# NetBackup™ for Sybase Administrator's Guide

for UNIX, Windows, and Linux

Release 11.1

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# NetBackup™ for Sybase Administrator's Guide

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# Contents

Chapter 1

# Introduction to NetBackup for Sybase

This chapter includes the following topics:



## About NetBackup for Sybase

NetBackup for Sybase integrates the database backup and recovery capabilities of NetBackup for Sybase with the backup and recovery management capabilities of NetBackup.


See "NetBackup for Sybase overview" on page 9.

See "SQL server and Sybase backup server" on page 10.

See "NetBackup for Sybase technical overview" on page 11.

See "Sequence of operation for NetBackup for Sybase backups" on page 12.

See "NetBackup for Sybase terminology" on page 9.


## Features of NetBackup for Sybase

Table 1-1 shows NetBackup for Sybase's main features and introduces some terms that are used in this documentation.

**Table 1-1** NetBackup for Sybase features and descriptions

| Feature | Description |
|---|---|
| Media and device management | All the devices Media Manager supports are available to NetBackup for Sybase. |
| Scheduling facilities | NetBackup scheduling facilities on the primary server can be used to schedule automatic and unattended Sybase backups.<br>This feature also lets you choose the times when these operations can occur. For example, to prevent interference with normal daytime operations, you can schedule your database backups to occur only at night. |
| Multiplexed backups and restores | NetBackup for Sybase lets you take advantage of NetBackup's multiplexing capabilities. Multiplexing directs multiple data streams to one backup device, thereby reducing the time necessary to complete the operation. |
| Transparent Sybase and regular file system backup and restore operations | All backups and restores run simultaneously and transparently without any action from the NetBackup administrator.<br>The database administrator can run database backup and restore operations through NetBackup. An administrator or any other authorized user can use NetBackup to run database backups and restores. |
| Sharing the same storage units that are used for other file backups | Devices and media can be shared for other backups or to you can give Sybase exclusive use of certain devices and media. NetBackup for Sybase can use Media Manager, disk, and Media Server Deduplication Pool (MSDP) storage units. |
| Centralized and networked backup operations | From the NetBackup primary server, you can schedule database backups or start them manually for any client. The Sybase databases can also reside on any hosts that are different from the devices on which NetBackup stores the backups. |
| User interfaces | NetBackup provides the NetBackup web UI for policy management and server-directed backups and restores. |
| Parallel backup and restore operations | NetBackup for Sybase supports the parallel backup and restore capabilities of the Sybase backup server. For example, a user can run more than one tape device at a time for a single Sybase backup or restore, thereby reducing the time necessary to complete the operation. |
| Compression | Compression increases backup performance over the network and reduces the size of the backup image that NetBackup writes to the storage unit. |

# NetBackup for Sybase terminology

Table 1-2 shows the terms that might be new to a Sybase database administrator or a NetBackup administrator.

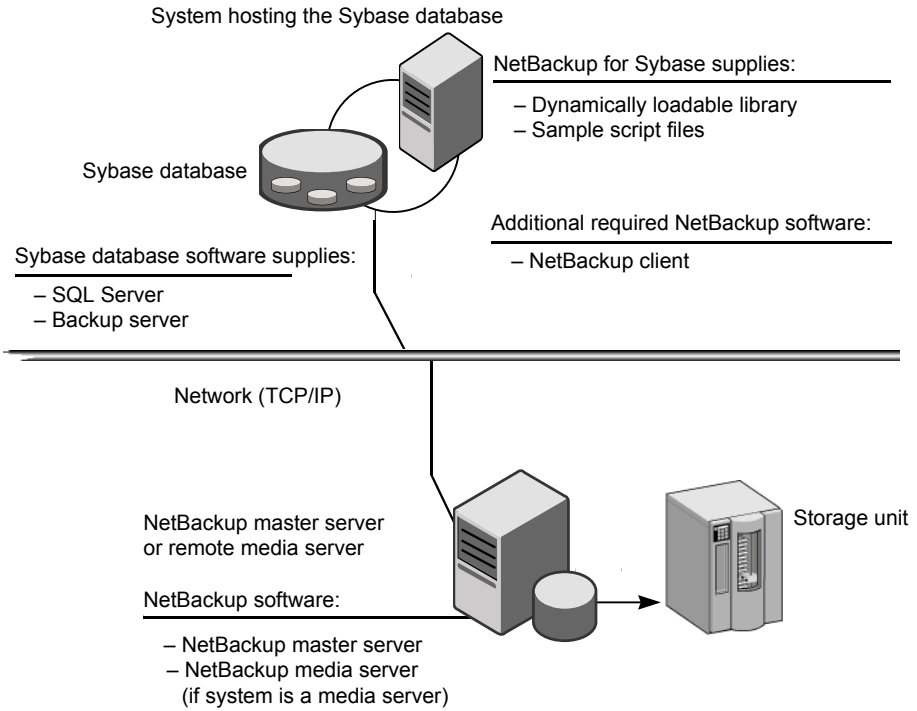
**Table 1-2** Terminology for Sybase

| Term | Meaning |
|---|---|
| SQL Server and Sybase backup server | SQL Server improves the backup and restore functions of Sybase backup server by using remote procedure calls (RPCs) to instruct Sybase backup server to back up or restore specific databases.<br>To enhance SQL Server functionality NetBackup for Sybase integrates Sybase backup server with NetBackup. This agent provides access to NetBackup media management and scheduling in addition to graphical user interface. |
| SQL Server `DUMP` and `LOAD` commands | These SQL Server commands are used for Sybase database backups and database restores. The `DUMP` command is used to back up. The `LOAD` command is used to restore. |
| Archive device | This dump device is used with the `DUMP` and `LOAD` commands. It is required to support integration with NetBackup for Sybase. |
| Sybase backup scripts | Shell scripts that control NetBackup for Sybase operations. |
| Sybase SQL script | An SQL script that contains SQL commands Sybase SQL Server to perform. |

# NetBackup for Sybase overview

Figure 1-1 shows the major components in a NetBackup for Sybase configuration. The server that is hosting the Sybase database must be a NetBackup client, and it must have NetBackup for Sybase installed or licensed.

**Figure 1-1** Example NetBackup for Sybase configuration




See "SQL server and Sybase backup server" on page 10.

See "NetBackup for Sybase technical overview" on page 11.

See "Sequence of operation for NetBackup for Sybase backups" on page 12.

See "About NetBackup for Sybase configuration" on page 19.

## SQL server and Sybase backup server

SQL Server performs Sybase backups and restores by sending Sybase `DUMP` and `LOAD` directives to Sybase backup server. Sybase backup server is an Open Server application that prevents backup and restore tasks from interfering with user processes. SQL Server and Sybase backup server are installed and configured with Sybase's regular installation facilities.

When either a Sybase `DUMP` or `LOAD` command is processed, SQL Server sends Sybase backup server the directives to dump or load the specified database or transaction log. These directives indicate which set of archive devices to use for

the dump image. Sybase backup server then handles all data transfer for the operation.

For more information on SQL Server and Sybase backup server, see your Sybase documentation.

See "NetBackup for Sybase overview" on page 9.

See "NetBackup for Sybase technical overview" on page 11.

See "Sequence of operation for NetBackup for Sybase backups" on page 12.

See "About NetBackup for Sybase configuration" on page 19.

## NetBackup for Sybase technical overview

NetBackup for Sybase has a dynamically loadable library that provides the functions necessary for Sybase backup server to use NetBackup. This library is installed when NetBackup for Sybase is installed.

NetBackup for Sybase is integrated with Sybase backup server through the Sybase backup server archive API. Sybase backup server uses the archive API routines to issue I/O requests to an archive-byte stream. At run time, Sybase backup server loads the NetBackup for Sybase library and makes calls to the API routines to open, close, read, and write to the byte stream through this API interface.

The dump-device string of the Sybase `DUMP` and `LOAD` commands is extended to support the archive API. The following syntax instructs Sybase backup server to use the NetBackup archive device to transfer data to and from NetBackup:

```
"sybackup::"
```

The Sybase `DUMP` command is as follows:

```
dump database model to "sybackup::"
```

SQL Server and Sybase backup server do not have a backup-catalog feature. However, when you perform a database or transaction dump, NetBackup for Sybase automatically creates a file name for the dump image. You must then specify this file name during a subsequent load operation.

The file naming convention for the database and transaction dumps is the following:

*sql_server_name.database_name.backup_type.stripe_number.pid.dd-mm-yyyy.hh:mm:ss*

The *backup_type* is either `D` for database or `T` for transaction.

For example:

```
SYBASE11.mydb.D.0.24312.17-12-2003.14:05:25
```

See "NetBackup for Sybase overview" on page 9.

See "Sequence of operation for NetBackup for Sybase backups" on page 12.

# Sequence of operation for NetBackup for Sybase backups

Sybase script files control the NetBackup operations. A user selects a script through the NetBackup client user interface.

You use the NetBackup web UI to configure a schedule to use a script to perform NetBackup operations.

See "About NetBackup for Sybase configuration" on page 19.

The following process takes place when a script is selected for a backup:

- A NetBackup process called `bphdb` starts the Sybase backup script on the client.
- The Sybase backup script starts the `isql` utility and uses the Sybase SQL script as an input file.
- SQL Server starts the requested operation on the databases.
- If the process requires media to store backup data, NetBackup for Sybase starts a user-directed backup by using the NetBackup `bpbackup` command for Sybase database extension.
- The NetBackup media server connects to NetBackup for Sybase on the client.
- Sybase backup server sends data to NetBackup for Sybase, which transfers data to the media server.
- The media server sends the data to a storage unit.

A restore works in essentially the same manner except that NetBackup for Sybase issues a `bprestore` command. This causes the media server to retrieve the data from the storage unit and send it to NetBackup for Sybase on the client.

Sybase backup server supports parallel operations, so it is possible to start more than one backup or restore operation.

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**Note:** The Sybase backup server API does not support the remote Sybase backup server feature. NetBackup controls all network communications.

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See "NetBackup for Sybase overview" on page 9.

Chapter 2

# Installing NetBackup for Sybase

This chapter includes the following topics:



## Planning the installation of NetBackup for Sybase

Table 2-1 shows the major installation steps that are needed to run NetBackup for Sybase.

**Table 2-1** Installation steps for NetBackup for Sybase

| Step | Action | Description |
|---|---|---|
| Step 1 | Verify the installation prerequisites. | See "Verifying the operating system and platform compatibility " on page 14.<br>See "NetBackup server and client requirements" on page 14.<br>See "Sybase server software requirements " on page 15.<br>See "Requirements for using NetBackup for Sybase in a NetBackup cluster " on page 16. |
| Step 2 | Verify that the primary server has a valid license for NetBackup for Sybase and any NetBackup options or add-ons. | See "License for NetBackup for Sybase" on page 16. |
| Step 3 | (UNIX) Specify the Sybase home path. | See "Running the sybase_config script" on page 17. |
| Step 4 | (UNIX) Add a new database instance. | See "Adding new Sybase instances" on page 17. |

# Verifying the operating system and platform compatibility

Verify that the NetBackup for Sybase agent is supported on your operating system or platform.

**To verify operating system and compatibility**

1. Go to the NetBackup compatibility list site.

   https://www.veritas.com/support/en_US/article.100040093

2. Select the link for the following document:

   Application/Database Agent Compatibility List

# NetBackup server and client requirements

Before you install NetBackup, review the requirements for the NetBackup server and the NetBackup clients.

## NetBackup server requirements

Verify that the following requirements are met for the NetBackup server:

- The NetBackup server software is installed and operational on the NetBackup server.

See the NetBackup Installation Guide.

- Make sure that you configure any backup media that the storage unit uses. The number of media volumes that are required depends on several things:
  - The devices that are used and the storage capacity of the media.
  - The sizes of the databases that you want to back up.
  - The amount of data that you want to archive.
  - The size of your backups.
  - The frequency of backups or archives.
  - The length of retention of the backup images.

  See the NetBackup Web UI Administrator's Guide.

### NetBackup client requirements

Verify that the following requirements are met for the NetBackup clients:

- The NetBackup client software is installed on the computer that has the databases you want to back up.
- If the database is clustered, you must use the same version of NetBackup on each node in the cluster.
- To use the new features that are included in NetBackup for Sybase in NetBackup 11.1, you must upgrade your NetBackup for Sybase clients to NetBackup 11.1. The NetBackup media server must use the same version as the NetBackup for Sybase client or a higher version than the client.

# Sybase server software requirements

Verify the following regarding the Sybase server software on the NetBackup server or client:

- The Sybase server software must be installed and operational.
  Refer to the Application/Database Agent Compatibility List for supported versions of the Sybase server software.
- One or more Sybase instances must exist.

See "NetBackup server and client requirements" on page 14.

# Requirements for using NetBackup for Sybase in a NetBackup cluster

If you plan to use NetBackup for Sybase on a NetBackup server configured in a NetBackup cluster, verify the following requirements:

- NetBackup supports your cluster environment.
  See the Software Compatibility List (SCL).
- The NetBackup server software is installed and configured to work in a NetBackup cluster.
  See the NetBackup Installation Guide.
  See the NetBackup Clustered Primary Server Administrator's Guide.
- The NetBackup client software is installed and operational on each node to which NetBackup can failover.
- A valid license for NetBackup for Sybase must exist on each node where NetBackup server resides.

# License for NetBackup for Sybase

The NetBackup for Sybase agent is installed with the NetBackup client software. No separate installation is required. A valid license for the agent must exist on the primary server.

More information is available on how to add licenses.

See the NetBackup Web UI Administrator's Guide.

For a NetBackup cluster, a valid license for NetBackup for Sybase must exist on each node where NetBackup server resides.

# Copying the NetBackup for Sybase library to each Sybase instance

If you have more than one instance of Sybase on your Windows computer, copy the NetBackup for Sybase library to every Sybase instance.

**To copy the NetBackup for Sybase library**

- Copy `Veritas\NetBackup\dbext\sybase\libsybackup.dll` to the appropriate location.

  Refer to the following table to determine the location, which is dependent on the level of Sybase you have:

| For | Copy to this directory |
|---|---|
| Sybase 12.0 or 12.5 | `%SYBASE%\ASE-12_*\lib\` |
| Sybase 11.9.2 | `%SYBASE%\lib\` |

**Note:** This step is required during installation and upgrade from an earlier version of the NetBackup client.

# Running the sybase_config script

After you install NetBackup with a valid license for NetBackup for Sybase, run this script on the computer where the Sybase vendor software is installed. With this script, NetBackup can gather additional information about your Sybase environment.

**To specify the Sybase home path**

1. Change to the following directory:

   `/usr/openv/netbackup/bin`

2. Run the following script:

   `./sybase_config`

3. Supply the home path for the database instance.
4. Add any other database instances, or enter `n` if you are finished.

# Adding new Sybase instances

If you install a new Sybase instance after you install NetBackup, you need to add this new instance to the NetBackup configuration. This action ensures that all new Sybase instances are included in backup operations.

See "Running the sybase_config script" on page 17.

Chapter 3

# Configuring NetBackup for Sybase

This chapter includes the following topics:

# About NetBackup for Sybase configuration

Before you attempt to configure NetBackup for Sybase, complete the installation procedure.

See “Planning the installation of NetBackup for Sybase ” on page 13.

After you complete the installation, you can follow the procedures in Table 3-1 to configure your environment.

**Table 3-1** Steps to configure NetBackup for Sybase

| Step | Action | Description |
|---|---|---|
| Step 1 | Configure a backup policy. | See “About configuring a backup policy for Sybase ” on page 20. |
| Step 2 | Create backup scripts. | See “About the backup, restore, and load scripts for NetBackup for Sybase on UNIX ” on page 27.<br>See “About the backup, restore, and load scripts for NetBackup for Sybase on Windows ” on page 34.<br>See “Modifying the NetBackup for Sybase load script” on page 42. |
| Step 3 | Edit Sybase environment variables. | See “NetBackup for Sybase environment variables” on page 43. |
| Step 4 | Edit Sybase configuration files. | See “ NetBackup for Sybase configuration or bp.conf file settings” on page 44. |
| Step 5 | (Windows) Configure the logon account for the NetBackup Client Service | See “Configuring the logon account for the NetBackup Client Service for NetBackup for Sybase ” on page 46. |
| Step 6 | Configure striped dumps and loads. | See “About striped dumps and loads with NetBackup for Sybase” on page 47. |
| Step 7 | (UNIX and Linux) Configure the permissions for log files. | See “About permissions for NetBackup for Sybase log files (UNIX)” on page 52. |
| Step 8 | Configure the Maximum jobs per client. | See “Configuring the Maximum jobs per client” on page 52. |
| Step 9 | Test the configuration settings. | See Perform a manual backup on page 53. |

# About configuring a backup policy for Sybase

A backup policy defines the backup criteria for a specific group of one or more clients.

These criteria include the following:

- Storage unit and media to use
- Policy attributes
- Backup schedules
- The clients to back up
- The script files to run on the clients

To back up the database environment, define at least one Sybase policy with the appropriate schedules. A configuration can have a single policy that includes all clients, or there can be many policies, some of which include only one client.

To perform striped dumps or loads you need to perform other configuration.

See "About striped dumps and loads with NetBackup for Sybase" on page 47.

See "Add a policy for Sybase" on page 20.

## Add a policy for Sybase

This topic describes how to create a policy to protect a database.

**To add a policy for Sybase**

1. Open the NetBackup web UI.
2. On the left, select **Protection > Policies**. Then select **Add**.
3. Type a unique name for the new policy.
4. From the **Policy type** list, select **Sybase**.
5. Complete the entries on the **Attributes** tab.

   See "About policy attributes" on page 21.
6. Add other policy information as follows:
   - Add schedules.
     See "Configure an application backup schedule" on page 23.
     See "Configure automatic backup schedules" on page 24.
   - Add clients.
     See "Add clients to a policy" on page 25.
   - Add scripts to the backup selections list.

See "Adding NetBackup for Sybase scripts to the backup selections list" on page 26.

7 When you have completed the policy configuration, select **Create**.

## About policy attributes

With a few exceptions, policy attributes for a Sybase policy are managed in the same way as for most other policy types. Certain policy attributes vary according to your specific backup strategy and system configuration.

For more information on policy attributes, see the NetBackup Administrator's Guide, Volume I.

**Table 3-2** Policy attributes for NetBackup for Sybase policies

| Attribute | Description |
|---|---|
| **Policy type** | Determines the types of clients that can be backed up with the policy. For Sybase databases, select the policy type **Sybase**. |
| **Keyword phrase** | For NetBackup for Sybase, the **Keyword phrase** entry is ignored. |

## Schedule properties

This topic describes the schedule properties that have a different meaning for database backups than for file system backups. Other schedule properties vary according to your specific backup strategy and system configuration. Additional information about other schedule properties is available. See the NetBackup Administrator's Guide, Volume I.

**Table 3-3** Description of schedule properties

| Property | Description |
|---|---|
| **Type of backup** | Specifies the type of backup that this schedule can control. The selection list shows only the backup types that apply to the policy you want to configure.<br>See "NetBackup for Sybase backup types" on page 23. |

**Table 3-3** Description of schedule properties *(continued)*

| Property | Description |
|---|---|
| **Schedule type** | You can schedule an automatic backup in one of the following ways:<br>■ **Calendar**<br>The **Calendar** option lets you schedule the backup operations that are based on specific dates, recurring week days, or recurring days of the month.<br>■ **Frequency**<br>The **Frequency** specifies the period of time that can elapse until the next backup operation begins on this schedule. For example, assume that the frequency is 7 days and a successful backup occurs on Wednesday. The next full backup does not occur until the following Wednesday.<br>Typically, incremental backups have a shorter frequency than full backups. |
| **Retention** | Specifies a retention period to keep backup copies of files before they are deleted. The retention level also denotes a schedule priority within the policy. A higher level has a higher priority. Set the time period to retain at least two full backups of your database. In this way, if one full backup is lost, you have another full backup to restore. For example, if your database is backed up once every Sunday morning, you should select a retention period of at least 2 weeks.<br>The retention period for an application backup schedule refers to the length of time that NetBackup keeps backup images. The retention period for an automatic schedule controls how long NetBackup keeps records of when scheduled backups occurred. For example, if your database is backed up once every Sunday morning, you should select a retention period of at least 2 weeks. |
| Effect of type of schedule on retention period | The type of schedule you select affects the retention period as follows:<br>■ Frequency-based scheduling<br>Set a retention period that is longer than the frequency setting for the schedule. For example, if the frequency setting is set to one week, set the retention period to be more than one week. The NetBackup scheduler compares the latest record of the automatic backup schedule to the frequency of that automatic backup schedule. This comparison is done to determine whether a backup is due. So if you set the retention period to expire the record too early, the scheduled backup frequency is unpredictable. However, if you set the retention period to be longer than necessary, the NetBackup catalog accumulates unnecessary records.<br>■ Calendar-based scheduling<br>The retention period setting is not significant for calendar-based scheduling. |
| **Multiple copies** | If you want to specify multiple copies of a backup for the policy, configure **Multiple copies** on the application backup schedule. If using Snapshot Client, also specify **Multiple copies** on the automatic schedule. |

# NetBackup for Sybase backup types

Table 3-4 shows the backup types you can specify for a NetBackup for Sybase policy.

**Table 3-4** NetBackup for Sybase backup types

| Backup type | Description |
|---|---|
| Application backup | The application backup schedule enables user-controlled NetBackup operations from the client. These operations include those initiated from the client and those initiated by an automatic schedule on the primary server. NetBackup uses the application backup schedule when the user starts a backup manually. Configure at least one application backup schedule for each database policy. The Default-Application-Backup schedule is configured automatically as an application backup schedule. |
| Automatic backup | An automatic backup schedule specifies the dates and times forNetBackup to automatically start backups. NetBackup runs the scripts in the order that they appear in the file list. If there is more than one client in the policy, the scripts are run on each client. |

## Configure an application backup schedule

A database backup requires an application backup schedule. You cannot perform backups if this type of schedule is not included in the policy. NetBackup automatically creates this schedule and names it **Default-Application-Backup**.

The backup window for an application backup schedule must encompass the time period during which all scheduled jobs and client-initiated jobs can occur. This window is necessary because the application backup schedule accepts the backup request from NetBackup for Sybase regardless of whether the backup was initiated from an automatic schedule or from the client. You can choose to set the window for the application backup schedule for 24 hours per day, seven days per week. This window ensures that your operations are never locked out due to the application backup schedule.

**To configure an application backup schedule**

1. Open the policy and select the **Schedules** tab.
2. Select the schedule that is named **Default-Application-Backup** and select **Edit**.
3. Specify the other properties for the schedule.

   See “Schedule properties” on page 21.
4. Select **Add**.

## Example application backup schedule

Assume the following:

- Users perform database backup operations during business hours, 08:00 to 13:00.
- The automatic backups that use this policy start between 18:00 and 22:00.

In this scenario, the application backup schedule must have a start time of 0800 and a duration of 14 hours. Alternatively, the schedule can have two windows each day; one with a start time of 0800 and duration of 5 hours, and another with a start time of 1800 and a duration of 4 hours.

**Table 3-5** Example settings for a NetBackup for Sybase application backup schedule

| Schedule option | Setting |
|---|---|
| Retention | 2 weeks |
| Backup window | Sunday through Saturday<br>00:08:00 - 22:00:00 |

## Configure automatic backup schedules

If you plan to have NetBackup perform automatic scheduled backups, you also need one or more automatic backup schedules. Generally, you configure the following automatic backup schedules for each Sybase database: one for the database dump backups and one for the transaction log backups.

**To configure an automatic backup schedule**

1. Open the policy and select the **Schedules** tab.
2. Click **Add**.
3. Specify a unique name for the schedule.
4. Select the **Type of backup**.

   See “NetBackup for Sybase backup types” on page 23.
5. Specify the other properties for the schedule.

   See “Schedule properties” on page 21.
6. Select **Add**.

## Example automatic backup schedule

Table 3-6 shows example settings for an automatic backup schedule.

**Table 3-6** Example settings for a NetBackup for Sybase automatic backup schedule

| Schedule property | Setting |
|---|---|
| Retention | 2 weeks |
| Frequency | Every week |
| Backup window | Sunday, 18:00:00 - 22:00:00 |

## Add clients to a policy

The client list contains a list of the clients on which your scripts are run during an automatic backup. This list determines the clients that can send backup requests to the application schedule. A NetBackup client must be in at least one policy but can be in more than one.

For a NetBackup for Sybase policy, clients you want to add must have the following items installed or available:

- Sybase
- NetBackup client or server
- The backup or restore scripts

**To add clients to a policy**

1. Open the policy and select the **Clients** tab.
2. Select **Add**.
3. Type the name of the client and select the hardware and operating system of the client.

   If Sybase is installed in a cluster, specify the virtual name of the Sybase server as the client name.

   **Note:** If you installed NetBackup on more than one node in the Sybase cluster, you must perform additional configuration.

   See "Reviewing the auto-discovered mappings" on page 49.

4. Select **Add**.

# Adding NetBackup for Sybase scripts to the backup selections list

The backup selections list in a database policy is different from the list in non-database policies. For example, in a Standard or MS-Windows policy, the list contains files and directories to be backed up. In a database policy, you specify scripts to be run.

Add scripts to the backup selections list only if you want to create a policy for automatic backups. In that case, add the scripts to a policy that has automatic backup schedules. NetBackup runs the scripts in the order that the scripts appear in the backup selections list.

**To add scripts to the backup selections list**

1. Ensure that the script resides on the client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

   See "Rules for NetBackup for Sybase scripts" on page 27.

2. Open the policy and select the **Backup selections** tab.
3. Select **Add**.
4. In the **Pathname or directive** box, type the full path name of a script on the client.

   For example:

   ```
   /usr/openv/netbackup/ext/db_ext/backup.sh
   ```

   ```
   C:\install_dir\dbext\backup.cmd
   ```

   It is recommended that you copy the script to a new file name or location so that it is not overwritten during upgrades.
5. Select **Add**.

## Browse for scripts to add to the backup selections list (Windows)

On Windows you browse for a script that is located on a client and add that script to the backup selections list.

**To browse for scripts to add to the backup selections list (Windows)**

1. Ensure that the script resides on the client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

2. Open the policy and click the **Backup Selections** tab.

3 Click **Add**.

4 Enter the name or full path to the script.

5 Click **Add**.

## Rules for NetBackup for Sybase scripts

Observe the following when you use scripts:

- To ensure that scripts run successfully on all clients, ensure that:
  - The scripts reside on each client in the client list and in the same location on each client
  - The script location is registered.
    See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.
  - That NetBackup can access the location.
  - If you use NetBackup for Sybase in a cluster, that the scripts reside in a location that is available after a failover.
- NetBackup installs sample scripts when you install the software; you can modify these scripts for your own use. Write the scripts to a location outside of the original installation location. This action ensures that future NetBackup upgrades do not overwrite your site's scripts.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

# About the backup, restore, and load scripts for NetBackup for Sybase on UNIX

Sybase SQL scripts cause the SQL Server to send directives that initiate a dump or load of the specified database or transaction log to the Sybase backup server. The Sybase `isql` utility communicates with the SQL server. For more information about the `isql` utility, see your Sybase documentation.

NetBackup for Sybase includes the following example scripts:

- `sybase_mydb_backup`
- `sybase_mydb_restore`
- `sybase_mydb_load`

The NetBackup for Sybase installation process writes these example scripts to the following location:

```
/usr/openv/netbackup/ext/db_ext/sybase/scripts
```

Each script can perform multiple Sybase backup server operations, but each type of operation requires a separate script. For example, you need to use separate scripts for backups versus restores.

The following topics show how to modify these scripts for your environment.

See "Modifying the backup script for NetBackup for Sybase on UNIX" on page 28.

See "Modifying the restore script for NetBackup for Sybase on UNIX " on page 32.

See "Modifying the NetBackup for Sybase load script" on page 42.

See "NetBackup for Sybase environment variables" on page 43.

# Modifying the backup script for NetBackup for Sybase on UNIX

The following procedure shows how to modify the backup script.

**To modify the sybase_mdb_backup script**

1. Copy the example script to the authorized location on your client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

   Do not save custom scripts in the samples directory. Subsequent NetBackup upgrades can overwrite your site's scripts.

2. Set the access permissions of the script to 775.

   ```
   chmod 775 sybase_mydb_backup
   ```

3. Use a text editor to open the `sybase_mydb_backup` script.

   The following example uses the `vi`(1) text editor.

   ```
   vi sybase_mydb_backup
   ```

4. Modify the `sybase_mydb_backup` script using the instructions in the script itself.

   When customizing this script, note the following line:

   ```
   # Replace "database_dump" below with your actual schedule name
   if [ "${SYBACKUP_SCHED}" = "database_dump" ]
   ```

   Replace `database_dump` with the name of the Automatic Backup schedule used when you set up the NetBackup configuration.

   See "About configuring a backup policy for Sybase " on page 20.

5 Save and close the file.

6 Test the script you modified.

See Perform a manual backup on page 53.

See "Sybase backup strategy" on page 54.

# Example sybase_mydb_backup.cmd script for NetBackup

The following code example shows the `sybase_mydb_backup` script:

```
#************************************************************************
# Replace /usr/sybase12 below with the actual Sybase home directory
#************************************************************************
SYBASE=/usr/sybase12

#************************************************************************
# Replace SYBASE12 below with the actual name of the SQL Server
#************************************************************************
SYBSERVER=SYBASE12

#************************************************************************
# Replace SYB_DB below with the actual name of your Sybase database
#************************************************************************
DATABASE_NAME=SYB_DB

#************************************************************************
# Replace syb_files below with your actual name of the NetBackup
# server Policy to be used to backup the directory with Sybase script files
#************************************************************************
SYB_FILES_POLICY=syb_files

#************************************************************************
# Replace /usr/sybase12/scripts below with your actual path of the Sybase files
#************************************************************************
SYB_FILES_DIR=/usr/sybase12/scripts

if [ ! -d "${SYBASE}"/ASE-12_0/ ]
then
#************** Sybase 11.9.2 or earlier ******************
ASE_QUAL=
OCS_QUAL=
else
```

```
#************** Sybase 12.0 ****************************
SYBASE_ASE=ASE-12_0; export SYBASE_ASE
SYBASE_OCS=OCS-12_0; export SYBASE_OCS
ASE_QUAL=/$SYBASE_ASE
OCS_QUAL=/$SYBASE_OCS
fi


echo "Started ‘date’"
SYBASE=$SYBASE; export SYBASE
# These environment variables are set by NetBackup
echo "SYBACKUP_SERVER = $SYBACKUP_SERVER"
echo "SYBACKUP_POLICY = $SYBACKUP_POLICY"
echo "SYBACKUP_SCHED = $SYBACKUP_SCHED"
echo "SYBACKUP_SCHEDULED = $SYBACKUP_SCHEDULED"
echo "SYBACKUP_USER_INITIATED = $SYBACKUP_USER_INITIATED"

RETURN_STATUS=0

#*****************************************************************************
# Replace "database_dump" below with your actual NetBackup schedule name
# which is used for a full backup of the Sybase database.
#*****************************************************************************
if [ "${SYBACKUP_SCHED}" = "database_dump" ]
then
############## NetBackup has started a "database_dump" backup ###############
DUMP_TYPE=DATABASE

else
############## NetBackup has started a "transaction log" backup ###############
DUMP_TYPE=TRANSACTION
fi

#*****************************************************************************
# Replace "Default-Application-Backup" below with your actual NetBackup
# Application Backup type schedule name for the Sybase database.
#*****************************************************************************
    echo dump $DUMP_TYPE $DATABASE_NAME to \"sybackup::-SERV $SYBACKUP_SERVER -POL
$SYBACKUP_POLICY -SCHED Default-Application-Backup\" > ./syb_${DATABASE_NAME}_dump

#*****************************************************************************
# Remove the '#' from the beginning of the line below if you are going to
# use multiple stripes for the backup. Repeat this line for each stripe.
```

```
# Replace "Default-Application-Backup" below with your actual NetBackup
# Application Backup type schedule name for the Sybase database.
# ****************************************************************************
# echo stripe on \"sybackup::-SERV $SYBACKUP_SERVER -POL $SYBACKUP_POLICY
-SCHED Default-Application-Backup\" >> ./syb_${DATABASE_NAME}_dump

echo go >> ./syb_${DATABASE_NAME}_dump

#*****************************************************************************
# Replace "manager" with your Sybase server Administrator's Password
#*****************************************************************************
    echo "$SYBASE$OCS_QUAL/bin/isql -Usa -Pmanager -I$SYBASE/interfaces -S$SYBSERVER
< ./syb_${DATABASE_NAME}_dump"

    $SYBASE$OCS_QUAL/bin/isql -Usa -Pmanager -I$SYBASE/interfaces -S$SYBSERVER
< ./syb_${DATABASE_NAME}_dump
    RETURN_STATUS=$?

if [ "${DUMP_TYPE}" = "DATABASE" ]
then
#  Initiate a backup of any file related to the Sybase database, such as script files.

    echo "bpbackup -c $SYB_FILES_POLICY $SYB_FILES_DIR"
    /usr/openv/netbackup/bin/bpbackup -c $SYB_FILES_POLICY $SYB_FILES_DIR
    BPBACKUP_STATUS=$?

    if [ "$BPBACKUP_STATUS" -ne 0 ]
    then
        echo ""
        echo "bpbackup of $SYB_FILES_DIR returned $BPBACKUP_STATUS"
    fi
fi


echo "Finished `date`"

echo "exit $RETURN_STATUS"
echo ""

exit $RETURN_STATUS
```

See " NetBackup for Sybase configuration or bp.conf file settings" on page 44.

# Modifying the restore script for NetBackup for Sybase on UNIX

The following procedure shows how to modify the restore script.

**To modify the sybase_mydb_restore script**

1. Copy the example script to the authorized location on your client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

   Do not save custom scripts in the samples directory. Subsequent NetBackup upgrades can overwrite your site's scripts.

2. Set the access permissions of the script to 775.

   ```
   chmod 775 script_name
   ```

3. Use a text editor to open the `sybase_mydb_restore` script.

   The following example uses the `vi`(1) text editor:

   ```
   vi sybase_mydb_restore
   ```

4. Modify the `sybase_mydb_restore` script using the instructions in the script itself.
5. Save and close the file.
6. Test the script you modified.

   More information is available for how to test scripts.

   See Perform a manual backup on page 53.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

# Example of a sybase_mydb_restore script

The following code example shows the `sybase_mydb_restore` script:

```
#************************************************************************
# Replace /usr/sybase12 below with your actual Sybase home directory
#************************************************************************
SYBASE=/usr/sybase12

#************************************************************************
# Replace SYBASE12 below with your actual name of the SQL Server
```

```
#************************************************************************
SYBSERVER=SYBASE12

if [ ! -d "${SYBASE}"/ASE-12_0/ ]
then
#************** Sybase 11.9.2 or earlier **************
ASE_QUAL=
OCS_QUAL=
else
#************** Sybase 12.0 or later **************
SYBASE_ASE=ASE-12_0; export SYBASE_ASE
SYBASE_OCS=OCS-12_0; export SYBASE_OCS
ASE_QUAL=/$SYBASE_ASE
OCS_QUAL=/$SYBASE_OCS
fi

#************************************************************************
# Replace /usr/openv/netbackup/ext/db_ext/sybase/scripts/sybase_mydb_load
# below with your actual SQL script path which contains corresponding
# LOAD commands
#************************************************************************
LOADDB=/usr/openv/netbackup/ext/db_ext/sybase/scripts/sybase_mydb_load

echo "Started ‘date’"

SYBASE=$SYBASE; export SYBASE

RETURN_STATUS=0

# NetBackup has started a restore

#************************************************************************
# Replace "manager" with your Sybase server Administrator's Password
#************************************************************************
echo "$SYBASE$OCS_QUAL/bin/isql -Usa -Pmanager -I$SYBASE/interfaces -S$SYBSERVER < $LOADDB"
$SYBASE$OCS_QUAL/bin/isql -Usa -Pmanager -I$SYBASE/interfaces -S$SYBSERVER < $LOADDB

RETURN_STATUS=$?

echo "Finished ‘date’"

echo "exit $RETURN_STATUS"
echo ""
```

```
exit $RETURN_STATUS
```

# About the backup, restore, and load scripts for NetBackup for Sybase on Windows

Sybase SQL scripts cause the SQL Server to send directives that initiate a dump or load of the specified database or transaction log to the Sybase backup server. The Sybase `isql` utility communicates with the SQL server. For more information about the `isql` utility, see your Sybase documentation.

NetBackup for Sybase includes the following example scripts:

- `sybase_mydb_backup.cmd`
- `sybase_mydb_restore.cmd`
- `sybase_mydb_load`

The NetBackup for Sybase installation process writes these example scripts to the following location:

*install_path*\NetBackup\dbext\sybase\samples

Each script can perform multiple Sybase backup server operations, but each type of operation requires a separate script. For example, you need to use separate scripts for backups versus restores.

The following sections show how to modify these scripts for your environment.

See "Modifying the backup script for NetBackup for Sybase on Windows" on page 35.

See "sybase_mdb_backup.cmd script" on page 35.

See "Additional information for editing the backup script for NetBackup for Sybase on Windows" on page 38.

See "Modifying the restore script for NetBackup for Sybase on Windows" on page 39.

See "sybase_mydb_restore.cmd script example for NetBackup" on page 40.

See "Additional information for editing the restore script for NetBackup for Sybase on Windows" on page 41.

See "Modifying the NetBackup for Sybase load script" on page 42.

See "NetBackup for Sybase environment variables" on page 43.

# Modifying the backup script for NetBackup for Sybase on Windows

The following procedure shows how to modify the backup script.

**To modify the sybase_mdb_backup.cmd script**

1. Copy the example script to the authorized location on your client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

   Do not save custom scripts in the samples directory. Subsequent NetBackup upgrades can overwrite your site's scripts.
2. Make sure there is share access to the script.
3. Use a text editor to open the `sybase_mydb_backup.cmd` script.
4. Modify the `sybase_mydb_backup.cmd` script using the instructions in the script itself.
5. You can modify the `sybase_mydb_backup.cmd` script to back up more than one database. For example, the following `DUMP` commands back up two different databases, `db1` and `db2`, and use two different Sybase policy configurations:

   See "About configuring a backup policy for Sybase " on page 20.

   ```
   dump database db1 to "sybackup::-POLICY db1-policy"
   go
   dump database db2 to "sybackup::-POLICY db2-policy"
   go
   ```
6. Save and close the file.
7. Test the script you modified.

   More information is available for how to test scripts.

   See Perform a manual backup on page 53.

See "Sybase backup strategy" on page 54.

# sybase_mdb_backup.cmd script

The `sybase_mydb_backup.cmd` script is as follows:

```
@setlocal
@echo off

@REM ************************************************************************
```

```
@REM Replace C:\Sybase below with your actual Sybase home directory
@REM ************************************************************************
@set SYBASE=C:\Sybase

@REM ************************************************************************
@REM Replace Sybase below with the actual name of your SQL Server
@REM ************************************************************************
@set SYBSERVER=SYBASE

@REM ************************************************************************
@REM Replace SYB_DB below with the actual name of your Sybase database
@REM ************************************************************************
@set DATABASE_NAME=SYB_DB

if "%SYBASE_OCS%" == "" goto notsyb12
@REM ********* Sybase 12.0 or later ***********
@set OCS_QUAL=\%SYBASE_OCS%
goto cont1

:notsyb12
@REM ********* Sybase 11.9.2 or earlier **********
@set OCS_QUAL=

:cont1

@REM ************************************************************************
@REM These environment variables are set by NetBackup.
@REM ************************************************************************
@echo SYBACKUP_SERVER = %SYBACKUP_SERVER%
@echo SYBACKUP_POLICY = %SYBACKUP_POLICY%
@echo SYBACKUP_SCHED = %SYBACKUP_SCHED%
@echo SYBACKUP_SCHEDULED = %SYBACKUP_SCHEDULED%
@echo SYBACKUP_USER_INITIATED = %SYBACKUP_USER_INITIATED%

@REM ************************************************************************
@REM Replace "database_dump" below with your actual NetBackup schedule name
@REM which is used for a full backup of the Sybase database.
@REM ************************************************************************
if  "%SYBACKUP_SCHED%" == "database_dump" goto dbdump

@REM *********** NetBackup has started a "transaction_dump" backup ***********
set DUMP_TYPE=TRANSACTION
       goto entercmd
```

```
:dbdump
@REM *********** NetBackup has started a "database_dump" backup ***********
set DUMP_TYPE=DATABASE

:entercmd

@REM ************************************************************************
@REM Replace "Default-Application-Backup" below with your actual NetBackup
@REM Application Backup type schedule name for the Sybase database.
@REM ************************************************************************

@echo dump %DUMP_TYPE% %DATABASE_NAME% to "sybackup::-SERV %SYBACKUP_SERVER% -POL
%SYBACKUP_POLICY% -SCHED Default-Application-Backup -STAT_FILE %STATUS_FILE%" > .
\syb_%DATABASE_NAME%_dump

@REM ************************************************************************
@REM Remove the REM from the beginning of the line below if you are going to
@REM use multiple stripes for the backup. Repeat this line for each stripe.
@REM Replace "Default-Application-Backup" below with your actual NetBackup
@REM Application Backup type schedule name for the Sybase database.
@REM ************************************************************************
@REM echo stripe on "sybackup::-SERV %SYBACKUP_SERVER% -POL %SYBACKUP_POLICY% -SCHED
Default-Application-Backup -STAT_FILE %STATUS_FILE%" >> .\syb_%DATABASE_NAME%_dump

@echo go >> .\syb_%DATABASE_NAME%_dump



@REM ************************************************************************
@REM Replace "manager" with your Sybase server Administrator's Password
@REM ************************************************************************

set CMD_LINE=%SYBASE%%OCS_QUAL%\bin\isql -Usa -Pmanager -I%SYBASE%\ini\sql.ini
-S%SYBSERVER% -i .\syb_%DATABASE_NAME%_dump

@echo %CMD_LINE%
%CMD_LINE%


@REM ************************************************************************
@REM This script will return an error status back to the NetBackup client if
```

```
@REM the isql command fails.
@REM ************************************************************************

if errorlevel 0 goto end
echo Execution of isql command failed - exiting
if "%STATUS_FILE%" == "" goto end
if exist "%STATUS_FILE%" echo 1 > "%STATUS_FILE%"

:end
@echo on
@endlocal
```

See " NetBackup for Sybase configuration or bp.conf file settings" on page 44.

# Additional information for editing the backup script for NetBackup for Sybase on Windows

```
@set SYBASE=C:\Sybase
```

Set this variable to the Sybase home folder. Typically set to the same value as the `SYBASE` environment variable.

```
@set SYBSERVER=SYBASE
```

Set this variable to the name of the Sybase adaptive server. Typically set to the same value as the `DSQUERY` environment variable.

```
@set DATABASE_NAME=SYB_DB
```

Set this variable to the name of your Sybase database.

```
if  "%SYBACKUP_SCHED%" == "database_dump" goto dbdump
```

Replace `database_dump` with the Automatic Backup schedule name that is used to schedule database dumps. You already configured this Automatic Backup schedule.

See "About configuring a backup policy for Sybase " on page 20.

```
@echo dump %DUMP_TYPE% %DATABASE_NAME% to "sybackup::-SERV
%SYBACKUP_SERVER% -POLICY %SYBACKUP_POLICY% -SCHED
```

```
Default-Application-Backup -STAT_FILE %STATUS_FILE%"
> .\syb_%DATABASE_NAME%_dump
```

This line builds the dump command that `isql` processes. Change the NetBackup server name (`%SYBACKUP_SERVER%`), the Sybase policy name (`%SYBACKUP_POLICY%`), and Application Backup schedule name (`Default-Application-Backup`) to fit your environment. Do not change the name of the client status file (`%STATUS_FILE%`).

```
@REM echo stripe on "sybackup::-SERV %SYBACKUP_SERVER% -POLICY
%SYBACKUP_POLICY% -SCHED Default-Application-Backup -STAT_FILE
%STATUS_FILE%" >> .\syb_%DATABASE_NAME%_dump
```

Change the NetBackup server name (`%SYBACKUP_SERVER%`), the Sybase policy name (`%SYBACKUP_POLICY%`), and Application Backup schedule name (`%SYBACKUP_POLICY%`) to match the `@echo dump` line described previously in this table. Repeat this line for each additional stripe that you plan to use to backup the database.

If you are going to use multiple stripes to back up the Sybase database, delete `REM` from this line.

```
set CMD_LINE=%SYBASE%%OCS_QUAL%\bin\isql -Usa -Pmanager
-I%SYBASE%\ini\sql.ini -S%SYBSERVER%
```

Replace `manager` with the adaptive server password for the administrator.

See " NetBackup for Sybase configuration or bp.conf file settings" on page 44.

# Modifying the restore script for NetBackup for Sybase on Windows

The following procedure shows how to modify the restore script.

**To modify the sybase_mydb_restore.cmd script**

1. Copy the example script to the authorized location on your client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

   Do not save custom scripts in the samples directory. Subsequent NetBackup upgrades can overwrite your site's scripts.

2. Make sure there is share access to the script.

3. Use a text editor to open the `sybase_mydb_restore.cmd` script.

4. Modify the `sybase_mydb_restore.cmd` script using the instructions in the script itself.

   More information is available for modifying this script.

5. Save and close the file.
6. Test the script you modified.

   More information is available for how to test scripts.

   See Perform a manual backup on page 53.

## sybase_mydb_restore.cmd script example for NetBackup

The following code example shows the `sybase_mydb_restore.cmd` script:

The `sybase_mydb_restore` script is as follows:

```
@setlocal
@echo off

@REM ************************************************************************
@REM Replace C:\Sybase below with your actual Sybase home directory
@REM ************************************************************************
@set SYBASE=C:\Sybase

@REM ************************************************************************
@REM Replace SYBASE below with the actual name of your SQL Server
@REM ************************************************************************
@set SYBSERVER=SYBASE

if "%SYBASE_OCS%" == "" goto notsyb12
@REM ********* Sybase 12.0 or later ***********
@set OCS_QUAL=\%SYBASE_OCS%
goto cont1

:notsyb12
@REM ********* Sybase 11.9.2 or earlier **********
@set OCS_QUAL=

:cont1

@REM ************************************************************************
@REM Replace ".\sybase_mydb_load" below with a full directory path only if
@REM the script file which contains the isql LOAD command is in a different
```

```
@REM directory than this script file.
@REM ***************************************************************************
@set LOADDB=".\sybase_mydb_load"

@REM NetBackup has started a restore
@REM ***************************************************************************
@REM Replace "manager" with your Sybase server Administrator's Password
@REM ***************************************************************************
set CMD_LINE=%SYBASE%%OCS_QUAL%\bin\isql -Usa -Pmanager -I%SYBASE%\ini\sql.ini
-S%SYBSERVER% -i %LOADDB%



@echo %CMD_LINE%
%CMD_LINE%


@echo on
@endlocal
```

See " NetBackup for Sybase configuration or bp.conf file settings" on page 44.

## Additional information for editing the restore script for NetBackup for Sybase on Windows

The following is additional information for editing the restore script.

`@set SYBASE=C:\Sybase`

Set this to the Sybase home folder. Typically set to the same value as the `SYBASE` environment variable.

`@set SYBSERVER=SYBASE`

Set this to the name of the Sybase adaptive server. Typically set to the same value as the `DSQUERY` environmental variable.

`@set LOADDB=".\sybase_mydb_load"`

Replace `LOADDB` with the full pathname of the script file that contains the Sybase `LOAD` command. Perform this replacement only if the script file is in a directory that is different from the one in which the `sybase_mydb_restore` script file resides.

```
set CMD_LINE=%SYBASE%%OCS_QUAL%\bin\isql -Usa -Pmanager -I%SYBASE%\ini\sql.ini
-S%SYBSERVER%
```

Replace `manager` with the adaptive server password for the administrator.

See " NetBackup for Sybase configuration or bp.conf file settings" on page 44.

# Modifying the NetBackup for Sybase load script

This topic shows how to modify the load script. The following is an example of the `sybase_mydb_load` script:

```
load database mydb from "sybackup::SYBASE12.mydb.D.0.24312.20-12-2001.23:05:25"
go
load transaction mydb from "sybackup::SYBASE12.mydb.T.0.44532.21-12-2001.22:01:00"
go
load transaction mydb from "sybackup::SYBASE12.mydb.T.0.14142.22-12-2001.20:45:00"
go
online database mydb
```

**To modify the sybase_mydb_load script**

1. Copy the example script to the authorized location on your client.

   See "Registering authorized locations used by a NetBackup database script-based policy" on page 69.

   Do not save custom scripts in the samples directory. Subsequent NetBackup upgrades can overwrite your site's scripts.

2. (UNIX or Linux) Set the access permissions of the script to 775.

   ```
   chmod 775 script_name
   ```

3. (Windows) Make sure there is share access to the script.
4. Use a text editor to open the `sybase_mydb_load` script.
5. Replace `mydb` with the name of the database.
6. Replace the file name, shown in the example as `SYBASE12`, with the name obtained from the `bplist` command.

   More information about the format of the file name is available.

   See "NetBackup for Sybase technical overview" on page 11.

7 (Optional) Use the `-SERV` option to specify the NetBackup server on the device string of the `load` command. The `-SERV` option, which in this example specifies `saturn`, overrides any server that is specified in the NetBackup client configuration. For example:

```
load database mydb from "sybackup::SYBASE12.mydb.D.0.24312.20-12-2001.23:05:25 -SERV
saturn"
```

8 Save and close the file.

9 Test the script you modified.

More information is available for how to test scripts.

See Perform a manual backup on page 53.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

# NetBackup for Sybase environment variables

When a schedule runs, NetBackup sets environment variables for the scripts to use when performing the backup.

Table 3-7 describes these environment variables.

**Table 3-7** Enviornment variables

| UNIX or Linux | Windows | Purpose |
|---|---|---|
| `$SYBACKUP_SERVER` | `%SYBACKUP_SERVER%` | Name of the NetBackup server. |
| `$SYBACKUP_POLICY` | `%SYBACKUP_POLICY%` | Name of the NetBackup policy. |
| `$SYBACKUP_SCHED` | `%SYBACKUP_SCHED%` | Name of the Automatic Backup schedule. |
| `$SYBACKUP_SCHEDULED` | `%SYBACKUP_SCHEDULED%` | Set to 1 if this is a scheduled backup (Automatic Backup). |
| `$SYBACKUP_USER_INITIATED` | `%SYBACKUP_USER_INITIATED%` | Set to 1 if this is a user-initiated backup (Application Backup backup). |

**Table 3-7** Enviornment variables *(continued)*

| UNIX or Linux | Windows | Purpose |
|---|---|---|
| `$SYBACKUP_PARENT_JOBID` | `%SYBACKUP_PARENT_JOBID%` | Parent job ID of the current backup job.<br>The `-PARENT_JOB_ID` parameter must be specified for every dump and stripe command during the backup operation.<br>■ For Unix/Linux:<br>`-PARENT_JOB_ID ${SYBACKUP_PARENT_JOBID}`<br>■ For Windows:<br>`-PARENT_JOB_ID %SYBACKUP_PARENT_JOBID%` |

**Note:** The `$SYBACKUP_POLICY` (`%SYBACKUP_POLICY%`) and `$SYBACKUP_SCHED` (`%SYBACKUP_SCHED%`) variables are set only if the backup is initiated from the server, either automatically by the NetBackup scheduler or manually through the NetBackup web UI.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

See "About the backup, restore, and load scripts for NetBackup for Sybase on UNIX " on page 27.

# NetBackup for Sybase configuration or bp.conf file settings

When a NetBackup for Sybase on UNIX operation is initiated, NetBackup searches the configuration files for the policy, server, and schedule definitions in the following order:

- `$SYBASE_HOME/bp.conf`
- `/usr/openv/netbackup/bp.conf`

When a NetBackup for Sybase operation on Windows is initiated, NetBackup searches for the policy, server, and schedule definitions in the following order:

- `-SERV`, `-POLICY`, and `-SCHED` options on the Sybase `DUMP` command.
- NetBackup client configuration.

To edit this configuration, choose **File > NetBackup Client Properties** and click on the **Backups** tab.

In case of conflicts, the order of precedence is as follows:

- Command line options
- Script variables
- Environment variables
- (UNIX clients) `$USER/bp.conf`
- `/usr/openv/netbackup/bp.conf` (UNIX clients) or the NetBackup client configuration (Windows clients)
- Built-in variables

NetBackup uses a policy or schedule configured in the NetBackup client configuration for all backups on the client, including file system and Sybase database backups. For this reason, if a policy or schedule that is not a Sybase policy is configured in the NetBackup client configuration, use the `-POLICY` and `-SCHED` options on the Sybase `DUMP` command to specify the correct policy or schedule.

More information is available on how to specify a policy or schedule on the Sybase DUMP command.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

If NetBackup fails to find policy and schedule definitions, NetBackup for Sybase defaults to the first policy and schedule with the appropriate policy type.

The following topics explain how to enable the `bp.conf` files.

See "Creating a $SYBASE_HOME/bp.conf file on the UNIX client" on page 45.

See "Specifying options in /usr/openv/netbackup/bp.conf on the UNIX client" on page 46.

## Creating a $SYBASE_HOME/bp.conf file on the UNIX client

You can create a `bp.conf` file and then use it to specify processing options. This ensures that NetBackup for Sybase uses the correct Sybase policy and schedule for your Sybase backups.

---

**Note:** NetBackup uses the `$SYBASE_HOME/bp.conf` file only for Sybase policies.

---

**To create a $SYBASE_HOME/bp.conf file**

1. Create a `bp.conf` file in your Sybase home directory.

   For example, if `$SYBASE_HOME` is `/sybase`, you create the following file:

   ```
   /sybase/bp.conf
   ```

2. Define the policy and schedule in the `bp.conf` file.

   Add the following parameters:

   ```
   BPBACKUP_POLICY=policy_name
   BPBACKUP_SCHED=schedule_name
   ```

   Where *policy_name* and *schedule_name* are as follows:

   | | |
   |---|---|
   | *policy_name* | Specify the name of the Sybase policy you want to use. |
   | *schedule_name* | Specify the name of the Application Backup schedule you want to use. |

## Specifying options in /usr/openv/netbackup/bp.conf on the UNIX client

The following procedure shows how to specify the Sybase home directory in the `bp.conf` file.

**To specify files in /usr/openv/netbackup/bp.conf**

- Add a `$SYBASE_HOME` option to the `/usr/openv/netbackup/bp.conf` file on the client.

  `$SYBASE_HOME` must be your Sybase SQL Server home directory. For example, if `$SYBASE_HOME` is equal to `/sybase`, add the following line to the `bp.conf` file:

  ```
  $SYBASE_HOME=/sybase
  ```

See " NetBackup for Sybase configuration or bp.conf file settings" on page 44.

# Configuring the logon account for the NetBackup Client Service for NetBackup for Sybase

Because the NetBackup Client Service is started by default under the `SYSTEM` account, you also must give special attention to database user authentication. The

SYSTEM account does not have permission to connect to the target database if you use OS authentication instead of passwords.

If you use OS authentication, run the NetBackup client service under an account that has SYSDBA privileges.

**To configure the logon account for the NetBackup Client Service for NetBackup for Sybase**

1. In the Windows Services application, open the **NetBackup Client Service** entry.
2. On the **Log On** tab, provide the following:
   - Type the account name with SYSDBA privileges.
   - Type the password.
3. Stop and start the NetBackup Client Service.

# About striped dumps and loads with NetBackup for Sybase

NetBackup for Sybase supports the Sybase backup server's ability to open multiple streams simultaneously to perform parallel dumps and loads. Before the dump or load can proceed, the following requirements must be met:

- All streams must be available simultaneously.
- The number of stripes specified during a load should match that of the dump.

See "Example Sybase scripts for striped dumps and loads" on page 47.

See "NetBackup for Sybase multiplexing considerations - duplicating tapes" on page 48.

See "NetBackup for Sybase multiplexing considerations - using more than 12 stripes" on page 49.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

## Example Sybase scripts for striped dumps and loads

The following is an example Sybase SQL backup script for a Sybase striped dump:

```
dump database mydb to "sybackup:: -PARENT_JOB_ID ${SYBACKUP_PARENT_JOBID}"
stripe on "sybackup:: -PARENT_JOB_ID ${SYBACKUP_PARENT_JOBID}"
```

```
stripe on "sybackup:: -PARENT_JOB_ID ${SYBACKUP_PARENT_JOBID}"
go
```

The following is an example Sybase SQL load script for a Sybase striped load:

```
load database mydb from
"sybackup::SYBASE11.mydb.D.0.27997.20-10-1997.10:55:52"
stripe on "sybackup::SYBASE11.mydb.D.1.27999.20-10-1997.10:55:52"
stripe on "sybackup::SYBASE11.mydb.D.2.28001.20-10-1997.10:55:52"
go
```

See "About striped dumps and loads with NetBackup for Sybase" on page 47.

See "NetBackup for Sybase multiplexing considerations - duplicating tapes" on page 48.

See "NetBackup for Sybase multiplexing considerations - using more than 12 stripes" on page 49.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

See "NetBackup for Sybase environment variables" on page 43.

## NetBackup for Sybase multiplexing considerations - duplicating tapes

If you duplicate a tape with backup files on it that was created with Sybase striping and the NetBackup multiplex feature, make sure to use multiplexing when duplicating the tape.

---

**Caution:** NetBackup tape duplication must be performed with the multiplex option when Sybase striping and the NetBackup multiplex (MPX) feature are used for a Sybase backup. A problem occurs when multiple Sybase stripes are multiplexed to a single tape and then the tape is duplicated without using the `-mpx` option. The duplicated tape must be created with the `-mpx` option on the `bpduplicate` command. This is also accessible as the **Preserve multiplexing** checkbox on the Duplicate Backup Images window. In addition, all of the backups from the original Sybase multiplexing session must be included in the duplicated multiplexed group.

---

See "NetBackup for Sybase multiplexing considerations - using more than 12 stripes" on page 49.

See "Example Sybase scripts for striped dumps and loads" on page 47.

## NetBackup for Sybase multiplexing considerations - using more than 12 stripes

If multiplexing striped Sybase database backups, you might require a special configuration to restore them. By default, when restoring from multiplexed backups, NetBackup uses twelve data buffers. This is enough unless you are using more than twelve stripes. If you are using more than 12 stripes, use the following procedure to increase the number of data buffers used by NetBackup.

**To increase the amount of data buffers for a restore**

1. On the primary server, use a text editor to create one of the following files:

   UNIX or Linux:

   ```
   /usr/openv/netbackup/db/config/NUMBER_DATA_BUFFERS_RESTORE
   ```

   Windows:

   ```
   install_path\NetBackup\db\config\NUMBER_DATA_BUFFERS_RESTORE
   ```

2. In the file, enter an integer to specify the number of buffers.

   This number is the only entry in the file.

3. Save and close the file.

   Make sure that editor does not save the file with any file extensions.

See "NetBackup for Sybase multiplexing considerations - duplicating tapes" on page 48.

See "Example Sybase scripts for striped dumps and loads" on page 47.

# Reviewing the auto-discovered mappings

In certain scenarios, a NetBackup host shares a particular name with other hosts or has a name that is associated with a cluster. To successfully perform backups and restores with NetBackup for Sybase, you must approve each valid auto-discovered mapping that NetBackup discovers in your environment. Or, manually add the mappings.

See the section called "Approve the auto-discovered mappings for a cluster" on page 50.

See the section called "Manually map host names" on page 51.

Examples of the configurations that have multiple host names include:

- A host is associated with its fully qualified domain name (FQDN) and its short name or its IP address.

- If the Sybase server is clustered, the host is associated with its node name and the virtual name of the cluster.

These mappings are configured in the **Security > Host mappings** node in the NetBackup web UI. You can also use the `nbhostmgmt` command to manage the mappings. See the NetBackup Security and Encryption Guide and NetBackup Web UI Administrator's Guide for more details.

## Auto-discovered mappings for a cluster

In a Sybase cluster environment, you must map the node names to the virtual name of the cluster if the following apply:

- If the backup policy includes the cluster name (or virtual name)
- If the NetBackup client is installed on more than one node in the cluster, the virtual name must be mapped to each node.
  If the NetBackup Client is only installed on one node, then no mapping is necessary.

## Approve the auto-discovered mappings for a cluster

**To approve the auto-discovered mappings for a cluster**

1. In the NetBackup web UI, expand **Security > Host mappings**.
2. Click the **Mappings to approve** tab.

   The list displays the hosts in your environment and the mappings or additional host names that NetBackup discovered for those hosts. A host has one entry for each mapping or name that is associated with it.

   For example, for a cluster with hosts `client01.lab04.com` and `client02.lab04.com`, you may see the following entries:

| Host | Auto-discovered mapping |
|---|---|
| client01.lab04.com | client01 |
| client01.lab04.com | clustername |
| client01.lab04.com | clustername.lab04.com |
| client02.lab04.com | client02 |
| client02.lab04.com | clustername |
| client02.lab04.com | clustername.lab04.com |

3. Click the name of the host.

4 Review the mappings for the host and click **Approve** if you want to use the discovered mappings.

For example, if the following mappings are valid for `client01.lab04.com`, then you approve them.

| Auto-discovered mapping | Valid name for |
|---|---|
| client01 | The short name of the client |
| clustername | The virtual name of the cluster |
| clustername.lab04.com | The FQDN of the virtual name of the cluster |

5 When you finish approving the valid mappings for the hosts, click on the **Hosts** tab.

For hosts `client01.lab04.com` and `client02.lab04.com`, you see entries for **Mapped host or IP address** that are similar to the following:

| Host | Mapped host names/IP addresses |
|---|---|
| client01.lab04.com | client01.lab04.com, client01, clustername, clustername.lab04.com |
| client02.lab04.com | client02.lab04.com, client02, clustername, clustername.lab04.com |

6 If you need to add a mapping that NetBackup did not automatically discover, you can add it manually.

**Table 3-8** Example mapped host names for a Sybase cluster environment

| Environment | Host | Mapped host names |
|---|---|---|
| Cluster with two nodes | Physical name of *Node 1* | Virtual name of Sybase server |
| | Physical name of *Node 2* | Virtual name of Sybase server |

## Manually map host names

If you need to add a mapping that NetBackup did not automatically discover, you can add it manually.

**To manually map host names**

1. In the NetBackup web UI, expand **Security > Host mappings**.
2. Click on the **Hosts** tab.
3. Click **Add shared or cluster mappings**.

   For example, type the name of the virtual name of the cluster. Then click **Add** to choose the hosts to which you want to map that virtual name.

# About permissions for NetBackup for Sybase log files (UNIX)

NetBackup uses the `/usr/openv/netbackup/logs` directory tree not only for the recording of troubleshooting information, but for progress and communication updates to users and other NetBackup applications. Restrictive permissions on these directories can not only disable the collection of troubleshooting data, but also prevent the application itself from functioning correctly.

See "Enable the debug logs manually (Sybase) (UNIX/Linux) " on page 63.

# Configuring the Maximum jobs per client

The **Maximum jobs per client** specifies the maximum number of concurrent backups that are allowed per client.

---

**Note:** Enter a large enough value for the **Maximum jobs per client** attribute to meet the number of jobs that Sybase runs. You may need to experiment with different values at your site.

---

**To configure the maximum jobs per client**

1. On the left, select **Hosts > Host properties**.
2. Select the primary server.
3. If necessary, select **Connect**. Then select **Edit primary server**.
4. Select **Global attributes**.
5. Select the appropriate value for **Maximum jobs per client**.

   The default is 1.

You can use the following formula to calculate a smaller value for the Maximum jobs per client setting:

Maximum jobs per client = *number_of_streams* X *number_of_policies*

Refer to the following definitions:

*number_of_streams* The number of backup streams between the database server and NetBackup. Each separate stream starts a new backup job on the client.

*number_of_policies* The number of policies of any type that can back up this client at the same time. This number can be greater than one. For example, a client can be in two policies to back up two different databases. These backup windows can overlap.

# Perform a manual backup

After you configure the servers and assets in your environment, you can test the configuration settings with a manual backup. Perform a manual backup (or backups) from a policy with the automatic backup schedules that you created.

**To perform a manual backup from a policy**

1. On the left, select **Protection > Policies**.
2. Select the policy you want to test.
3. Select **Manual backup**.
4. Select the schedule that you want to use for the manual backup.
5. Select the clients that you want to include for the manual backup.

Chapter 4

# Using NetBackup for Sybase

This chapter includes the following topics:



## About Sybase database backups

You can use the NetBackup interfaces to start Sybase backups. You can also issue `DUMP` commands directly from the `isql` utility to perform Sybase backups.

The following types of backups exist for Sybase:

- A full backup copies the entire database, including both the data and the transaction log. This is accomplished by performing a database dump.
- An incremental backup copies the transaction log that contains the database changes made since the last database or transaction log dump. You can run a transaction log dump only if the database stores its log on a separate segment.
  See "Sybase backup strategy" on page 54.
  See "Automatic backups of a Sybase database" on page 55.
  See "Backing up a Sybase database manually" on page 55.

### Sybase backup strategy

One of the major tasks in developing a backup plan is to determine how often to back up your databases. The backup strategy in this section is an example. For

guidelines on developing your own backup and recovery plan, refer to your Sybase documentation.

The frequency of your backups determines how much work you can restore in the event of a disaster. Dump each database immediately after you create it to provide a base point, and then dump it on a fixed schedule thereafter.

The following is an example database backup strategy:

1. Perform a full database backup by running a database dump every Friday night.
2. Back up your Sybase configuration files every Friday night at the same time as the full-database backup.

   Sybase recommends that you save all the Sybase scripts. This includes the scripts that contain the `disk init`, `create database`, and `alter database` commands.

   Sybase also recommends that you save a hard copy of your `sysdatabases`, `sysusages`, and `sysdevices` tables each time you issue one of these commands. In addition, keep a copy of the `syslogins`.
3. Perform an incremental backup each night by running a transaction log dump.

See "About Sybase database backups" on page 54.

See "Modifying the backup script for NetBackup for Sybase on UNIX" on page 28.

See "Automatic backups of a Sybase database" on page 55.

## Automatic backups of a Sybase database

The most convenient way to back up your database is to set up schedules for automatic backups. When the NetBackup scheduler invokes a schedule for an automatic backup, the Sybase backup scripts are run in the same order as they appear in the file list. The scheduler tries to find each script, and it runs the scripts that it finds.

Information is available on how to initiate a manual backup of a Sybase policy.

See Perform a manual backup on page 53.

See "About Sybase database backups" on page 54.

See "Sybase backup strategy" on page 54.

See "Backing up a Sybase database manually" on page 55.

## Backing up a Sybase database manually

The following procedure shows you how to back up a database manually.

**To back up a Sybase database manually**

1. (Optional) Issue the Sybase `DBCC` command to check database consistency.

   Database consistency is needed to ensure consistent and accurate backups. If the database is corrupt, use the `DUMP` command. The `DUMP` command can complete successfully even if the database is corrupt.

2. Log into the NetBackup primary server as administrator (Windows) or `root` (UNIX).

3. Using the NetBackup web UI, manually run an automatic backup schedule for the Sybase policy.

   More information is available on how to initiate a manual backup of a Sybase policy.

   See Perform a manual backup on page 53.

See “About Sybase database backups” on page 54.

See “Automatic backups of a Sybase database” on page 55.

See “Sybase backup strategy” on page 54.

## Performing a user-directed backup for Sybase

The following procedure shows you how to perform a user-directed backup.

**To perform a user-directed backup**

1. (Optional) Issue the Sybase `DBCC` command to check the database’s consistency.

2. Issue the Sybase `DUMP` command from the `isql` utility on the client.

   If the client name appears in one or more Sybase policies, the Default-Application-Schedule that NetBackup uses is the first policy in alphabetical order.

For example:

```
dump transaction mydb to "sybackup::"
go
```

For information on the `isql` utility and the `DUMP` command, see your Sybase documentation.

See “Sybase backup strategy” on page 54.

See “About Sybase database backups” on page 54.

See “Browsing Sybase backups” on page 57.

See "Using isql to restore a Sybase database" on page 58.

# Browsing Sybase backups

You can use the `bplist` command to browse the Sybase backup history on the primary server. The result is the list of dump file names. The following example `bplist` command searches all Sybase backups (dumps) for a client named `copper` on a server named `candytuft`:

UNIX and Linux:

```
root:<candytuft> % cd /usr/openv/netbackup/bin
root:<candytuft> % bplist -S candytuft -C copper -t 7 -R /
/sybase1200.esam.T.0.22448.26-10-2025.13:45:17
/sybase1200.model.D.0.21182.26-10-2025.12:56:40
/sybase1200.model.D.0.20730.26-10-2025.12:42:04
/sybase1200.model.D.0.20932.26-10-2025.12:33:02
/sybase1200.primary.D.1.20138.26-10-2025.07:25:57
/sybase1200.primary.D.2.19620.26-10-2025.07:25:57
/sybase1200.primary.D.3.20640.26-10-2025.07:25:57
/sybase1200.primary.D.0.19888.26-10-2025.07:25:57
/sybase1200.model.D.0.19092.26-10-2025.07:18:14
/sybase1192.model.D.0.4172.25-10-2025.07:17:20
root:<candytuft> %
```

Windows:

```
C:\>cd pro*
C:\Program Files>cd ver*
C:\Program Files\Cohesity NetBackup>cd net*
C:\Program Files\Cohesity NetBackup\NetBackup>cd bin
C:\Program Files\Cohesity NetBackup\NetBackup\bin>bplist -S candytuft -C copper -t 7 -R \
/sybase1200.esam.T.0.22448.26-10-2025.13:45:17
/sybase1200.model.D.0.21182.26-10-2025.12:56:40
/sybase1200.model.D.0.20730.26-10-2025.12:42:04
/sybase1200.model.D.0.20932.26-10-2025.12:33:02
/sybase1200.primary.D.1.20138.26-10-2025.07:25:57
/sybase1200.primary.D.2.19620.26-10-2025.07:25:57
/sybase1200.primary.D.3.20640.26-10-2025.07:25:57
/sybase1200.primary.D.0.19888.26-10-2025.07:25:57
/sybase1200.model.D.0.19092.26-10-2025.07:18:14
/sybase1192.model.D.0.4172.25-10-2025.07:17:20
C:\Program Files\Veritas\NetBackup\bin>
```

The `-t 7` option on this command specifies the Sybase backups (dumps). The `-R` on this command specifies a recursive listing.

For more information on this command, see the `bplist`(1M) man page.

---

**Note:** NetBackup stores Sybase backups (dumps) in its catalog as *dumpfile*, but when you specify a backup for the `LOAD` command, you must use *dumpfile* without the slash `/`.

---

See "Sybase Backup Server log and messages" on page 66.

See "Performing a user-directed backup for Sybase" on page 56.

See "Configuring a redirected restore on the NetBackup for Sybase client" on page 60.

# About restoring a Sybase database

You can use the NetBackup interfaces to start Sybase restores. You can also issue `LOAD` commands directly from the `isql` utility to perform Sybase restores.

The procedure for restoring a Sybase database depends on the database involved and the problems that you have on your system.

If the database and the device were lost, do the following:

- Initialize a new device.
- Re-create the database.

For information on how to restore your database in each of the preceding situations, see your Sybase documentation.

See "Sybase Backup Server log and messages" on page 66.

See "Using isql to restore a Sybase database" on page 58.

See "Configuring a redirected restore on the NetBackup for Sybase client" on page 60.

See "Modifying the restore script for NetBackup for Sybase on UNIX " on page 32.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 34.

## Using isql to restore a Sybase database

The steps required to recover a Sybase database depend on the database that is involved and the problem that you have on your system.

These steps can include the following:

- Using `buildmaster`, `installmaster`, and `installmodel` for system databases
- Re-creating database devices
- Re-creating databases
- Loading database dumps
- Applying transaction logs

For information on how to perform the preceding steps, see your Sybase documentation.

A load can take significantly longer than a dump. The time required to load a database depends on the overall number of pages in the database. The `load database` command loads all used pages from the dump into the target database and runs recovery of syslogs to ensure consistency. The load process initializes any unused pages.

You can load database and transaction dumps by manually submitting the Sybase `LOAD` command to SQL server (UNIX and Linux) or the `isql` utility on the client (Windows).

The `LOAD` command must include the appropriate dump file name. More information is available about how to edit the `LOAD` command with the correct dump file name.

Make sure to load the database dump and all of the transaction logs before bringing the database back online.

The following example shows you how to restore the database `mydb` to the level of a recent database dump plus two transaction log dumps:

- Execute the `LOAD` commands directly from SQL server.
  This loads the database dump and transaction log dumps.
- Check database consistency.
  When you have brought the database up-to-date, use `DBCC` commands to check the consistency of the database.

```
load database mydb from "sybackup::SYBASE.mydb.D.0.14693.12-12-1997.09:29:37 -SERV
saturn"
go
```

See “About the backup, restore, and load scripts for NetBackup for Sybase on Windows ” on page 34.

See “About restoring a Sybase database” on page 58.

See "Configuring a redirected restore on the NetBackup for Sybase client" on page 60.

See "Modifying the restore script for NetBackup for Sybase on UNIX " on page 32.

# Configuring a redirected restore on the NetBackup for Sybase client

The following procedures describe how to configure a redirected restore so you can browse restore a backup that another client performed.

**To configure a redirected restore on the NetBackup for Sybase client on Windows**

1. Ensure that the NetBackup server is configured to allow the redirected restore.

   For information, see the NetBackup Web UI Administrator's Guide.

2. On Windows, specify the client name on the `LOAD` command with the `-CLIENT` option. For example, the following command specifies `saturn` as the client to browse:

```
load database mydb from "sybackup::SYBASE.mydb.D.0.14693.12-12-1997.09:28:37
-CLIENT saturn"
```

**To configure a redirected restore on the NetBackup for Sybase client on UNIX or Linux**

1. Ensure that the NetBackup server is configured to allow the redirected restore.

   For information, see the NetBackup Web UI Administrator's Guide.

2. On UNIX or Linux, specify either of the following (if you specify both, NetBackup considers them in the order listed):

   - Specify the client name on the Sybase `LOAD` command with the `-CLIENT` and `-SERV` option. For example, the following command specifies `saturn` as the client to browse:

```
load database mydb from "sybackup::SYBASE.mydb.D.0.14693.12-12-1997.09:28:37
-SERV car -CLIENT saturn"
go
```

   - Specify the client name with the `CLIENT_NAME` option in the `$HOME/bp.conf` or `/usr/openv/netbackup/bp.conf` file on the client. For example, the following command specifies `saturn` as the client to browse.

     ```
     CLIENT_NAME=saturn
     ```

Chapter 5

# Troubleshooting NetBackup for Sybase

This chapter includes the following topics:



## NetBackup debug logs and reports

### Debug logs

The NetBackup server and client software let you enable detailed debugging logs. The information in these log files can help you troubleshoot the problems that occur outside of either the database agent or Sybase Backup Server.

Note the following for these logs:

- These logs do not reveal the errors that occur when Sybase Backup Server is running unless those errors also affect NetBackup. Sybase may (or may not) write errors in the application to the NetBackup logs. Your best sources for Sybase error information are the logs provided by Sybase.
- Generally, each debug log corresponds to a NetBackup process and executable.

Information about the debugging log files is available in the NetBackup Troubleshooting Guide.

Also refer to the following file:

`Windows: install_path\NetBackup\logs\README.debug file`

```
UNIX: /usr/openv/netbackup/logs/README.debug file
```

### Reports

NetBackup provides other reports that are useful in isolating problems. One such report is **All logs entries** on the server. For more information see the NetBackup Web UI Administrator's Guide.

## Enable the debug logs automatically (Sybase client) (Windows)

You can enable debug logging by running a batch file that creates each log directory. To create all log file directories automatically, run the following:

```
install_path\NetBackup\logs\mklogdir.bat
```

Or, you can manually create the directories for the log files you want created.

# Enable the debug logs manually (NetBackup for Sybase) (Windows)

**To enable the NetBackup for Sybase for Windows database agent logs manually**

1. Create the following directories on the client:

   *install_path*\NetBackup\logs\bpbackup

   *install_path*\NetBackup\logs\bpbkar32

   *install_path*\NetBackup\logs\bphdb

   *install_path*\NetBackup\logs\bprestore

   *install_path*\NetBackup\logs\tar32

   *install_path*\NetBackup\logs\sybackup

   For example:

   ```
   cd install_path\NetBackup\logs
   mkdir bphdb
   ```

2. Make sure there is share access to the log directories.
3. Enable logging for the `nbpem`, `nbjm`, and `nbrb` scheduling processes, which use unified logging.

   NetBackup writes unified logs to *install_path*\NetBackup\logs.

   You do not need to create log directories for processes that use unified logging. For information on how to use logs and reports, see the NetBackup Troubleshooting Guide.

   NetBackup for Sybase sends an informational message that specifies the dump file name to Sybase backup server.

# Enable the debug logs manually (Sybase) (UNIX/Linux)

This topic describes how to manually create the directories that are used for debug logging. More information is available on how on how to use logs and reports.

See the NetBackup Troubleshooting Guide.

**To enable the debug logs manually**

1. Create the following directories on the client:

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

   /usr/openv/netbackup/logs/bphdb

   /usr/openv/netbackup/logs/tar
   /usr/openv/netbackup/logs/sybackup
   ```

   For example:

   ```
   cd /usr/openv/netbackup/logs
   mkdir bphdb
   ```

2. Enable logging for the `nbpem`, `nbjm`, and `nbrb` scheduling processes that use unified logging.

   NetBackup writes unified logs to `/usr/openv/logs`.

   You do not need to create log directories for the processes that use unified logging.

3. If you create a debug log directory on the client, NetBackup for Sybase records the dump file name in the resulting debug log.

   The debug log directory that you can create is as follows:

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

   NetBackup for Sybase sends an informational message that specifies the dump file name to Sybase backup server.

## About the bphdb directory on the Windows database client

The *install_path*\NetBackup\logs\bphdb directory contains log files.

The following types of logs exist:

- sybase_stdout.*mmddyy.hhmmss*.txt

  Unless it is redirected elsewhere, NetBackup writes Sybase script output to this file.

- sybase_stderr.*log.mmddyy.hhmmss*.txt

  Unless it is redirected elsewhere, NetBackup writes Sybase script errors to this file.

- *log.mmddyy*.log

This log contains debugging information for the `bphdb` process. `bphdb` is the NetBackup database backup binary. It is invoked when an automatic backup schedule is run. NetBackup for Sybase uses this client process for Sybase script execution.

## About the bphdb directory on the UNIX database client

The `/usr/openv/netbackup/logs/bphdb` directory contains logs.

The following types of logs exist:

- `sybase_stdout.`*`mmddyy`*

  Unless it is redirected elsewhere, NetBackup writes Sybase script output to this file.

- `sybase_stderr.`*`mmddyy`*

  Unless it is redirected elsewhere, NetBackup writes Sybase script errors to this file.

- `log.`*`mmddyy`*

  This log contains debugging information for the `bphdb` process. `bphdb` is the NetBackup database backup binary. It is invoked when an automatic backup schedule is run. NetBackup for Sybase uses this client process for Sybase script execution.

## About the sybackup directory on the UNIX database client

The `/usr/openv/netbackup/logs/sybackup` directory contains run logs.

The following run log exists:

- `log.`*`mmddyy`*

  This log contains debugging information and run status for the NetBackup for Sybase client process.

See "Enable the debug logs manually (Sybase) (UNIX/Linux) " on page 63.

## About the sybackup directory on the Windows database client

The *`install_path`*`\NetBackup\logs\sybackup` directory contains execution logs, as follows:

*`log.mmddyy`*`.log`

This log contains debugging information and execution status for the Sybase NetBackup client processes program provided with NetBackup for Sybase.

## Set the debug level on a Sybase client (Windows)

To control the amount of information that is written to the debug logs, change the Database debug level. Typically, the default value of 0 is sufficient. However, technical support may ask you to set the value higher to analyze a problem.

The debug logs are located in *install_path*\NetBackup\logs.

**To set the debug level**

1. Open the **Backup, Archive, and Restore** interface.
2. Select **File > NetBackup Client Properties**.
3. Click the **Troubleshooting** tab.
4. Set the **General** debug level.
5. Set the **Verbose** debug level.
6. Set the **Database** debug level.
7. Click **OK** to save your changes.

## Set the debug level on a Sybase client (UNIX)

To control the amount of information that is written to the debug logs, change the "Database" debug level. Typically, the default value of 0 is sufficient. However, Technical Support may ask you to set the value higher to analyze a problem.

The debug logs are located in /usr/openv/netbackup/logs.

**To set the debug level**

- Enter the following line in the bp.conf file.

  VERBOSE = *X*

  Where *X* is the debug level you want.

# Sybase Backup Server log and messages

The Sybase Backup Server log provides information on the Sybase Backup Server part of the operation. The database administrator can check this log to determine the ultimate success or failure of the database backups and restores.

The server log contains the following information.

**Table 5-1** Sybase Backup Server log information

| Server log information | Description |
|---|---|
| DUMP and LOAD progress messages | Sybase Backup Server sends its dump and load progress messages to the client that initiated the dump or load request. NetBackup for Sybase writes NetBackup for Sybase progress messages to the following file, if the parent directory exists: |
| Error logging | Sybase Backup Server performs its own error logging in the file that you specify when you configure Sybase Backup Server. For more information on this file, see your Sybase documentation.<br><br>Informational and error messages sent to the Sybase Backup Server log file include messages from the Archive API. You can enable detailed diagnostic tracing for the Archive API by specifying the `-DTRACEIO` option on the `backup server` command line.<br><br>**Note:** To determine successful status of `DUMP` and `LOAD` commands, always check Sybase Backup Server messages and logs.<br><br>The following Sybase Backup Server message log indicates successful `DUMP` command completion:<br><br>`Backup Server: 3.43.1.1: Dump phase number 1 completed.`<br>`Backup Server: 3.43.1.1: Dump phase number 2 completed.`<br>`Backup Server: 4.58.1.1: Database model: 238 kilobytes DUMPed.`<br>`Backup Server: 3.43.1.1: Dump phase number 3 completed.`<br>`Backup Server: 4.58.1.1: Database model: 242 kilobytes DUMPed.`<br><br>Backup Server: 3.42.1.1: DUMP is complete (database model). |

See "Minimize time-out failures on large database restores" on page 67.

# Minimize time-out failures on large database restores

Large database restores sometimes fail when multiple restore sessions compete for resources. In this situation, a restore session can be delayed while NetBackup waits for media or device access. If the delay is too long, the restore session times out. Use the following procedure to minimize session time-outs and to allow the restore jobs to complete successfully.

**To minimize time out failures on large database restores**

1. Open the NetBackup web UI.
2. On the left, select **Hosts > Host properties**.
3. Select the check box for the client.

4 If necessary, select **Connect**.

5 Select **Edit client**.

6 Select **Timeouts**.

7 Set the **Client read timeout** property to a large value.

The default for the **Client read timeout** setting is 300 seconds (5 minutes). For database agent clients, increase the value significantly from the recommended value.

See the NetBackup Web UI Administrator's Guide.

For example, change this setting to 30-60 minutes to minimize time-out errors.

8 Select **Save**.

---

**Note:** This change may delay detecting problems during subsequent backups. Consider putting the original value back in place once any restore that requires a change is complete.

---

# Minimize the loading and unloading of tapes for database backups

You can minimize excessive unloading and reloading of tapes between multistreamed database backups by changing the media settings for the primary or the media server.

See the NetBackup Administration Guide, Volume 1 for details.

**To minimize loading and unloading of tapes**

1 Open the NetBackup web UI.

2 On the left, click **Hosts > Host properties**.

3 Select the primary or the media server.

4 If necessary, click **Connect**.

5 Click **Edit primary server** or **Edit media server**.

6 Click **Media**.

7 Configure the following settings:

- **Media unmount delay**
- **Media request delay**
  Use this variable only with non-robotic drives, such as tape stackers.

Appendix A

# Register authorized locations

This appendix includes the following topics:



## Registering authorized locations used by a NetBackup database script-based policy

During a backup, NetBackup checks for scripts in the default script location and any authorized locations. The default, authorized script location for UNIX is `usr/openv/netbackup/ext/db_ext` and for Windows is *`install_path`*`\netbackup\dbext`. If the script is not in the default script location or an authorized location, the policy job fails. You can move any script into the default script location or any additional authorized location and NetBackup recognizes the scripts. You need to update the policy with the script location if it has changed. An authorized location can be a directory and NetBackup recognizes any script within that directory. An authorized location can also be a full path to a script if an entire directory does need to be authorized.

If the default script location does not work for your environment, use the following procedure to enter one or more authorized locations for your scripts. Use `nbsetconfig` to enter an authorized location where the scripts reside. You can also use `bpsetconfig`, however this command is only available on the primary or the media server.

**Note:** One recommendation is that scripts should not be world-writable. NetBackup does not allow scripts to run from network or remote locations. All scripts must be stored and run locally. Any script that is created and saved in the NetBackup `db_ext` (UNIX) or `dbext` (Windows) location needs to be protected during a NetBackup uninstall.

For more information about registering authorized locations and scripts, review the knowledge base article:

https://www.veritas.com/content/support/en_US/article.100039639

**To add an authorized location**

1. Open a command prompt on the client.
2. Use `nbsetconfig` to enter values for an authorized location. The client privileged user must run these commands.

   The following examples are for paths you may configure for the Oracle agent. Use the path that is appropriate for your agent.

   - On UNIX:

     ```
     [root@client26 bin]# ./nbsetconfig
     nbsetconfig>DB_SCRIPT_PATH = /Oracle/scripts
     nbsetconfig>DB_SCRIPT_PATH = /db/Oracle/scripts/full_backup.sh
     nbsetconfig>
     <ctrl-D>
     ```

   - On Windows:

     ```
     C:\Program Files\Cohesity NetBackup\NetBackup\bin>nbsetconfig
     nbsetconfig> DB_SCRIPT_PATH=c:\db_scripts
     nbsetconfig> DB_SCRIPT_PATH=e:\oracle\fullbackup\full_rman.sh
     nbsetconfig>
     <ctrl-Z>
     ```

**Note:** Review the NetBackup Command Reference Guide for options, such as reading from a text file and remotely setting clients from a NetBackup server using `bpsetconfig`. If you have a text file with the script location or authorized locations listed, `nbsetconfig` or `bpsetconfig` can read from that text file. An entry of `DB_SCRIPT_PATH=none` does not allow any script to run on a client. The `none` entry is useful if an administrator wants to completely lock down a server from running scripts.

3 (Conditional) Perform these steps on any clustered database or agent node that can perform the backup.

4 (Conditional) Update any policy if the script location was changed to the default or authorized location.