



TECHNICAL NOTES

NETWORK CD/DVD SERVERS

AXIS STORPOINT CD E100

Hard Disk Caching

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Introduction

AXIS StorPoint CD E100 supports *hard disk caching*. This means that one or several hard disks that can be used for storing copies of the discs that are networked by the AXIS StorPoint CD E100 server.

A CD sharing solution based on hard disk caching has several benefits:

- **Increased performance** - Multiple users can access the same disc at high speed, simultaneously.
- **High capacity** - Possibility to share a large number of discs. Data can be accessed even if the original discs have been removed from the drives.

The hard disk caching function is managed via the built-in Web interface.

Note: The Basic versions of AXIS StorPoint CD E100 do not support hard disk caching.

1.1 Capacity

The AXIS StorPoint CD E100 server allows you to archive up to 255 discs.

About 90% of the disk space can be used for caching. However, the number of discs that can be cached depends on the size of the hard disks as well as the size of the individual discs. For example, a 20 GB hard disk will allow 30 650-MB discs to be cached. However, if each disc contains only 200 MB, about 100 discs can be cached on the hard disk.

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

Important!

Avoid turning off the power supply during hard disk caching. However, should this happen, the server will restart caching the discs automatically when the power supply has been restored.

1.2 Requirements

The caching facility requires at least one hard disk to be connected to the bus. The server will automatically format the hard disks and use them for hard disk caching. You can connect up to 6, 7 or 13 hard disks to your AXIS StorPoint CD E100 server, depending on model (IDE, SCSI or dual SCSI).

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

1. Start your Web browser and enter the name or IP address of the AXIS StorPoint CD E100 server in the location/address field.
2. Click **ADMIN**. You will be prompted for the Server username and password. By default, this is set to *root* and *pass*. The **SERVER SETTINGS** page appears.
3. On the **SERVER SETTINGS** page, click the hard disk icon to verify that the server has detected a hard disk that can be used for hard disk caching. Information about the hard disk will be displayed to the right.
4. If the hard disk has been used before and includes a partition table it must be formatted before it can be used for hard disk caching. Click **FORMAT** to do that. The formatting will remove all the information currently cached on the hard disk.

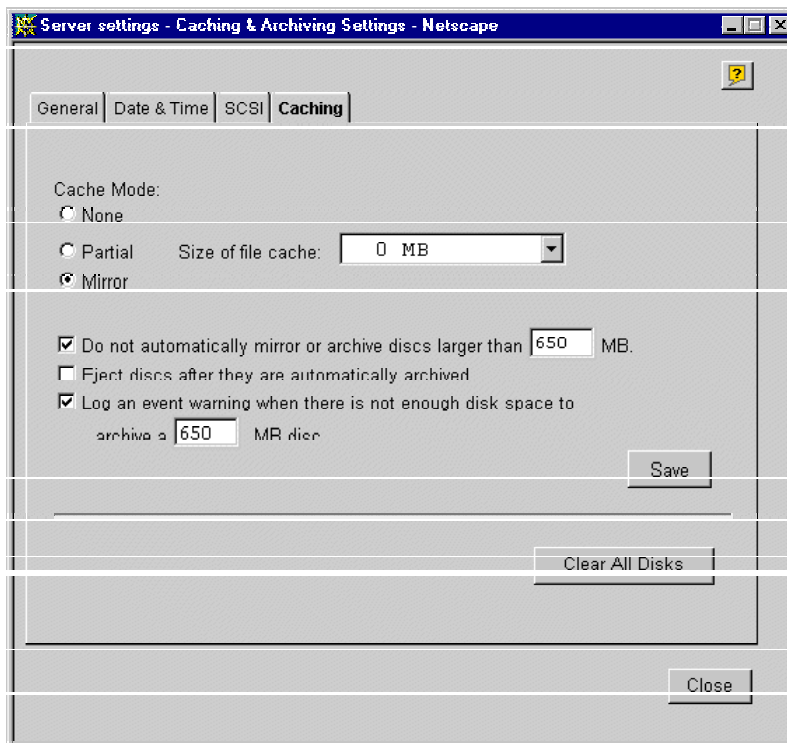
Note: This is not something you would normally want to do.

2 Performance Caching

To use hard disk caching for increased performance, you specify the **CACHE MODE** parameter. This setting is used as the default status for all discs that are inserted into the connected drives. If desired, you can change the caching status per disc.

Follow these steps:

1. Start your Web browser and enter the name or IP address of the AXIS StorPoint CD E100 server in the location/address field.
2. Click **ADMIN**. You will be prompted for the Server username and password. By default, this is set to *root* and *pass*. The **SERVER SETTINGS** page appears.
3. Click **CHANGE** and select the **CACHING** tab. **Note:** The **CACHING** tab only appears if at least one hard disk has been connected to the server.



4. Select the global **CACHE MODE**. These options are available:
 - **NONE** - The disc will not be cached. This is the default setting.
 - **PARTIAL** - Information about the disc's directory structure and files is cached on to the hard disk, but no actual data. This speeds up the directory browsing, especially with the use of disc changers. The file cache is a separated part on a hard disk where the actual files can be cached. The more hard disk space allocated to file caching, the larger files can be stored in the file cache.
 - **MIRROR** - A copy of the disc is created on the hard disk. This method takes more time to carry out when a new disc is inserted. Until a disc has been completely cached on the hard disk, the disc will be accessible from the disc drive.

Note: If there is not enough room on the hard disk to mirror all the discs, it is advisable to only mirror the most frequently used discs and use **PARTIAL** caching with a file cache for the others.

5. Make the other required selections by checking the appropriate checkboxes.
 - The **DO NOT AUTOMATICALLY MIRROR OR ARCHIVE DISCS LARGER THAN X MB** option is useful for example if you are using DVD discs.
 - The **EJECT DISCS AFTER THEY ARE AUTOMATICALLY ARCHIVED** (*Auto-eject*) option is particularly useful when you are caching a large amount of discs combined with the **AUTO-ARCHIVE** function (see 3.3 *Automatic Archiving – Auto-archiving*). Note that this setting does not apply to manually archived discs.
 - The **LOG AN EVENT WARNING WHEN THERE IS NOT ENOUGH DISK SPACE TO ARCHIVE A X MB DISC** option will write a message to the **EVENT LOG** and, if configured, send an e-mail notification to the Administrator (see 4.2.2 *E-mail Notification*).
6. Click **SAVE**.

New discs will automatically be cached according to these settings when inserted. Already inserted or archived discs will not be affected.

3 Archiving

An archived disc is accessible to the users even if the original disc has been ejected from the drive. Archiving can be performed manually or automatically for one or more drives.

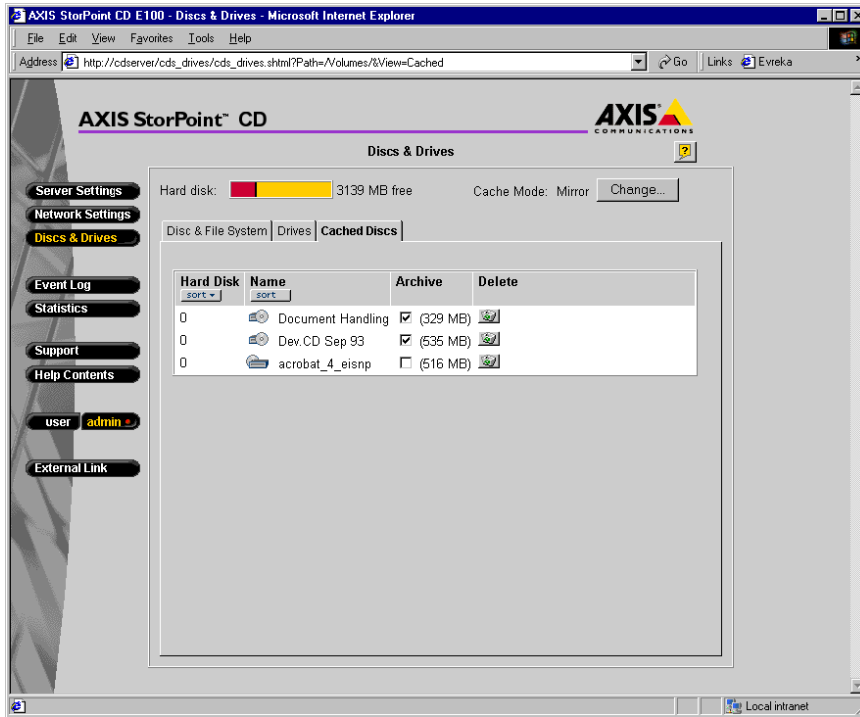
To store discs permanently on the hard disks, follow these steps:

1. Start your Web browser and enter the name or IP address of the AXIS StorPoint CD E100 server in the location/address field.
2. Click **ADMIN**. You will be prompted for the Server username and password. By default, this is set to *root* and *pass*.
3. Open the **DISCS & DRIVES** page. This page is divided into three views:
 - **DISCS AND FILE SYSTEM**
 - **DRIVES**
 - **CACHED DISCS**

Discs can be archived one by one (**manual archiving**) or automatically if inserted into a particular drive (**auto-archiving**).

3.1 Cached Discs View

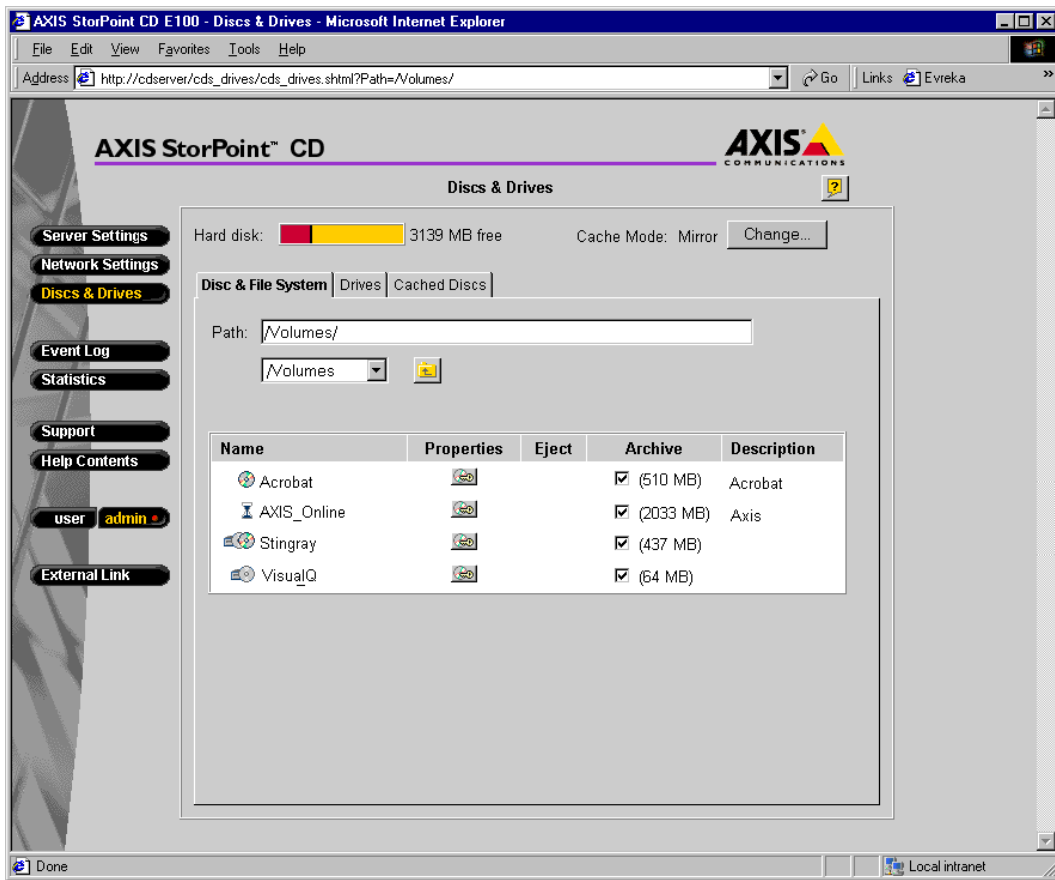
The **CACHED DISCS** view provides an overview of all archived discs and all mirrored discs that are not inserted.



From this page, you can make discs archived by checking the appropriate **ARCHIVE** checkbox. You can remove discs by clicking the **DELETE** button.

3.2 Manual Archiving

Manual archiving is managed from the **DISCS & FILE SYSTEM** view.



Check the **ARCHIVE** checkbox to copy a disc to the hard disk.

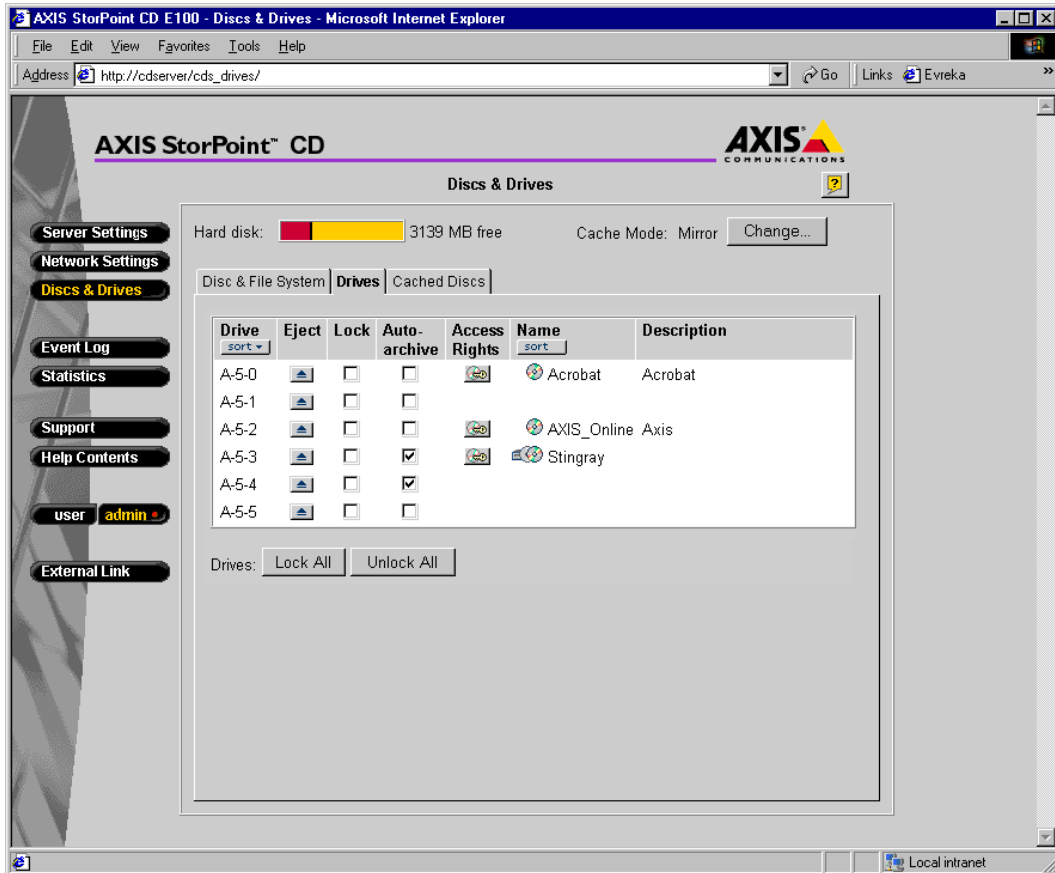
Unchecking the **ARCHIVE** checkbox (unarchiving) of a disc causes it to go back to the default **CACHE MODE**, which appears at the top right of the page.

Archiving a 650-MB CD takes around six minutes. If the CD has already been mirrored, the archiving procedure is done in seconds.

Note: The **ARCHIVE** checkbox only appears if there is a hard disk connected.

3.3 Automatic Archiving – Auto-archiving

Instead of selecting the individual discs, you can select a particular drive that will apply archiving to all discs inserted into that drive. Automatic archiving is managed from the **DRIVES** view.



Check the **AUTO-ARCHIVE** checkbox to automatically archive all discs that will be inserted into this particular drive.

Notes:

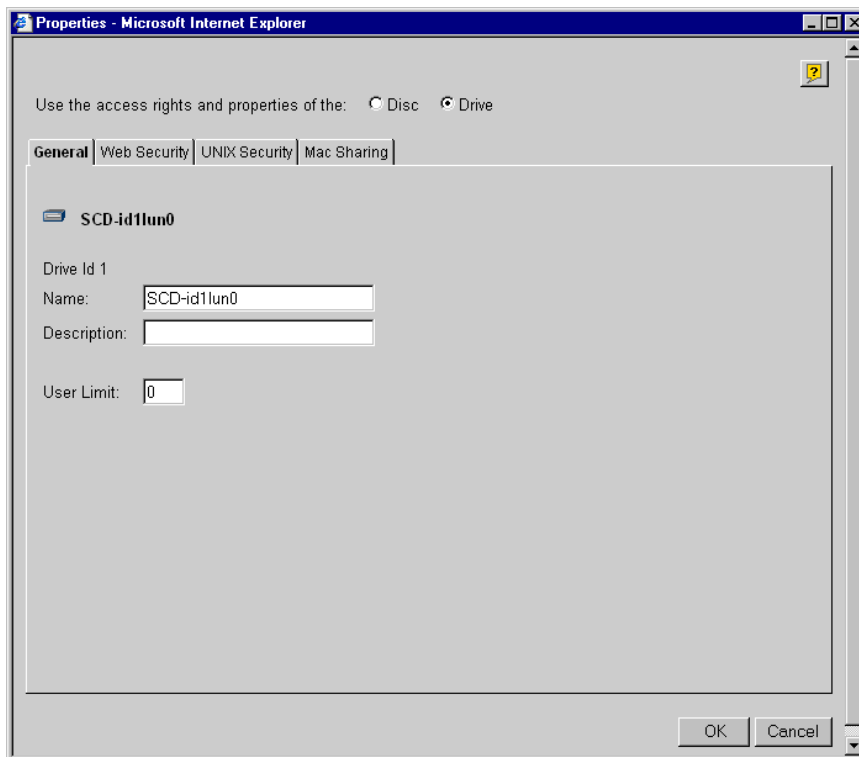
- The **AUTO-ARCHIVE** checkbox only appears if there is a hard disk connected
- You can click the **STOP ARCHIVING** button to immediately interrupt all current caching jobs. To restart archiving, check the appropriate **ARCHIVE / AUTO-ARCHIVE** checkbox(es) again.

4 Tips & Tricks

4.1 Shared Drive – Handling Monthly Updates

If you are receiving a monthly updates on CD that needs to be shared on the network, it is convenient to set up access rights for the drive instead of setting it for the disc each time you insert a new disc.

1. On the **DISCS & DRIVES** page **SELECT THE DRIVES** view.
2. Click the **PROPERTIES** icon to display the **PROPERTIES** dialog box for the drive.
3. Select **USE THE ACCESS RIGHTS AND PROPERTIES OF THE DRIVE** and specify an appropriate name and description.
4. Specify the access rights in the network environments that are relevant on the other tabs.



Now any disc inserted into this drive will become accessible under the drive's name and inherits the drive's access rights and properties automatically.

Notes:

- When a disc is inserted into a shared drive and then archived, the disc inherits the drive's access rights but keeps its original name.
- If a previously archived disc is inserted into a shared drive, the drive icon will indicate that the disc in the drive is not accessible under the drive's name. This is because the disc is already archived under its original name.

4.2 Hard Disk Full

4.2.1 Deleting Discs

If a hard disk becomes full and you want to cache another disc, you must first free some space on the hard disk.

Follow these steps to delete a disc that you no longer use:

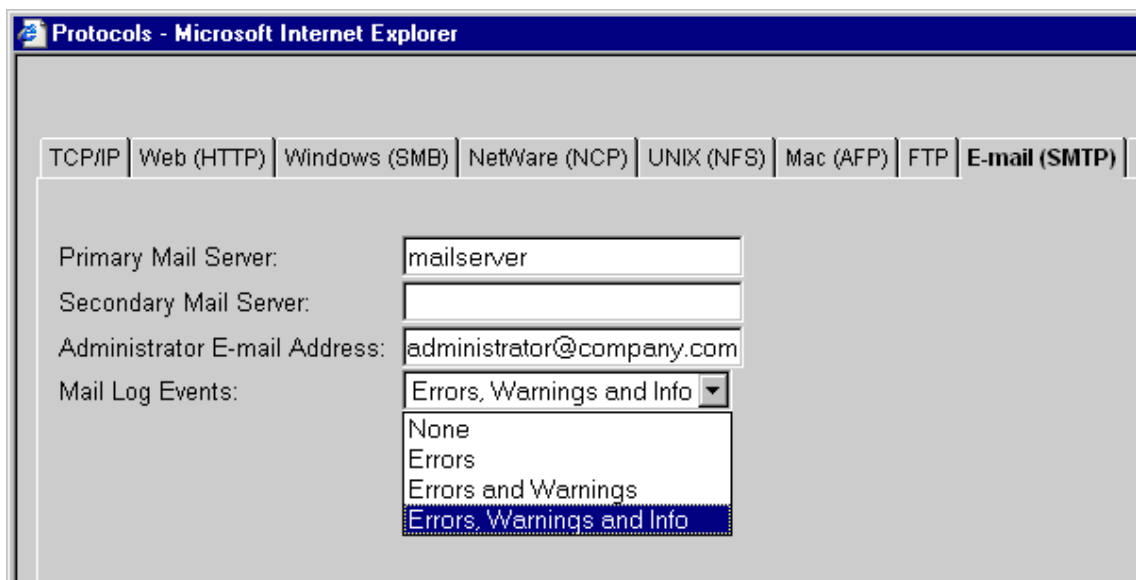
1. Open the **DISCS & DRIVES** page.
2. Select the **CACHED DISCS** view and locate an archived disc that is currently not inserted.
3. Click the **DELETE** button to remove the data permanently from the hard disk.
Consequently, this disc will no longer be accessible to the users.

Note: If you only uncheck the **ARCHIVE** checkbox, a copy of the disc will remain on the hard disk until the space is needed by other data.

4.2.2 E-mail Notification

You can set up the AXIS StorPoint CD E100 server to send an e-mail to the Administrator in case the hard disk becomes full. To do this, follow these steps:

1. Open the **NETWORK SETTINGS** page.
2. Click the **DETAILED VIEW** button.
3. Open the **E-MAIL (SMTP)** tab.
4. Specify the name or IP address of the mail server that provides the e-mail facilities in the **PRIMARY MAIL SERVER** field.
5. Specify the **ADMINISTRATOR E-MAIL ADDRESS** and the **MAIL LOG EVENTS** parameters.
6. Click **OK**.



4.3 Archiving a Large Number of Discs

If you are archiving a large number of discs and the tower has several CD drives, you will find it very useful to combine the **AUTO-ARCHIVE** and **AUTO-EJECT** functions.

To use these functions you:

- Set the global **EJECT DISCS AFTER THEY ARE AUTOMATICALLY ARCHIVED** parameter on the **SERVER SETTINGS | CACHING** page
- Check the **AUTO-ARCHIVE** checkbox for the drives on the **DISCS & DRIVES | DISCS & FILE SYSTEM** view.

All you need to do now is inserting the new discs one after another as soon as they are being ejected.

5 Troubleshooting

5.1 Problems Archiving a Disc

If you are having problems when trying to archive a particular disc, the reason might be one of the following:

- The disc is copy-protected and cannot be archived
- The disc is damaged or dirty
- The drive where the disc is inserted does not support the disc format