VERITAS NetBackup™ 3.4 for NCR Teradata

System Administrator's Guide

Windows NT and UNIX

April 2000

VERITAS

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Printed in the USA, April 2000.

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Preface

This guide describes how to install, configure and use NetBackup for NCR Teradata extension on a UNIX or Windows NT platform.

For specific information about the NetBackup software, refer to

- *NetBackup System Administrator's Guide - Windows NT/2000* if you have a Windows NT or a Windows 2000 server
- *NetBackup System Administrator's Guide - UNIX* if you have a UNIX server
- *NetBackup for NCR Teradata on Windows*, for information about how to set up an administrative host using NetBackup for NCR Teradata on Windows NT.

This document is the same as `NetBackup_AdminGuide_Teradata.pdf` distributed with the NetBackup for Teradata software.

In this manual, NetBackup for NCR Teradata on a Unix or Windows NT platform will be shortened to NetBackup for Teradata on UNIX or NetBackup for Teradata on Windows. It will be shortened further to NetBackup for Teradata if the context does not require that a distinction be made between the UNIX and Windows NT/2000 versions of the product.

Audience

This guide is intended for the:

- Teradata system administrator responsible for configuring and using Teradata.
- NetBackup system administrator responsible for configuring NetBackup.

A system administrator is a person with system administrator privileges and responsibilities.

This guide assumes:

- A basic understanding of Windows NT system administration and UNIX system administration.
- A working understanding of the NetBackup for Windows NT server software or NetBackup for UNIX server software.
- A familiarity with the information covered in the following NetBackup manuals:
  - *NetBackup System Administrator's Guide - Windows NT/2000* or *NetBackup System Administrator's Guide - UNIX.*
  - *NetBackup Troubleshooting Guide - Windows NT/2000* or *NetBackup Troubleshooting Guide - UNIX.*
  - *NetBackup for Teradata on Windows NT System Administrator's Guide*
- A thorough understanding of Teradata Administration.

Organization

This guide is organized as follows:

- The Introduction provides an overview of NetBackup for Teradata and lists some features. Read this chapter to become familiar with NetBackup.
- The Installation chapter describes the system configuration requirements and the installed components of NetBackup for Teradata.
- Advanced Installation Topics provides details on the integration of NetBackup for Teradata on Windows software with Microsoft's Systems Management Server (SMS).
- The Configuration chapter explains how to configure NetBackup for Teradata.
- Using NetBackup for Teradata explains how to use NetBackup for Teradata on Windows to install and back up transaction logs and databases. It also explains how to use NetBackup for Teradata on Windows to back up and restore databases and tables.

- The Troubleshooting chapter describes the various Troubleshooting tools available with NetBackup for Teradata.
- The Reference chapter describes the various windows, screens, and menus associated with the NetBackup for Teradata graphical user interface.

Related Documents

The following documents provide related information. For a more detailed listing of NetBackup documents, refer to *NetBackup Release Notes*.

If you have a UNIX server, refer to these documents:

- *NetBackup System Administrator's Guide - UNIX*

  Explains how to configure and manage NetBackup on a UNIX system.

- *NetBackup Media Manager System Administrator's Guide - UNIX*

  Explains how to configure and manage the storage devices and media on UNIX NetBackup servers. Media Manager is part of NetBackup.

- *NetBackup Troubleshooting Guide - UNIX*

  Provides troubleshooting information for UNIX-based NetBackup products. You can also refer to www.veritas.com knowledge base for tech notes.

If you have a Windows NT/2000 server, refer to these documents:

- *NetBackup System Administrator's Guide - Windows NT/2000*

  Explains how to configure and manage NetBackup on a Windows NT/2000 server system.

- *NetBackup Media Manager System Administrator's Guide - Windows NT/2000*

  Explains how to configure and manage the storage devices and media on Windows NT/2000 NetBackup servers. Media Manager is part of NetBackup.

- *NetBackup Troubleshooting Guide - Windows NT/2000*

  Provides troubleshooting information for Windows NT/2000-based NetBackup products. You can also refer to www.veritas.com knowledge base for tech notes.

- *NetBackup for Teradata on Windows NT*

  Provides information on how to use NetBackup for Teradata to set up an administrative host for managing you NetBackup for Teradata installation.

The following NCR publications provide additional information related to the Teradata RDBMS product:

- *Archive/Recovery Reference* (B035-2412)

Provides a full description of the syntax used in an ARCMAIN script.

- *Teradata Client for Windows Installation Guide* (B035-2407)

  Provides information on how to install the following NCR Teradata client products that are required by NetBackup for Teradata:

  - NCR Teradata Call-Level Interface (CLI)
  - NCR Teradata ODBC driver for Teradata (ODBC).
  - NCR Teradata Archive and Recovery Utility (ARC).
- *Teradata Client for MP-RAS Installation Guide*

These NCR publications are available on the Web at `http://www.info.ncr.com`.

Conventions

The following explains typographical and other conventions used in this guide.

Type Style

Table 1. Typographic Conventions

Typeface	Usage
`Bold fixed width`	Input. For example, type **`cd`** to change directories.
`Fixed width`	Paths, commands, filenames, or output. For example: The default installation directory is `/opt/VRTSxx`.
Italics	Book titles, new terms, or used for emphasis. For example: *Do not* ignore cautions.
Sans serif (italics)	Placeholder text or variables. For example: Replace *filename* with the name of your file.
Sans serif (no italics)	Graphical user interface (GUI) objects, such as fields, menu choices, etc. For example: Enter your password in the Password field.

Notes and Cautions

Note This is a Note and is used to call attention to information that makes it easier to use the product or helps you to avoid problems.

Caution This is a Caution and is used to warn you about situations that can cause data loss.

Key Combinations

Some keyboard command sequences use two or more keys at the same time. For example, you may have to hold down the Ctrl key before you press another key. When this type of command is referenced, the keys are connected by plus signs. For example:

Press Ctrl+t

Command Usage

The following conventions are frequently used in the synopsis of command usage.

brackets [ ]

The enclosed command line component is optional.

Vertical bar or pipe (|)

Separates optional arguments from which the user can choose. For example, when a command has the following format:

`command` *arg1*|*arg2*

the user can use either the *arg1* or *arg2* variable.

Getting Help

For updated information about this product, including system requirements, supported platforms, supported peripherals, and a list of current patches available from Technical Support, visit our web site:

`http://www.veritas.com/`

For product assistance, contact VERITAS Customer Support.

US and Canadian Customers: 1-800-342-0652

International Customers: +1 (650) 335-8555

VERITAS Customer Support can also be reached through electronic mail at:

`support@veritas.com`

Introduction 1

NetBackup for Teradata extends the capabilities of NetBackup to include backing up and restoring Teradata databases. It is supported on both the Windows NT and UNIX MP-RAS platforms which run the NCR Teradata RDBMS. This manual covers the full functionality of the both the Windows NT platform and the UNIX platform.

NetBackup for Teradata supports parallel backups and restores coordinated across multiple hosts contained in a single Teradata RDBMS. The full functionality of the NetBackup server and the multiple media servers is realized in this product. In addition, this product uses an Administrative Host, which contains a graphical user interface to provide object browsing and selection, automatic script generation and centralized job monitoring.

The capability to manage backups for multiple Teradata RDBMS installations is also provided through the Administrative Host.

To use this product, you must install NetBackup for Teradata as the Administrative Host on a Windows NT platform. The other NetBackup for Teradata hosts, which typically coincide with the Teradata platform nodes, can be either UNIX or Windows NT.

Features

This section describes the main features of NetBackup for Teradata.

NetBackup Operations

- Full integration with the NetBackup master server and Media Manager.
- Support for parallel job launch using a single point of control.
- Backup and restore of databases and tables.
- Client operation monitoring through the NetBackup Client Job Monitor. Server monitoring is also available through the NetBackup master server.
- Job launch is supported through the following options:
  - Immediate launch through the NetBackup Database Extension - Graphical User Interface
  - Scheduled launch through the NetBackup scheduler
  - Command line launch

Graphical User Interface

Note The graphical user interface is provided as part of NetBackup for Teradata on Windows NT. Although it runs only on a Windows NT platform, it is fully compatible with the NetBackup Database Extension on both MP-RAS and Windows NT.

- The graphical user interface runs on a Windows NT host (called the Administrative Host) which is detached from the hosts which perform backup and restore operations.
- The graphical user interface can be used to co-ordinate NetBackup client operations for multiple RDBMS instances.
- Graphical user interface capability for browsing:
  - Teradata databases and tables
  - Backup images stored by the NetBackup server
- Graphical user interface assistance for generating backup and restore scripts
- Single point progress monitoring for a parallel operation.
- On-line help provided through the NetBackup Database Extension - Graphical User Interface.

Installation 2

This chapter describes the NetBackup for Teradata installation procedure. It includes information on:

- System Configuration Requirements
- Installation Procedure
- The NetBackup for Teradata configuration file, `TDconfig`
- Creating an ODBC Data Source Name for NetBackup for Teradata

To determine which Teradata version levels are supported, refer to the Database Extension Matrix in Chapter 4, "Supported Platforms and Peripherals" of the *NetBackup Release Notes - UNIX* or of the *NetBackup Release Notes - Windows NT/2000*.

System Configuration Requirements

NetBackup for Teradata on UNIX

- UNIX MP-RAS 3.02 or above
- NetBackup UNIX server
- NCR Teradata for MP-RAS, V2R3.0 or above
- The following NCR Teradata client utilities:
  - NCR Teradata Call-Level Interface (CLI)
  - NCR Teradata Archive and Recovery Utility (ARC).

NetBackup for Teradata on Windows NT

- Windows NT 4.0 with Service Pack 4 or above
- NetBackup Windows NT server
- NCR Teradata for NT version 3.0 or above
- The following NCR Teradata client utilities:
  - NCR Teradata Call-Level Interface (CLI)
  - NCR Teradata Archive and Recovery Utility (ARC).

The NetBackup for Teradata for Windows NT Administrative Host requires:

- Windows NT 4.0 with Service Pack 4 or above.
- NetBackup Windows Client installed
- NCR Teradata Call-Level Interface (CLI)
- NCR Teradata ODBC driver for Teradata (ODBC).

Installation Procedure

This section contains instructions for installing:

- NetBackup for Teradata on Windows NT on an Administrative Host
- NetBackup for Teradata on a UNIX platform host
- NetBackup for Teradata on a Windows NT platform host

Install NetBackup for Teradata on Windows NT on the Administrative Host

Before installing NetBackup for Teradata on your Windows NT administrative host, you must first install the NetBackup Client. Use the following procedure to install NetBackup for Teradata on Windows NT on the Administrative Host:

▼ Load the NetBackup for Teradata CD into the CD-ROM drive

If the AutoPlay feature is enabled, use it to perform the following sequence:

1. Browse the contents of the CD-ROM.
2. Add/remove programs from your system.
3. View the Teradata Extension Readme file.
4. Install NetBackup for Teradata on Windows NT.

If the AutoPlay feature is not enabled, perform the following sequence.

1. Click Run from the Windows NT Start menu.
2. Type **`D:\Autorun\AutoRunI.exe`** where `D:\` is your CD-ROM drive.

After installing NetBackup for Teradata on the Administrative Host, you must create a `TDconfig` configuration file and place it in the location *install_path*`\NetBackup\dbext\NCR_Teradata\`. See section “TDconfig File” on page 14 for details on how to create the `TDconfig` file.

Note For ease of use, install NetBackup Administrative client on the Teradata Administrative Host. This will allow you to manage both NetBackup Server and NetBackup for Teradata functions from the same terminal.

Install NetBackup for Teradata on a UNIX Platform Host

There are two ways to install database extension software.

- Remote Installation

  Loads the software on a master server. The user will then push the database software out to affected clients.

  Refer to the following section.

- Local Installation

  Loads and installs the software only to the local machine.

  Refer to "Local Installation of NetBackup for Teradata" on page 11.

Remote Installation of NetBackup for Teradata

During a remote installation, NetBackup for Teradata files are loaded onto the current machine, which must be a master server. The software will then be distributed to the platform hosts and installed.

Before performing a remote install, make sure:

- There is adequate disk space on each client that will receive the software.

  Reserve a minimum of one megabyte of disk space in the client's *install_path*`/netbackup` directory.

- NetBackup version 3.4 server software is installed and operational on each Teradata platform host.

Remote Install Procedure

1. Log in as the root user on the server.

   If you are already logged in, but are not the root user, execute the following command.

   ```
   su - root
   ```

2. Make sure a valid license key for NetBackup for Teradata has been registered.

   Use the command *install_path*`/netbackup/bin/admincmd/get_license_key` to list and add keys.

3. Insert the CD-ROM into the drive.

4. Change the working directory to the CD-ROM directory.

   ```
   cd /CD_mount_point
   ```

5. Load the software on the server by executing the `install` script.

`./install`

The following prompt will appear:

```
Do you want to do a local installation? (y/n) [n]
```

a. Answer **`n`**.

You are presented with a menu of all database extensions available on the CD-ROM.

b. Select the NetBackup for Teradata option.

c. Enter **`q`** to quit selecting options.

A prompt will appear asking if the list is correct.

d. Answer **`y`**.

The `install` script identifies the types of client software loaded during the installation of the NetBackup server. By default, any matching NetBackup for Teradata software will automatically be loaded. If there are more platforms available, the script displays a menu giving you the opportunity to add more client types to the default list. Once the list is complete, database extension version files, compressed tar files and the `install_dbext` script are copied to directory *install_path*`/netbackup/dbext`.

6. Distribute and install the NetBackup for Teradata software on each client.

Note It is expected that the NetBackup version level (for example, 3.4) running on each client that you wish to update matches the version level of the database extension being installed.

a. Execute the command to distribute the NetBackup for Teradata software to the clients. This command varies, depending upon the type of install you will perform.

There are two types of installs.

- *initial install*
  Use an initial install if the clients you intend to update have not been configured into classes of type NCR-Teradata.
- *upgrade install*
  Use an upgrade install if all the clients you intend to update already have been configured into classes of type NCR-Teradata.

Initial Install Procedure

1. Execute the following command to create a file containing a list of clients currently configured in the NetBackup database.

   cd *install_path***/netbackup/bin**
   ./admincmd/bpclclients -allunique -noheader > *filename*

   where *filename* is the name of the file to contain the list of unique clients. If no clients have been configured in the NetBackup database, and therefore *filename* is empty, create *filename* using the same format as that generated by `bpclclients`.

   `bpclclients` generates output in following format:

   hardware operating_system client_name

   where

   hardware is the hardware name. For examples, execute the `ls` command in directory *install_path*`/netbackup/client`.

   operating_system is the operating system name. For examples, execute the `ls` command in directory *install_path*`/netbackup/client/`*hardware*.

   client_name is the name of the client.

   For example, the contents of *filename* might look like this:

   ```
   NCR UNIX cougar.min.ov.com
   ```

2. Edit *filename*.

   This is an optional step. Use it if the contents of *filename* need to be changed. Edit *filename* to contain only those clients you wish to update with NetBackup for Teradata software.

3. Specify *filename* on the `update_dbclients` command.

   For example:

   cd *install_path***/netbackup/bin**
   ./update_dbclients Teradata -ClientList *filename*

   Only clients listed in *filename* will be updated.

Upgrade Install Procedure

Execute the following command.

cd *install_path***/netbackup/bin**
./update_dbclients Teradata ALL ALL

This command will look at all possible clients and only update the ones currently in an NCR-Teradata class type.

Instead of `ALL ALL`, you may use `-ClientList` *filename* as explained in "Initial Install Procedure" on page 8.

Note With an initial or upgrade install, some clients may be skipped and not updated. Possible reasons are:
- the client is a PC client (which cannot be updated from a UNIX server),
- NetBackup for Teradata does not support that client's platform type,
- the NetBackup for Teradata software for that client type was not loaded onto the server in step 5
- (if using the `ALL ALL` method) the client does not belong to an NCR-Teradata class type.

All skipped clients are available in a file whose name is displayed by `update_dbclients`.

b. The number of updates required to distribute the software to the clients is displayed.

If more than one update will occur, you will see the following prompt:

```
Enter the number of simultaneous updates you wish to take place. 1 max dflt
```

where:

max is the maximum number of simultaneous updates that is allowed. The value displayed will be a number ranging from 1 to 30.

dflt is the default number the program will use if you press Enter. The value displayed will be a number ranging from 1 to 15.

Example 1

If three client updates will be performed, the *max* and *dflt* values shown would be 3.

Example 2

If 50 client updates will be performed, the *max* value shown would be 30 and the *dflt* value shown would be 15.

`update_dbclients` will start the number of updates that you specify. If this number is less than the total number of client updates to be performed, new updates will start as the previous updates finish until all of the updates have been completed.

Based on your answer, the time it will take to update the clients is displayed, followed by this question:

```
Do you want to upgrade the clients now? (y/n) [y]
```

c. Enter **y** or **n** for the prompt.

If you answer **n**, `update_dbclients` will quit and leave the list of clients it would have updated in a file. This file can later be used by the `-ClientList` parameter mentioned previously.

Answer **y** to continue the installation process.

If the `update_dbclients` command was successful in distributing the software to the client, it will automatically run the `install_dbext` script on the client. If `install_dbext` has successfully completed, there will be a version file in directory *install_path*`/netbackup/ext` that contains the version of NetBackup for Teradata that was installed and an installation timestamp. The `update_dbclients` command displays a note on whether the update was successful for each client. When the `update_dbclients` command has completed, it displays a file name that contains a complete log of what happened for each client. If the update failed for any client, the log file should be examined to determine the problem.

Local Installation of NetBackup for Teradata

During a local installation, the NetBackup for Teradata files are extracted and installed. The local machine (platform host) should be a server.

Before performing a local install, make sure:

- The local machine has adequate disk space.

  Reserve a minimum of one megabyte of disk space in the *install_path*`/netbackup` directory.

- NetBackup version 3.4 server software is installed and operational.

Local Install Procedure

1. Log in as the root user on the machine.

   If you are already logged in, but are not the root user, execute the following command.

   `su - root`

   - If the local machine is a client, go to step 3.
   - If the local machine is a server, go to step 2.

2. Make sure a valid license key for NetBackup for Teradata has been registered.

   Use the command *install_path*`/netbackup/bin/admincmd/get_license_key` to list and add keys.

3. Insert the CD-ROM into the drive.

4. Change the working directory to the CD-ROM directory.

   `cd /CD_mount_point`

5. Load and install the software by executing the `install` script.

Note It is expected that the NetBackup version level (for example, 3.4) running on the local machine matches the version level of the database extension being installed.

`./install`

The following prompt will appear:

```
Do you want to do a local installation? (y/n) [n]
```


a. Answer **y**.

You are presented with a menu of all database extensions available on the CD-ROM.

b. Select the NetBackup for Teradata option.

c. Enter **q** to quit selecting options.

A prompt will appear asking if the list is correct.

d. Answer **y**.

The following actions will occur:

- The version file, compressed tar file and `install_dbext` script will be loaded to directory *install_path*`/netbackup/dbext`.
- The `install` script will automatically execute the `install_dbext` script.
- If `install_dbext` has successfully completed, there will be a version file in directory *install_path*`/netbackup/ext/` that contains the version of NetBackup for Teradata that was installed and an installation timestamp.

Install NetBackup for Teradata on Windows NT Platform Host

▼ Load the NetBackup for Teradata CD into the CD-ROM drive

If the AutoPlay feature is enabled, use it to perform the following sequence:

1. Browse the contents of the CD-ROM.
2. Add/remove programs from your system.
3. View the Teradata Extension Readme file.
4. Install NetBackup for Teradata on Windows NT

If the AutoPlay feature is not enabled, perform the following sequence.

1. Click Run from the Windows NT Start menu.
2. Type **`D:\Autorun\AutoRunI.exe`** where `D:\` is your CD-ROM drive.

TDconfig File

NetBackup for Teradata relies on a configuration file called TDconfig for certain information about your configuration. TDconfig resides on the NT Administrative Host in the following folder:

install_path\dbext\NetBackup\dbext\NCR_Teradata\

For a NetBackup for Teradata on Windows NT installation, a sample TDconfig file is supplied in the following path:

install_path\dbext\NetBackup\dbext\NCR_Teradata\samples

For a NetBackup for Teradata on UNIX installation, a sample TDconfig file is supplied in the following path:

usr/openv/netbackup/NCR_teradata/samples

TDconfig File

```
# $Revision: 1.10 $
# bcpyrght
#***************************************************************************
# Copyright 1993 - 2000 VERITAS Software Corporation. All Rights Reserved *
#***************************************************************************
# ecpyrght
#
# SAMPLE TDconfig file.
#
# This file specifies information about your Teradata configuration and about
# your backup preferences. It resides on your Administrative host.
#
# This TDconfig sample supports two Teradata RDBMS instances. Configuration
# data for the first instance begins at the line containing
# 'Instance <instance-name>' and ends before the next line containing the
# same information. The <instance-name> corresponds to an ODBC data source
# name which you set up for NetBackup for Teradata to access the Teradata
# database instance.
#
# NOTE: Comment lines can be inserted by placing the pound sign (#) in column
# one.
#
###############################################################################
# Following are configuration data for a Teradata RDBMS instance named
# peanut. This configuration consists of an Administrative Host and four
# Windows NT Platform nodes.
###############################################################################
#
Instance peanut
```

```
#
# The Administrative host is specified below. Backup history is written to the
# administrative host.
#   1. ADMINHOST
#   2. host name
#   3. NT
# The following line is required.
#
ADMINHOST candy NT
#
# The next four lines specify the directory of the Teradata Arcmain binary on
# each host that is used in your configuration. The path name must be contained
# in single quotation marks and it must be the exact path name. Use the UNIX
# or NT path name style depending upon the node architecture.
# These lines are optional. But if they are omitted, then the NetBackup Teradata
# extension assumes that Arcmain resides in the NetBackup bin directory.
#
ARCPATH tiger 'C:\Program Files\NCR\Teradata Client\bin\'
ARCPATH camel 'C:\Program Files\NCR\Teradata Client\bin\'
ARCPATH puma 'C:\Program Files\NCR\Teradata Client\bin\'
ARCPATH rock 'C:\Program Files\NCR\Teradata Client\bin\'
#
# You can specify the default number of Teradata Arcmain sessions using the
# following line. This default can be overridden by the batch file that you
# use for running an individual operation. The following line is optional.
#
sessions 4
#
# Specify the number of clusters in your Teradata configuration with the
# line. This line is mandatatory.
#
clusters 12
#
# Specify the number of data streams that you would like for NetBackup to
# generate for 'initiator mode' with the following line. This line is
# mandatatory.
#
datastreams 4
#
# The next non-commented lines following the datastreams parameter are host
# lines. You must have one host line for each datastream. Host lines specify
# information about each datastream in an initiator mode backup/restore
# operation. Host lines contain the following fields.
#   1. Name of host on which the datastream will be executed.
#   2. Host architecture type (UNIX or NT).
#   3. NetBackup class name. This is the class to which the stream will be
#      backed up.
```


```
#   4. TDPID that the NetBackup Teradata extension will use for logging onto
#      Teradata. Generally, the TDPID specified should be the one that
#      corresponds to the one for the host named in column 1.
#   5. The stream id. It must be in the range 0 to n-1, where n is the number
#      of datastreams. Also there can be no duplicates.
#   6. The userid that the datastream will use for restore operations. This
#      userid must have restore privileges and should not be duplicated.
# The host line set is required.
#
candy nt Teradata-class1 candy 0 User1
tiger nt Teradata-class2 tiger 1 User2
camel nt Teradata-class3 camel 3 User3
cougar nt Teradata-class4 cougar 4 User4
#
#
##############################################################################
# Following are configuration data for a Teradata RDBMS instance named
# brownie. This configuration consists of an Administrative Host and 4
# UNIX platform nodes.
##############################################################################
INSTANCE brownie
ADMINHOST fudge NT
ARCPATH rsv0001 '/usr/bin/'
ARCPATH rsv0002 '/usr/bin/'
ARCPATH rsv0003 '/usr/bin/'
ARCPATH rsv0004 '/usr/bin/'
SESSIONS 6
CLUSTERS 4
DATASTREAMS 4
rsv0001 UNIX UNIX-TD-class1
rsv0002 UNIX UNIX-TD-class2
rsv0003 UNIX UNIX-TD-class3
rsv0004 UNIX UNIX-TD-class4
```

Customizing TDconfig

To customize this sample for a typical configuration which has an NT Administrative Host and UNIX backup hosts, make the following changes:

1. Replace the NT style ARCPATH locations with UNIX style paths, e.g.,

```
ARCPATH tiger '/usr/bin/'
ARCPATH camel  '/usr/bin/'
ARCPATH cougar  '/usr/bin/'
ARCPATH lollipop '/usr/bin/'
```

Note You must retain an NT style path descriptor to specify the location of your NT Administrative Host. For example,
`ARCPATH candy 'C:\Program Files\NCR\Teradata Client\bin\'`

2. Replace the NT designation for the data streams with UNIX, e.g.,

```
candy UNIX Teradata-class1 candy 0 User1
tiger UNIX Teradata-class2 tiger 1 User2
camel UNIX Teradata-class3 camel 3 User3
cougar UNIX Teradata-class4 cougar 4 User4
```

It is important to understand the relationship between the number of clusters and the number of data streams. The number of data streams cannot exceed the number of clusters because a cluster is the smallest unit that NetBackup for Teradata backs up. However, if the number of data streams exceeds the number of clusters, then NetBackup for Teradata combines multiple clusters to a single stream. For example, in the sample `TDconfig` file, above, in which there are 12 clusters and 4 data streams, 3 clusters are backed up by each data stream. The cluster assignments are made consecutively. In this example, the following assignments are made:

Data Stream	Cluster Assignments	Backup Host	Teradata Backup Class
0	0,1,2	Candy	Teradata-class1
1	3,4,5	Tiger	Teradata-class2
2	6,7,8	Camel	Teradata-class3
3	9,10,11	Cougar	Teradata-class4

Each data stream maps to a distinct backup image.

3. Customize your `TDconfig` file to support multiple Teradata instances by appending new configuration data to the end of the file. Note that configuration data for each distinct instance starts with the keyword value pair

`INSTANCE` *instance-name*

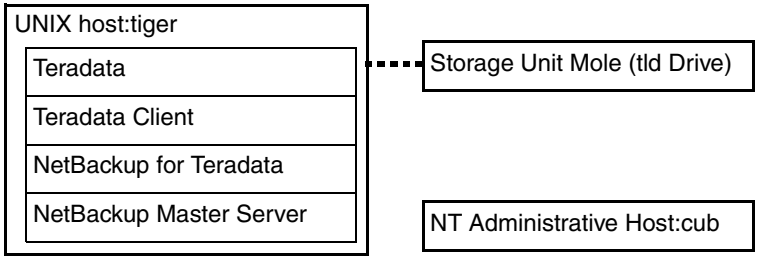
and ends at the next occurrence of this pair or at the end of the file.

Note You must create a Teradata ODBC data source name (DSN) having the same name specified with the INSTANCE keyword for every distinct instance configuration that is supported by your TDconfig file.

TDconfig Files in Example Installations

This section demonstrates how to customize the TDconfig file for example installation of increasing complexity.

Example 1 - Simple SMP, single cluster installation of Teradata, single storage unit



In this example, Teradata is installed on a single host, tiger. A single drive is attached to tiger. The NCR-Teradata class (Tdclass1) configured from the NetBackup Database Extension - Graphical User Interface should name Mole as the Class Storage Unit. The TDconfig file on cub would appear as

```
INSTANCE peanut
ADMINHOST cub NT
ARCPATH tiger '/usr/bin'
SESSIONS 6
CLUSTERS 2
DATASTREAMS 1
tiger unix tdclass1 tiger 0 hao1
```

Notice that the number of data streams is specified as one, corresponding to the number of storage unit. A single host line specifies the following information:

- tiger is the NetBackup server which manages the single backup stream
- UNIX is the operating system for tiger
- tdclass1 is the name of the class to which the stream is backed up
- tiger is also the TDPID name for the Teradata instance on tiger
- the stream id number backed up on tiger is cluster 0
- the Teradata username hao1 will be used for restores of the backup stream

Notice that the Administrative Host is a Windows NT workstation named cub. You can use the NetBackup Database Extension - Graphical User Interface on cub to administer the NetBackup for Teradata configuration.

Example 2 - Simple SMP, multiple data streams, single storage unit

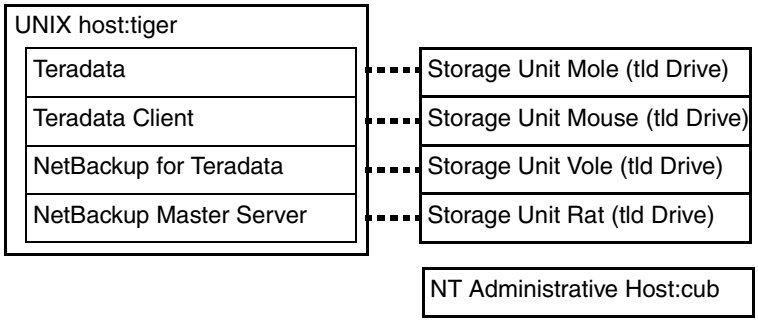
Assuming that there is only one drive attached to the master server, as in Example 1, it will be necessary to ensure that the drive is multiplexed to at least the number of data streams. For example, if the Teradata instance contains four clusters, and you want to back up each cluster to its own backup image, then the following `TDconfig` file on cub would be valid.

```
INSTANCE peanut
ADMINHOST cub NT
ARCPATH tiger '/usr/bin'
SESSIONS 12
CLUSTERS 4
DATASTREAMS 4
tiger unix tdclass1 tiger 0 hao1
tiger unix tdclass1 tiger 1 hao2
tiger unix tdclass1 tiger 2 hao3
tiger unix tdclass1 tiger 3 hao4
```

With this configuration, the class `tdclass1` should name the single multiplexed storage unit attached to host tiger.

In general, if the Teradata configuration defines more data streams than there are available storage devices, then the multiplexing level on each drive must average at least the number of clusters divided by the number of drives.

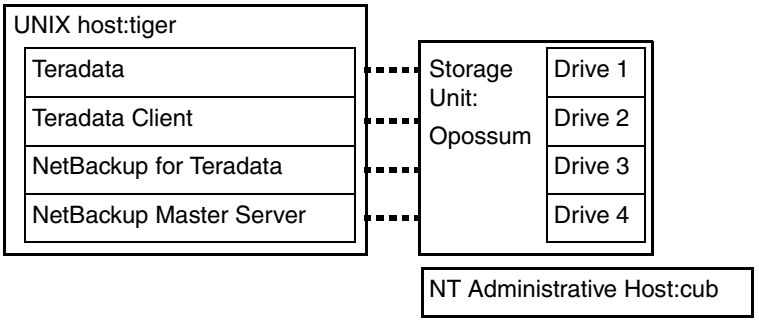
Example 3 - Simple SMP, multiple clusters, multiple storage units



In this example, you can assure that all four storage units are used to back up the four clusters by creating four classes each naming a different device. For example: `tdclass1` for mole, `tdclass2` for mouse, etc. The `TDconfig` file on cub would appear as

```
INSTANCE peanut
ADMINHOST cub NT
ARCPATH tiger '/usr/bin'
SESSIONS 12
CLUSTERS 4
DATASTREAMS 4
tiger unix tdclass1 tiger 0 hao1
tiger unix tdclass2 tiger 1 hao2
tiger unix tdclass3 tiger 2 hao3
tiger unix tdclass4 tiger 3 hao4
```

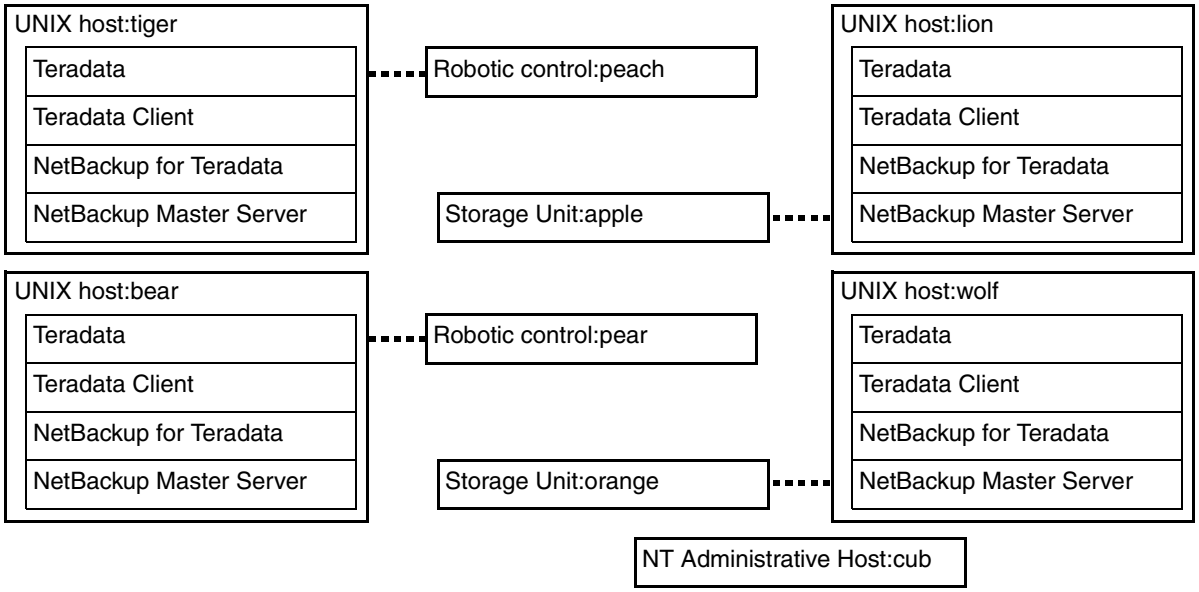

Example 4 - Simple SMP, multiple clusters, multi-drive storage unit



In this example, the number of data streams equals the number of drives in storage unit opossum. A single Teradata class should be created for opossum; and all four host lines in the data stream section of the TDconfig file on cub should refer to that class, as follows:

```
INSTANCE peanut
ADMINHOST cub NT
ARCPATH tiger '/usr/bin'
SESSIONS 8
CLUSTERS 4
DATASTREAMS 4
tiger unix tdclass tiger 0 hao1
tiger unix tdclass tiger 1 hao2
tiger unix tdclass tiger 2 hao3
tiger unix tdclass tiger 3 hao4
```

Example 5 - Multi-host Teradata instance, storage units attached to each host



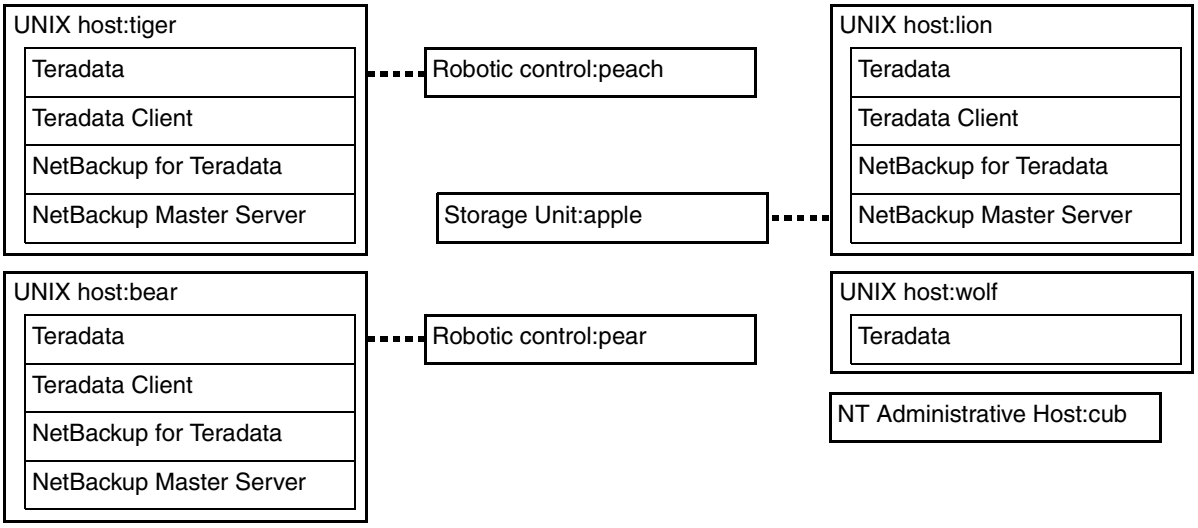
In this example, the Teradata instance is installed across four hosts, there are 12 clusters, and each host contains a storage unit used for Teradata backup. Windows NT host, tiger, is selected as the master server. Hence, it manages the overall backup policy and the volume database. As the master server, tiger is designated as the initiator host as well.

In order to ensure that a backup stream will be assigned to a drive on each host, four Teradata backup classes should be created, each of which designates a storage unit on a different host. For example, let `tdclass1` designate robotic unit peach which is on tiger, `tdclass2` designate storage unit apple which is on lion, etc.

The `TDconfig` file on cub is specified as:

```
INSTANCE peanut
ADMINHOST cub NT
ARCPATH tiger '/usr/bin'
ARCPATH lion '/usr/bin'
ARCPATH bear '/usr/bin'
ARCPATH wolf '/usr/bin'
SESSIONS 8
CLUSTERS 12
DATASTREAMS 4
tiger unix tdclass1 tiger 0 hao1
lion unix tdclass2 lion 1 hao2
bear unix tdclass3 bear 2 hao3
wolf unix tdclass4 wolf 3 hao4
```


Example 6 - Multi-host Teradata instance, storage units attached to some (not all) hosts



This is similar to example 5 except that one of the four Teradata hosts does not have a storage unit attached. Assuming that there are four clusters and four backup streams are generated from an initiator mode backup, one of the storage units must be designated as the datastream for two streams.

In this diagram, host wolf does not have a device attachment so it will not be used to support a backup stream. Therefore, it also does not contain either NetBackup or Teradata client components.

The `TDconfig` file on cub is specified as follows:

```
INSTANCE peanut
ADMINHOST cub NT
ARCPATH tiger '/usr/bin'
ARCPATH lion '/usr/bin'
ARCPATH bear '/usr/bin'
ARCPATH wolf '/usr/bin'
SESSIONS 8
CLUSTERS 12
DATASTREAMS 4
tiger unix tdclass1 tiger 0 hao1
lion unix tdclass2 lion 1 hao2
bear unix tdclass3 bear 2 hao3
wolf unix tdclass1 wolf 3 hao4
```

Notice that two streams will be generated on the master server tiger and backed up to its robotic control; and the remaining two streams will be backed up to the local devices on lion and bear.

Advanced Installation Topics 3

Microsoft Systems Management Server Integration

NetBackup for Teradata can be Microsoft Windows NT 4.0 BackOffice certified. You can integrate this product with Microsoft's Systems Management Server (SMS) for distribution and installation.

A Package Definition File (PDF) is included with the software for import into SMS. The PDF contains predefined Workstation, Sharing, and Inventory property settings. Use the `Import` command from the Package Properties dialog in SMS to create a new SMS package for this product.

This file contains rules to inventory machines for this software. The inventory process looks for the `NBTeradata.ini` file to determine if NetBackup for Teradata is installed.

The status of an install or uninstall is reported to SMS by using a status Management Information Format (`.mif`) file. By default, this file is named `NBTeradata.mif` and is located in the system Windows folder.

The PDF file `NBTeradata.pdf` is located on the install media in the *CDROM*`:\`*Platform* folder.

Where:

CDROM is the CD-ROM drive letter

Platform is the platform: X386 for Intel and Alpha for Alpha

This file is directly usable only if your NetBackup installation folder was `C:\Program Files\VERITAS`. If not, folder names in the PDF file will require modification.

Install Command Line Interface

CDROM:*Platform*\Setup.exe *Setup options*

Where:

CDROM is the CD-ROM drive letter

Platform is the platform: X386 for Intel and Alpha for Alpha

Setup.exe Command Line Options

-f1*path\ResponseFile*	Specifies the alternate location and name of the response (.iss) file. If this option is used when running in silent mode (-s option), the response file is read from the folder/file specified by *path\ResponseFile*. If this option is used along with the -r option, the response file is written to the folder/file specified by *path\ResponseFile*.
-f2*path\LogFile*	Specifies the alternate location and name of the log file created by a silent mode install. By default, the Setup.log file is created and stored in the same folder as that of Setup.ins.
-m*filename*	Causes Setup.exe to generate a Management Information Format (.mif) file automatically at the end of the installation. Do not include a path--as part of the *filename* specification the .mif (Management Information Format) file is always placed in the system Windows folder. *filename* is optional. If you do not specify a filename, the resulting file will be called Status.mif.
-r	Causes Setup.exe to record a response file (.iss file). Setup.exe will record all your installation choices in Setup.iss and place the file in the system Windows folder.
-s	Causes Setup.exe to execute a silent installation. When running a installation in silent mode, be aware that no messages are displayed. Instead, a log file captures installation information, including whether the installation was successful. Review the log file to determine the result of the installation.
-SMS	Prevents a network connection from closing, and Setup.exe from exiting, before the installation is complete. This option works with installations originating from a Windows NT server over a network. Please note that SMS must be uppercase; this is a case-sensitive switch.

Silent Installation

A normal (non-silent) installation receives the necessary input from the user in the form of responses to dialog boxes. A silent install allows automated electronic software distribution. With a silent installation, there is no need for a user to monitor and provide

input through dialog boxes. The installation runs on its own, without any end user intervention. To launch the installation in silent mode, you must specify the `-s` option on `Setup.exe`.

The silent installation gets its user input at run time from the response file (`.iss` file). The response file is a plain text file consisting of sections containing data entries, similar to an `.ini` file. This file contains information an end user would otherwise enter in dialog boxes when running a normal setup. A response file (`Setup.iss`) for silent installation of this product is in the *CDROM*:*Platform* folder.

Note The `Setup.iss` file supplied with this product will work as is with no need for modification.

Example 1

This is an example of a silent installation using the response file delivered with the product. The CD-ROM drive letter is assumed to be `D:` and your platform is assumed to be Intel.

1. Log on as Administrator.
2. Enter the following command line.
   `D:\x386\Setup.exe -s -f1D:\x386\Setup.iss -f2C:\temp\Setup.log -m`
   - A silent installation will be performed using the response file delivered with the product.
   - An installation log file will be created in `C:\temp\Setup.log`.
   - A Management Information Format file `Status.mif` will be created in the system Windows folder.
3. Verify that the silent installation succeeded.
   a. Open the Windows NT Explorer and find `C:\temp\Setup.log`.
   b. Open `Setup.log` in a text editor.
   c. Look at the ResultCode value in the `[ResponseResult]` section of `Setup.log`. `Setup.exe` writes an appropriate return value after the *`ResultCode`* *key*name.

Example 2

This is an example of a silent installation using a response file generated by the user. The CDROM drive letter is assumed to be `D` and your platform is assumed to be Intel.

1. Type the following command line to generate a response file.
   `D:\x386\Setup.exe -r -f1C:\temp\Setup.iss`

   `Setup.exe` will record all your setup choices in the file `C:\temp\Setup.iss`.

2. Type the following command line to perform a silent installation using the response file generated in step 1.

```
D:\x386\Setup.exe -s -f1C:\temp\Setup.iss -f2C:\temp\Setup.log -mMYMIF.mif
```

   - A silent installation will be performed using the response file created in step 1.
   - An installation log file will be created in `C:\temp\Setup.log`.
   - A Management Information Format file `MYMIF.mif` will be created in the system Windows folder.

3. Verify that the silent installation succeeded.
   a. Open the Windows NT Explorer and find `C:\temp\Setup.log`.
   b. Open `Setup.log` in a text editor.
   c. Look at the ResultCode value in the `[ResponseResult]` section of `Setup.log`. `Setup.exe` writes an appropriate return value after the ResultCode keyname.

Uninstall Command Line Interface

%WINDIR%\IsUninst.exe *options*

Where *%WINDIR%* is the environment variable defining the location of the system Windows folder.

IsUninst.exe Command Line Options

-a	Runs the uninstall in silent mode.
-f"Uninstall log file"	Specifies the location and name of the uninstall log file. During setup, events for the uninstall were recorded in the Uninstall log file. The events recorded in this file are for the creation of: ◆ files ◆ folders ◆ program items ◆ registry entries ◆ self-registration of files ◆ some types of initialization file changes. When launched, unInstallShield undoes the recorded events. By default, the log file was created at installation time and is located and named as follows: *install_path*\UnIsNBTeradata.isu
-c"Uninstall custom DLL"	Specifies the full pathname of an uninstall DLL used to perform custom uninstall functions. The uninstall for this product uses a custom uninstall DLL to remove files that were created at run time. The custom .dll was installed at installation time and is located and named as follows: *install_path*\NetBackup\DbExt\NCR_Teradata\UnIsNBTeradata.dll
-m"Uninstall MIF file"	Creates an uninstall .mif (Management Information Format) file. Do not include a path as part of the *filename* specification. The .mif (Management Information Format) file is always placed in the system Windows folder. *filename* is optional. If you do not specify a filename, the resulting file will be called Uninst.mif.

Silent Uninstall

Silent uninstall suppresses the display of all user interfaces. During a normal uninstall, when a shared file is encountered, the interface would display a dialog box asking the user whether to remove the shared file.

When a shared file is encountered during a silent uninstall, the interface will automatically reduce the reference count to zero and not remove the file. Therefore, running in silent mode is functionally equivalent to an uninstall in which the user selects the No To All option when this dialog box first appears.

Example

This is an example of a silent uninstall.

1. Log on as Administrator.
2. Enter the following command line.
   ISUNINST.EXE -a -f"*install_path*\UnIsNBTeradata.isu"
   -c"*install_path*\NetBackup\dbext\NCR_Teradata\UnIsNBTeradata.dll"
   -mMyUninst.mif
   - A silent uninstall will be performed.
   - Events recorded in the Uninstall log file *install_path*\UnIsNBTeradata.isu will be undone.
   - The Uninstall custom DLL will be invoked to remove any run-time created files.
   - A Management Information Format file MyUninst.mif file will be created in the system Windows folder.

Configuration 4

This chapter describes how to configure NetBackup for Teradata. Before attempting to configure NetBackup for Teradata, complete the installation procedure described in the Installation chapter.

The following is the configuration procedure.

1. Verify Installed Components
2. Configure Media Manager
3. Create Backup and Restore Script
4. Maximum Jobs per Client Global Attribute
5. Add NCR-Teradata Classes to NetBackup
6. Test NetBackup for Teradata Configuration Settings
7. Configuring for Multiplexed Backups
8. Create Restore Userids

The following sections in this chapter describe each of these steps in detail.

Verify Installed Components

Windows NT

Note *install_path* refers to the folder where you installed NetBackup software. By default this folder is `C:\Program Files\VERITAS\NetBackup\.`

When you installed NetBackup for Teradata, the following actions were taken.

- Three icons were added to the NetBackup Program Group

  NetBackup - Teradata Client `dbbackup`

  NetBackup - Teradata Administration Help

  NetBackup - Teradata Client Readme

- On Windows NT the *install_path*`\NetBackup\DbExt\NCR_Teradata` folder was created. A readme file (`Readme.txt`) was placed in this folder.

  The following where also created:

  `.Arclogs\` - target folder for `Arcmain` output. (`Arcmain` is the Teradata client utility which manages backup and restore data streams).

  `History\` - target folder for backup history.

  `Samples\` - contains a sample `TDconfig` file and sample `Arcmain` script/batch file pairs. (See "Create Backup and Restore Script" on page 34.)

  `Scripts\` - source folder for `Arcmain` script/batch file pairs.

  `tmp\` - contains temporary run-time information that NetBackup for Teradata uses for managing multiple backup streams.

- The *install_path*`\NetBackup\logs\user_ops\Teradata\jobs` folder was created. This folder contains status data used by the NetBackup for Teradata progress viewer.

- The *install_path*`\NetBackup\logs\user_ops\Teradata\logs` folder was created. This folder contains logging data used by the NetBackup for Teradata progress viewer.

UNIX

Note *install_path* refers to the folder where you installed NetBackup software. By default this directory is `/usr/openv/netbackup/` on UNIX.

When you installed NetBackup for Teradata, the following actions were taken.

- On UNIX the `/usr/openv/netbackup/ext/db_ext/NCR_Teradata` directory was created. A readme file (`Readme.txt`) was placed in this directory.

  The following where also created:

  `Arclogs/` - target directory for `Arcmain` output. (`Arcmain` is the Teradata client utility which manages backup and restore data streams).

  `History/` - target directory for backup history.

  `Samples/` - contains a sample `TDconfig` file and sample `Arcmain` script/batch file pairs. (See .)

  `Scripts/` - source directory for `Arcmain` script/batch file pairs.

  `tmp/` - contains temporary run-time information that NetBackup for Teradata uses for managing multiple backup streams.

- The *install_path*`/NetBackup/logs/user_ops/Teradata/jobs` folder was created. This directory contains status data used by the NetBackup for Teradata progress viewer.
- The *install_path*`/NetBackup/logs/user_ops/Teradata/logs` folder was created. This directory contains logging data used by the NetBackup for Teradata progress viewer.

Configure Media Manager

Use the Media Manager to configure tapes or other storage units for a NetBackup for Teradata configuration.

- Refer to the *Media Manager for NetBackup System Administrator's Guide - UNIX* if the NetBackup server is UNIX.
- Refer to the *Media Manager for NetBackup System Administrator's Guide - Windows NT/2000* if the NetBackup server is Windows NT/2000.

The number of volumes required will depend on the devices used, the size of the Teradata databases that you are backing up, the size of your backups, and the frequency of backups.

Create Backup and Restore Script

Every NetBackup for Teradata operation is driven by paired scripts which are contained in the *install_path*`\NetBackup\DbExt\NCR_Teradata\scripts\` folder on the NetBackup for Teradata Administrative Host.

These scripts are plain ASCI text and case insensitive.

Both scripts have the same path and filename; but they have different extensions. For example, a paired backup operation may be described jointly by *install_path*`\NetBackup\DbExt\NCR_Teradata\scripts\bkup.scr` and *install_path*`\NetBackup\DbExt\NCR_Teradata\scripts\bkup.bch`.

The first script type, which uses the `.scr` extension is composed of `Arcmain` syntax and forms the basis of the input to the `Arcmain` utility, the Teradata client backup utility. The second script type which is a NetBackup for Teradata client batch file contains directives to NetBackup about the backup or restore operation.

You can either create these scripts directly or use the NetBackup Database Extension - Graphical User Interface (GUI) to create the scripts for you. If you use the GUI, you can still modify them before you use them for actual backup or restore operations.

Refer to "Create Backup Scripts" on page 86 and "Create Restore Scripts" on page 96 for instructions on creating scripts with the GUI.

See "Using Script and Batch Files" on page 107 for a description of the NetBackup for Teradata batch file syntax. See also, "Create Scripts" on page 85 for information on how to use the NetBackup Database Extension - Graphical User Interface to create `Arcmain` scripts and batch files that you can use for specific operations.

Maximum Jobs per Client Global Attribute

The Maximum jobs per client global attribute value is figured with the following formula.

`Max Jobs per Client =` *Number of Streams* `x` *Number of Classes*

Where:

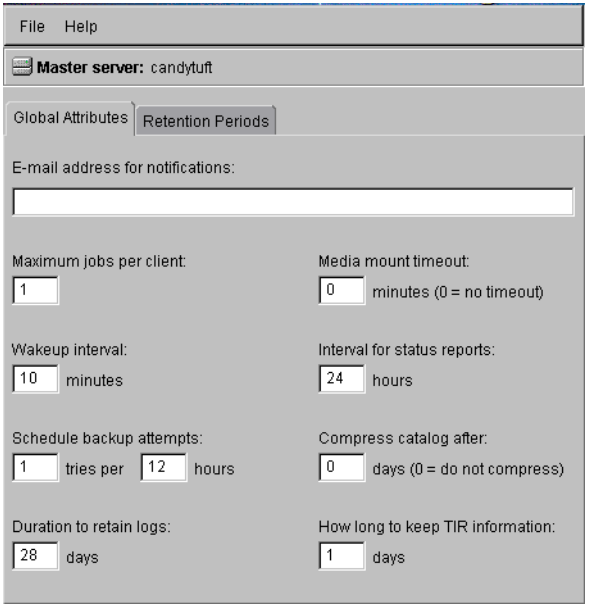
- *Number of Streams* is the number of backup streams between the database server and NetBackup. Each separate stream starts a new backup job on the client.
- *Number of Classes* is the number of classes that may back up this client at the same time. This number can be greater than one. For example, a client may be in two classes in order to back up two different databases. These backup windows may overlap.

NetBackup Administration - Java Interface

Use this procedure to set the Maximum Jobs per Client global attribute on the NetBackup Administration - Java Interface for HP or Solaris operating systems.

1. On the Configure menu in the NetBackup Administration dialog box, click NetBackup System Configuration. The System Configuration dialog box appears.

2. In the Master Server dialog box, click the Global Attributes tab.



The default value is 1 for Maximum jobs per client.

3. Change the Maximum jobs per client value to a value equal to the maximum number of backups allowed per client.

Tip To avoid any problems, we recommend that you enter a value of 99 for the Maximum jobs per client global attribute.

`xbpadm` Interface

Use this procedure to set the Maximum Jobs per Client global attribute on a UNIX NetBackup master server.

1. Log onto the server as root.
2. Start the NetBackup `xbpadm` administrator interface.
   - If the `DISPLAY` variable is set, type:

     ```
     /usr/openv/netbackup/bin/goodies/xbpadm &
     ```

   - If the `DISPLAY` variable is not set, use the `-d` option:

     ```
     /usr/openv/netbackup/bin/goodies/xbpadm -d (your_machine_name):0 &
     ```

   The NetBackup Administration dialog box will open.
3. From the File menu, click Change NetBackup Configuration. The NetBackup Configuration dialog box will appear.

   The default value is 1 for Maximum jobs per client.
4. Change the Maximum jobs per client value to a value equal to the maximum number of backups allowed per client.

Tip To avoid any problems, we recommend that you enter a value of 99 for the Maximum jobs per client global attribute.

5. Click OK.

NetBackup Administration - Windows NT Interface

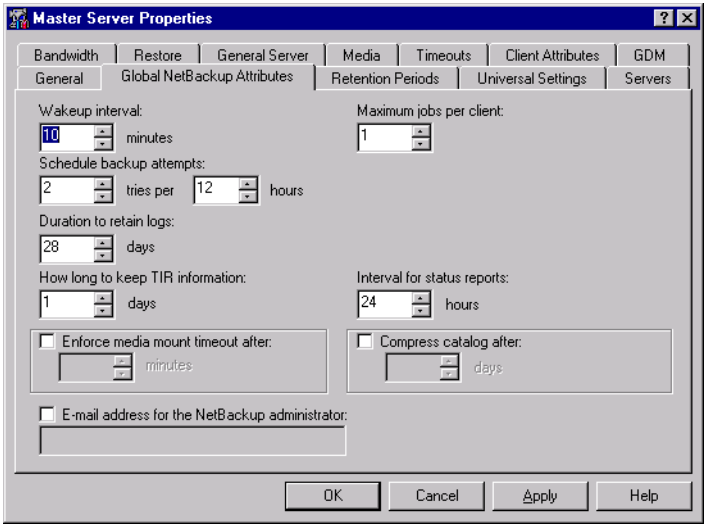
Use this procedure to set the Maximum Jobs per Client global attribute on a Windows NT/2000 server or on the NetBackup Administration Client host.

1. On the Start menu in the NetBackup Administration window, click Configure NetBackup. The Configure-NetBackup dialog box appears.

2. In the left pane, right-click on the server and on the shortcut menu click Properties (Read/Write).

   The Master Server Properties dialog box appears.

3. In the Master Server Properties dialog box, click the Global NetBackup Attributes tab.



   The default value is 1 for Maximum jobs per client.

4. Change the Maximum jobs per client value to a value equal to the maximum number of backups allowed per client.

Tip To avoid any problems, we recommend that you enter a value of 99 for the Maximum jobs per client global attribute.

Add NCR-Teradata Classes to NetBackup

NetBackup classes define the criteria for the backup. These criteria include:

- clients and the NetBackup for Teradata script files to be executed on the clients
- storage unit and media to use
- backup schedules

Procedures in this section describe how to configure a class for NetBackup for Teradata on a NetBackup server. There are other attributes for a class to consider. Refer to the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT/2000* for details on how to configure all the attributes.

NetBackup Administration - Java Interface

Use this procedure to configure a class on the NetBackup Administration - Java Interface on HP or Solaris operating systems.

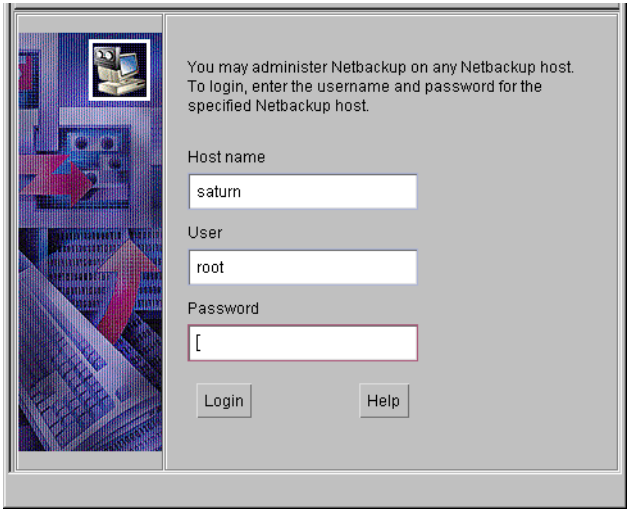
1. Log onto the server as root.
2. Start the NetBackup administrator interface by entering:

   install_path`/netbackup/bin/jnbSA &`

   For additional usage information, enter:

   `jnbSA -h`

   The Login dialog box appears.

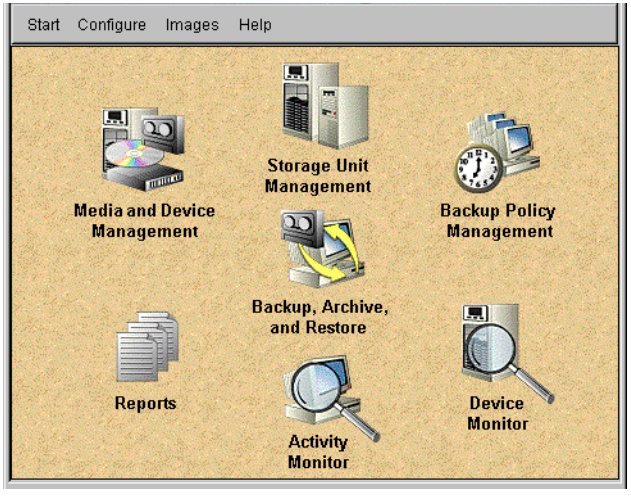


3. Type the password.

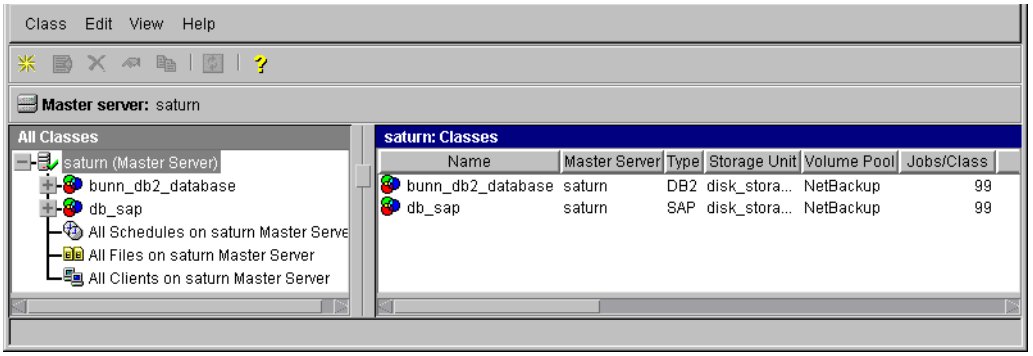
4. Press Login.

   The Login dialog closes and the NetBackup Assistant displays.

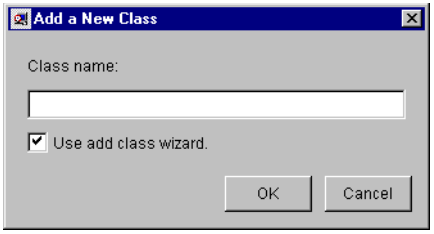
5. Click Close. The launch screen displays.



6. Click the Backup Policy Management icon. The Backup Policy Management (Classes) - NetBackup dialog appears.



7. On the Edit menu click New. The Add a New Class dialog box appears.



The class wizard automates the class configuration process. To configure classes without using the class wizard, use the following instructions.

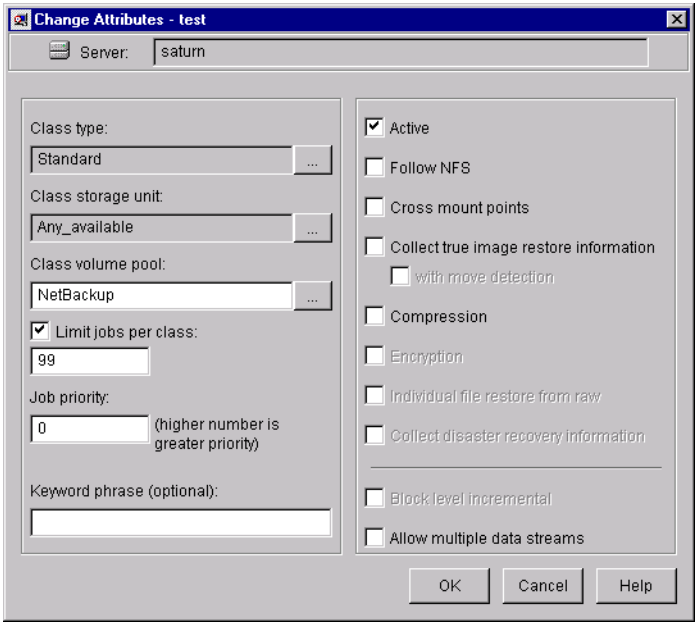
8. Clear the Use add class wizard check box.

9. Type the new class name in the Class name box.

   You need to create a separate NCR-Teradata class for each of the following purposes.

   - Backup association classes, which you will use for associating a media server or device with a backup data stream.
   - Automatic scheduling classes, which will be used by the NetBackup schedule for automatic job launch.

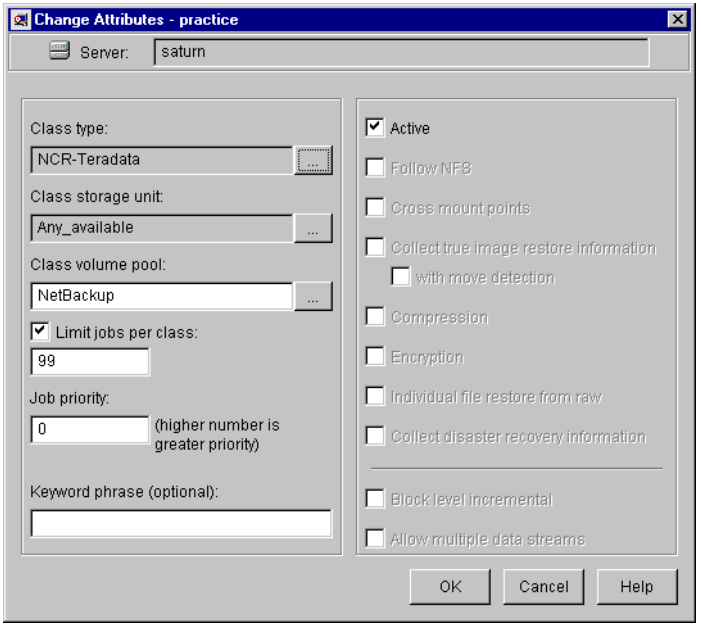
10. Click OK. The Change Attributes dialog box appears.



a. Select the NCR-Teradata class type for Teradata.

b. Click OK.

The Change Attributes dialog box changes.



Refer to the following table to configure class attributes.

Class storage unit:

Select the storage unit for this class. A storage unit is a group of one or more storage devices configured to store information from a backup.
If you are setting up a backup association class, select the storage unit that you want associated with this class name.
If you are setting up a class for automatic scheduling, select any from the Class Storage Unit list.

Class volume pool:

Select the volume pool for this class. A volume pool is a group of volumes (removable media) configured for use by NetBackup only. These volumes are protected from being used by other applications.

Limit jobs per class:

Type the maximum number of concurrent jobs for this class. If the Limit jobs per class checkbox is clear, the maximum number of backup and restore jobs that NetBackup will perform concurrently for this class can be up to a limit of 999. To specify a lower limit, select the checkbox and specify a value from 1 to 999 (the default is 99).

Job priority

Select a value for the job priority NetBackup will assign to automatic backup jobs for this class. When a drive becomes available, NetBackup assigns it to the first client in the highest priority class.

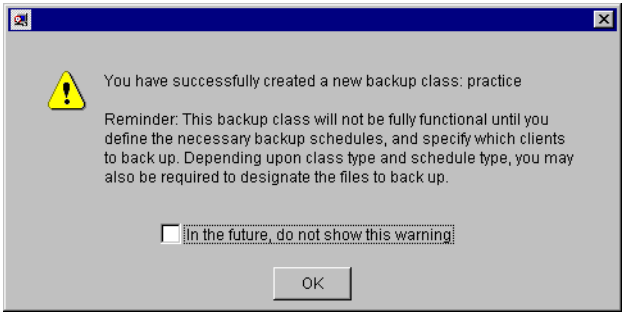
Keyword phrase:

For NetBackup for Teradata, the keyword phrase entry is ignored.

Active

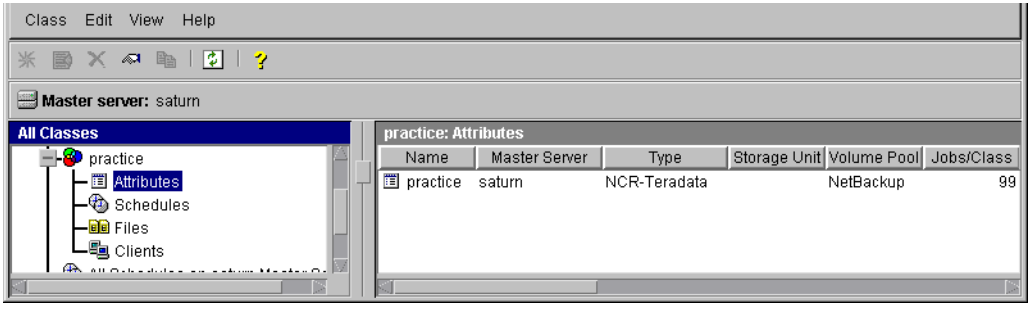
Select the checkbox to perform scheduled operations defined in this class. The class must be active for NetBackup to execute automatic backup schedules or allow user backups or archives.

c. Click OK to close the Change Attributes dialog box. The following Warning will appear.



d. Click OK to close the Warning box.

Notice that the newly created class appears in the All Master Servers pane in the Backup Policy Management (Classes) - NetBackup dialog box.



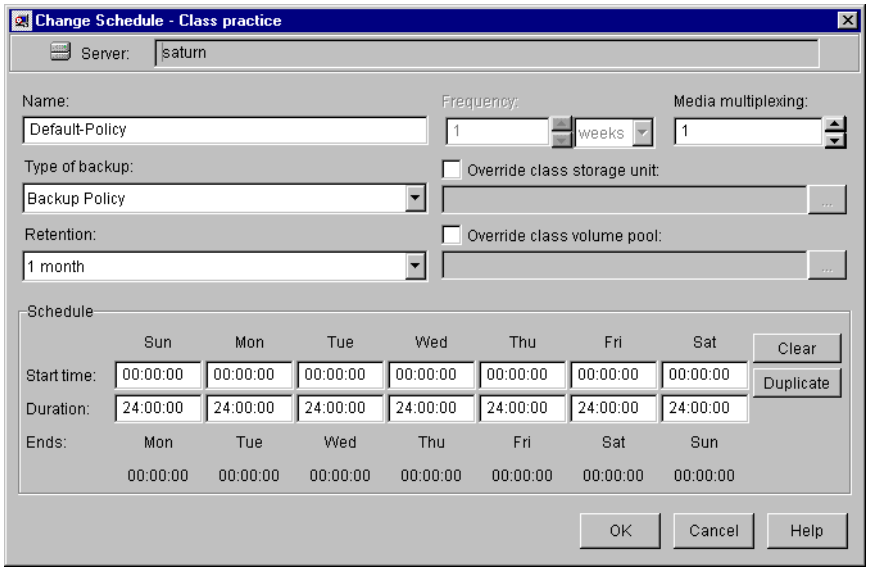
Also notice that the configuration settings you entered in the Change Attributes dialog box are displayed in the *class: Attributes* pane. Use the scroll bar at the bottom of the *class: Attributes* pane to view all settings.

11. Refer to the following instructions to configure schedules for your class.

a. Click Schedules in the All Master Servers pane of the Backup Policy Management (Classes) - NetBackup dialog box.

Notice that a Default-Policy appears in the practice:Schedules pane.

b. Double click the Default-Policy schedule. The Change Schedules dialog box appears.



c. Configure a *Backup Policy* schedule.

All Teradata database operations are performed through NetBackup for Teradata using a *Backup Policy* schedule. This includes those backups started automatically.

You must configure a *Backup Policy* schedule for each NCR-Teradata class you create. If you do not do this, you will not be able to perform a backup. To help satisfy this requirement, a *Backup Policy* schedule named Default-Policy is automatically created when you configure a new class.

Refer to the following table when configuring *Backup Policy* schedules.

Name:
: Each schedule requires a unique name.

Type of backup:
: A *Backup Policy* schedule enables user-controlled NetBackup operations performed on the client.

At least one *Backup Policy* schedule must be configured in each NCR-Teradata class. The Default-Policy schedule is configured as a *Backup Policy* schedule.

Retention:

The retention period for a *Backup Policy* schedule refers to the length of time that NetBackup keeps backup images. Set the time period to retain at least two full backups of your database. In this way, if one full backup has been lost, you will have another full backup to fall back on.

For example, if your database is backed up once every Sunday morning, you should select a retention period of at least "2 weeks."

Media Multiplexing

The media multiplexing box sets the number of jobs from this schedule that NetBackup can multiplex onto any one drive.

Start:

Specifies the day and time when the backup windows will open.

Duration:

Specifies the period of time (backup window) during which the backup job can take place.

The backup window for a *Backup Policy* schedule must encompass the time period during which all NetBackup jobs, scheduled and unscheduled, will occur. This is necessary because the *Backup Policy* schedule starts processes that are required for all NetBackup for Teradata backups, including those started automatically.

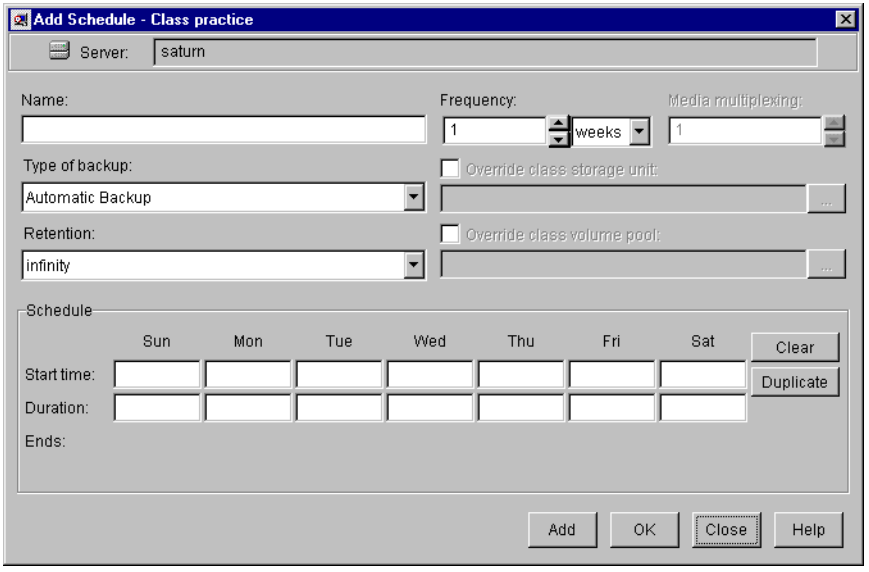
For example, assume that you:
- expect users to perform NetBackup operations during business hours, 0800 to 1300.
- configured automatic backups to start between 1800 and 2200.

The *Backup Policy* schedule must have a start time of 0800 and a duration of 14 hours.

Tip Set the time period for the *Backup Policy* schedule for 24 hours per day, seven days per week. This will ensure that your NetBackup for Teradata operations are never locked out due to the *Backup Policy* schedule.

d. Configure an *Automatic Backup*

Double click on Schedules in the All Master Servers pane of the Backup Policy Management (Classes) - NetBackup dialog box. The Add Schedule - Class *classname* property sheet appears.



Refer to the following table when configuring *Automatic Backup* schedules.

Name:

Each schedule requires a unique name.

Type of backup:

An *Automatic Backup* schedule specifies the dates and times when NetBackup will automatically start backups by running the scripts in the order that they appear in the file list. If there is more than one client in the NCR-Teradata class, the scripts are executed on each client.

Note The scripts must be installed on each machine in the client list.

Retention:

The retention period for an *Automatic Backup* schedule controls how long NetBackup keeps records of when scheduled backups have occurred. Note that this is different than with a *Backup Policy* schedule.

The NetBackup scheduler compares the latest record to the frequency to determine whether a backup is due. This means that if you set the retention period to expire the record too early, the scheduled backup frequency will be unpredictable. However, if you set the retention

period to be longer than necessary, the NetBackup catalog will accumulate unnecessary records. Therefore, set a retention period that is *longer* than the frequency setting for the schedule.

For example, if the frequency setting is set to one week, set the retention period to be more than one week.

Frequency

Refers to the time period to wait between backups.

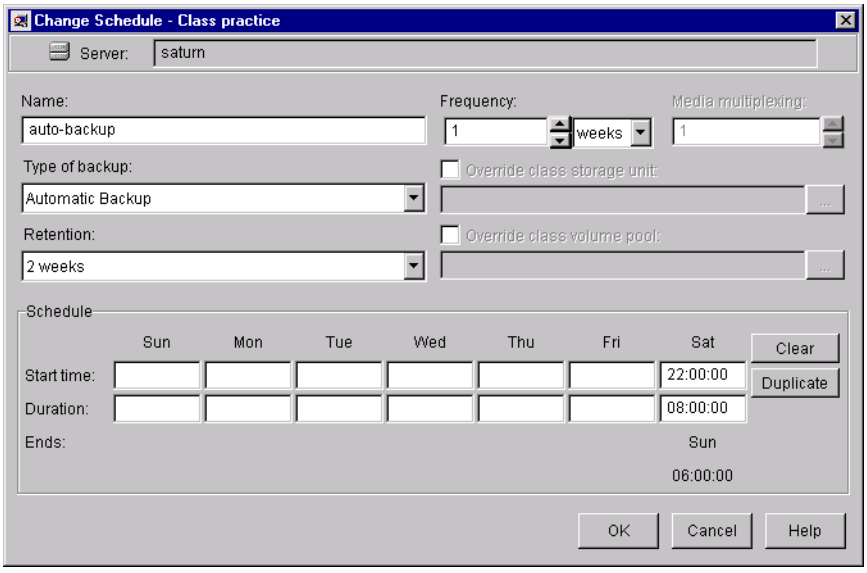
Start:

Specifies the day and time when the backup windows will open.

Duration:

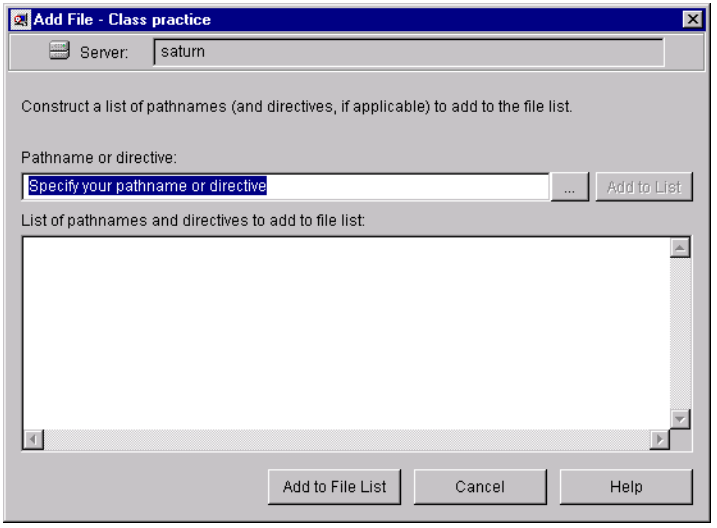
Specifies the period of time (backup window) during which the backup job can take place.

The following illustrates how an *Automatic Backup* schedule might be configured.



12. Refer to the following instructions to configure the list of scripts.

a. Double click on Files in the All Master Servers pane of the Backup Policy Management (Classes) - NetBackup dialog box. The Add File Class appears.



The File list in a database class has a different meaning than for other classes. Normally, in a Standard class, you would list files and directories to be backed up. But since you are now configuring a database class, you will list scripts.

Refer to "Create Backup and Restore Script" on page 34 for details.

Add script names only if you are setting up a class for automatic scheduling. All scripts listed in the file list will execute for the *Automatic Backup* schedules as specified under the Schedules tab.

b. Type in a simple name for the script.

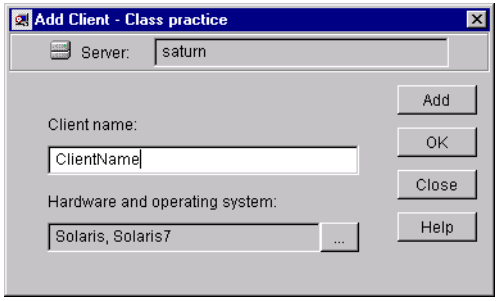
A simple name is the file name of a paired batch file and `Arcmain` script, entered without a directory path and without an extension. NetBackup for Teradata operations use a paired batch file and `Arcmain` script. Each member of the paired set has the same name except for the extension. The batch file extension is `.bch` and the `Arcmain` script extension is `.scr`. When you enter a simple name, both the batch file and the `Arcmain` script are used in the NetBackup operation.

c. Click Add.

Since all scripts specified in the file list execute during automatic backups, you must make sure that only one type of backup is executed on the same database.

13. Refer to the following instructions to configure the Client list.

a. Double click on Clients in the All Master Servers pane of the Backup Policy Management (Classes) - NetBackup dialog box. The Add Client Class dialog box appears.



b. Type the name of the client. This client should have:

- the database installed
- NetBackup for Teradata installed
- the backup or restore script(s)

c. Click Add to add the client to the client list.

d. Click OK.

The Add Client Class dialog box closes. The Backup Policy Management (Classes) - NetBackup dialog box remains open.

`xbpadm` Interface

Use this procedure to configure a class on a UNIX NetBackup master server.

1. Log onto the server as root.
2. Start the NetBackup `xbpadm` administrator interface.
   - If you are using `mwm` and the `DISPLAY` variable is set, type:

     `/usr/openv/netbackup/bin/goodies/xbpadm &`
   - If you are using `mwm` and the `DISPLAY` variable is not set, use the `-d` option:

     `/usr/openv/netbackup/bin/goodies/xbpadm -d (`*your_machine_name*`):0 &`

   The NetBackup Administration dialog box will open.
3. Create a new class.
   a. On the Actions menu, select New, then Classes. The Creating a Class dialog box will open.
   b. In the Class Name box, type the new class name.

      You need to create a separate NCR-Teradata class for each of the following purposes.
      - Backup association classes, which you will use for associating a media server or device with a backup data stream.
      - Automatic scheduling classes, which will be used by the NetBackup schedule for automatic job launch.

      When you configure the NCR-Teradata class on your NetBackup installation, you will use a unique class name.
   c. Under Select one of, select New Class. The Class Type list box will enable.
   d. Select the NCR-Teradata class from the list box.
   e. Click OK. The Changing Class dialog box will open.
4. Check the Class Attribute settings.

   Refer to the following table to configure class attributes.

Class storage unit:
: Select the storage unit for this class. A storage unit is a group of one or more storage devices configured to store information from a backup.
If you are setting up a backup association class, select the storage unit that you want associated with this class name.
If you are setting up a class for automatic scheduling, select any from the Class Storage Unit list.

Class volume pool:
: Select the volume pool for this class. A volume pool is a group of volumes (removable media) configured for use by NetBackup only. These volumes are protected from being used by other applications.

Limit jobs per class:
: Type the maximum number of concurrent jobs for this class. If the Limit jobs per class checkbox is clear, the maximum number of backup and restore jobs that NetBackup will perform concurrently for this class can be up to a limit of 999. To specify a lower limit, select the checkbox and specify a value from 1 to 999 (the default is 99).

Job priority
: Select a value for the job priority NetBackup will assign to automatic backup jobs for this class. When a drive becomes available, NetBackup assigns it to the first client in the highest priority class.

Keyword phrase:
: For NetBackup for Teradata, the keyword phrase entry is ignored.

Active
: Select the checkbox to perform scheduled operations defined in this class. The class must be active for NetBackup to execute automatic backup schedules or allow user backups or archives.

5. Refer to the following instructions to configure the schedules for your class.

a. Click Schedules to change the display.

b. Click New to open the Creating a Schedule dialog box.

c. In the Name of Schedule box, type the new schedule name.

d. Click OK. The Creating a Schedule dialog box will open.

e. Configure a *Backup Policy* schedule.

All Teradata backup and restore operations are performed through NetBackup for Teradata using a *Backup Policy* schedule. This includes those backups started automatically.

You must configure a *Backup Policy* schedule for each NCR-Teradata class you create. If you do not do this, you will not be able to perform a backup. To help satisfy this requirement, a *Backup Policy* schedule named Default-Policy is automatically created when you configure a new class.

Refer to the following table when configuring *Backup Policy* schedules.

Name:

Each schedule requires a unique name.

Type of backup:

A *Backup Policy* schedule enables user-controlled NetBackup operations performed on the client.
At least one *Backup Policy* schedule must be configured in each NCR-Teradata class. The Default-Policy schedule is configured as a *Backup Policy* schedule.

Retention:

The retention period for a *Backup Policy* schedule refers to the length of time that NetBackup keeps backup images. Set the time period to retain at least two full backups of your database. In this way, if one full backup has been lost, you will have another full backup to fall back on. For example, if your database is backed up once every Sunday morning, you should select a retention period of at least "2 weeks."

Media Multiplexing

The media multiplexing box sets the number of jobs from this schedule that NetBackup can multiplex onto any one drive.

Start:

Specifies the day and time when the backup windows will open.

Duration:

Specifies the period of time (backup window) during which the backup job can take place.

The backup window for a *Backup Policy* schedule must encompass the time period during which all NetBackup jobs, scheduled and unscheduled, will occur. This is necessary because the *Backup Policy* schedule starts processes that are required for all NetBackup for Teradata backups, including those started automatically.

For example, assume that you:
- expect users to perform NetBackup operations during business hours, 0800 to 1300.
- configured automatic backups to start between 1800 and 2200.

The *Backup Policy* schedule must have a start time of 0800 and a duration of 14 hours.

Tip Set the time period for the *Backup Policy* schedule for 24 hours per day, seven days per week. This will ensure that your NetBackup for Teradata operations are never locked out due to the *Backup Policy* schedule.

f. Configure an *Automatic Backup*.

Refer to the following table when configuring *Automatic Backup* schedules.

Name:
: Each schedule requires a unique name.

Type of backup:
: An *Automatic Backup* schedule specifies the dates and times when NetBackup will automatically start backups by running the scripts in the order that they appear in the file list. If there is more than one client in the NCR-Teradata class, the scripts are executed on each client.

Retention:
: The retention period for an *Automatic Backup* schedule controls how long NetBackup keeps records of when scheduled backups have occurred. Note that this is different than with a *Backup Policy* schedule.

  The NetBackup scheduler compares the latest record to the frequency to determine whether a backup is due. This means that if you set the retention period to expire the record too early, the scheduled backup frequency will be unpredictable. However, if you set the retention period to be longer than necessary, the NetBackup catalog will accumulate unnecessary records. Therefore, set a retention period that is *longer* than the frequency setting for the schedule.

  For example, if the frequency setting is set to one week, set the retention period to be more than one week.

Frequency
: Refers to the time period to wait between backups.

Start:
: Specifies the day and time when the backup windows will open.

Duration:
: Specifies the period of time (backup window) during which the backup job can take place.

6. Refer to the following instructions to configure the Files list for your class.

Perform this procedure if unattended schedule backups are going to be performed. Otherwise this step can be skipped.

a. Click Files.

The Files list in a database class has a different meaning than for other classes. Normally, in a Standard class, you would list files and directories to be backed up. But since you are now configuring a database class, you will list scripts.

Refer to "Create Backup and Restore Scripts" later in this chapter for details on creating a script.

Add script names only if you are setting up a class for automatic scheduling. All scripts listed in the file list will execute for the *Automatic Backup* schedules as specified under the Schedules tab.

b. Type in a simple name for the script.

A simple name is the file name of a paired batch file and `Arcmain` script, entered without a directory path and without an extension. NetBackup for Teradata operations use a paired batch file and `Arcmain` script. Each member of the paired set has the same name except for the extension. The batch file extension is `.bch` and the `Arcmain` script extension is `.scr`. When you enter a simple name, both the batch file and the `Arcmain` script are used in the NetBackup operation.

Specify the full pathname for the script in the file list. For example, the following is the path to a script on a Windows NT Teradata client.

install_path`\NetBackup\dbext\NCR_teradata\samples\`

The following is the path to a script on a UNIX Teradata client.

install_path`/netbackup/db_ext/NCR_teradata/script/`

7. Refer to the following instructions to configure the Clients list for your class.

a. Click Clients to change the display.

b. Click New to open the Adding Clients dialog box.

c. Select the hardware and operating system from the Hardware and Operating System: scroll box.

d. Type the name of the client. This client should have:

- the database installed
- NetBackup for Teradata installed
- the backup or restore script(s)

Note The Install NetBackup Client Software checkbox will install NetBackup client software on a remote client. There is no option to install NetBackup for Teradata software. Refer to the installation instructions in this guide to install NetBackup for Teradata.

e. Click OK.

8. Click OK.

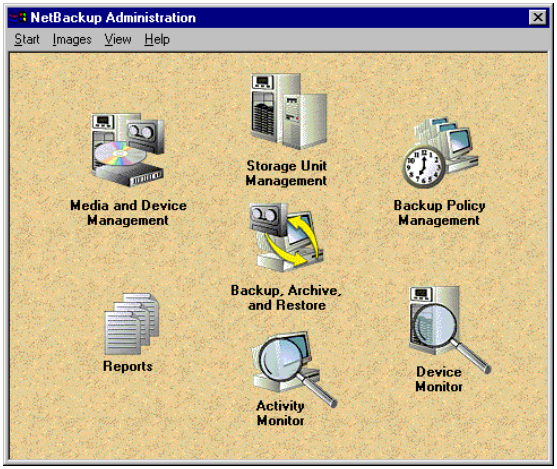
The Changing Class dialog box will close. The NetBackup Administration dialog box will remain open.

NetBackup Administration - Client Interface and Windows NT/2000 Interface

Use this procedure when configuring a class from a Windows NT/2000 server or from the NetBackup Administration Client host.

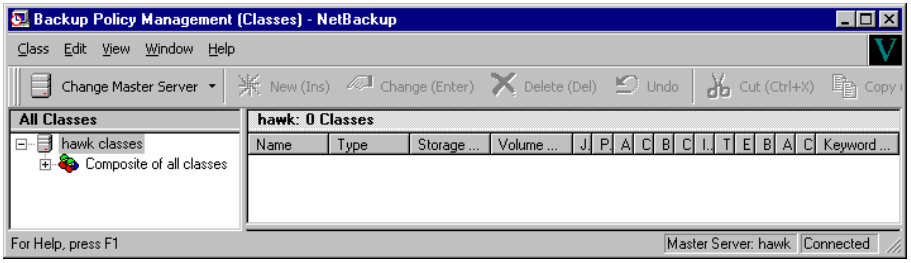
1. Log onto the server as Administrator.

2. From the Start menu, select Programs, VERITAS NetBackup, NetBackup Administration. The NetBackup Administration interface appears.



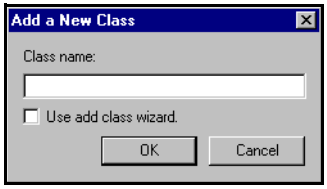
3. Click the Backup Policy Management icon.

   The Backup Policy Management (Classes) - NetBackup dialog appears.



4. Perform the following steps to add a new class.

a. On the Class menu click New. The Add a New Class dialog box appears.



The class wizard automates the class configuration process. To configure classes without using the class wizard, use the following instructions.

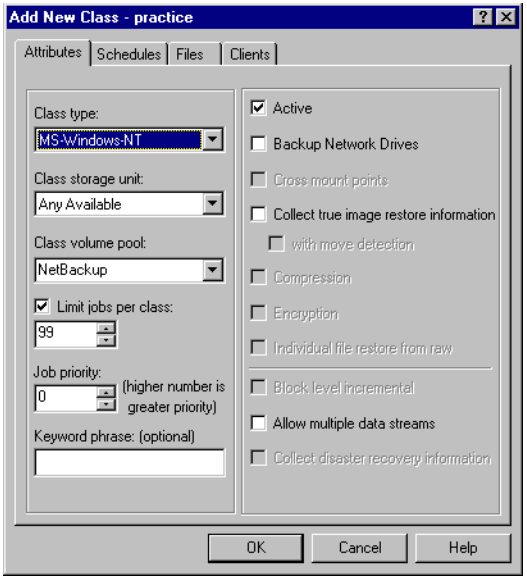
b. Confirm that the Use add class wizard check box is not checked.

c. Type the new class name in the Class name box.

You need to create a separate NCR-Teradata class for each of the following purposes.

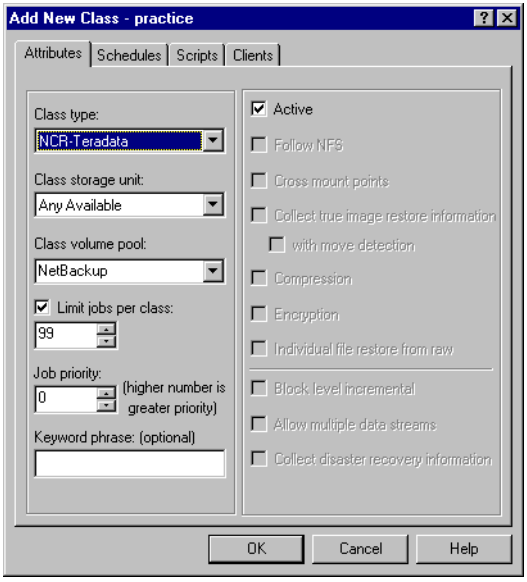
- Backup association classes, which you will use for associating a media server or device with a backup data stream.
- Automatic scheduling classes, which will be used by the NetBackup schedule for automatic job launch.

d. Click OK. The Add New Class dialog box appears. The class name you specified appears in the title bar.



5. Use the following instructions to configure the general attributes for the class.

a. Select the NCR-Teradata class type.



Refer to the following table to configure class attributes.

Class storage unit:
: Select the storage unit for this class. A storage unit is a group of one or more storage devices configured to store information from a backup.
If you are setting up a backup association class, select the storage unit that you want associated with this class name.
If you are setting up a class for automatic scheduling, select any from the Class Storage Unit list.

Class volume pool:
: Select the volume pool for this class. A volume pool is a group of volumes (removable media) configured for use by NetBackup only. These volumes are protected from being used by other applications.

Limit jobs per class:
: Type the maximum number of concurrent jobs for this class. If the Limit jobs per class checkbox is clear, the maximum number of backup and restore jobs that NetBackup will perform concurrently for this class can be up to a limit of 999. To specify a lower limit, select the checkbox and specify a value from 1 to 999 (the default is 99).

Job priority
: Select a value for the job priority NetBackup will assign to automatic backup jobs for this class. When a drive becomes available, NetBackup assigns it to the first client in the highest priority class.

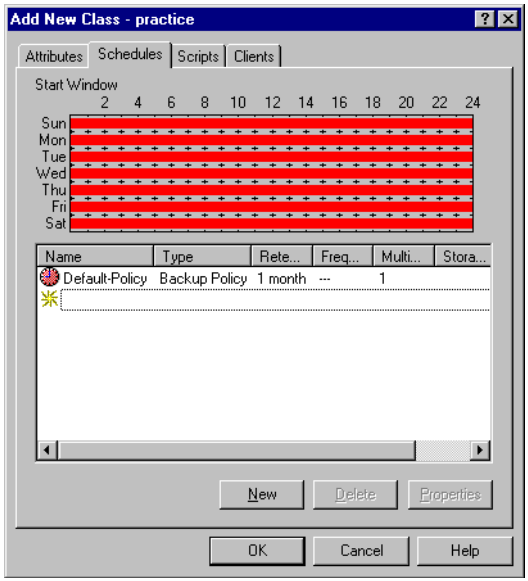
Keyword phrase:
: For NetBackup for Teradata, the keyword phrase entry is ignored.

Active

Select the checkbox to perform scheduled operations defined in this class. The class must be active for NetBackup to execute automatic backup schedules or allow user backups or archives.

6. Use the following instructions to configure the class schedules.

a. Click Schedules tab. The Schedules property sheet appears.

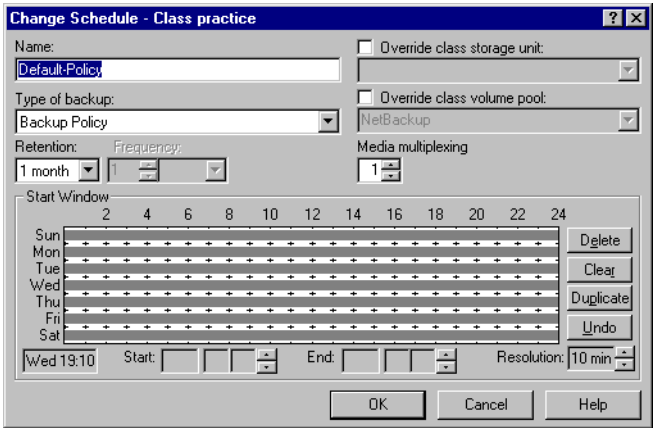


b. Configure a *Backup Policy* schedule.

All Teradata database operations are performed through NetBackup for Teradata using a *Backup Policy* schedule. This includes those backups started automatically.

You must configure a *Backup Policy* schedule for each NCR-Teradata class you create. If you do not do this, you will not be able to perform a backup. To help satisfy this requirement, a *Backup Policy* schedule named Default-Policy is automatically created when you configure a new class.

The following illustrates how a *Backup Policy* schedule might be configured.



Refer to the following table when configuring *Backup Policy* schedules.

Name:

Each schedule requires a unique name.

Type of backup:

A *Backup Policy* schedule enables user controlled NetBackup operations performed on the client.

At least one *Backup Policy* schedule must be configured in each NCR-Teradata class. The Default-Policy schedule is configured as a *Backup Policy* schedule.

Retention:

The retention period for a *Backup Policy* schedule refers to the length of time that NetBackup keeps backup images. Set the time period to retain at least two full backups of your database. In this way, if one full backup has been lost, you will have another full backup to fall back on.

For example, if your database is backed up once every Sunday morning, you should select a retention period of at least "2 weeks."

Media Multiplexing

The media multiplexing box sets the number of jobs from this schedule that NetBackup can multiplex onto any one drive.

Start:

Specifies the day and time when the backup windows will open.

End:

Specifies the day and time when the backup windows will close.

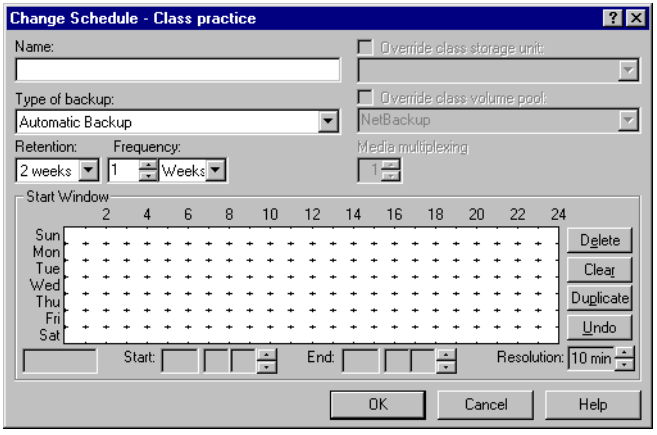
The backup window for a *Backup Policy* schedule must encompass the time period during which all NetBackup jobs, scheduled and unscheduled, will occur. This is necessary because the *Backup Policy* schedule starts processes that are required for all NetBackup for Teradata backups, including those started automatically.

For example, assume that you:
- expect users to perform NetBackup operations during business hours, 0800 to 1300.
- configured automatic backups to start between 1800 and 2200.

The *Backup Policy* schedule must have a start time of 0800 and a duration of 14 hours.

Tip Set the time period for the *Backup Policy* schedule for 24 hours per day, seven days per week. This will ensure that your NetBackup for Teradata operations are never locked out due to the *Backup Policy* schedule.

c. Click New to configure an *Automatic Backup* schedule.



Refer to the following table when configuring *Automatic Backup* schedules.

Name:

Each schedule requires a unique name.

Type of backup:

An *Automatic Backup* schedule specifies the dates and times when NetBackup will automatically start backups by running the scripts in the order that they appear in the file list. If there is more than one client in the NCR-Teradata class, the scripts are executed on each client.

Note The scripts must be installed on each machine in the client list.

Retention:

The retention period for an *Automatic Backup* schedule controls how long NetBackup keeps records of when scheduled backups have occurred. Note that this is different than with a *Backup Policy* schedule.

The NetBackup scheduler compares the latest record to the frequency to determine whether a backup is due. This means that if you set the retention period to expire the record too early, the scheduled backup frequency will be unpredictable. However, if you set the retention period to be longer than necessary, the NetBackup catalog will accumulate unnecessary records. Therefore, set a retention period that is *longer* than the frequency setting for the schedule.

For example, if the frequency setting is set to one week, set the retention period to be more than one week.

Frequency

Refers to the time period to wait between backups.

Start:

Specifies the day and time when the backup windows will open.

End:

Specifies the day and time when the backup windows will close.

The backup window for a *Backup Policy* schedule must encompass the time period during which all NetBackup jobs, scheduled and unscheduled, will occur. This is necessary because the *Backup Policy* schedule starts processes that are required for all NetBackup for Teradata backups, including those started automatically.

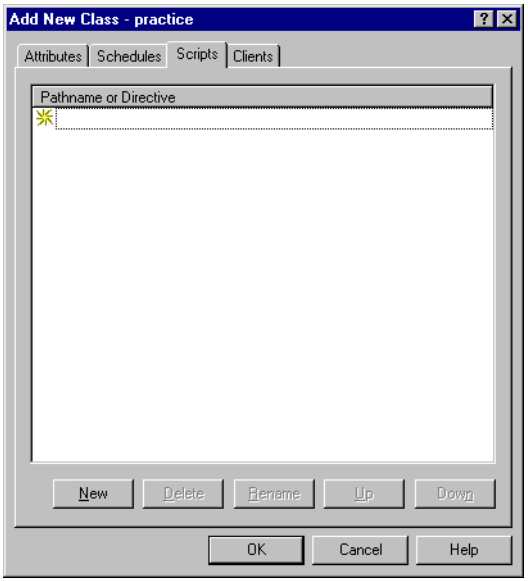
For example, assume that you:
- expect users to perform NetBackup operations during business hours, 0800 to 1300.
- configured automatic backups to start between 1800 and 2200.

The *Backup Policy* schedule must have a start time of 0800 and a duration of 14 hours.

Tip Set the time period for the *Backup Policy* schedule for 24 hours per day, seven days per week. This will ensure that your NetBackup for Teradata operations are never locked out due to the *Backup Policy* schedule.

7. Refer to the following instructions to configure the list of scripts.

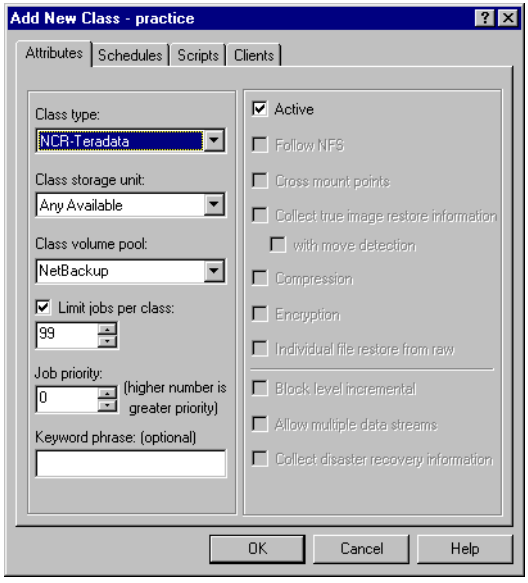
a. Click Scripts tab. The Scripts property sheet appears.



The File list in a database class has a different meaning than for other classes. Normally, in a Standard class, you would list files and directories to be backed up. But since you are now configuring a database class, you will list scripts.

8. Refer to "Create Backup and Restore Script" on page 34 for details.

Add script names only if you are setting up a class for automatic scheduling. All scripts listed in the file list will execute for the *Automatic Backup* schedules as specified under the Schedules tab.



The File list in a database class has a different meaning than for other classes. Normally, in a Standard class, you would list files and directories to be backed up. But since you are now configuring a database class, you will list scripts.

Refer to "Create Backup and Restore Script" on page 34 for details.

Add script names only if you are setting up a class for automatic scheduling. All scripts listed in the file list will execute for the *Automatic Backup* schedules as specified under the Schedules tab.

b. Type in a simple name for the script.

A simple name is the file name of a paired batch file and `Arcmain` script, entered without a directory path and without an extension. NetBackup for Teradata operations use a paired batch file and `Arcmain` script. Each member of the paired set has the same name except for the extension. The batch file extension is `.bch` and the `Arcmain` script extension is `.scr`. When you enter a simple name, both the batch file and the `Arcmain` script are used in the NetBackup operation.

Specify the full pathname for the script in the file list. For example, the following is the path to a script on a Windows NT Teradata client.

install_path`\NetBackup\dbext\NCR_teradata\samples\`

The following is the path to a script on a UNIX Teradata client.

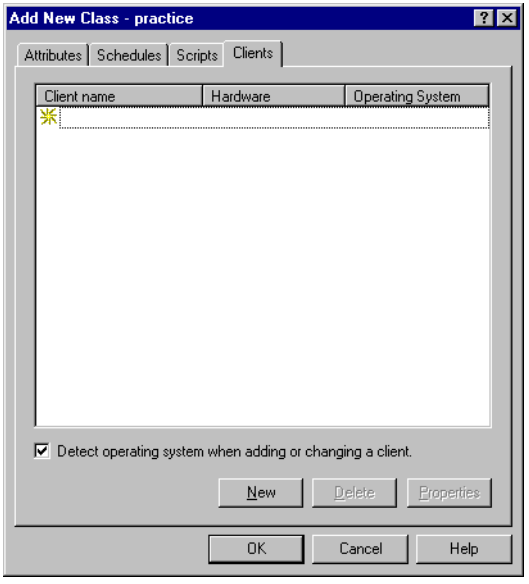
install_path`/netbackup/db_ext/teradata/script/`

c. Click Add.

Since all scripts specified in the file list execute during automatic backups, you must make sure that only one type of backup is executed on the same database.

9. Refer to the following instructions to configure the Client list.

a. Click Clients tab. The Clients property sheet appears.



b. Click New. The Client Names box appears.

c. Type the name of the NetBackup for Teradata Administrative Host that has:

- the database installed
- NetBackup for Teradata installed
- the backup or restore script

d. Click OK.

The Client Hardware and Operating system dialog box appears.

e. Select the hardware and operating system for the client.

f. Click OK.

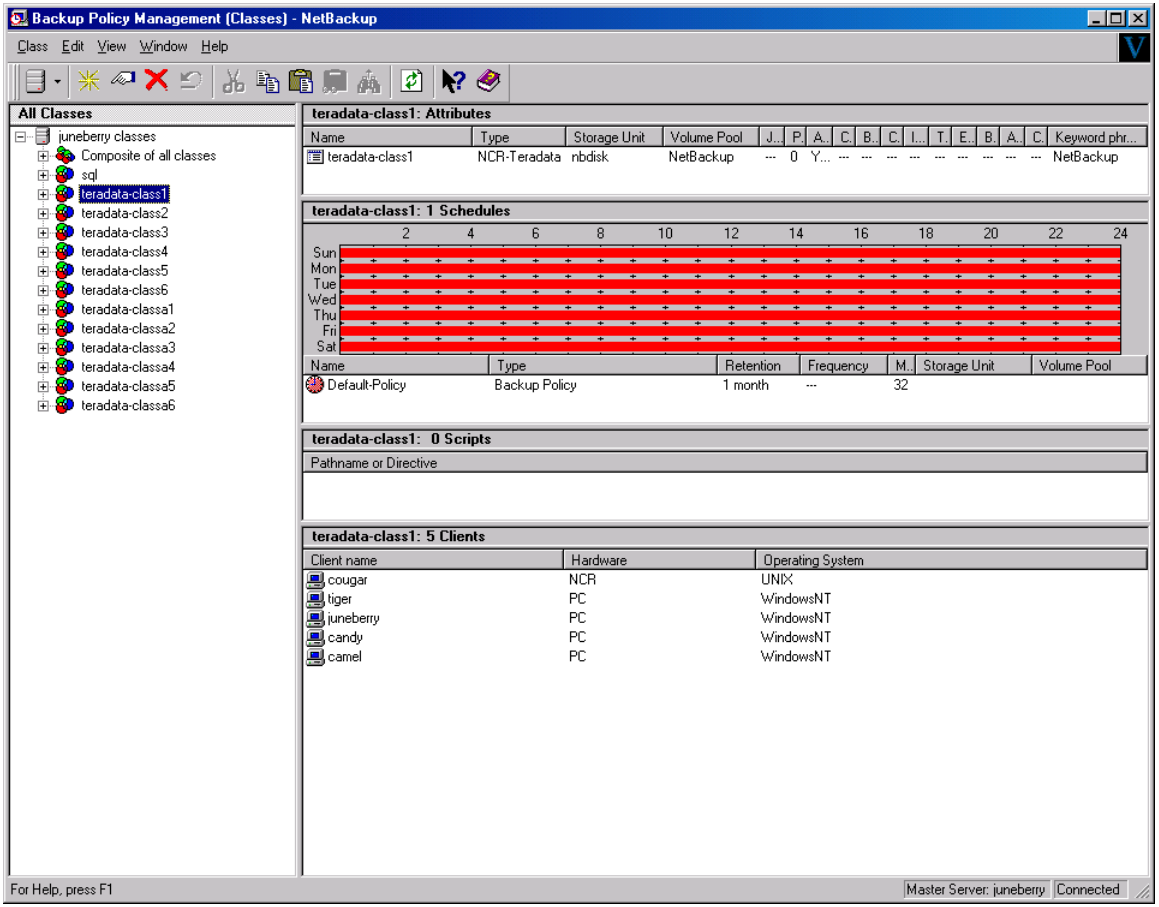
The Client Hardware and Operating system dialog box closes.

10. Click OK.

The Changing Class dialog box closes. The Backup Policy Management (Classes) - NetBackup dialog box remains open.

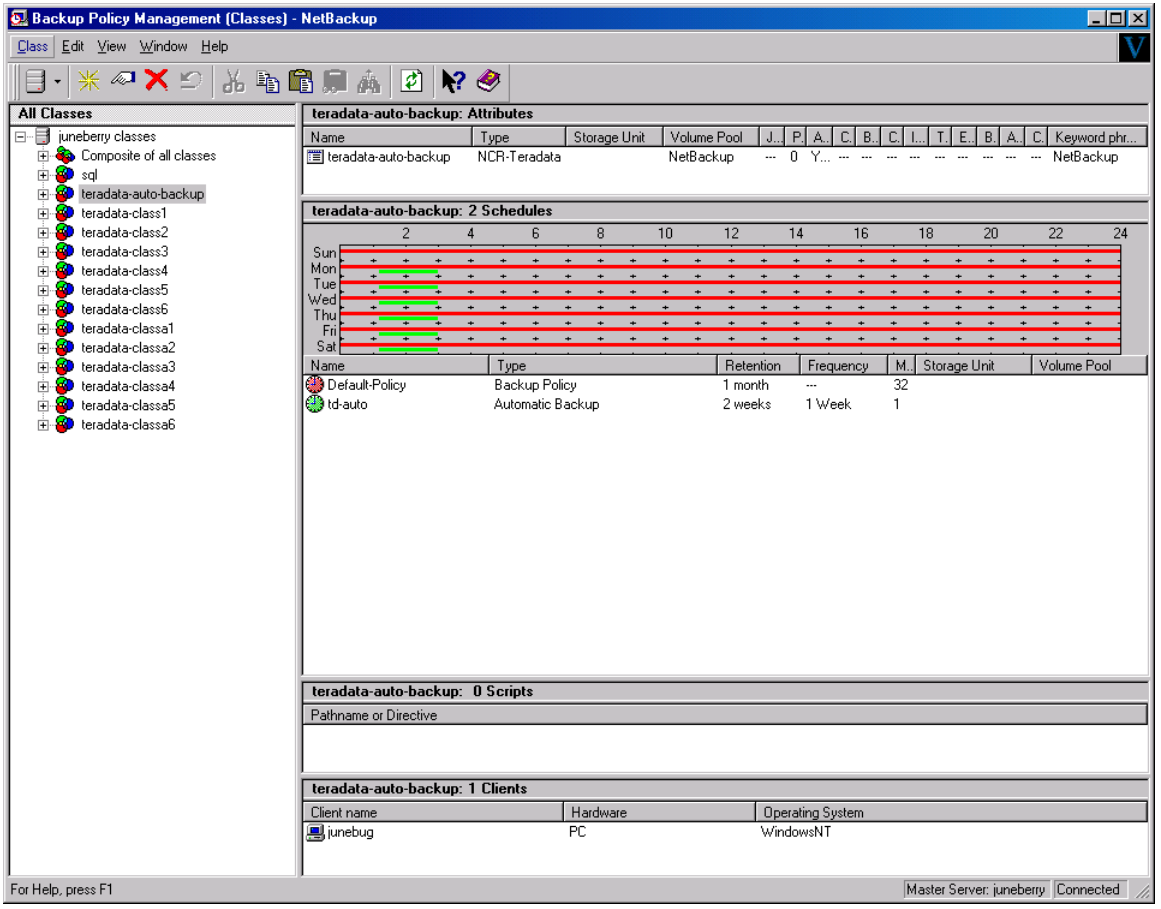
Example 1 NCR-Teradata Class Storage Unit Association

The following shows the attributes and schedules for a typical NCR-Teradata class created for storage unit association.



Example 2 NCR-Teradata Class For Automatic Scheduling

The following shows the attributes and schedules for a typical NCR-Teradata class created for automatic scheduling.



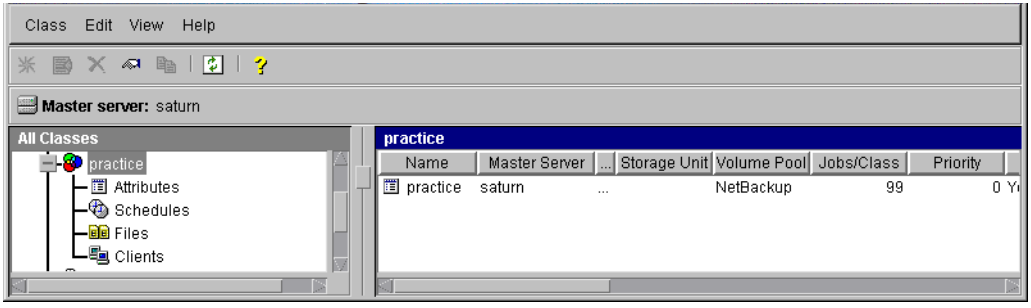
Test NetBackup for Teradata Configuration Settings

After you have configured the master server for NetBackup for Teradata, you should test the configuration settings. For a description of status codes, refer to the *NetBackup Troubleshooting Guide - Windows NT/2000*.

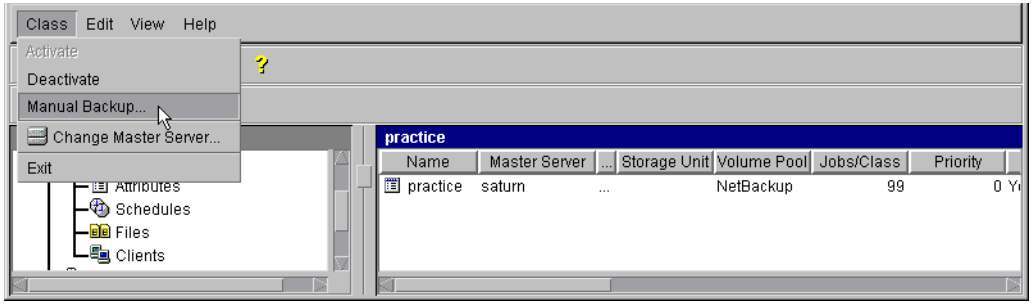
NetBackup Administration - Java Interface

Use this procedure to test a class configuration on the NetBackup Administration - Java Interface for HP or Solaris operating systems.

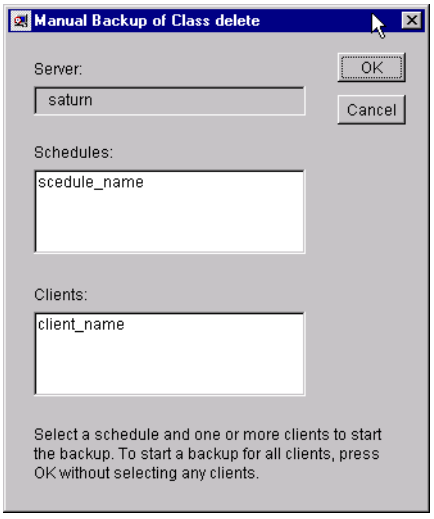
1. Log onto the server as root.
2. Start the NetBackup administrator interface.
3. Click the Backup Policy Management icon. The Backup Policy Management (Classes) - NetBackup dialog appears.
4. Select a class to back up.



5. On the Class menu, click Manual Backup.



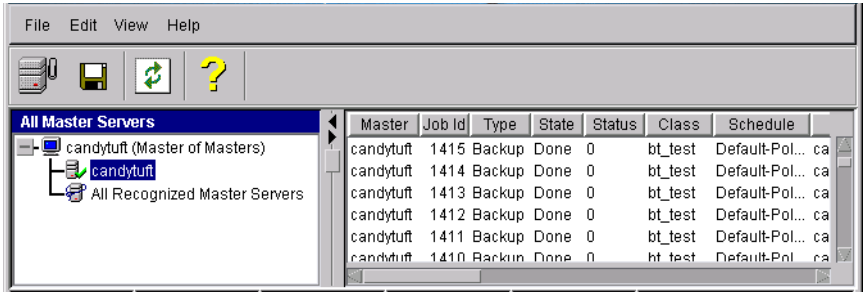
The Manual Backup dialog box appears.



The Schedule pane contains the name of a schedule configured for the class you are going to test. The Client pane contains the name of the client(s) listed in the class you are going to test.

6. Follow the instructions on the dialog box.

7. Click Activity Monitor on the NetBackup Administration interface to open the Activity Monitor dialog box.



If the test does not exit with a successful status, refer to the Troubleshooting chapter.

`xbpadm` Interface

Use this procedure to test a class configuration on a UNIX NetBackup master server.

1. Log onto the server as root.
2. Start the NetBackup `xbpadm` administrator interface.
   - If the `DISPLAY` variable is set, type:

     `/usr/openv/netbackup/bin/goodies/xbpadm &`
   - If the `DISPLAY` variable is not set, use the `-d` option:

`/usr/openv/netbackup/bin/goodies/xbpadm -d (`*your_machine_name*`):0 &`

   The NetBackup Administration dialog box will open.
3. Under Classes, select the NCR-Teradata class you configured.
4. Under Actions, select Manual Backup. The Manual Backup dialog box will appear.
   a. Select a schedule in the Schedules pane.
   b. Select a client in the Clients pane.
   c. Click OK. The Manual Backup dialog box will close.
5. Under File, select Job Monitor. The Job Monitor dialog box will appear. A status code will display in the Status column.

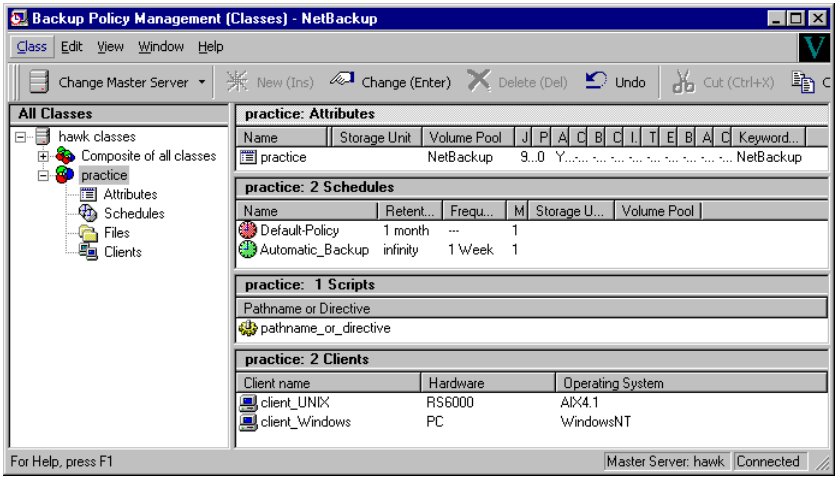
Note The jobs listed in the Job Monitor dialog box include one job for the overall database backup and multiple default-policy jobs which depended on the need of drives have been specified.

If the test does not exit with a successful status, refer to the Troubleshooting chapter.

NetBackup Administration - Windows NT Interface

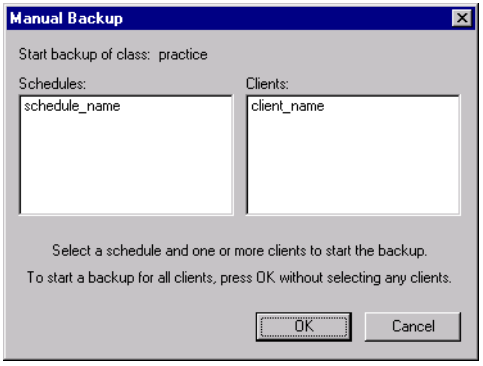
Use this procedure to test a class configuration from a Windows NT/2000 server or from the NetBackup Administration Client host.

1. Log onto the server as Administrator.
2. Start the NetBackup administrator interface.
3. Click the Backup Policy Management icon. The Backup Policy Management (Classes) - NetBackup dialog appears.
4. Select a class to back up.



5. On the Class menu, click Manual Backup.

   The Manual Backup dialog box appears.



The Schedule pane contains the name of a schedule configured for the class you are going to test. The Client pane contains the name of the client(s) listed in the class you are going to test.

6. Follow the instructions on the dialog box.

7. Click Activity Monitor on the NetBackup Administration interface to open the Activity Monitor dialog box.

If the test does not exit with a successful status, refer to the Troubleshooting chapter.

Configuring for Multiplexed Backups

When you perform a backup operation in initiator-mode, the number of data streams is specified by the `Tdconfig` file where you launch the backup operation. If the number of datastreams exceeds the number of available drives, then you can multiplex (or interleave) the data streams in order to allow your operations to proceed.

Caution You will generally obtain better performance by avoiding multiplexing if you have multiple tape drives available.

To use multiplexing:

- Set the Maximum MPX Per Drive property in your Backup Policy schedule to the number of backup streams that must be multiplexed.
- Set the MPX property for the storage units which you associate with your Backup Policy schedule to the number of data streams that you plan to interleave.
- Set the Maximum Jobs Per Client property in the NetBackup master and Media servers to at least number of multiplexed data streams.

Create Restore Userids

Teradata requires exclusive usage of userids in order to perform a restore operation. Initiator-mode restores that use multiple Teradata logons require exclusive usage of multiple userids.The userids that NetBackup employs are specified in the `TDconfig` file. (See "TDconfig File" on page 14.) You must create these userids before you can perform a restore. You must also ensure that these userids have the restore privilege for any databases that they may need to restore.

NetBackup for Teradata always uses the restore userids specified in the `TDconfig` file for restore operations. The Teradata password used for the logon, however, is the same password as indicated by the `Arcmain` script.

Consider the following segment from the `TDconfig` file:

```
Datastreams 4
lynx TeradataClass0 lynx 0 UserName1
wolf TeradataClass1 wolf 1 UserName2
boar TeradataClass2 boar 2 UserName3
bear TeradataClass3 bear 3 UserName4
```

There are four clusters with restore userids specified as Username1 to Username4. If the user codes the logon for an `Arcmain` restore script as:

```
LOGON tiger/jimmy,punkin
```

then, during the launch, NetBackup for Teradata generates four scripts, substituting not only the TDPID but the userid as well, creating runtime logons as

```
LOGON lynx/UserName1,punkin
LOGON wolf/UserName2,punkin
LOGON boar/UserName3,punkin
LOGON bear/UserName4,punkin
```


Using NetBackup for Teradata 5

After completing the installation and configuration, you can use the NetBackup Database Extension - Graphical User Interface to start Teradata backups and restores. This GUI runs on the Windows NT host configured as the NetBackup Administration Client for your NetBackup for Teradata installation.

The most convenient way to back up your Teradata databases is to set up Teradata classes and schedules for automatic, unattended backups. To add a new schedule or change an existing schedule for automatic backups, follow the guidelines given in "Add NCR-Teradata Classes to NetBackup" on page 38.

The administrator on the master server can use the NetBackup Administration graphical user interface (`nblaunch` on Windows NT or `xbpadm` on UNIX) to manually execute an Automatic Backup schedule for an Teradata class. See the *NetBackup System Administrator's Guide - Windows NT Server* and the *NetBackup System Administrator's Guide - UNIX* for instructions.

The rest of this chapter describes how to perform user-directed operations for Teradata on a Windows NT client and the NetBackup Administration Client Windows NT host.

You can initiate backups from the NetBackup client using either the command line interface program, `tdbackex`, or the NetBackup for Teradata graphical user interface. Both of these programs are executed from the NetBackup for Teradata on Windows NT Administrative Host. The following sections describe each of these processes in detail.

Note You must have a NetBackup for Teradata on Windows NT Administrative Host whether your platform hosts are Windows NT or UNIX. You can initiate backup or restore operations on either platform from the NetBackup for Windows NT Administrative Host.

Caution The Teradata extension does not handle object names that contain any of the following special characters: space, carrot, period, back slash, and forward slash.

Using tdbackex

Execute tdbackex from a Windows NT MS-DOS prompt on the NetBackup for Teradata Administrative Host.

install_path\NetBackup\bin\tdbackex -f *file* [-np]

Where:

file is the name of a NetBackup batch file [.bch] or Arcmain script [.scr]. Since the batch file and Arcmain scripts are paired, you can specify either one. If the filename does not include a path, then the following is presumed.

install_path\NetBackup\dbext\NCR_Teradata\scripts\

To designate the file, it simplest to specify the simple file name excluding the path and the extension. For example, use

```
tdbackex -f bkup
```

as shorthand for

```
tdbackex -f install_path\NetBackup\dbext\NCR_Teradata\scripts\bkup.bch
```

Note The batch file and Arcmain script must reside on the NetBackup for Teradata Administrative Host.

Using the NetBackup Database Extension - Graphical User Interface

Note The NetBackup for Teradata GUI is executed from the NT Administrative Host.

This section describes how to use the NetBackup Database Extension - Graphical User Interface to perform NetBackup operations on Teradata. It contains the following:

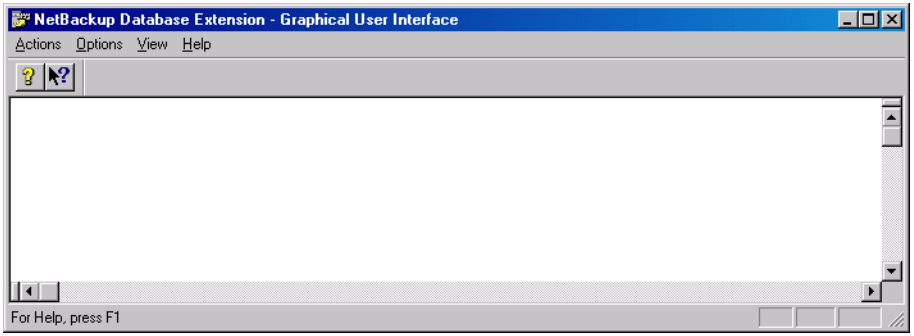
1. Start NetBackup Database Extension - Graphical User Interface
2. Set Database Login Parameters
3. Set NetBackup Client Options
4. Create Scripts
5. Launch Scripts

Start NetBackup Database Extension - Graphical User Interface

1. Log onto the Administrative Host.

   The NetBackup Database Extension - Graphical User Interface is always executed of the NetBackup for Teradata Administrative Host. The Administrative Host is designated in the `TDconfig` file as the ADMINHOST. Refer to "TDconfig File" on page 14 for details.

2. From the Start menu, select Program, NetBackup, then NetBackup NCR Teradata Client. The NetBackup Database Extension - Graphical User Interface will appear.



The NetBackup Database Extension - Graphical User Interface can also be started from a Windows NT MS-DOS prompt as

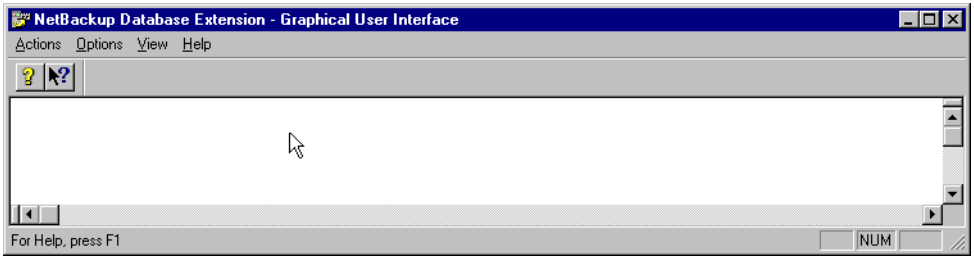
install_path`\NetBackup\bin\dbbackup-teradata`

Set Database Login Parameters

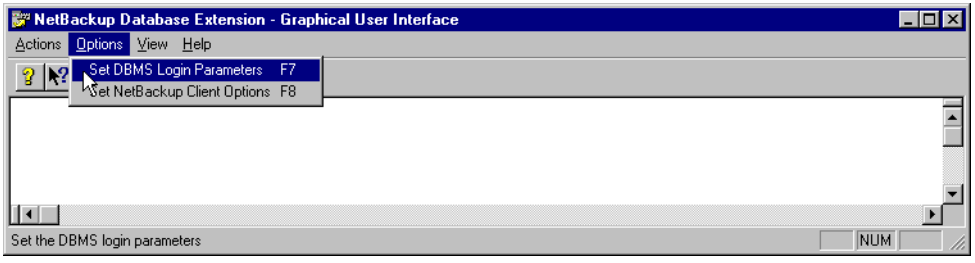
Use this procedure to set the Teradata DBMS login parameters that the NetBackup Database Extension graphical user interface uses when it accesses Teradata. You will set your DBMS userid and password in addition to the ODBC Data Source Name that you want to use.

Note The ODBC Data Source Name is mapped to a Teradata DBMS instance. Therefore choosing a data source name also allows you to choose which database instance you want to work with.

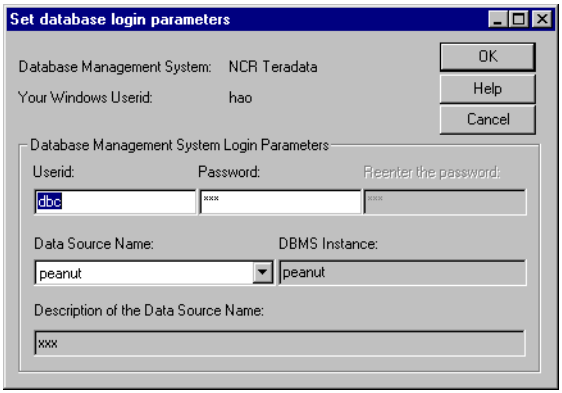
1. From the Start menu, select Program, NetBackup, then NetBackup NCR Teradata Client. The NetBackup Database Extension Graphical User Interface will appear.



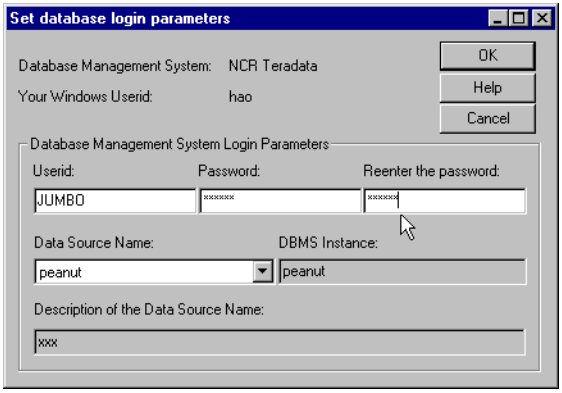
2. On the Options menu select "Set DBMS Login Parameters".



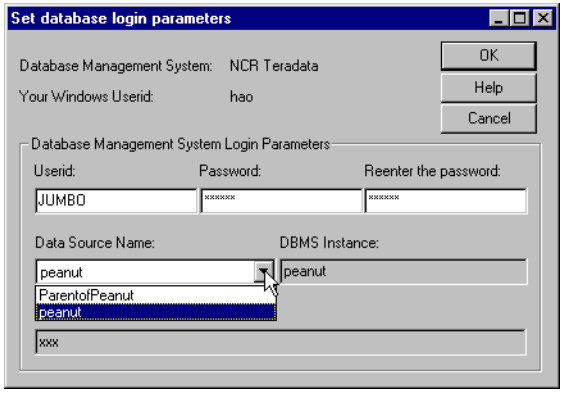
The DBMS Login Parameters dialog box appears.



3. Type a DBMS userid, a DBMS password. Then re-enter the DBMS password.



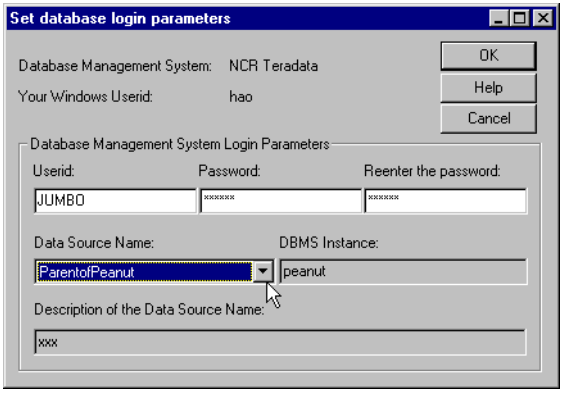
4. To select a data source name, click on the triangle on the right side of the Data Source Name edit list.



The list of available data source names appear.

Note To appear in the list of available data source names, two conditions must obtain: (1) the data source name must be defined as an INSTANCE in the `TDconfig` and (2) the DSN must be defined on the Windows NT machine where the NetBackup for Teradata Administrative Host resides.

5. Click on the one the data source name that you would like to make current.



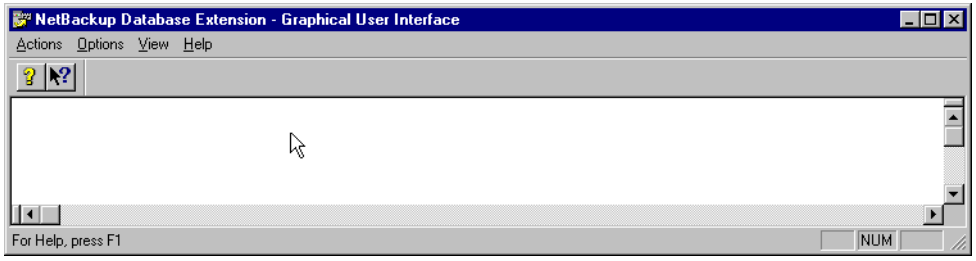
6. Select OK in order to save your changes and close the dialog box.

Set NetBackup Client Options

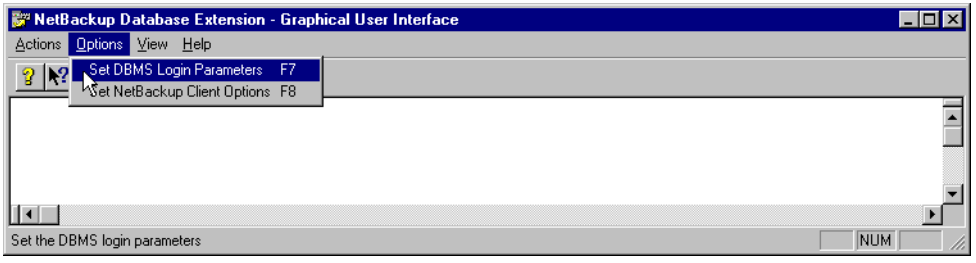
Use this procedure to set the Teradata DBMS login parameters that the NetBackup Database Extension graphical user interface uses when it accesses Teradata. You will set your DBMS userid and password in addition to the ODBC Data Source Name that you want to use.

Note The ODBC Data Source Name is mapped to a Teradata DBMS instance. Therefore choosing a data source name also allows you to choose which database instance you want to work with.

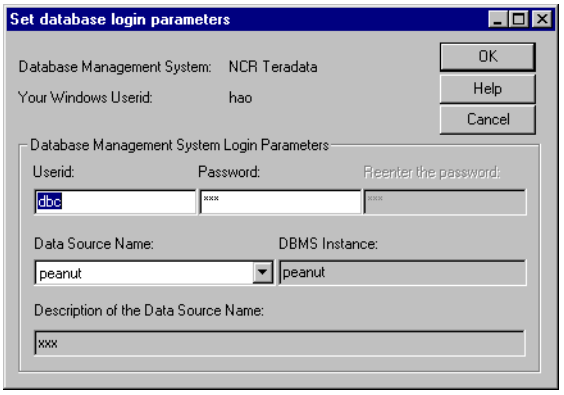
1. From the Start menu, select Program, NetBackup, then NetBackup NCR Teradata Client. The NetBackup Database Extension Graphical User Interface will appear.



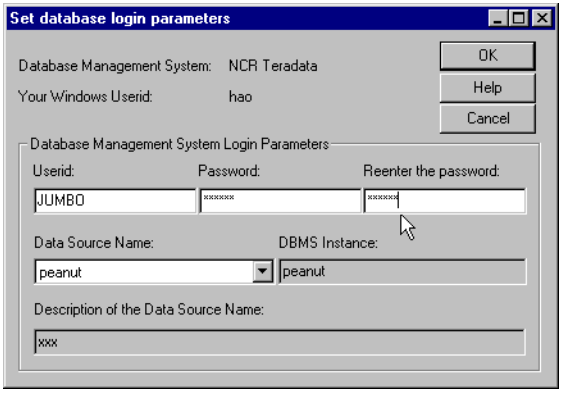
2. On the Options menu select "Set DBMS Login Parameters".



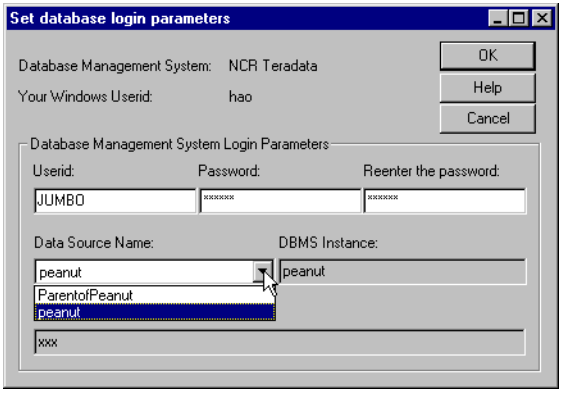
The DBMS Login Parameters dialog box appears.



3. Type a DBMS userid, a DBMS password. Then re-enter the DBMS password.



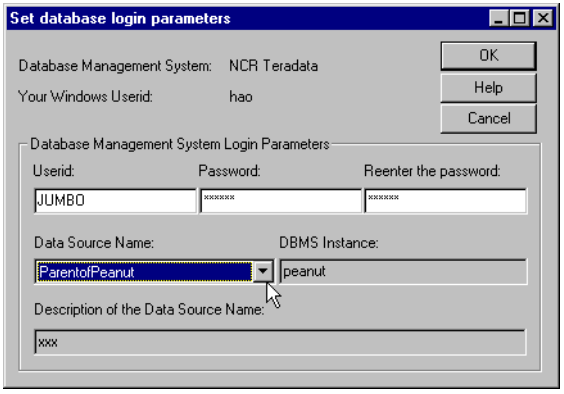
4. To select a data source name, click on the triangle on the right side of the Data Source Name edit list.



The list of available data source names appear.

Note To appear in the list of available data source names, two conditions must obtain: (1) the data source name must be defined as an INSTANCE in the `TDconfig` and (2) the DSN must be defined on the Windows NT machine where the NetBackup for Teradata Administrative Host resides.

5. Click on the one the data source name that you would like to make current.



6. Select OK in order to save your changes and close the dialog box.

Create Scripts

NetBackup Database Extension - Graphical User Interface, which resides on the NetBackup for Teradata Administrative Host, will generate an `Arcmain` script and companion batch file for launching a NetBackup for Teradata operation. The `Arcmain` script is generated by substituting object names into sample script templates. The companion batch file is generated based upon client options selected in the Client Session Options dialog box. Script generation is carried out in the following steps:

1. User selects Teradata objects to backup or restore.

2. User selects script generation parameters.

3. User requests NetBackup Database Extension - Graphical User Interface to generate scripts (`Arcmain` script and batch file) based upon the selections in step 1 and step 2.

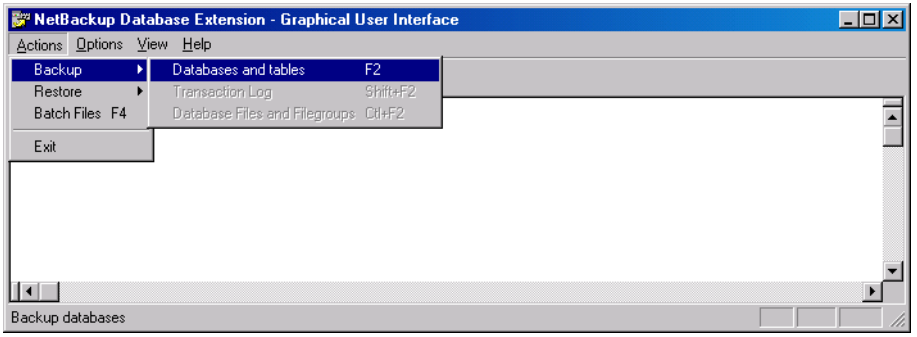
After the scripts have been generated, the user may edit them by hand.

Create Backup Scripts

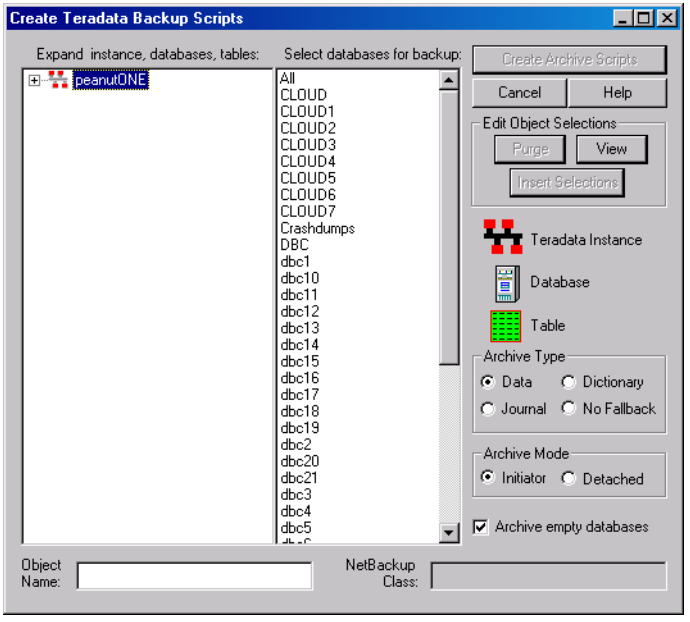
This tutorial contains instructions on creating and launching Teradata backup scripts from the NetBackup Database Extension - Graphical User Interface.

1. Complete the procedure for typing your default login parameters as described in "Set Database Login Parameters" on page 80.

2. On the Actions Menu, click Backup, then Databases and tables.

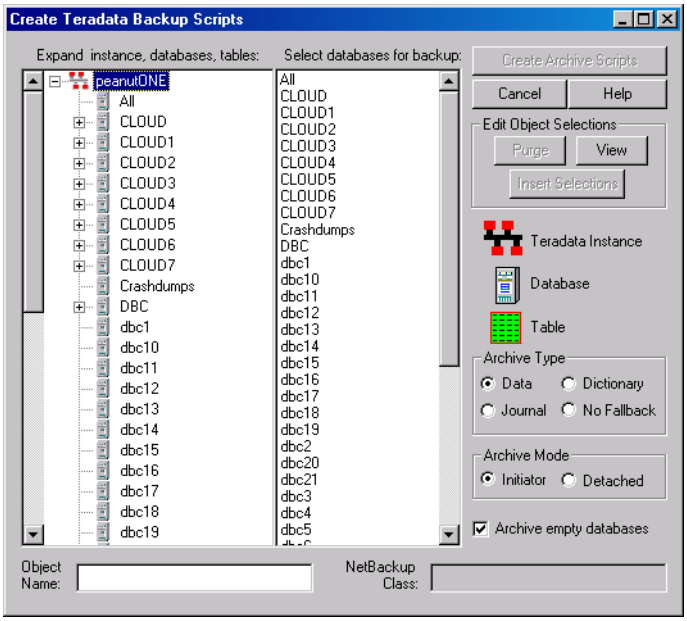


The Create Teradata Backup Scripts dialog box appears.



Notice that a Teradata instance name appears in the right-hand pane as the root level of the object tree. The instance name corresponds with the instance name selected using the Set Database Login Parameters dialog box.

3. Expand the Teradata instance icon by clicking on the + that appears to its left.

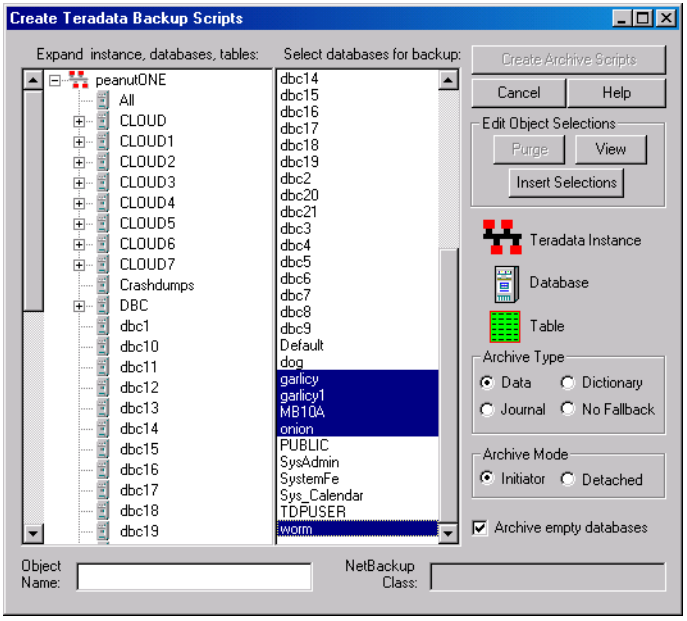


Notice that the object tree is expanded to display all of the databases contained in your Teradata instance. In addition, the right-hand pane contains a list of the database names.

4. Select the databases and/or tables you want to backup.

❖ To select a database to back up...

a. Select the databases in the right-hand pane that you want to include in your backup.

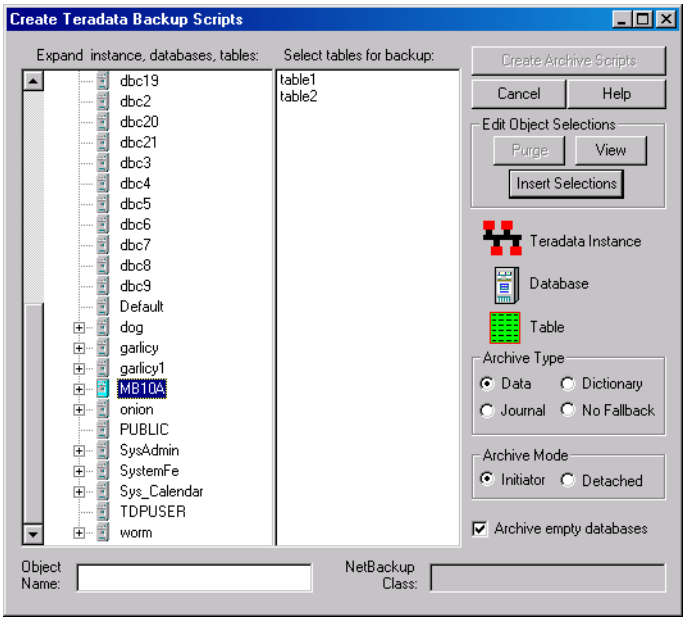


Make your selections using the right mouse button. To include multiple non-consecutive databases hold down the CTL key and continue clicking. To select a range of databases, hold down the shift key and select the first and last one in the range.

b. With the databases still highlighted, click Insert Selections. This will enter your selections into the Database and Table Selection List.

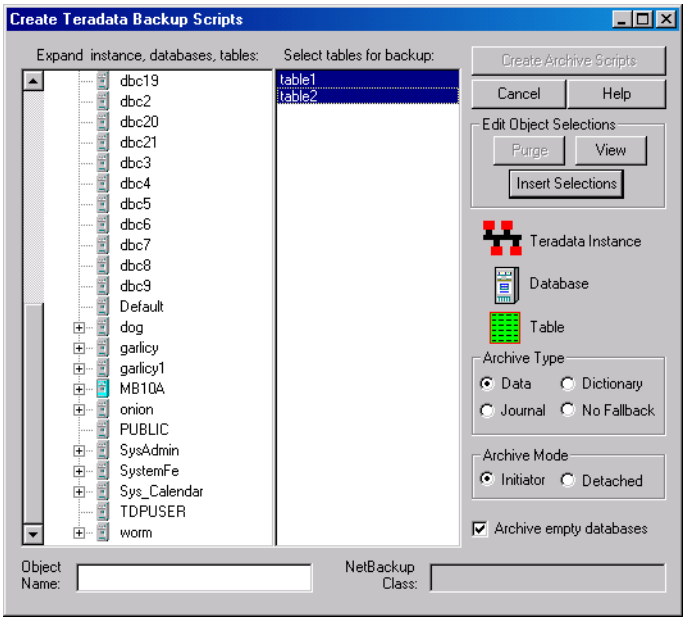
❖ To select an individual table to back up...

a. In the lefthand pane, select the database that has the tables you want to backup.



Notice that the tables contained in the highlighted database now appear in the right-hand pane.

b. Select the tables in the right-hand pane that you want to include in your backup.



c. Click Insert Selections to move the tables into the Database and Table Selection List.

5. To view the selections that you have made to the Database and Table Selection List.

a. Click View in the Create Teradata Backup Scripts dialog box. The Database and Table Selection List pops up.

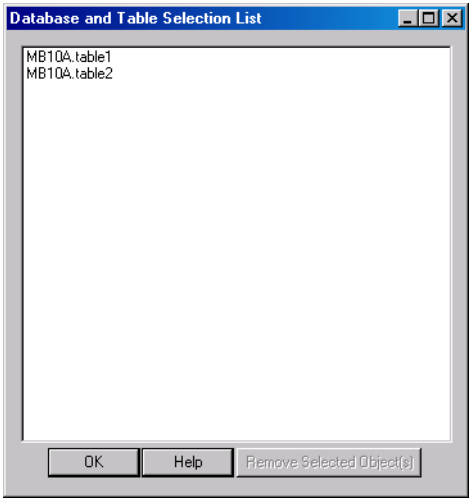


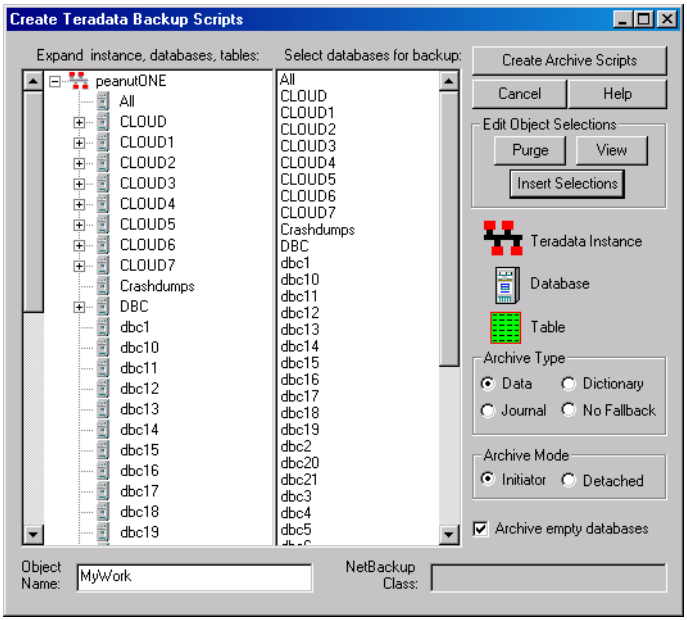
Table entries in the Database and Table Selection List use the format *database*.*table*. Database entries are simple names.

Note If you enter a database into the Database and Table Selection List in addition to a table contained in the same database, only the database name will appear.

- You can continue to insert more databases and tables into the Database and Table Selection List from the Create Teradata Backup Scripts dialog box.
- You can remove items from the Database and Table Selection List by highlighting them and clicking Remove Selected Object(s).

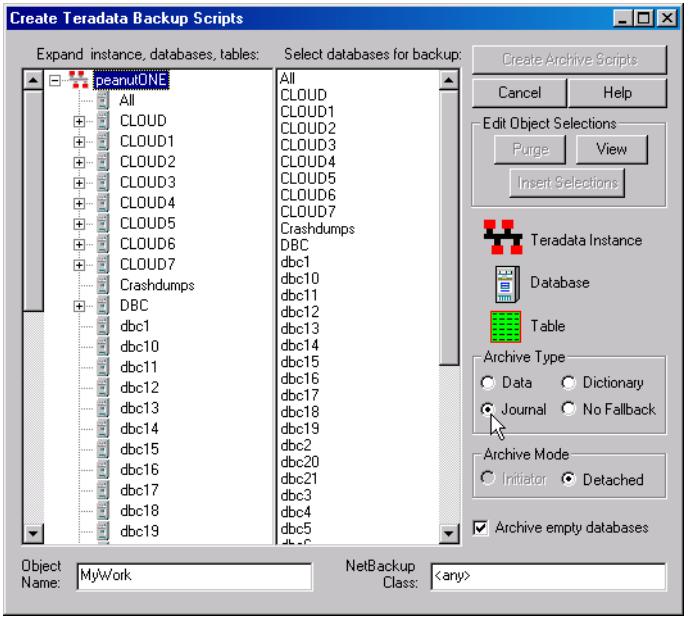
b. Click OK to close the Database and Table Selection List.

6. Type an object name to identify the items to be contained in the backup image.



The object name is used by the NetBackup Database Extension - Graphical User Interface to organize backup images for convenient browsing.

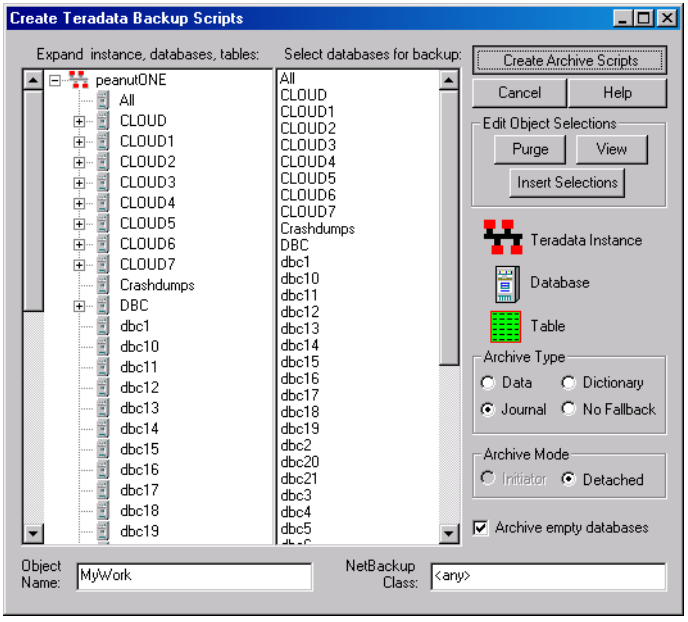
7. Use the Archive Type and Archive Mode radio groups to select the type and mode of your operation.



If you choose Data, then you can choose either initiator or detached mode.

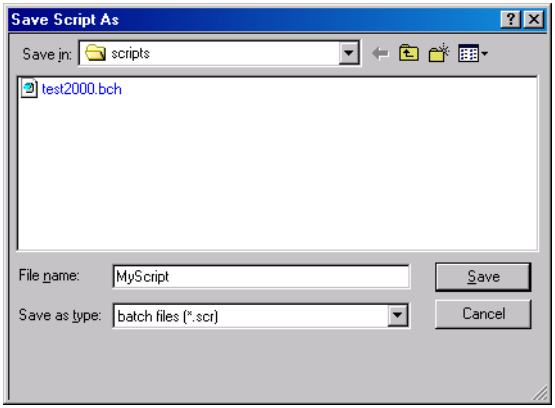
If you choose Journal, Dictionary, or No Fallback, then detached mode is your only option.

8. Click Create Archive Scripts to generate the paired batch file and `Arcmain` script.



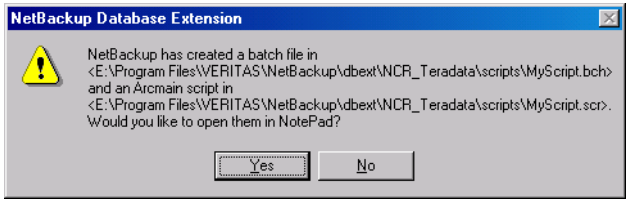
The Save Scripts As dialog box will appear.

a. Type the filename that you would like the paired batch file and `Arcmain` script to be written to. For this tutorial, we will use `MyWorkScript`.



Notice that a simple name is entered without an extension.

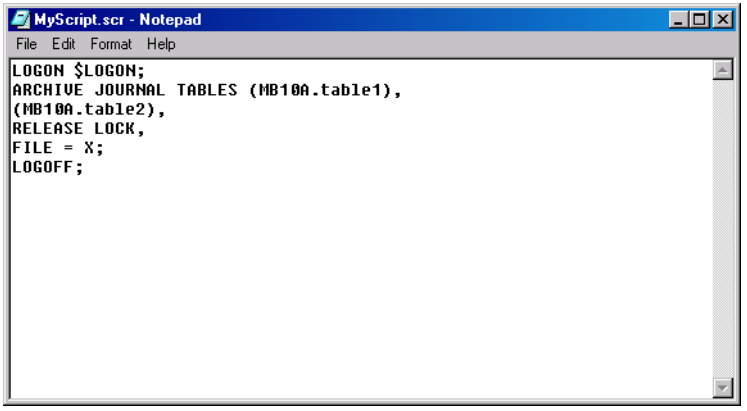
b. Click Save. A message box appears asking you whether you would like to open the batch file and `Arcmain` script in Notepad.



If you *do not* want to view or modify the script, click NO, then go to step 9.

If you want to view or modify the script, go to the next step.

c. Click Yes. The scripts open.



You can modify the script in Notepad if needed.

The logon lines in the generated `Arcmain` script as

`LOGON` *tdpid*/*userid*,*password*

The TDPID is the one specified in the `TDconfig` file corresponding to the NetBackup for Teradata Administrative Host name. The userid and password are those designated in the "Set Database Login Parameters" on page 80.

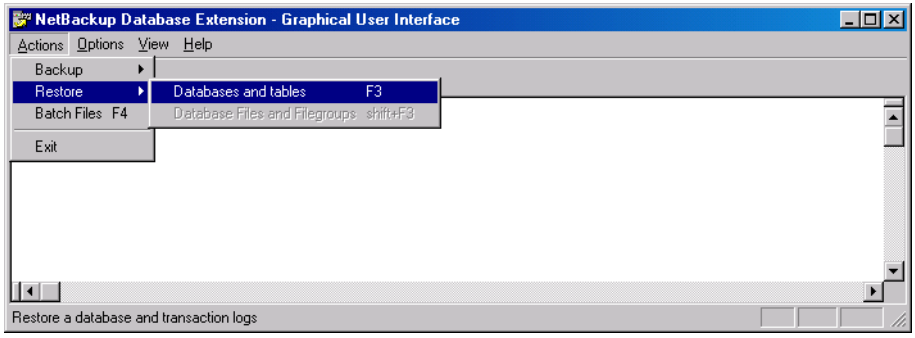
9. Go to "Launch Scripts" on page 104 to launch the scripts that you just created.

Create Restore Scripts

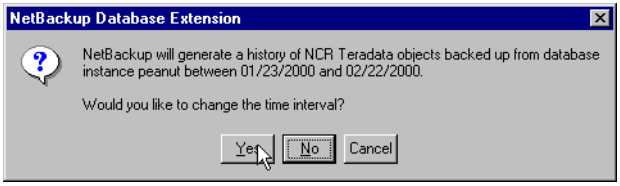
This tutorial contains instructions on creating and launching Teradata restore scripts from the NetBackup Database Extension - Graphical User Interface.

1. Complete the procedure for typing your default login parameters as described in “Set Database Login Parameters” on page 80.

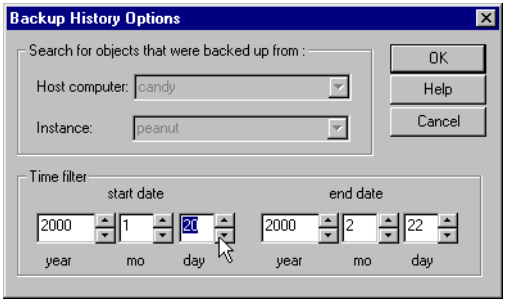
2. On the Actions Menu, click Restore, then Databases and tables.



A NetBackup Database Extension message box appears.

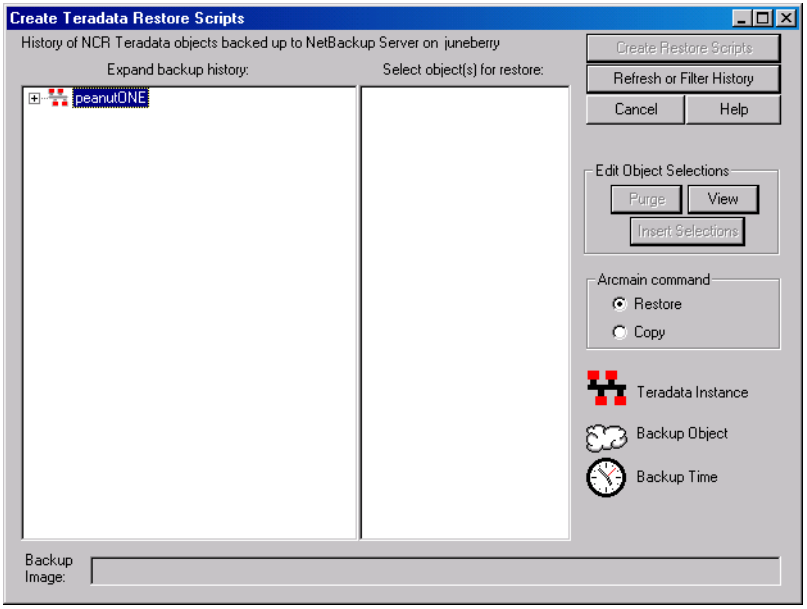


3. Click Yes. The Backup History Options dialog box will appear.



This dialog box controls the parameters used to browse backups.

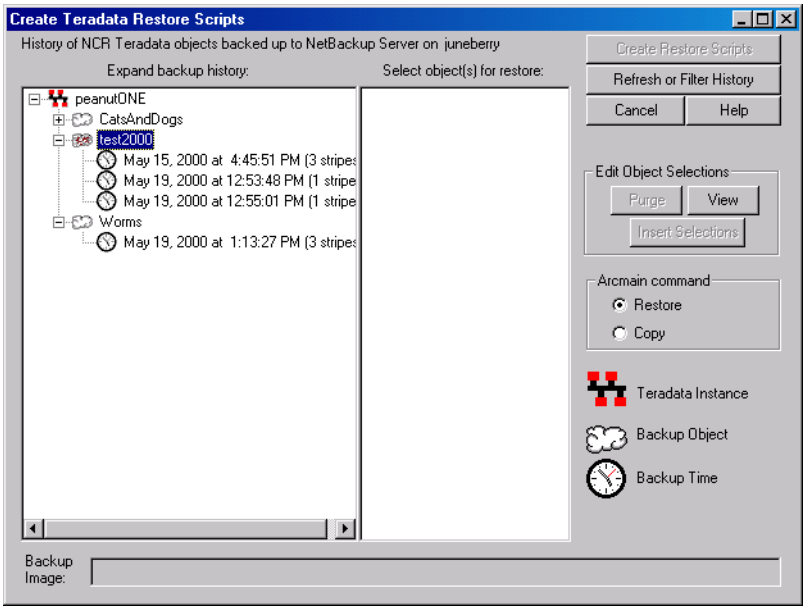
4. Click OK from the Backup History Options dialog box. The Create Teradata Restore Scripts dialog box appears.



Notice that your Teradata instance name appears as the root host of an image tree in the left-hand pane. The instance name is identical to the instance name identified in your `TDconfig` file.

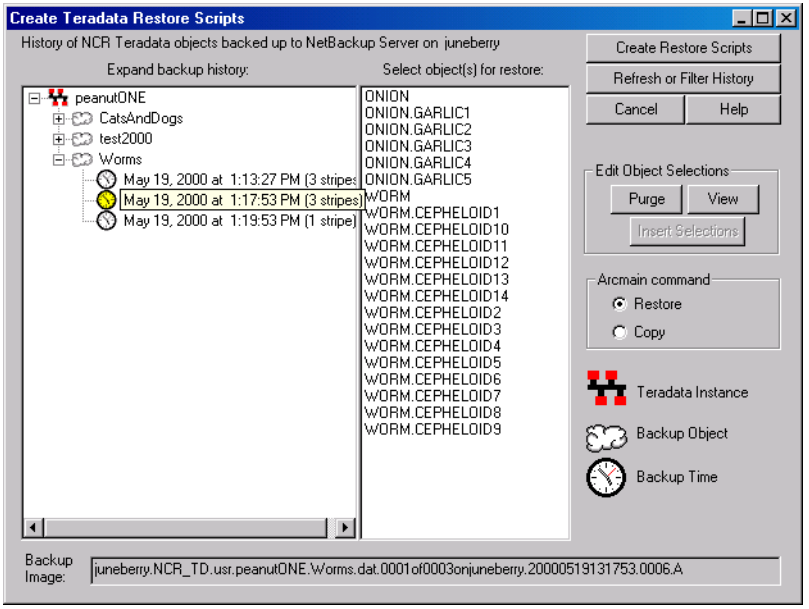
5. Select the databases and/or tables you want to back up.

a. Expand the backup history tree by clicking on the + that appears to the left of the icon.



The history tree can be expanded to display backup objects and backup times for those objects.

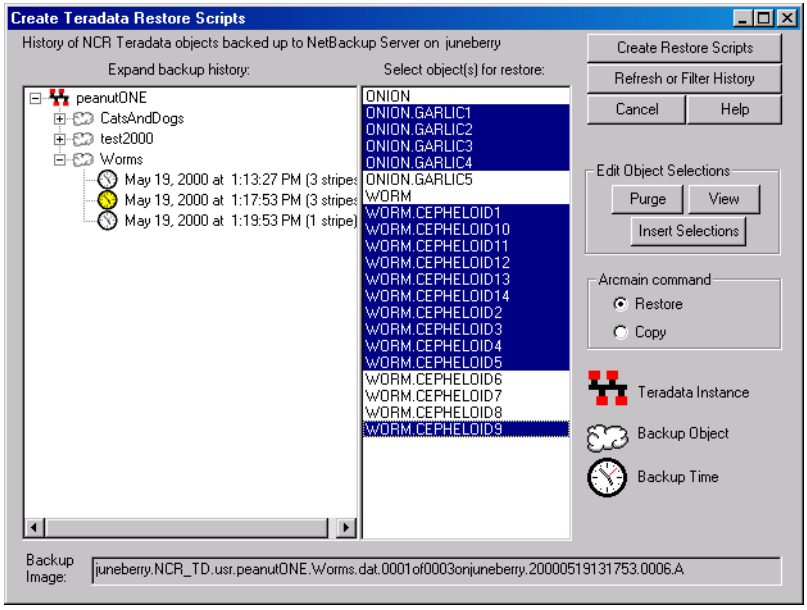
b. Select a backup time icon.



The databases and tables contained in the object at that backup time are displayed in the righthand pane.

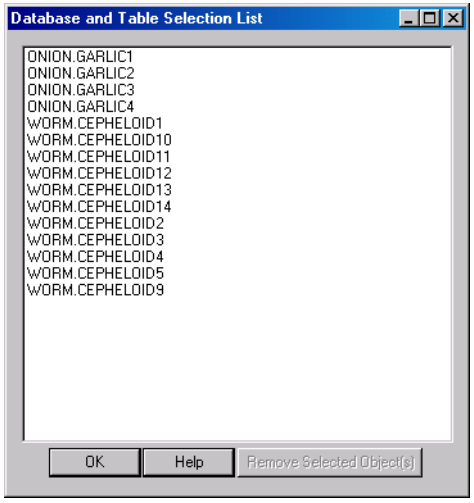
c. Select the databases and tables displayed in the righthand screen that you would like to include in your restore script.

d. Click Insert Selections to insert the databases and tables into the Database and Table Selection List.



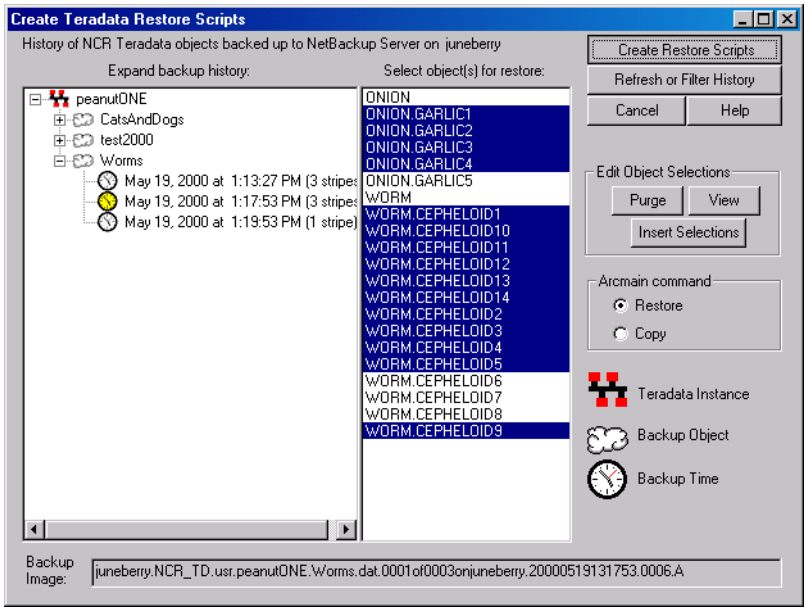
6. To view the selections that you have made to the Database and Table Selection List.

a. Click View in the Create Teradata Backup Scripts dialog box. The Database and Table Selection List pops up.



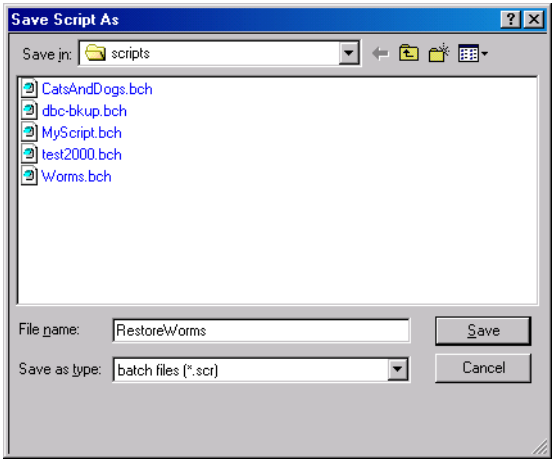
b. Click OK to close the Database and Table Selection List.

7. Click Create Restore Scripts to generate the paired batch file and `Arcmain` script.



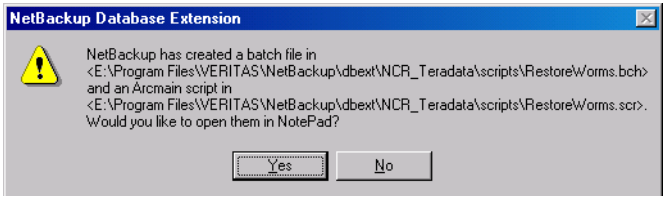
The Save Scripts As dialog box will appear.

a. Type the filename that you would like the paired batch file and `Arcmain` script to be written to. For this tutorial we will use rest-init.

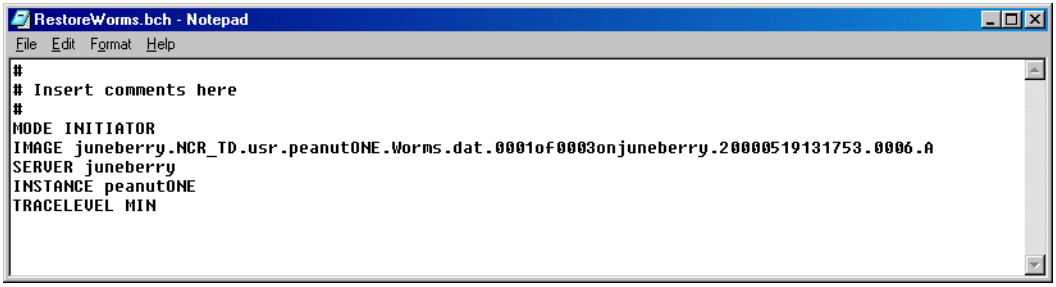


Notice that a simple name is entered without an extension.

b. Click Save. A message box appears asking you whether you would like to open the batch file/`Arcmain` script in Notepad.



c. Click Yes. The scripts open.



You can modify the script in Notepad if needed.

The logon lines in the generated `Arcmain` script as

`LOGON` *tdpid*/*userid*,*password*

The TDPID is the one specified in the `TDconfig` file corresponding to the Administrative Host name. The userid and password are those designated in the "Set Database Login Parameters" on page 80.

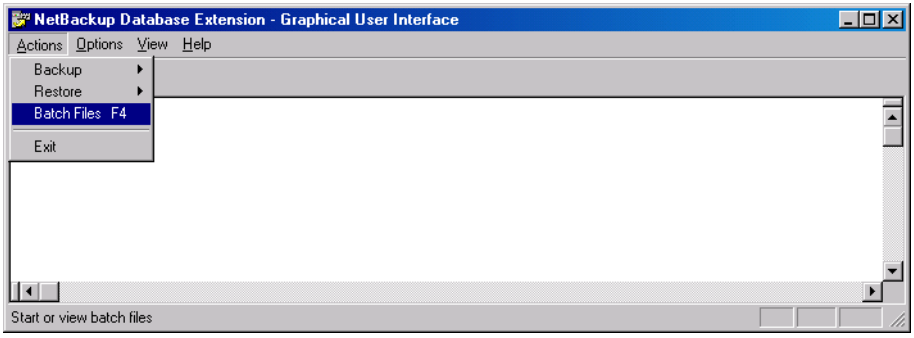
8. Go to "Launch Scripts" on page 104 to launch the scripts that you just created.

Launch Scripts

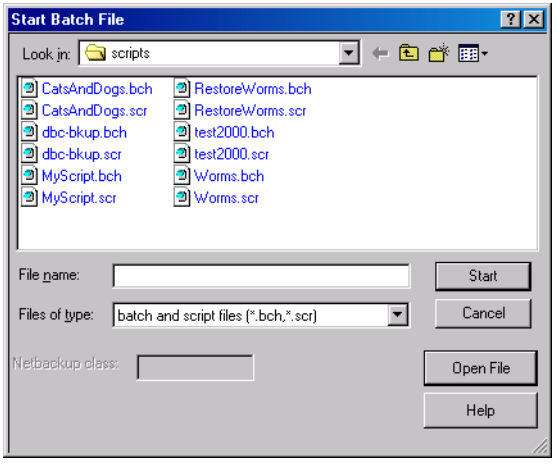
After you have created a paired `Arcmain` script/batch file, use the following procedure to launch Teradata backup or restore operations from the NetBackup Database Extension - Graphical User Interface.

1. Complete the procedure for typing your default login parameters as described in "Set Database Login Parameters" on page 80.

2. On the Actions Menu, click Batch Files.

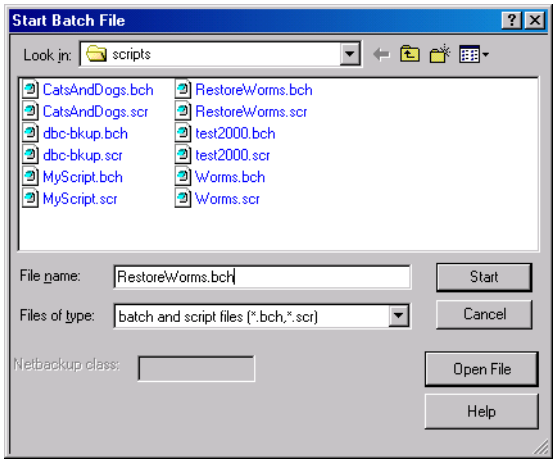


The following dialog box appears.

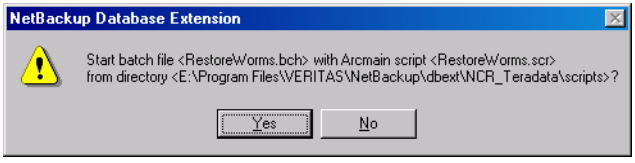


3. Double click a batch file from the list. The name of the file will appear in the File Name: box.

Note You can click either a `.bch` file or its paired `.scr` file, in order to launch the operation that is associated with the `Arcmain` script/batch file pair.

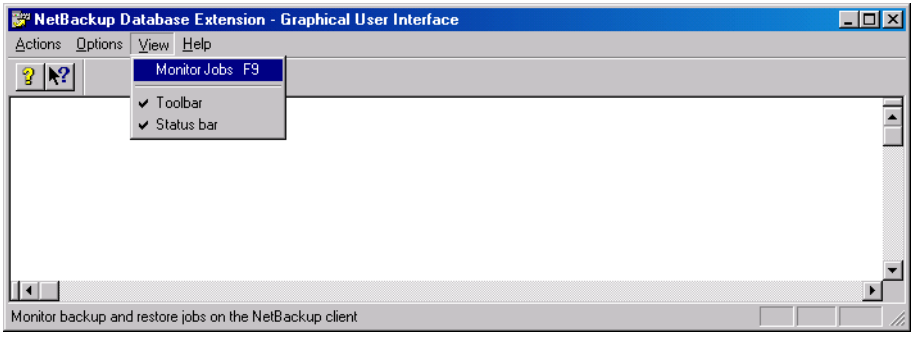


4. Click Start. The following appears.

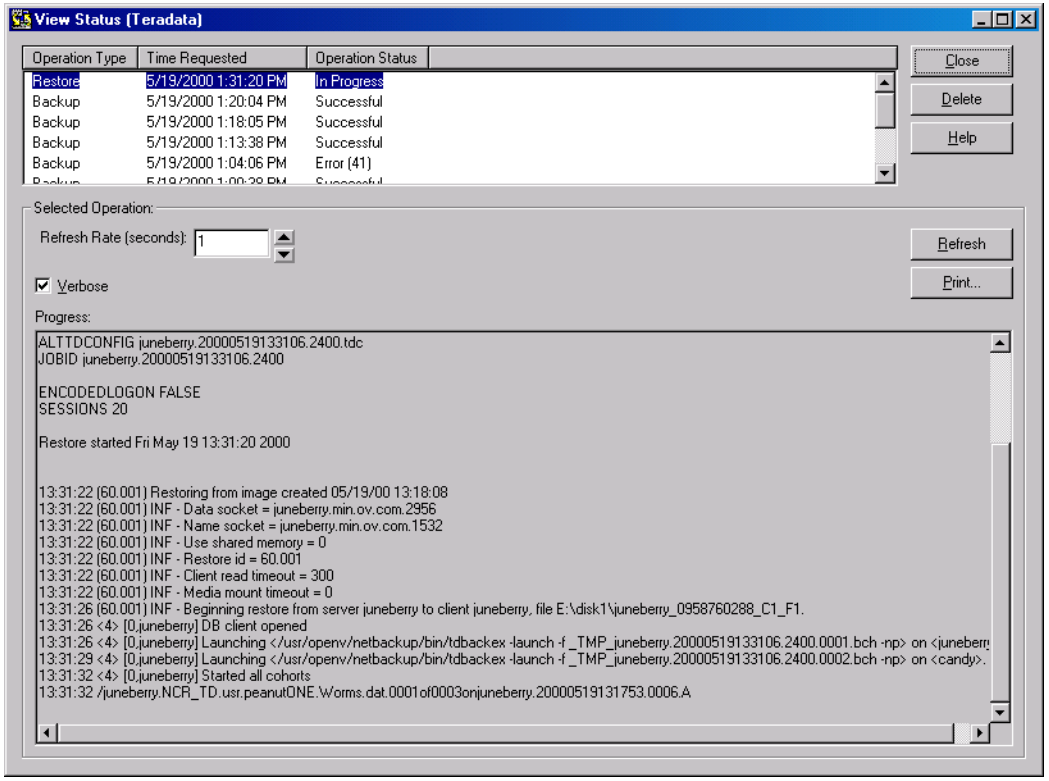


5. Click Yes.

6. On the View Menu, select Monitor Jobs.



The View Status (Teradata) dialog box will appear.



Use this display to monitor the progress of your launch.

Using Script and Batch Files

Every backup or restore operation that is initiated uses NetBackup for Teradata paired scripts. One script is an NCR Teradata `Arcmain` script and the second is a NetBackup batch file on the NetBackup for Teradata Administrative Host. The paired scripts must be in the same folder and must have the same name. Their names are distinguished only by the extensions. The `Arcmain` script member uses a `.scr` extension whereas the batch file uses `.bch`. An example of a valid pair is

```
C:\Program Files\VERITAS\NetBackup\dbext\NCR_Teradata\scripts\NightlyBackup.scr
C:\Program Files\VERITAS\NetBackup\dbext\NCR_Teradata\scripts\NightlyBackup.bch
```

To launch a backup or restore job, from the NetBackup Database Extension - Graphical User Interface, from the `tdbackex` command line, or from the NetBackup Scheduler, you can specify either the non-extended filename (`NightlyBackup`), the filename with the script extension (`NightlyBackup.scr`), or the filename with the batch extension (`NightlyBackup.bch`).

If you store your NetBackup for Teradata paired scripts in *install_path*`\dbext\NCR_Teradata\scripts`, you get the following benefits:

Note *install_path* refers to the folder where you installed NetBackup software. By default this folder is `C:\Program Files\VERITAS\NetBackup\`.

- When you open the Start Batch File dialog box from the NetBackup Database Extension - Graphical User Interface, icons for your scripts will appear immediately in the display window.
- When you launch a job from the `tdbackex` command line interface, you only need to specify the simple name, not the full path.
- When you specify a batch file or script in the script list of an `NCR_Teradata` class, you only need to specify the simple name, not the full path.

`Arcmain` Script File

The `Arcmain` script that you use for a NetBackup for Teradata operation must have an `.scr` extension and should be contained in the NetBackup for Teradata scripts directory. It specifies the `Arcmain`/Teradata parameters. These parameters include:

- operation type (backup/restore/copy),
- backup objects (databases, tables)
- optional cluster ID
- lock/unlock directive
- the Teradata login userid and password (optional)

For a full description of the syntax used in an `Arcmain` script, see *Teradata ®Archive/Recovery Reference B035-2412*.

NetBackup Batch File

NetBackup for Teradata uses a batch file, which you create, to describe the NetBackup-specific parameters of a single backup or restore operation.

The information in the `.bch` file includes:

- the name of the user defined object backed up (for backups)
- the image name (for restores)
- NetBackup class and/or schedule (for backups only, optional)

Teradata allows the user to specify the set of tables and databases to be backed up as a single unit. This set constitutes a single user-defined NetBackup object. On backups, the user names the object, which is specified in the `.bch` file. It is further noted, that NetBackup for Teradata uses the object name, together with additional information to formulate the image name under which the backup object is stored. For restores, the `.bch` file is required to specify the generated image which contains the backup data for the indicated Teradata objects.

If the batch file specifies `MODE INITIATOR`, then the backup or restore operation will actually be split into multiple component streams based upon the Teradata cluster configuration; however, you will still supply only a single batch file/`Arcmain` script pair.

Use a pound sign (#) in column 1 to designate a comment line.

Keep in mind the following rules about forming a NetBackup for Teradata batch file.

- Only one operation is specified in a batch file.
- A batch file consists of a series of *keyword, value* pairs.
- The keyword is not case sensitive; but the value is.

The following describes the keywords and values used in a batch file.

Keyword	Values	Required	Default	Description
ARCOPTIONS	String	No	None	Use ARCOPTIONS to extend the Arcmain command line generated by NetBackup for Teradata.
DSN	String	No	*	The ODBC data source name to use for accessing Teradata.
INSTANCE	String	No	*	The Teradata instance on which to perform the current operation.
LAUNCHFROM	String	No	None	Use this parameter for any detached mode operation to designate which Teradata host to the operation should run
NBIMAGE	String	Yes, for restore. Do not use for backup	None	NetBackup for Teradata backup image name.
MODE	DETACHED, INITIATOR	No	DETACHED	Operation mode. Initiator mode may not be specified for dictionary, journal, or no fallback operations.
NBCLASS	String	Optional for detached backup mode. Do not use for restore or backup initiator mode.	None	NetBackup class name
NBSCHED	String	No	None	Alternate backup policy schedule.
OBJECT	String	Yes, for backup. Do not use for restore.	None	User name for backup set.
SESSIONS	Integer	No	None	Number of Arcmain sessions.
TRACELEVEL	MIN, MID, MAX	No	MIN	NetBackup client trace level.

* The default used for INSTANCE and DSN are the values specified for the current NT Windows account via the DBMS Login Parameters dialog box on the NetBackup for Teradata Graphical User Interface.

Sample `Arcmain` Script/Batch File Pairs

Caution The NCR Teradata product uses the term archive as a synonym for backup. In NetBackup the term archive means a special type of backup in which the original backup object is deleted.

Note The archive and restore statements, which are used in the `Arcmain` scripts, must contain the `FILE = name` clause. The name specified, however, is not used in the context of NetBackup for Teradata operations. Thus, to satisfy the syntactical requirement the script generator specifies this clause as `FILE = X`. This practice is also followed in the ongoing discussion.

Sample 1 - Detached mode backup

Batch File

```
#
# Detached mode backup of a database.
#
MODE DETACHED
OBJECT bk-detached
```

`Arcmain` Script

```
LOGON candy/DBC,DBC;
ARCHIVE DATA TABLES (SEMPLE) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Sample 2 - Detached mode restore

Batch File

```
#
# Detached mode restore of a single table.
# This table was contained in the backup object, named bk-detached.
#
MODE DETACHED
NBIMAGE ed.NCR_TD.usr.dog.bk-detached.dat.0001of0001oned.19990618170242.0000.A
TRACELEVEL MIN
```

`Arcmain` Script

```
LOGON candy/DBC,DBC;
RESTORE DATA TABLES (SEMPLE.table1),
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Sample 3 - Dictionary backup

Batch File

```
#
# Dictionary backup of a database and an additional table.
# A dictionary mode backup must be performed in detached mode.
#
MODE DETACHED
OBJECT DctObj
```

Arcmain Script

```
LOGON candy/DBC,DBC;
ARCHIVE DICTIONARY TABLES (dog.cat1),
(Acctg) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Sample 4 - Initiator mode backup

Batch File

```
#
# Initiator mode backup of a database and an additional table.
#
MODE INITIATOR
OBJECT bkup-init
```

Arcmain Script

```
LOGON candy/DBC,DBC;
ARCHIVE DATA TABLES (dog.cat1),
(Acctg) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Tip Always precede any initiator mode backup with a dictionary backup. You must restore the dictionary before restoring databases and tables from an initiator mode backup.

Sample 5 - Restoring a Dictionary

Batch File

```
#
# The dictionary is backed up and restored in detached mode.
#
MODE DETACHED
IMAGE ed.NCR_TD.usr.dog. DctObj.dct.0001of0001ontiger.19990627075040.0000.A
```


```
LOGON candy/DBC,DBC;
RESTORE DICTIONARY TABLES (Acctg) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Sample 6 - Initiator Mode restore

Batch File

```
#
# Initiator mode restore of database.
#
MODE INITIATOR
IMAGE ed.NCR_TD.usr.dog.bk-init.dat.0002of0005ontiger.19990627075040.0000.A
TRACELEVEL MIN
```

Note In an initiator mode backup, multiple database images are generated, which are distinguished by the 'stream iteration field' (i.e., 0001of0005, 0002of0005, etc.). You can specify any one of the generated image names in the batch file, with the same results.

`Arcmain` Script

```
LOGON candy/DBC,DBC;
RESTORE DATA TABLES (Acctg) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Sample 7 - Restore a single cluster from an initiator-mode backup

Batch File

```
#
# Use detached mode to perform the single cluster restore
#
MODE DETACHED
IMAGE ed.NCR_TD.usr.dog.bk-init.dat.0001of0005on tiger.19990627075040.0000.A
TRACELEVEL MIN
```

Note To restore a single cluster from an initiator mode backup, you must specify detached mode; and you must specify the precise image name that you wish to restore.

`Arcmain` Script

```
LOGON candy/DBC,DBC;
RESTORE DATA TABLES (Acctg) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Sample 8 - Use an encoded logon to perform a backup

Batch File

```
#
# Perform an initiator mode.
#
MODE INITIATOR
OBJECT bkup-init
```

`Arcmain` Script

```
LOGON candy/DBC,DBC
ARCHIVE DATA TABLES (dog.cat1),
(Acctg) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Using bplist to Retrieve NCR-Teradata Backups

This section describes how to use the bplist command to obtain NetBackup for Teradata restore images. See the *NetBackup System Administrator's Guide - UNIX* or the *NetBackup System Administrator's Guide - Windows NT Server* for general information about bplist. To extract all of the NetBackup for Teradata backups from a specific server for a specific client, execute the following command from the MS-DOS prompt.

install_path`\NetBackup\bin\bplist -C` *client* `-t 26 -S` *server* `-R \`

where *client* is the host machine on which NetBackup for Teradata resides and *server* is the host machine of NetBackup server.

The following example shows how to obtain the list of Teradata backups backed up from client owl to server owl:

```
owl.NCR_TD.usr.tiger.bkup-init.dat.0002of0002onowl.0006.19990616170918.A:\
owl.NCR_TD.usr.tiger.bkup-init.dat.0001of0002onowl.0006.19990616170918.A:\
owl.NCR_TD.usr.tiger.empty-bk.dat.0001of0002onowl.0006.19990616134755.A:\
owl.NCR_TD.usr.tiger.empty-bk.dat.0002of0002onowl.0006.19990616134306.A:\
owl.NCR_TD.usr.tiger.empty-bk.dat.0002of0002onowl.0006.19990616133103.A:\
owl.NCR_TD.usr.tiger.empty-bk.dat.0001of0002onowl.0006.19990616133103.A:\
owl.NCR_TD.usr.tiger.bkup-init.dat.0002of0002onowl.0006.19990616103409.A:\
owl.NCR_TD.usr.tiger.dogs.nof.0001of0001onowl.0000.19990615100309.A:\
owl.NCR_TD.usr.tiger.dogJRNL.dct.0001of0001onowl.0000.19990614112803.A:\
owl.NCR_TD.usr.tiger.bkjournaltest.jrn.0001of0001onowl.0000.19990614112350.A:\
```


Note The colon and backslash, which terminate each line, are not part of the backup name.

Backup Name Syntax

The backup name is a string consisting of the following components, separated by periods:

1. The Teradata initiator host name.
2. The database management system name, NCR_TD, which stands for NCR Teradata
3. The object type, `usr`, which stands for user object.
4. The Teradata instance name as specified by the `TDconfig` file.
5. The user name for the backed up object.
6. The backup type,
   a. `dat` for data
   b. `dct` for dictionary
   c. `jrn` for journal
   d. `nof` for no fallback
7. Backup stripe property, specified as *stream number* of *total streams* on *clientname*.
8. The total number of clusters backed up.
9. The timestamp in `YYYYMMDDHHMMSS`.
10. Version indicator for Teradata. `A` indicates that the image was created by version 3.2.

Example 1 - Initiator-mode backup

`TDconfig` file

```
Instance peanut
Adminhost rat nt
ARCPATH candy '/usr/bin/'
ARCPATH owl '/usr/bin/'
ARCPATH fox '/usr/bin/'
ARCPATH camel '/usr/bin/'
clusters 8
sessions 12
datastreams 4
```


```
owl unix Teradata2 candy 0 DBC2
candy unix Teradata4 candy 1 DBC4
fox unix Teradata1 candy 2 DBC6
camel unix Teradata3 candy 3 DBC7
```

`Arcmain` Script

```
LOGON candy/DBC,DBC;
ARCHIVE DATA TABLES (mb10a) ALL,
(MB10A) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Batch File

```
MODE INITIATOR
OBJECT bk-init
TRACELEVEL MIN
```

Since the batch file designates initiator mode and 4 datastreams are specified in the `TDconfig` file, 4 backup images will be generated. Since there are 8 clusters, each image backs up 2 clusters. Since host owl is designated first in the `TDconfig` file, the backup operation is ported to owl. Owl co-ordinates the overall operation. As the initiator, the host name owl occupies the first field in each of the four backup images generated.

The backup image, containing the back up data from Teradata clusters 0 and 1, generated on owl is named:

```
owl.NCR_TD.usr.peanut.bkup-init.dat.0001of0004onowl.0008.19990616103409.A:\
```

The next two clusters (2 and 3) are backed up on candy, using a backup image which is named:

```
owl.NCR_TD.usr.peanut.bkup-init.dat.0002of0004oncandy.0008.19990616103409.A:\
```

The two remaining backup images, which back up data for clusters 4 and 5, and 6 and 7, are executed on fox and camel. The images are named:

```
owl.NCR_TD.usr.peanut.bkup-init.dat.0003of0004onfox.0008.19990616103409.A:\
owl.NCR_TD.usr.peanut.bkup-init.dat.0004of0004oncamel.0008.19990616103409.A:\
```

Example 2 - Detached-mode backup

`TDconfig` file - same as Sample 1.

`Arcmain` Script

```
LOGON owl/DBC,DBC;
ARCHIVE DATA TABLES (mb10a) ALL,
(MB10A) ALL,
```

```
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Batch File

```
MODE DETACHED
OBJECT bk-detached
TRACELEVEL MIN
```

Only a single image is generated for any detached mode operation. The operation is executed on the host on which it was launched unless that host is not listed as a data stream coordinator in the `TDconfig` file. Assuming that the above script set is launched from rat (the Administrative Host), then it will execute on the owl, since rat is not a data stream coordinator and owl is the first host listed in the data stream coordinator list. The image generated is named:

```
owl.NCR_TD.usr.peanut.bk-detached.dat.0001of0001onowl.0000.19990616103409.A:\
```

Example 3 - Dictionary backup

`TDconfig` file - same as Sample 1.

`Arcmain` Script

```
LOGON owl/DBC,DBC;
ARCHIVE DICTIONARY TABLES (mb10a) ALL,
(MB10A) ALL,
RELEASE LOCK,
FILE = X;
LOGOFF;
```

Batch File

```
MODE DETACHED
OBJECT bk-dict
TRACELEVEL MIN
```

Dictionary, no-fallback, and journal backups must be run in detached mode. Thus the image name generated for this example would appear as:

```
owl.NCR_TD.usr.peanut.bk-dict.dct.0001of0001onowl.0000.19990616103409.A:\
```


Troubleshooting 6

This section contains information on the following troubleshooting tools:

- Technical Overview of NetBackup for Teradata
- Progress Reports Created for NetBackup for Teradata
- NetBackup for Teradata Logs
- NetBackup Activity Logs
- NetBackup Logs

Caution The Teradata extension does not handle object names that contain any of the following special characters: space, carrot, period, back slash, and forward slash.

Technical Overview of NetBackup for Teradata

A NetBackup for Teradata backup or restore operation is invoked by the command-line program `tdbackex`. `tbackex` can be invoked directly by the user, through the NetBackup scheduler, or by the NetBackup Database Extension - Graphical User Interface. `tbackex`, in turn, calls the Teradata backup utility `Arcmain`. `Arcmain` uses the Teradata Client Access Module API to issue a series of Access Module calls to the NetBackup for Teradata module, `tdbackmain`. `tdbackmain` is dynamically linked to `Arcmain`. These Access Module calls guide the flow of backup and restore operations through `tdbackmain` to the NetBackup database client component, `dbclient`, and ultimately to the NetBackup Server. For example, to back up a Teradata database to the NetBackup server, the `Arcmain` utility would issue the following requests to `tdbackmain`:

1. `PmiPIDMOptInit` - Tells the backup agent what type of request is being made. Also, provides NetBackup with user information about the request.

2. `PmiPIDMOptOpen` - Requests the backup agent to open resources for the impending operation.

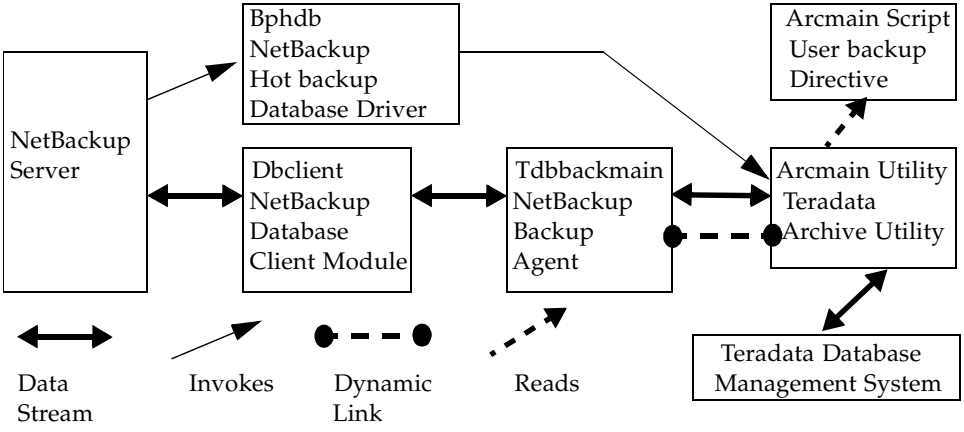
3. `PmiPIDMOptWrite` - One block of data is passed from the `Arcmain` utility to the backup agent. Repeated until all data has been passed.

4. `PmiPIDMOptClose` - Requests the backup agent to close the resources its resources.

5. `PmiPIDMOptShut` - Tells the backup agent to shut down the interface.

Architecture

The following diagram illustrates the overall NetBackup database client architecture that supports Teradata.



NetBackup Client

NetBackup for Teradata achieves optimal performance by generating parallel data streams on multiple hosts. The `TDconfig` file identifies the hosts on which each datastream is generated and it partitions the clusters evenly among the data streams. Both the `Arcmain` utility and NetBackup for Teradata must be installed on each of the on hosts which manage data streams in a backup or restore operation.

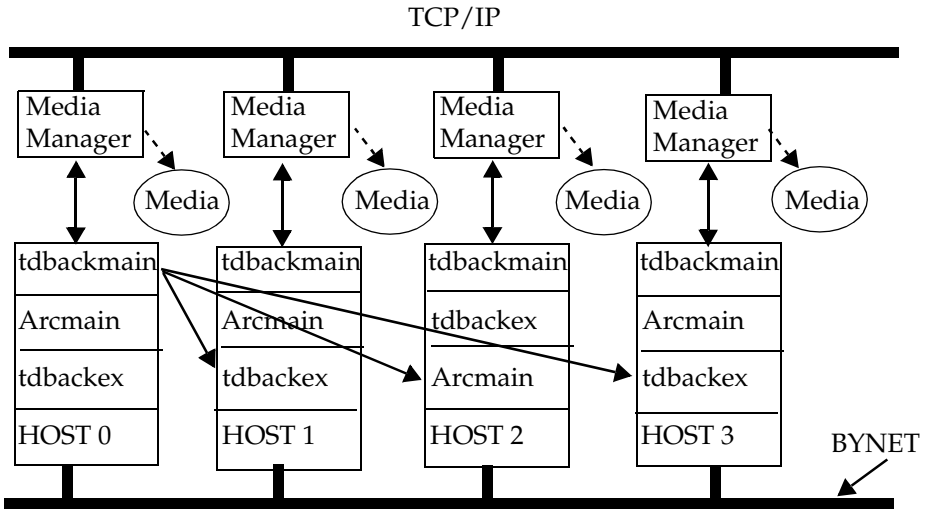
The end-user has single-point control to launch a backup or restore operation on any one of the cluster masters by invoking the local `Arcmain` utility. The NetBackup Database Extension - Graphical User Interface on the initiating host starts a cohort operation on each of the other cluster masters by performing the following steps:

1. It reads the `TDconfig` file to determine the data stream set.

2. It downloads a copy of batch file and `Arcmain` script to each of the data stream hosts. These copies are near replicas of the ones on the initiator host except for clustering data which uniquely distinguishes each stream.

3. It remotely invokes the NetBackup binary, `tdbackex.exe`, on each cluster master. `tdbackex` in turn invokes the `Arcmain` utility on its own host, using the operation files which were downloaded in step 2.

The following illustrates an example of an MPP Teradata RDBMS instance using NetBackup.



Note that hosts 0, 1, 2, and 3 are data stream hosts. Host 0 is the initiator.

Note Any one of the cluster masters could serve equally well as the initiator.

In general, the operation is carried out identically on each of the hosts, whether it is the initiator or a cohort. Specialized processing ensures single-point control for progress viewing and exception handling.

For progress log handling, the cohorts write their progress data back to the progress file contained on the initiator host. This allows the full set of progress data to be viewed signaller from the initiator's progress viewer.

For exception handling, if a cohort fails, it signals its status to the initiator. The initiator then signals a shutdown request to each of the other cohorts. Finally, the initiator signals a shut-down request back to each of the cohorts.

Cluster Mapping

NetBackup for Teradata balances the backup load across multiple hosts based upon the number of data streams specified in your `TDconfig` file. For example, if you specify 6 datastreams on a 10-clustered Teradata instance, then 6 streams will be generated each time you run an initiator mode backup. Four of those streams will back up two clusters each; and the remaining 2 streams will back up one cluster each.

Each datastream includes a host name designation, which is specified in the `TDconfig` file. Therefore in our example, if the Teradata configuration contained four hosts that were to be used for backup and there were 6 data streams, then the it would be necessary to specify at least one of the host names in multiple datastream lines in the `TDconfig` file.

Example

`TDconfig` file

```
Instance peanut
Adminhost rat nt
ARCPATH candy '/usr/bin/'
ARCPATH tiger '/usr/bin/'
ARCPATH fox '/usr/bin/'
ARCPATH camel '/usr/bin/'
sessions 12
lusters 10
datastreams 6
fox nt Teradata1 fox 0 DBC6
camel unix Teradata3 camel 1 DBC7
tiger unix Teradata2 tiger 2 DBC2
candy unix Teradata4 candy 3 DBC4
tiger unix Teradata1 tiger 4 DBC6
candy unix Teradata3 candy 5 DBC7
```

NetBackup for Teradata assigns clusters to datastreams consecutively based upon the stream id. (The stream id is the 5th field in the datastream descriptor lines.) If the number of clusters is not evenly divisible by the number of streams, then the leftover clusters are assigned to the lower numbered datastreams. The clusters in this example are assigned to streams as follows:

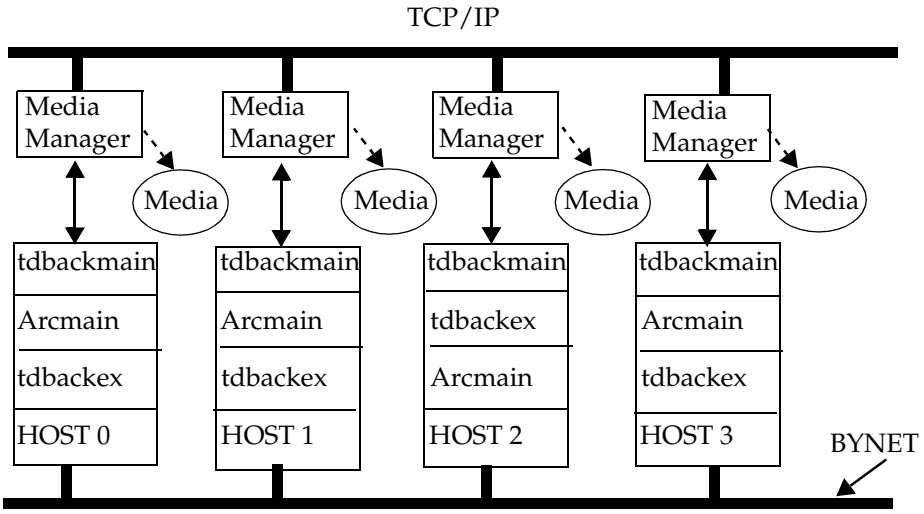
Stream id	Cluster id
0	0, 1
1	2, 3
2	4
3	5
4	6
5	7

Note that only 4 hosts are designated for hosting backup streams, tiger, candy, fox, and camel. In this example, tiger and candy are specified twice. Therefore, two datastreams will run on these two hosts and only one will run on the fox and camel.

NetBackup Server

NetBackup requires that any host which has a channel attached tape device be either a NetBackup master or media manager. A master host and all of its media managers share a common image name space. Image names are not otherwise shared between NetBackup server hosts. This means that all hosts contained in a Teradata instance are required to be members of the same master server/media manager grouping.

With the configuration shown in the following illustration, tapes are attached on each host.



This arrangement requires that a NetBackup master server instantiation be placed on one of the hosts (e.g., host 0). The media managers are placed on the others. Alternate configurations are also possible. For example,

- A master server is placed on host 0, with no media managers. In this case, the backup images from hosts 1 to n would be sent on the network to the drives on host 0.
- A master server exists on a host which is not involved in the Teradata configuration. In this case all of the backup images would be sent on the network to the master server.

For these example configurations, NetBackup allows the backup images from different Teradata hosts to be written to individual tape drives. Backup images from different Teradata hosts may also be multiplexed to the same one. Multiplexing allows concurrent backups when there are fewer available drives than tape device.

Job Launch

A NetBackup for Teradata backup or restore operation is launched by involving an `Arcmain` script. This section summarizes the mechanisms supported by the NetBackup for Teradata script launch.

- Launch by `dbbackup`, the NetBackup database client GUI.

  This GUI runs on the Windows NT host configured as the Administration Client for the Master Server and Media Servers (on UNIX hosts).

For the graphical user interface launch, `tdbackup` initiates the operation on the initiator host by invoking `tdbackex`. `tdbackex`, in turn, calls the Teradata `Arcmain` utility.

- Launch by the NetBackup scheduler.

  An operation can be launched by the NetBackup scheduler. In this case, NetBackup calls `Bphdb` on the initiator host. `Bphdb` launches `tdbackex`; and `tdbackex` invokes the `Arcmain` utility.

- Command-line invocation of `tdbackex`.

  The user can call `tdbackex` directly to launch a NetBackup operation for Teradata.

These methods are capable of using secondary launches to achieve an MPP backup, provided that the `TDconfig` file is appropriately specified.

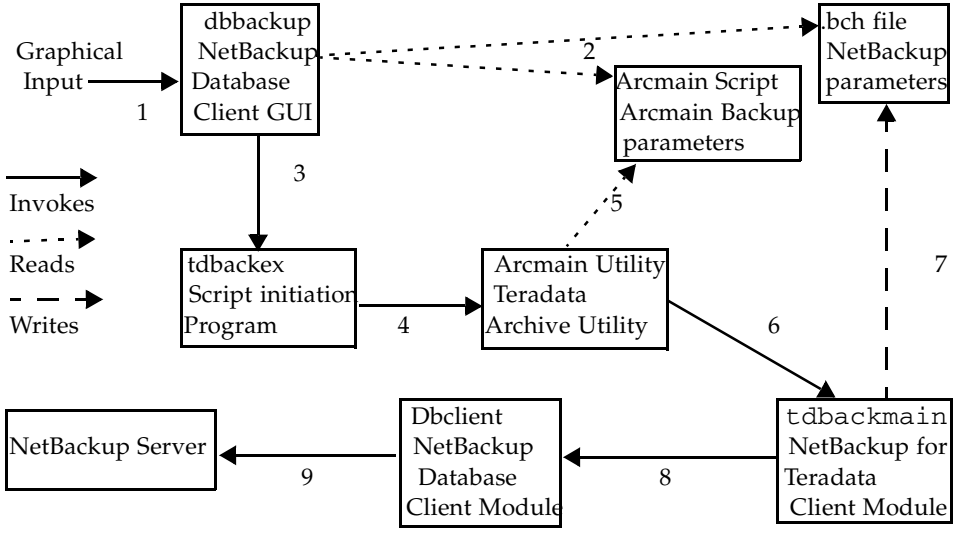
- Secondary launch on a datastream host.

  `tdbackex` is invoked remotely on all of the clients by `tdbackmainon` the initiating host. `tdbackex` is used as an intermediary to launch the backup script.

Sequence of Operations

Launching a Job From the Client `tbbackup`

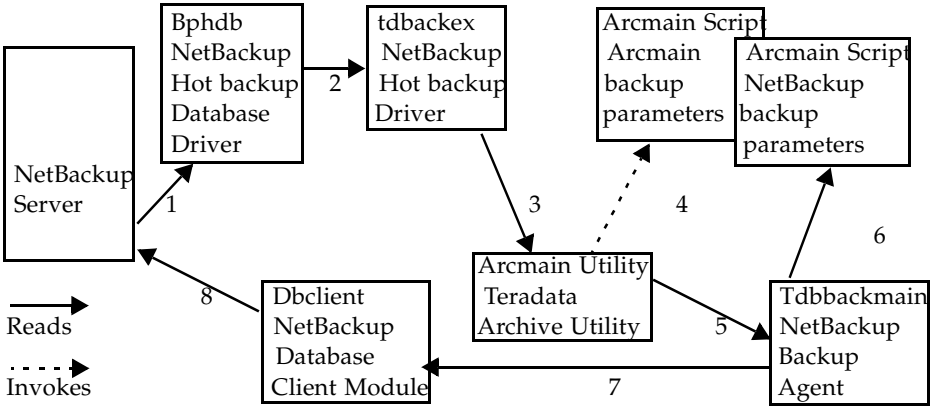
The following figure shows the steps involved in a client launch from `tbbackup`. (The step numbers refer to this figure).



1. Graphical input is supplied by the end-user.
2. The NetBackup Database Extension - Graphical User Interface writes an `Arcmain` script and a batch file which specify the desired operation.
3. `tdbackup` invokes `tdbackex`, specifying the name of the local `Arcmain` script.
4. `tdbackex` invokes the `Arcmain` utility specifying the name of the `Arcmain` script.
5. The `Arcmain` utility reads the `Arcmain` script.
6. The `Arcmain` utility launches the backup operation by using the access module API set to call the `tdbackmain` library routines.
7. `tdbackmain` reads the batch file to obtain NetBackup related parameters for the operation. If an MPP operation is requested, then `tdbackmain` creates `Arcmain` scripts and batch files for the cohort hosts, distributes them, and remotely launches `tdbackex` on each cohort.
8. `tdbackmain` opens a backup session with `dbclient`.
9. `dbclient` requests NetBackup Server to start receiving (sending) data.

Launching a Job from the Server Scheduler

The following figure shows the steps involved in launching a NetBackup for Teradata job from the NetBackup Server Scheduler.



Note that the server launch relies on the `Arcmain` script and batch file already being in place on the client initiator host.

1. The NetBackup Server scheduler invokes `bphdb` on the initiating client. When it calls `bphdb` it specifies the name of the `Arcmain` script, which is contained in the class schedule list.

2. `Bphdb` invokes `tbbackex`, specifying the name of the file containing the `Arcmain` script.

3. `tdbackex` invokes the `Arcmain` utility using the `Arcmain` script as input.

4. The `Arcmain` utility reads the `Arcmain` script as input.

5. The `Arcmain` utility launches the backup operation by using the access module API set to call the `tdbackmain` library routines.

6. `tdbackmain` reads the batch file to obtain NetBackup related parameters for the operation. If an MPP operation is requested, then `tdbackmain` creates `Arcmain` scripts and `.bch` files for the cohort hosts, distributes them, and remotely launches `tdbackex` on each cohort.

7. `tdbackmain` opens a backup session with `dbclient`.

8. `dbclient` requests NetBackup Server to start receiving (sending) data.

Progress Reports Created for NetBackup for Teradata

NetBackup for Teradata creates a progress report for each operation that has been initiated. This report contains summary information concerning the overall status of your job. The reports are contained in the following folder can be viewed by opening the progress report viewer from the NetBackup Database Extension - Graphical User Interface.

install_path\NetBackup\logs\user_ops\teradata\logs

The progress report contains the following types of information:

- the batch keywords and values which define the operation - See "NetBackup Batch File" on page 108 for information about the batch file syntax
- summary information about the operation
- information about the operation as it progresses
- any error conditions or warnings that cause the operation to fail
- the final outcome of the operation, whether it succeeded or failed and how long it took

The following is a typical progress report created for a database backup. In this configuration, the initiator host is named candy and there is a single additional cohort host, named tiger.

```
line 1   #
line 2   # Nightly Backup Accounting
line 3   #
line 4   MODE INITIATOR
line 5   OBJECT bk-init
line 6   TRACELEVEL MIN
line 7    JOBID candy.19990627074135.1025
line 8   ENCODEDLOGON TRUE
line 9   Backup started Sun Jun 27 07:41:49 1999
line 10  07:42:05 INF - Data socket = candy.1861
line 11  07:42:06 INF - Name socket = candy.3547
line 12  07:42:06 INF - New data socket = candy.1813
line 13  07:42:06 INF - Use shared memory = 1
line 14  07:42:06 INF - Backup id = candy_0930487320
line 15  07:42:06 INF - Compression = 0
```

```
line 16  07:42:07 INF - Multiplexing = 0
line 17  07:42:07 INF - Client read timeout = 300
line 18  07:42:07 INF - Media mount timeout = 0
line 19   07:42:10 INF - Data buffer size = 32768
line 20  07:42:12 INF - Beginning backup on server candy of client
         candy.
line 21  07:42:12 <4> [0,candy] DB client opened
line 22  07:42:14 INF - DbcAppendFile status = 0
line 23   07:42:19 INF - DbcAppendFile status = 0
line 24  07:42:22 <4> [0,candy] Launching
         </usr/openv/netbackup/bin/tdbackex -launch -f
         #TMP#candy.19990627074135.1025.0001.bch -np -u DBC -pw ****>
         on <tiger>.
line 25  07:42:23 INF - DbcCommand status = 0
line 26  07:42:27 <4> [0,candy] Started all cohorts
line 27  07:42:42 INF - Server status = 0
line 28  07:42:43 <4> [0,candy] DB client has closed. Access module
         status is 0.
line 29  07:42:48 INF - Backup by hao on client candy: the requested
         operation was successfully completed.
line 30  07:43:29 <4> [1,tiger] DB client opened
line 31  07:43:41 <4> [1,tiger] DB client has closed. Access module
         status is 0.
line 32  07:44:23 <4> [0,candy] Combined job status: Succeeded 2,
         Failed 0, Unknown 0.
```

Observe the following:

- Lines 1 through 8 duplicate the batch file used in launching this operation. In this case, it is modified from the original batch file submitted by the end-user. For example, the `JOBID` and `ENCODEDLOGON` lines have been added to help coordinate internal activities.
- Line 9 specifies the start up time of the operation on the initiator host (June 27, 1999 at 7:41:49 AM.)
- Lines 10 to 23 contain internal client/server communication protocol.
- Line 24 specifies that a job launch was initiated on a cohort host named tiger.
- Line 29 indicates that the backup operating on the initiator host (candy) has been successful.

- Lines 31 indicates that the backup component on tiger has successfully completed.
- Line 32 tells the final status of both job components.

NetBackup Activity Logs

The NetBackup master server and client software offers a comprehensive set of activity logs for troubleshooting problems that occur on the NetBackup server.

To enable these activity logs, create the appropriate folders on the client or the server.

Use the following on a UNIX host:

```
/usr/openv/netbackup/logs
```

Use the following on a Windows NT:

install_path`\NetBackup\logs\`

See the *NetBackup Troubleshooting Guide - UNIX* for more information on the activity logs.

NetBackup Logs

In addition to activity logs, NetBackup provides a set of logs that are useful in isolating problems. One such log is All Logs Entries on the master server. See the *NetBackup System Administrator's Guide - Windows NT Server* and the *NetBackup System Administrator's Guide - UNIX* for a description of this and other logs.

Create Folders or Directories for Logs

As an optional troubleshooting aid, you can create log folders or directories for certain NetBackup components that are pertinent to NetBackup for Teradata.

Windows NT

On Windows NT these folders should be created in *install_path*`\NetBackup\Logs` NetBackup for Teradata on Windows NT. They are listed below in rough order of how useful they may be for debugging your NetBackup for Teradata operations:

- `dbbackup`
- `dbclient`
- `bphdb`

You can disable logging by deleting the folders.

UNIX

On UNIX these directories should be created on each of the hosts on which you installed NetBackup for Teradata on UNIX in *install_path*`/netbackup/log/`. They are listed below in rough order of how useful they may be for debugging your NetBackup for Teradata operations:

- `dbclient`
- `bphdb`

You can disable logging by deleting the directories.

Note You can also find an information log for each operation that you perform in the NetBackup for Teradata operational logs.

For additional NetBackup client logs and NetBackup master server logs, see *NetBackup User's Guide - Microsoft Windows* and the *NetBackup System Administrator's Guide - Windows NT Server* or the *NetBackup System Administrator's Guide - UNIX*.

NetBackup for Teradata Logs

For detailed troubleshooting information, enable the `dbclient`, and `bphdb` logs on each NetBackup for Teradata host.

On Windows NT you do this by creating the following folders and allowing public access to them:

install_path`\NetBackup\logs\bphdb\`
install_path`\NetBackup\logs\dbclient\`

On UNIX you do this by creating the following directories and setting permissions so that all users have access to them:

```
/usr/openv/netbackup/logs/bphdb/
/usr/openv/netbackup/logs/dbclient/
```

Also create the following folder on the NetBackup for NCR Teradata Administrative Client:

install_path`\NetBackup\logs\dbbackup\`

The resulting activity logs created in these folders will contain the following types of information. Log names are formatted as `MMDDYY.log`.

`dbbackup` Log

The `dbbackup` log contains process information for the NetBackup Database Extension - Graphical User Interface.

Note To specify how much information appears in the `dbbackup` debug log, set the `TRACELEVEL` parameter to `MIN`, `MID`, or `MAX`. The `MAX` level will produce huge amounts of output appropriate only for internal debugging. The `TRACELEVEL` parameter is set for individual operations either through the batch file or the NetBackup Database Extension - Graphical User Interface.

`dbclient` Log

The `dbclient` log contains process information on `dbclient`, `tdbakex` and `tdbackmain`. `dbclient` is the NetBackup client interface program which connects to the NetBackup master server. `tdbakex` is the NetBackup for Teradata job launch. `tdbackmain` is the NetBackup interface program for the Teradata RDBMS.

Note To specify how much information appears in the `dbclient` debug log, set the `TRACELEVEL` parameter to `MIN`, `MID`, or `MAX`. The `MAX` level will produce huge amounts of output, which is usually appropriate only for internal debugging. The `TRACELEVEL` parameter is set for individual operations either through the batch file or the NetBackup Database Extension - Graphical User Interface.

`bphdb` Log

The `bphdb` log contains `bphdb` process information. `bphdb` is the NetBackup Hot Database Backup binary and is the client process that NetBackup for Teradata uses to start the backup or restore operations schedules from the NetBackup logs. The `bphdb` restore are normally not very long.

Note Use the Debug Verbose Level option from the NetBackup Client browser to adjust the amount of information that appears in the `bphdb` log. This verbose level applies to all of the NetBackup logs used on the Windows NT client except for `dbclient` and `dbbackup`.

`Arclog` Folder

Note that output from any NetBackup for Teradata initiated `Arcmain` job will be piped to the `Arclog` folder. The name of the output file will be derived from the name of the `Arcmain` script (excluding the `.scr` extension) and the current timestamp, specifically,

arc script file name_timestamp`.log`

Reference 7

This chapter provides reference information for using the NetBackup Database Extension - Graphical User Interface in support NetBackup for Teradata. This GUI runs on the Windows NT host configured as the NetBackup Administration Client for the Master Server domain used perform NCR Teradata operations. This information includes

- Launching the NetBackup Database Extension - Graphical User Interface
- Menu Bar
- Dialog Boxes

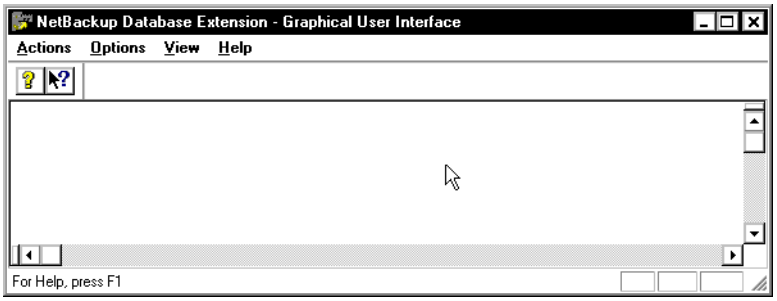
NetBackup Database Extension - Graphical User Interface

The NetBackup Database Extension - Graphical User Interface can be executed in support of Teradata from a Windows NT MS-DOS command prompt as

install_path`\NetBackup\bin\dbbackup -teradata`

It can also be launched from the Windows NT Start menu by clicking on the Programs group, then NetBackup, then NetBackup NCR Teradata Client.

The NetBackup Database Extension - Graphical User Interface appears as



This window contain some familiar windows elements: the Menu Bar, the Toolbar and the Status Bar. The Menu Bar has been customized for NetBackup Database Extension - Graphical User Interface. Refer to “Menu Bar” on page 137 for more details. The Toolbar and the Status Bar are standard features for windows applications. Refer to “View Menu” on page 140 for details on viewing these features.

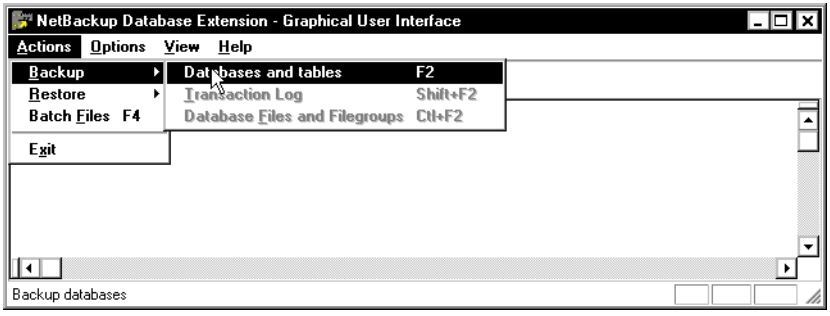
The NetBackup Database Extension - Graphical User Interface provides context-sensitive help. You can activate context-sensitive help by clicking shift-F1 or by using the context-sensitive help button from the Main Frame toolbar. The context-sensitive toolbar is shown here:

When context-sensitive help is activated, the mouse cursor will change to a question mark; and your next mouse click will show the help available for the object in the position of the cursor.

Menu Bar

The menus on the Menu Bar have been developed for NetBackup Database Extension - Graphical User Interface.

Actions Menu



Use this menu to create NetBackup for Teradata scripts and modify and launch batch files.

Backup

This selection expands to allow you to choose from the following:

Database

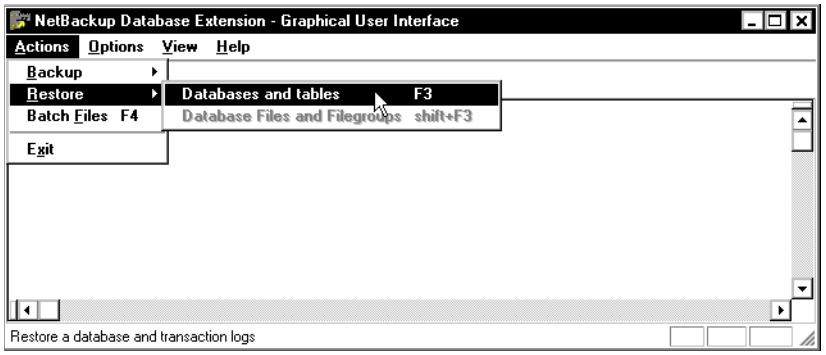
Opens the Create Teradata Backup Scripts dialog box. Use this dialog box to create scripts for archiving Teradata databases and tables. Refer to page page 144 for more information.

Transaction Log

Disabled for Teradata.

Database Files and Filegroups

Disabled for Teradata.



You can also use this menu to start a restore operation.

Restore

This selection expands to allow you to choose the following commands.

Databases and tables

Opens the Create Teradata Restore Scripts dialog box. Use this dialog box to create scripts to restore databases and tables. Refer to page 150 for more details.

Database Files and Filegroups

Disabled for Teradata

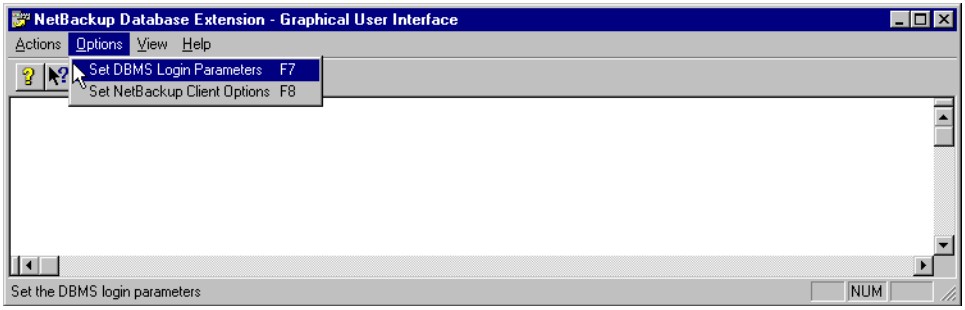
Batch Files

Opens the Start Batch File dialog box. Use this dialog box to start batch files for NetBackup operations. Refer to page 154 for more details.

Exit

Use this command to exit the NetBackup Database Extension - Graphical User Interface.

Options Menu



Use this menu to change Teradata DBMS logon parameters or to set NetBackup Client Options.

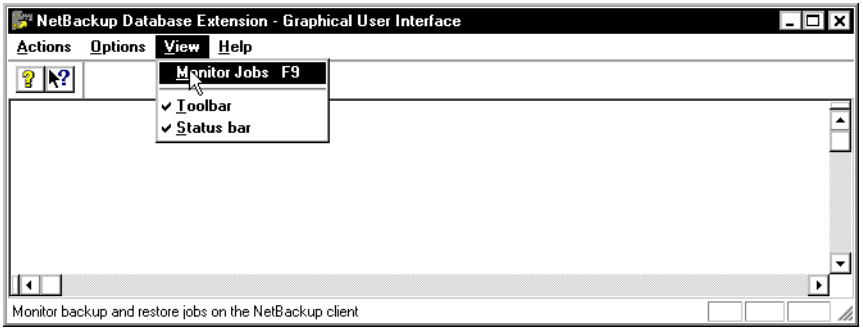
Set DBMS Login Parameters

Opens the Set Database Login Parameters dialog box. Use this dialog box to set the login parameters your current DBMS userid and password, or to select the ODBC data source name that you want to use.

Set NetBackup Client Options

Opens the Client Options dialog box. Use this dialog box to select the NetBackup Master server that you want to use or to set the client trace level

View Menu



Use this menu to view the status of NetBackup operations and to control the appearance of the Toolbar and the Status Bar.

Monitor Jobs

Opens the View Status (Teradata) dialog box. Use this dialog box to view the status of NetBackup operations. Refer to page 156 for more details.

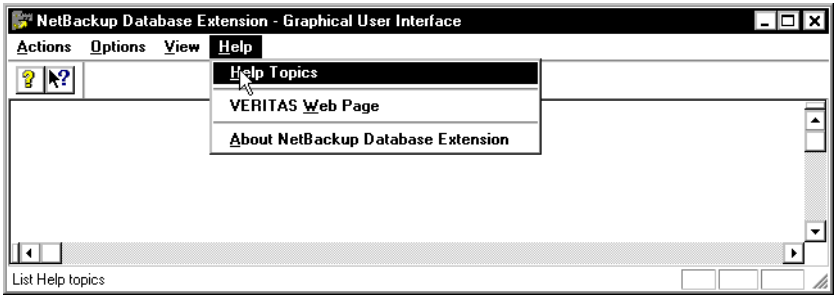
Toolbar

Turns the Toolbar on or off.

Status Bar

Turns the Status Bar on or off.

Help Menu



Use this menu to access the following help pages.

Help Topics

Opens the NetBackup Help topics. NetBackup Help contains the same information found in the user guide. You can also access NetBackup Help by using the context-sensitive button on the Toolbar.

VERITAS Web Page

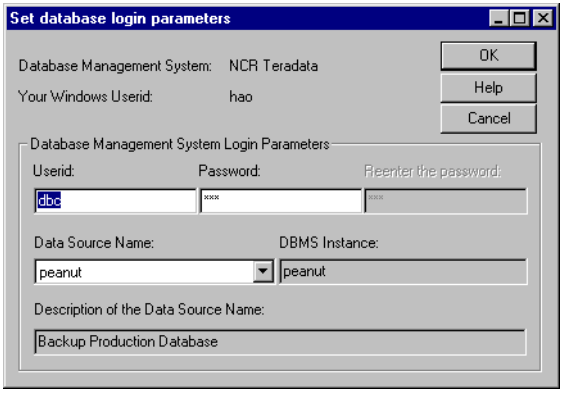
Displays the VERITAS world wide web page on your computer's default browser.

About Database Extension

Displays the version number of NetBackup Database Extension - Graphical User Interface.

Dialog Boxes

Set Database Login Parameters



Access this dialog box from the Options Menu by selecting Set Database Login Parameters. Use this dialog box to set the login parameters that NetBackup for Teradata will use for logging into Teradata. Also use this dialog box to select the ODBC data source name that NetBackup for Teradata will use.

Userid:

Use this edit box to specify a DBMS userid.

Password:

Use this edit box to specify a DBMS password.

Reenter the password:

Use this edit box to reenter the DBMS password.

Data Source Name

Use this edit box to select the ODBC data source name that you want to use. Note that when you modify the data source name, the values for DBMS Instance and Description of the Data Source Name are automatically changed.

DBMS Instance:

This box displays the DBMS Instance: name which corresponds to the Data Source Name.

Description of Data Source Name

This box displays a description of the Data Source Name.

OK

Use this button to enter the userid, password and data source name.

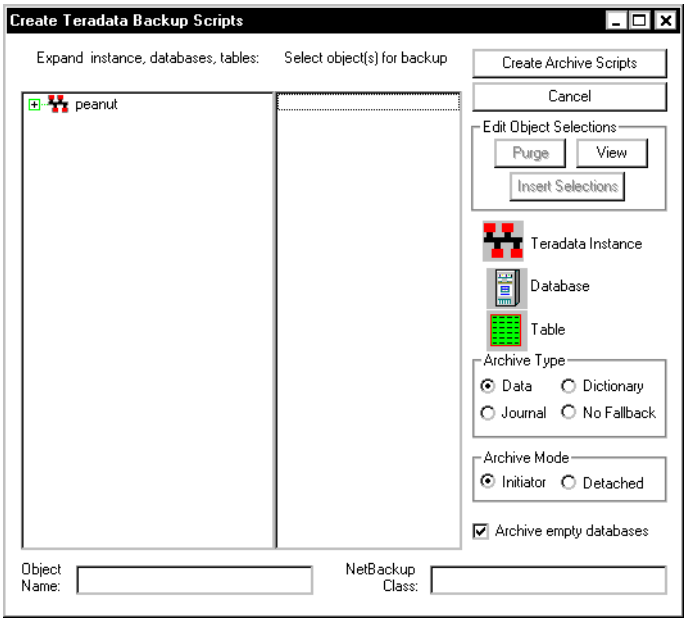
Help

To view on-line help for this dialog box, click this button.

Cancel

To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Create Teradata Backup Scripts



Access this dialog box from the Actions Menu by selecting Backup and then Database. Use this dialog box to create a paired `Arcmain` script and batch file for backing up Teradata databases and tables.

Expand instance, database, tables:

This is a tree display of Teradata database objects. You can expand and collapse this tree by clicking on the + and - elements.

Note the icons in the following expansions are depicted in the lower right-hand corner of the dialog box.

The tree can be expanded as follows:

Level 0:

Teradata instance. The Teradata instance is based upon the instance setting in the `TDconfig` file.

Level 1:

Database.

Level 2:

Table.

Select databases For backup:

This edit box contains the items contained in the object selected in the left-hand pane. For example, if you select a level 0 object (Teradata instance) in the right-hand pane, then this edit box will be populated with the databases in that instance. If you select a database, then it will be populated with tables. And if you select a table, it will contain just the table itself.

You can select an object in the Backup Database dialog box by clicking them You can also use the CTL and SHIFT keys for selecting multiple objects.

Create Archive Scripts

Click this button in order to generate NetBackup for Teradata backup scripts. These scripts will be a paired batch file and `Arcmain` script. The `Arcmain` script will specify all of the objects currently in the Database and Table Selection List.

Cancel

To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Help

To view on-help, click this button.

Edit Object Selections:

This group contains buttons for editing images in the Database and Table Selection List. See “Database and Table Selection List” on page 153 for information about the Database and Table Selection List.

Insert Selections

Click this button to insert the images selected in the Backup Database dialog box into the Database and Table Selection List.

Purge:

Use this button to delete all of the items from the Database and Table Selection List.

View

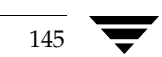
Use this button to bring up the Database and Table Selection List.

Archive Type

Select the type of Teradata archive command which you want to be generated in the Arcmain script. Choose between Data, Journal, Dictionary, and No Fallback.

Archive Mode

Select whether the backup should be run in initiator or detached mode.



Note You can select initiator mode only if you choose Data as the Archive type.

Archive empty databases

Select this option if you want for your Arcmain backup script to back up empty databases.

Object Name

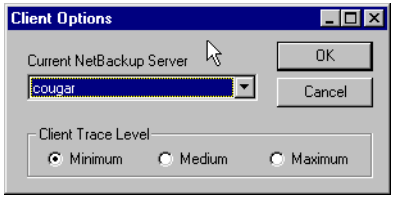
Use this edit box to enter the name you want to use to identify the backup image.

NetBackup Class

Use this edit box to enter the name of the NetBackup class that you want to use for your backup. This option is only available if you choose the archive mode as detached.

If you choose initiator mode, then the `TDconfig` file will determine which NCR_Teradata backup classes will be used for each backup stream.

Client Session Options



Access this dialog box from the Options Menu by selecting Set NetBackup Client Options. Use this dialog box to set the current NetBackup master server and the NetBackup for Teradata client trace level.

Current NetBackup Server

Use this pull down edit box to select the current NetBackup server used by NetBackup for Teradata.

Client Trace Level Group

Use this radio group to set the trace level written to the `dbbackup` and `dbclient` logs. Normally, you should set the level to Minimum. Maximum generates a very large amount of debug data.

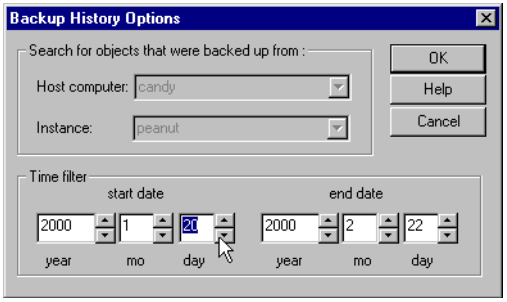
OK

Click this button to change your client options.

Cancel

To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Backup History Options



You can access this dialog box:

- From the Create Teradata Restore Scripts dialog box by clicking Refresh or Filter History.
- From the Actions Menu, by selecting Restore Databases and Tables, and then responding Yes when asked "`Would you like to change the time interval?`".

Use the Backup History Options dialog box to change the start and end times for which you would like to browse for images.

Host computer:

This is the name of the NetBackup for Teradata Administrative Host from which you are using the NetBackup for Database Graphical User Interface. You cannot change this field.

Instance:

This is the Teradata Instance which you are currently accessing. You cannot change from this value from this dialog box. It may be altered, however, by selecting a different data source name from the Set DBMS Login Parameters dialog box.

Time Filter

Define the range of backups you want to search in this box.

start date

Enter the earliest date of the backup you want to search.

end date

Enter the latest date of the backup you want to search.

OK

Click this button to change your backup history.

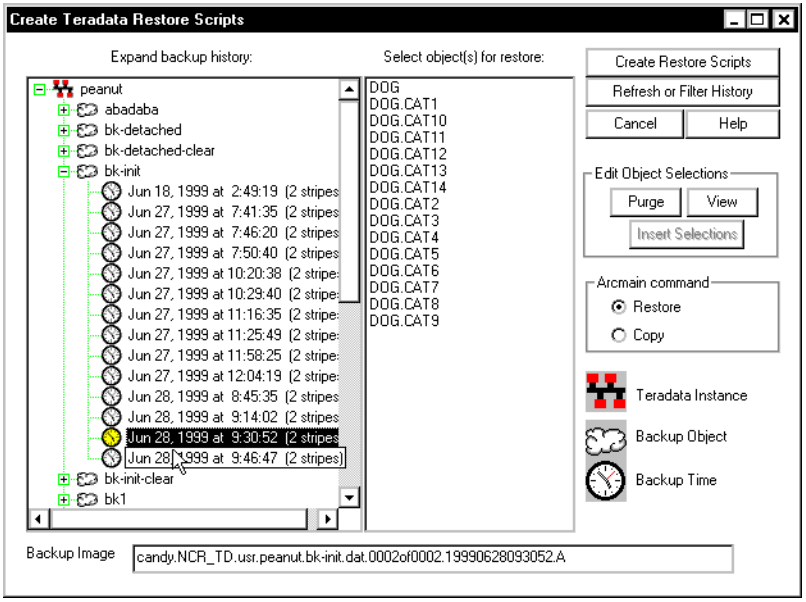
Help

To view on-line help for this dialog box, click this button.

Cancel

To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Create Teradata Restore Scripts



Access this dialog box from the Actions Menu by selecting Restore and then Database. Use this dialog box to create a paired `Arcmain` script and batch file for restoring Teradata databases and tables from backup images.

Expand backup history:

This is a tree display of the backup history for a NetBackup for Teradata client. You can expand and collapse this tree by clicking on the + and - elements.

Note The icons in the following expansions are depicted in the lower righthand corner of the dialog box.

The tree can be expanded as follows:

Level 0:

Teradata instance. The Teradata instance is based upon the instance setting in the `TDconfig` file.

Level 1:

Backup object. The backup objects correspond to each unique object value specified in the batch file used for a successful Teradata backup.

Level 2:

Backup time. Indicates the timestamp of each successful backup for the indicated object.

Select object(s) for restore:

This is a list box which contains names of databases and tables. When you select a backup-time in the backup history tree, this list is populated with the names of the databases and tables that are contained in the backup object at the indicated time.

Create Restore Scripts

Click this button to generate NetBackup for Teradata restore scripts. These scripts will be a paired batch file and an `Arcmain` script. The `Arcmain` script will specify all of the objects currently Database and Table Selection List. The batch file will specify the image name in the Backup Database dialog box.

Refresh or Filter History

Use this button to start the Backup History Options dialog box.

Cancel

To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Help

To view on-help, click this button.

Edit Object Selections:

This group contains buttons for editing images in the Database and Table Selection List. See “Database and Table Selection List” on page 153 for information about the Database and Table Selection List.

Insert Selections

Click this button to insert the images selected in the Backup Database dialog box into the Database and Table Selection List.

Purge:

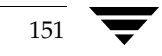
Use this button to delete all of the items from the Database and Table Selection List.

View

Use this button to bring up the Database and Table Selection List.

Arcmain Command:

This is a radio group that allows you to decide whether to generate a restore or copy script.



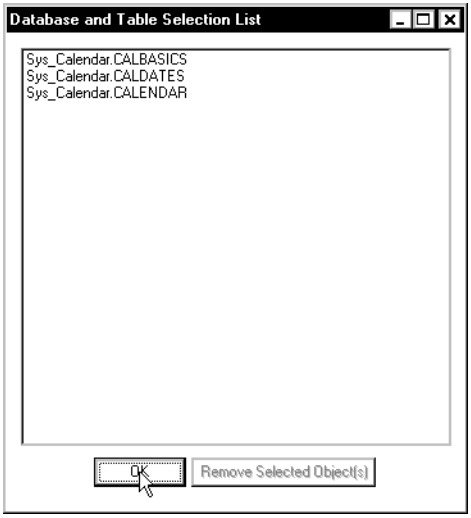
Backup Image:

This edit box contains the name of a backup image. When you select a backup-time in the backup history tree, this edit box contains the name of the corresponding backup image. If the backup was created from an initiator mode operation, then the backup corresponds to multiple images and the Backup Database dialog box contains the name of only one of these images.

Note If an object is backed up in initiator-mode, then the complete backup will be contained in multiple constituent images. These images will be named the same except for the fifth component, which is the stripe property. For example, a stripe property '0002of0002' identifies the second of two component images. You can identify a multi-component backup image because the second integer in its stripe property ('0002', in this example). is greater than 1.

You can select an object in the Backup Database dialog box by clicking them. You can also use the CTL and SHIFT keys for selecting multiple objects.

Database and Table Selection List



Access this box by clicking View in either the Create Teradata Backup Scripts dialog box or the Create Teradata Restore Scripts dialog box. This box displays the list of databases and tables that you have selected for inserting into an `Arcmain` script for backup or restore.

List box:

Displays the current selection of tables and databases. You can insert entries by selecting items from the Create Teradata Backup Scripts dialog box or from the Create Teradata Restore Scripts dialog box and clicking Insert Selections from the corresponding dialog box.

Remove Selected Object(s)

Use this button to delete items from the Database and Table Selection List. First, select one or more items in this box, then click Remove Selected Object(s).

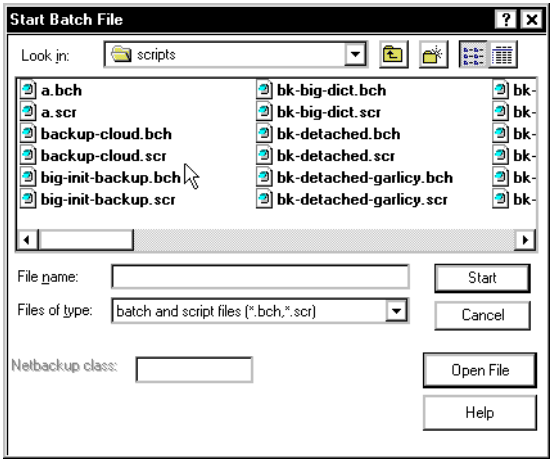
OK

Click OK to close this display.

Help

To view on-help, click this button.

Start Batch File



Access this dialog box from the Actions Menu by selecting Batch Files. Use this dialog box to start a NetBackup for Teradata operation from a paired batch file and `Arcmain` script.

This dialog box displays file icons for the contents of the *install_path*`\dbext\NCR_Teradata\scripts\` folder on the Administrative Host. You are generally advised to keep your scripts there; however, support is provided through common Microsoft controls to navigate the file system to locate them anywhere.

Besides using this dialog box to start operations, you can also use it to open your batch files in NotePad for viewing or editing.

This dialog uses the common controls from the Microsoft Windows File menu. You can get additional help on many of the items in this dialog box by clicking F1 and clicking on that item.

File Name:

Type the name of the file you want to use for starting a NetBackup for Teradata operation. Alternatively, you can click on an icon in the dialog box in order to move a name to this field.

Note NetBackup for Teradata operations use a paired batch file and `Arcmain` script. Each member of the paired set has the same name except for the extension. The batch file extension is `.bch` and the `Arcmain` script extension is `.scr`. You can start a NetBackup for Teradata operation by entering either the batch filename or the `Arcmain` script name into the File Name: box.

Flies of Type:

By modifying the file extension, which appears in this box, you can control what files will be displayed in the main window.

Start

Click this button to launch the NetBackup for Teradata operation.

Help

To view the on-line help for this dialog box, click this button.

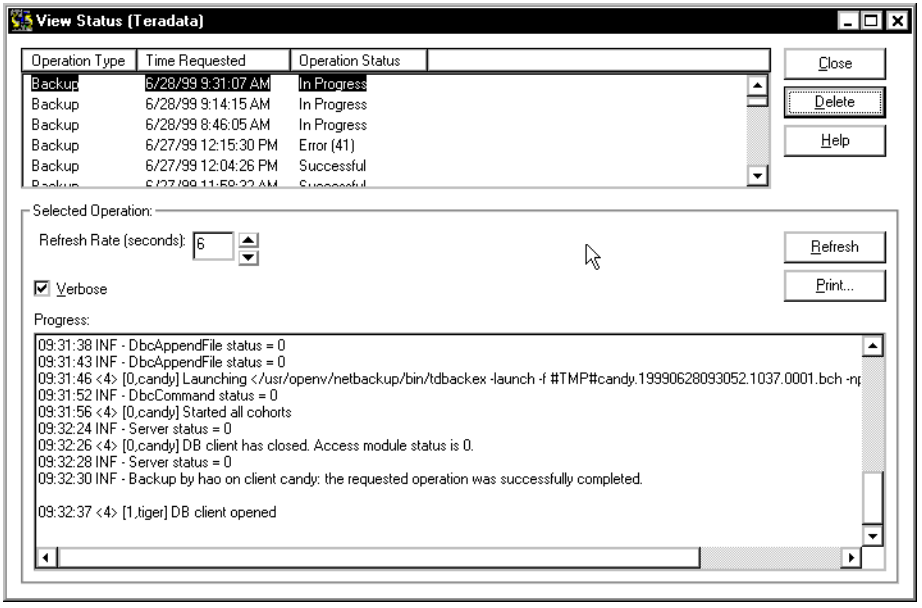
Cancel

To cancel and return to the previous display without accepting changes to the parameters in this dialog box, click this button.

Open File:

Click this button to open the selected file in NotePad.

View Status (Teradata)



Access this dialog box from the View Menu by selecting Monitor Jobs. Use this dialog box to view the status of NetBackup operations.

The source input for master server status will come from logs in the following folder.

install_path\NetBackup\Logs\user_ops\Teradata\jobs\

The source input for client status will come from logs in the following folder.

install_path\NetBackup\Logs\user_ops\Teradata\logs\

Operations List

This text box displays existing NetBackup progress reports.

Operation Type

This column displays the NetBackup operation type: backup or restore.

Time Requested

This column displays the data and time the NetBackup operation was initiated.

Operation Status

This column displays a brief message on the status of the NetBackup operation.

Close

Closes the View Status (Teradata) dialog box.

Delete

To delete a progress report, first select the report in the Operations List pane then click this button.

Help

To view on-line help for this dialog box, click this button.

Refresh Rate (seconds):

To change the rate at which NetBackup updates this screen:

- Type a value (in seconds) in the Refresh Rate (seconds): box
  or
- Use the spin buttons to the right of the Refresh Rate (seconds): box to set the number to the desired value in seconds

Refresh

Use this to update the contents of the selected progress report.

Print...

Opens the Microsoft Windows print dialog box and prints out the progress report for the selected NetBackup operation.

Verbose

Select this box for more detailed descriptions in the activity logs.

Progress:

This is a view-only text box. It shows the progress of the selected operation.

NetBackup displays the status as it is performing a backup or restore. Each message begins with the time of the related event and an acronym that indicates the nature of the message. The status also lists all the media IDs that were used to store the data.

Select Verbose for a more for more detailed descriptions.

Glossary

activity logs

Logs that can be optionally enabled for specific NetBackup programs and processes and then used to investigate problems.

administrator

A user that is granted special privileges to install, configure, and manage the operation of a system, network, or application

Administration Client

A Windows NT NetBackup client that has the administration interface software installed and can be used to administer NetBackup servers.

Administrative Host

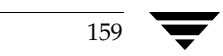
The NetBackup for Oracle on UNIX host, from which the NetBackup Database Extension - Graphical User Interface is executed. The Administrative host is always installed on a Windows NT client. Backup history data is maintained on the Administrative Host in *install_path*`\VERITAS\NetBackup\NCR_Teradata\history\`.

alternate-client restore

Restoring files to your client when they were originally backed up from a different client. The administrator using the interface on the master server can direct a restore to any client (this variation is called a server directed restore).

archive

In the general context of NetBackup, an archive is a set of data that Is copied to storage media, then deleted from the original location. In the contect of NCR-Teradata RDBMS, archive is a synonym for back up.



`Arcmain` script

A Teradata Archive/Restore script that servs as input to a NetBackup for Oracle on UNIX operation. Every NetBackup for Oracle on UNIX operation requires a paired set which includes both an `Arcmain` script and a batch file.

back up

The act of copying and saving files and folders to storage media.

backup

Refers to the process of copying and saving files and directories to storage media. For example, *the backup is complete*. This term can also refer to the collection of data that NetBackup saves for a client during a backup or archive. For example, *duplicate the backup*.

Backup is two words when used as a verb. For example, *back up the file*.

batch file

A NetBackup for Oracle on UNIX script that serves as input to a NetBackup for Oracle on UNIX operation. Every NetBackup for Oracle on UNIX operation requires a paired set which includes both an `Arcman` script and a batch file.

catalogs

Internal NetBackup and Media Manager databases. These catalogs contain information about configuration, media, devices, status, errors, and the files and directories in the stored backup images.

class

Defines the backup policy for a group of one or more clients that have similar backup requirements.

client

The system with the files to back up, archive, or restore.

cohort

A NetBackup for Oracle on UNIX host that is not the initiator.

initiator

The NetBackup for Oracle on UNIX client that coordinates backup and restore operations across itself and all other hosts.

install_path

Directory where NetBackup and Media Manager software is installed. The default on Windows NT/2000 is `C:\Program Files\VERITAS` and on UNIX it is `/usr/openv`.

logs

Files where a computer or application records information about its activities.

master server

The NetBackup server that provides administration and control for backups and restores for all clients and servers in a master and media server cluster. NetBackup BusinesServer supports only a single server and it is the master.

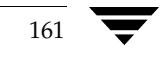
media server

A NetBackup server that provides storage within a master and media server cluster. The master can also be a media server. A media server that is not the master is called a remote media server (or slave server). NetBackup BusinesServer does not support remote media servers.

restore

(verb) The act of restoring selected files and directories from a previous backup or archive and returning them to their original directory locations (or to an alternate directory).

(noun) The process of restoring selected files and directories from a previous backup and returning them to their original directory locations (or to an alternate directory).



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