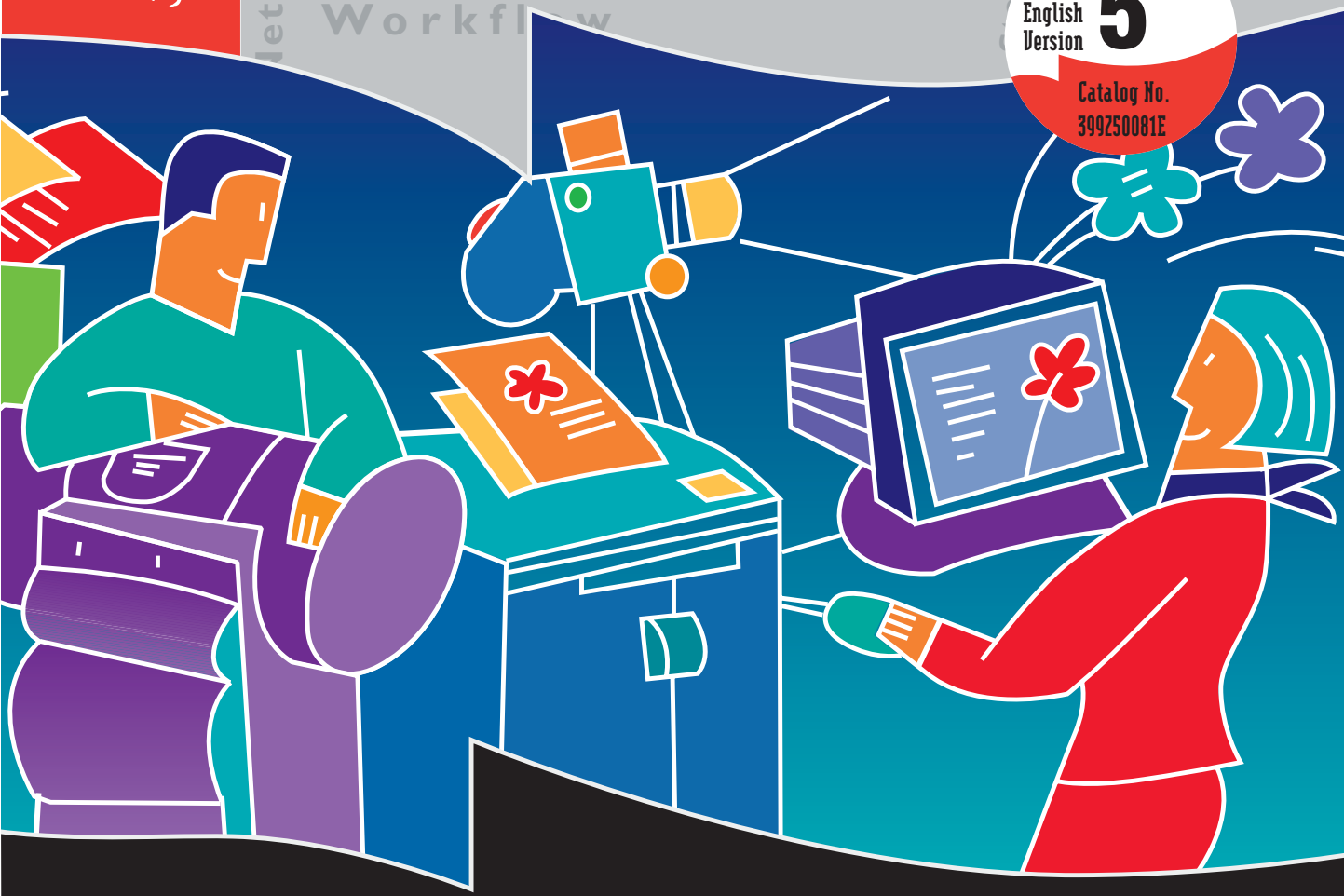
Scitex Graphic Arts

Legato Backup

Installation Guide

English Version 5

Catalog No. 399250081E



OPEN TO A WORLD OF COLOR scitex

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First Edition	February, 1996
Second Edition	March, 1996
Third Edition	July, 1996
Fourth Edition	May, 1998
Fifth Edition	January, 1999
Sixth Edition	August, 1999

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4.992.862	5.079.721	5.103.407	5.111.308	5.113.249	5.119.440	5.122.871	5.124.547
5.150.225	5.153.769	5.155.782	5.157.516	5.200.816	5.208.888	5.221.997	5.227.895
5.247.174	5.247.352	5.283.140	5.285.297	5.296.935	5.299.020	5.313.278	5.323.248
5.325.217	5.328.032	5.331.439	5.333.064	5.339.176	5.355.446	5.359.458	5.367.388
5.384.648	5.384.899	5.412.491	5.412.737	5.420.702	5.473.733	5.481.379	5.488.906
5.497.252	5.508.828	5.509.561	5.519.792	5.519.852	5.526.107	5.526.143	5.532.728
5.561.691	5.568.595	5.576.754	5.579.115	5.592.309	5.594.556	5.600.448	5.608.822
5.615.282	5.623.001	5.636.330	5.649.220	5.650.076	5.652.804	5.691.823	5.691.828
5.696.393	5.699.174	5.708.736	5.739.819	5.742.743	5.764.381	5.813.346	

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1. NETWORKER INSTALLATION AND CONFIGURATION

The **Scitex Backup Utility** is supplied as a stand-alone application, which automates backup operations performed by the Scitex Ripro Server and supports Scitex Scheduled Archiving functionality.

This document provides a description of the installation (software and hardware) and configurations procedures, as well as providing a basic user work flow.

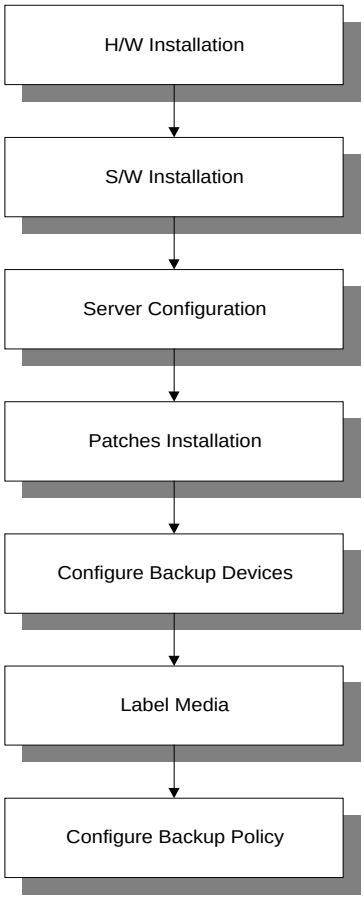
Once installed and configured according to your specific requirements, this application runs automatically (you must verify that the necessary tapes are available). It is highly recommended to monitor the progress of any backup operation and to read the notifications on your mail application on a daily basis.

You can reconfigure the utility at any time and for any reason.



Ensure that you have MacX installed and/or that you can open a x-window on your server terminal.

For Macs with a PCI platform, use MacX ver 1.5 only.


H/W Installation
S/W Installation
Server Configuration
Patches Installation
Configure Backup Devices
Label Media
Configure Backup Policy

1.1 Pre-Installation Requirements

1.1.1 Software

1. New Scitex software (**Timna** and up) is installed and operational on your machine.
   - Where the software is version 2.2.30 or below, see *Section 1.2.3*.
2. **TCP/IP** is configured and active.
3. Verify that the system date is correct, type **`smit date`** and press **Enter**. Change parameters to match the correct date.



If you are reinstalling the software on the machine where Legato Indexes exist, do **NOT** change time / date.

1.1.2 Hardware

1. Any DLT Jukebox that is already connected to the system must be removed.
   At the command prompt type **`rmdev -l devicename -d`** and press **Enter**.
2. For **41T/W or 42T/W** models, you need a free SCSI ID for the on-board SCSI controller, for **RS5XX** models you need a free SCSI ID for a separate SCSI adapter or SCSI-2 Fast.

   For PCI models, connect each device according to its configuration:
   - Connect 4000 / 4500 Quantum devices to F / W adapter.
   - Connect Q47 Breece Hill machines to an ultra-single SCSI adapter.
   - Connect Q2.15 machines to a single adapter.

1.2 Software Installation

1.2.1 Removing the Old Legato Software

When upgrading the Legato 5.0 to 5.1, keep the indexes.

At the command prompt, type:

```
#nsr_shutdown –a
#nsr_ize –u –s
```

Answer **Yes** to all questions.

1.2.2 Downloading CD Software for New Scitex Server (Timna and up)

If you are already at the **Automatic Backup and Restore** menu, do not start again. Proceed from *step 5.*

1. Insert the *Legato NetWorker CD-ROM* in the CD-ROM drive.
2. Type **`scismit`** and press **Enter** (On **Timna**, activate **scismit** via CDE).
3. From the *SciSmit* main menu, choose **Backup and Restore** and press **Enter**.
4. Choose **Automatic Backup and Restore** and press **Enter.**
5. Choose **Software Installation** and press **Enter**.
6. Press **Enter** again in response to "... Are You sure?"
   This installation creates a */backup* file system. In addition, the CD-ROM is downloaded to a temporary location that will later be erased.
   User *Backup* is also created.
7. Press **[F10]** to exit *SciSmit*.
   This takes approximately five minutes to complete.

1.2.3 Downloading CD software for systems other than Ripro3000/5000

For Server version 2.2.30 install the NetWorker software version 5.X using the following sequence:

1. Via *smit* create a mount point for CD - /mnt

   ```
   #mount /mnt
   ```

2. Create a directory on one of the dataVolumes:

   ```
   #mkdir /dataVolumes/rtest10.1.0/legato5.1
   ```

3. Change to this new directory:

   #cd /dataVolumes/rtest10.1.0/legato5.1

4. Extract the Legato SW:

   #tar xvpBf /mnt/aix/networkr.tar



For the GEMS Legato 5.1 CD-ROMs the path should be written in capital letters:
#tar xvpBf /mnt/AIX/NETWORKR.TAR

1.3 Server Configuration



During this phase, the software allocates the required disk space for the NetWorker (application and indexes). If there is not enough disk space (at least 200MB disk space is required), the following error message is displayed and the operation is aborted:

Not enough Free space in rootvg to install Backup

1.3.1 Configuration

- Refer to the section *1.3.2 Enlarging/Backup Filesystem* for enlarging the **/backup** filesystem.

1. At the command prompt type **`scismit`** and press **Enter** (or activate **scismit** via CDE on **Timna**)
   - From the *Scismit* main menu choose **Backup and Restore** and press **Enter**.
   - Choose Automatic Backup and Restore and press Enter.
   - From the *Automatic Backup and Restore* menu choose **Server Configuration** and press Enter.
   - Press Enter again at the "Are you sure...?" dialog window.
2. Proceed to answer the questions that appear:

   Install NetWorker man pages [yes]?

- Type **No** and press **Enter.**

  Directory for main pages: [*/backup/man*]

  Install the aix41 NetWorker programs [yes]

- Press **Enter** to accept the default.

  Directory where aix41 NetWorker programs should be installed [usr/bin]

  Do you wish to continue with nsr_ize?

- Type in **`/backup/bin`** and press **Enter**.

  To set up the NetWorker server you need to supply a directory with enough free space to maintain all the on-line file indexing and media management information.

  To setup NetWorker client, you need to supply a directory for the nsrexecd state file.

Do you wish to continue with nsr_ize?

- Type **Yes**.

Directory to use for server and client information [/dataVolumes/rtest7.2.0/nsr].

- Type in **/backup/nsr** and press **Enter**.

The following is a list of tape devices available on your system:

rmt0 Available 00-00-0S-40 Other SCSI Tape Drive

rmt1 Available 00-00-0S-30 Other SCSI Tape Drive

Enter device name [Return]:

- Type in your selected device and press **Enter** for each **rmt.** For Example: type **/dev/rmt1.1** and press **Enter**.

Enter device name [Return]:

- Press **Enter** to confirm.
- Enter all available devices (rmt0.1, rmt 1.1 etc) and press **Enter** twice. Follow instructions on screen.

Enter the first NetWorker server's name (enter the value "all" allowing access to all *NetWorker* servers) [no more]:all

- Type **all** and press **Enter** to confirm.

Start NetWorker daemons at end of install [yes]: ?

- Type **No**.

Note: Do *not* start the daemons if you plan to install the patches.

Install the NetWorker device drivers [yes].

- Press **Enter** to confirm.

NetWorker successfully installed on Ripro1

- Press **[F10]** to exit *SciSmit*.

1.3.2 Enlarging/Backup Filesystem

If the **/backup** file system (space defined for indexes) must be enlarged, perform:

- At the command prompt type:

  `chfs -a size=+200000 /backup` and press **Enter**.

This adds 100MB to the file system. For each 32GB of file system add another 100MB of file system.

1.3.3 Patch Installation

- See information regarding the latest patches from Scitex Support Zone: *www.scitex.com/support/tech_support/products/legato/news.htm*
- Install all recommended latest patches. See Appendix C.

1.3.4 Changing Password for user Backup

To change user Backup password to null:

1. At the command prompt type **`passwd backup`** and press **Enter**.
2. Press **Enter** in response to **Backup's new password** in order to enter the null password.
3. Press **Enter** again in response to **Re-enter Backup's new password** (null).

1.3.5 Accessing NetWorker

- Activate the deamons:

  #nsrd

  #nsrexecd

For "Timna" Version

1. Exit from the prompt until you reach the login prompt.
2. Login as **cdesci**.

   Note: Do not login as **cdesci** on the Timna station till database is defined.

3. When the CDE panel is displayed, click on the *NetWorker* **nwadmin** button under Services.

For Version 2.2.30

NetWorker can be accessed from the Scitex Server with a graphic monitor or from the Macintosh front end (if you have a Scitex Server Terminal with an IBM 3151 terminal or equivalent).

From the Scitex Server:

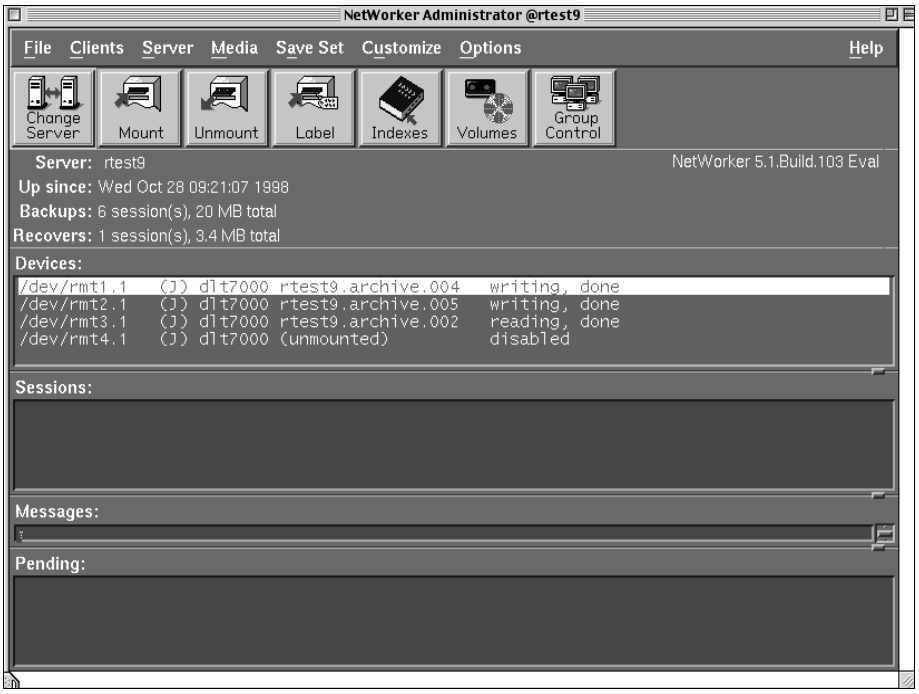
1. At the prompt type **`cd /backup/bin`** and press **Enter**.
2. To access the *NetWorker* applications from the Scitex Server with a graphic monitor, open a *xinit* window, then type **`nwadmin&`** and press **Enter.** (Not recommended).

The *NWAdmin* dialog window is now displayed.

From the Macintosh:

1. To access the *NetWorker* applications on the Macintosh, login to the server via the chooser, as *root*, select **MacX Ripro Applications** from your server.
2. Open the *MacX Ripro Applications* volume on your desktop and open the *NWAdmin* file.
3. Make sure that you have the correct hostname defined on Mac. If not, change the host definition before proceeding. (Refer to the *Scitex Server Installation Guide (PCI Model), Chapter 7, Installing the Scitex Server Applications on the Macintosh, Cat.No. 399Z50585D*).

The *NWAdmin* dialog window is now displayed.



1.3.6 Setting the Event Notification Mechanism

The *Notifications* mechanism advises the user of events (both pre-configured and user configured) that occur in the *NetWorker* system. Messages are sent through the electronic mail.

To set the *Event Notification* system in order to send messages to user *Backup,* follow these steps:

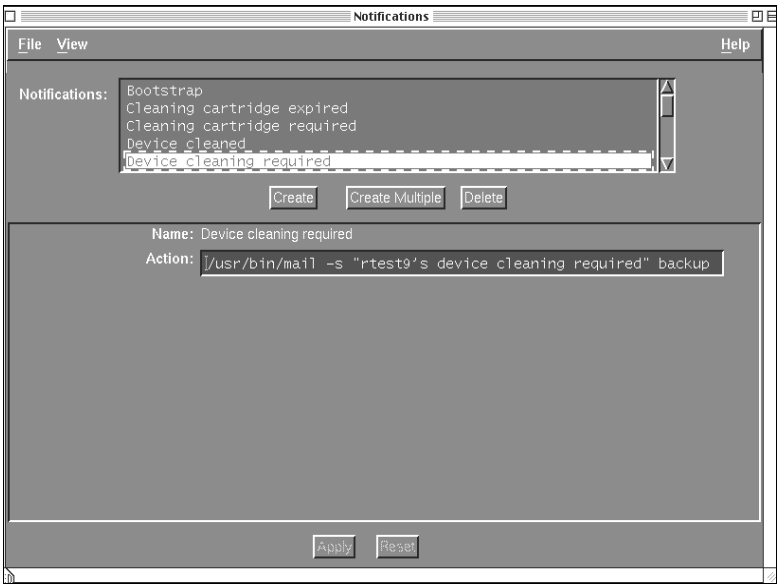
1. From the main menu bar, choose **Customize,** then choose **Notifications**.
2. **Change "Bootstrap" line to:**

   `/usr/bin/mail -s "ripro1's bootstrap information" backup`

   This sends the bootstrap into a separate mail.

Important: The user must print out the Bootstrap information **daily** through the *Helios Mail* from Macintosh.

3. Select all the notifications from the *Notifications* window.
4. The *Actions* text field displays what type of action is to be taken if the operation is mail. Verify that this command line shows the correct destination for the mail.



5. Delete the word **root** and type in **backup**.
6. Select **Apply**. Repeat this procedure for each *Notification* message.
7. Choose **File** and then choose **Exit** to return to the main window.

1.3.7 Changing Server Parameters

To determine the number of devices and sessions per device that can be activated in parallel:

1. From the main menu bar, execute the sequence **Server -> Server Setup**.
2. At the *Parallelism* text field, change the default from 4 to be equal to the number of drives. For example, for Q2-15, *Parallelism* = 2; for Q47 with four drives, *Parallelism* = 4; for Quantum 4500 with 1 drive, *Parallelism* = 1.
3. From the main menu bar, execute the sequence **View -> Details.**
4. At the *SS cutoff size* text field, enter **4000MB.** This increases the maximum saveset before Legato splits it.
5. Select **Apply** and choose **File.** Then choose **Exit** to close this window.



This optimizes the performance for retrieval, rather than for backup/ archive.

1.3.8 Working in the Domain Name Server Environment (DNS)

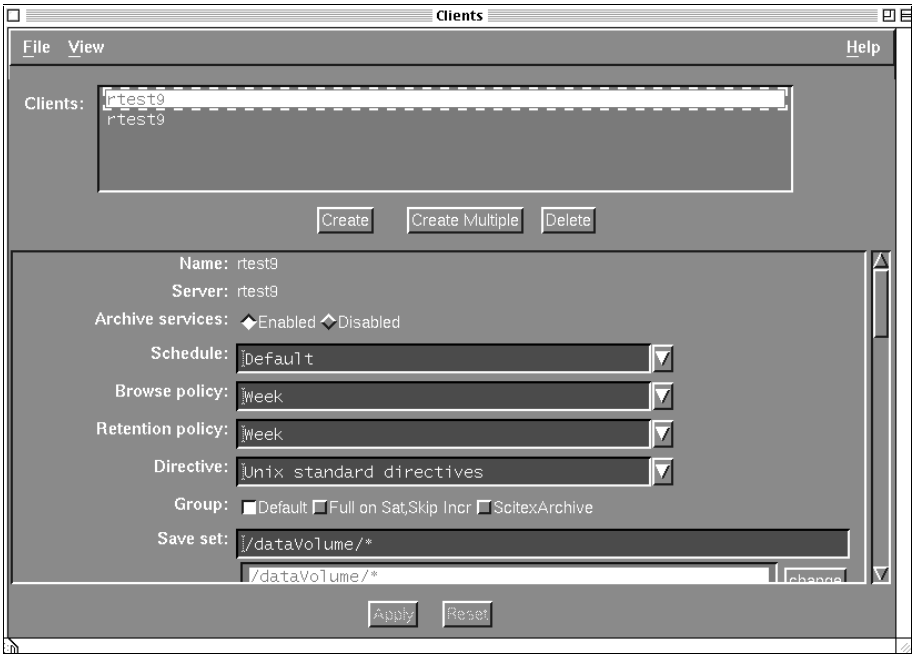
When working in a DNS environment with a NetWorker, the client setup must be changed accordingly.

1. From the main menu bar, execute the sequence **Clients-> Clients Setup**. The *Clients* window appears.
2. For a domain name server, the *Clients* text field shows the server name as follows:
   ripro1.stil.scitex.com.
3. Scroll down the window until the *Aliases* text field appears.
4. Select the alias field and delete the domain part of the server name, i.e., delete the **.stil.scitex.com,** leaving only **ripro1.**
5. Press the *Add* button to add this name to the text field, which will now read as follows:
   ripro1.stil.scitex.com.
   ripro1
6. Exit this window.

1.3.9 Enabling Archive Module (for Ripro Server 5000 Only)

Note: Not to be used on Scitex Archiver.

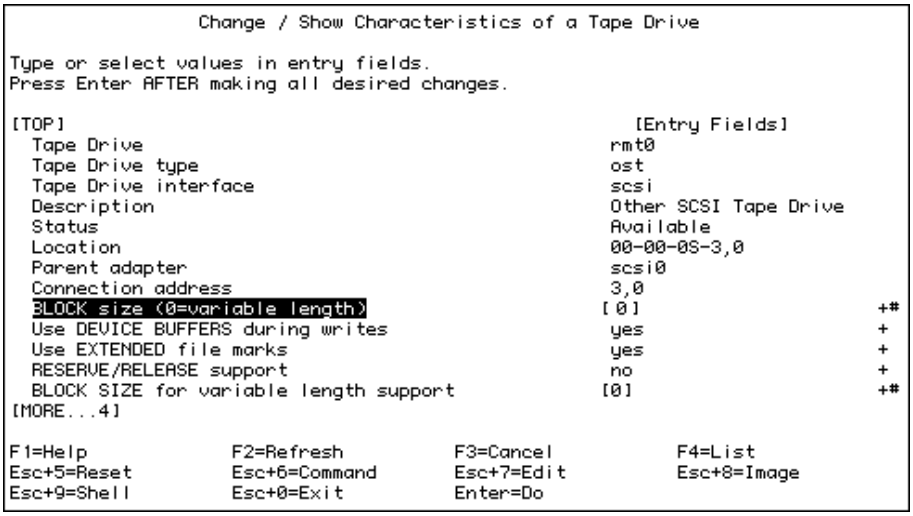
1. From the main menu bar, execute the sequence **Clients-> Clients Setup**. The *Clients* window appears.
2. To use the *Legato Archive* module, change **Archive Services** to **enable**.
3. Add **macuser** to the *Archiver User* option.



1.4 Defining a Backup Device

1.4.1 Changing Tape Block Size

1. At the command prompt, type **`smit chgtpe`** and press **Enter**.
2. Choose the backup device and press **Enter**.
3. Select **Block size** and change the default value **(512)** to **0 (variable length).**
   Change this for all remote devices for multiple drive tapes.



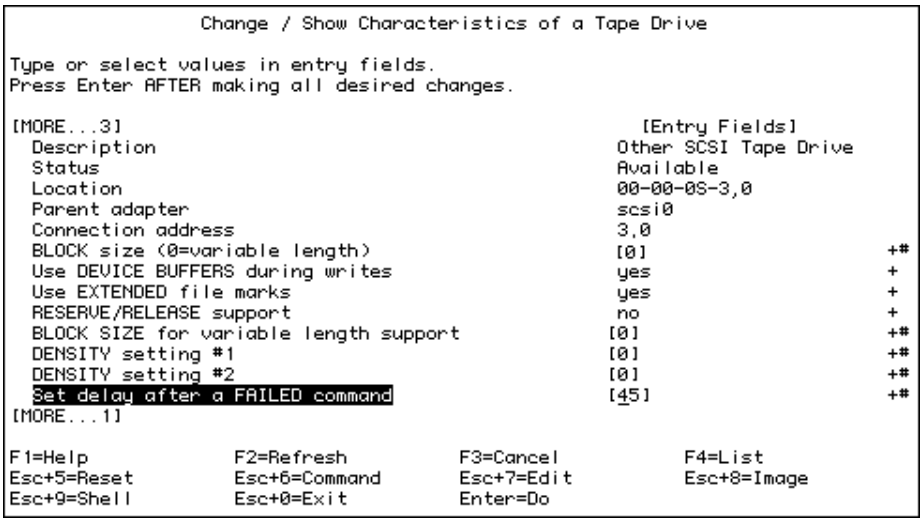
```
                Change / Show Characteristics of a Tape Drive

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                                  [Entry Fields]
  Tape Drive                                          rmt0
  Tape Drive type                                     ost
  Tape Drive interface                                scsi
  Description                                         Other SCSI Tape Drive
  Status                                              Available
  Location                                            00-00-0S-3,0
  Parent adapter                                      scsi0
  Connection address                                  3,0
  BLOCK size (0=variable length)                     [0]                    +#
  Use DEVICE BUFFERS during writes                    yes                    +
  Use EXTENDED file marks                             yes                    +
  RESERVE/RELEASE support                             no                     +
  BLOCK SIZE for variable length support             [0]                    +#
[MORE...4]

F1=Help            F2=Refresh         F3=Cancel          F4=List
Esc+5=Reset        Esc+6=Command      Esc+7=Edit         Esc+8=Image
Esc+9=Shell        Esc+0=Exit         Enter=Do
```

4. Verify that the default values for **Density Setting #1** and for **Density Setting #2** are both **0**.



5. Press **Enter**.

1.4.2 Determining the Backup Media Devices

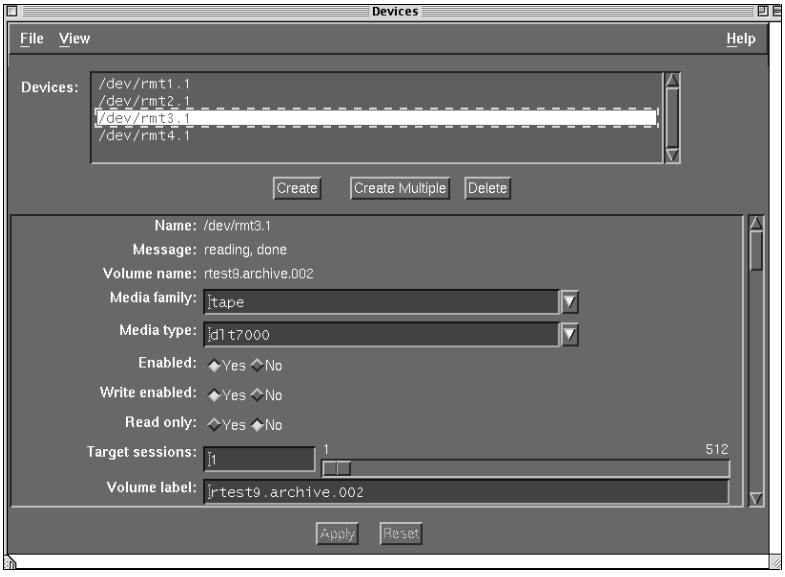
1. Choose **Media** from the menu bar.
2. Choose **Devices**.
3. Choose View->Details.
4. ***Delete*** all media devices.
5. Press **Create** and verify in the *Name* field that the device name and path are correct, if not, select and change accordingly.

6. Fill in the following fields:

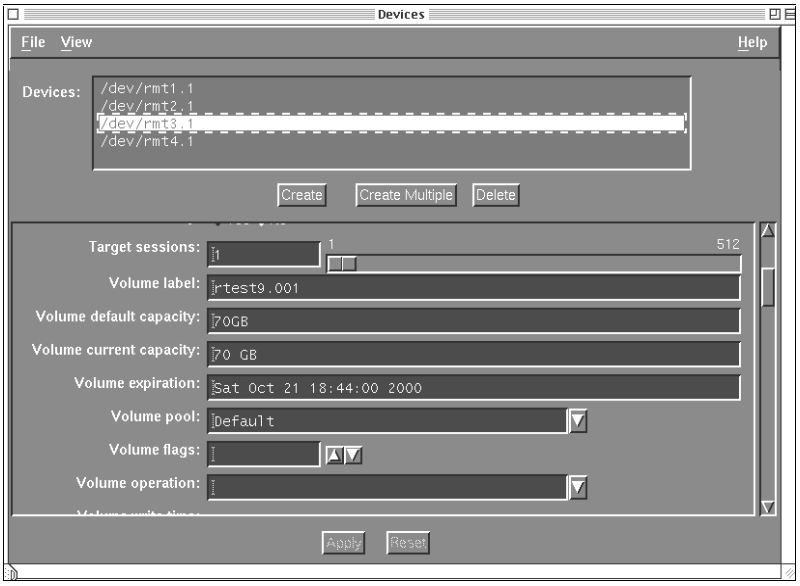
Media Family	Tape
Media Type	DLT or DLT7000
Read Only	No
Target Sessions	1 (per device)
Volume Default Capacity	70GB (30GB for
Jukebox Device	Yes
Cleaning Required	No
Cleaning Interval	2 weeks
Auto Media Management	Yes
Unlabeled volume loaded?	Yes
*Enabled	Yes
*Write Enabled	Yes

Note: Disregard error message **"nwadmin error, no jukebox found".**

Note: The *Enabled* and *Write Enabled* fields appear only after **Apply** is clicked.



7. Select *Apply* after all changes are complete.
8. Repeat this for all media devices.
9. Choose **File -> Exit** to exit *NWAdmin.*



1.4.3 Configuring a Jukebox

1. At the prompt, type **`jb_config`** and press **Enter** (under /backup/bin).

   The installation script now appears and you are prompted for answers (this is an example only):

   1. Install an Autodetected SCSI Jukebox?
   2. Install a Serial Jukebox?
   3. Install an SJI Jukebox?
   4. Install an RLM Jukebox?
   5. Install an STL Silo?

   What kind of Jukebox are you installing?

2. Type 1, **Install an Autodetected SCSI Jukebox** and press **Enter**.
3. Choose your device type.
   Installing a xxxxxxxxxx Jukebox.

   Name you would like to assign for the Jukebox device?

4. Type in **`jbx1`** and press **Enter**.

   Pathname of control port for the jukebox device

5. Choose the desired SCSI port (the one that matches the Jukebox SCSI ID).

Do you want automated cleaning support enabled [yes/no]

6. Type **`Yes`** and press **Enter** to confirm.

Enter pathname of media drive.

7. Type in **`/dev/rmt0.1`** (in this example) and press **Enter**.

Note: For multiple drive Jukeboxes repeat this command for each device.

If your device has a barcode reader support, do you want barcode reader support enabled? (yes/no).

Note: Breece Hill and ATL models have barcode support.

8. Type **`Yes`** and press **Enter**. (Type **`No`** for non Quantum devices.)

Do you want volume labels to match barcode labels? (yes/no).

9. Type **`No`** and press **Enter**.

Note: A specific labeling is used for Scitex backup and Archive.

Jukebox has been added successfully

1.4.4 Verifying Jukebox Parameters

1. Execute the sequence **Media -> JukeBoxes-> View -> Details**.
2. At the *Default cleanings* text field, change the default **to 20** cleanings.
3. Select **Apply** after all changes are complete.
4. Choose **File** and then choose **Exit** to return to the *NetWorker Administration* dialog window.
   - The *Devices* field should read / **dev/rmt1.1 (J),** where **(J)** represents jukebox and **(status)** is the working status of the jukebox (e.g. unmounted or reading etc.)
   - This field is not identical for a single cartridge device or for multiple drive devices.
   - This ends procedures for software and hardware installation and configuration.

You should now enable and authorize the software. Refer to *section 5, Enabling and Authorizing NetWorker.*

Note: If the scheduled Archive option exists, there may later on be four (4) types of pools and labels: Backup, Backup Clone, Schedule Archive and Schedule Archive Clone.

1.5 Labelling the Media



Relabeling a volume destroys all records of its contents under the old label.

- In case of a system crash and a new Legato installation is performed, new cassettes must be labeled differently from already used cassettes, those labeled before the crash.

1.5.1 DLT Libraries

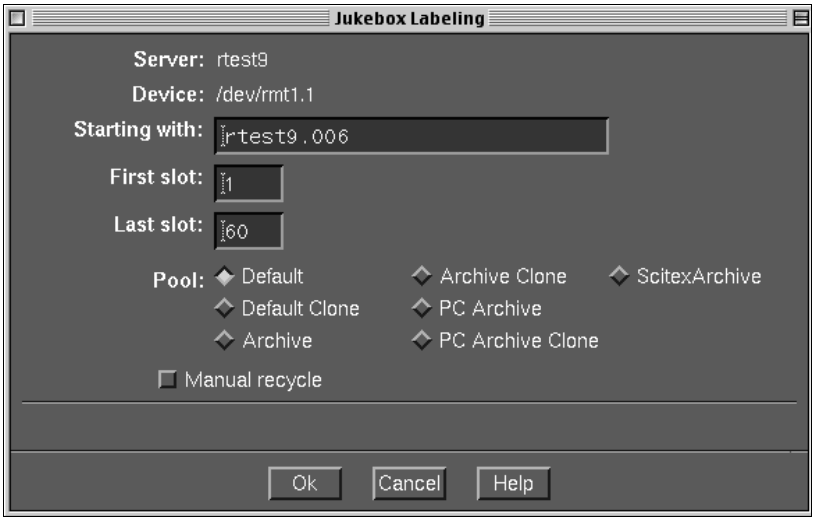
The default label template is used to label backup volumes loaded in the jukebox.

1. To open the *Jukebox Labeling* dialog box, verify that the device in the *Devices* text field is highlighted and then select the *Label* speedbar button.
2. The *Jukebox Labeling* dialog box opens and displays the name of the *NetWorker* server and the pathname previously selected for the designated jukebox device.
3. The *Starting with* text field displays the server label and number.
4. *First* and *Last* slots display the range of slots containing backup volumes to be labeled, according to the label template selected in the *Pools* window (default).
5. Click **OK** to begin labeling.

   During the labeling process, a progress message appears in the dialog box. The time duration varies according to the drive speed.

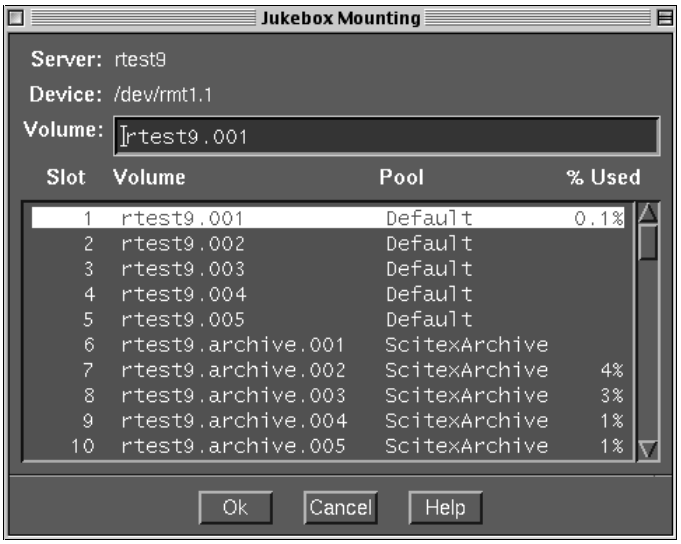
   At the end a notice appears:

   `Finished Labeling Volumes`
6. Select **Cancel** to close this dialog window.



7. To verify the labeling, select the *Mount* button from the speedbar.

   The *Jukebox Mounting* dialog window opens displaying the labeled cartridges including the cleaning cartridge (and number of cleaning periods left before replacement).



- During the labeling process, the cartridges are entered into the database inventory.

- On the *Volumes* window, check proper cartridges' labeling and definition.



If the cartridges have been used previously by other software, the contents must be erased before use with NetWorker.

To erase the cartridge contents:

1. Use NwAdmin to load cartridge into drive.
2. Type **`mt -f /dev/rmt1 weof`** and press Enter.

Repeat this process on all used cartridges.

1.5.2 Single Cartridge Magnetic Tape (DLT4000 or 7000)

To use the backup volume for recovering or backing up files, it must first be labeled and mounted.

1. Highlight the backup device in the *NetWorker Administrator* window.
2. Click the *Label* button on the speedbar.

   The *Label* dialog window is displayed.

   "Verifying media label..." appears in the *Volume Name* text field. Wait for this message to disappear.

   The *Volume name* text entry field displays the name of the volume currently mounted in the drive, if it is named, otherwise it remains blank.
3. Check **Default** for *Pool*.
4. If necessary, delete the contents and type in a new name for this volume.
5. Check **Mount after labeling** if you do not intend to label more media and you intend to use this media for next backup.
6. Click **OK** after each volume is labeled and/or mounted.
7. Click **Cancel** to cancel the operation.

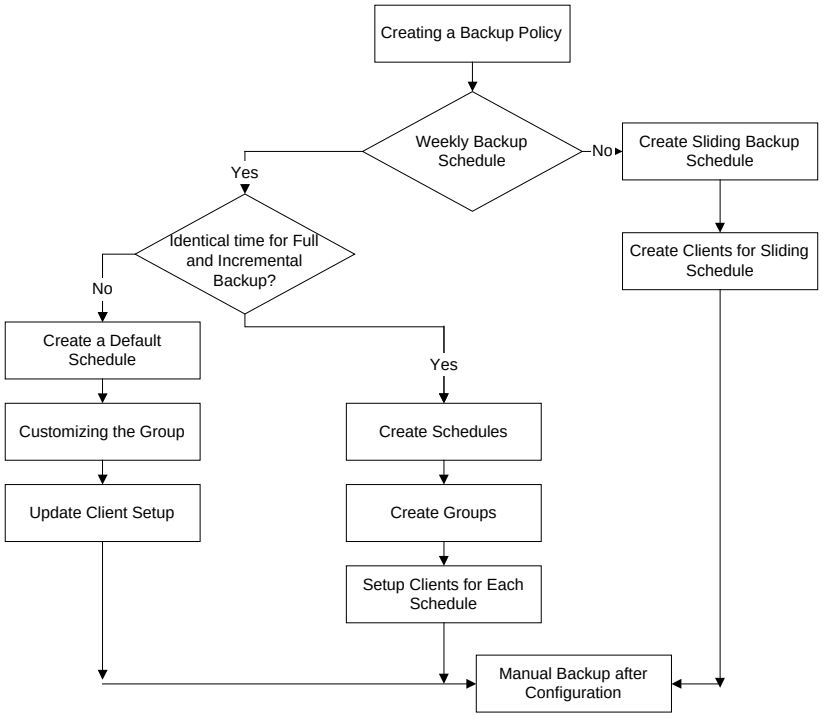
This is the end of the Installation procedure. Continue with *Chapter 2, Customizing Setup, page 2–1* for customization instructions.

2. CUSTOMIZING SETUP

This section deals with customizing a backup policy that answers the requirements of the specific workflow.

The *NetWorker* backs up each client system according to a backup schedule. The backup schedule specifies what level of backup will be performed for a client on each day of a weekly or monthly period.

The backup policy considerations should be handled as follows:



The above diagram is just a typical example. The exact configuration should be done according to specific needs.

2.1 Customizing Schedules

The two main factors in determining the type of backup schedule are:

- Estimating the amount of time that can be dedicated to performing a full backup.
- Capacity of the backup device, where for full backup the device capacity must be ≥ total data disk capacity.

The optimal time for performing the backup is when the server is acquiescent (with few files open). This is either late at night or over a weekend.

- Calculate the necessary backup time for a full backup and then see how this fits into the existing workflow.
- The rule of thumb for calculating the maximum time for a full backup is:

$$\frac{\text{Data Disks User Space (GB)}}{\text{15GB x No of Drives}} = \text{Maximum Backup Time (hours)}$$

*Where 15GB / hour is the accepted backup rate for DLT7000 Series Magnetic Tape devices. The rate may vary depending on the platform and SCSI type.

For example:

For a 180GB RAID and Q2-15 Jukebox the calculation is as follows:

$$\frac{180\text{GB}}{15\text{GB x } 2} = 6 hours$$

It is recommended that a weekly Full Backup be performed over the weekend.

If the plant works every day in three shifts, a sliding schedule of Full Backups should be planned.

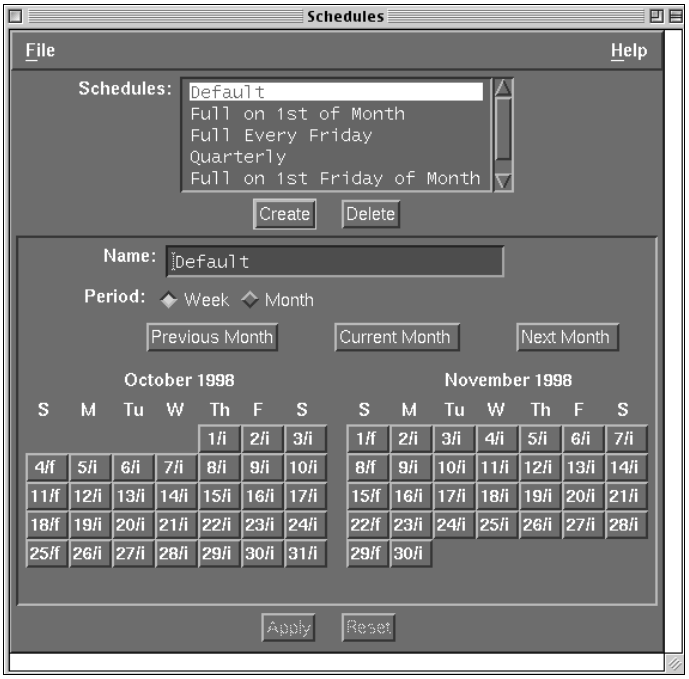
- NetWorker provides five pre-configured schedules and the ability to create customized schedules.
- The *default* schedule is *Full Backup* every Sunday and *Incremental Backup* every day. This is the recommended schedule, if there is no work over the weekend.

2.1.1 Weekly Backup Schedules

Identical Start Time for Full and Incremental Backup

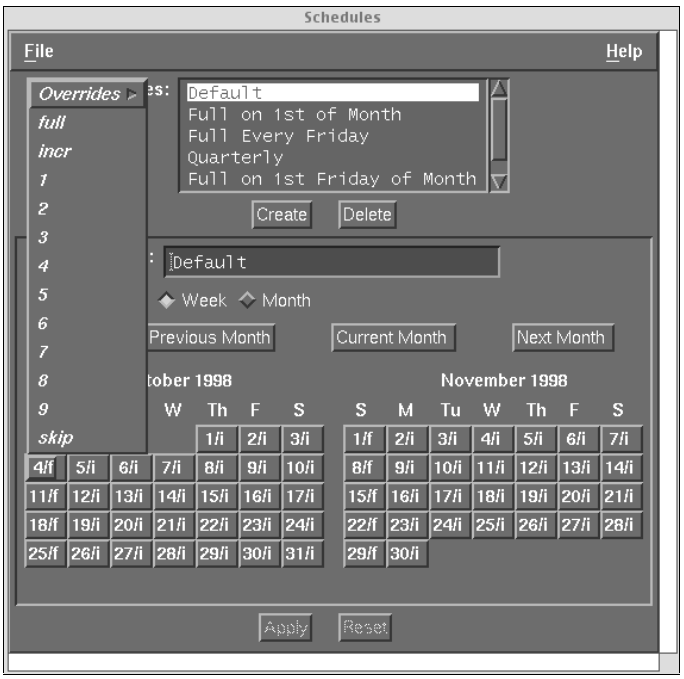
If you are using the default schedule, *Full Backup every Sunday and Incremental Backup every day*, skip this section.

1. To create a weekly backup schedule, choose **Customize** from the menu bar, then select **Schedules** from the pull-down menu.
2. Click the *Create* button.
3. Enter the name of the schedule into the *Name* text field (e.g., *Full on Saturday*).
4. Select **Week** as the *Period*.



5. To select a day for the full backup, select the specific day of the week from the current month calendar displayed and pulls down the *Backup Level* menu.

6. Select **full** from this menu.



7. To ensure that all other days are marked for an Incremental Backup, select the day of the week to begin the Incremental Backup and pull down the *Backup Level* menu.
8. Select **incr** and click **Apply** to save this new schedule.

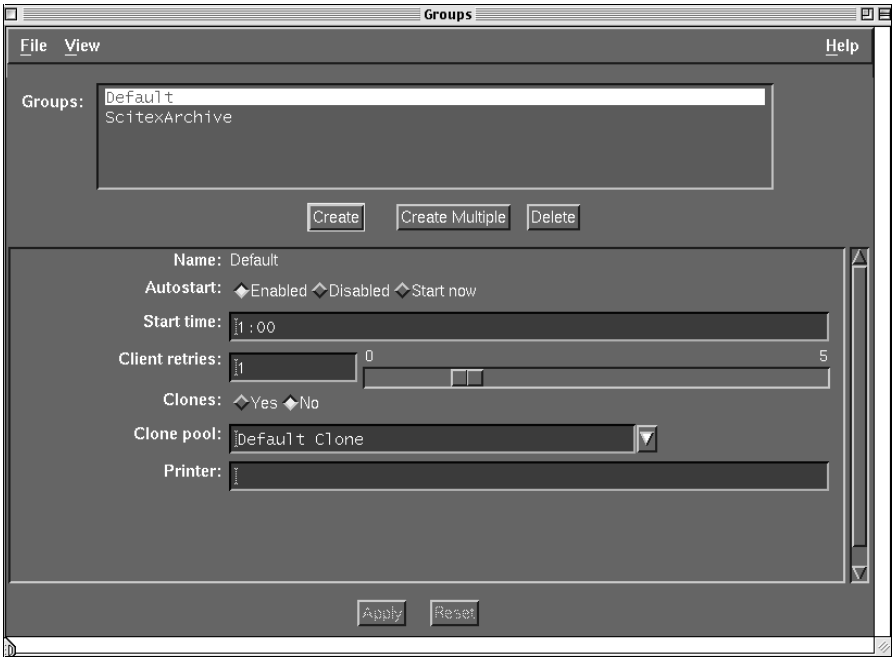
- If you want no backup at a certain day, choose **skip** on that day.

Customizing the Group

Enable the *Default* group to which the client belongs. When the default group is enabled, the *NetWorker* backs up all clients in the group according to the pre-configured selections.

- For further explanations of *Client* and *Group,* refer to the manuals supplied with the **Legato NetWorker**.

1. Choose **Customize** from the main menu bar and then choose **Groups**.
2. From the *Groups* text field, select the group required, in this case, select the *Default* group.
3. Set the *Start time* for the backup according to your requirements, in this case, both *Full* and *Incremental Backups* begin together at the configured time.

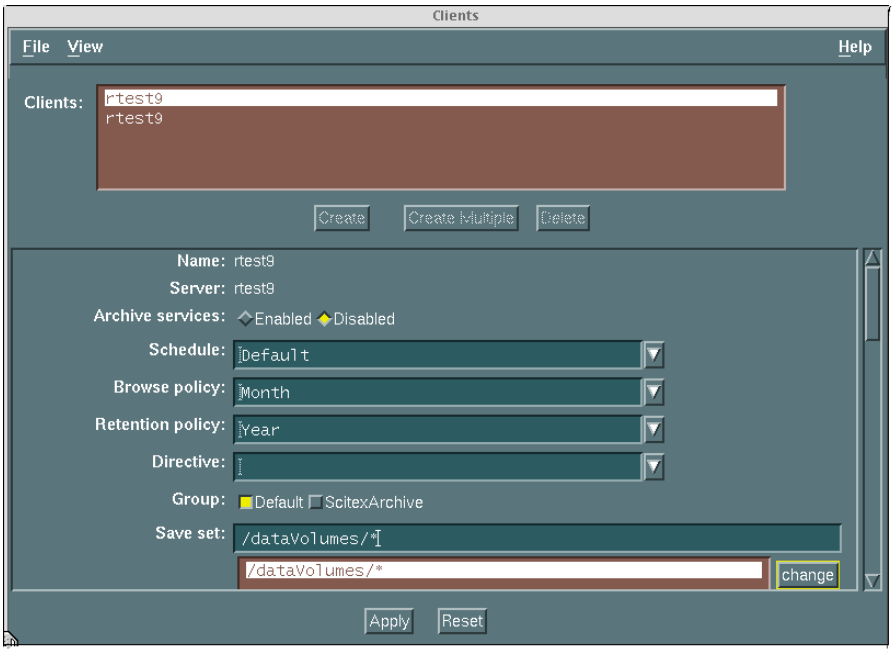


4. Set **Autostart** to **enabled.**
5. Select **Apply**, then choose **Exit** from the **File** menu to close this window.

Updating Client Setup

- Each backup schedule must have a client for the schedule.
- When *NetWorker* is installed, it becomes a client of itself.

1. Choose **Clients** from the menu bar and then choose **Client Setup**.
   The *Clients* dialog window is now displayed.



2. The *Clients* text field displays the server name.

If you are using the default schedule then proceed from *step 6* and update the different policies.

If you need to create a client, proceed from *step 3* (for a Sliding Schedule, refer to section *2.3.2, Creating a Sliding Backup Schedule*).

3. Press the *Create* button.
4. In the Name field type in the name of the client that is to be created, in this case, **`ripro1.stil.scitex.com`** (the suffix **stil.scitex.com** indicates that a domain server is installed). The client name is usually **ripro1**.

Note: The suffix will be different depending on a customer's DNS setup.

5. Now proceed to fill in the parameters for this client.
6. At the *Schedule* text field, select the triangular indicator to display a list of schedules, then select the schedule you require.

   At the *Browse policy* text field, a list of policies can be similarly displayed.

   The *Browse* policy selected reflects how long the file entries remain in the file indexes before being automatically removed. The recommended setting is *2 weeks* for backup.

   A Full Backup remains in the on-line index for a period of time equal to the Browse Policy plus one complete backup cycle.

   This setting determines the number of cartridges required.

   Calculation (from previous example):

Amount to be backed up (full backup)	180GB
Incremental Backups 10%/day x 6days	80GB
Total Space Required	260GB
No. of Cartridges /week	4 (35GB compressed ≈ 70GB)
No. of cartridges according to Browse/Retention Policy	12 (2 weeks +1 complete backup cycle)

   At the *Retention* policy text field, a list of policies can be similarly displayed.

   The *Retention* policy selected reflects how long the save sets on a volume will be recoverable before the volume is available for recycling. The recommended setting is *2 weeks*. It must be equal to the *Browse* policy setting.

   At the *Directive* text field, a list of policies can be similarly displayed.

   The *Directive* policy selected is an instruction set created to maximize the efficiency of a backup and handling of special files. The recommended policy is *Unix standard directives*.

   Note: Do not use the *Unix with Compression Directives* option due to hardware compression, which is default.
7. Verify that *Group* is set to **default**.

8. Set the *Save set* text field to the appropriate client filesystem(s) for the selected *NetWorker* client and change the default setting **All** to **/dataVolumes/*,** then press the *Change* button.
9. Select **Apply** when all settings are complete.
10. Choose **File** and then choose **Exit** to return to the *NetWorker Administration* window.

This ends the basic Legato Backup configuration.

2.1.2 Creating Schedules

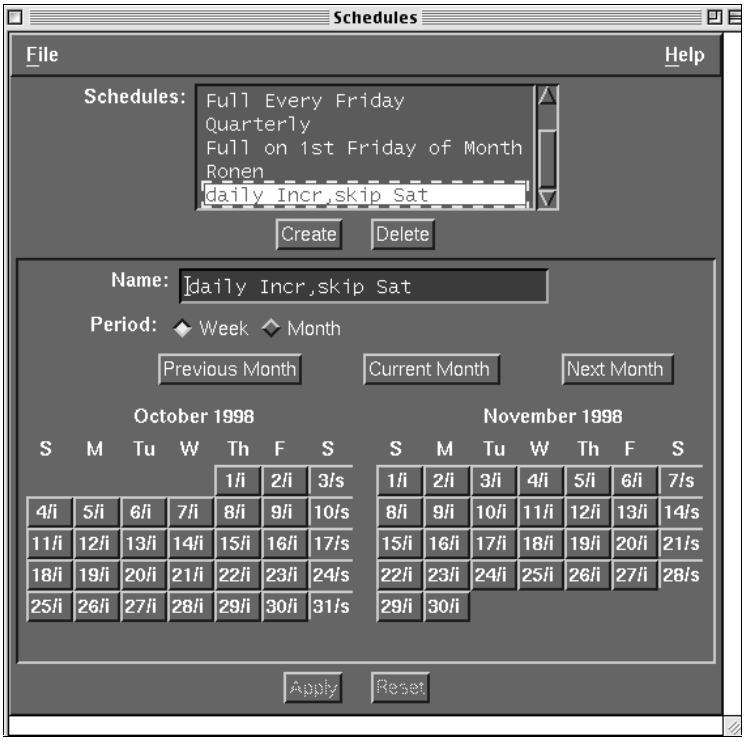
Different start time for Full and Incremental Backups

1. To create schedules for each type of backup, refer to section *2.1.1 Weekly Backup Schedule.*

For example:

Schedule Name	Type
Full on Saturday, Skip Daily	To perform a Full Backup on Saturday and skip a Daily Incremental Backup.
Incremental Daily, Sat Skip	To perform a Daily Incremental Backup and skip Full Backup on Saturday.

2. To select a day for the Full Backup (in the first example, Saturday) from the current month calendar displayed, select the specific day of the week and pull down the *Backup Level* menu.
3. Select **full** from this menu, to mark (**f**) all Saturdays appropriately.
4. Since there is no Incremental Backup (e.g., day after the Full Backup), pull down the *Backup Level* menu and select **skip** from this menu for all days but Saturday.
5. Click **Apply** to save this schedule.



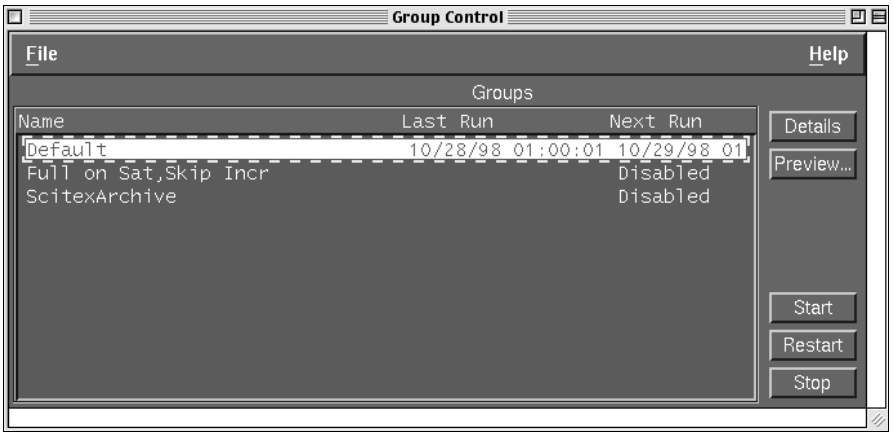
6. For the second schedule, follow the above procedure but select **incr** to determine the days for the Incremental Backup only and select **skip** for the days for the Full Backup.

2.2 Manual Backup After Configuration

To perform a backup after setting up the *NetWorker*:

1. Choose the *Group Control* button from the speedbar.

   The *Groups Control* dialog window opens with information about all of the backup groups known to the *NetWorker*.



2. Select the group for backup and press the *Start* button.
3. Select **OK** on the *Notice* message window to commence the backup.



- The status of the backup is shown in the *NWAdmin* window in the *Messages* section.

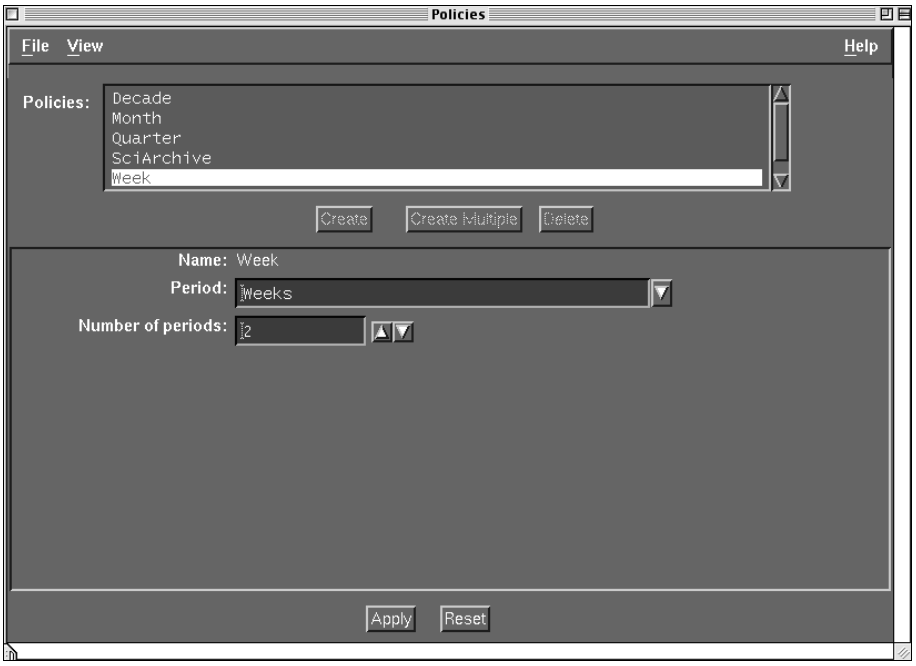
2.3 Sliding Backup

2.3.1 Creating a Policy

To create a browse / retention policy:

1. From the main menu bar, choose **Customize,** then choose **Policies**.

   The *Policies* dialog window now appears.



2. To create a new policy, click the *Create* button.
3. Enter a name for the policy in the *Name* text entry field.
4. Select a period for the policy. In this example, it should be **2 weeks.**
5. For the *Number of periods* field, use the *Up/Down* arrow symbols to select **2** to indicate that any index entry is automatically removed from the on line index after two weeks.
6. Click **Apply** to execute the selections.

- This newly created policy is now available in the client's window and can be selected as both a *Browse Policy* and a *Retention Policy*.

2.3.2 Creating a Sliding Backup Schedule

A sliding backup schedule enables you to perform a part of the full backup and the incremental backup every day. This schedule is implemented in those instances where there is no available time to perform a complete weekly backup in one day (e.g. the plant works every day including weekends).

Creating a sliding backup schedule means:

- Creating a full daily backup schedule plus daily incremental schedule for each day of the week (i.e., 7 schedules + 1 incremental).
- Creating a client for each day of the week (i.e., a client for each schedule) = 7 +1 client.
- Each client is allocated a set of filesystems that represent 1/7 of all dataVolumes to be backed up (in other words, they represent 1/7 of a complete full backup).
- Creating a client for daily incremental backup.

2.3.3 Creating Clients for a Sliding Schedule

To Create Clients for a Sliding Schedule:

1. Choose **Clients** from the menu bar and then choose **Client Setup**.
   The *Clients* dialog window is now displayed.
2. The *Clients* text field displays the server name.
   This must be selected for each new schedule.
3. Press the *Create* button.
4. In the N*a*me field, type in the name of the client (equals the server name) that is to be created, in this case, **ripro1.**
5. At the *Schedule* text field, select the triangular indicator to display a list of schedules, then select the schedule you require.
   For a sliding schedule, there should be 7 schedules, each representing a weekly backup for a specific day, e.g., *Full on Sunday*, *Full on Monday* etc.
   At the *Browse policy* text field, a list of policies can be similarly displayed.

The recommended setting is *2 weeks.*

At the *Retention* policy text field, a list of policies can be similarly displayed.

The recommended setting is *2 weeks*, it cannot be less than the *Browse* policy setting.

At the *Directive* text field, a list of policies can be similarly displayed. The recommended policy is *Unix standard directives.*

Note: Do not use the *Unix with Compression Directives* option due to hardware compression, which is default.

6. Check the *Group* checkbox required and verify that the *default* **check box is not checked** (e.g., Daily Incremental, Skip Sat, Full on Monday, Full on Sunday)**.**
7. The *Save set* text field must be set to the appropriate client filesystem(s) for the selected *NetWorker* client.

   For each day client, a list of all dataVolumes to be backed up should be shown (like in **df** command) and then divided up into 7 sets (each set representing a 1/7 of a weekly full backup plus the incremental backup).

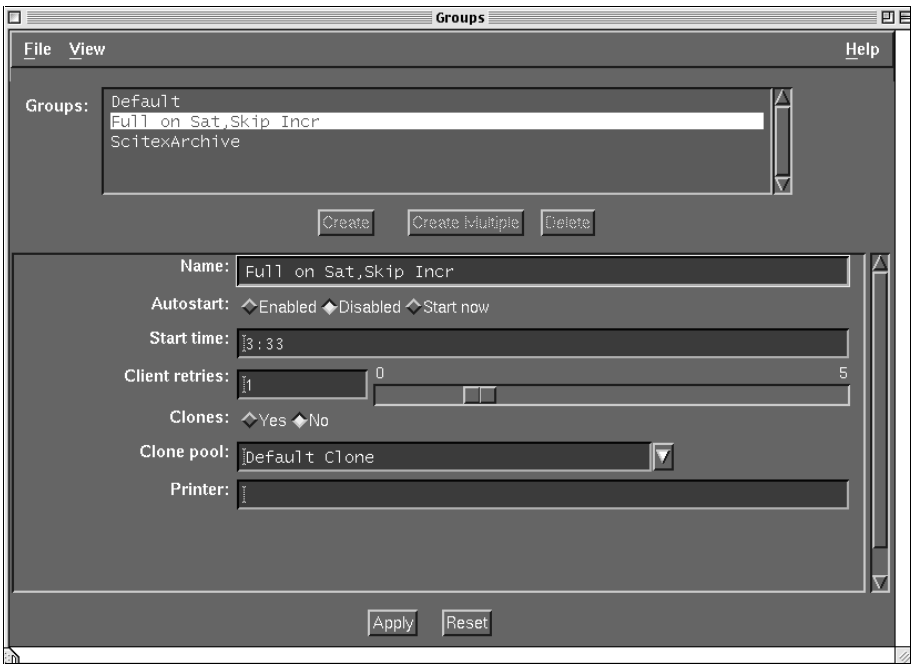
   For Daily Incremental, a **/dataVolumes/*** should be selected.

2.3.4 Creating Groups for Different Full and Incremental Start Time

To create a group for each schedule and to adjust the start time accordingly:

1. Choose **Customize** from the main menu bar and then choose **Groups**.
2. To create a new group, select **Create**.
3. Type in the name of the group in the *Name* text field (e.g., Daily Incremental, Skip Sat, Full on Monday, Full on Sunday).
4. Set **Autostart** to **enabled.**
5. Set the *Start time* according to your requirements.
6. Select **Apply.**
7. Create a second group (e.g., Full on Sat, Skip Incr), and set the *Start time* accordingly. Ensure that *Autostart* is checked as **Enabled**.
8. Select **Apply.**

9. Choose **Exit** from the **File** menu to close this window.



2.3.5 Setup Clients for Different Full and Incremental Start Time

1. Choose **Clients** from the menu bar, then choose **Client Setup**.
2. The *Clients* text field displays the server name.
3. Press the *Create* button.
4. In the N*a*me field, type in the name of the client that is to be created, in this case, **ripro1.**
5. Now proceed to fill in the parameters for this client.
6. At the *Schedule* text field, select the triangular indicator to display a list of schedules, then select the schedule you require.

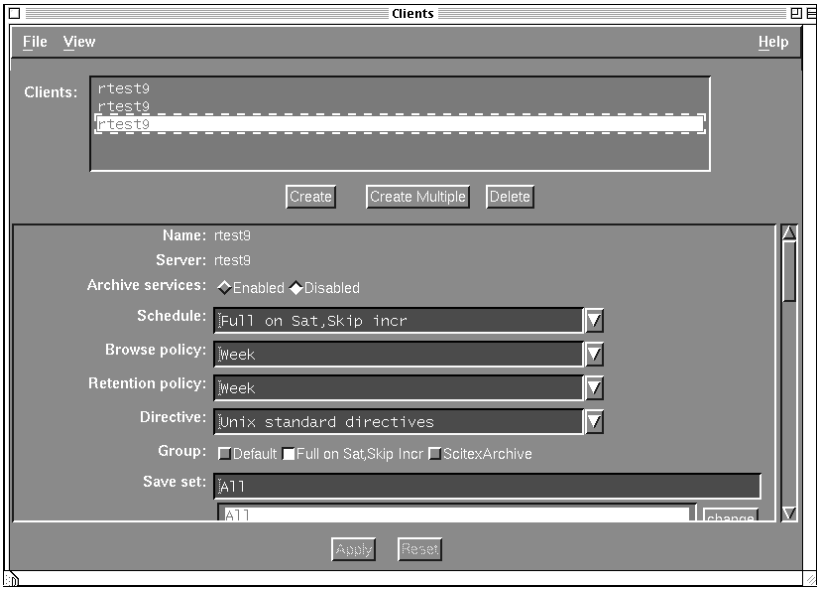
   Note: Do not use the *Unix with Compression Directives* option due to hardware compression, which is default.

   At the *Browse policy* text field, a list of policies can be similarly displayed. The recommended setting is *2 weeks*.

At the *Retention policy* text field, a list of policies can be similarly displayed.The recommended setting is a *2-week* period; it cannot be less than the *Browse* policy setting.

At the *Directive* text field, a list of policies can be similarly displayed.The recommended policy is *Unix standard directives*.

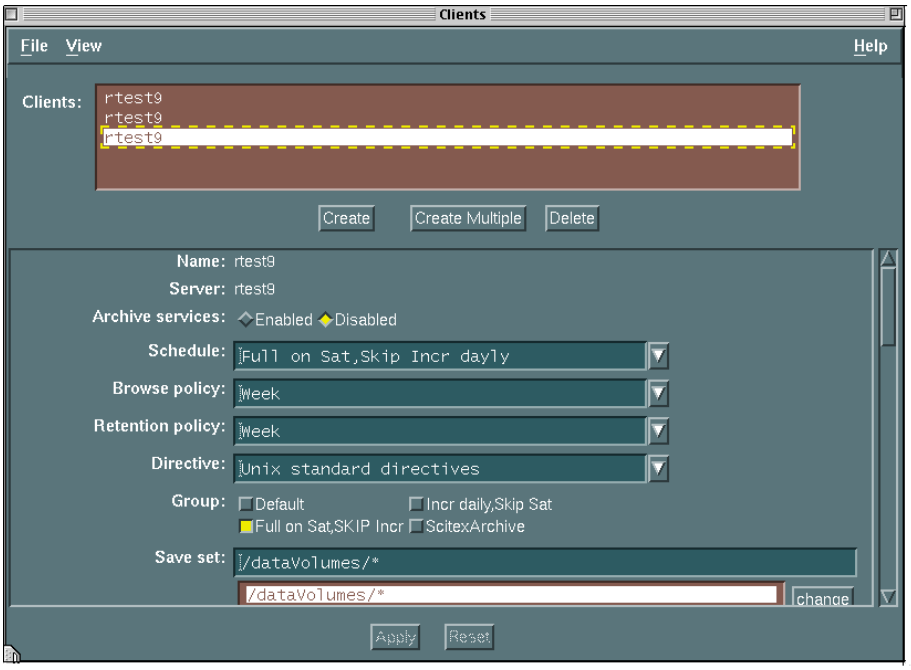
7. Check the *Group* checkbox required (e.g. Daily Incr, skip Sat) and verify that the *default* **check box is not checked**.
8. Set the *Save set* text field to the appropriate client filesystem(s) for the selected *NetWorker* client and change the default setting **All** to **/dataVolumes/***, then press the *Change* button.
9. Select **Apply** when all settings are complete.
10. Repeat this procedure for the second group created.
11. Choose **Exit** from the **File** menu to return to the *NetWorker Administration* window.
12. Repeat this procedure to create the schedule *Full Saturday, skip daily*.



Select **Apply** when all settings are complete.

This procedure must be repeated until all the schedules have been set to cover a complete week.

13. Choose **File** and then choose **Exit** to return to the *NetWorker Administration* window.



3. UPGRADING FROM VER 4.2 TO VER 5.1 AND UP

Note: An Upgrade Enabler Code is needed for version 5 for NetWorker. No Update Enabler Code is needed for JBX or No. of slots.

To upgrade from **Legato Ver 4.2 to Ver 5.1** follow these steps:

1. Insert the *Legato NetWorker CD-ROM Ver5* in the CD-ROM drive.
2. To install software, refer to section *1.2 Software Installation*.
3. Proceed to *Download CD Software*.
4. Refer to section *1.3, Server Configuration to* install new binary programs of *Legato 5.1* and latest patches (currently patch 2).
5. Refer to section *5, Enabling and Authorizing NetWorker* to execute the enabling and authorizing procedure using the update code.

   The global update Enabler Code should be entered as following:

   `nsrcap –v –c 6CF2E8-2C92A1-C0062C`

4. WORKING IN THE NETWORKER ENVIRONMENT

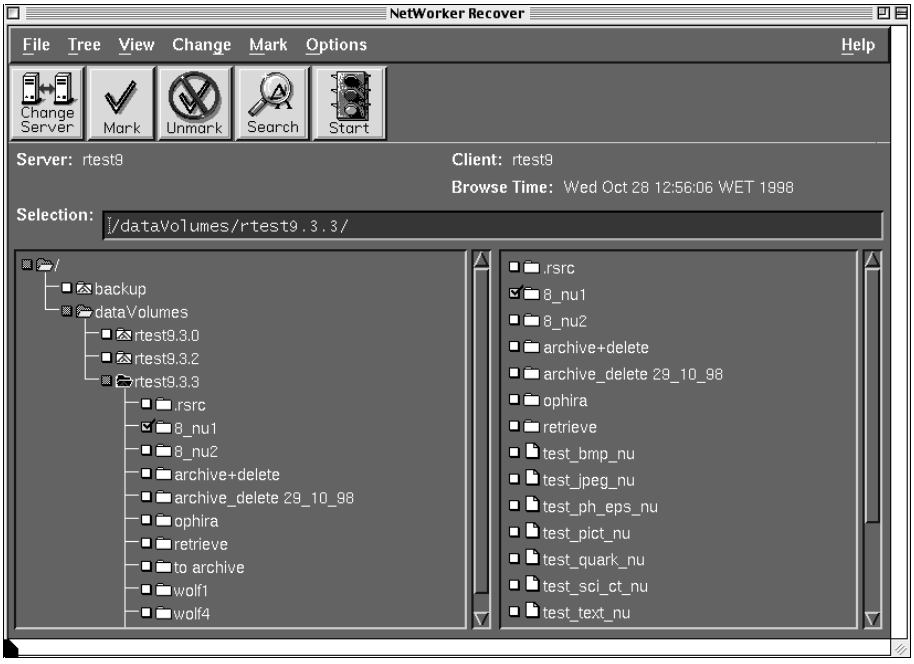
4.1 NwRecover

4.1.1 General

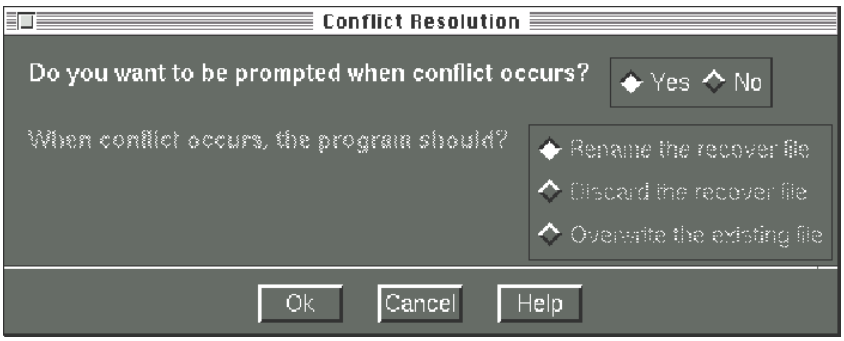
To restore (recover) backed up files / directories / dataVolumes:

1. Access the *NwRecover* application in the same way as the *NWAdmin* application was accessed. Refer to *section 1.3.5 Accessing NetWorker.* The *NwRecover* dialog window is now displayed.
2. Choose the items for recovery, then select the white square and double click to mark it or choose **Mark** from the menu bar. The *Selection* text field displays the selected path.

   Note: Marking a data volume or directory marks all files below it. This is not recommended due to hidden files such as *.rsrc, .def, .rfs.* Only folders within main dataVolumes or Jobs folders should be marked.
3. Select **Start** to execute the recover process.



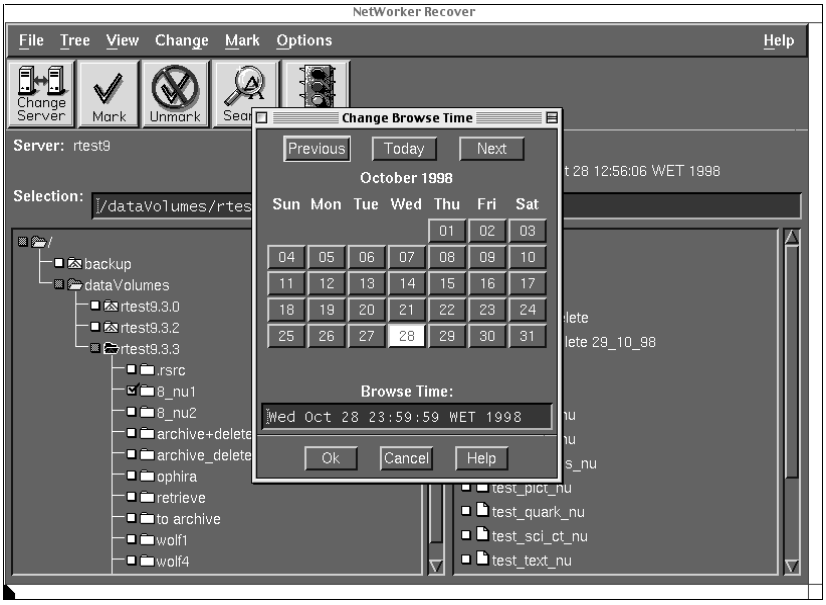
4. When **Start** is selected the *Conflict Resolution* dialog window opens.



5. Leave the default settings or change them as required and select **OK** to proceed.

4.1.2 Changing time

1. To change the items for recovery to an earlier version, for example, choose **Change -> Browse Time** from the menu bar.
   This will restore a *Full True Image* resembling the specific time selected.



2. Select the date required from the calendar and select **OK**.

4.1.3 Changing Destination

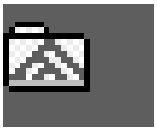
This may be needed if original dataVolumes do not have enough capacity for recovery.

1. To change the destination for the recovered items, choose **Options -> Relocate** from the menu bar.
2. Type in the new destination in the text field and select **OK**.

4.1.4 Recovering dataVolumes

Note: Recovery of entire dataVolumes level is not recommended.

1. The following icon marks file systems. Select the file system for recovery.



2. Select **Start** to execute the recover process.

4.1.5 Recovering Mac Files

Macintosh files can be recovered by recovering both the file and its resource file **(.rsrc).**

1. Expand the dataVolume until you reach the level where the specific file is displayed.
2. Select the file and open the *.rsrc* directory on the same level.
   Select the file of the same name under the *.rsrc* directory.



3. To change the destination for the recovered files, choose **Options-> Relocate** from the menu bar.
4. Type in a new temporary destination to a different path or a different data volume in the text field and select **OK**.
5. Select **Start** to execute the recover process.

4.1.6 Recovering Whisper files/pages/jobs

Whisper files can be recovered as complete **jobs (.j**) or **pages** (**.p**), or as individual files (**CT, LW**).

1. To recover *Whisper* jobs, open **/dataVolumes/ripro1.1.0/jobs** and select those jobs which have **.j** as a suffix.
2. To recover Whisper pages, open a job and select pages under the job which have **.p** as a suffix.
3. To recover whisper files, open the page and select items that have **CT** or **LW** as a suffix.



4. Select **Start** to execute the recover process.

When selecting individual files, either CT or LW as defined in the **.rfs** file and in order to retain the links between the files on a page after recovery, a new page layout must be performed (reset page) on the Whisper.

4.2 NwBackup

1. Access the NwBackup application in the same way as the NwAdmin application was accessed. Refer to section *1.3.5 Accessing NetWorker*.

   The *NwBackup* dialog window is now displayed.

2. When performing the backup, only dataVolumes (file systems) and not less are backed up in order to ensure data integrity.

   The file systems are marked with the following icon:



3. From the *NwBackup* dialog window, select the file systems for backup.



4. To select the filesystems, click the white square adjacent to the file system; this selects the filesystem and everything below it.

5. To expand the file system to display all the other files below it, double click the icon, or select the icon and choose **Tree** from the menu bar. Then choose the level of expansion.

4.3 NetWorker Administration

4.3.1 Cleaning the DLT

Cleaning of the DLT is performed automatically by the system if a cleaning cassette is inserted in the last slot in the magazine.

- A message will appear on the DLT LCD panel.
- The cassette can be used up to twenty times before being changed.

Note: Since the Legato bug was reported, the default number of cleanings should be defined to 20. Run
`nsrjb –U 20 –S 64 j jbx1`



Never use cleaning cassette more than 20 times.

Cleaning takes place in the following cases:

Display	Diagnosis	Action
HC message is displayed.	Drive head needs cleaning or tape is bad.	Load cleaning cartridge into drive.
Data cartridge causes *HC* message to display.	Data cartridge may be damaged.	Backup this cartridge onto another one, discard the suspected cartridge.
HC message still displays after cleaning drive head.	Data cartridge may be causing problems.	Try another one.

HC message displays after loading cleaning cartridge.	Cleaning not performed, cartridge expired.	Replace cleaning cartridge.

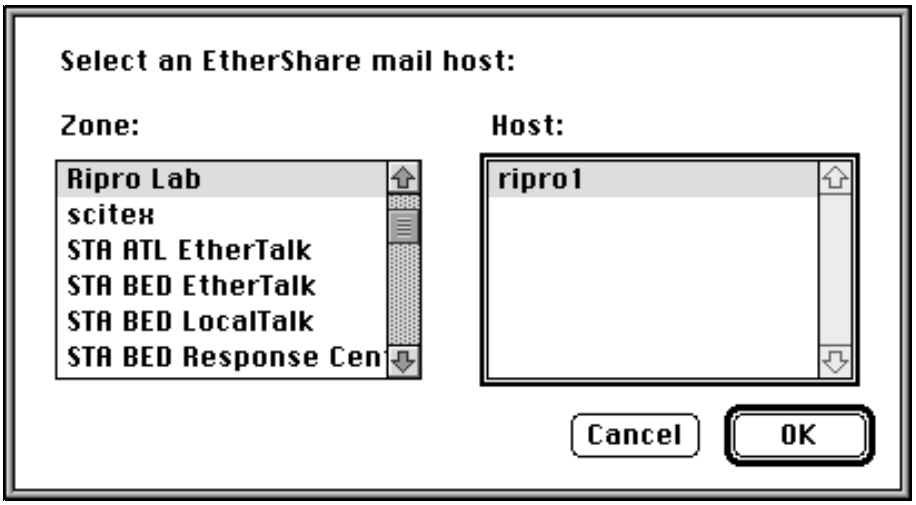
4.3.2 Monitoring the Backup

Check the *Ripro Mail* every day to verify that the backup was successful or if there are any failure messages.

- Make sure the bootstrap information is printed daily via Mail.

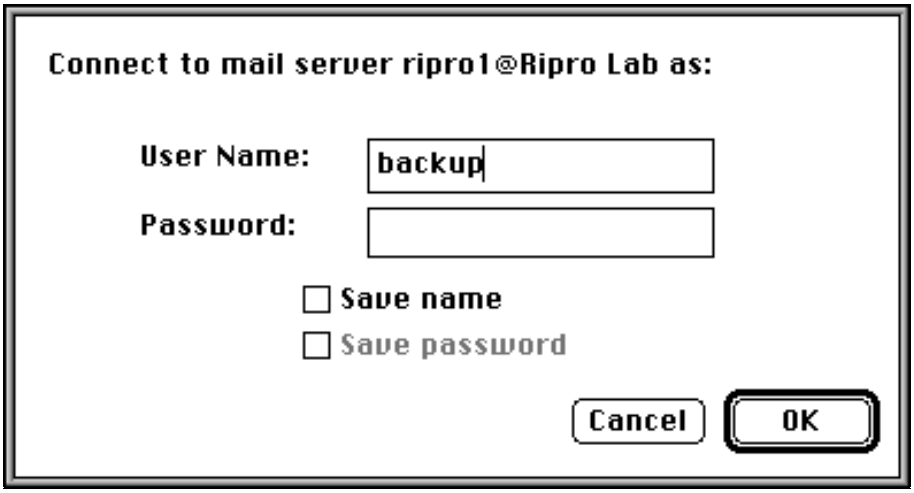
Opening the Mail

1. To open *Helios Mail* on the Mac, select the zone and the server.
2. Login to the server as **backup**.
3. Select *EtherShare Applications* and click **OK**.
4. From your desktop, open the *EtherShare Applications* volume and then open the *Helios Mail* folder.
5. Open the *Helios Mail* file and launch the *Helios Mail* application.
6. Choose the sequence **File ->Login** from the menu bar.
   The following screen appears.

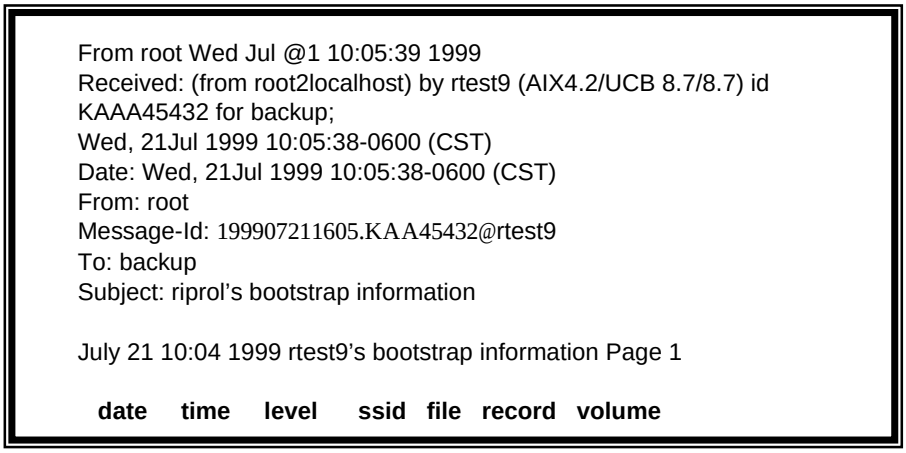


7. Select your *EtherShare* mail host and click **OK**.

8. Login again as **backup** to connect to the mail server.



9. You can scroll the file to display all messages received concerning the backup utility.
10. Select an entry and double click it to display the journal regarding the particular entry.



11. **Print the mail every day. Use the local printer or change to another printer if necessary.**
    This information is necessary in case of a system crash or other failures.

5. ENABLING AND AUTHORIZING NETWORKER

5.1 Enabling NetWorker Products

Once the installation and configuration of the NetWorker server is complete, the enabling and registration of the backup utility must also be completed. If the software is not enabled and registered within the specified time, it disables itself. The software is defined as “Evaluation” until it is enabled and authorized.

The following steps provide an overview of the enabling and registration process:

1. Enter required company and product information in the Registration form provided.
2. Enable all NetWorker products installed (from a specific kit).
3. Send the contents of the completed Registration form to your local Scitex Service Center to register your NetWorker and to receive the authorization codes.
4. Enter the authorization codes provided by your local Scitex Service Center to authorize the NetWorker and additional modules.

To enable the NetWorker:

1. Login as **root** and press **Enter**.
2. Type in the command ‘**`nsrcap -v -c xxxxxx-xxxxxx-xxxxxx`**’ and press **Enter**. The **`xxxxxx-xxxxxx-xxxxxh`** represents the enabler code printed on the *Enabler Certificate, Server Edition for Solaris and AIX* supplied with your software.
3. To enable an autochanger, perform the same procedure and enter the enabler code from the *Enabler Certificate, Autochanger Software Module for 1-6slots* supplied with your software.

   This step is based on the assumption that the autochanger has been defined and configured (refer to section *1.4 Defining a Backup Device*).

Legato NetWorker® Enabler Certificate

Autochanger Software Module for 1-6 slots

LEGATO™

Enabler Code: 000B82-C5FC44- XXXXXXX

Instructions for Enabling Your Product

Before you can use NetWorker, you must enable it.

Step 1:

Logon to your system as root.

Step 2:

If you are enabling an autochanger, you must first run:

jb_config

and answer the questions about the type of autochanger you are enabling.
If you are not enabling an autochanger module please skip this step.

Step 3:

Enter the following command:

nsrcap -v-c enabler_code

Enter your enabler code in the enabler_code field

NOTE: To save time

If you have also purchased NetWorker add-on options at the same time, enable all of the options before registering any of these products.

Step 4:

You must register your NetWorker product within 45 days of enabling them.
Bring up the registration window within NetWorker.
From the view menu, select the tabular option. From the file menu, select the print option to print the registration form.

Step 5:

Please fax or mail the output from Step 4 to Legato's Customer support at **1-415-812-6031.** Legato will then send you authorization code(s) to permanently enable your NetWorker products.

PN 20-1764-01
S/N 125105

5.1.1 Registration

1. Fill in the attached form and fax it with a copy of each Enabling Certificate (see above graphic as an example) to your local Scitex Service Center.
2. Forwarding this form and a copy of each Enabling Certificate will permit you to receive the authorization codes from the Scitex Service Center.

Registration Form for Backup Utility User **Fill in and fax, with a copy of each Enabling Certificate, to your local Scitex Service Center.**	
Machine ID	
Contact Person	
Company	
Street Address	
City / Town	
State / Province	
Zip / Post code	
Country	
Phone	
Fax	
Modem Tel #	
CompuServe address	
Purchase date	
Product serial number	
Machine type	
Backup device	
Disk size	
Backup policy	

5.1.2 Authorization

This procedure is performed when you receive the authorization codes from the Scitex Service Center.

1. Open a *NWAdmin* window.
2. Choose **Server** from the main menu and then choose **Registration**.
3. From the *Registration* dialog window, select the module to be registered from the *Registration* text window and enter the *authorization code* into the blank *Auth code* text field.
4. Select **Apply**.
5. Repeat this for each module for authorization.



Verify that the expiration date is now “null” and that evaluation marking no longer appears.

A. HARDWARE INSTALLATION

Note: To install other DLT Jukeboxes, refer to the manufacturer's instructions.

A.1 Installing the DLT4500 Mini Library

To install the DLT4500 Mini Library backup jukebox device - follow these steps:



Previously installed Jukeboxes must be deleted from the configuration before installing the DLT (use SciSmit).

1. Verify which SCSI addresses are vacant on your different SCSI adapters. (SciSmit->Devices->Peripherals -> List all Peripherals Devices ->List all System SCSI Devices).
2. Do not connect the DLT to the same SCSI adapter to which the system disk is connected.
   For **41T/W or 42T/W** models connect to the on-board SCSI controller, for RS5XX models connect to a separate SCSI adapter or SCSI-2 Fast.
3. Press **[F10]** to exit SciSmit.
4. Type **"0"** and press **Enter** at the Scitex login menu to logout from all Scitex applications.
5. After a few minutes, the login prompt will be displayed.
6. Login as **root** and initiate the shutdown procedure.
7. Power off the server after the "**Halt is completed...** " message is received.
8. Attach the SCSI cable to the SCSI adapter or to a device in the SCSI chain and to the DLT device.
9. Ensure that the termination is correct.
10. Set (if necessary) the SCSI ID of the new DLT drive and then restart it.

To set the SCSI ID on the DLT drive

1. Power on the DLT.
2. When "LDR RDY" appears on the LCD panel, press and hold the Display / Mode button on the operator panel of the DLT, until the SCSI ID appears on the LCD panel.
3. Press the Select button to change the SCSI ID.
4. Press Display / Mode button until **LDR RDY** is displayed on DLT panel.
5. Power off the DLT and then power it on, so that the drive can recognize the new SCSI ID.

To set the tape density (capacity - 20GB compressed)

1. On the operator panel of the DLT, press the Density Select button twice.
2. Press the **Select** button until you see the selected density (20 C) and the OVR light remains steady.
3. Press **Display Mode** to return to the main DLT menu.

Hardware Configuration Verification

1. Power on the Scitex Ripro Server.
2. Verify that the DLT has been correctly configured.
   (SciSmit->Devices->Peripherals -> List all Peripherals Devices ->List all System SCSI Devices).



Record the SCSI ID of the DLT drive for reference later on in the installation process.

3. Exit SciSmit.

   Refer also to the **Owner's Manual** supplied with your DLT package.

A.2 Installing a Single Cartridge Magnetic Tape (DLT4000 or DAT)

1. Perform steps 1-8 as described in the previous section.
2. To change the SCSI ID, press the buttons on the toggle switch, on the rear panel of the drive, to reach the required SCSI ID number.
3. Load a tape into the DLT4000, the indicator light of the tape density will light up.
4. If this is not the density you require, press the *Density Select* button until the indicator light opposite the density you require, turns on.
5. This light blinks initially, meaning that a density change is impending, it then remains steady and the Density Override light remains lit.
6. Power on the Scitex Server.
7. Verify that the DLT has been correctly configured.
   (SciSmit->Devices->Peripherals -> List all Peripherals Devices ->List all System SCSI Devices).

   Refer also to the **Owner's Manual** supplied with your DLT package.
8. Remove the *Scitex Distribution Media 3.5" NetWorker Installation* diskette from the diskette drive and the *Scitex Distribution Media NetWorker CD-ROM* from the CD-ROM drive.



To configure other backup devices, refer to the manufacturers' documentation for each specific device.

B. MOVING LEGATO INDEXES TO A DIFFERENT HOST

The following is a suggested procedure to move Legato indexes from one host to another, where both machines are running Scheduled Archiving S/W.

Both file and media indexes are moved.

The procedure supports the case when the old host and the new host have the latest Legato version (5.X) installed.

Note: When moving indexes between platforms the Legato version on both platforms must be identical.
The new host must have installed on it:
–Legato 5.X (currently 5.1) with latest patches (See Appendix D).
–Enabler codes.
–Scheduled Archiver must be configured and enabled (Scitex password) on Archiver machines.

The following sequence must be followed exactly in the order it appears below.

B.1 Moving indexes onto the new host when the host name is identical to old one

In this example, you move indexes from **rtest10** with IP address 149.115.83.156 t **rtest10** with IP address 149.115.83.122.

1. Verify setup of both computers.

   In order to copy the indexes - verify the setup of the /etc/hosts files on both computers.

   On the original rtest10 the /etc/hosts should have the following entries:

   149.115.83.156 rtest10
   149.115.83.122 rdev9

   Note: Hostname rdev9 can be any name.

On the new rtest10 the /etc/hosts should have the following entries:

149.115.83.122 rtest10
#149.115.83.156 rtest10 (the old host name entry)

Note: The new host is named *rdev9* on the new host only for the sake of copying the indexes.

2. On the old host rtest10 move the indexes first onto a dataVolumes:

   #mkdir /dataVolumes/rtest10.1.0/legato

   #cd /backup/nsr

   # uasm -s -i ./index | (cd /dataVolumes/rtest10.1.0/legato ; uasm -r -iY)

   #uasm -s -i ./mm | (cd /dataVolumes/rtest10.1.0/legato ; uasm -r -iY)

   #cd /dataVolumes/rtest10.1.0

3. Copy indexes onto a new host dataVolumes (type on the old host):
   #rcp -r legato sciroot@rdev9:/dataVolumes/rtest10.1.0/

4. On the new host installed with Legato 5.X restore the indexes:

   #nsr_shutdown –a

   #rm –r /backup/nsr/index

   #rm –r /backup/nsr/mm

   #cd /dataVolumes/rtest10.1.0/legato

   # uasm -s -i ./index | (cd /backup/nsr; uasm -r -iY);

   # uasm -s -i ./mm | (cd /backup/nsr; uasm -r -iY);

   #cd /backup/nsr

   #chgrp sys *

5. Restart Legato daemons – nsrd,nsrexecd

6. Move the old magazine to the new machine Jukebox.

7. Perform Inventory using **nwadmin**.

B.2 Moving indexes onto the new host when the host name is different from old one (ex:rdev9)

In this example, you move indexes from **rtest10** to **rdev9.**

1. On **rdev9** verify Legato 5.1 is installed with the latest patches and configured.
2. Verify that Scheduled Archive is properly configured (on Archiver only).
3. On the old host **rtest10** move the indexes first onto a dataVolumes:

   #mkdir /dataVolumes/rtest10.1.0/legato

   #cd /backup/nsr

   # uasm -s -i ./index | (cd /dataVolumes/rtest10.1.0/legato ; uasm -r -iY)

   #uasm -s -i ./mm | (cd /dataVolumes/rtest10.1.0/legato ; uasm -r -iY)

   #cd /dataVolumes/rtest10.1.0
4. Copy indexes onto a new host dataVolumes (type on the old host-**rtest10**):
   #rcp -r legato sciroot@rdev9:/dataVolumes/rdev9.1.0/
5. On the new host **rdev9** installed with Legato 5.X restore the indexes:

   #nsr_shutdown –a

   #cd /dataVolumes/rdev9.1.0/legato

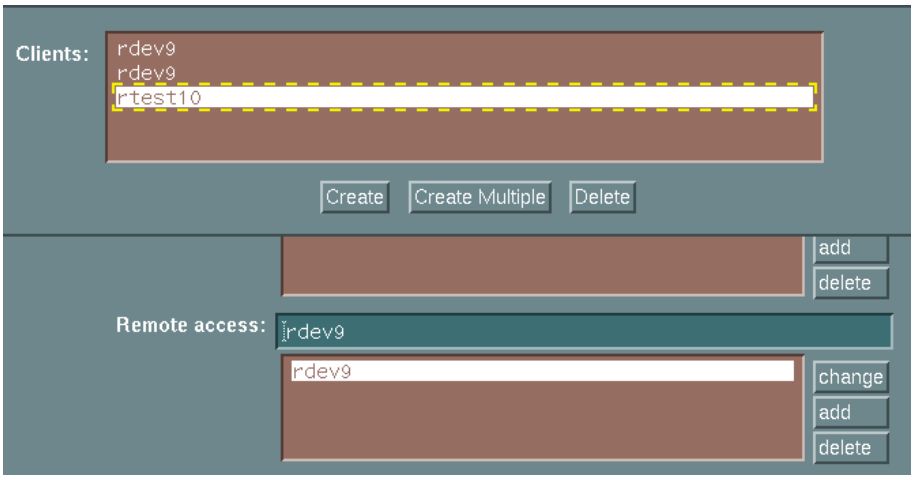
   # uasm -s -i ./index | (cd /backup/nsr; uasm -r -iY);

   # uasm -s -i ./mm | (cd /backup/nsr; uasm -r -iY);

   #cd /backup/nsr

   #chgrp sys *
6. Restart Legato daemons – **nsrd**,**nsrexecd**
7. Move the old magazine to the new machine Jukebox.
8. Perform Inventory using **nwadmin**.
9. Via nwadmin create a new client with the name identical to the old host name (ex:**rtest10**).This client must have identical parameters to the existing Scheduled Archive client – **rdev9**.

10. Via *nwadmin*, configure remote access for this client (**rtest10**) to be the new hostname (**rdev9**).



11. Via *nwrecover*, choose **client -> update client list -> rtest10**

B.3 Completing the move

1. Verify that the old savesets are seen and accessible.
2. Verify that all old cassettes are recognized.
3. Use the Recover window to make sure all the client indexes are visible and therefore recoverable.
4. Try recovering files from the old client set via nwrecover.
5. In case of Scheduled Archive – try retrieving files from old archived tapes.
6. Re-register your Server.

C. LEGATO 5.1-002 PATCH INSTALLATION

Installing Legato 5.1-002 Patch

To install Legato 5.1-002 patch – follow these steps:

1. Go to the root directory and create a new directory, e.g. /dataVolumes/rtest10.2.0/legato
2. NetWorker needs to be shut down before the installation of the new patch. Execute "**nsr_shutdown -a**" to stop the running of any daemons. Verify with the "**ps**" command that no other NetWorker binaries are running.
3. Copy "**Patch_aix_ 5.1-002.tar.Z**" and the installation script "**InstallPatch**" into the new directory.

   ```
   # mount /mnt
   # cd /mnt/legato
   # cp * /dataVolumes/rtest10.2.0/legato
   # cd /dataVolumes/rtest10.2.0/legato
   ```

4. Execute the installation script.

   ```
   # InstallPatch.aix   aix
   ```

5. Make sure the permissions and the owner for the file are correct:

The permission for **savegrp** and save:	4755
The permission for other files:	755
The owner:	root

D. AUTO BACKING UP LEGATO INDEXES

The following is a suggested procedure to back up Legato indexes onto a chosen dataVolume daily upon completion of the savegroup.

Both file and media indexes are backed up.

This means that one can go back one day in case of the problem.

Prerequisite:

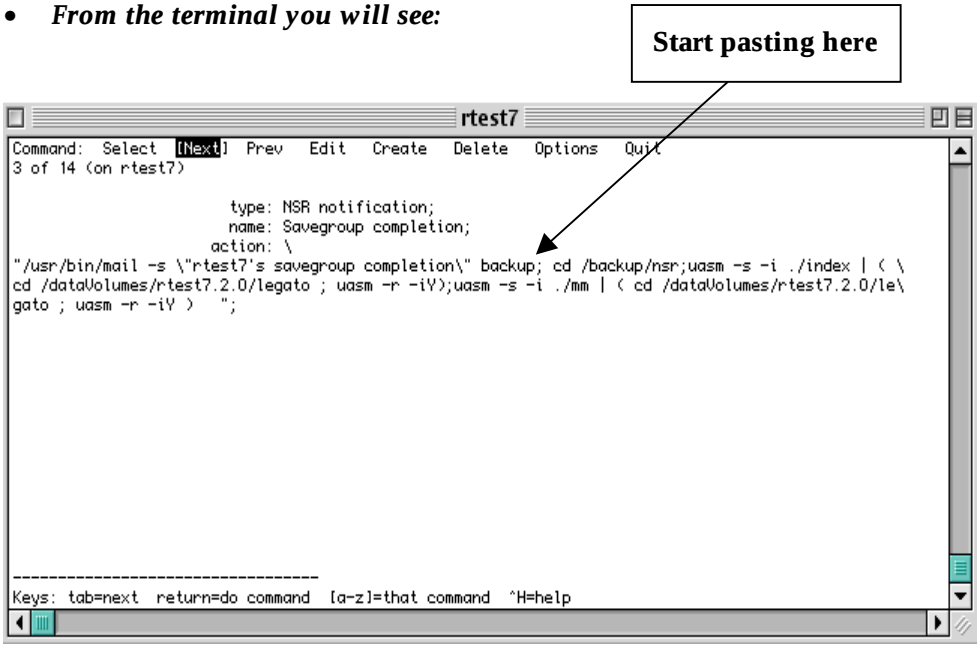
- The chosen dataVolume must be managed by a system administrator to ensure space availability.
- Create directory "legato" on a chosen dataVolume. For example: /dataVolumes/ripro1.2.0/legato

How to configure the Notification mechanism:

1. When using terminal/modem, use **`nsradmin-c`** command to enter nsradmin.
   If working on the system consule of using macx – use **`nwadmin`** command.
2. Select **Nsr Notification** (terminal) or **customize ->notification** on macx.
3. Select **Savegroup completion** notification.
4. Paste the following line EXACTLY as shown at the end of savegroup notification, using the correct host and volume name.

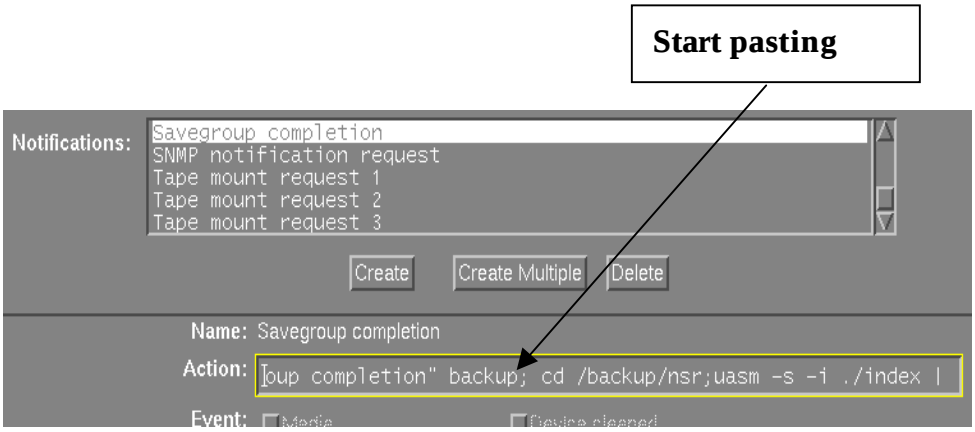
   ```
   cd /backup/nsr ; uasm -s -i./index |(cd/dataVolumes/
   ripro1.2.0/legato ; uasm -r -iY);uasm -s -i./mm | (cd/
   dataVolumes/ripro1.2.0/legato ; uasm -r -iY)
   ```

- ***From the terminal you will see:***



Note: You will see that Legato inserts a "\" every time it brakes the command line.

- ***From the nwadmin (consule or macx) you will see:***



From now on, the indexes are copied daily to the chosen volume (cd /dataVolumes/ripro1.2.0/legato in this example).

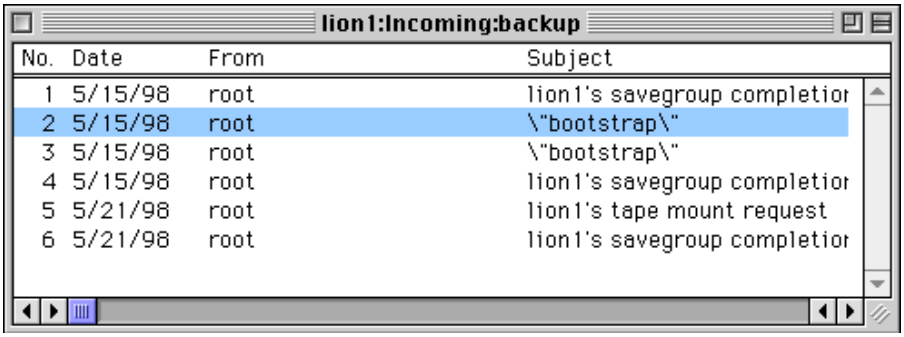
To recover it back into /backup/nsr:

```
#cd/dataVolumes/ripro1.2.0/legato
#nsr_shutdown -a
# uasm –s -i./index | (cd/backup/nsr;uasm -r -iY)
# uasm -s -i./mm | (cd/backup/nsr;uasm -r -iY)
```

E. LEGATO DISASTER RECOVERY

In case of a loss of Legato indexes on the system disk, follow the procedure described below:

1. Connect to Ripro Mail as a backup user and see the following:



2. Double-click **bootstrap** to see the following:

May 15 09:31 1998 lion1's bootstrap information Page 1

date	time	level	**ssid**	**file**	**record**	volume
5/15/98	9:31:19	full	**30985**	**15**	**0**	lion1.001

If the customer is saving his bootstrap information daily, the scanner command in the second page, which takes a long time, does not have to be executed. The next command, **`mmrecov,`** is fast as long as the **ssid**, file number and record number are used.

By default, in the notification the bootstrap is the following:

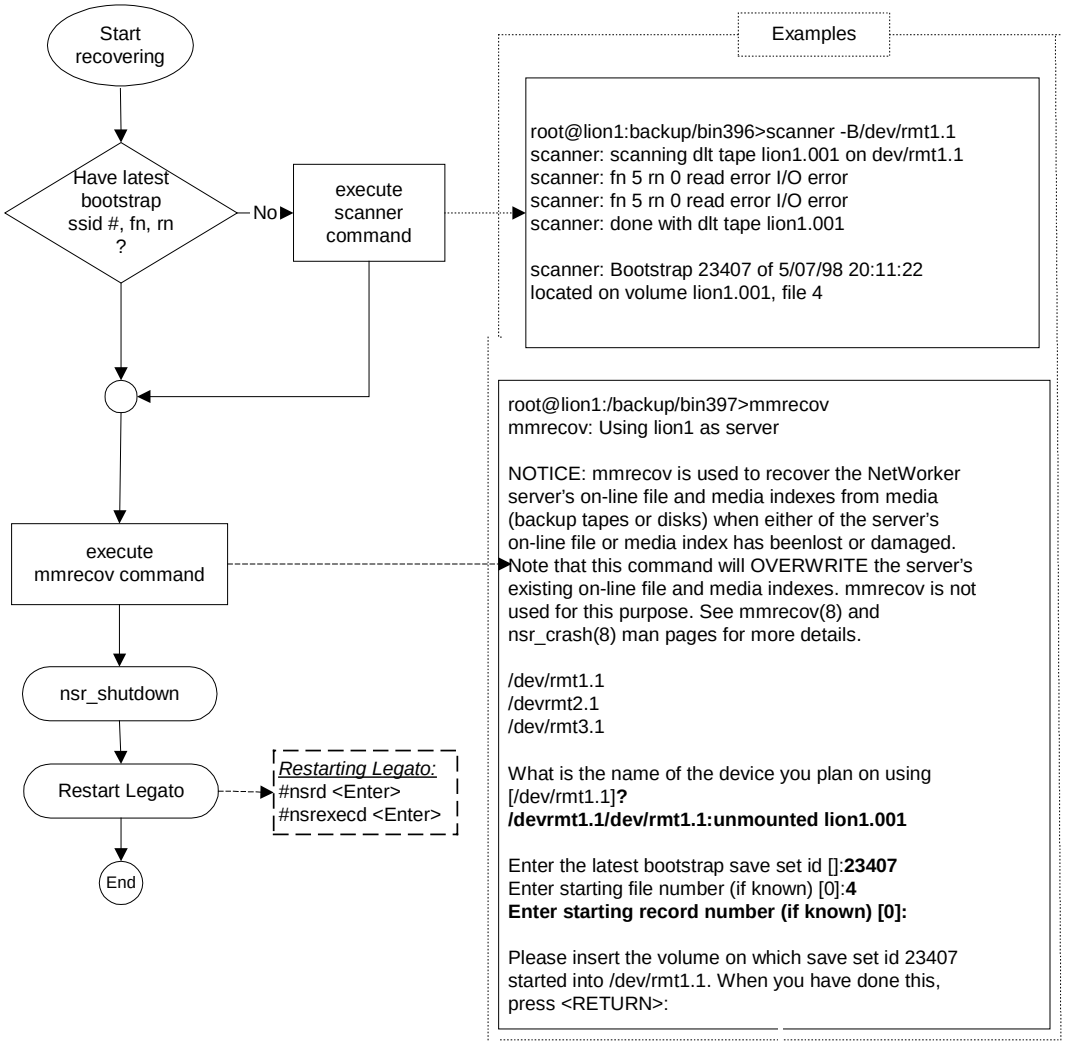
```
/usr/bin/lp -c bootstrap -d%PRINTER
```

Since a printer is not directly connected to the server, change the line to the following:

```
/usr/bin/mail -s \"bootstrap\" backup
```

Customers are required to print out the bootstrap information for a faster recovery process in case of a disaster.

The next page shows the recovery process in a chart form.


Start recovering
Have latest bootstrap ssid #, fn, rn ?
No
execute scanner command
execute mmrecov command
nsr_shutdown
Restart Legato
End
Restarting Legato:
#nsrd <Enter>
#nsrexecd <Enter>
Examples
root@lion1:backup/bin396>scanner -B/dev/rmt1.1
scanner: scanning dlt tape lion1.001 on dev/rmt1.1
scanner: fn 5 rn 0 read error I/O error
scanner: fn 5 rn 0 read error I/O error
scanner: done with dlt tape lion1.001
scanner: Bootstrap 23407 of 5/07/98 20:11:22
located on volume lion1.001, file 4
root@lion1:/backup/bin397>mmrecov
mmrecov: Using lion1 as server
NOTICE: mmrecov is used to recover the NetWorker server's on-line file and media indexes from media (backup tapes or disks) when either of the server's on-line file or media index has beenlost or damaged. Note that this command will OVERWRITE the server's existing on-line file and media indexes. mmrecov is not used for this purpose. See mmrecov(8) and nsr_crash(8) man pages for more details.
/dev/rmt1.1
/devrmt2.1
/dev/rmt3.1
What is the name of the device you plan on using [/dev/rmt1.1]?
/devrmt1.1/dev/rmt1.1:unmounted lion1.001
Enter the latest bootstrap save set id []:23407
Enter starting file number (if known) [0]:4
Enter starting record number (if known) [0]:
Please insert the volume on which save set id 23407 started into /dev/rmt1.1. When you have done this, press <RETURN>:

F. LEGATO LINEMODE COMMANDS

mminfo **= displays status of last backups**

-mv **= displays media status**

-aV ripro1.archive.456 **= displays savesetids per volume**

-s ripro2 –av –q “suspect” ripro2.archive.002

-q “volume”=ripro2.archive.021,ssid=12777”–r”cloneid,name,ssid,volume”

-av | grep archive | grep cE **= brouse all SA savesets which are expired**

-av –q “pool=ScitexArchive,name=Archive.75” -r”volume,pool,name,savetime,ssid,sumflags”

-av |grep archive | grep cr **= brouse all SA savesets which are resycleble**

-av –g “name=Archive150.266” –r ”savetime, ssid,volume”

= selective query per saveset

su – backup **= enables login as backup user to read it’s mail**

tail -50 /backup/nsr/logs/messages

= displays last 50 messages from the log file.

nsrjb **= enables jukebox management**

-EI -v -j jbx1 & **= shows inventory verbose of jbx1**

-HE -v **= resets the jukebox + element**

-h **= shows history**

-l ripro1.003 **= loads and mounts cassette**

-u ripro1.003 **= unloads cassette**

-S 60-U 20 **= sets cleaning cassette in slot 60 to 20 uses**

-L-S 35-f /dev/rmt3.1 ripro5000.010
= labels cassette with a non-default label

-U 20 -j jbx1 -S 60 **= sets cleaning cassette**

nsradmin **= enables nwadmin in linemode commands**

nsrwatch **= enables offline application monitoring**

nsr_shutdown -qa ->nsrd ->nsrexecd
= restarts the application processes

nsrmm -m -l ripro1.004 **= loads, mounts and labels a volume**

-u **= unmounts the volume**

-l –b default –v –f /dev/rttttmt2.1 –y
= label without confirmation

-o recyclable ripro5000.031 **= make recyclable**

nsrls **= lists Legato DBspaces**

savegrp **= activates default savegroup**

save /dataVolumes/ripro1.2.3 & **= saves in background**

nsrck –F **= verifies and compresses Indexes Dbase**

scanner -n -v /dev/rmt1.1 **= verifies tape**

-i/dev/rmt1.1 **= adds index from this cassette to an existing index**

-B /dev/rmt1.1 **= scans for the last bootstrap record position**

-i-s <bootstrap-ssid> /dev/rmt1.1 **= recovers latest index**

-f 139 –S 7226 –pv /dev/rmt0.1 &

= scan specific file and ssid

mmlocate = lists all known volumes

nsr_support > /tmp/lev = creates a full report about configuration

mmrecov = rebuilds all indexes from a cassette

nsrim –v = displays index info verbose

-v | grep archive **= veryifyes browsing status**

recover = enables interactive index browsing and files recovery

nsr_ize -i –s = reinstalls legato

-u **= uninstalls, keeps indexes**

nsrinfo -v ripro1 -n ScitexArchive |grep 897911918

= browses index by pool and timestamp

–v –t 9876523 ripro1 **= browses by timestamp**

jbexercise -c /dev/scsidev@0.2.1 -m “Quantum DLT/Digital DLT”

= exercise tape

mt -f rmt1 status = gives tape parameters setting

nsrclone –b SciClone ripro2.archive.002

= clone tape

G. REMOVING COMPLETELY THE OLD LEGATO SOFTWARE

This is not necessary for upgrade from 5.0 to 5.1. It deletes the Legato indexes.

1. At the command prompt type:

   #nsr_shutdown –a

   #nsr_ize –r –s

2. Answer **Yes** to all questions.
3. Reboot the system.
4. At the command prompt type:

   #umount /backup

   #rmfs –r /backup

   #rm –rf /nsr