all the units connected to the SCSI bus listed by SCSI ID. To display information on a particular device, simply click the corresponding icon:

 Server

 Changer/CD/DVD-ROM Drive

Main Menu

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

- **This Server** - System settings and drive information.
- **Discs & Drives** - Managing the drives and the inserted discs. Setting up access rights.
- **Network Settings** - Specifying settings for the network protocols used.
- **Event Log** - Viewing the event log that contains occurrences in the CDT-E3 .
- **Statistics** - Displaying statistics on the CDT-E3.
- **Support** - Trouble shooting, server report, software version, CDT-E3 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.

*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 CDT-E3 Web pages. To access help for a specific page, click **Help** .*

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), 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.

To set the Server password, follow these steps:

1. On the **This Server** page, click **Settings** to open the Server Settings dialog box.
2. Open the **General** page.
3. Specify and confirm the **Server password.**
4. Click **Save** and then **Close**.

Note: The new password will not take effect unless it is saved.

Date and Time

1. On the **This Server** page, click **Settings** to open the Server Settings dialog box.
2. Open the **Date/Time** page.
3. Specify the time zone in which the CDT-E3 operates.
4. To set the time using a time synchronization source, choose **Automatically** and specify the time source:

   Network Time Protocol (NTP) - for TCP/IP networks

   Novell Directory Services (NDS) - for NetWare

NTP is not natively supported by Windows NT servers. You will need third party software.

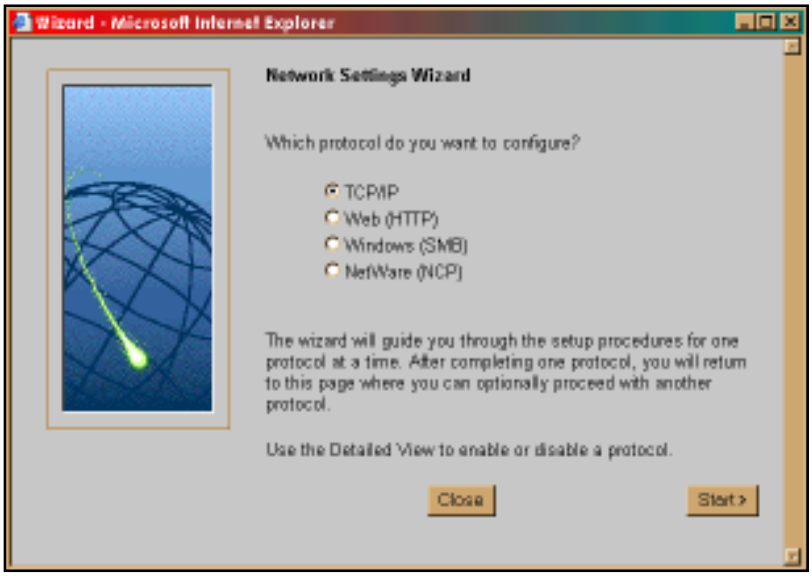
   To set the time manually, choose **Manually** and specify the date in yy-mm-dd format, and time in hh:mm:ss format using the 24 hour clock.

5. Click **Save** and then **Close**.

TCP/IP

The installation wizard is a convenient way to specify the Internet-related settings for your CDT-E3 .

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. Open the **TCP/IP** page and verify the settings.
7. Click **OK**.

Context sensitive online help  is *available for all parameters.*

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

Chapter 3

Configuring the CD Tower Ethernet 3

This chapter outlines the required configuration settings for running the CDT-E3 in:

- Microsoft and IBM (SMB) Network Environments
- Novell NetWare Environment
- UNIX (NFS) Environment

In addition, this section also describes the procedure for configuring the CDT-E3 for use via its Web interface.

Microsoft and IBM Networks (SMB)

This section outlines the required configuration settings for running the CDT-E3 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.

SMB (Server Message Blocks) is a protocol that make use of NetBIOS. NetBIOS can be transported over several different network protocols. The CDT-E3 supports the following transport methods:

- SMB over NetBIOS/NetBEUI - max 200 users
- SMB over NetBIOS/TCP/IP (NBT) - max 300 users

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

Network Settings

You do not need to specify any specific settings before you can use the CDT-E3 in the Windows (SMB) environment. However, you might want to change some of the default settings, e.g. the SMB server name. You can use the Administration Web pages to configure the CDT-E3 assuming the IP is already configured.

SMB Server Name

The default SMB server name is **Procom<nnnnnn>**, where <nnnnnn> are the last six digits of the CDT-E3 Ethernet address. 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. It can be useful to choose a more descriptive name, e.g. in order to indicate where the unit is located.

Wizard

The installation wizard is a convenient way to set up your CDT-E3 for your Windows (SMB) environment.

1. Start your Web browser, and enter the name or IP address of the CDT-E3 in the location/address field.

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

3. Click **Network Settings**.

4. Click **Wizard**  . The **Network Settings Wizard** dialog box 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. Open the **Windows (SMB)** page and verify the settings.
9. Click **OK**.

Access Control

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

- **Share-level** access control will prompt the users to supply a password before they can access the shared resource.
- **User-level** access control will grant specific users access to specific resources. This method integrates the CDT-E3 with Windows NT or OS/2 domains, reading access rights from domain control servers on the network.

Setting the Security Mode

Follow these steps:

1. Start your Web browser, and enter the name or IP address of the CDT-E3 in the location/address field.
2. Click **Administration**. You will be prompted for the Server password. By default, this is set to **pass**.
3. Click **Network Settings**.
4. Click **Detailed View**  .
5. Open the **Windows (SMB)** page.
6. Select the security mode to be used; either share-level or user-level. For user-level, you must specify the name of the authentication domain to which the domain controller belongs. Otherwise, no access will be granted.
7. Click **OK**.

Share-level

Share-level access control allows you to assign passwords to each shared resources on the CDT-E3. The user will automatically be prompted for the password when trying to access the shared resource. The user will then be granted access to the volume and all its subfolders.

By default, all users will have access to all the discs. The system files are protected by the Server password.

Discs & Drives

1. Start your Web browser, and enter the name or IP address of the CDT-E3 in the location/address field.

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

Note: By now you should have already changed the Admin password.

3. Click **Discs & Drives**.

4. To protect **all** the discs:

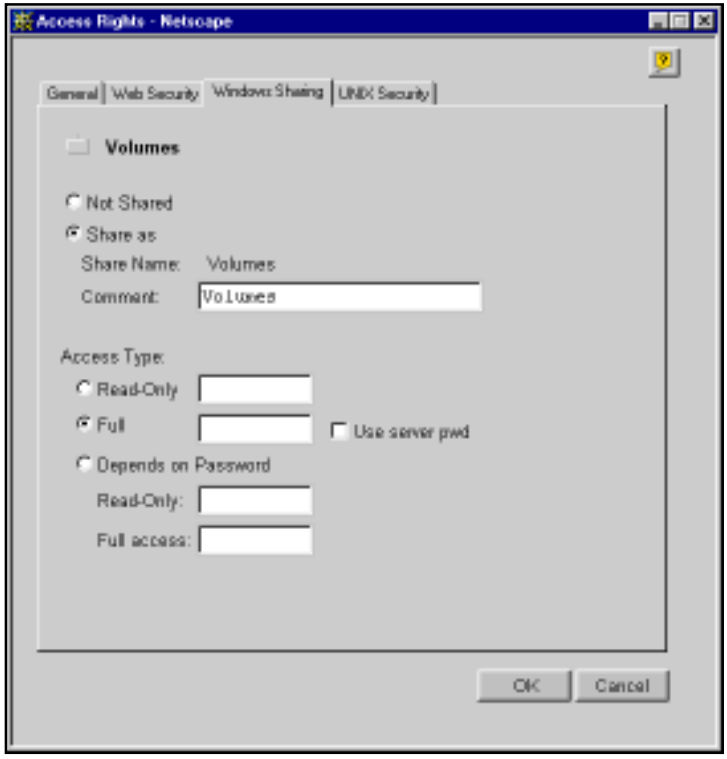
   - Locate the Volumes folder in the file tree.

   To protect **one or several** shared resources:

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

5. Click **Access Rights**  .

6. Open the **Windows Sharing** page.



7. Specify the sharing options.

8. Click **OK**.

User-level

User-level access control means that specific users and groups can be granted access to each shared resource on the CDT-E3. The CDT-E3 validates all users, except the local administrator, against a domain controller. On successful login, the user will be authenticated to use the shared resources on the CDT-E3 according to the permissions specified.

The system files are protected by default. All users that belong to the administrator groups in the domain have administrator rights on the CDT-E3. All members of the domain have full access to all the discs.

Discs & Drives

1. Start your Web browser, and enter the name or IP address of the CDT-E3 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. To make **all** the discs available to some users only:

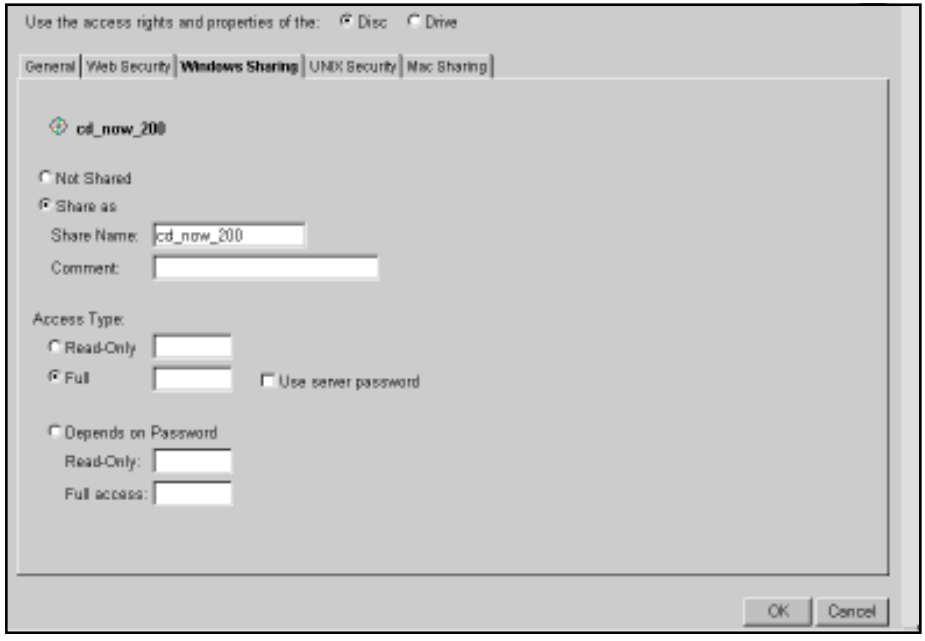
   - Locate the Volumes folder in the file tree.

   To protect **one or several** resources but grant all users access to most other resources:

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

5. Click **Access Rights**  .

6. Open the **Windows Sharing** page.



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

All users must belong to the same domain. All groups must be global, not local.

Files and subfolders created within this folder will automatically inherit the same access rights. 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**.

NetWare (NCP)

This section outlines the required configuration settings for running the CDT-E3 in the Novell NetWare environment and how to set up access restrictions.

Network Settings

The CDT-E3 emulates both a NetWare 3.x bindery server and a 4.x NDS server. It also supports NetWare/IP. In NetWare 5 environments, the CDT-E3 can be integrated as any other 4.10 server accessed via IPX or NetWare/IP.

If your network supports TCP/IP, you can use the Administration Web pages to configure the CDT-E3.

NetWare Server Name

The default NetWare server name is **Procom <nnnnnn>_NW**, where <nnnnnn> are the last six digits of the CDT-E3 Ethernet address. 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 can be useful to choose a more descriptive name, e.g. in order to indicate where the unit is located.

Installation as a Bindery Server

If used as a bindery server, no specific installation is required prior to using and accessing the CDT-E3. However, it is recommended that you specify the authentication server.

Installation as an NDS Server

If used as an NDS server, the CDT-E3 must first be installed in the NDS tree. The most convenient way to do this is using the installation wizard available from the CDT-E3 Web interface, see *Wizard* on page 40.

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 41.

Requirements

When installing the first CDT-E3 into the NDS tree, it is recommended that you use an account with Supervisor rights to the [Root] of the tree. This means that the user specified in the **NDS Admin Name** parameter must have Supervisor access rights.

The CDT-E3 will extend the NDS Schema with a new attribute which will be added to the NDS Server object class. The extension is needed for storing configuration data. The CDT-E3 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.

Adding the schema extension requires Supervisor rights to the [Root] object of the NDS directory 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 Novell file server. However, you must specify the **NDS Rights Storage** and **NDS Rights File** parameters properly. You will need Admin rights to the Organizational Unit (OU). After the NDS installation, you must create and assign access rights to the directory on the Novell file server where the file is stored.

For subsequent installations, Create rights to the context where you want to install the CDT-E3 will be sufficient.

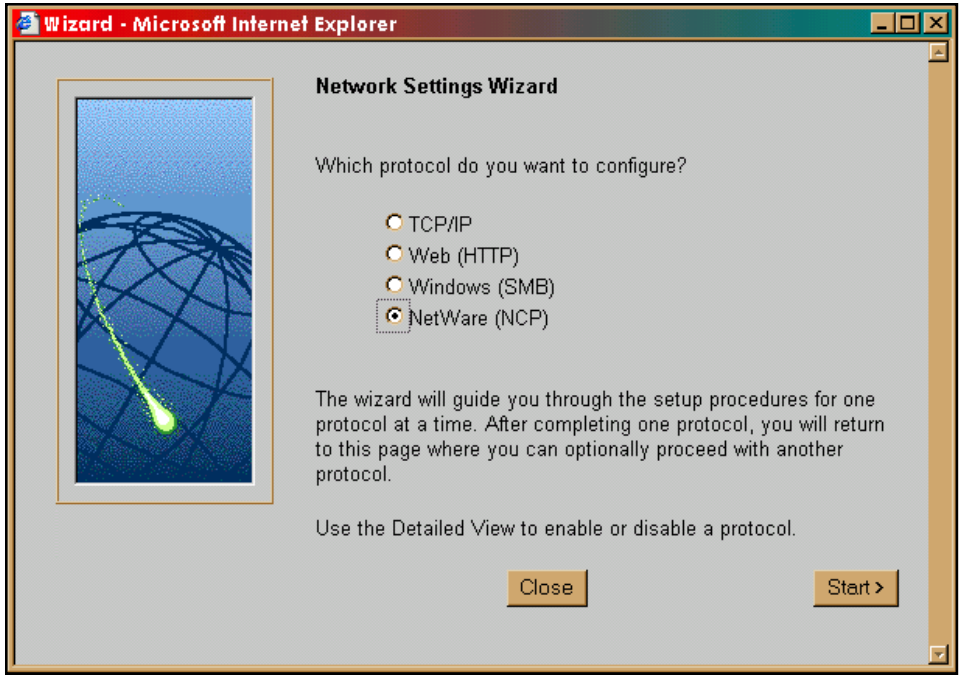
Synchronizing the NDS Tree

Before installing the CDT-E3 in the NDS tree you need to verify that the NDS tree is synchronized. To do that, load **DSREPAIR** on the server in the NDS tree and select **Unattended full repair**. If the NDS tree is not synchronized, do **not** continue the installation until you have solved the problem.

Wizard

The installation wizard is a convenient way to install your CDT-E3 in the NetWare environment.

1. Verify that the NDS tree is synchronized.
2. Start your Web browser, and enter the name or IP address of the CDT-E3 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 **Network Settings**.
5. Click **Wizard**  . The **Network Settings Wizard** dialog appears.



6. Choose **NetWare (NCP)** to set up the CDT-E3 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. Open the **NetWare (NCP)** page and verify the settings.

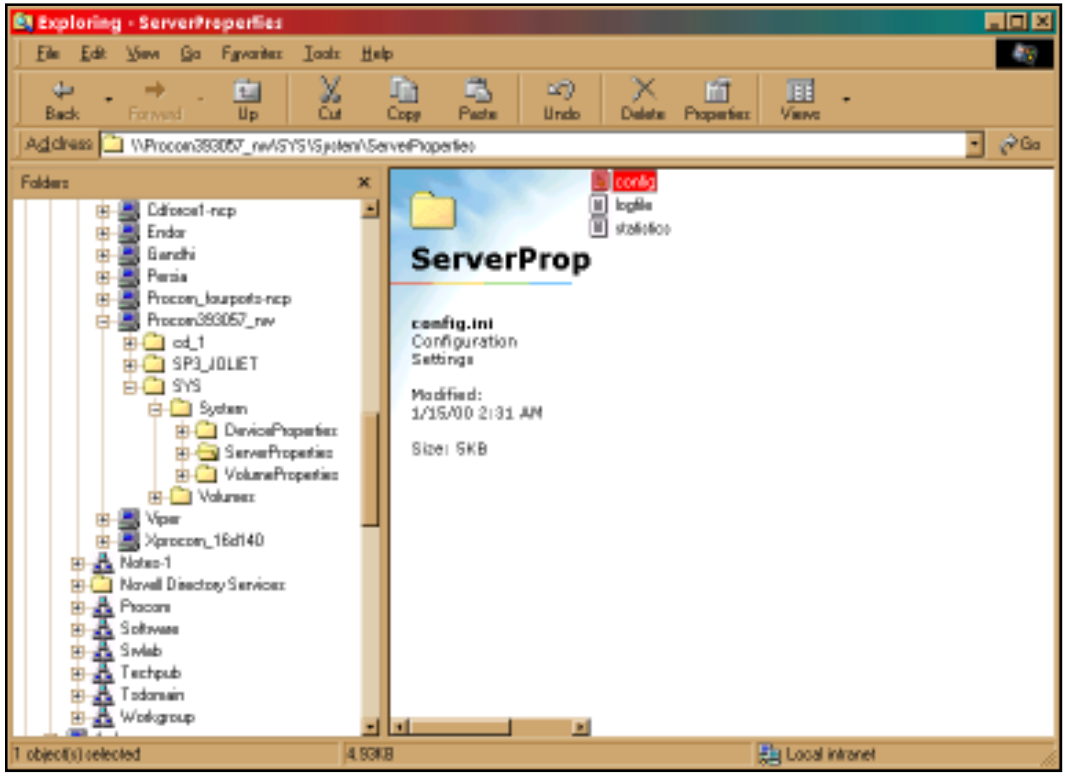
10. Click **OK**.

Text Editor

If you do not have TCP/IP on your network, follow these steps to install the CDT-E3 as an NDS server:

1. Verify that the NDS tree is synchronized.

2. Use a standard text editor such as Notepad to edit the configuration parameters. From Windows Explorer or File Manager, locate the CDT-E3 configuration file, **config.ini** which is located in the **System/ServerProperties** folder.



3. Enter the appropriate settings for these parameters

Parameter Name	Value	Description
[Server]		
TimeZone	=	Must be set to the same time zone in which the CD-E34 is operating.
TimeSyncSource	= NDS	Set to ***NDS*** to enable the CDT-E3 to get its time from the NetWare network. Default is ***NDS***.
[NetWare]		
NDSEnable	= yes	Must be set to *yes* to enable the NDS login.
NDSTreeName	=	The name of the tree where you want to install the CDT-E3, e.g., ***MEDCORP***.
NDSServerContext	=	The distinguished name of the context in the NDS tree where you want to install the CDT-E3, 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 CDT-E3, e.g. ***Admin.Medtec***.
NDSAdminPassword	=	The password of the administrator entered in the NDSAdminName shown above. Once written, this password will appear as *****.
NDSInstall	=	Change this to ***Install*** when you are ready to install the CDT-E3 CD. ***Forced*** 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 extension in your NDS tree or it 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\CDSRX.DAT*** The specified directory must exist and the CDT-E3 CD must have Read, Write, Create, Erase, Modify and File scan rights. The CDT-E3 CD will create the file once you start adding trustees.
TimeSyncSources	= SAP	Default is ***SAP*** for the network agreed time. Alternatively, enter the server names to be contacted for time synchronization.

Example (NDS settings):

The CDT-E3 CD is placed in the Eastern United States. The name of your NDS tree is ACMECORP, the name of the context where you wish to install the CDT-E3 is Corp.Acme, and the administrator's name is Admin.Acme. Specify these parameters:

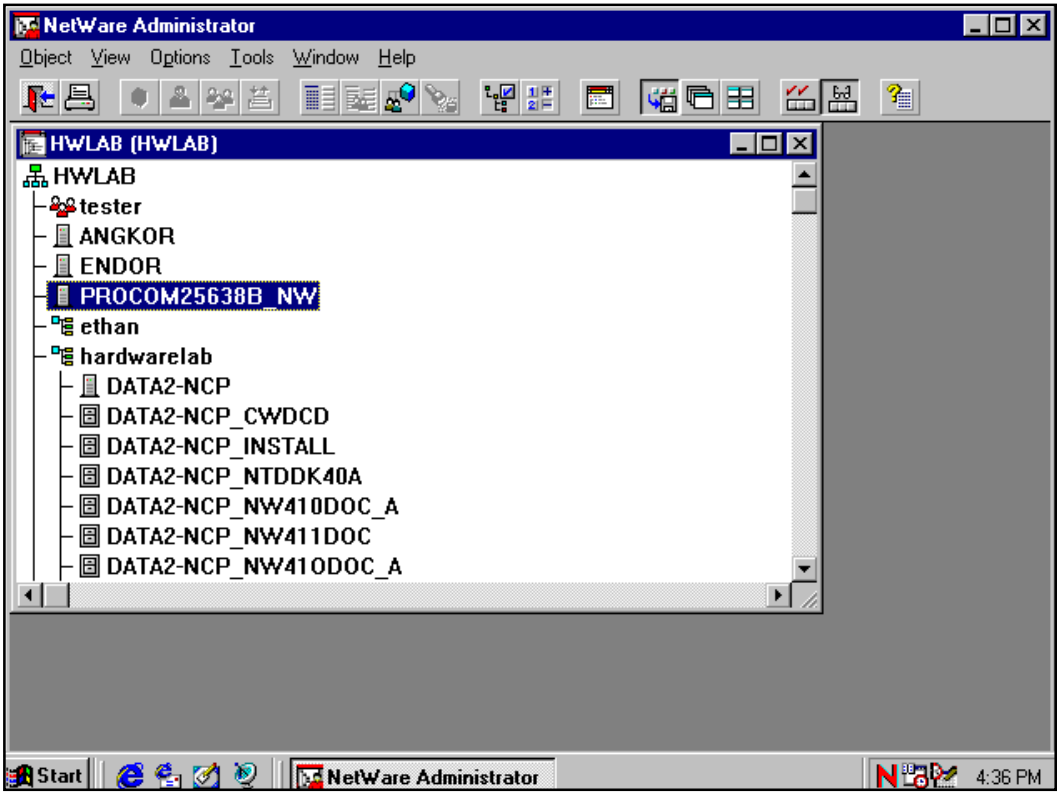
[Server]		
TimeZone	=	US_CAN_EASTERN
TimeSyncSource	=	NDS
. . .		
[NetWare]		
NDSEnable	=	yes
NDSTreeName	=	ACMECORP
NDSServerContext	=	Corp.Acme
NDSAdminName	=	Admin.Acme
NDSAdminPassword	=	secret
NDSInstall	=	install
NDSRightsStorage	=	NDS
TimeSyncSources	=	SAP

4. 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 CDT-E3 in NDS mode.

5. Check the logfile.txt file to verify that the CDT-E3 was successfully installed. See *Installation Errors in NetWare NDS* on page 46.

6. After the installation you must logoff and then login again to have all the necessary rights on the CDT-E3 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.

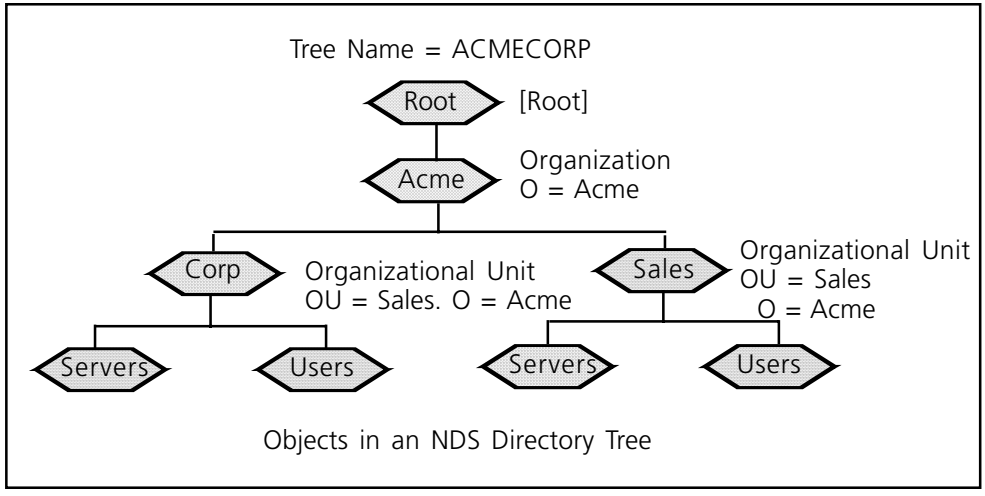


Distinguished Names

Names in the 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**



Objects in an NDS Directory Tree

You can display Details in NWAdmin to verify the syntax of the ***NDSServerContext and NDSAdminName*** *parameters.*

Deleting the Server Object

If using the partition manager within NWAdmin to delete the server object from your NDS tree, you must turn off the CDT-E3 and keep it turned off for 5 minutes before deleting the object. If you do not turn off the server before attempting to delete the server object, your client workstation will hang and you will have to reboot your PC. However, when using NDS manager this is not needed.

Installation Errors in NetWare NDS

If you experience problems when installing your CDT-E3 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 CDT-E3 Web interface. For a summary of error messages, see the table on the next page.

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 ise the correcet format, e.g. *admin.acme.* Verify the spelling.
Installation failed: Administator 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 paramete 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 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.

Access Control

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

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

The CDT-E3 acts as a normal NetWare file server, which means that you use standard procedures such as NWAdmin, SYSCON and Filer for handling security.

You cannot set up access restrictions for the NetWare environment via the CDT-E3 Web interface.

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 CDT-E3 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 CDT-E3 system files to the Supervisor. Unauthorized users will still have guest access to the volumes. This is normally sufficient security for a CDT-E3.

NetWare Bindery with Authentication

If user access control is required, you must specify an authentication server in the **Bind Authentication** parameter. The CDT-E3 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 CDT-E3. However, several CDT-E3s can share this license.

Important! *If "Station Restrictions" are used on the Novell server used for authentication, each user who wants to access the CDT-E3 needs 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 CDT-E3. If the user is defined in the file server that the CDT-E3 uses for authentication, the user will automatically have access to the CDT-E3.

Authentication to a NetWare 3.x Server

For access to a CDT-E3 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 CDT-E3 . 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.

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 of the discs inserted into the CDT-E3 available to some users only, follow these steps:

1. Login as Supervisor on the CDT-E3. In order for Filer to access the CDT-E3, 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 **Procom<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 CDT-E3. In order for Filer to access the CDT-E3, 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 **Procom<nnnnnn>_NW/SYS:**.

4. Set an inherited rights filter and filter **ALL** rights on the resource you want to protect.

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

*The NetWare bindery access rights for the CDT-E3 can be set using Group and User Objects as with any other file server. You can always access the CDT-E3 using the user name **Supervisor** and the password specified by the **Server Password** parameter. By default the password is **pass**.*

Access Restrictions in NetWare NDS

In NetWare, access rights for users in bindery mode is separate from users accessing the CDT-E3 in NDS mode. For this reason, we recommend that you disable bindery mode after you have successfully installed the CDT-E3 in NDS and thus allow users to log on in NDS mode only.

If NDS mode is not functioning, you can always access the CDT-E3 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 CDT-E3 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 CDT-E3. All users who have Supervisor privileges in the context in which the CDT-E3 was installed will also have Supervisor privileges on the CDT-E3.
- 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.

If the default security is satisfactory to your system, do not change anything. If required, you may change the default trustee assignments using ***NWAdmin****.*

Setting Security Rights in NetWare NDS

Because the CDT-E3 acts as a normal NDS file server, its NDS security rights can be set using standard procedures, e.g. NWAdmin.

To make all of the discs inserted into the CDT-E3 available to some users only, follow these steps:

- Login as **Admin**, and start the NWAdmin.
- Remove the [Public] trustee from the root of the **SYS** volume.
- Add the new trustee assignments to the root of the **SYS** volume.

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

- Login as **Admin**, and start the NWAdmin.
- Set an inherited rights filter and filter **ALL** rights on the resource you want to protect.
- Add the new trustee assignments to the resource. This makes it available only to the users in the trustee list.

The NetWare NDS access rights for the CDT-E3 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 CDT-E3, and how you would set the access rights on an NDS file server.

UNIX (NFS)

This section outlines the required configuration settings for running the CDT-E3 in the UNIX (NFS) environment and how to set up access restrictions.

Make sure you have set the Internet address as described in Assigning an IP Address *on page 14.*

Network Settings

Use the Administration pages within the CDT-E3 Web interface to configure the CDT-E3.

1. Start your Web browser, and enter the name or IP address of the CDT-E3 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 **Network Settings**.

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

5. Open the **UNIX (NFS)** page and specify the settings.

6. Click **OK**.

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 CDT-E3 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.

Discs & Drives

1. Click **Discs & Drives**.

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

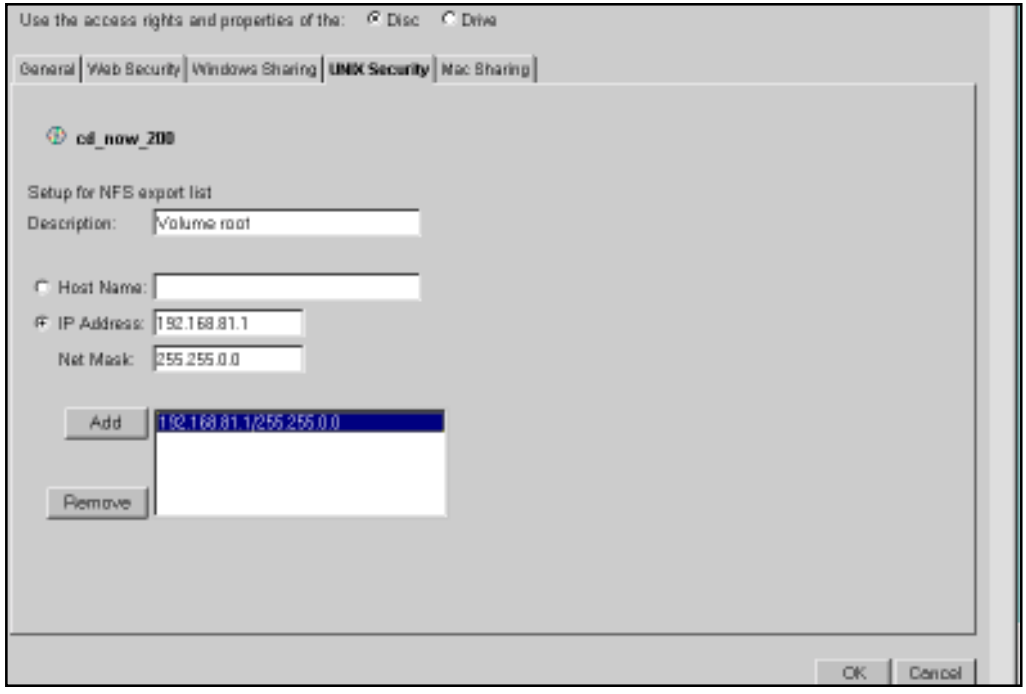
   - Locate the Volumes folder in the file tree.

   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 may 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.

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

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

* which represents any number of character except dots (. . .). A single * represents any host name.

? which represents one character.

You may specify an IP address/subnet mask par in order to export the directory to an IP subnetwork.

7. Click **Add** to add the new entry to the NFS export list.

8. Click **OK**.

WebBrowser (HTTP)

This section describes how to configure the CDT-E3 for use via its Web interface.

The CDT-E3 supports HTTP over TCP/IP, which means that it works as a Web server available on the Internet and intranets.

Network Settings

You use the Administration Web pages to configure the CDT-E3.

Wizard

The installation wizard is a convenient way to set up your CDT-E3 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. Open the **Web (HTTP)** page and verify the settings.
7. Click **OK**.

Context sensitive online help  *is available for all parameters. The parameter list is described in detail in* Appendix A - Parameter List.

External Link

You can add a customized link on the Home 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 CDT-E3.

Follow these steps:

1. Click Network Settings.
2. Click Detailed View  .
3. Open the Web (HTTP) page.
    - 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. h**ttp://www.company.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

Access Control

All users will always have access to the CDT-E3 Home 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 CDT-E3 Web interface for access control. Refer to *Accessing the CDT-E3 Web Pages* on page 22.

The Server password implies full access to the CDT-E3 regardless of any additional passwords set for particular discs.

Discs & Drives

To restrict user access to a particular resource:

1. Click **Discs & Drives.**
2. Locate the resource you want to protect in the file tree.
3. Click **Access Rights**  .
4. Open the **Web Security** page.

5. Specify how to protect the shared resource when accessed from a Web browser. By default, access rights are inherited from the parent folder, but you can optionally specify another password.

6. Click **OK**.

Disable User Access

To disable user access from the Web browser and thus limit access to the Administration pages only:

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)** field.
5. Click **OK**.

Chapter 4

Accessing the Discs

This section provides instructions for choosing access points when mapping the CDT-E3. As well, instructions are provided for accessing resources via your network operating system.

Accessing the Discs

The CDT-E3 makes your networked CD/DVD-ROMs available to anyone who has the appropriate privileges on the network. Users will access the CDT-E3 just as any other workstation or file server.

This section explains how to choose access points when mapping the CDT-E3. It also describes how to access the CDT-E3 resources in the following network operating systems:

Network Environments	See . . .
Windows 95/98 & NT. (SMB, NetWare, NFS)	page 68
Windows for Workgroups 3.x (SMB, NetWare, NFS)	page 76
Windows NT 3.51 (SMB, NetWare, NFS)	page 81
DOS (SMB, NetWare)	page 85
UNIX (NFS)	page 88
Web Browser (HTTP)	page 89
Macintosh (SMB, NFS)	page 90

The examples will assume that you have not changed the default server name. The default server name is ***Procom<nnnnnn>*** *in the SMB environment and* ***Procom<nnnnnn>_NW*** *in NetWare, where* ***<nnnnnn>*** *are the six last digits of the CDT-E3 Ethernet address. 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 CDT-E3. The default Server password is* ***pass****.*

Access Points

The CDT-E3 is integrated into your network operating system just like any other file server and you use the same commands to access it. To be able to access the discs from within your applications, you need to make them available to your system, that is to 'mount' the CDT-E3. On PC systems, this is typically done by mapping the CDT-E3 to a drive letter.

The CDT-E3 offers several possibilities to specify access points:

- **Root Level Access**: If the top level of the CDT-E3 directory structure is used as the access point, the user can access all the files on the CDT-E3. This is useful for the Administrator, who wants to configure and monitor the CDT-E3.
- **Volumes Folder Access**: If the Volumes folder is used as the access point, the user can access all the available discs. On PC systems, this makes it possible to use one drive letter to access *all* the discs. This is the recommended access for normal users.
- **Disc Access**: If the folder for a particular disc is used as the access point, the user can access only the files on that disc. This is useful or even necessary with software that expects to find its data at root level.

General Disc Settings

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

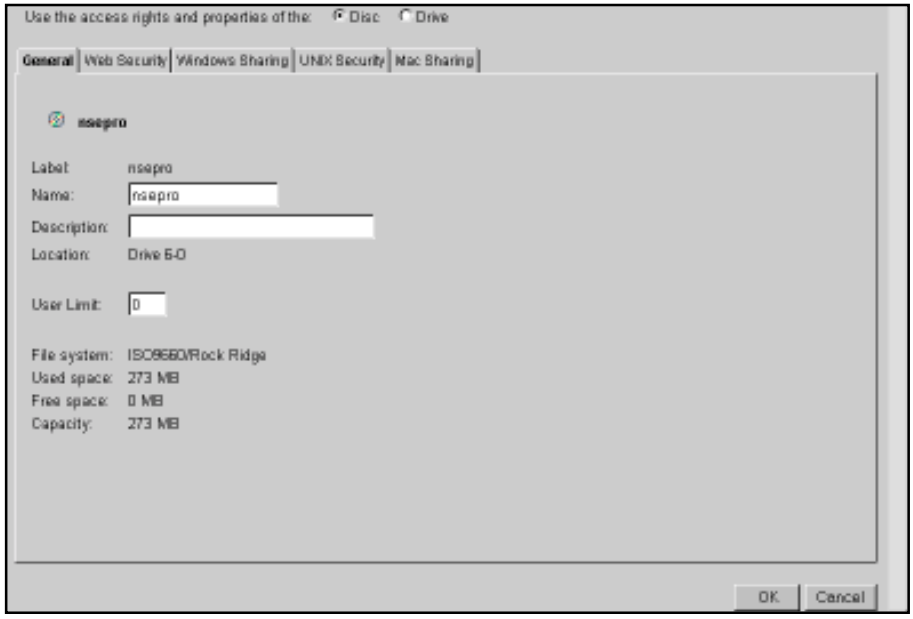
1. Start your Web browser, and enter the name or IP address of the CDT-E3 in the location/address field.

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**  . This dialog box appears:



6. On 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 the Details view of 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

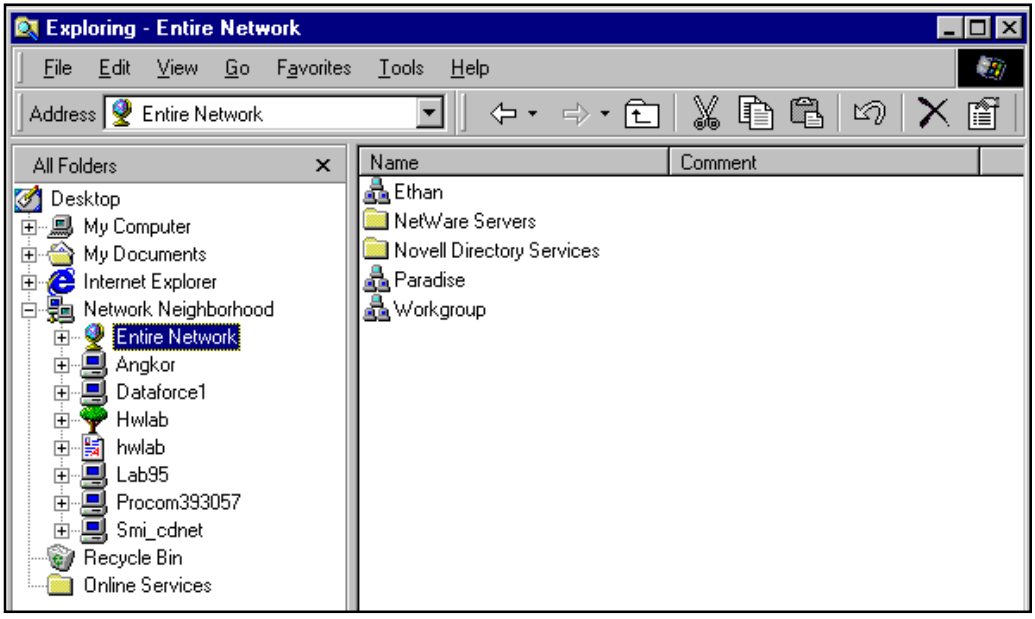
Microsoft Networking (SMB)

In Windows 95/98 and Windows NT 4 on an SMB client, follow these steps to map the CDT-E3:

1. Start the Windows Explorer.

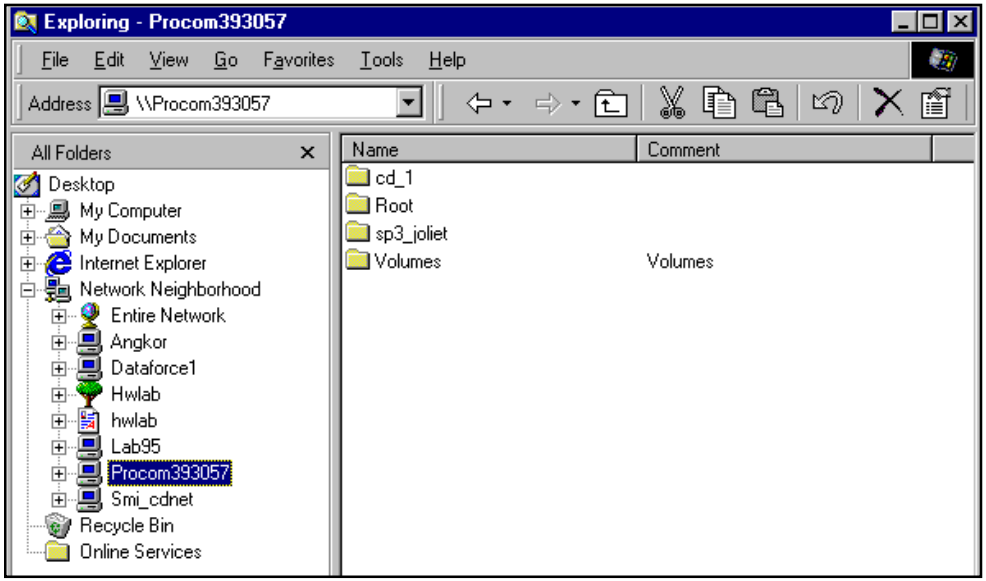
2. Expand the **Network Neighborhood** icon.

3. Expand the **Entire Network** icon. By default, the CDT-E3 appears in the folder that comes first when sorted by name. If the Domain Name is already set, the CDT-E3 will appear in the specified folder.



If you cannot find the CDT-E3 under ***Entire Network****, refer to* Alternative Method *on page 70.*

4. Double click the entry for your CDT-E3. The default name is **Procom<nnnnnn>**, where **<nnnnnn>** are the six last digits of the CDT-E3 Ethernet address.



5. To map one of the CDT-E3 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. office 97

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

7. Select a drive letter for your CDT-E3.

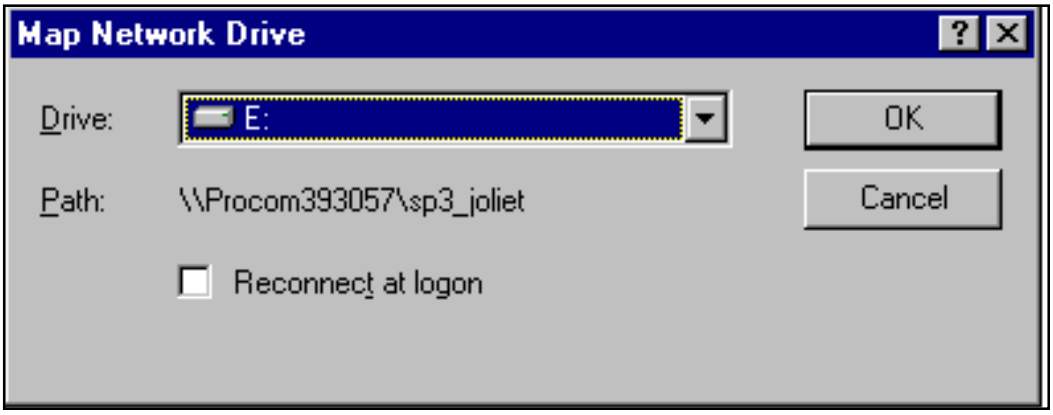
8. Check **Reconnect at logon** if you wish to use the resource under the same drive letter the next time you start your computer.

9. Click **OK**. The CDT-E3 is ready for use.

Alternative Method

If you cannot find the CDT-E3, 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 *Procom<nnnnnn>\root*, where <*nnnnnn*> are the six last digits of your CDT-E3 Ethernet address.
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 CDT-E3 is ready for use.

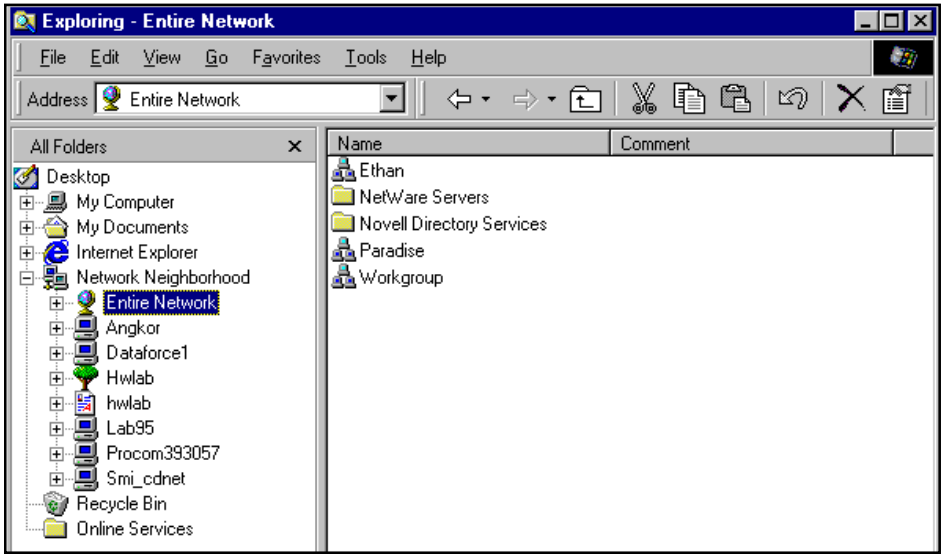
NetWare (NCP)

NDS Mode

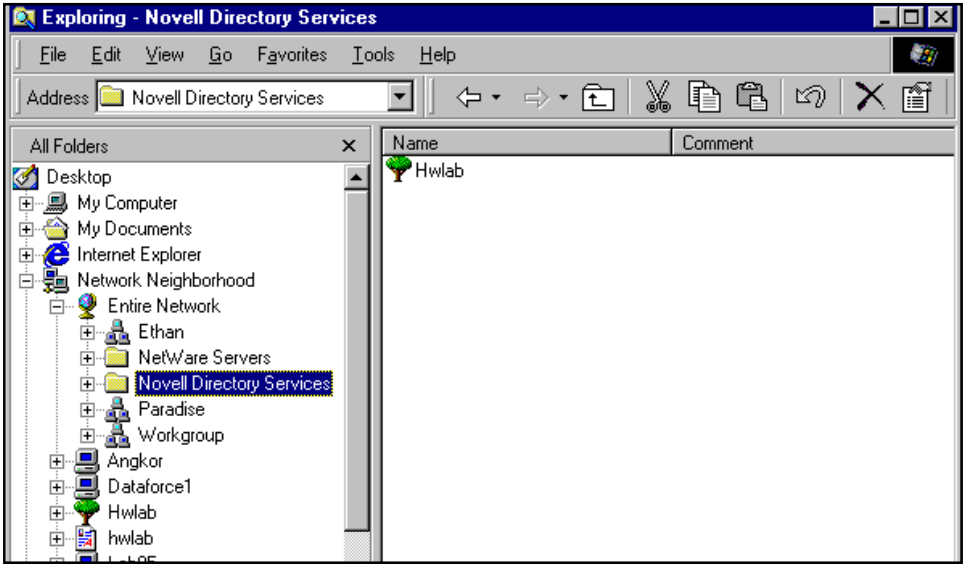
In Windows 95/98 and Windows NT on a Novell NetWare client for NDS, follow these steps to map the CDT-E3:

1. Start the Windows Explorer.

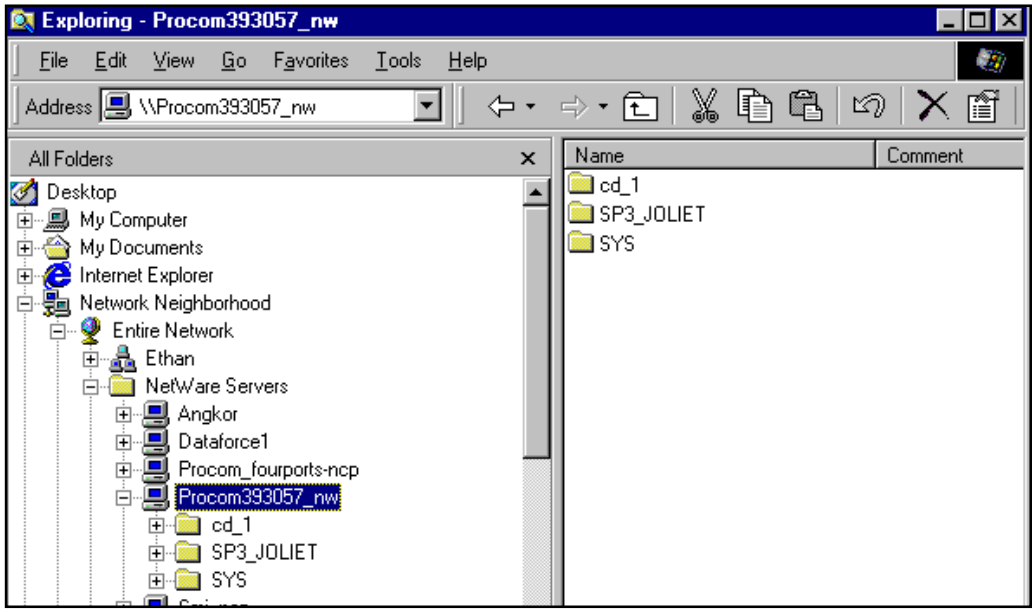
2. Expand the **Network Neighborhood** icon. The available resources are displayed:



3. Expand the **Entire Network** icon and open the **Novell Directory Servers** folder.



4. Locate your CDT-E3. The default name is **Procom<nnnnnn>_NW_SYS**, where **<nnnnnn>** are the last six digits of the CDT-E3 Ethernet address. Expand the **Volumes** folders to display all the discs.



5. To map a CDT-E3 resource to a drive letter, select:

   - **Procom<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 97

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

7. Select a drive letter for your CDT-E3.

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

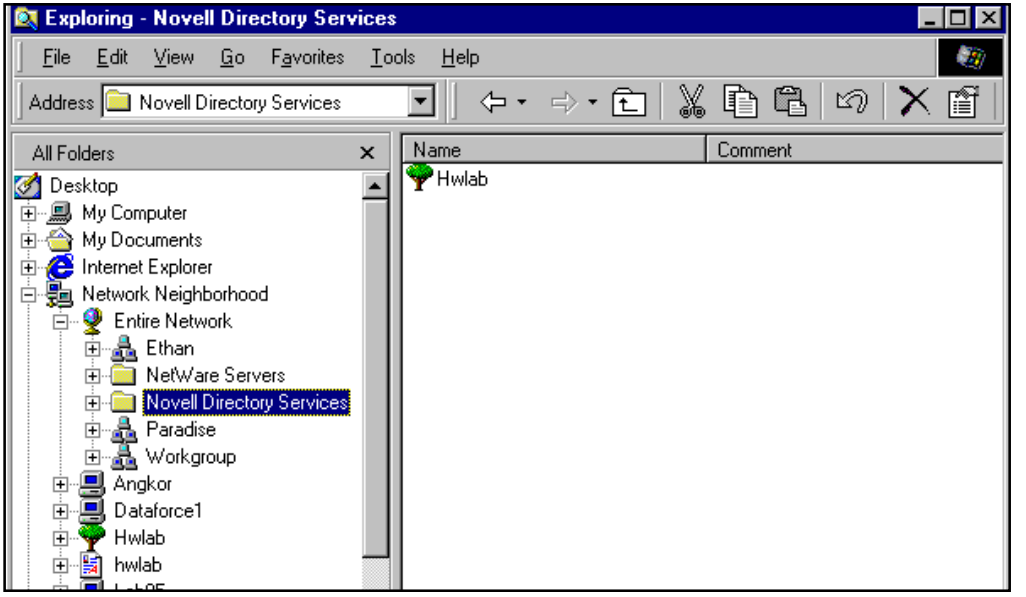
9. Click **OK** . The CDT-E3 is ready for use.

Bindery Mode

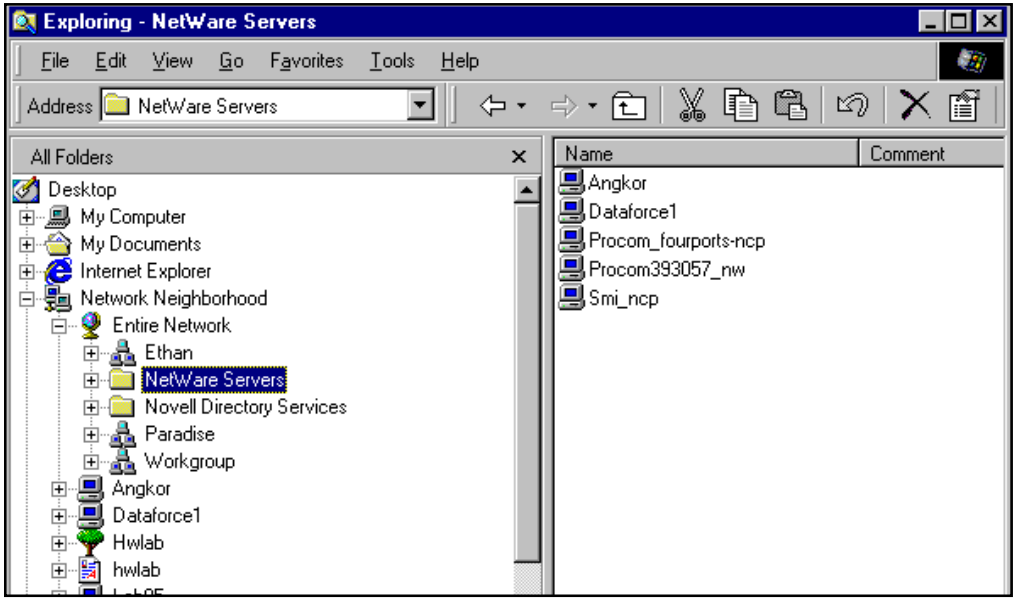
In Windows 95/98 and Windows NT on a Novell NetWare client for bindery mode, follow these steps to map the CDT-E3:

1. Start the Windows Explorer.

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



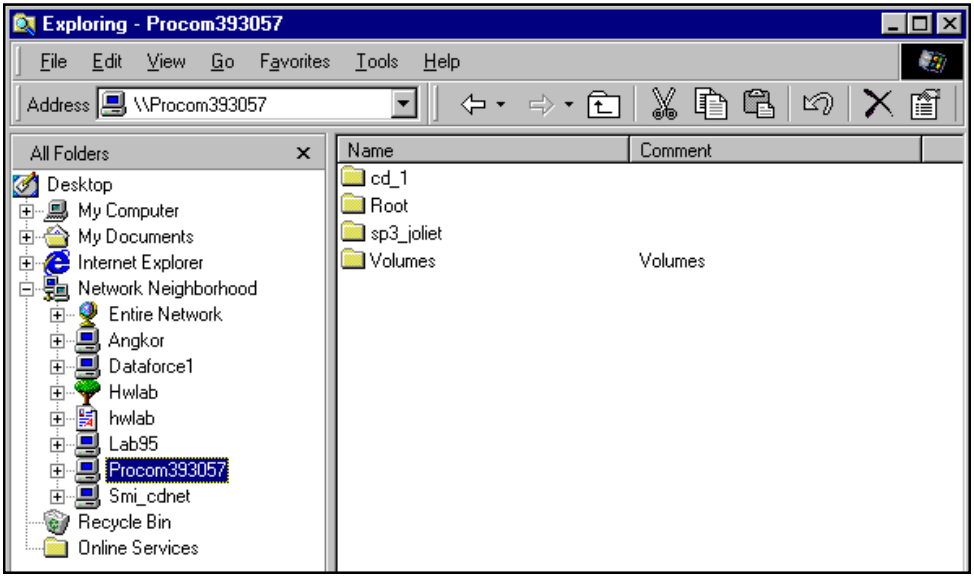
3. Expand the **Entire Network** icon and then open the **NetWareServers** folder.



4. Double click the entry for your CDT-E3. The default name is **Procom<nnnnnn>_NW**, where **<nnnnnn>** are the six last digits of the CDT-E3 Ethernet address.

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 CDT-E3, expand the **SYS** and **Volumes** folders to display all the discs:



*If the **Show All Volumes** parameters 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 CDT-E3 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. office 97
8. Right click the resource and select **Map Network Drive...**
9. Select a drive letter for your CDT-E3.
10. Check **Reconnect at logon** if you wish to use the resource under the same drive letter the next time you start your computer.
11. Click **OK** . The CDT-E3 is ready for use.

NFS for PC

The CDT-E3 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 CDT-E3.

Windows for Workgroups 3.x

Microsoft Networking (SMB)

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.

3. In the top listing, double-click the entry for your CDT-E3. The default name is **Procom<nnnnnn>**, where **<nnnnnn>** are the last six digits of the CDT-E3 Ethernet address.

If you cannot find the CDT-E3, enter ***\\Procom<nnnnnn>\root****, in the Path box and click* ***OK****.*

4. From the bottom listing, select one of the CDT-E3 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 CDT-E3 is ready for use.

NetWare (NCP)

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.

3. Select the entry for your CDT-E3. The default name is **Procom<nnnnnn>_NW**, where **<nnnnnn>** are the last six digits of the CDT-E3 Ethernet address.

4. Click the **Login** button.

5. Once you are logged in to the CDT-E3, click the **Drive Connections** button on the toolbar. This screen is displayed:

*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 **Procom<nnnnnn>_NW_SYS** and then **VOLUMES**.

7. Select a drive letter in the Drives listing.

8. In the Resources listing, select a CDT-E3 resource:

   - **Procom<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 CDT-E3 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 CDT-E3 is ready for use.

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 CDT-E3. The default name is **Procom<nnnnnn>_NW**, where **<nnnnnn>** are the last six digits of the CDT-E3 Ethernet address. Use drag-and-drop to move the CDT-E3 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 **Procom<nnnnnn>_NW\SYS** and then open the **VOLUMES** folder.

*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 CDT-E3 resource:
   - **Procom<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 CDT-E3 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.

10. Click the **Exit** button on the toolbar. The CDT-E3 is ready for use.

NFS for PC

The CDT-E3 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 CDT-E3.

Windows NT 3.51

Microsoft Networking (SMB)

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 CDT-E3. The default name is **Procom<nnnnnn>**, where **<nnnnnn>** are the six last digits of the CDT-E3 Ethernet address.
4. To connect a CDT-E3 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 CDT-E3.
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.
8. Click **OK**. The CDT-E3 is now ready for use.

NetWare (NCP)

NDS

On Windows NT 3.51 using a 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 CDT-E3 is installed. The default name is **Procom<nnnnnn>_NW_SYS**, where **<nnnnnn>** are the six last digits of the CDT-E3 Ethernet address.
5. To connect a CDT-E3 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 CDT-E3.
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 CDT-E3 is now ready for use.

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 CDT-E3. The default name is **Procom<nnnnnn>_NW**, where **<nnnnnn>** are the six last digits of the CDT-E3 Ethernet address.
5. In the bindery mode, you will be prompted to enter your user name and password unless you are already logged in.
6. To connect to a CDT-E3 resource, select:
   - **SYS** for root level
   - **Volumes** for access to all discs
   - The **volume name** for access to an individual file, e.g. office.
7. Select a drive letter for your CDT-E3.
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.
10. Click **OK**. The CDT-E3 is now ready for use.

NFS for PC

The CDT-E3 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 CDT-E3.

DOS

Microsoft Networks (SMB)

When you are using DOS in the SMB environment, you mount the CDT-E3 using the net use command, provided that the appropriate network support is installed. Follow these steps:

1. At the DOS prompt, type:

   net use <drive letter>: \\Procom<nnnnnn>\<folder>

   or

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

   where <nnnnnn> are the last six digits of your CDT-E3 Ethernet address and <folder> is the CDT-E3 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 CDT-E3 with Ethernet address 00408C18025C under the drive letter E, type:

   net use E: \\Procom18025C\root

   Example 2 (Volumes folder access):
   If your CDT-E3Ethernet address is 00408C18025C, and you want to be able to access all the discs under the drive letter F, type:

   net use F: \\Procom18025C\volumes

Example 3 (Disc access):
If your CDT-E3 Ethernet address is 00408C18025C, and you want to map a disc named 44018881 to drive G, type:

```
net use G:\\Procom18025C\44018881
```

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 quotation mark (“). For example to change the directory call Product Information:

```
G:\PROCOM18025C\\VOLUMES\>CD “PRODUCT INFORMATION
```

Windows NT allows users to employ the * wildcard. For example, a quick way of changing to the Product Information directory would be:

```
G:\PROCOM18025C\\VOLUMES\>CD “PRODUCT*
```

NetWare (NCP)

When you are suing DOS in NetWare, you use the **map** command to mount the CDT-E3. Follow these steps:

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

   map root <drive letter>: =Procom<nnnnnn<_NW/<folder>:

   where <nnnnnn> are the last six digits of your CDT-E3 Ethernet address and <folder> is the CDT-E3 folder you want to map.

2. To make connections permanent, edit your **autoexe.bat** file to include your **map** commands.

   Example 1 (Root level access):
   To access the root level of your CDT-E3 with Ethernet address 00408CCD000B under drive letter E, type:

   map root E:=PROCOMCD00B_NW/SYS:

   Example 2 (Volumes folder access):
   To access all the discs of your CDT-E3 with Ethernet address 00408CCD000B under the drive letter f, type:

   map root F:=PROCOMCD000B_NW/SYS:/VOLUMES

   Example 3 (disc access):
   If your CDT-E3 Ethernet address is 0040CCD000B and you want to map a disc named 44018881 to drive G, type:

   map root G:=PROCOMCD00B_NW/SYS:/VOLUMES/44018881

   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 names 44018881. Type:

   map root G:=PROCOMCD00B_NW/440188881

UNIX

NFS

You will not need root privileges to mount the CDT-E3.

To access the CDT-E3 resources from a UNIX client, follow these steps:

1. Create a directory for the CDT-E3.

   mkdir <directory>

   Example:

   mkdir /CDT-E3_sales_dept

2. Display the export list.

   showmount -e <IP address>

3. Mount the resource.

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

   Example 1 (Root):

   mount 192.16.253.80:/ /CDT-E3_sales_dept

   Example 2 (Volumes directory):

   mount 192.16.253.80:/volumes /CDT-E3_sales_dept

   Example 3 (Disc):

   mount 192.16.253.80:/volumes/acrobat /CDT-E3_sales_dept

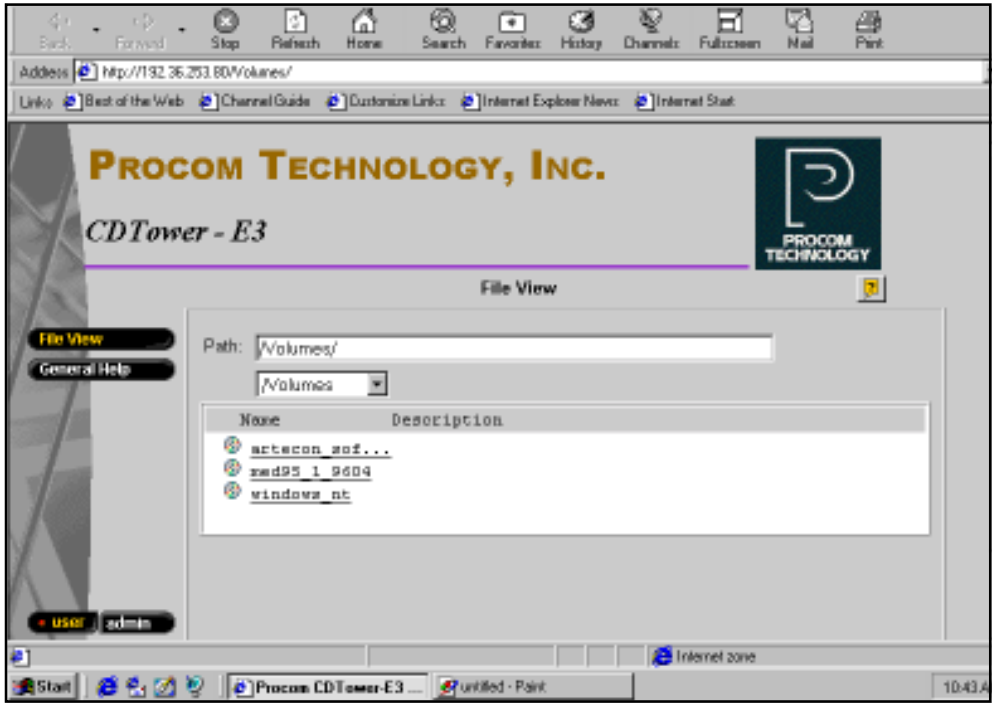
   The <IP address> is the IP address or host name assigned to the CDT-E3 during TCP/IP configuration.

Web Browser

HTTP

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 CDT-E3 in the location/address field.
3. This brings you to the **File View** page of the CDT-E3:



4. From this page you can display and access the shared discs according to the access restrictions set up by the Administrator. We recommend that you add this page as a bookmark in your Web browser.

Macintosh

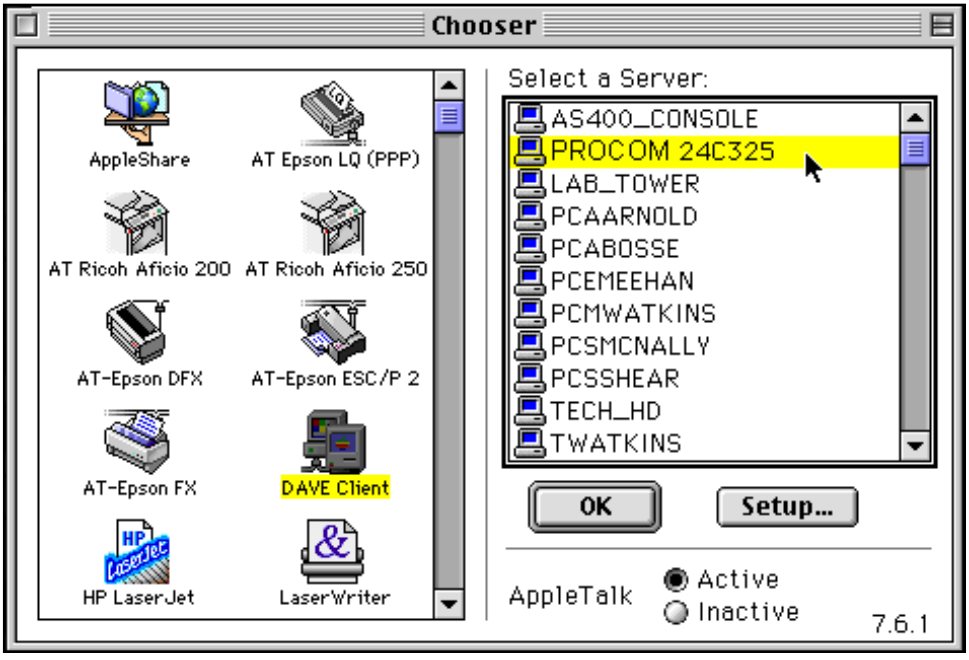
SMB

Third party software such as DAVE provides Macintosh users with the ability to mount the CDT-E3 on a Windows network.

Follow these steps:

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

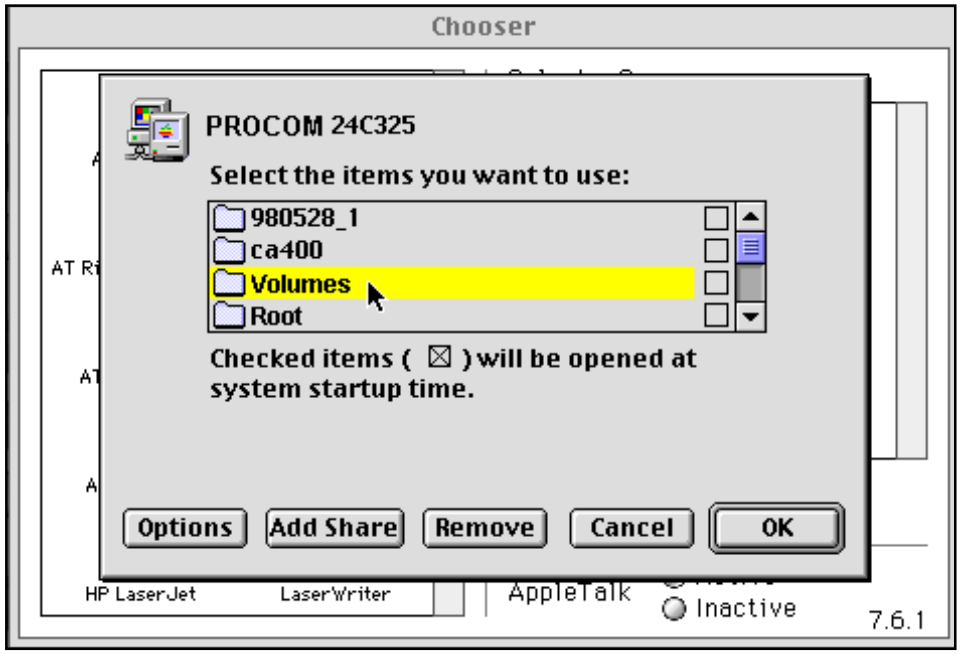
2. Click the **DAVE Client** icon.



3. From the **Select a Server** listing, select **Procom<nnnnnn>,** where **<nnnnnn>** are the last six digits of the CDT-E3 Ethernet address.

4. Click **OK**.

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



6. Choose the access point for the CDT-E3:

   - **Root** for root level access
   - **Volumes** for access to all the discs
   - The **volume name** for access to an individual disc.

7. Click **OK**.

NFS

The CDT-E3 can also accessed using third party NFS software for Apple Macintosh computers. If you run a TCP/IP network, this is an alternative to SMB. Refer to the NFS software documentation for instruction about how to mount the CDT-E3.

Chapter 5

Monitoring the CD Tower Ethernet 3

This section described the following monitoring tools:

- Event Log
- Statistics
- Email
- SNMP

Event Log

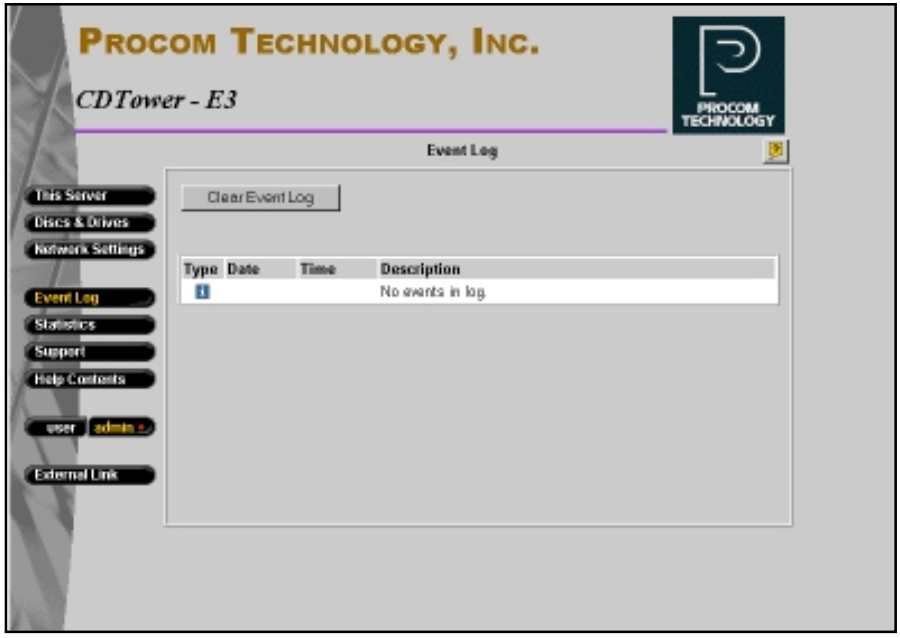
In the event log, the CDT-E3 writes information such as:

- Information, e.g. completed tasks
- Errors, e.g. installation failures

The event log is stored in the **logfile.txt** file located in the **System/ ServerProperties** folder.

To display the event log from the CDT-E3 Web interface, follow these steps:

1. Start your Web browser, and enter the name or IP address of the CDT-E3 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 **Event Log**.



All events are viewed in the same ordered as they entered the log.

Note: If a synchronization source has been found or time and date have been set to a decent value (later than 1st January 1998), date information appears.

Critical events may survive a power-off.

*Click **Clear Events Log** to clear the event log of events.*

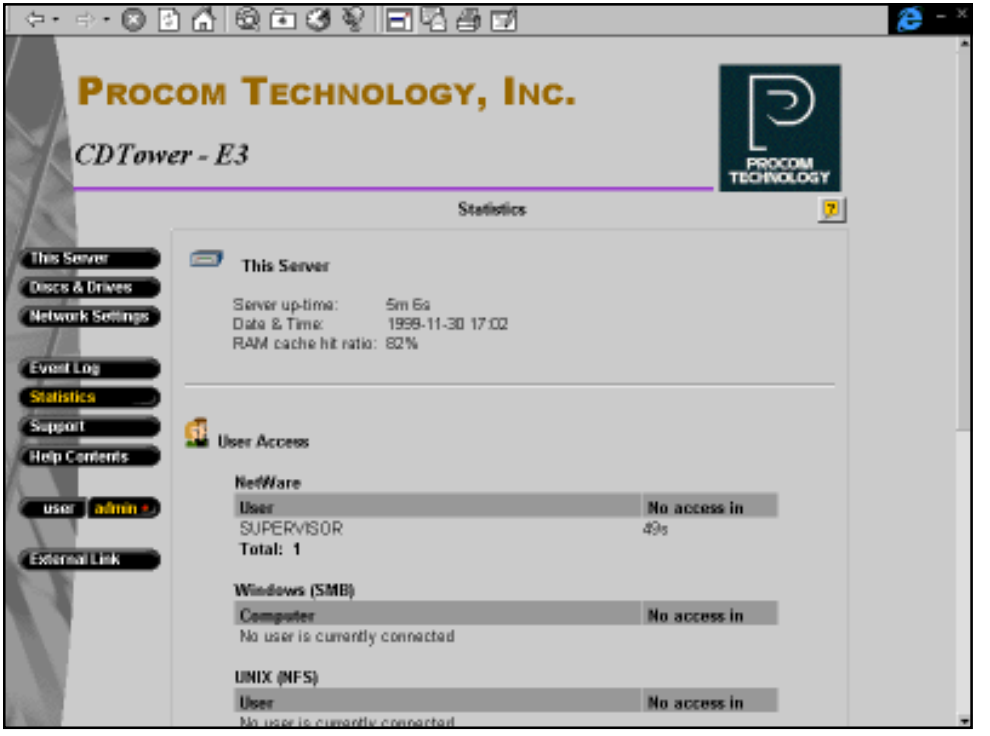
Statistics

To display the statistics:

1. Start your Web browser, and enter the name or IP address of the CDT-E3 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 **Statistics**.



The CDT-E3 presents statistics such as:

- Server uptime.
- Cache hit radio in the RAM cache.
- A list of users who are currently connected to the CDT-E3 in each particular network environment.
- A list of cache state and the number of times a disc has been accessed.

Email (SMTP)

To specify the settings for your email facilities:

1. Start your Web browser and enter the name or IP address of the CDT-E3 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 **Network Settings** within the Administration Web pages.

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

5. Open the **Email (SMTP)** page. Specify the settings for the mail server.

6. Enter the Administrator's email address.

7. Select **mail log events** from the **Mail Log Events** drop down list. These will be sent to the email address specified above. Click **OK**.

SNMP

You can use Simple Network Management Protocol (SNMP) for remote monitoring of the CDT-E3.

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 CDT-E3 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 CDT-E3 supports all relevant parts of MIB-II. It also includes a private enterprise MIB, the ProcomMIB, 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 Procom MIB

The Procom MIB includes a large number of objects that can be categorized as follows:

- Menu objects - used for viewing and changing the CDT-E3 configuration from the NMS program.
- Status and administration objects - used for monitoring the CDT-E3 and storing parameter settings.
- Trap objects - used for alarm at various error conditions.

To add the Procom MIB to your NMS software:

1. Download the latest MIB file

   ftp://support.procom.com/cd_tower/E3_tower/snmp

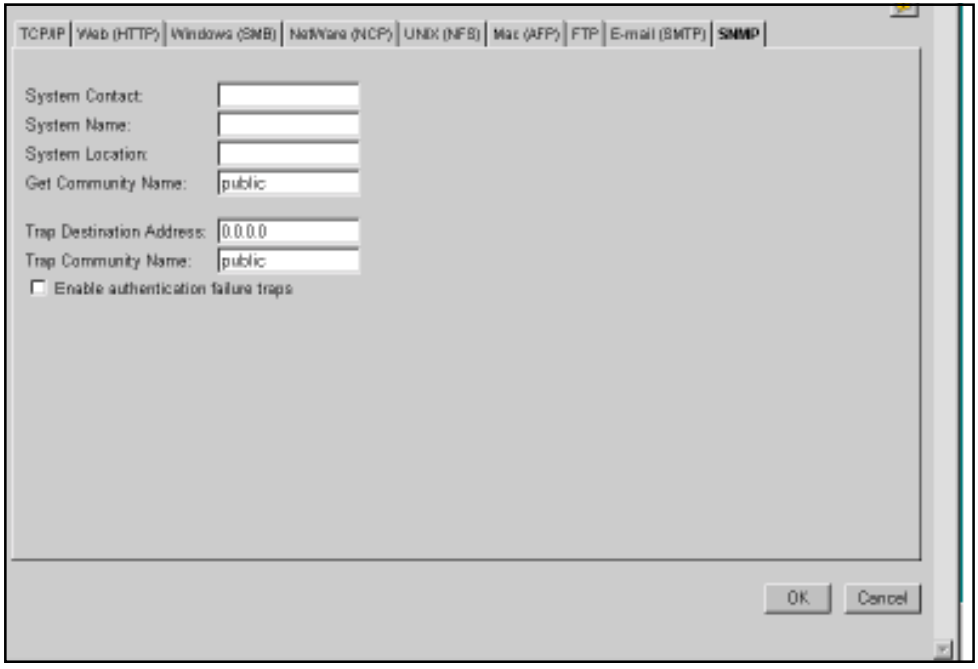
2. Install the Procom MIB according to instructions in your NMS software documentation.

For technical details, view the MIB file **procom_cd.mib** using a text editor.

SNMP Settings

To configure your CDT-E3 for SNMP:

1. Start your Web browser.
2. Enter the name or IP address of the CDT-E3 in the location/address field. You will be prompted for the Server password. By default, this is set to **pass**.
3. Click **Network Settings**.
4. Click **Detailed View** .
5. Open the **SNMP** page.



6. Specify the setting and click **OK**.

Appendix A

Parameter List

This section includes the CDT-E3 parameter list. It also explains the CDT-E3 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 114. The middle column shows the default values, when applicable. The right-hand column gives a brief description of the parameters.

Parameter Name	Value	Description
[Server]		
Hardware Address	= 00:40:8c11:00:86	The CDT-E3 hardware address.
Date	= 1999-01-01	yyyy-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 **yes** to restore factory default settings.
Restart	= no	Set to **yes** to restart the CDT-E3.
TimeZone	= UTC	Must be set to the time zone in which the CDT-E3 is operating. Refer to *Time Zone Parameter Values*, on page 113.
TimeSyncSource	= NDS	Specifies the time source for the CDT-E3. Set to **NDS** for the NetWare network. Set to **NTP** for UNIX and SMB over TCP/IP. Note that you will need third party software on your Windows NT server to obtain support for NTP.
Server Password	= 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 will be replaced with *s, each representing a letter of the password.
Cache Mode	= mirror	The default caching method to be used each time you insert a new disc in one of the drives. **None** means no change; **Partial** means that the driectory 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.

Parameter Name	Value	Description
[Server (continued)]		
FileCacheSize	= 0	Specifies how much of the disk space to use for caching. Default is 0 which disables the function.
[SCSI]		
SCSI Termination	= on	Always on.
JukeBoxLockTime	= 0	Specifies the maximum duration required for a data read operation to prevent disc changer fluttering during multiple acccess requests.
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**.
[IP]		
InternetAddress	= 192.36.253.80	The CDT-E3 IP address.
Default Router	= 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.
BOOTEnable	= yes	Enables BOOT 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 CDT-E3 belongs.
PrimaryDNS	= 0.0.0.0	The IP address of the secondary DNS server should the primary DNS server be unavailable or disconnected.
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 of the primary WINS 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.

Parameter Name	Value	Description
[SMB]		
EnableNetBEUI	= yes	Enables SMB over NetBIOS/NetBEUI.
EnableNBT	= yes	Enables SMB over NetBIOS/TCP/IP.
NBTscopeID	=	Defines the NetBIOS scope to which the CDT-E3 belongs.
Domain/GroupName	=	Name of the CDT-E3 workgroup in SMB. If not specified, the CDT-E3 will appear in the folder that comes first in alphabetical order.
EthernetAddress	= Procom<nnnnnn>	The server name in the SMB environment. Default is **Procom<nnnnnn>** where **nnnnnn** are the last six digits of the serial number.
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**.
SecurityMode	= shareLevel	Specifie the security mode used in SMB:**userLevel** or **shareLevel**.
AuthenticationDomain	=	Name of the domain to which the controller used for authenticating users belongs. The CDT-E4 will locate a domain controller in that domain and redirect user logins to that controller for user authentication. Used in user-level security mode.
[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 server used for authentication of PC users on the UNIX (NFS) network. The default **0.0.0.0** disables the function.
Export Volumes	= 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.
[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 CDT-E3 Web interface.
ExternalImage	=	Specifies the URL to the image that will indicate the customized external link.

=Parameter Name	Value	Description
[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 to which SNMP traps are sent. 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 that should be in plain text and may be used to show the name of the system contact person.
SystemName	=	Optional entry that should be in plain text and may be used to show the name of the system.
SystemLocation	=	Optional entry that 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.
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 NetWare over the IP protocol.
NetWare_DDS_Server	=	The IP address of the DSS server.
ServerName	= Procom<nnnnnn>_NW	NetWare Server name to be presented to the NetWare clients. Default is **Procom<nnnnnn>_NW** where **nnnnnn** are the last six digits of theEthernet address.
InternalNetAddress	= nn-nn-nn-nn	Internal network address. Default is nn-nn-nn-nn where *nnnnnnnn* are the last eight digits of the Ethernet address.
BurstMode	= on.	Burst mode enable
ShowAllVolumes	= yes	Shows all drives and discs also at **SYS** level.
BinderyEnable	= yes	Enables bindery mode login. When using NDS, set to **no** in order to increase system security. The Supervisor can always login in bindery mode even if his parameter is set to **no**.

Parameter Name	**Value**	**Description**
[NetWare (continued)]		
BindAuthentication	=	Name of the server used for authenticating clients.
NDSEnable	= yes	Enables NDS mode.
NDSTreeName	=	Name of the tree where you wish to install the CDT-E3.
NDSServerContext	=	Distinguished name of the context in the NDS tree where you wish to install the CDT-E3, e.g. **CorpAcme**.
NDSAdminName	=	Distinguished name of a user or administrator with Supervisor or Create rights to the context where you want to install the CDT-E3, 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 that represent each letter of the password.
NDSInstall	= no	Set to **install** when you are ready to install the CDT-E3 in NDS or **forced** to overwrite the NDS server object.
NDSRightsStorage	= NDS	Set to **NDS** to store 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* The specified directory must exist and the CDT-E3 must have Read, Write, Create, Erase, Modify and File Scan rights. The CDT-E3 will create the file once you start adding trustees.
TimeSyncSources	= SAP	Default is **SAP** for the network agreed time. Alternatively, enter the server names to be contacted for time synchronization.
[END]		

Time Zone Parameters

The first table lists the time zone as the number of hours +/- Universal Time Coordinated (UTC). UTC—which used to be known as Greenwich Mean Time(GMT)—is the local time at the Greenwich meridian (zero degrees longitude).

Time Zone Parameter Value	Hours +/- UTC
UTC	0
UTC+1_(No_DST)	1
UTC+2_(No_DST)	2
UTC+3_(No_DST)	3
UTC+4_(No_DST)	4
UTC+5_(No_DST)	5
UTC+6_(No_DST)	6
UTC+7_(No_DST)	7
UTC+8_(No_DST)	8
UTC+9_(No_DST)	9
UTC+10_(No_DST)	10
UTC+11_(No_DST)	11
UTC+12_(No_DST)	12
UTC-1_(No_DST)	-1
UTC-2_(No_DST)	-2
UTC-3_(No_DST)	-3
UTC-4_(No_DST)	-4
UTC-5_(No_DST)	-5
UTC-6_(No_DST)	-6
UTC-7_(No_DST)	-7
UTC-8_(No_DST)	-8
UTC-9_(No_DST)	-9
UTC-10_(No_DST)	-10
UTC-11_(No_DST)	-11
UTC-12_(No_DST)	-12

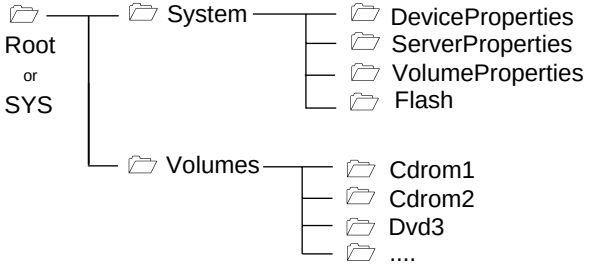
Time Zone Parameter Value	Hours +/- UTC
GB_Eire	0
Western_Europe	0
Iceland	0
Central_Europe	1
Poland	1
Eastern_Europe	2
Turkey	3
Western_Russia	3
US_CAN_Eastern	-5
US_CAN_Central	-6
Saskatchewan	-6
US_CAN_Mountain	-7
US_Arizona	-7
US_CAN_Pacific	-8
US_Alaska	-9
US_Aleutian	-10
Cuba	-5
Egypt	2
Libya	1
Sudan	2
Tunisia	1

Time Zone Parameter Value	Hours +/- UTC
Brazil_Noronha	-2
Brazil_San_Paulo	-3
Brazil_Manaus	-4
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

No_DST (Daylight Saving Time) means that automatic adjustments for DST are not included. The parameter values shown in the second and third tables above, however, do include adjustments for DST.

Directory Structure

The CDT-E3 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 CDT-E3 is outlined below:



The purpose of each folder is explained on the pages that follow.

The System Folder

The **System** folder includes configuration information about the CDT-E3, 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.
- **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 the no volume name has been set, the volume label will be used. If the disc does not have a volume label, the CDT-E3 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**.
- **Flash**- To be implemented in the near future.

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 set a volume name, this name will be used.
- If no volume name has been set, 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 CDT-E3 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 CDT-E3 will add the suffix **_a** to the name of the second one. If two inserted discs are identical, the CDT-E3 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.

If you wish to run an application that is stored on a disc or looks 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 CDT-E3 parameter list using a standard Web browser:

- Netscape Navigator version 3.0 or higher, or
- Internet Explorer version 3.0 or higher

You must first assign a valid IP address as described in Assigning an IP Address *on page 20.*

To access the CDT-E3 Home Page from your Web browser, you simply enter the URL of the CDT-E3, i.e. the name or IP address, in the location/address field.

Example:

http://192.36.253.80

FTP

You can retrieve the configuration parameters of your CDT-E3 using the File Transfer Protocol (FTP). FTP is supported by most operating environments. Follow these instructions:

1. Log in to the CDT-E3 with the command:

ftp <IP address>

where <*IP address*> is the name or IP address of your CDT-E3.

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 on the next page.

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 CDT-E3, type:

```
put config CONFIG
```

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 CDT-E3 configuration file from within the Windows 95 environment. Some of your system files may be overwritten if you do not change to another directory.*

Text Editor

If you do not have TCP/IP on your network, you can edit the CDT-E3 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 CDT-E3 by simply saving the files. To activate the new settings it is necessary to restart the CDT-E3 . You can do this by setting the **Restart** parameter to **yes**.

Caution! *Do* ***not*** *restart the CDT-E3 in the middle of the NDS installation.*

Configuration Settings

The CDT-E3 configuration settings are stored in the **config.ini** file located in the **System/ServerProperties** folder.

Example:

Procom CDT E-4 Parameter List, V5.xx	
[Server]	
HardwareAddress	= 00:40:cc24:c3:0c
Date	= 99-01-01
Time	= 08:54:37
FactoryDefaults	= no
Restart	= no
TimeZone	= UTC
TimeSyncSource	= None
ServerPassword	= ********
Cache	= normal
Clear Cache	= no
[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
BOOTEnable	= yes
DHCPEnable	= yes
RARPEnable	= yes
* * *	

Access Control Parameters

The CDT-E3 access control parameters are stored in separate text files for each shared resource. These text files are located in the **System/VolumeProperties** folder.

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.

Example:

* * *	
; Explanations:	
; [W] - Writable	
; [R] - Read-only	
--- Identification ---	
[R] Volume Name	= Root
[R] Volume Label	= Root
[R] Volume Serialnumber	= 00000001
[W] Vlume Description	=
* * *	
; Access Rights	
* * *	
--- Windows Sharing ---	
* * *	
File	= /
Share Name	= Root
Comment	=
AccessRight	= Full-Server Password
Read-Only Password	=
Full Access Password	=
[END]	

Note: When editing the file, be sure that the equal sign and the parameter values are separated by a space. Also, 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 CDT-E3, including:

- The Front Panel Indicators
- Running a Diagnostic Test
- Correcting Errors that Occur when Accessing the CDT-E3 CD or an Inserted Disc
- Low Transfer Rates that Occur when Using Disc Changers
- Problems Running CD-ROM Software
- Difficulties Locating the CDT-E3 CD in NetWare
- Insufficient Access Rights in NetWare NDS
- Problems Locating the Domain Controller in SMB

Troubleshooting

You will find more useful information such as technical notes and support FAQs on the Procom Technology Support Web at:

http://www.procom.com

You may also go to the Support page to solve any problems you may have seeing your devices and discs in your CDT-E3 CD, finding your CDT-E3 CD in the network, or installing your CDT-E3 in NetWare. From the Support page you may also produce a Server Report that includes technical information about your CDT-E3.

To receive update information about Procom Technology products, services and software updates by email, you may subscribe to the Procom Technology mailing list at:

http://www.procom.com

The Front Panel Indicators

The front panel indicators show the status of the CDT-E3. The indicators have the following functions:

- Status - Flashes during startup. When the CDT-E3 is ready for use, the light turns solid green.
- SCSI - Flashes to indicate activity on the SCSI bus.
- Network - Flashes to indicate the presence of network traffic.
- Power - Indicates that power is connected to the CDT-E3. This LED should always remain lit and is only used to indicate power is present in the CDT-E3 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 and Network LEDs are turned off.

This table shows the other front panel indicators under normal conditions:

Event	Status LED	SCSI LED	Network LED
Initial Power to Unit	GREEN	GREEN	GREEN
Power-Up and Self-Test (approx. 30 seconds)	GREEN*		
Firmware Startup	GREEN**		
Startup Sequence OK	GREEN		
Normal Operation			
Writing to the SCSI Bus		AMBER*	
Reading from the SCSI 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 the various error conditions:

Event	Status LED	SCSI 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 Exapansion Module. Replace DIMM Module.	RED/ AMBER		
Fatal SCSI Error. Return Unit.		RED	
Drive Disconnected or not Working Properly.		RED*	
Faulty Network Connection.			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.

Running a Diagnostic Test

The CDT-E3 Web Page includes 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 CDT-E3 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 CDT-E3.
- In order to test the data transfer performance of a drive, a disc including a file larger than 10 Mbytes must be inserted.

Procedure

To perform the diagnostic test, follow these steps:

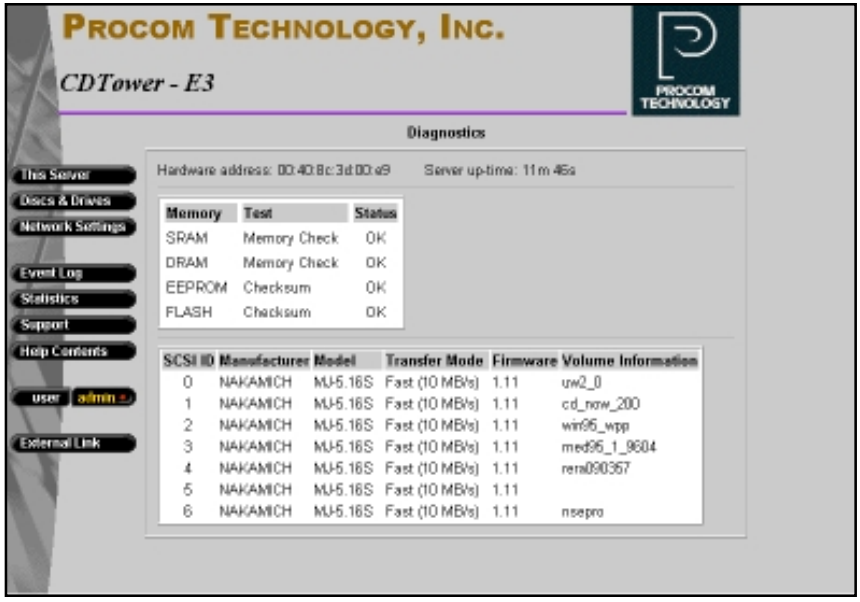
1. Start the Web browser, and enter the URL of the Diagnostics page in the location/address field:

   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.

2. Start the diagnostic test by simply reloading/refreshing the Diagnostics page. The test takes a few minutes to complete.

3. Reload/refresh the page once again to display the results.

Errors when Accessing the CDT-E3 or an Inserted Disc

If you get error messages when trying to access the CDT-E3 or an inserted disc:

- LED Indicators - Consult the error table in section *Error Conditions* on page 142 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.
- IP Address - If using TCP/IP, make sure that you have assigned a unique and valid IP address to the CDT-E3. If you have changed the IP address, try restarting the CDT-E3.
- SMB Protocol - In the Microsoft & IBM networking environments, verify that the SMB protocol is enabled.
- WINS Database - If using WINS, check that the CDT-E3 is registered in the WINS database. If it is, there is probably a problem with the name resolution on your network.

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 CDT-E3 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.

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. See also Chapter 4 - *Accessing the Discs.*

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.

Single User Version

If the CD-ROM is a single user version, you must restrict the number of simultaneous users to one by setting the **User Limit** parameter. Refer to Chapter 4 - *General Disc Settings.*

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 CDT-E3 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 CDT-E3 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 CDT-E3.

However, depending on your network, you may want the CDT-E3 not to operate on some frame types. If your network has multiple sections with different frame types on some of the sections, then the CDT-E3 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.

Insufficient Access Rights in NetWare NDS

When you install the first CDT-E3 in the NDS tree, the CDT-E3 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 CDT-E3 as described in *Installation as an NDS Server* on page 45. 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 CDT-E3 server object.

5. Start NWAdmin. The server object just created will appear in the context where you installed the CDT-E3.

6. Add the CDT-E3 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.

7. The CDT-E3 will create the file once you start adding trustees.

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 CDT-E3.

Web Browser

You can verify the configuration settings from the CDT-E3 web interface. Within the Administration Web pages, click **Network Settings**, **Detailed View**, and open the **Windows (SMB)** tab to do that.

Local Administrator Account

In Windows NT, you can correct the problem by logging on to the CDT-E3 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 CDT-E4 Name
Connect as:	Server Name/Administrator
Password:	The Password Set in the ServerPassword Parameter

Example:
The host name of the CDT-E3 is **cdserv**.

Path:	*\\cdserv\root*
Connect as:	*cdserv\Adminstrator*

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 CD Tower Ethernet 3

This section provides the information required for upgrading the firmware.

Upgrading the Firmware

Using FTP

The CDT-E3 firmware can easily be upgraded over the network using FTP on a TCP/IP network.

To upgrade over the network you will need the following:

- The file with the new CDT-E3 software. The name of this file is of the form **product_version.bin**, e.g. **cde_500.bin** for the software release 5.xx for the Ethernet version of the CDT-E3.
- A computer on the network with TCP/IP and FTP.
- The CDT-E3 must also be installed on the network with TCP/IP as described in *Assigning an IP Address* on page 20.

Follow these steps to upgrade the CDT-E3 using FTP:

1. Log in to the CDT-E3 with the command:

   ftp <IP address>

   where <*IP address*> is the name or IP address of your CDT-E3.

2. You will be prompted for user ID and password. Use the user ID **root**, which has the default password **pass**.

3. To change to binary transfer mode, issue the command:

   bin

4. Issue the command:

   put <software name> flash

   where <*software name*> is the name of the new software, e.g. **cde_500.bin**

*If you intend to download an earlier version or a beta version, you need to type **FLASH** in capitals, i.e. put **<software name> FLASH**, to force a flash memory load.*

5. Wait for the flash memory load to finish. This normally takes 1 to 4 minutes. The unit will then automatically restart with the new CDT-E3 software.

6. Log out using the commands **quit**, **bye** or **exit** depending on your FTP version.

Caution! Be careful not to interrupt the file transfer. If the flash loading fails, the CDT-E3 will not be accessible from the other protocols such as Windows (SMB), We browser (HTTP) etc. However, you may still access your CDT-E3 via FTP in order to carry out the upgrade again.

Appendix D

Technical Specifications

Technical Specifications

Supported Systems

Novell NetWare	NetWare 3.11, 3.12, 4.10, 4.11 and 5.00.
Microsoft Windows	Windows for Workgroups, Windows 95, Windows 98, Windows NT.
Microsoft LAN Manager	LAN Manager 1.3 and above.
IBM LAN Server	LAN Server 1.3 and above.
TCP/IP	Supports all UNIX dialects through NFS over UDP/IP on TCP/IP networks.
Web Browser	Internet/intranet over HTTP 1.0 and HTML 2.0 compatible browsers.

Supported Protocols

Novell NetWare	NDS, NCP (IPX and NetWare/IP).
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.
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.
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), CD-UDF version 1.0 and 1.5.
Software Updates	Flash memory allows central and remote updating of the CDT-E3 software over the network using FTP over TCP/IP.
Performance	Data throughput up to 2700 kbytes/sec.
Hardware	CPU: 32 bit RISC controller. Flash memory: 4 Mbytes. RAM: 32 Mbytes, expandable up to 160 Mbytes.
Attachments	RJ-45 (for 100baseTX and 10baseT).
CD/DVD-ROM Drive Connections	One changer or one changer and one DVD-ROM drive.

*All specifications are subject to change without prior notice.

Appendix E

Glossary

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.

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.

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.

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.

Appendix F

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