Symantec NetBackup™ for Sybase Administrator's Guide

for UNIX, Windows, and Linux

Release 7.5

✓Symantec™

Symantec NetBackup™ for Sybase Administrator's Guide

The software described in this book is furnished under a license agreement and may be used only in accordance with the terms of the agreement.

Documentation version: 7.5

Legal Notice

Technical Support

Symantec Technical Support maintains support centers globally. Technical Support's primary role is to respond to specific queries about product features and functionality. The Technical Support group also creates content for our online Knowledge Base. The Technical Support group works collaboratively with the other functional areas within Symantec to answer your questions in a timely fashion. For example, the Technical Support group works with Product Engineering and Symantec Security Response to provide alerting services and virus definition updates.

Symantec's support offerings include the following:

- A range of support options that give you the flexibility to select the right amount of service for any size organization
- Telephone and/or Web-based support that provides rapid response and up-to-the-minute information
- Upgrade assurance that delivers software upgrades
- Global support purchased on a regional business hours or 24 hours a day, 7 days a week basis
- Premium service offerings that include Account Management Services

For information about Symantec's support offerings, you can visit our Web site at the following URL:

www.symantec.com/business/support/

All support services will be delivered in accordance with your support agreement and the then-current enterprise technical support policy.

Contacting Technical Support

Customers with a current support agreement may access Technical Support information at the following URL:

www.symantec.com/business/support/

Before contacting Technical Support, make sure you have satisfied the system requirements that are listed in your product documentation. Also, you should be at the computer on which the problem occurred, in case it is necessary to replicate the problem.

When you contact Technical Support, please have the following information available:

- Product release level

- Hardware information
- Available memory, disk space, and NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
  - Error messages and log files
  - Troubleshooting that was performed before contacting Symantec
  - Recent software configuration changes and network changes

Licensing and registration

If your Symantec product requires registration or a license key, access our technical support Web page at the following URL:

www.symantec.com/business/support/

Customer service

Customer service information is available at the following URL:

www.symantec.com/business/support/

Customer Service is available to assist with non-technical questions, such as the following types of issues:

- Questions regarding product licensing or serialization
- Product registration updates, such as address or name changes
- General product information (features, language availability, local dealers)
- Latest information about product updates and upgrades
- Information about upgrade assurance and support contracts
- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs, DVDs, or manuals

Support agreement resources

If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

Asia-Pacific and Japan	customercare_apac@symantec.com
Europe, Middle-East, and Africa	semea@symantec.com
North America and Latin America	supportsolutions@symantec.com

Contents

Introduction to NetBackup for Sybase

This chapter includes the following topics:

- About NetBackup for Sybase
- Features of NetBackup for Sybase
- NetBackup for Sybase terminology
- NetBackup for Sybase overview

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 and Media Manager.

Features of NetBackup for Sybase

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

Table 1-1   NetBackup for Sybase features and descriptions

Feature	Description
Media and device management	All devices supported by Media Manager are available to NetBackup for Sybase.

Table 1-1   NetBackup for Sybase features and descriptions *(continued)*

Feature	Description
Scheduling facilities	NetBackup scheduling facilities on the master server can be used to schedule automatic and unattended Sybase backups.
	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.
	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 used for other file backups	It is possible to share the same devices and media used for other backups or to give Sybase exclusive use of certain devices and media. NetBackup for Sybase can use Media Manager, disk, and PureDisk storage units.
Centralized and networked backup operations	From the NetBackup master server, you can schedule database backups or start them manually for any client. The Sybase databases can also reside on hosts that are different from the devices on which NetBackup stores the backups.
Graphical user interfaces	NetBackup provides the following graphical user interfaces for client users and administrators:
	■ NetBackup Administration Console for Java
	■ NetBackup Administration Console for Windows
	A database administrator or NetBackup administrator can start backup or restore operations for Sybase from the NetBackup graphical user interface on the master server.
Parallel backup and restore operations	NetBackup for Sybase supports the parallel backup and restore capabilities of the Sybase backup server. For example, this permits the user to 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.

Table 1-1   NetBackup for Sybase features and descriptions *(continued)*

Feature	Description
Compression	Compression increases backup performance over the network and reduces the size of the backup image that NetBackup writes to the storage unit.

For more information on general NetBackup terminology, see the *NetBackup Administrator's Guide, Volume I.*

NetBackup for Sybase terminology

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

Table 1-2   Sybase terms

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. NetBackup for Sybase enhances SQL Server functionality by integrating Sybase backup server with NetBackup. This provides access to NetBackup media management and scheduling in addition to graphical and menu interfaces.
SQL Server `DUMP` and `LOAD` commands	These SQL Server commands are used for Sybase database backups and 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 to be performed by Sybase SQL Server.

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
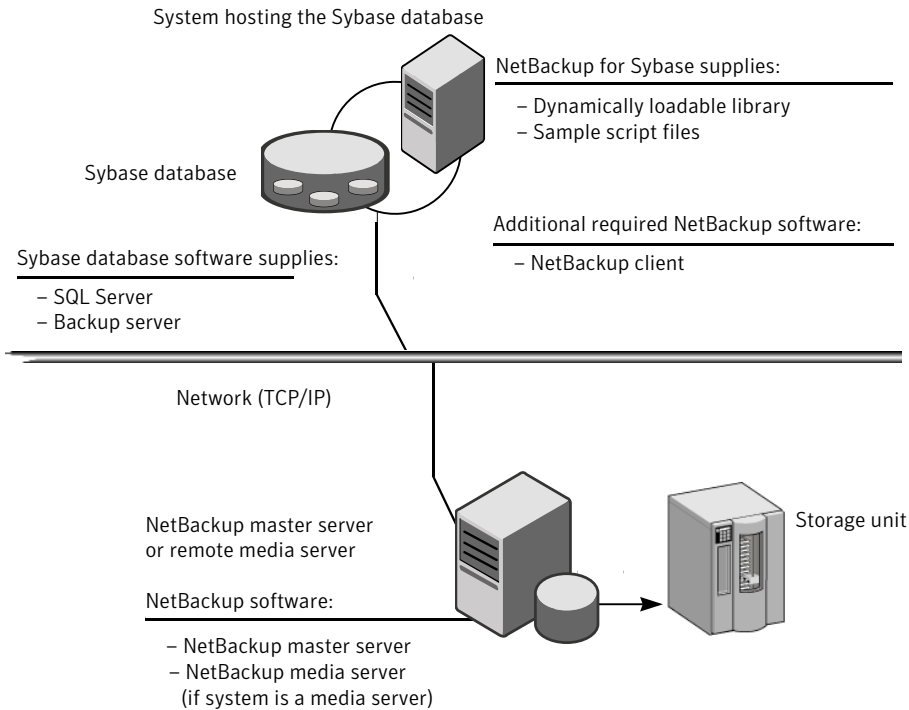
SQL server and Sybase backup server

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.

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
```

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 Administration Console to configure a schedule to use a script to perform NetBackup operations.

See "About NetBackup for Sybase configuration" on page 24.

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.

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

Installing NetBackup for Sybase

This chapter includes the following topics:

- Planning the installation of NetBackup for Sybase

- Verifying the operating system and platform compatibility for NetBackup for Sybase

- NetBackup server and client requirements for NetBackup for Sybase

- Sybase server software requirements for NetBackup for Sybase

- Requirements for installing NetBackup for Sybase in a NetBackup cluster

- Adding license keys for NetBackup for Sybase backups

- Copying the NetBackup for Sybase library to each Sybase instance

- Running the sybase_config script

- Adding new Sybase instances

Planning the installation of NetBackup for Sybase

Table 2-1 shows the major installation steps needed to run NetBackup for Sybase. Each step contains one or more links to pertinent procedures and concepts.

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 for NetBackup for Sybase" on page 18. See "NetBackup server and client requirements for NetBackup for Sybase" on page 19. See "Sybase server software requirements for NetBackup for Sybase" on page 19. See "Requirements for installing NetBackup for Sybase in a NetBackup cluster" on page 19.
Step 2	Add the license key for NetBackup for Sybase.	See "Adding license keys for NetBackup for Sybase backups" on page 20.
Step 3	(UNIX or Linux) Specify the Sybase home path.	See "Running the sybase_config script " on page 21.
Step 4	(UNIX and Linux) Add a new database instance.	See "Adding new Sybase instances" on page 21.

Verifying the operating system and platform compatibility for NetBackup for Sybase

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 Symantec Support Web page:

http://www.symantec.com/business/support/index.jsp

2   Click on the link for **NetBackup Enterprise Server**.

3   In the list of documents, click on the following document:

NetBackup Database Agent Compatibility List

4   For information on supported cluster environments for NetBackup for Sybase, see the following document:

NetBackup Cluster Compatibility List

NetBackup server and client requirements for NetBackup for Sybase

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

- The NetBackup server software is installed and operational on the NetBackup server. The NetBackup server platform can be any that NetBackup supports. 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 used

  - 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

  See the *NetBackup Administrator's Guide, Volume I*.

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.

Sybase server software requirements for NetBackup for Sybase

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

- Sybase server software must be installed and operational.

- One or more Sybase instances must exist.

Requirements for installing NetBackup for Sybase in a NetBackup cluster

If you plan to use the database agent software on a NetBackup server configured in a NetBackup cluster, verify the following requirements:

- Your cluster environment is supported by NetBackup:

See "Verifying the operating system and platform compatibility for NetBackup for Sybase" on page 18.

■ The NetBackup server software is installed and configured to work in a NetBackup cluster.
See the *NetBackup Installation Guide*.
See the *NetBackup Clustered Master Server Administrator's Guide* .

■ The Sybase server software is installed and operational on each node to which NetBackup can failover.

■ On each node where NetBackup server resides, add the license key for the database agent.

Adding license keys for NetBackup for Sybase backups

To use NetBackup for Sybase, add a valid license key for it on the master server. More information is available on how to add license keys.

See the *NetBackup Administrator's Guide, Volume I*.

In a NetBackup cluster, add the key on each node where the NetBackup server is installed.

To add a NetBackup for Sybase license key in the NetBackup Administration Console

1 On the master server, open the NetBackup Administration Console.

2 Choose **Help > License Keys**.

3 Click the **New** icon.

4 Type the license key and click **Add**.

On UNIX and Linux, you can also add a license key by using the `get_license_key` command.

To add a NetBackup for Sybase license key with the `get_license_key` command

1 From the master server server, run the following command:

    `/usr/openv/netbackup/bin/admincmd/get_license_key`

2 When the system prompts you, type the host name of the NetBackup master server.

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\`

Running the sybase_config script

After you add the license key 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 21.

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 17.

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 a Sybase database" on page 25.
Step 2	Create backup scripts.	See "About the backup, restore, and load scripts for NetBackup for Sybase on UNIX " on page 33. See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 40. See "Modifying the NetBackup for Sybase load script" on page 47.
Step 3	Edit Sybase environment variables.	See "NetBackup for Sybase environment variables" on page 48.
Step 4	Edit Sybase configuration files.	See " NetBackup for Sybase configuration or bp.conf file settings" on page 49.
Step 5	(Windows) Configure the log on account for the NetBackup Client Service	See "Configuring the log on account for the NetBackup Client Service for NetBackup for Sybase on Windows" on page 51.
Step 6	Configure striped dumps and loads.	See "About striped dumps and loads with NetBackup for Sybase" on page 52.
Step 7	(UNIX and Linux) Configure the permissions for log files.	See "About permissions for NetBackup for Sybase log files (UNIX and Linux)" on page 54.
Step 8	Configure the Maximum jobs per client.	See "Configuring the Maximum jobs per client" on page 55.
Step 9	Test the configuration settings.	See Testing configuration settings for NetBackup for Sybase on page 55.

About user interface terminology

You perform many configuration steps from the NetBackup Administration Console on the master server. The type of console available depends on your master server platform. NetBackup supports a Java interface for both Windows and UNIX master servers. In addition, NetBackup supports a Windows interface for Windows master servers.

The Java and Windows interfaces are nearly identical. If interface differences exist in the configuration procedures, the term "Windows" or "Java" appears in the procedure to differentiate between the two interfaces.

About configuring a backup policy for a Sybase database

A backup policy for a database 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
- Clients to be backed 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.

Most requirements for database policies are the same as for file system backups. In addition to the policy attributes for this database agent, other attributes are available that you should consider.

See the *NetBackup Administrator's Guide, Volume I*.

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

See "About striped dumps and loads with NetBackup for Sybase" on page 52.

To add and configure a policy, see the following topics:

- See "Adding a new NetBackup for Sybase policy" on page 26.
- See "About policy attributes for NetBackup for Sybase" on page 27.
- See "About adding schedules to a NetBackup for Sybase policy" on page 27.

■ See "Adding clients to a NetBackup for Sybase policy" on page 31.

Adding a new NetBackup for Sybase policy

This topic describes how to add a new backup policy for a database.

To add a new NetBackup for Sybase policy

1 Log on to the master server as administrator (Windows) or root (UNIX).

2 Start the NetBackup Administration Console.

3 If your site has more than one master server, choose the one on which you want to add the policy.

4 Do one of the following:

■ Windows: In the left pane, right-click **Policies** and choose **New Policy**.

■ Java interface: In the left pane, click **Policies**. In the **All Policies** pane, right-click the master server, and click **New Policy**.

5 In the **Add a New Policy** dialog box, in the **Policy name** box, type a unique name for the new policy.

6 Click **OK**.

7 In the **Add New Policy** dialog box, in the **Policy type** list, select **Sybase**.

The database agent policy type does not appear in the drop-down list unless your master server has a license key for the database agent.

8 Complete the entries on the **Attributes** tab.

See "About policy attributes for NetBackup for Sybase" on page 27.

9 Add other policy information as follows:

■ Add schedules.
See "About adding schedules to a NetBackup for Sybase policy" on page 27.

■ Add clients.
See "Adding clients to a NetBackup for Sybase policy" on page 31.

■ Add scripts to the backup selections list.
See "About backup selections for a Sybase client" on page 31.

10 When you have added all the schedules, clients, and backup selections you need, click **OK**.

About policy attributes for NetBackup for Sybase

With a few exceptions, NetBackup manages a database backup like a file system backup. Other 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 attribute descriptions for NetBackup for Sybase policies

Attribute	Description
Policy type	Determines the types of clients that can be in the policy. In some cases the policy type determines the types of backups that NetBackup can perform on those clients. To use the Sybase database agent, you must define at least one policy of type that is Sybase.
Keyword phrase	For NetBackup for Sybase, the **Keyword phrase** entry is ignored.

About adding schedules to a NetBackup for Sybase policy

Each policy has its own set of schedules. These schedules initiate automatic backups and specify when a user can initiate operations. A database backup has these types of schedules: application backup and automatic backup.

Configuring a NetBackup for Sybase 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. The NetBackup for Sybase agent 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 unscheduled jobs can occur. This window is necessary because the application backup schedule starts the processes that are required for all database backups, including those started automatically. 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   In the **Policy** dialog box, click the **Schedules** tab.

    To access the **Policy** dialog box, double-click the policy name in the **Policies** list in the NetBackup Administration Console .

2   Double-click the schedule that is named **Default-Application-Backup**.

3   Specify the other properties for the schedule.

    See "About NetBackup for Sybase schedule properties" on page 29.

Example application backup schedule for NetBackup for Sybase

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.

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

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

Configuring NetBackup for Sybase 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   On the **Policy** dialog box, click the **Schedules** tab.

2   Click **New**.

3   Specify a unique name for the schedule.

4   Select the **Type of backup**.

    See "About the types of NetBackup for Sybase backups" on page 29.

5   Specify the other properties for the schedule.

See "About NetBackup for Sybase schedule properties" on page 29.

6   Click **OK**.

Example automatic backup schedule for NetBackup for Sybase

Table 3-4 shows example settings for an automatic backup schedule.

Table 3-4   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

About the types of NetBackup for Sybase backups

Table 3-5 shows the backup schedules you can specify.

Table 3-5   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 master 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 for NetBackup 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.

About NetBackup for Sybase 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 3-6   Description of schedule properties

Property	Description
Type of backup	Specifies the type of backup that this schedule controls. The selection list shows only the backup types that apply to the policy you want to configure. See "About the types of NetBackup for Sybase backups" on page 29.
Schedule type	You can schedule a backup in one of the following ways: ■ **Frequency** This setting is used only for scheduled backups. It is not used for user-directed backups. **Frequency** specifies the period of time that can elapse until the next backup or archive operation begins on this schedule. For example, assume that the frequency is seven days and a successful backup occurs on Wednesday. The next full backup does not occur until the following Wednesday. Typically, incremental backups have a shorter frequency than full backups. ■ **Calendar** This setting is used only for scheduled backups. It is not used for user-directed backups. The **Calendar** option allows you to schedule backup operations that are based on specific dates, recurring week days, or recurring days of the month.
Retention	The retention period for an application backup schedule refers to the length of time that NetBackup keeps backup images (stream-based backups). The retention period for an automatic schedule controls how long NetBackup keeps records of when scheduled backups occurred (proxy backups). For example, if your database is backed up once every Sunday morning, you should select a retention period of at least 2 weeks. The retention period is affected by the type of schedule you select, as follows: ■ Frequency-based scheduling 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 to determine whether a backup is due. This means that if you set the retention period to expire the record too early, the scheduled backup frequency is unpredictable. However, if you set the retention period to be longer than necessary, the NetBackup catalog accumulates unnecessary records. ■ Calendar-based scheduling 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.

Adding clients to a NetBackup for Sybase policy

The client list contains a list of the clients on which your scripts are run during an automatic backup. 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 software installed:

■ Sybase

■ NetBackup client or server

■ The backup or restore Sybase script(s)

To add clients to a NetBackup for Sybase policy

1 In the **Policy** dialog box, click the **Clients** tab.

To access the **Policy** dialog box, double-click the policy name in the **Policies** list in the NetBackup Administration Console.

2 Click **New**.

3 Type the name of the client and press **Enter** (Windows) or click **Add** (Java).

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

4 (Windows) To add another client, repeat step 2 and step 3.

5 (Java) To add another client, repeat step 3.

6 If this client is the last client you want to add, click **OK**.

7 (Java) In the **Policy** dialog box, click **Close**.

About backup selections for a Sybase client

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.

About NetBackup for Sybase scripts rules

Observe the following when you use scripts:

■ Make sure the scripts reside on each client in the client list. Scripts can reside in any location. Make sure that NetBackup can access the location you choose and that NetBackup can run the scripts.

- 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 ensures that future NetBackup installations do not overwrite your site's scripts.

- If you use NetBackup for Sybase in a NetBackup server cluster, make sure that the scripts reside in a location that is available after a failover.

Add scripts to the backup selections list only if you want to set up a policy for automatic backups. These scripts are run for manual backups and for automatic backup schedules as specified under the Schedules tab. NetBackup runs the scripts in the order that the scripts appear in the backup selections list.

See "About the backup, restore, and load scripts for NetBackup for Sybase on Windows " on page 40.

Adding NetBackup for Sybase scripts to the backup selections list

The following procedures describe how to add scripts to the backup selections list by with the Java interface and the Windows interface. Review the information on backup scripts if necessary.

Note: Be sure to specify the correct script names in the backup selections list to prevent an error or possibly a wrong operation. Make sure that the script resides on the client before you try to add it to the backup selections list.

To add NetBackup for Sybase scripts to the backup selections list from the Java interface

1 Open the **Policy** dialog box.

   To access the **Policy** dialog box, double-click the policy name in the Policies list in the NetBackup Administration Console.

2 Click the **Backup Selections** tab.

3 Click **New**.

4 In the **Script** box, type the full path name of a script on the client.

   For example:

   ```
   /backup_scripts/db/cold_backup.sh
   ```

   ```
   C:\backup_scripts\db\cold_backup.cmd
   ```

5   Click **Add** to add the script to the list.

6   Click **OK**.

To add NetBackup for Sybase scripts to the backup selections list from the Windows interface

1   In the **Policy** dialog box, click the **Backup Selections** tab.

       To access the **Policy** dialog box, double-click the policy name in the Policies list in the NetBackup Administration Console.

2   Click **New**.

3   Specify the names of the scripts you want NetBackup to use.

       Use one of the following methods:

- Type the full path name of the script on the client. For example:

  ```
  /backup_scripts/db/cold_backup.sh
  ```

  ```
  C:\backup_scripts\db\cold_backup.cmd
  ```

- Click the **Remote Folder** button.

4   Navigate to and select the script file, then click **OK**.

5   Click **OK**.

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.

Caution: Always specify the correct script when configuring automatic backups or when starting operations through NetBackup. NetBackup for Sybase does not generate an error if a restore script is used for a backup operation or a backup script is used for a restore operation.

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

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 a different location on your client.

Sybase backup scripts can be located anywhere on a client. If you do not copy the scripts to a site-specific location, 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 a Sybase database" on page 25.

5 Save and close the file.

6 Test the script you modified.

More information is available for how to test scripts.

See Testing configuration settings for NetBackup for Sybase on page 55.

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
```

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 a different location on your client.

Sybase restore and load scripts can be located anywhere on the client. If you do not copy the scripts to a site-specific location, 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.

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.

Caution: Always specify the correct script when configuring automatic backups or when starting operations through NetBackup. NetBackup for Sybase does not generate an error if a restore script is used for a backup operation or a backup script is used for a restore operation.

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

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 a different location on your client.

Sybase backup scripts can be located anywhere on a client. If you do not copy the scripts to a site-specific location, 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 a Sybase database" on page 25.

```
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 Testing configuration settings for NetBackup for Sybase on page 55.

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
```

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

```
@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 49.

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 a different location on your client.

    Sybase restore and load scripts can be located anywhere on the client. If you do not copy the scripts to a site-specific location, 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 Testing configuration settings for NetBackup for Sybase on page 55.

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
```

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.

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 a different location on your client.

    Sybase restore and load scripts can be located anywhere on the client. If you do not copy the scripts to a site-specific location, 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 15.

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 Testing configuration settings for NetBackup for Sybase on page 55.

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).

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 Administration Console.

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 40.

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 50.

See "Specifying options in /usr/openv/netbackup/bp.conf on the UNIX client" on page 51.

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 49.

Configuring the log on account for the NetBackup Client Service for NetBackup for Sybase on Windows

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 log on account for the NetBackup Client Service

1   Open the Windows Services application.

2   Double-click on the **NetBackup Client Service** entry.

3   Click on the **Log On** tab.

4   Type the account name with SYSDBA privileges.

5   Type the password.

6   Click **OK**.

7   Stop and start the NetBackup Client Service.

8   Close the Services control panel application.

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 52.

See "NetBackup for Sybase multiplexing considerations - duplicating tapes" on page 53.

See "NetBackup for Sybase multiplexing considerations - using more than 12 stripes" on page 53.

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::"
stripe on "sybackup::"
stripe on "sybackup::"
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
```

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 53.

See "Example Sybase scripts for striped dumps and loads" on page 52.

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 master 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.

About permissions for NetBackup for Sybase log files (UNIX and Linux)

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.

Backup and restore operations fail when permissions are too restrictive. We recommend that you make all of the usr/openv/netbackup/logs directories and subdirectories readable and writeable by all users (777 permissions). However, security requirements may prohibit global read-write access. If so, you can restrict permissions of specific directories to a single group or user if the following is true: Processes that run as members of that group or as that user initiate all backup and restore operations that are related to that directory.

Check that the `/usr/openv/netbackup/logs/user_ops` directory tree has 777 permissions. The items in this directory need to be accessible for the applications to operate correctly.

If you restrict permissions on the other directories that are located in `/usr/openv/netbackup/logs`, backup and restore operations are not affected.

However, troubleshooting efforts may be hindered when processes do not have the appropriate permissions to update the debug logs therein.

Configuring the Maximum jobs per client

The following procedure shows how to set the **Maximum jobs per client** attribute.

To configure the maximum jobs per client

1 In the left pane of the NetBackup Administration Console, expand **NetBackup Management > Host Properties**.

2 Select **Master Server**.

3 In the right pane, double-click the server icon.

4 Click **Global Attributes**.

5 Change the **Maximum jobs per client** value to 99.

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

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.

Testing configuration settings for NetBackup for Sybase

After you configure the master server for NetBackup for Sybase, test the configuration settings. Perform a manual backup (or backups) with the automatic

backup schedules you created. A description of status codes and other troubleshooting information is available.

See the *NetBackup Status Codes Reference Guide*.

See the *NetBackup Troubleshooting Guide*.

To test the configuration settings

1   Log onto the master server as administrator (Windows) or root (UNIX).

2   Start the NetBackup Administration Console.

3   In the left pane, click **Policies**.

4   Click the policy you want to test.

5   Select **Actions > Manual Backup**.

     The **Schedules** pane contains the name of an automatic schedule (or schedules) configured for the policy that you want to test. The **Clients** pane contains the name of the client(s) listed in the policy that you want to test.

6   Follow the directions in the **Manual Backup** dialog box.

7   To check the status of the backup, click **Activity Monitor** in the NetBackup Administration Console.

     The Activity Monitor and the script output indicate the status of the backup operation.

     For more information, see the *Troubleshooting* chapter.

Using NetBackup for Sybase

This chapter includes the following topics:

- About using NetBackup for Sybase
- About Sybase database backups
- Browsing Sybase backups
- About restoring a Sybase database

About using NetBackup for Sybase

You can use the NetBackup interfaces to start Sybase backups and restores after you complete the installation and configure NetBackup. You can also issue DUMP and LOAD commands directly from the isql utility to perform Sybase backups and restores.

Caution: Always specify the correct Sybase script when starting operations through NetBackup. NetBackup for Sybase does not generate an error if a restore script is used for a backup operation or a backup script is used for a restore operation.

See "Using isql to restore a Sybase database" on page 61.

About Sybase database 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.

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.

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.

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 master server as administrator (Windows) or root
    (UNIX).

3   Using the NetBackup Administration Console, 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 Testing configuration settings for NetBackup for Sybase on page 55.

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.

Browsing Sybase backups

You can use the bplist command to browse the Sybase backup history on the
master 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.0.22448.26-10-2001.13:45:17
/sybase1200.model.D.0.21182.26-10-2001.12:56:40
/sybase1200.model.D.0.20730.26-10-2001.12:42:04
/sybase1200.model.D.0.20932.26-10-2001.12:33:02
/sybase1200.master.D.1.20138.26-10-2001.07:25:57
/sybase1200.master.D.2.19620.26-10-2001.07:25:57
/sybase1200.master.D.3.20640.26-10-2001.07:25:57
/sybase1200.master.D.0.19888.26-10-2001.07:25:57
/sybase1200.model.D.0.19092.26-10-2001.07:18:14
/sybase1192.model.D.0.4172.25-10-2001.07:17:20
root:<candytuft> %
```

Windows:

```
C:\>cd pro*
C:\Program Files>cd ver*
C:\Program Files\Symantec>cd net*
C:\Program Files\Symantec\NetBackup>cd bin
C:\Program Files\Symantec\NetBackup\bin>bplist -S candytuft -C copper -t 7 -R \
/sybase1200.esam.T.0.22448.26-10-2001.13:45:17
/sybase1200.model.D.0.21182.26-10-2001.12:56:40
/sybase1200.model.D.0.20730.26-10-2001.12:42:04
/sybase1200.model.D.0.20932.26-10-2001.12:33:02
/sybase1200.master.D.1.20138.26-10-2001.07:25:57
/sybase1200.master.D.2.19620.26-10-2001.07:25:57
/sybase1200.master.D.3.20640.26-10-2001.07:25:57
/sybase1200.master.D.0.19888.26-10-2001.07:25:57
/sybase1200.model.D.0.19092.26-10-2001.07:18:14
/sybase1192.model.D.0.4172.25-10-2001.07:17:20
C:\Program Files\Symantec\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 or NetBackup online help.

> **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 `/`.

About restoring a Sybase database

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.

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
```

Configuring a redirected restore on the NetBackup for Sybase client

If you want to browse and restore backups that are owned by another client, perform the following steps:

To config 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 Administrator's Guide, Volume 1*.

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 config 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 Administrator's Guide, Volume 1*.

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
```

Troubleshooting NetBackup for Sybase

This chapter includes the following topics:

- NetBackup debug logs and reports
- Sybase Backup Server log and messages
- Minimizing timeout failures on large database restores
- Minimizing loading and unloading of tapes for database backups (UNIX and Linux)

NetBackup debug logs and reports

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 the Sybase backup server.

Note the following with regard to 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.

See the *NetBackup Troubleshooting Guide*.

Also refer to the following file:

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

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

Enabling the debug logs for a NetBackup for Sybase client automatically (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.

See "Enabling the debug logs for NetBackup for Sybase manually (Windows)" on page 66.

Enabling the debug logs for NetBackup for Sybase manually (Windows)

Creating the NetBackup for Sybase for Windows database agent logs manually

1   Create the following directories on the client in a DOS window:

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.

Enabling the debug logs for a NetBackup for Sybase for UNIX or Linux client

Enabling the NetBackup for Sybase logs manually (UNIX/Linux)

1 Create the following directories on the client:

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

/usr/openv/netbackup/logs/bphdb

/usr/openv/netbackup/logs/bprestore

/usr/openv/netbackup/logs/tar
/usr/openv/netbackup/logs/sybackup
chmod 777 /usr/openv/netbackup/logs/sybackup
```

For example:

cd /usr/openv/netbackup/logs
mkdir bphdb

2 The user_ops, each of the log directories, and any subdirectories should have 777 permissions. They must exist and be accessible for the applications to operate correctly.

For example:

chmod 777 bphdb

See "About permissions for NetBackup for Sybase log files (UNIX and Linux)" on page 54.

3 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 processes that use unified logging.

Information on how to use logs and reports is available.

See the *NetBackup Troubleshooting Guide*.

4 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.*mmddyy.hhmmss*.txt

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

- *log.mmddyy*.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 or Linux database client

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

The following execution log exists:

- `log.mmddyy`

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

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 linked to the library program provided with NetBackup for Sybase.

Setting the debug level on a NetBackup for Sybase Windows client

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 on a NetBackup for Sybase for Windows client

1   From the Windows Start menu, choose **Programs > Symantec NetBackup > Backup, Archive, and Restore**.

2   Select **File > NetBackup Client Properties**.

3   Click the **Troubleshooting** tab.

4   Set the **Database** debug level.

5   Click **OK** to save your changes.

Setting the debug level on a UNIX or Linux client

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 `/user/openv/netbackup/logs`.

To set the debug level on a UNIX or Linux client

◆   Enter the following line in the `bp.conf` file.

    VERBOSE = *X*

Where *X* is the debug level you want.

About NetBackup server reports

NetBackup provides other reports that are useful in isolating problems. One such report is All Logs Entries on the server. Information on server reports is available.

See the *NetBackup Administrator's Guide*.

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:
	
	`/usr/openv/netbackup/logs/bphdb/`
	`sybase_stdout.mmddyy.hhmmss.txt`
	
	`install_path\NetBackup\logs\bphdb\`
	`sybase_stdout.mmddyy.hhmmss.txt`

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.
	
	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.
	
	Note: To determine successful status of `DUMP` and `LOAD` commands, always check Sybase Backup Server messages and logs.
	
	The following Sybase Backup Server message log indicates successful `DUMP` command completion:
	
	`Backup Server: 3.43.1.1: Dump phase number 1 completed.`
	`Backup Server: 3.43.1.1: Dump phase number 2 completed.`
	`Backup Server: 4.58.1.1: Database model: 238 kilobytes DUMPed.`
	`Backup Server: 3.43.1.1: Dump phase number 3 completed.`
	`Backup Server: 4.58.1.1: Database model: 242 kilobytes DUMPed.`
	
	Backup Server: 3.42.1.1: DUMP is complete (database model).

Minimizing timeout 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 waiting for media or device access. If the delay is too long, the restore session times out. Use the following procedure to minimize session timeouts and to allow the restores to complete successfully.

To minimize timeout failures on large database restores

1   In the NetBackup Administration Console, expand **NetBackup Management > Host Properties > Clients**

2   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 Administrator's Guide, Volume 1*.

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

3   Click **OK** for each client.

Minimizing loading and unloading of tapes for database backups (UNIX and Linux)

You can minimize excessive unloading and reloading of tapes between multistreamed database backups by making changes on the NetBackup media server.

To minimize loading and unloading of tapes

◆   In the `/usr/openv/netbackup/bp.conf` file on the NetBackup media server, add the following options:

■   `MEDIA_UNMOUNT_DELAY`.

■   `MEDIA_REQUEST_DELAY`. Use this variable only with non-robotic drives, such as tape stackers.

Index