Quest® NetVault® Backup Plug-in *for Teradata* 16.0

User's Guide

Contents

Introducing NetVault Backup Plug-in *for Teradata*

- About NetVault Backup Plug-in for Teradata
- Target audience
- Recommended additional reading
- Contacting support

About NetVault Backup Plug-in *for Teradata*

Quest NetVault Backup (NetVault Backup) Plug-in *for Teradata* (Plug-in *for Teradata*) provides protection to your Teradata Databases and allows you to implement your backup policies from a point-and-click interface without any complex scripting. Using the Teradata Archive and Recovery (ARC) utility, the plug-in automatically generates ARC scripts to back up entire databases or individual database objects. You can select the All-AMPs method, or use parallelism provided by the Cluster and Multi-Stream methods for increased throughput and fault tolerance. Support for granular restores reduces downtime and allows you to resume normal operations quickly.

Feature summary

- Supports All-AMPs, Cluster, and Multi-Stream offline and online backup methods
- Enables backups and restores of entire database or individual database objects
- Supports parallel jobs for better performance and fault tolerance
- Allows backups of Data Dictionary
- Allows restores to alternate Teradata Database System (DBS) configuration
- Performs roll forward recovery with after-change journal images
- Generates ARC scripts without actually performing the jobs
- Allows analysis of archive media
- Supports user-defined ARC scripts
- Offers ease of use with point-and-click GUI
- Integrates with a wide range of backup devices

Target audience

This guide is intended for system administrators, database administrators, and other technical personnel who are responsible for the backup and recovery of Teradata Databases. An understanding of the Teradata Database administration and the operating system under which you are running the database is assumed.

Recommended additional reading

Quest recommends that you have the following documentation available for reference while setting up and using this plug-in.

- **Teradata documentation**

  - *Teradata Archive/Recovery Utility Reference Guide:* This guide describes how to use Teradata Archive/Recovery Utility (Teradata ARC) to archive, restore, and recover Teradata database, and provides a detailed description of the ARC commands.

  - *Teradata Database Administration Guide:* This guide provides information about database administration tasks and tools, and describes how to create and manage Teradata database objects.

  You can download these guides from:
  http://www.info.teradata.com/templates/eSrchResults.cfm?txtpid=&frmdt=&srtord=Asc&rdsort=Title&todt=&txtrelno=&prodline=Software%20-%20Teradata%20Tools%20and%20Utilities%20(TTU)&txtsrchstring=

- **NetVault Backup documentation**

  - *Quest NetVault Backup Installation Guide:* This guide provides information about installing the NetVault Backup Server and Client software.

  - *Quest NetVault Backup Administrator's Guide:* This guide provides information about configuring and using NetVault Backup to protect your data. It provides comprehensive information about all NetVault Backup features and functionality.

  - *Quest NetVault Backup CLI Reference Guide:* This guide provides information about using the NetVault Backup command-line utilities.

  You can download these guides from https://support.quest.com/technical-documents.

Contacting support

- **Teradata telephone support:** The support information for the Plug-in *for Teradata* customers having a technical support contract with Teradata follows:

  - **U.S. Customers:** Call 1-877-698-3282

  - **Outside U.S.A:** Contact your local area representative. The relevant telephone number may be found in your localized documentation.

- **Quest support:** Customers having direct technical support contract with Quest can obtain worldwide technical support by using the web, email, and telephone. For more information, visit http://www.quest.com.

  For sales or other inquiries, visit http://quest.com/company/contact-us.aspx or call +1-949-754-8000.

- **Teradata service and support links:** Customer support is available around-the-clock, seven days a week. Trained professionals at Remote Services Centers (RSC) are available to assist you. To learn more about Teradata Customer Services, go to Teradata @ Your Service at https://tays.teradata.com/login?ref=https%3A%2F%2Fteradatanet0%2Eteradata%2Ecom%2FSite00E9%2F

  RSCs were formerly called Managed Service Centers (MSCs).

If you have purchased an ESS (Enterprise System Support) contract, a customized support plan was created for you. For contact information, see your support plan. In addition, a unique PIN (Personal Identification Number) was given to your site. If you are an ESS customer, you must contact the regional RSC to request support, and you must use your PIN. PINs are not published; if you misplace your PIN contact your account representative.

- **Teradata information links:**

  - **Information Products website:** The Information Products site provides Technical Documentation at URL: http://www.info.teradata.com

  - **Teradata website:** Provides the latest news, upcoming events, analyst reports, benchmark publications, and customer stories — all tailored to your industry, your business, and your needs at URL: http://www.teradata.com

  - **Teradata resource center website:** The latest Teradata Product and Solution brochures, Industry Solution brochures, as well as customer success stories and third-party analyst reports at URL: http://in.teradata.com/Resources/?CID=Rbl&LangType=16393&LangSelect=true

  - **Data storage products are listed at:** http://www.teradata.com/solutions-and-industries/backup-and-restore

Installing the plug-in

- Setting up the Teradata backup system
- Installation prerequisites
- Installing the plug-in
- Upgrading the plug-in
- Installing product license keys
- Removing the plug-in

Setting up the Teradata backup system

The Teradata Backup System can be viewed as two possible architectures:

- Traditional architecture
- BAR framework

Traditional architecture

The traditional approach is the direct-attached architecture in which the tape drives and libraries are connected directly to the Teradata nodes. The Plug-in *for Teradata* runs on the DBS nodes, which initiate the backup and restore jobs.

Figure 1. An example of legacy direct-attached configuration
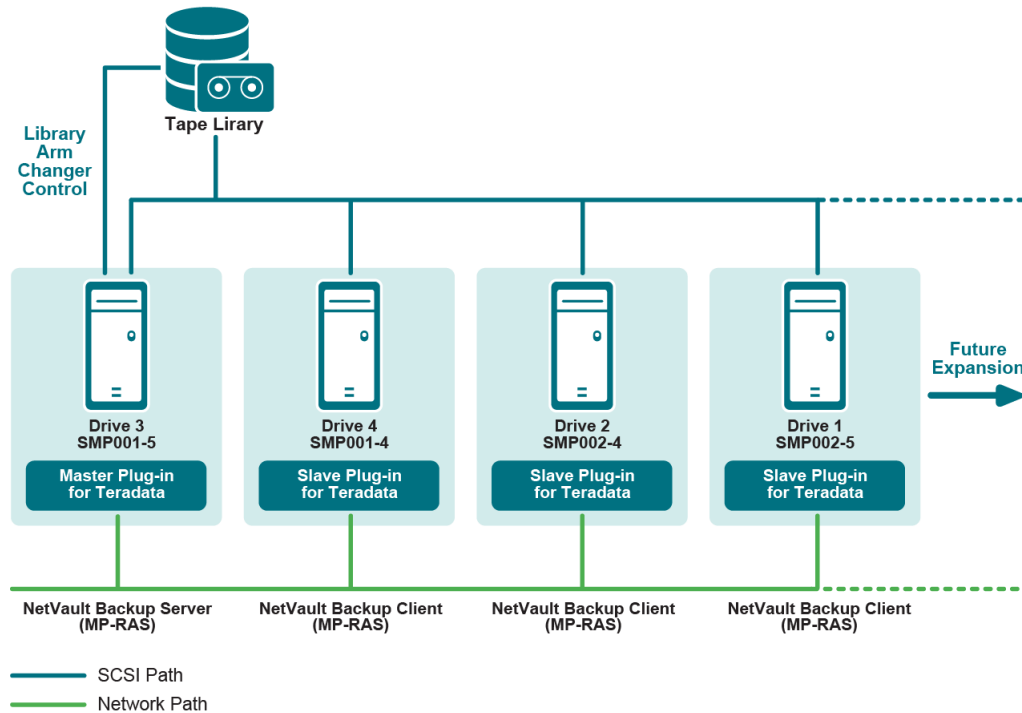
Teradata has moved away from this architecture and does not recommend it to the new customers. However, support continues to protect the investment of the existing customers. The direct-attached configuration is only available on MP-RAS UNIX. It is not supported on Windows or Linux.

BAR framework

The recent and the recommended approach for all platforms is the BAR framework. In this architecture, backups and restores are managed by dedicated BAR Servers that are connected to the Teradata DBS nodes by using Gigabit Ethernet LAN. This approach off loads the BAR work from Teradata nodes and offers better scalability. Also, this approach supports disk backups and sharing of devices. These features are not available in the direct-attached architecture.

Figure 2. An example of BAR framework
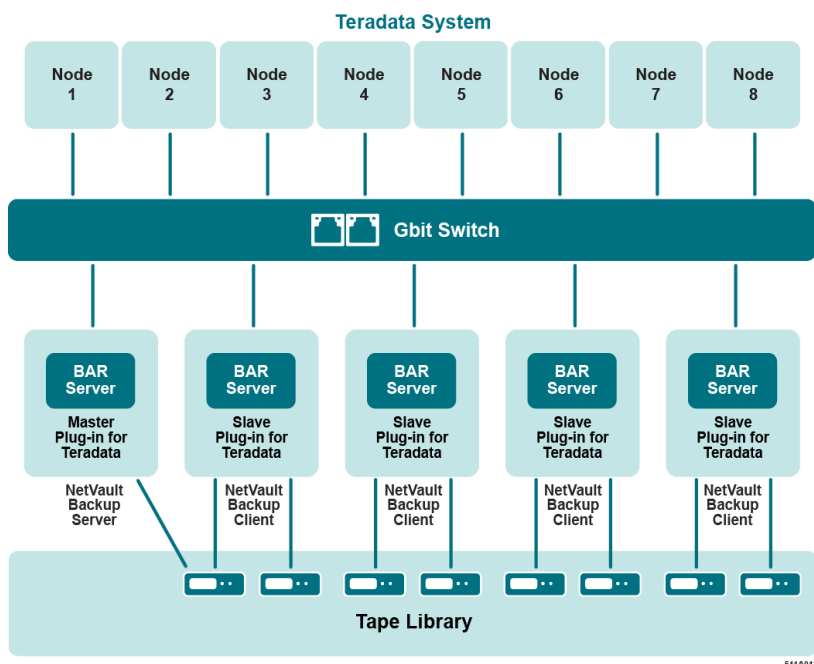
You can also install multiple Teradata systems at a single site, which can be configured within a single or multiple NetVault Backup Domains. When setting up multiple NetVault Backup Domains, verify that each Teradata system has access to separate backup devices. To understand the different ways to configure the BAR Servers, consult the Teradata Global Support Center, or the Quest Teradata OEM Group.

Figure 3. An example of two Teradata systems at a single site
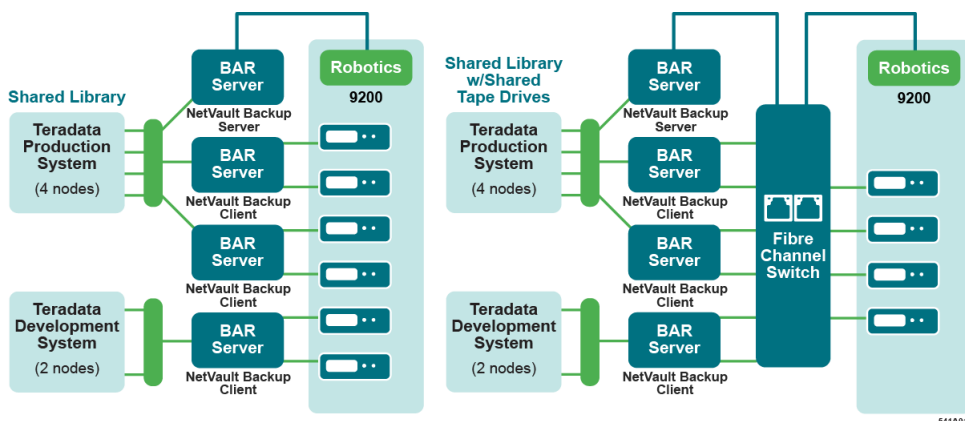
Installation prerequisites

Before installing the plug-in, verify that the following requirements are met:

- **Install NetVault Backup Server:** Install the NetVault Backup Server software on the designated machine. This machine can be a BAR Server or any other machine outside the Teradata DBS system.

  The NetVault Backup Server can run on Windows and Linux operating systems.

  The NetVault Backup Server is the core software that provides backup management services and controls all operations and devices (including logical control of robotics). For information about installing the NetVault Backup Server software, see the *Quest NetVault Backup Installation Guide*.

- **Select Master Plug-in *for Teradata*:** Select the node that can serve as the Master Plug-in *for Teradata*. The NetVault Backup Server configured as the Master Plug-in *for Teradata* is suitable. You can also select one of the BAR Servers or any other machine on the network to serve as the Master Plug-in *for Teradata*.

- **Install NetVault Backup Client:** Install the NetVault Backup Client software on the BAR Servers and the Master Plug-in *for Teradata* (if this machine is not configured as the NetVault Backup Server). For more information about installing the NetVault Backup Client software, see the *Quest NetVault Backup Installation Guide*.

- **Install Teradata Tools and Utilities (TTU):** Install TTU 16.0 on the Master Plug-in *for Teradata* and the BAR Servers.

  > **ⓘ** | **NOTE:** The ARCMAIN paths include:
  > - **Linux 32-bit:** opt/teradata/client/16.00/bin/arcmain32
  > - **Linux 64-bit**: /usr/bin/arcmain
  > - **Windows 64-bit:** C:\Program Files\Teradata\Client\16.00\bin\arcmain.exe
  > - **Windows 32-bit:** C:\Program Files (x86)\Teradata\Client\16.00\bin\arcmain.exe
  >
  > By default, the plug-in uses the applicable 64-bit path. If your environment uses 32-bit, you must change the path.

- **Set up Teradata ARC Server (TARA Server) for Multi-Stream backups and restores:** For Multi-Stream backups and restores, set up the TARA Server. This server facilitates communication between the ARC processes.

- **Add NetVault Backup Clients:** Add the NetVault Backup Clients to the NetVault Backup Server. For more information about adding clients, see the *Quest NetVault Backup Administrator's Guide*.

- **Add backup devices:** Add all backup devices to the NetVault Backup Server. For more information about adding devices, see the *Quest NetVault Backup Administrator's Guide*.

Installing the plug-in

You can install the plug-in simultaneously on multiple machines by using the configuration wizard. Alternatively, you can install a plug-in on a single client from the **Manage Clients** page.

The following sections describe the different procedures that you can use to install the plug-in:

- Installing the plug-in using the push installation method (Windows)
- Installing the plug-in using the configuration wizard (Linux/UNIX)
- Installing the plug-in from the Manage Clients page

Installing the plug-in using the push installation method (Windows)

On Windows-based machines, you can use the push installation method to install the plug-ins on several machines at the same time. You can perform push installations from the NetVault Backup WebUI.

Before you start the push installation procedure, verify that the following requirements are met:

- **Copy the packages to a shared location:** Copy the client and plug-in packages to a shared location. Only CIFS shares are currently supported as package stores. The path must be accessible to the NetVault Backup Server and all target machines where you want to install the packages.

  Make sure that you use the original names of the installation packages. Renamed packages cannot be selected for push installations.

- **Configure a package store in NetVault Backup:** After copying the installation packages, configure the shared location details in NetVault Backup. For more information, see the *Quest NetVault Backup Administrator's Guide*.

To install the plug-in on Windows-based clients:

1   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Install Software/Add Clients**.

2   On the **Select Software/Add Clients** page, select **Install NetVault software on remote machines**.

3   In the **Package Store** list, select the repository that contains the installation packages that you want to deploy.

4   To add plug-in packages, click **Add NetVault plug-in package**, and then complete the following steps:

   a   In the **Select Packages for Deployment** dialog box, select the check boxes corresponding to the **".npk"** binary files that you want to use, and click **OK**.

   b   Click **Next**.

5   On the **Machines to Have NetVault Software Installed** page, click **Choose Machines**, and select **From available machines**.

6   On the **NetVault Machine Details** tab, select the client that you want to add, and click **OK**.

7   To add more machines, repeat Step 5 and Step 6.

8   To submit the task, click **Install Software/Add Clients**.

   You can monitor the progress and status of the task from the **Deployment Task Status** page. For more information, see the *Quest NetVault Backup Administrator's Guide*.

Installing the plug-in using the configuration wizard (Linux/UNIX)

On Linux-based machines, you can use the configuration wizard to install the plug-in on multiple clients at the same time.

> **i** | **NOTE:** When you use this procedure, make sure that the plug-in binary file is compatible with the client OS and platform.

1   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Install Plugins**.

2   In the **NetVault Backup Clients** table, select the clients on which you want to install the plug-in.

3   Click **Choose Plug-in File**, navigate to the location of the **".npk"** installation file for the plug-in, for example, on the installation CD or the directory to which the file was downloaded from the website.

   Based on the operating system (OS) in use, the path for this software may vary on the installation CD.

4   Select the file entitled **"nvf-x-x-x-x.npk,"** where **x-x-x-x** represents the version, build, and platform numbers, and click **Next**.

   After the plug-in is successfully installed, a message is displayed.

Installing the plug-in from the Manage Clients page

From the **Manage Clients** page, you can install a plug-in on a single client.

1   In the Navigation pane, click **Manage Clients**.

2   In the **NetVault Backup Clients** table, select the client, and click **Manage**.

3   At the lower-right corner of the Installed Plug-ins table, click the **Install Plugin** button ( ).

4   Click **Choose Plug-in File**, navigate to the location of the **".npk"** installation file for the plug-in, for example, on the installation CD or the directory to which the file was downloaded from the website.

   Based on the operating system (OS) in use, the path for this software may vary on the installation CD.

5   Select the platform-specific binary file for the plug-in.

   The binary file for Windows is named **"win-x-x-x-x.npk"** and the binary file for Linux and UNIX is named **"nvf-x-x-x-x.npk,"** where **x-x-x-x** represents the version, build, and platform numbers.

6   To begin installation, click **Install Plugin**.

   After the plug-in is successfully installed, a message is displayed.

Upgrading the plug-in

1   Start the Backup Job Wizard, and click **Create New** next to the **Selections** list.

2   Open the NetVault Backup Server or Client node.

3   Select **Plug-in** *for Teradata*, and in the **Actions** list, click **Configure**.

   You can also configure the default settings from the **Change Settings** page. In the Navigation pane, click **Change Settings**. On the **Configuration** page, click the **Server Settings** or **Client Settings**, and then on the Settings page, click **Plugin Options**.

4   In the **Configure** dialog box, change the following settings:

- **Media Availability Check Timeout:** Clear this check box if you are upgrading from version 13.0. This setting is not available in Plug-in *for Teradata* 14.0 and later versions.

- **Allow ARC Script Journaling:** Clear this check box if you are upgrading from version 13.0, 14.0, or 14.10. This setting is not available in Plug-in *for Teradata* 15.0 and later versions.

- **Teradata Database Version:** Select Teradata V2R6.x Database if you are upgrading from version 13.0 or Teradata Database 12.x if you are upgrading from version 14.0 or later.

5   Remove the current version of the plug-in.

For more information, see Removing the plug-in.

6   Install the latest version of the plug-in.

For more information, see Installing the plug-in.

7   Change the **Teradata Database Version** the version that you are using; by default, it is set to Teradata Database 12.x.

> **i** | **NOTE:** Make sure that you update the **Teradata Database Version** after installing the plug-in. Otherwise, the value displayed in the **Configure** dialog box may not match the value used by the plug-in.

Installing product license keys

The evaluation license for the NetVault Backup products is valid for 30 days. To continue using the product after the expiry of the evaluation period, you must install the permanent license keys for the server and installed plug-ins.

The server is licensed based on the NetVault Backup Server Edition and the additional options that you have purchased. The clients require a permanent license key only if a licensed plug-in is installed on the machine. For more information about obtaining the license keys, see the *Quest NetVault Backup Installation Guide*.

> **i** | **NOTE:** The permanent license keys for NetVault Backup are tied to the Machine ID of the NetVault Backup machine. When installing the license keys, make sure that you select the correct server or client machine for which the license is obtained.

You can use the configuration wizard to install the license keys. You can also install the license keys from the **Manage Clients** or **Change Settings** page. These procedures are described in the following sections:

- Installing license keys using the configuration wizard

- Installing license keys from the Manage Clients page

- Installing license keys from the Change Settings page

Installing license keys using the configuration wizard

1   In the **Navigation** pane, click **Guided Configuration**.

2   On the **NetVault Configuration Wizard** page, click **Install Licenses**.

3   In the **NetVault Backup Clients** list, select the applicable machine, and click **Next**.

4   In the **Enter the license key string** box, type or copy and paste the license key, and click **Apply**.

After the key is applied successfully, a message is displayed.

Installing license keys from the Manage Clients page

1   In the **Navigation** pane, click **Manage Clients**.

2   In the **NetVault Backup Clients** list, select the applicable machine, and click **Manage**.

3   On the **View Client** page, click **Install License**.

4   In the **Install License** dialog box, type or copy and paste the license key, and click **Apply**.

    After the key is applied successfully, a message is displayed.

5   To dismiss the dialog box, click **Close**.

Installing license keys from the Change Settings page

1   In the Navigation pane, click **Change Settings**, and on the **Configuration** page, click **Server Settings**.

2   On the **NetVault Server Settings** page, click **Install License**.

3   In the **Install License** dialog box, type or copy and paste the license key, and click **Apply**.

    After the key is installed successfully, a message is displayed on the page.

4   To close the dialog box, click **Close**.

Removing the plug-in

1   In the Navigation pane, click **Manage Clients**.

2   In the **NetVault Backup Clients** list, select the client, and click **Manage.**

3   In the **Installed Plug-ins** table, select **Plug-in *for Teradata***, and click the **Remove Plugin** button ( ).

4   In the **Confirm** dialog box, click **Remove**.

Configuring the plug-in

- Configuring default settings
- Adding a Teradata DBS
- Reconfiguring the cluster count
- Removing a DBS
- Adding BAR Servers
- Enabling communication between Master Plug-in for Teradata and BAR Servers
- Configuring a default login account
- Creating or upgrading the Catalog Database
- Creating user accounts for parallel restores

Configuring default settings

After installing the plug-in, the next step is to configure the default settings for the Master Plug-in *for Teradata* and the individual BAR Servers. You cannot use the plug-in for backups and restores without completing this procedure. Start the configuration procedure with the Master Plug-in *for Teradata*. You cannot access the plug-in on the other BAR Servers until you configure the Master Plug-in *for Teradata*.

1 In the navigation pane, click Create Backup Job, and then click **Create New** next to the **Selections** list.

2 Open the NetVault Backup machine on which the plug-in is installed.

3 Select **Plug-in *for Teradata***, and in the **Actions** list, click **Configure**.

> **ⓘ** | **NOTE:** You can also configure the default settings from the **Change Settings** page:
>
> 1 In the Navigation pane, click **Change Settings**.
>
> 2 If the plug-in is installed on the NetVault Backup Server, click **Server Settings**.
>   —or—
>   If the plug-in is installed on a NetVault Backup Client, click **Client Settings**; in the clients table, select the client, and click **Next**.
>
> 3 Under **Plugins**, click **Plugin Options**.

4   Under **Plug-in *for Teradata***, configure the following settings:

Option	Description
Node is the Master Plug-in *for Teradata*	Select this check box on the machine that is designated as the Master Plug-in *for Teradata*. This node controls the Teradata DBS backups and restores. Only the Master Plug-in *for Teradata* allows you to browse the DBS system and schedule backup or restore jobs.
	On the other BAR Servers, clear this check box.
Path to ARCMAIN Utility	Specify the full file path for the ARCMAIN utility. The ARCMAIN paths include:
	• **Linux 32-bit:** opt/teradata/client/16.00/bin/arcmain32
	• **Linux 64-bit:** /usr/bin/arcmain
	• **Windows 64-bit:** C:\Program Files\Teradata\Client\16.00\bin\arcmain.exe
	• **Windows 32-bit:** C:\Program Files (x86)\Teradata\Client\16.00\bin\arcmain.exe
	By default, the plug-in uses the applicable 64-bit path. If your environment uses 32-bit, you must change the path.
Additional ARCMAIN Command Line	Specify the additional run-time parameters that you want to use with the ARC jobs. For example, you can specify CHECKSUM=1 for data integrity verification during restores, or CHECKSUM=2 for data integrity verification during all backups and restores.
	To specify multiple parameters, use a comma or white space as a delimiter. If a value contains a comma or white space, enclose it within single or double quotation marks. For more information about the run-time parameters, see the *Teradata Archive/Recovery Utility Reference Guide*.
Path for ARC working files	The path to the working directory must be relative to the NetVault Backup installation directory, regardless of whether NetVault Backup is installed in the default installation directory or in a custom directory. By default, the working directory is set to the following relative path:
	• **Linux:** teradata
	• **Windows:** Teradata
ARC Data Row and Buffer Size (KB)	This setting specifies the size of the data block Teradata sends to NetVault Backup.
	The default value for this setting is 1024 KB.
Allow Use of Network Attached Devices	To enable the use of network devices for backups and restores, select this option. This setting applies to all backup and restore jobs. You can override this setting on a per-job basis when configuring the backup or restore job options.
Use ARC Catalog	To store the backup information in a catalog, select this check box. A catalog allows direct tape positioning during restore and copy operations, resulting in quicker data retrieval.
	In addition to selecting this check box, you must also configure the catalog database name in the ARC Catalog Database box to use a catalog for backups performed using the plug-in.
ARC Catalog Database	The default name for the catalog database is $NETVAULT_CATALOG.
	You can change it to any valid database name in Teradata. Verify that the catalog database is created before you begin using the plug-in for backups. For more information, see Creating or upgrading the Catalog Database.
	If you are running more than one Teradata DBS, use the same name for the catalog database on each DBS.

Option	Description
Number of Restore Accounts for Parallel Restores	For restoring cluster archives in parallel, the plug-in requires multiple user accounts that are used to run concurrent jobs on the BAR Servers. Teradata ARC does not allow concurrent restore operations by the same user.
	Specify the total number of user accounts that can be used for parallel restores. The number of restore accounts can be determined by the total number of drives available to the BAR Servers. Also, configure the **Restore Account Base Name** setting.
Restore Account Base Name	For Restore Accounts, the plug-in uses a common base name and adds a serial number to the name. The default base name for the user accounts is NETVAULT. You can use any valid user name in Teradata.
	Before initiating a parallel restore operation, verify that the required number of restore accounts are created on the DBS. For example, if you set the **Number of Restore Accounts for Parallel Restores** to 2, then using the base name NETVAULT, create two user accounts named NETVAULT1 and NETVAULT2 for parallel restores.
	If you are running more than one Teradata DBS, create these restore accounts on each DBS. For more information, see Creating user accounts for parallel restores.
Send Script to Editor Application	To edit the plug-in generated ARC script before execution, select this check box, and specify the name of application in the **Editor Application** box.
Editor Application	To use this feature, first create a script to modify the ARC scripts automatically without any manual input. Then, type the file path for the script in the Editor Application box. The changes made to the ARC script only apply to the current instance of the backup or restore job. Quest recommends that you thoroughly test the script before using it as it is run for every job.
	To specify the script filename, use the following format:
	• **Linux:** `/bin/sh <full path to shell script>`
	• **Windows — batch (.bat) file:** `<full path to batch file>` (The file path cannot contain any spaces.)
	• **Windows — PERL script:** `perl <full path to PERL script>`
Teradata Database Version	On the Master Plug-in *for Teradata*, select the appropriate DBS version in the Teradata Database Version list. The supported database versions include the following:
	• Teradata Database 14.0 and Later
	• Teradata Database 13.x
	• Teradata Database 12.x
	The backups can fail if you select an incorrect version. The features that are specific to a Teradata DBS release included:
	• **Teradata Database 14.0 and later:** On Teradata Database 14.0 and later, you can configure Temperature-Based Block-Level Compression (TBBLC) during restores.
	• **Teradata Database 13.0 and later:** On Teradata Database 13.0 and later, you can do selective backups and restores of database objects such as views, triggers, stored procedures, and others. On Teradata Database 12.0, you must select the entire database or individual tables and Partitioned Primary Index (PPI) partitions for backups and restores.
	• **Teradata Database 12.0 and later:** On Teradata Database 12.0 and later, logging is automatically started when an online backup is requested. This process improves performance of the DBS as only the change images during backup are recorded in the journal table.

Option	Description
ARCMAIN Backup Connect-Back Timeout (Minutes)	Type or select the timeout interval for ARCMAIN to connect back to Plug-in *for Teradata* during cluster backups. A job is stopped if the connect-back does not take place within the specified interval. The timeout applies to all cluster backup jobs. The default setting for this option is 10 minutes.
ARCMAIN Restore Connect-Back Timeout (Minutes)	Type or select the timeout interval for ARCMAIN to connect back to the Plug-in *for Teradata* during cluster restores. A job is stopped if the connect-back does not take place within the specified interval. The timeout applies to all cluster restore jobs. The default setting for this option is 10 minutes.
Progress Statistics Update Interval (Seconds)	Type or select the interval at which the plug-in refreshes the data transfer statistics displayed on the **Monitor Job** page. By default, this information is updated every 10 seconds. You can set it to any value between 0 and 600 seconds. When set to zero, the plug-in refreshes the **Monitor Job** page after completing the backup of each table or database object. Setting the refresh interval to a low value can have a negative impact on performance.
Restore Media Request (Timeout)	Type or select the timeout interval for media availability during restore. A job is stopped if the backup media is not available within the specified interval. When set to zero, the job waits indefinitely for the media. Therefore, Quest recommends that you change the default value and set an appropriate timeout period to exit gracefully.
TARA Server Machine Address	To use the Multi-Stream backup and restore methods, set up a TARA Server, and provide the server name or IP Address in this box. The Full Multi-Stream and Full Multi-Stream On-line Backup Methods cannot be used without configuring the TARA Server Machine Address option.
TARA Server Port	The default listener port for the TARA Server is 54323. If the TARA Server is configured to listen on a nondefault port, specify the port number.
ARCMAIN Log Line Wrap Width	On TTU 13.0 and later, this setting can be used to set a value for the ARCMAIN LINEWRAP parameter. ARCMAIN uses this setting while displaying the log messages. By default, the messages are wrapped at 80 characters. To change the LINEWRAP settings, type or select the number of characters at which you want ARCMAIN to wrap the message. You can specify any value in the range 0 to 255. The line wrap setting works as follows: • 0: No wrapping • 1–79: Line wrapped at 80 characters • 80–255: Line wrapped at the specified value • > 255: Line wrapped at 80 characters
Override Auto-Deletion of ARC Working Files	This setting is only required while debugging any plug-in issues. When selected, the plug-in does not delete the temporary ARC files that are stored in the working directory—configured as **Path for ARC working files**—after a backup or restore job is completed. By default, the plug-in deletes all temporary files that are stored in the working directory.

5   To save the settings, click **OK** or **Apply**.

Adding a Teradata DBS

After configuring the default settings, the next step is to add the target DBS to the plug-in. You cannot use the plug-in or backups and restores without completing this procedure. Complete this procedure for each target DBS that you want to protect using the Plug-in *for Teradata*.

1 In the Navigation pane, click **Create Backup Job**.

—or—

In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2 To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3 Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4 In the **Actions** list, click **Add DBS**.

5 Configure the following settings:

Option	Description
DBS Name	Type the name of the Teradata DBS. Ensure that this machine has a corresponding **COP1** mapping in the `/etc/hosts` file of each BAR Server. For example, if the Teradata DBS is called **TeraDB**, the `/etc/hosts` file on each BAR Server must have an alias mapping for the DBS name as **TeraDBcop1**.
Cluster Count	Type the total number of clusters contained in the DBS. The cluster count is required to determine the number of parallel jobs for cluster archiving.

6 To close the dialog box, click **OK**.

The DBS is added to the plug-in, and displayed under the **Plug-in *for Teradata*** node.

Reconfiguring the cluster count

To reconfigure the DBS cluster count when a cluster is added or removed, use the following procedure.

1 In the Navigation pane, click **Create Backup Job**.

—or—

In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2 To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3 Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4 In the **Actions** list, click **Change Cluster Count**.

5 Configure the following settings:

Option	Description
DBS Name	This box displays the DBS name as a read-only setting.
Cluster Count	Modify the number of clusters according to the current DBS settings.

6 To close the dialog box, click **OK**.

Removing a DBS

1   In the Navigation pane, click **Create Backup Job**.

   —or—

   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3   Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4   In the **Actions** list, click **Remove DBS**.

5   In the confirmation dialog box, click **OK**.

Adding BAR Servers

1   In the Navigation pane, click **Create Backup Job**.

   —or—

   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3   Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4   In the **Actions** list, click **Define Clients for DBS**.

5   Configure the following settings:

Option	Description
Client	This list includes all NetVault Backup Clients that are added to the NetVault Backup Server. Select only the BAR Servers that participate in the backup and restore operations.
Number of Drives	Type or select the number of drives available on the selected BAR Server. The drive count helps in determining the number for parallel data streams that can be generated for Cluster and Multi-Stream backups and restores.

6   To close the dialog box, click **OK**.

> **i** | **TIP:** Use the same procedure to add or remove BAR Servers, or to reconfigure the drives available to a BAR Server.

Enabling communication between Master Plug-in *for Teradata* and BAR Servers

If the Master Plug-in *for Teradata* is configured on a NetVault Backup Client, complete the following steps to enable communication between the Master Plug-in *for Teradata* and the BAR Servers.

1   Start a terminal session on the Master **Plug-in *for Teradata***, and navigate to the `<NetVault Backup home>/util` directory.

2   Type the following command:

    `nvclientaccess -tdclients <DBSname>`

3   When the prompt is displayed, type the NetVault Backup password for the password-protected clients.

    The message "Verified Password for Client *<Client Name>*" confirms access to the client nodes.

4   Start a terminal session on the BAR Server, and navigate to the `<NetVault Backup home>/util` directory.

5   Type the following command:

    `nvclientaccess -client <NetVault Backup name of Master Plug-in for Teradata>`

6   When the prompt is displayed, type the NetVault Backup password for the machine.

    The message "Verified Password for Client *<Client Name>*" confirms the access to the Master Plug-in *for Teradata* node.

7   Perform Step 4 through Step 6 for the remaining BAR Servers.

Configuring a default login account

The Plug-in *for Teradata* requires a DBS user account that has sufficient privileges to connect to the server for backups and restores. Configuring a default login account eliminates the need to specify the authentication details each time a connection to the Teradata Database is required. The plug-in establishes a connection automatically using the default account. When a default account is configured, the existing job definitions are not affected by any changes in the user account or password. If you do not configure a default account, the job definitions would have to be changed each time the user account or password is changed.

1   In the Navigation pane, click **Create Backup Job**.

   —or—

   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3   Open the Teradata DBS node, and select **Plug-in *for Teradata***.

4   In the **Actions** list, click **Set Default Logon**.

5   Configure the following settings:

Option	Description
Default Account	Specify a Teradata DBS user account. The user account must have sufficient privileges to run backup and restore jobs.
Password	Type the password for the user account.
Use Default Login	To connect to the database automatically without waiting for any user input, select this option.

6   To save the authentication details, click **OK**.

> **i** | **NOTE:** Whenever the password for the configured user is changed in the Teradata DBS, it must also be updated for the plug-in.

Creating or upgrading the Catalog Database

A catalog database stores information about backups, which enables direct tape positioning during restore and copy operations. To create or upgrade a catalog database from the NetVault Backup WebUI, use the following procedure.

i | **IMPORTANT:**

- Before you begin, verify that you have configured the **Use ARC Catalog** and **ARC Catalog Database** options. For more information, see Configuring default settings.
- If the catalog database was created using a plug-in version earlier than 12.0, you must upgrade the database to create tables that store the additional information required for this function.
- To remove unnecessary records related to savesets that have been retired, blanked, or removed from the NVDB, use the Catalog Database Maintenance functionality provided by the plug-in. For more information, see Managing the Catalog Database.

To create or upgrade a catalog database:

1 In the Navigation pane, click **Create Backup Job**.

   —or—

   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2 To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3 Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4 In the **Actions** list, click **Create/Upgrade Catalog Database**.

5 Configure the following settings:

Option	Description
Enter Password for DBC Account	Type the password for the Database Computer (DBC) user account.
Catalog Database Name	This box displays the name of the Catalog Database specified in the Configure dialog box. If you want to change the name, do not use this interface; use the **Configure** dialog box to modify the name.
Permanent Storage Space	By default, Teradata allocates 100000000 bytes to the permanent storage space. For more information about optimum storage space for the Catalog database, see the relevant Teradata Documentation.

6 To initiate the catalog creation, click **OK**.

If you have added more than one DBS to the Plug-in *for Teradata*, repeat this procedure for each added DBS.

Creating user accounts for parallel restores

Teradata ARC does not allow concurrent restore operations by the same user. Therefore, the Plug-in *for Teradata* requires multiple user accounts to run parallel jobs for restoring cluster archives. You can use the NetVault Backup WebUI to create the Restore Accounts.

The procedure for creating Restore Accounts from the NetVault Backup WebUI involves creating the restore accounts and granting the user privileges to these accounts.

You can also use Basic Teradata Query (BTEQ) commands to accomplish this task. For more information about BTEQ, see the relevant Teradata documentation.

Note the following:

- If you do not create the restore accounts, the cluster restore jobs fail and the message "User Identification is Not Authorized" is logged.

- If you do not create sufficient restore accounts, the job does not fail, but the message "Parallelism is Lost" is displayed.

- If you do not grant the necessary privileges to the restore accounts, the restore jobs fail and the message "User does not have RESTORE Access to Database *<name>*" is logged.

This section includes the following topics:

- Creating restore accounts

- Granting user privileges to Restore Accounts

- Revoking user privileges from Restore Accounts

Creating restore accounts

Before proceeding, verify that you have configured the **Number of Restore Accounts for Parallel Restores** and the **Restore Account Base Name** settings in the **Configure** dialog box. For more information, see Configuring default settings.

To create restore accounts for parallel restore operations, use the following procedure.

1   In the Navigation pane, click **Create Backup Job**.

   —or—

   In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3   Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4   In the **Actions** list, click **Create Restore Accounts**.

5   Configure the following settings:

Option	Description
Enter Password for DBC Account	Type the password for the DBC user account.
Restore Account Base Name	This box displays the base name for the Restore Account specified in the **Configure** dialog box. If you want to change the name, do not use this option; use the **Configure** dialog box to modify the name.

Option	Description
Number of Account to Create	This box displays the number of restore accounts specified in the **Configure** dialog box. If you want to change this setting, do not use this option; use the **Configure** dialog box to modify the number for Restore Accounts.
Password for New Accounts	Provide a password for the Restore Account. The plug-in sets the same password for all Restore Accounts.

6   To start creating the restore accounts, click **OK**.

If you have added more than one DBS to the Plug-in *for Teradata*, repeat this procedure for each added DBS.

Granting user privileges to Restore Accounts

You can use the NetVault Backup WebUI to grant user privileges to Restore Accounts. You can also use BTEQ commands to accomplish this task. For more information about BTEQ, see the relevant Teradata documentation.

1   In the Navigation pane, click **Create Backup Job**.

—or—

In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3   Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4   In the **Actions** list, click **Change Restore Privileges**.

5   Configure the following settings:

Option	Description
Account name	Specify a user account with DBC account privileges.
Password	Type the password for the user account.
Restore Account Base Name	This box displays the base name for the Restore Account specified in the **Configure** dialog box. If you want to change the name, do not use this option; use the **Configure** dialog box to modify the name.
Number of Account to Create	This box displays the number of restore accounts specified in the **Configure** dialog box. Do not change this value unless you want to grant permissions to specific number of restore accounts.
Operation	To grant the restore privilege on the database, click **Grant**.

6   To close the dialog box, click **OK**.

Revoking user privileges from Restore Accounts

1   In the Navigation pane, click **Create Backup Job**.

—or—

In the Navigation pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   To open the **NetVault Backup Selections** page, click **Create New** next to the **Selections** list.

3   Open the Master Plug-in *for Teradata* node, and select **Plug-in *for Teradata***.

4   In the **Actions** list, click **Change Restore Privileges**.

5 Configure the following settings:

Option	Description
Account name	Specify a user account with DBC account privileges.
Password	Type the password for the user account.
Restore Account Base Name	This box displays the base name for the Restore Account specified in the **Configure** dialog box. If you want to change the name, do not use this option; use the **Configure** dialog box to modify the name.
Number of Account to Create	This box displays the number of restore accounts specified in the **Configure** dialog box. Do not change this value unless you want to grant permissions to specific number of restore accounts.
Operation	To revoke the granted privileges, click **Revoke**.

6 To close the dialog box, click **OK**.

Backing up data

- Available backup methods
- Performing Full and Full On-line Backups
- Performing Full Clustered and Full Clustered On-line Backups
- Performing Full Multi-Stream and Full Multi-Stream On-line Backups
- Archiving selected partitions of PPI tables
- Backing up Data Dictionary
- Generating ARC scripts
- Backing up data with user scripts
- Managing the Catalog Database
- Additional notes
- Deprecated features

Available backup methods

An archive operation copies the selected data from the Teradata Database to one or more archive files. You can use the Plug-in *for Teradata* to back up databases, tables and other database objects, and partitions of PPI tables. The plug-in supports the following backup methods:

- All-AMPs
- Cluster
- Multi-Stream

Each method can be used to perform online or offline backups. Online backups allow updates to the database objects when the backup is in progress. On Teradata Database 12.0 and later, the Plug-in *for Teradata* uses automatic logging when performing online backups. Without automatic logging, read locks are placed on the object being backed up, preventing updates during the backup.

The available backup types are described in the following sections:

- Full Backup
- Full On-line Backup
- Full Clustered Backup
- Full Clustered On-line Backup
- Full Multi-Stream Backup
- Full Multi-Stream On-line Backup
- Data Dictionary Backup
- User-defined backup scripts

Full Backup

The Full Backup method archives data from all AMPs into a single archive file. Read utility locks are used to prevent updates by other users during backup.

When a database is selected, the read utility lock is placed at the database level before archiving begins. When individual tables are selected, the lock is placed on each table before it is archived. The locks are released after the backup is completed.

Full On-line Backup

The Full On-line Backup method is similar to the Full On-line Backup method, but the database objects are accessible for writes during backups. The updates are logged to temporary journals. The archive contains the data dictionary, tables and objects, and change images in the journal which can be rolled forward during a restore.

Full Clustered Backup

The Full Clustered Backup archives data from all AMPs into a set of archive files called a cluster archive. With cluster archives, multiple data streams can be generated for a single job to reduce the overall backup time, especially when targeting large database objects. Read utility locks are used to prevent updates by other users during backups. When a database is selected, the read utility lock is placed at the database level before archiving begins. When individual tables are selected, the lock is placed on each table before it is archived.

The locks are released after the backup is completed.

The Full Cluster backup consists of two phases:

- Phase 1 archives the data dictionary.

- Phase 2 archives the data tables and objects into cluster archives.

Full Clustered On-line Backup

The Full Clustered On-line Backup method is similar to the Full Clustered Backup method, but the database objects are accessible for writes during backups. The updates are logged to temporary journals. The archive contains the data dictionary, data tables and objects, and change images in the journal which can be rolled forward during a restore.

Full Multi-Stream Backup

The Full Multi-Stream Backup method is available with TTU 13.0 and later.

In this method, the unit of data distribution is not necessarily a cluster; the Full Multi-Stream backup method can use smaller data units—for example, AMPs or sub-AMPs—to distribute data optimally and generate multiple streams for faster backups. The ARCMAIN itself determines how the data is distributed and what data each stream backs up. The backup script generated by the plug-in does not contain this information. The data dictionary is automatically included in stream 1.

To use this method, you must set up a TARA Server and configure the **TARA Server Machine Address** and **TARA Server Port** parameters in the **Configure** dialog box.

Read utility locks are used to prevent updates by other users during a backup.

When a database is selected, the read utility lock is placed at the database level before archiving begins. When individual tables are selected, the lock is placed on each table before it is archived. The locks are released after the backup is completed.

Full Multi-Stream On-line Backup

The Full Multi-Stream On-line Backup method is similar to the Full Multi-Stream backup method, and enables data distribution at granular level. However, the database objects are accessible for writes during a backup. The updates are logged to temporary journals. The archive contains the data dictionary, data tables, and the change images in the journal which can be rolled forward during restore.

To use this method, you must set up a TARA Server and configure the **TARA Server Machine Address** and **TARA Server Port** parameters in the **Configure** dialog box.

Data Dictionary Backup

A dictionary archive of a database includes the definitions of all tables, views, macros, triggers, and stored procedures. You can use this option to back up the dictionary information whenever the structure of tables in a cluster is modified.

User-defined backup scripts

The Plug-in *for Teradata* also supports backups through user-defined scripts. For more information about running user-defined backup scripts from the NetVault Backup WebUI, see Backing up data with user scripts.

Performing Full and Full On-line Backups

1   In the Navigation pane, click **Create Backup Job** to start the configuration wizard.

   —or—

   In the **Navigation** pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   In **Job Name**, specify a name for the job.

   Assign a descriptive name that lets you easily identify the job for monitoring its progress or restoring data. A job name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

3   In the **Selections** list, select an existing Backup Selection Set, or complete the following steps to create a set:

   a   To open the **NetVault Backup Selections** page, click **Create New**.

   b   Open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in *for Teradata***.

   c   To display the **Hierarchical View** and **Classical View** nodes, open the Teradata DBS node.

   The plug-in provides two methods for browsing the DBS and selecting the database objects. Select the appropriate browse method:

   ▫ **Hierarchical View:** This view displays the parent-child structure of the DBS. It is similar to the DBS view in the Teradata Administrator application.

   ▫ **Classical View:** This view displays a flat selection tree and ignores the parent-child relationship.

   d   To display the contents, open the database node.

e   If you have not configured a default login account for the plug-in, provide the following information when the prompt is displayed:

  ▫   **Account Name:** Specify a Teradata DBS user name. The user account must have sufficient privileges to run backup and restore jobs.

  ▫   **Password:** Type the password for the user account.

f   Click **OK**.

Upon authentication, the database structure is displayed.

> ℹ | **NOTE:** This step is not applicable if you have configured a default login account for the plug-in. For more information, see Configuring a default login account.

g   Select the data that you want to back up:

  ▫   **Back up an entire DBS:** In the Hierarchical View, select the **DBC** node. In the **Classical View**, select each node that you want to include in the backup.

  ▫   **Back up DBC system tables:** You can select the DBC system tables only when performing a Full or Full On-line Backup. To include the DBC system tables, select the **<All DBC Objects>** node in the Hierarchical View or the **DBC** node in the Classical View.

  ▫   **Back up individual databases:** Select the databases that you want to back up.

  ▫   **Back up individual tables and other database objects:** On Teradata database 13.0 and later, you can also select database objects, such as triggers, views, stored procedures, and others.

  ▫   **Back up PPI table partitions:** The ability to select partitions of a PPI table is limited to Full and Full Multi-Stream backup methods. The other backup methods do not support backups of PPI table partitions. For more information, see Archiving selected partitions of PPI tables.

  ▫   **Back up all items in a database:** In the Classical View, select the database node, and in the **Actions** list, click **Include ALL**. **Include ALL** marks the selected database with a red arrow in addition to the standard green check in the check box and adds the label **ALL** to the database name. It is important to know the structure of the database before using this option or its use may result in data being backed up twice.

  To remove **Include ALL**, select the database node, and in the **Actions** list, click **Cancel Include ALL**.

> ℹ | **IMPORTANT:**
> - For excluding any child-level objects after selecting a parent node, first complete all the selections, and then omit the unwanted objects from backup. Any data selection after an exclusion results in a failed backup job.
> - The All, Default, and Public objects are not displayed in the Hierarchical View. To back up these objects, select the DBC node.
> - The SYSUDTLIB Database which contains the definition of all User Defined Types (UDTs) is logically linked to the DBC Database. When you archive DBC, SYSUDTLIB is automatically included. If you exclude DBC, SYSUDTLIB is also excluded.

h   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

i   To close the dialog box, click **Save**.

4   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

a   To open the **Plug-in** *for Teradata* **Backup Options** page, click **Create New**.

b   Under **Backup Type**, select the **Full** or **Full On-line** option.

For more information about backup methods, see Available backup methods

c   Configure the applicable options.

Table 1. Plug-in *for Teradata* Backup Options

Option	Description
Use ARC Catalog	To store the backup information in a catalog, leave this check box selected. To use a catalog, also complete the following tasks: • Select the **Use ARC Catalog** check box in the Configure dialog box. For more information, see Configuring default settings. • Create the required catalog database. For more information, see Creating or upgrading the Catalog Database. Clear this check box if you do not want to use the catalog for a particular job—for example, when archiving the Catalog Database itself.
Archive only NONEMPTY DATABASES	To exclude any empty users or databases, select this check box.
Force Release Lock on Abort	To enforce lock releases when a job is canceled, select this check box. The lock is not guaranteed to release in all cases. Particularly, the following events result in a leftover lock: • If ARC is forcibly stopped by the user or operating system. • If communication to the Teradata Database is lost and cannot be reestablished. • If an internal failure occurs in ARC, such that program control cannot proceed to or complete the release lock step.
Allow Use of Network Attached Devices	By default, the plug-in only uses locally available devices. To use network-attached devices, select this check box. To apply this setting globally to all jobs, select this check box in the ***Configure*** dialog box.
Login Information	Under **Login Information**, specify a user account for the backup job: • **Use Default Logon:** To use the default login account to connect to the database during backups, leave this check box selected. Clear this check box. To use a non-default user for the job, clear this check box and configure a Backup Account and the password for the account. • **Backup Account:** Specify a Teradata DBS user account. The user account must have sufficient privileges to run backup and restore jobs. • **Password:** Type the password for the user account. **NOTE:** For jobs created with 12.x or previous versions, the plug-in uses the default login account or the user account stored in the Backup Selection Sets.
Sessions	Type or select the maximum number of Teradata Database sessions available for the archive and recovery operations. The default value for this setting is four sessions. Teradata ARC uses two control sessions for archive and recovery operations. The additional sessions are required for parallel processing during backups and restore/copy operations. The optimal number of sessions is site-specific and depends on the database size and other factors. Consult a Teradata representative if you are unsure of how many sessions to use. For most sites, 16 sessions is a good starting point. Any connected sessions that are not used in the operation result in wasted system resources.

Table 1. Plug-in *for Teradata* Backup Options

Option	Description
Override ARC Options	To override the default settings for any ARC parameters or to specify more run-time parameters for a particular job, specify the parameters and their values in this box. Ensure that the syntax is correct. The plug-in does not check for any syntactical errors when you save or submit the job. **NOTE:** This option is passed as the last argument to ARCMAIN so that you can override any ARC parameter, including the ones generated internally by the plug-in.
Run Job on Client	For All-AMPs Backups, you do not have to specify the target BAR Server while creating the job. By selecting **<AUTO>** in the **Run Job on Client** list, you can direct the plug-in to find the most suitable target automatically and start the job on that BAR Server at run-time. The suitability of a BAR Server is based on the following criteria: • The BAR Server has least number of concurrent active jobs. • It has access to an online drive. • This step ensures that the job does not have to wait for drive or media availability during execution. To override the auto-selection and run the job on particular BAR Server, select the target machine in the **Run Job on Client** list.
Query Band ID	A query band is a set of name and value pairs that can be set on a session to identify where a query originated. Query bands offer a way to identify the user and application; for example, when applications use pooling mechanisms that hide the identity of users because each connection in the pool logs in to the database using the same user account. Without query bands, there is no way to tell the source of the request when the request comes from a multi-tiered application. Another potential use of query bands is troubleshooting, when it is necessary to provide the specific user or application that issued a request. To use a query band, specify the band identifier string in the **Query Band ID** box. This string must be specified in the following format: `'name1=value1;name2=value2;'` You can specify a maximum of 2048 characters in the string.

   d   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

   A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

   e   To close the dialog box, click **Save**.

5   Select or create the Schedule Set, Target Set, and Advanced Options Set.

   For more information about these sets, see the *Quest NetVault Backup Administrator's Guide*.

   i | **NOTE:** For the Plug-in *for Teradata* jobs, you cannot configure the **Local Drives Only** option in the Target Set.

6   To save or schedule the job, select one of the following methods:

   ▪   **Schedule the job:** To submit the job for scheduling, click **Save & Submit**.

   You can monitor the job progress from the **Job Status** page and view the logs from the **View Logs** page.

   ▪   **Save the definition without scheduling the job:** To save the job definition without scheduling it, click **Save**.

You can view, edit, or run this job from the **Manage Job Definitions** page. This job is not displayed on the **Job Status** page until you submit it.

For more information about **Job Status**, **View Logs**, and **Manage Job Definitions**, see the *Quest NetVault Backup Administrator's Guide*.

Performing Full Clustered and Full Clustered On-line Backups

1   Complete Step 1 through Step 3 in Performing Full and Full On-line Backups.

2   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

   a   To open the **Plug-in** *for Teradata* **Backup Options** page, click **Create New**.

   b   Under **Backup Type**, select the **Full Clustered** or **Full Clustered On-line** option.

   For more information about backup methods, see Available backup methods.

   c   Configure the applicable options.

   For more information, see Table 1.

> **NOTE:** The **Run Job on Client** option is not applicable to Full Clustered and Full Clustered On-line Backups.

   d   To run parallel cluster backup jobs, configure the following options under **MPP Options**.

Option	Description
Maximum Parallel Data Streams to Use	Type or select the maximum number of parallel streams that can be generated for the cluster backup.
	The number of parallel streams depends on the total number of drives accessible to the BAR Servers on which the sub-jobs run.
Cluster Batch Size	Type or select the number of clusters to be backed up by each sub-job. The number of sub-jobs is equal to Cluster Count divided by Batch Size.
Retry Failed Clusters on Another Remaining Client	To retry the backup job on remaining BAR Servers if a job fails because of any of the following reasons, select this check box:
	• **Write Error:** The backup fails on a BAR server as a result of write error caused by a bad tape or a bad tape drive (Access Module error code ARC0805; severity 12).
	• **ARCMain Dies Unexpectedly:** The ARCMain process is stopped or dies unexpectedly on a BAR server.
	• **NetVault Processes Die Unexpectedly:** The NetVault Backup processes are stopped or die unexpectedly on a BAR server.
	The Plug-in *for Teradata* attempts to restart the failed cluster sub-jobs on the remaining active BAR Servers. This step might increase the backup time depending on how much data was transferred before the error, and whether an idle BAR Server is available immediately. The job status is set to **Backup Completed with Warnings** if any of the sub-jobs has to be rescheduled while the other sub-others are successful.
	If you do not select this check box, the job is canceled when a sub-job fails.

   e   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

   A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows

OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

    f   To close the dialog box, click **Save**.

3   Complete Step 5 and Step 6 in Performing Full and Full On-line Backups.

Performing Full Multi-Stream and Full Multi-Stream On-line Backups

With TTU 13.0 and later versions, you can use the Full Multi-Stream and Full Multi-Stream On-line backup methods instead of the clustered backup methods for better performance. To use these backup methods, you must set up a TARA Server and configure the **TARA Server Machine Address** and **TARA Server Port** settings in the **Configure** dialog box. For more information, see Configuring default settings. With these methods, you only have to specify the total number of data streams. The generation of streams and distribution of data is managed by the ARCMAIN.

1   Complete Step 1 through Step 3 in Performing Full and Full On-line Backups.

2   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

    a   To open the **Plug-in** *for Teradata* **Backup Options** page, click **Create New**.

    b   Under **Backup Type**, select the **Full Multi-stream** or **Full Multi-stream On-line** option.

        For more information about backup methods, see Available backup methods

    c   Configure the applicable options.

        For more information, see Table 1.

        i | **NOTE:** The **Run Job on Client** option is not applicable to Full Multi-Stream and Full Multi-Stream On-line Backups.

    d   To run parallel cluster backup jobs, configure the **Maximum Parallel Data Streams to Use** option under **MPP Options**.

        Type or select the maximum number of parallel streams that can be generated for the backup job. The number of parallel streams depends on the total number of drives accessible to the BAR Servers on which the sub-jobs run.

    e   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

        A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

    f   To close the dialog box, click **Save**.

3   Complete Step 5 and Step 6 in Performing Full and Full On-line Backups.

Archiving selected partitions of PPI tables

With the Plug-in *for Teradata*, you can archive the individual partitions of a PPI table instead of performing a full table backup. This feature can be used to do the following:

- Archive only a subset of data and avoid duplication. This option can minimize the size of the archive and improve performance.
- Restore data in table that is partially damaged.
- Copy a limited set of data to another host or a test system.

The ability to select partitions of a PPI table is limited to the Full backup method. The other backup methods do not support backups of PPI table partitions.

This section includes the following topics:

- Considerations for archiving partitions
- Backing up PPI partitions
- Modifying the PPI filter expression
- Deselecting PPI partitions

Considerations for archiving partitions

Consider the following when archiving selected partitions in PPI tables:

- A restore operation always deletes the selected partitions of the target table before restoring the rows that are stored in the archive.
- Archiving selected partitions operates on complete partitions within tables (that is, the selection of a partial partition implies the entire partition).
- Partitioning is based on one or more columns specified in the table definition.
- If a table has a partitioning expression that is different from the partitioning expression used in the PPI archive, a PPI restore is possible as long as no other significant DDL changes are made to the table.

Backing up PPI partitions

1. In the Navigation pane, click **Create Backup Job** to start the configuration wizard.

    —or—

    In the **Navigation** pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2. In **Job Name**, specify a name for the job.

    Assign a descriptive name that lets you easily identify the job for monitoring its progress or restoring data. A job name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

3. In the **Selections** list, select an existing Backup Selection Set, or complete the following steps to create a set:

    a   To open the **NetVault Backup Selections** page, click **Create New**.

b   Open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in** *for Teradata*.

c   Open the Teradata DBS node, and select the appropriate browse method.

d   To display the contents, open the database node.

e   Select the table, and in the **Actions** list, click **Select PPI Partitions**.

f   In the **Enter Partition Selection Expression** dialog box, specify the expression.

Verify that the syntax is correct. The plug-in does not check for syntactical errors when you save the expression.

g   Click **OK**.

The plug-in updates the PPI table icon to indicate PPI partition backup and displays the partition expression in parentheses.

h   To include partitions from other PPI tables, perform Step e through Step g for each table.

i   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

j   To close the dialog box, click **Save**.

4   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

a   To open the **Plug-in** *for Teradata* **Backup Options** page, click **Create New**.

b   Under **Backup Type**, select the **Full Multi-stream** or **Full Multi-stream On-line** option.

c   Configure the applicable options.

For more information, see Table 1.

d   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

e   To close the dialog box, click **Save**.

5   Complete Step 5 and Step 6 in Performing Full and Full On-line Backups.

Modifying the PPI filter expression

1   In the Navigation pane, click **Manage Sets**.

2   In the **Set Type** list, select Backup Selection.

3   In the list of available sets, select the applicable set, and click **Edit**.

4   On the **NetVault Backup Selections** page, open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in** *for Teradata*.

5   Open the Teradata DBS node, and select the appropriate browse method.

6   To display the contents, open the database node.

7   Select the applicable table, and in the **Actions** list, click **Modify PPI Expression**.

8   In the **Enter Partition Selection Expression** dialog box, specify the expression.

Verify that the syntax is correct. The plug-in does not check for syntactical errors when you save the expression.

9   Click **OK**.

The plug-in updates the PPI table icon to indicate PPI partition backup and displays the partition expression in parentheses.

10 Click **Save**.

11 In the **Edit Set** dialog box, click **Save** to overwrite the existing set.

Deselecting PPI partitions

To clear a PPI partition, you must remove the set filter expression. Clearing the table removes the table from the backup selection, but it does not remove the filter expression.

To remove a PPI filter expression:

1   In the Navigation pane, click **Manage Sets**.

2   In the **Set Type** list, select Backup Selection.

3   In the list of available sets, select the applicable set, and click **Edit**.

4   On the **NetVault Backup Selections** page, open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in** *for Teradata*.

5   Open the Teradata DBS node, and select the appropriate browse method.

6   To display the contents, open the database node.

7   Select the applicable table, and in the **Actions** list, click **Deselect PPI Partitions**.

This action removes the filter expression for the table, but the table itself remains selected. To remove the table, clear the corresponding check box.

8   Click **OK**.

9   Click **Save**.

10 In the **Edit Set** dialog box, click **Save** to overwrite the existing set.

Backing up Data Dictionary

A dictionary archive of a database includes the definitions of all tables, views, macros, triggers, and stored procedures. You can back up the dictionary information when the structure of tables in the cluster is modified.

1   In the Navigation pane, click **Create Backup Job** to start the configuration wizard.

—or—

In the **Navigation** pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   In **Job Name**, specify a name for the job.

Assign a descriptive name that lets you easily identify the job for monitoring its progress or restoring data. A job name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

3   In the **Selections** list, select an existing Backup Selection Set, or complete the following steps to create a set:

a   To open the **NetVault Backup Selections** page, click **Create New**.

b   Open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in *for Teradata***.

c   Open the Teradata DBS node, and select the appropriate browse method.

d   Select the applicable database.

e   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

f   To close the dialog box, click **Save**.

4   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

a   To open the **Plug-in *for Teradata* Backup Options** page, click **Create New**.

b   Under **Backup Type**, select the **Data Dictionary** option.

c   Configure the applicable options.

For more information, see Table 1.

d   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

e   To close the dialog box, click **Save**.

5   Complete Step 5 and Step 6 in Performing Full and Full On-line Backups.

Generating ARC scripts

The Plug-in *for Teradata* provides an option to generate only the ARC scripts without actually running the job. These scripts are stored as Context Objects in the job logs. You can save the script to files and use them with the User Script backup method. You can also use these scripts to run jobs outside the plug-in.

1   Complete Step 1 through Step 3 in Performing Full and Full On-line Backups.

2   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

a   To open the **Plug-in *for Teradata* Backup Options** page, click **Create New**.

b   Under **Backup Type**, select the one of the following backup methods:

  □ **Full**

  □ **Full On-line**

  □ **Full Clustered**

  □ **Full Clustered On-line**

  □ **Full Multi-Stream**

  □ **Full Multi-Stream On-line**

For more information about backup methods, see Available backup methods.

c   Under **Backup Type**, select the **Generate ARC Script Only** check box.

d   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

    e   To close the dialog box, click **Save**.

3   Click **Save & Submit**.

For information about viewing and saving the ARC script, see Viewing log messages.

Backing up data with user scripts

To run user-defined ARC scripts for backing up data, use the following procedure.

1   In the Navigation pane, click **Create Backup Job** to start the configuration wizard.

    —or—

In the **Navigation** pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   In **Job Name**, specify a name for the job.

Assign a descriptive name that lets you easily identify the job for monitoring its progress or restoring data. A job name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

3   In the **Selections** list, select an existing Backup Selection Set, or complete the following steps to create a set:

    a   To open the **NetVault Backup Selections** page, click **Create New**.

    b   Open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in** *for Teradata*.

    c   Open the Teradata DBS node, and select the appropriate browse method.

    d   Select the applicable database.

Further selections from the nodes beneath the Teradata DBS are not required, but the correct database must be selected.

    e   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

    f   To close the dialog box, click **Save**.

4   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

    a   To open the **Plug-in** *for Teradata* **Backup Options** page, click **Create New**.

    b   Under **Backup Type**, select the **User Script** option.

    c   Under **Overrides**, in the **Run User Script** box, type full path to the script file.

The script must reside on the Master Plug-in *for Teradata*. For more information, see Guidelines for creating user scripts.

    d   Configure the additional options that you want to use.

For more information, see Table 1.

    e   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

    f   To close the dialog box, click **Save**.

5   Complete Step 5 and Step 6 in Performing Full and Full On-line Backups.

> **i** | **NOTE:** The **Create Selection Set** page for restore jobs does not display the contents of the savesets generated using the **User Scripts** backup method. To view the contents of the saveset, you can use the **ARC Analyze** option available on the **Plug-in** *for Teradata* **Restore Options** page.

Managing the Catalog Database

NetVault Backup allows you to set a time-based or generation-based retirement period for a backup saveset. After the specified period has elapsed, NetVault Backup retires the saveset and deletes information about the backup from the NetVault Database. For more information about this feature, see the *Quest NetVault Backup Administrator's Guide*.

The plug-in provides a Catalog Database Maintenance feature that can be used to remove unnecessary records related to the savesets that have been retired, blanked, or removed from the NetVault Database. You can use this option to clean up the catalog database and manage the database size. You can run a catalog cleanup job either from the WebUI or CLI.

The procedures are described in the following sections:

* Performing Catalog Database maintenance from the WebUI

* Performing Catalog Database maintenance from the CLI

Performing Catalog Database maintenance from the WebUI

1   In the Navigation pane, click **Create Backup Job** to start the configuration wizard.

    —or—

In the **Navigation** pane, click **Guided Configuration**, and then on the **NetVault Configuration Wizard** page, click **Create Backup Jobs**.

2   In **Job Name**, specify a name for the job.

Assign a descriptive name that lets you easily identify the job for monitoring its progress or restoring data. A job name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

3   In the **Selections** list, select an existing Backup Selection Set, or complete the following steps to create a set:

    a   To open the **NetVault Backup Selections** page, click **Create New**.

    b   Open the NetVault Backup machine on which the plug-in is installed, and then open **Plug-in** *for Teradata*.

    c   Open the Teradata DBS node, and select the appropriate browse method.

    d   Select the applicable database, or open the database node and select any entity.

    e   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

    f   To close the dialog box, click **Save**.

4   In the **Plugin Options** list, select an existing Backup Options Set, or complete the following steps to create a set:

    a   To open the **Plug-in *for Teradata* Backup Options** page, click **Create New**.

    b   Under **Backup Type**, select the **Catalog Database Maintenance** option.

    c   Click **Save**, and in the **Create New Set** dialog box, type a name for the set.

A set name can contain alphanumeric and non-alphanumeric characters, but it cannot contain non-Latin characters. On Linux OS, the names can have a maximum of 200 characters. On Windows OS, there is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

To close the dialog box, click **Save**.

5   To run the job later or to define a recurring schedule, specify a Schedule Set.

You can select an existing Schedule Set or create a set by clicking Create New. For more information about the scheduling options, see the *Quest NetVault Backup Administrator's Guide*.

6   In the Schedule list, select an existing Schedule Set, or click Create New, and configure the schedule.

7   Click **Save & Submit**.

You can monitor the job progress from the **Job Status** page and view the logs from the **View Logs** page. For more information, see Viewing logs and job progress.

Performing Catalog Database maintenance from the CLI

To run a catalog cleanup job from the CLI, navigate to the *<NetVault Backup Home>*/bin directory. Depending on the operating system, type the following command:

- **On Windows:**

```
nvtera.exe NVServer=<Value> DBSName=<Value> [DBAccount=<Value>]
[DBPassword=<Value>] [Verbose=<ALL|ERROR>] /CatalogDatabaseMaintenance
```

- **On Linux:**

```
./nvtera NVServer=<Value> DBSName=<Value> [DBAccount=<Value>]
[DBPassword=<Value>] [Verbose=<ALL|ERROR>] /CatalogDatabaseMaintenance
```

Here *<value>* is a user input variable that must be replaced with the actual value. The parameters enclosed in [ ] are optional.

Options

- **CatalogDatabaseMaintenance:** – Use this option to run a catalog maintenance job. You can use either - or / to specify this option.

```
-CatalogDatabaseMaintenance
```

```
/CatalogDatabaseMaintenance
```

- **NVServer:** Name of the NetVault Backup Server.

- **DBSName:** Name of the Teradata Database.

- **DBAccount:** A valid Teradata Database user name.

- **DBPassword:** The password for the configured DBAccount.

  > **i** | **NOTE:** If you omit either **DBAccount** or **DBPassword**, the plug-in uses the default account configured for the DBS. If you omit one of these parameters without a default account, the job fails.

- **Verbose:** Specify ALL to write both the ERROR and the LOG messages to the standard output. To write only the ERROR messages to standard output, specify ERROR. This parameter is optional. If you omit this parameter or specify any other value, the plug-in does not write any messages. This parameter does not affect the NetVault Backup Log Daemon.

Note the following:

- The parameters can be specified in any order.

- The parameters are not case-sensitive, for example, you can type NVServer or NVSERVER, but the values are case-sensitive.

Additional notes

- The SYSUDTLIB Database is linked with the DBC Database; is only archived if DBC is archived. SYSUDTLIB cannot be specified as an individual object in an ARCHIVE statement. If the DBC Database is included in an archive operation, it is always archived first, followed by database SYSUDTLIB.

- The Teradata Database configuration determines how to archive when AMPs are offline. If the fallback protection or dual after-image journaling is enabled for a table, Teradata ARC makes a complete copy of the data rows, even if an Access Module Processor (AMP)—per cluster—is offline during archive.

- For non-fallback tables, Quest recommends that you perform a backup when all AMPs are online. Alternatively, you can perform specific AMP archive for the offline processors after the AMPs are back online. The Plug-in *for Teradata* does not support backups of specific AMPs. Such backups must be performed outside the plug-in from the command line.

- Since single after-images (remote or local) are maintained on single AMPs, the after-images for offline AMPs are not included in the incremental archive of the journal tables. If you restore one of these archives with a roll-forward operation, data from some of the online AMPs are not rolled forward.

Deprecated features

Starting with 13.0, the Plug-in *for Teradata* does not support the following features:

- Checkpoint restarts
- Backup encryption using Protegrity Defiance BAR encryption solution

Checkpoint restarts

Starting with 13.0, the Plug-in *for Teradata* does not support the following backup options:

- **Enable Checkpoints Restarts**
- **Checkpoint Frequency**

A backup job that has the **Enable Checkpoint Restarts** option selected fails during the parameter validation phase with the following error message in the NetVault Backup logs:

```
Checkpoint Restart is not supported in NVBU 8.5 or later. You must edit the job and
disable this option or recreate the job.
```

Backup encryption using Protegrity Defiance BAR encryption solution

Starting with 13.0, the Plug-in *for Teradata* does not support backup encryption using the Protegrity Defiance BAR Encryption solution. The **Define Encryption Algorithms** dialog box and the **Encryption Algorithm** option have been removed.

To ensure backward compatibility for jobs created with 12.x or earlier versions, the plug-in behavior has been modified as follows:

- Backup jobs: A backup job that has encryption enabled fails during the parameter validation phase with the following error message in the NetVault Backup logs:

  ```
  Encryption is not supported in Plug-in for Teradata version 13.0 or later.
  You must edit the job and disable this option or recreate the job.
  ```

- **Restore jobs:** If a saveset is encrypted, the restore job fails during the parameter validation phase with the following error message in the NetVault Backup logs:

  ```
  Encryption is not supported in Plug-in for Teradata version 13.0 or later.
  You must use an older version of Plug-in for Teradata for this job.
  ```

Restoring data

- Available restore methods
- Restoring or copying All-AMPs Backups
- Restoring or copying Cluster Backups
- Restoring or copying Multi-Stream Backups
- Restoring or copying selected partitions
- Restoring Dictionary archives
- Renaming objects during restore
- Copying data to an alternate database
- Analyzing archive media
- Generating ARC Script only
- Restoring data with user scripts
- Searching for files in savesets
- Viewing media list
- Additional notes

Available restore methods

You can use the plug-in to restore or copy databases, tables and other database objects, and PPI partitions from the savesets to the same or a different DBS configuration. The supported restore methods are described in the following sections:

- Restore
- Copy
- Analyze
- User-defined restore scripts

Restore

A restore operation moves data from archived files back to the same Teradata database from which it was archived.

Note the following:

- A restore of the Database DBC drops all the new database objects (database, users, and UDTs) created since the archive. A restore of a user database drops new tables and other database objects such as views and macros, created since the archive of the database.

- The data dictionary must contain the definition of the entity to be restored. DROP and RENAME statements cause the definition of an entity to be removed from the dictionary, and the same definition cannot be recreated using CREATE statement. So a dropped table can be restored only by restoring the entire database. A dropped database can be restored only by restoring the DBC first (provided the DBC archive has the database definition in it). To restore objects not defined in the dictionary, use the Copy method.

- When restoring partitions, select the **ALL Partitions** or **Partitions Where** option unless you intend to overwrite the existing table only with the archived partitions.

- Before starting a parallel restore job, verify that you have created the required number of restore accounts. For more information, see Creating user accounts for parallel restores.

Copy

A copy operation moves data from an archived file to any Teradata Database and creates a table if one does not exist on the target database.

The following conditions must be met before you copy the data:

- The user must have restore access privileges on the target database or table.

- The target database must exist to copy a database.

- The user account must have both CREATE TABLE and RESTORE database access privileges on the target database to copy a nonexistent table.

- The target database must have a journal table to copy journal archives.

Analyze

The analyze method allows you to determine the contents of a backup saveset without actually restoring the data.

The Plug-in *for Teradata* provides the following two analyze options:

- **Analyze Selections:** Use this option to analyze the contents of the selected database in the archive.

- **Analyze All from Archive:** Use this option to analyze the contents of the complete saveset.

The analyze method provides the following information about the archive saveset:

- The date and time when the saveset was generated.

- The archive type (All-AMPs, Cluster, or Multi-Stream).

- The name of each database, data table, journal table, stored procedure, view, and macro in each database.

- The number of bytes and rows in each table.

- If an archive file contains a selected partition archive of a table, the expression used to select the partition.

User-defined restore scripts

The Plug-in *for Teradata* also supports restores through user-defined scripts. This method allows you to restore data from backup created using user scripts and from backups created using the plug-in. For more information about running user-defined scripts from the NetVault Backup WebUI, see Restoring data with user scripts.

Restoring or copying All-AMPs Backups

To restore data using the plug-in, use the following procedure.

1   In the Navigation pane, click **Create Restore Job**.

On the **Create Restore Job — Choose Saveset** page, the saveset table provides a list of available savesets. The table shows the saveset name (Job Title and Saveset ID), creation date and time, saveset size, and saveset status.

The saveset status is indicated using the following icons.

Icon	Description
🟢	Saveset is online (all segments are online).
🟠	Saveset is partially online (some segments are online).
🔴	Saveset is offline (all segments are offline).

The saveset list is sorted by creation date. You can sort the list by a different column or reverse the sort order by clicking the column heading. The arrowhead next to the column name indicates the sort order.

2   To filter the saveset list, use the following filter options:

Filter	Description
Client	Displays savesets created for particular clients. The default selection is **Any**.
	1 To use this filter, click the **Client** box.
	2 In the **Choose Client** dialog box, select the clients.
	3 To close the dialog box, click **OK**.
Plugin Type	Displays savesets created using a particular plug-in. The default selection is **Any**.
	1 To use this filter, click the **Plugin Type** box.
	2 In the list, select the plug-in.
Date	Displays savesets created during a specified period. The default selection is **Any**.
	1 To use this filter, click the **Date** box.
	2 In the list, select the option that you want to use.
	The available options are Last 24 hours, Last Week, Last Month, Last 6 Months, Last Year, and Any.
Job	Displays savesets created for particular jobs. The default selection is **Any**.
	1 To use this filter, click the **Job** box.
	2 In the **Choose Job** dialog box, select the jobs.
	3 To close the dialog box, click **OK**.

3   Select the saveset that you want to use, and click **Next**.

When you select a saveset, the following details are displayed in the **Saveset Information** area: Job ID, job title, tag, server name, client name, plug-in name, saveset date and time, retirement setting, Incremental Backup or not, archive or not, and saveset size.

4　On the **Create Selection Set** page, open the saveset to display the **<All Objects>** node.

5　To list the databases and tables, open the **<All Objects>** node.

6　Select the items that you want to restore.

7　Click **Edit Plugin Options**, and configure the following options in the **Plug-in *for Teradata* Restore Options** dialog box.

Table 2. Plug-in *for Teradata* Restore Options

Option	Description
Login Information	Under **Login Information**, provide the following details: • **Target DBS:** This box displays the target database name. Do not change it. • **Restore Account:** To select a user account for the restore job automatically, use the default value **<AUTO>**. To run the job from a particular user account, type or select the user account. • **Password:** Type the password for the user account.
Restore Method	Under **ARC Restore Options**, select **Restore** or **Copy**.
Use ARC Catalog	If the backup information was written to a catalog, select this check box to speed up the operation. Clear this check box if a catalog was not used during backup.
Roll Forward	When restoring online backups, the Plug-in *for Teradata* provides an option to roll forward databases or tables from the journal archives. To apply the after-change images available in the restored journal, select the **Roll Forward** check box. The plug-in completes the recovery as long as the structure of the table matches the structure of the change images. When recovering multiple tables, the stopped recovery of one table—for example, if the structure of the table and after change image do not match—does not affect the recovery of other tables.
Issue BUILD Statement	To generate copy of fallback tables and indexes for fallback and nonfallback tables, select this check box under **ARC Restore Options**.
Allow Use of Network Attached Devices	By default, the plug-in only uses locally available devices. To use network-attached devices, select this check box. To apply this setting globally to all jobs, select this check box in the **Configure** dialog box.
Sessions	Type or select the maximum number of Teradata Database sessions available for the archive and recovery operations. The default value for this setting is four sessions. Teradata ARC uses two control sessions for archive and recovery operations. The additional sessions are required for parallel processing during backups and restore/copy operations. The optimal number of sessions is site-specific and depends on the database size and other factors. Consult a Teradata representative if you are unsure of how many sessions to use. For most sites, 16 sessions is a good starting point. Any connected sessions that are not used in the operation result in wasted system resources.
Override ARC Options	To override any default settings for any ARC parameters or to specify more run-time parameters for a particular job, specify the parameters and their values in this box. Verify that the syntax is correct. The plug-in does not check for any syntactical errors when you save or submit the job. **NOTE:** This option is passed as the last argument to ARCMAIN so that you can override any ARC parameter, including the ones generated internally by the plug-in.

Table 2. Plug-in *for Teradata* Restore Options

Option	Description
Run Job on Client	For All-AMPs restores, you do not have to specify the target BAR Server while creating the job. By selecting **<AUTO>** in the **Run Job on Client** list, you can direct the plug-in to find the most suitable target automatically and start the job on that BAR Server at run-time. The suitability of a BAR Server is based on the following criteria: • The BAR Server has least number of concurrent active jobs. • It has local access to the data stream to restore. This option ensures that the job does not have to wait for drive or media availability during execution. To override the autoselection, and run the job on particular BAR Server, select the target machine in the **Run Job on Client** list.
Temperature-Based Block-Level Compression Settings	The Temperature-Based Block-Level Compression (TBBLC) feature enables automatic data compression based on how often the data is accessed. If the data is COLD (infrequently accessed), it is automatically compressed. When the data becomes WARM or HOT (more frequently accessed), it is automatically decompressed. TBBLC is available with Teradata Database 14.0 and later. By default, the tables compressed with TBBLC are restored to the same temperature and compression settings that they had at the time of backup. To change the Block Compression and TVS Temperature settings during restore, configure the following settings: • **Block Compression:** To enable TBBLC for the tables that are being restored, select this check box. When you select this option, the plug-in appends the following name-value pair to the Query Band String: BLOCKCOMPRESSION=YES • **TVS Temperature:** The data temperature can be set to the following values: DEFAULT COLD WARM HOT When you select this option, the plug-in appends the following name-value pair to the Query Band String: `TVSTEMPERATURE=<Temperature_Option>` If you select DEFAULT, the plug-in does not generate a Query Band string for the TBBLC options. It uses the default DBS Control Setting for the restored data.
Query Band ID	A query band is a set of name and value pairs that can be set on a session to identify where a query originated. Query bands offer a way to identify the user and application; for example, when applications use pooling mechanisms that hide the identity of users because each connection in the pool logs in to the database using the same user account. Without query bands, there is no way to tell the source of the request when the request comes from a multi-tiered application. Another potential use of query bands is troubleshooting, when it is necessary to provide the specific user or application that issued a request. To use a query band, specify the band identifier string in the Query Band ID box. This string must be specified in the following format: `'name1=value1;name2=value2;'` You can specify a maximum of 2048 characters in the string.

8   To save the settings, click **OK**, and then click **Next**.

9   On the **Create Restore Job** page, specify a name for the job.

Assign a descriptive name that lets you easily identify the job for monitoring its progress. A job name can contain alphanumeric and nonalphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

10 In the **Target Client** list, verify that the client from which data was backed up is selected.

This client is selected by default. Do *not* change this setting.

11 Select or create the Schedule Set, Restore Source Set, and Advanced Options Set.

For more information about these sets, see the *Quest NetVault Backup Administrator's Guide*.

12 To submit the job for scheduling, click **Submit**.

You can monitor the job progress from the **Job Status** page and view the logs from the **View Logs** page. For more information about these functions, see the *Quest NetVault Backup Administrator's Guide*.

Restoring or copying Cluster Backups

The Plug-in *for Teradata* provides two methods to restore or copy the cluster backups:

- **Cluster restore method:** In this method, each subjob restores one or more clusters. The smallest data unit for a subjob is a cluster. The user specifies the maximum number of data streams that can be generated for a restore job, and the plug-in generates a restore script accordingly.

- **Multi-Stream restore method:** This method can only be used to restore cluster backups generated using Plug-in *for Teradata* 12.0 or later. The Multi-Stream restore method requires at least TTU 13.0. Also, you must configure a TARA Server. In this method, the unit of data distribution is not necessarily a cluster; the Full Multi-Stream backup method can use smaller data units—for example, AMPs or sub-AMPs—to distribute data optimally and generate multiple streams for faster backups. The ARCMAIN itself determines how the data is distributed and what data each stream restores. The restore script generated by the plug-in does not contain this information.

To restore or copy Cluster Backups:

1   Complete Step 1 through Step 6 in Restoring or copying All-AMPs Backups.

2   Click **Edit Plugin Options**, and configure the following options in the **Plug-in *for Teradata* Restore Options** dialog box:

- **Restore Method:** Under **ARC Restore Options**, select **Restore** or **Copy**.

- **Maximum Parallel Data Streams to Use:** Type or select the maximum number of parallel streams that can be generated for the restore job. The number of parallel streams depends on the total number of drives accessible to the BAR Servers on which the subjobs run.

   > **i** | **NOTE:** When using the Multi-Stream restore method, you can use the **Maximum Parallel Data Streams to Use** option to reduce the number of parallel streams and use fewer streams than what was used during backup. The plug-in restores the first subset of data streams, and then continues with the next subset until all data streams are restored. The remaining streams in the last subset may be lesser than the configured maximum parallel data streams.

- **Use TARA Multi-Stream Feature:** Select this check box if you want to restore a Cluster backup using the Multi-Stream restore method. This restore method requires at least TTU 13.0. Also, you must configure a TARA Server.

3   Configure the additional options that you want to use.

For more information, see Table 2.

> **i** | **NOTE:** The **Run Job on Client** option is not applicable to the Cluster and Multi-Stream restore methods.

4   Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Restoring or copying Multi-Stream Backups

The backups generated using the Full Multi-Stream or Full Multi-Stream On-line backup methods are restored using the Multi-Stream Restore method. In this method, the unit of data distribution is not necessarily a cluster; the Full Multi-Stream backup method can use smaller data units — for example, AMPs or sub-AMPs — to distribute data optimally and generate multiple streams for faster backups. The ARCMAIN itself determines how the data is distributed and what data each stream restores. The restore script generated by the plug-in does not contain this information.

To restore or copy Multi-Stream Backups:

1   Complete Step 1 through Step 6 in Restoring or copying All-AMPs Backups.

2   Click **Edit Plugin Options**, and configure the following options in the **Plug-in *for Teradata* Restore Options** dialog box:

- **Restore Method:** Under **ARC Restore Options**, select **Restore** or **Copy**.

- **Maximum Parallel Data Streams to Use:** Type or select the maximum number of parallel streams that can be generated for the restore job. The number of parallel streams depends on the total number of drives accessible to the BAR Servers on which the subjobs run.

  > **i** | **NOTE:** When using the Multi-Stream restore method, you can use the **Maximum Parallel Data Streams to Use** option to reduce the number of parallel streams and use fewer streams than what was used during backup. The plug-in restores the first subset of data streams, and then continues with the next subset until all data streams are restored. The remaining streams in the last subset may be lesser than the configured maximum parallel data streams.

3   Configure the additional options that you want to use.

For more information, see Table 2.

> **i** | **NOTE:** The **Run Job on Client** option is not applicable to the Cluster and Multi-Stream restore methods.

4   Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Restoring or copying selected partitions

To restore or copy selected partitions from an All-AMPs backup, use the following procedure.

1   Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups

2   Select the partition that you want to restore using one of the following methods:

- **<PPI table> (ALL PARTITIONS):** To restore all the partitions included in the selected saveset, select this check box. The records within the specified range are dropped from the table, and then the data available in the saveset is restored.

- **<PPI table> (PARTITIONS WHERE <Filter Expression>):** To modify the filter expression and specify the records that you want to restore, select this check box.

    To modify the expression, select the item, and in the **Actions** list, click **Modify PPI Expression**.

    In the **Enter Partition Selection Expression** box, the expression used to back up the data is displayed. Modify the expression and click **OK**. The records within the specified range are dropped from the table, and then the data available in the saveset is restored.

- **<PPI table> — Warning! All Data in Target Table will be Dropped:** To drop all the records in the target table and restore only the data in the saveset, select this check box.

3   Click **Edit Plugin Options**, and configure the applicable options in the **Plug-in *for Teradata* Restore Options** dialog box.

    For more information, see Table 2.

4   Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Restoring Dictionary archives

1   Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups

2   Select the data that you want to restore.

3   Click **Edit Plugin Options**, and configure the applicable options in the **Plug-in *for Teradata* Restore Options** dialog box.

    For more information, see Table 2.

4   Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Renaming objects during restore

To restore an object without overwriting the existing copy, you can rename the item during restore.

Note the following:

- You must use the Copy method if you want to rename an object. The job fails if you try to rename objects using the Restore method.

- An object with the same name must not exist in the database.

- This procedure cannot be used to rename the following objects:

  - Authorization Type

  - Instance or Constructor Methods

  - Macros

  - Triggers

  - User-defined Data Types

  - Views

To rename an object during restore:

1 Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups.

2 Select the object that you want to rename, and in the **Actions** list, click **Rename**.

3 In the **Restore Rename** dialog box, select the **Relocate to** check box, and specify the new name for the object.

4 To close the dialog box, click **OK**.

   After you close the dialog box, the plug-in updates the corresponding node in the selection tree to display the new name for the object.

5 Repeat Step 2 through Step 4 for any other object that you want to rename.

6 Click **Edit Plugin Options**.

   The **Plug-in** *for Teradata* **Restore Options** dialog box is displayed.

7 Under **ARC Restore Options**, select the **Copy** method.

8 Configure the additional options that you want to use.

   For more information, see Table 2.

9 Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Copying data to an alternate database

During restore, you can copy data to an alternate DBS configuration, which is useful when you want to migrate data to a different database. The target database to which you want to copy the data must exist; the plug-in does not create the target database.

1 Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups.

2 Select the applicable database node, and in the **Actions** list, click **Rename**.

3 In the **Restore Rename** dialog box, select the **Relocate to** check box, and specify the new name for the object.

4 To close the dialog box, click **OK**.

After you close the dialog box, the plug-in updates the corresponding node in the selection tree to display the new name for the database.

> **NOTE:** You can also rename tables and other database objects while copying them to an alternate database. For more information, see Renaming objects during restore.

5 Click **Edit Plugin Options**, and configure the following options in the **Plug-in *for Teradata* Restore Options** dialog box:

- **Login Information**: Under **Login Information**, provide the following details:
    - **Target DBS:** Specify the target database name. The database must already be added to the Plug-in *for Teradata*. For more information, see Adding a Teradata DBS.
    - **Restore Account:** To select a user account for the restore job automatically, use the default value **<AUTO>**. To run the job from a particular user account, type or select the user account.
    - **Password:** Type the password for the user account. For cluster backups, specify the common password assigned to the restore accounts.
- **Restore Method:** Under **ARC Restore Options**, select the **Copy** method.
- **Restore to a Different Teradata Configuration:** If you are restoring a cluster backup, select this check box. For All-AMPs backups, this option is not required.

6 Configure the additional options that you want to use.

For more information, see Table 2.

> **NOTE:** For cluster backups, clear the **Use ARC Catalog** check box. For All-AMPs backups, you can select the check box if the backup information was stored in a catalog
>
> The **Run Job on Client** option is not applicable to the Cluster and Multi-Stream restore methods.
>
> When restoring data to an alternate DBS configuration, a clustered saveset is always restored serially. The **Maximum Parallel Data Streams to Use** option does not affect this process. If you select the **Use TARA Multi-Stream Feature** check box, the plug-in ignores the option and logs the following warning message: "Multi-Stream Copy - Option 'Restore to a Different Teradata Configuration' is Ignored."

7 Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Analyzing archive media

The ANALYZE method conducts a basic consistency check on the selected data stream and displays the contents of the saveset without actually restoring the data. The output of the ANALYZE statement is stored as Context Object in the logs.

The Plug-in *for Teradata* provides the following two Analyze options:

- **Analyze Selections:** Use this option to analyze the contents of the selected database in the archive.
- **Analyze All from Archive:** Use this option to analyze the contents of the complete saveset.

To analyze the contents of a backup:

1 Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups.

2 Select the applicable database node.

3 Click **Edit Plugin Options**, and configure the following options in the **Plug-in *for Teradata* Restore Options** dialog box:

- **Login Information**: Under **Login Information**, provide the following details:
    - **Target DBS:** This box displays the target database name. Do not change it.

- **Restore Account:** To select a user account for the restore job automatically, use the default value **<AUTO>**. To run the job from a particular user account, type or select the user account.

- **Password:** Type the password for the user account.

- **Restore Method:** Under **ARC Restore Options**, select the **ANALYZE Selections** or **ANALYZE All from Archive** option.

4   To save the settings, click **OK**, and then click **Next**.

5   On the **Create Restore Job** page, specify a name for the job.

   Assign a descriptive name that lets you easily identify the job for monitoring its progress. A job name can contain alphanumeric and nonalphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

6   To submit the job for scheduling, click **Submit**.

   For information about viewing the output of ANALYZE statement, see Viewing log messages.

Generating ARC Script only

The Plug-in *for Teradata* provides an option to generate only the ARC scripts without actually running the job. These scripts are stored as Context Objects in the job logs. You can save the script to files and use them with the User Script method. You can also use these scripts to run jobs outside the plug-in.

1   Complete Step 1 through Step 6 in Restoring or copying All-AMPs Backups.

2   Click **Edit Plugin Options**, and configure the following options in the **Plug-in *for Teradata* Restore Options** dialog box:

- Under **ARC Restore Options**, select the **Restore** or **Copy** option.

- Select the **Generate ARC Script Only** check box.

3   To save the settings, click **OK**, and then click **Next**.

4   On the **Create Restore Job** page, specify a name for the job.

   Assign a descriptive name that lets you easily identify the job for monitoring its progress. A job name can contain alphanumeric and nonalphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

5   To submit the job for scheduling, click **Submit**.

   For information about viewing and saving the ARC script, see Viewing log messages.

Restoring data with user scripts

This section describes the following procedures:

- Restoring backups created with user scripts
- Restoring plug-in backups with user scripts
- Dumping Restore Map

Restoring backups created with user scripts

1. Complete the procedure described in the section Analyzing archive media.

   You can use the **ANALYZE Selections** or **ANALYZE ALL from Archive** option to determine the contents of the saveset.

2. To determine the backup stream filename, complete the procedure described in Dumping Restore Map.

3. Using the information obtained in Step 1 and Step 2, write an ARC script for restoring the required data.

   In the ARC script, set the **FILE** parameter to Restore Map **NVUSn** as displayed in the logs for the **Dump Restore Map** job. For example, set **FILE=NVUS1** when restoring All-AMPs archives. For cluster backups, specify the Restore Map corresponding to the specific stream file. For example, set **FILE=NVUS1** for the dictionary data, **FILE=NVUS2** for cluster 0, and so on, for the remaining clusters depending on the cluster subjobs.

   For guidelines on writing user scripts, see Guidelines for creating user scripts.

4. Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups.

5. Select the **User Archive** node.

6. Click **Edit Plugin Options**, and configure the **Run user script** option in the **Plug-in** *for Teradata* **Restore Options** dialog box.

7. Type the file path for the script file created in Step 3.

   The script file must reside on the Master Plug-in *for Teradata*.

8. Configure the additional options that you want to use.

   For more information, see Table 2.

9. Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Restoring plug-in backups with user scripts

You can use User Scripts to restore specific cluster data or to exclude or include data items manually.

1. Complete the procedure described in the section Analyzing archive media.

   You can use the **ANALYZE Selections** or **ANALYZE ALL from Archive** option to determine the contents of the saveset.

2. To determine the backup stream filename, complete the procedure described in Dumping Restore Map.

3. Write an ARC script for restoring data using either of the following methods:

   - **Create an ARC script manually:** Using the information obtained in Step 1 and Step 2, write an ARC script for restoring the required data. In the ARC script, set the **FILE** parameter to Restore Map **NVUSn** as displayed in the logs for the **Dump Restore Map** job. For example, set **FILE=NVUS1** when restoring All-AMPs archives. For cluster backups, specify the Restore Map corresponding to the specific stream file. For example, set **FILE=NVUS1** for the dictionary data, **FILE=NVUS2** for cluster 0, and so on, for the remaining clusters depending on the cluster subjobs. For guidelines on writing user scripts, see Guidelines for creating user scripts.

- **Create an ARC script using the Generate ARC Script method:** Perform the procedure described in the section Generating ARC Script only to obtain the script and modify it to meet your requirements. For cluster jobs, reconfigure the FILE parameter that is set to the stream file **FILE=NVCSn** to the Restore Map **FILE=NVUSn** as displayed in the logs for **Dump Restore Map** job. Specify the Restore Map corresponding to the specific stream file. The job fails if you use the stream filename (**NVCSn**).

4 Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups.

5 Select the top-level entity as any other selection is ignored.

6 Click **Edit Plugin Options**, and configure the **Run user script** option in the **Plug-in** *for Teradata* **Restore Options** dialog box.

7 Type the file path for the script file created in Step 3.

  The script file must reside on the Master Plug-in *for Teradata*.

8 Configure the additional options that you want to use.

  For more information, see Table 2.

9 Complete Step 8 through Step 12 in Restoring or copying All-AMPs Backups.

Dumping Restore Map

A Restore Map provides backup stream filenames that must be used with User Script option for restoring data. The Restore Maps are stored as Context Objects in the Logs.

1 Complete Step 1 through Step 5 in Restoring or copying All-AMPs Backups.

2 Select the database node.

3 Click **Edit Plugin Options**, and configure the **Restore Method** option in the **Plug-in** *for Teradata* **Restore Options** dialog box.

4 Under **ARC Restore Options**, select the **Dump Restore Map Only** option.

5 To save the settings, click **OK**, and then click **Next**.

6 On the **Create Restore Job** page, specify a name for the job.

  Assign a descriptive name that lets you easily identify the job for monitoring its progress. A job name can contain alphanumeric and nonalphanumeric characters, but it cannot contain non-Latin characters. There is no length restriction. However, a maximum of 40 characters is recommended on all platforms.

7 To submit the job for scheduling, click **Submit**.

  For information about viewing and saving the ARC script, see Viewing log messages.

Searching for files in savesets

The **Search** option on the **Create Restore Job — Choose Saveset** page allows you to find specific files or data items without opening any savesets or browsing through their contents. You can use filenames or regular expressions to find the data items that you want to restore.

To search for data items in savesets:

1 On the **Create Restore Job — Choose Saveset** page, click **Search**.

2 In the **Search for files in savesets** dialog box, configure the following options:

- **Search String:** Type the search string.

- **Regular expression search:** To use POSIX (Portable Operating System Interface for UNIX) regular expressions in the **Search String** box, select this check box.

- **Case sensitive:** To perform a case-sensitive search, select this check box.

3   Click **Search**.

On the **Search Results** page, you can view the savesets that contain the specified files or data items.

4   Select the items you want to restore.

You can only restore items from one saveset.

5   Click **Next**.

6   Complete

Viewing media list

The **Media List** option on the **Create Restore Job — Choose Saveset** page lets you view information about the media items used to store a backup. You can view details about the data segments and index segments for a backup.

1   On the **Create Restore Job — Choose Saveset** page, select the applicable saveset.

2   In the **Saveset Information** area, click **Media List**.

3   In the dialog box that is displayed, view the following details:

- **Backup size:** This area shows the total size of the saveset in number of bytes

- **Data segment table:** This table shows information about the media items that contain the data segments. You can view the following details: media label, media group label, stream ID, starting byte number, ending byte number, and media location

- **Index segment table:** This table shows information about the media items that contain the index segments. You can view the media label and media location.

4   To close the dialog box, click **Close**.

Additional notes

- When you restore the DBC Database, the plug-in automatically restores the SYSUDTLIB Database.

- When using the COPY method, do not select the DBC and SYSUDTLIB databases.

- If you restore a data table with fallback from All-AMPs or Cluster backups while one or more AMPs are offline, Teradata ARC generates the information to restore the data on the offline AMPs when they return to operation. The system recovery process restores the offline AMPs when they return to online status.

- For nonfallback tables, Quest recommends that you restore the All-AMPs or Cluster backups when all AMPs are online. Alternatively, you can restore the data to specific AMP when they come back online. The Plug-in *for Teradata* does not support restores to specific AMPs. This process must be performed outside the plug-in from the command line.

- The Teradata Database does not generate transient journal images during roll-forward operation. If the operation is not completed, the data tables being recovered are left in an unknown state.

- When restoring Full Multi-Stream and Full Multi-Stream On-line backups, the Plug-in *for Teradata* uses the following steps:

- Restore stream 1 to the same BAR Server that backed it up.

- If this BAR Server is not available, restore stream 1 to any other available BAR Server.

- If no BAR Server is available to restore stream 1, fail the entire restore job.

- Otherwise, continue with the other streams, and restore the ones that can be restored to the same BAR Server that backed them up. Skip the streams that cannot be restored to the same BAR Server.

- Restore the remaining streams to any other available BAR Server.

Viewing logs and job progress

- Monitoring job progress
- Viewing log messages

Monitoring job progress

You can monitor the progress of a job from the **Monitor Job** page. The page displays the job status, data transfer rate, log messages, and other job details.

1 In the Navigation pane, click **Job Status**.

2 In the list of jobs, select the job, and click **Monitor**.

3 On the **Monitor Job** page, view the following information:

- **Job details**: This area displays the following details: job title, job ID, phase number, instance ID, client name, plug-in name, start time, expected completion time, run count, duration, size, and status.

- **Data transfer chart:** This area displays the data transfer chart.

- **Job logs:** This area displays the log messages generated for the job.

4 To view the job definition or cancel the job, click the corresponding button in the Operations pane.

Alternatively, click a link in the Navigation pane to open a different page

Viewing log messages

You can view the log messages from the **View Logs** page.

The logs contain messages related to device and media activity, client selection, ARC Output logs, and the job status. The output logs, ARC scripts, and Restore Maps are stored as Context Objects, which can be saved to a text file.

1 In the Navigation pane, click **View Logs**.

2 On the **View Logs** page, view the log messages generated by various processes.

The table displays the following information:

- **Severity:** Severity level of the message.

  Log messages are classified into the following severity levels: Background messages, Information messages, Job messages, Warning messages, Error messages, and Severe error messages.

- **Date**: Sate and time when the log was generated.

- **Job ID:** Job identification number.

- **Class:** Type of operation that generated the logs.

  Log classes include the following: System, Schedule, Jobs, Media, Database, Plugins, and UI.

- **Client:** Name of the client for which the log was generated.
- **Message:** Detailed log message or description.

The following table provides a brief description of the log severity levels.

Icon	Severity level	Description
●	Background	General log messages.
●	Information	Log messages related to media, scheduler, and system activities.
●	Job message	Log messages related to backup, restore, and report jobs.
●	Warning	Problems that might not have caused a job to fail.
●	Error	Problems that might have caused a job to fail.
●	Severe error	Critical problems that might have caused an operation to fail.

> **i** | **NOTE:** The icons for some log messages can contain an exclamation mark, for example, ●, ●, and others. This mark indicates that you can open the message to view the log context information.
>
> To view the context information, click anywhere in the **Severity** column. Alternatively, select the message, and click **More Info**. The dialog box that is displayed can include data transfer details, execution scripts, or other information. After reviewing the details, click **OK** to close the dialog box.

Among the other entries, the ARC script, ANALYZE statement output, and Restore Map can be identified by their Log Messages as described in the following. For cluster jobs, there are multiple log entries depending on the number of parallel data streams generated for the job.

Output type	Log message
ARC script for backup and restore jobs	Job File: ARC Script for Job
	Job File: ARC Script for Job #
Output of Analyze statement	ARCmain Output for Job
	ARCmain Output for Job #
Restore Map	Restore file 'NVUS1' -> Data Steam
	Restore file 'NVUS1' -> Dictionary Stream
	Restore file 'NVUS2' -> 'Cluster Stream
General job output	ARCmain Output for Job
	ARCmain Output for Job #

3. To open one of the following dialog boxes, double-click a message with an exclamation mark:
   - **Additional Information Window:** If the log contains information about data transfer or other such information, a window containing this information is displayed.
   - **View Job Context:** The log context typically contains the execution scripts or output generated by the plug-in.

4. To save a log context, click **Save to File**.

5. In the **Save Log Context** dialog box, type the filename, and click **OK**.

The file is saved to Logs directory under the NetVault Backup installation directory.

Migrating the NetVault Backup Server

Prerequisites

Before you start the server migration, verify that the following requirements are met:

* Ensure that the Target Server has TCP/IP connectivity to all the existing NetVault Backup Clients.

* Back up the NetVault Database using the NetVault Backup Plug-in *for Databases*. The NetVault Database contains information about the current NetVault Backup system, including the clients, libraries, media, and jobs. This data must be restored to the new NetVault Backup Server to migrate the existing settings. For more information about the NetVault Backup Plug-in *for Databases*, see the *Quest NetVault Backup Built-in Plug-ins User's Guide*.

   When backing up the NetVault Database, note down the bar codes of the backup media. This information can be used to identify the tapes during restore.

i | **NOTE:** The historic logs are not preserved when the setup is migrated. You can, however, restore the log files from a previous NetVault Database backup and view it by changing the log source temporarily in the Logs window.

Migrating the NetVault Backup Server

To migrate the NetVault Backup Server from MP-RAS UNIX to Windows or Linux, use the following procedure.

1. Access the **RAS Device Management** page on the Source Server, and remove all direct attached devices.

   For instructions on removing the devices, see the *Quest NetVault Backup Administrator's Guide*.

2. Stop the NetVault Backup Service using either of the following methods:

   ▪ Start the NetVault Configurator. Click the **Service** tab, and then click **Stop Service**.

   ▪ Alternatively, start a terminal session, and type:

      ```
      ./nvpmgr shutdown
      ```

3. Remove the devices physically and reconnect them to the target server.

4. Install the NetVault Backup Server software on the target server.

   For more information, see the *Quest NetVault Backup Installation Guide*.

   Note the following:

   ▪ The NetVault Backup version must be the same as the source server. Any upgrade must be done post migration.

- The NetVault Backup name must be the same as the source server.

- The installation directory can differ on the two Servers. You can select any directory on the target server.

- The NetVault Database directory can differ on the two Servers. However, verify that the selected directory can accommodate the existing NetVault Database and meet the growing space requirements.

5   Install the Plug-in *for Teradata* and any other plug-ins that were installed on the source server.

The plug-in versions and the configuration must match on the two servers.

6   Start the NetVault Backup WebUI, and access the **RAS Device Management** page.

7   On the **Add** menu, click **Add Library**.

8   Add any one drive connected to the server.

Only one drive must be added to restore the NetVault Database. The remaining settings can be restored from the NetVault Database backup.

9   Click the **Configure** tab.

10 Double-click the library, or right-click and select **Configure**.

11 On the **Configuration** tab, select the **Mark Unknown Media Blank** check box.

When you select this check box, all the media are marked as Blank, which helps in completing the library initialization process quickly. Otherwise, NetVault Backup tries to load each tape and read its header.

12 To save the settings, click **OK**, and then click **Save Details** on the toolbar.

13 Load the NetVault Database backup media on library.

    a   If the media is not already loaded, find the slot that contains the media—use the media barcode.

    b   Right-click the slot and select **Load**.

14 Right-click the media item marked as Foreign, and select **Scan**.

When the scanning completes, all the savesets contained in the media are displayed.

15 In the Navigation pane, click **Create Restore Job**.

16 On the **Create Restore Job — Choose Saveset** page, select the saveset that you want to use, and click **Next**.

17 On the **Create Selection Set** page, select the following items:

- **Backup Indexes:** To restore backup indexes.

- **Media Manager:** To restore media-related information.

- **Schedule Manager:** To restore job schedule.

Depending on your setup, select the following additional items:

- **Events:** To restore custom events defined for backup and report jobs.

- **General Report Files:** To restore custom report templates.

- **Keys:** To restore the permanent license key for NetVault Backup Server.

- **Scripts:** To restore pre- or post-backup scripts.

- **User Level Access:** To restore access control settings.

18 Click **Submit**.

The NetVault Backup Service stops automatically when the job completes. To restart the NetVault Backup Service:

- Start the NetVault Configurator. Click the Service tab, and then click Start Service.

- Alternatively, start a terminal session, and type: `nvpmgr restart`

On successful migration, all the previously defined jobs run at the scheduled time. You can access and modify the job definitions from the Jobs window. The Server recognizes all the backup media and the media rotation policies remain unaffected.

> **i** | **NOTE:** To view the historic logs, restore the log files from the NetVault Database backup. Open the **Logs** window. On the **Options** menu, click **Select Logs Source**. In the **Select Log Source** window, type the log file path. For more information, see the *Quest NetVault Backup Administrator's Guide*.

Creating user scripts

- Guidelines for creating user scripts

Guidelines for creating user scripts

The User Script backup and recovery method can be used to run your own archive and recovery scripts. A thorough knowledge of the ARC scripting language is necessary to write these scripts. Also, you must follow certain rules to make these scripts understandable to the Plug-in *for Teradata*.

The following sections explain these rules:

- Logon string
- Backup scripts
- Restore scripts

Logon string

All scripts must begin with a logon string that connects to the Teradata DBS. There are two ways to write the logon script:

- Write the full logon string. This method is simple but lacks security as the password is visible in the script file.

- Alternatively, type the following string:

  ```
  LOGON $LOGON;
  ```

  This method uses the cached login details. The ARC process tries to log in as the same user that originally scheduled the job. This method is considerably more secure and the password is not displayed in clear text anywhere on the system. However, this method works only if a connection has been previously established from the given machine to the Teradata DBS.

Backup scripts

The following naming convention is recommended for the script files:

FILE=NVUSn (where **n** represents the file number used for cluster backups)

n	Represents
1	Dictionary
2	Cluster group #0
3	Cluster group #1
4...	Cluster group #2 (...)

The script filename for the cluster phase must not begin with the letters NVC.

Restore scripts

Review the following notes when creating a restore script:

- Follow the backup script naming convention.

- Examine the backup scripts. Determine which files contain what data, and specify the correct file number in the Restore statement to restore the intended data.

- You can access the backup archives in any order.

- When using plug-in generated ARC scripts for Cluster restores, change the cluster stream filename (for example, NVCS1) to the corresponding Restore Map file (for example, NVUS2).

Using command-line utilities

- NetVault Backup CLI and Plug-in for Teradata

NetVault Backup CLI and Plug-in *for Teradata*

The NetVault Backup CLI is common to all plug-ins, and is described in detail in the *Quest NetVault Backup Command Line Interface Reference Guide*. The following sections provide information about the utilities that are fully supported by the Plug-in *for Teradata* and the others that are not supported or provide limited functionality.

> **i** | **NOTE:** This appendix provides additional information about using the NetVault Backup CLI utilities with the Plug-in *for Teradata*. It is intended as a supplement to the *Quest NetVault Backup CLI Reference Guide*.

Supported CLI utilities

The following CLI utilities can be used with the Plug-in *for Teradata* without any restriction or issues:

- **Client-specific utilities**
- **Devices-specific utilities**
- **Job-specific utilities:** Only the following job-specific commands are fully supported by the Plug-in *for Teradata*:
  - **nvjoblist**
  - **nvjobstart**
  - **nvjobabort**
  - **nvjobhold**
  - **nvjobresume**
  - **nvjobexport**
  - **nvjobimport**
  - **nvtrigger**
  - **nvsetdelete**
  - **nvjobdelete**
- **Media-specific utilities**
- **Log-specific utilities**
- **Other utilities**

CLI utilities that provide limited or no functionality

The following CLI utilities have some known issues or limitations when you use them with the Plug-in *for Teradata*:

nvsetcreate

The **nvsetcreate** utility can be used to create the following types of Sets:

- Backup Selection Set

  > **i** | **NOTE:** The default login for database browsing must be configured to create a backup selection set using **nvsetcreate**.

- Restore Selection Set

- Schedule Set

- Backup Target Set

- Advanced Backup Options Set

- Advanced Restore Options Set

This utility cannot be used to create a Backup Options Set since the Plug-in *for Teradata* does not support the **-backupoption** parameter. A Backup Options Set can only be created from the NetVault Backup WebUI.

NetVault Backup does not support Restore Options Set for any plug-in.

Examples:

- Create a Backup Selection Set BS1 to include database DB1

  ```
  nvsetcreate -setname BS1 -type BS -client TDBAR1 -plugin TeraData
  -include "bkb4480/Hierarchical View/DBC/DB1"
  ```

- Create a Restore Selection Set RS1 to include database DB1

  ```
  nvsetcreate -setname RS1 -type RS -client TDBAR1 -plugin TeraData
  -saveset 31 -include "<All Objects>/DB1"
  ```

nvsetmodify

The nvsetmodify utility can be used to modify the following types of Sets:

Backup Selection Set

Restore Selection Set

Schedule Set

Backup Target Set

Advanced Backup Options Set

Advanced Restore Options Set

This utility cannot be used to modify a Backup Options Set since the Plug-in *for Teradata* does not support the **-backupoption** parameter. A Backup Options Set can only be modified from the NetVault Backup WebUI.

Examples:

- Modify Backup Selection Set BS1 to include database DB2 instead of DB1

  ```
  nvsetmodify -setname BS1 -type BS
  -change @tree@path@"bkb4480/Hierarchical View/DBC/DB1"=DB2
  ```

- Modify Restore Selection Set RS1 to include database DB2 instead of DB1

```
nvsetmodify -setname RS1 -type RS -change @tree@path@"<All Objects>/DB1"=DB2
```

nvjobcreate

The nvjobcreate utility can be used to create and run Plug-in *for Teradata* backup jobs. However, you cannot use the **-backupoption** parameter.

This utility cannot be used to create Plug-in *for Teradata* restore jobs because of the following reasons:

- NetVault Backup does not support a Restore Options Set for any plug-in.

- The Plug-in *for Teradata* cannot run a restore job with the default plug-in settings. It requires at least the Restore Account password to complete a restore job, and it cannot be provided from the CLI.

nvjobmodify

The **nvjobmodify** utility can be used to modify the Job Title or the Sets that are used for a backup job. However, you cannot use the **-change** parameter to modify the backup options for a Plug-in *for Teradata* job.

nvrestore

The **nvrestore** utility cannot be used to restore Plug-in *for Teradata* backups. The **-path** parameter, which is a required parameter, cannot be specified correctly for the Plug-in *for Teradata* restore jobs. The Plug-in *for Teradata* only supports the **-list** parameter that lists all the completed backups.

Troubleshooting

This topic describes some common errors and their solutions. In cases where an error occurs and is not described in this table, obtain the ARC error number from the NetVault Backup logs, and then see the relevant Teradata documentation for resolution.

Table 3. Troubleshooting

Error message	Explanation
• Backup Completed with Warnings • Failed to add backup record • Failed to write index of backup to the database	These messages indicate that the selected data was backed up, but the job's index information was not properly added by NetVault Backup to its database. Without this index information, the data cannot be properly restored. To correct this problem, perform the following: • To import the backup indexes, scan the backup media. If the contents are displayed correctly on the Create Selection Set page for restore jobs, it implies that the problem has been corrected. • If this method fails, run the job again.
Backup Failed User does not have BACKUP access to database *<database name>*	The user does not have sufficient privileges to perform backups. To perform backups, grant the necessary privileges or configure another user account with sufficient privileges.
Restore Failed User identification is not authorized	User does not exist or the password is incorrect. See the topic Creating user accounts for parallel restores to configure the restore accounts.
Restore Failed User does not have RESTORE access to database *<database name>*	The restore accounts do not have the required privileges. See the topic Granting user privileges to Restore Accounts to grant the necessary privileges.
Restore Failed Unable to locate catalog table	When restoring backups for which Catalog database was not used, disable the **Use ARC Catalog** option.

Glossary

A

AMP

Access Module Processor

ARC

Archive and Recovery

B

BTEQ

Basic Teradata Query

C

COP

Communications Processor

D

DBC

Database Computer

DBS

Database System

M

Master Plug-in *for Teradata*

The Master Plug-in *for Teradata* acts as an agent for the NetVault Backup Server to control the Teradata backup and recovery data flows for a Teradata DBS.

MPP

Massively Parallel Processing

N

NetVault Backup Client

NetVault Backup Clients are machines that act as backup or restore targets. These machines require at least the Client version of the NetVault Backup software.

NetVault Backup Domain

In a NetVault Backup setup, one machine is configured as the NetVault Backup Server and various other machines that you want to protect function as NetVault Backup Clients. A single server and its associated clients form a NetVault Backup Domain.

NetVault Backup Server

NetVault Backup Server is the core backup management software. The Server controls all the operations within the NetVault Backup Domain and manages the backup devices.

P

PPI

Partitioned Primary Index

T

TTU

Teradata Tools and Utilities

About us

We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece—you—to the community, to the new Quest.

Contacting Quest

For sales or other inquiries, visit https://www.quest.com/company/contact-us.aspx or call +1-949-754-8000.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at https://support.quest.com.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request.
- View Knowledge Base articles.
- Sign up for product notifications.
- Download software and technical documentation.
- View how-to-videos.
- Engage in community discussions.
- Chat with support engineers online.
- View services to assist you with your product.