

April 23, 2003

Legato NetWorker[®]

Module for Sybase[®]

Releases 1.0, 1.1, and 2.0
UNIX[®] and Microsoft[®] Windows NT[®] Version

Installation Guide

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Legato NetWorker Module for Sybase Installation Guide, Releases 1.0, 1.1, and 2.0, UNIX and Microsoft Windows NT Version

April 23, 2003

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Preface

This Installation Guide provides instructions on how to install the Legato NetWorker[®] Module for Sybase software.

After installing the NetWorker[™] Module for Sybase software, refer to the *Legato NetWorker Module for Sybase Administrator's Guide* and the program's Online Help for detailed instructions on how to configure, administer, and use the NetWorker Module software.

If late-breaking information becomes available following the release of the CD-ROM, it will be included in an electronic version of the product Release Supplement available in the Support section of the Legato web site (www.legato.com). Refer to the web site periodically to view the latest release of this document.

Audience


The information in this guide is intended for system administrators who are responsible for installing software and maintaining the servers and clients on a network. Operators who monitor the daily backups may also find this manual useful.

Product Documentation

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This document uses the following typographic conventions and symbols to make information easier to access and understand.

Convention	Indicates	Example
boldface	Names of line commands, daemons, options, programs, or scripts	The nsradmin command starts the command line version of the administration program.
<i>italic in text</i>	Pathnames, filenames, computer names, new terms defined in the Glossary or within the chapter, or emphasized words	Displayed messages are also written to <i>/nsr/logs/daemon.log</i> .
<i>italic in command line</i>	A variable that must be provided in the command line	nwadmin -s server-name
fixed-width	Examples and information displayed on the screen	media waiting: recover waiting for 8mm 5GB tape volume name
fixed-width, boldface	Commands and options that must be typed exactly as shown	nsr_shutdown -a
Menu_Name> Command	A path or an order to follow for making selections in the GUI	Volume>Change Mode>Appendable
Important:	Information that must be read and followed to ensure successful backup and recovery of data	 <hr/> Important: Use the no_verify option with extreme caution. <hr/>

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Installation

This guide provides instructions for installing the Legato NetWorker Module for Sybase software on systems running Sybase SQL Server 11.0.x or Sybase Adaptive Server Enterprise (ASE) 11.5 or later.

After you install the NetWorker Module, refer to the *Legato NetWorker Module for Sybase Administrator's Guide* for detailed instructions about configuring the database server as a client of the NetWorker storage management server.

Revision History

The following table summarizes the latest changes to this document.

Date	Revision Description
April 23, 2003	The following items are changed: <ul style="list-style-type: none">• In "Files Installed during Installation" on page 18, the name of the installation directory for the <i>threshold.sql</i> and <i>nsrsyb.sh</i> files on HP-UX is changed.• In "How to Install the NetWorker Module on HP-UX" on page 20, the new step 9 is added.• In "How to Run a Test On-Demand Backup" on page 26, the new step 2 is added.
August, 2000	Initial release.

Installation Guidelines

This section provides guidelines for installing the NetWorker Module for Sybase on a Sybase server that requires backup and recovery services.

1. Verify that your Sybase server and NetWorker server meet installation requirements (see [page 13](#)).
2. Prepare the NetWorker Module software for installation from CD-ROM or from downloadable file (see [page 16](#)).
3. Install the NetWorker Module software (see [page 18](#)).
4. Edit the **nsrsyb** shell script or batch file (see [page 21](#)).
5. Enable and register the NetWorker Module software (see [page 22](#)).

6. Configure the database server as a NetWorker client (see [page 23](#)).
7. Test scheduled and on-demand backups (see [page 25](#)).

How to Update NetWorker Module for Previous Releases

This section provides instructions for updating the NetWorker Module for Sybase to the latest release of the software. To update your software:

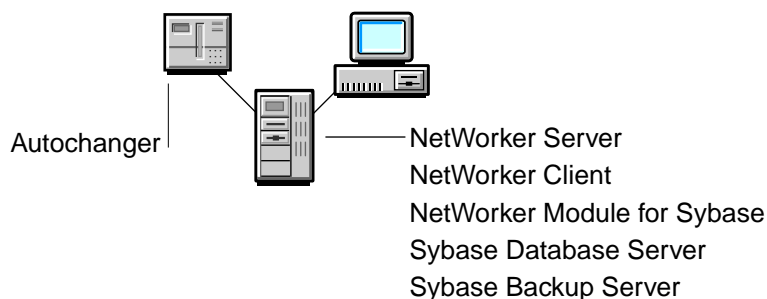
1. Verify that NetWorker Module for Sybase is not performing a back up.
2. Remove the NetWorker Module for Sybase software from the Sybase server. Follow the software removal instructions appropriate to your platform.
3. Install the latest release of NetWorker Module for Sybase on the Sybase server. Follow the software installation instructions appropriate for your platform.

NetWorker Components

The NetWorker server software and database server software can exist on either the same computer (see [Figure 1](#)) or separate computers (see [Figure 2](#)). Because NetWorker Module for Sybase is a client-side software product, the software must reside on the same computer as the NetWorker client software, the Sybase SQL Server or Sybase ASE software, and the Sybase Backup Server.

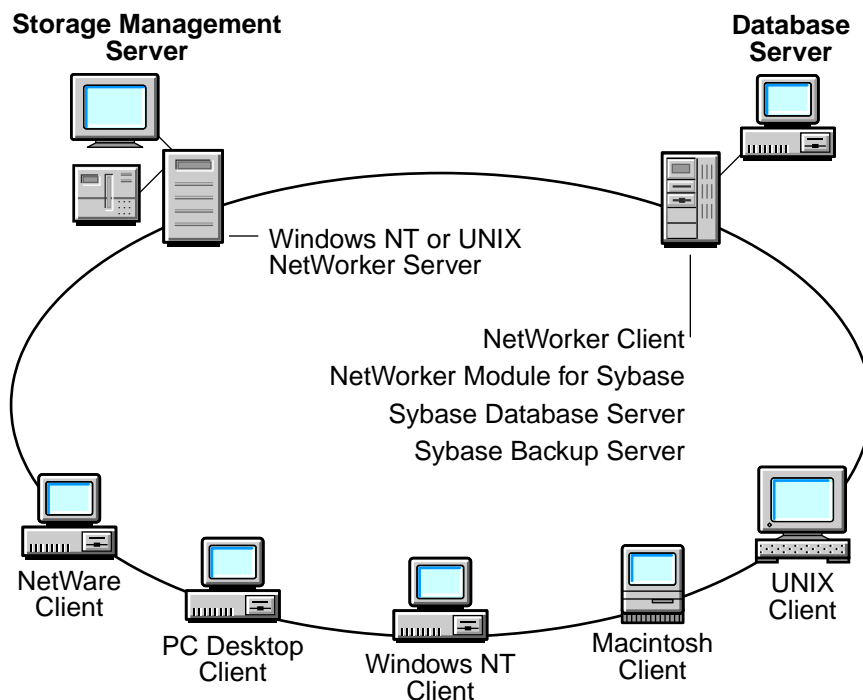
The following is an example of a simple environment in which all NetWorker client and server software and Sybase server software are installed on the same machine.

Figure 1. Single Server Environment



The following is an example of a heterogeneous network environment in which the NetWorker server software is installed on a different machine than the NetWorker client software and Sybase server software.

Figure 2. Heterogeneous Networked Environment



The NetWorker server software and NetWorker Module for Sybase software provide storage management services for Sybase database servers. The Sybase Backup Server connects to the NetWorker Module software through the Sybase Backup Server API in a shared **libbms** library. The NetWorker Module backup, restore, and database consistency check programs **nsrsybsv**, **nsrsybrc**, and **nsrsybcc** connect to the database server through the Sybase Open Client API.

Because the NetWorker Module works with both UNIX and Windows NT NetWorker servers, you can use a single network-wide backup and restore solution to provide storage management for other data on your network.

Installation Requirements

NetWorker Module for Sybase Release 1.0

System requirements for NetWorker Module for Sybase release 1.0 (for UNIX platforms only using Sybase SQL Server or Sybase ASE 11.5.1 or 11.9.x):

- A storage management server with either NetWorker for UNIX 5.0 or later *or* NetWorker for Windows NT 5.0 or later *server* software installed.
- NetWorker for UNIX 5.5.1 or later *or* NetWorker for Windows NT 5.5.1 or later *client* software installed on the same computer running the database server.

- A database server with Sybase SQL Server 11.0.x or Sybase ASE 11.5.1, 11.9.2, or 11.9.3.

If NetWorker Module for Sybase release 1.0 is used with the Sybase SQL Server 11.0, the following operating systems are supported:

- Solaris 2.3, Solaris 2.4, Solaris 2.5, Solaris 2.5.1, or Solaris 2.6
- AIX 4.1.x or AIX 4.2
- HP-UX 10.20 or HP-UX 10.30

If NetWorker Module for Sybase release 1.0 is used with Sybase ASE, the following operating systems are supported:

- NetWorker Module for Sybase release 1.0 with ASE 11.5.1 is supported on AIX 4.3.2
- NetWorker Module for Sybase release 1.0 with ASE 11.9.2 is supported on Solaris 2.6 and 2.7, HP-UX 10.20.11, and AIX 4.3.2
- NetWorker Module for Sybase release 1.0 with ASE 11.9.3 is supported on Solaris 2.7 64-bit, HP-UX 11.0 64 bit, and AIX 4.3.2 64 bit
- Sybase Backup Server software installed on the same computer running the database server (standard installation).
- Sybase Open Client/C 11.1 or later software on the same computer running the database server.
- About 15 MB of available space in the same directory on the computer where you installed the NetWorker client software and the database server.

NetWorker Module for Sybase Release 1.1

System requirements for NetWorker Module for Sybase release 1.1 (for Windows NT only using Sybase SQL Server or Sybase ASE 11.x):

- A storage management server with either NetWorker for UNIX 5.5.1 patch 1 or later *or* NetWorker for Windows NT 5.5.1 patch 1 or later *server* software installed.
- NetWorker for Windows NT 5.5.1 or later *client* software installed on the same computer running the database server.
- A database server with Sybase SQL Server 11.0.x or Sybase ASE 11.5, 11.5.1, or 11.9.2, running on a Windows NT 4.0 operating system (Service Pack 4 or later).

To use the NetWorker Module with Sybase Adaptive Server 11.9.2, install patch EBF 8741. This patch can be downloaded from Sybase's web site, www.sybase.com.

- Sybase Backup Server software installed on the same computer running the database server (standard installation).
- Sybase Open Client/C 11.1 or later software on the same computer running the database server.
- About 15 MB of available space in the same directory on the computer where you installed the NetWorker client software and the database server.

NetWorker Module for Sybase Release 2.0

System requirements for NetWorker Module for Sybase release 2.0 (for Windows NT or UNIX platforms using only Sybase ASE 12.0):

- A storage management server with either NetWorker for UNIX 5.5.1 patch 1 or later *or* NetWorker for Windows NT 5.5.1 patch 1 or later *server* software installed.
- NetWorker for UNIX 5.5.1 or later *or* NetWorker for Windows NT 5.5.1 or later *client* software installed on the same computer running the database server.
- A database server with Sybase ASE 12.0 or later installed.
- Sybase Backup Server software installed on the same computer running the database server (standard installation).
- Sybase Open Client/C 11.1 or later software on the same computer running the database server.
- The database server must be running one of the following operating systems:
 - Windows NT 4.0 (Service Pack 4 or later)
 - Solaris 2.6 (32 bit), Solaris 7 (32 or 64 bit)
 - HP-UX 11.0 (32 or 64 bit)
 - AIX 4.3.2 (32 or 64 bit)
- About 15 MB of available space in the same directory on the computer where you installed the NetWorker client software and the database server.



Important: Before installing the NetWorker Module on your database server, you must first install the NetWorker 5.5.1 or later client software.

Required Sybase Roles and Permissions

To create, dump, and load databases, you must have certain Sybase roles and permissions. Because the NetWorker Module relies on the administrator's ability to dump and load databases when performing backup and restore operations, you must also have the appropriate Sybase roles and permissions to use the NetWorker Module. [Table 1 on page 15](#) lists the Sybase roles and permissions required for performing NetWorker Module administrative tasks.

Table 1. Sybase Roles and Permissions

Sybase Role or Permission	Action	NetWorker Module Command
SA_role or create database privileges	Create a database	n/a
SA_role, DBO (database ownership), or OPER_role	Dump and load databases	nsrsybsv; nsrsybrc
SA_role, DBO	Run a database consistency check	nsrsybcc



Important: During a scheduled NetWorker backup, a database consistency check (**nsrsybcc**) runs by default. The Sybase OPER_role does not have permission to run a database consistency check; therefore, a user with only an OPER_role cannot run a scheduled backup of the database server unless the consistency check is disabled.

Preparing the Software for Installation

The NetWorker Module software is available in two media formats, on CD-ROM and as a downloadable file. The installation instructions are different depending on which media you use and what platform you install it on.

CD Distribution

To prepare for installation from CD-ROM, simply mount the NetWorker Module CD and change directories to the appropriate software location. [Table 2](#) lists the location of NetWorker Module for Sybase software on the CD. Preparation for AIX installation requires additional steps, see ["How to Extract NetWorker Module for Sybase Software for AIX" on page 16](#).

Table 2. NetWorker Module for Sybase Location

Platform	CD Location, Releases 1.0 and 1.1	CD Location, Release 2.0
Windows NT	<i>/SYBASE/SYB1_X/i386/networkr/setup.exe</i>	<i>/SYBASE/SYB2_0/i386/networkr/setup.exe</i>
Solaris	<i>volume_label/SYBASE/SYB1_X/SOLARIS/BMS.PKG</i>	<i>volume_label/SYBASE/SYB2_0/SOLARIS/BMS.PKG</i>
HP-UX	<i>/SYBASE/SYB1_X/HPUX/BMS.PKG</i>	<i>/SYBASE/SYB2_0/HPUX/BMS.PKG</i>
AIX	<i>/SYBASE/SYB1_X/AIX/BMS.TAR</i>	<i>/SYBASE/SYB2_0/AIX/BMS.TAR</i>

How to Extract NetWorker Module for Sybase Software for AIX

To install the NetWorker Module on AIX, you must first extract the software to a temporary directory before you can install it.

To extract the software:

1. Become root on the database server.
2. Create a temporary directory for the software and change to that directory.
3. Insert the NetWorker Module CD-ROM into the drive and mount it.

4. Extract the software from the CD-ROM with the following command:


```
# tar -xvpf /mount_point/SYBASE/SYB1_X/AIX/BMS.TAR
```

 or


```
# tar -xvpf /mount_point/SYBASE/SYB2_0/AIX/BMS.TAR
```
5. Continue the installation with ["Install the NetWorker Module on AIX" on page 21](#).

Web Distribution

To prepare for installation from a downloaded file, you must extract the NetWorker Module software before you can install it. For instructions, see ["How to Extract Downloaded Software" on page 17](#).

[Table 3](#) lists the software files available for download. The downloadable version of NetWorker Module contains compressed versions of the software.

Table 3. Web Downloadable Files

Platform	Downloadable File, Releases 1.0 and 1.1	Downloadable File, Release 2.0
Windows NT	<i>nms11_nti.zip</i>	<i>nms20_nti.zip</i>
Solaris	<i>nms10_solaris.pkg.gz</i>	<i>nms20_solaris.pkg.gz</i>
HP-UX	<i>nms10_hpux.pkg.gz</i>	<i>nms20_hpux.pkg.gz</i>
AIX	<i>nms10_aix.tar.gz</i>	<i>nms20_aix.tar.gz</i>

How to Extract Downloaded Software

To extract the downloaded software:

1. Become root or log on as administrator or equivalent on the database server.
2. Create a temporary directory for the downloaded evaluation file.
3. Save the downloaded file in the temporary directory you created in [step 2](#).
4. Extract the downloaded evaluation file.
 - For Windows NT computers, unzip the *znms11_nti.zip* or *nms20_nti.zip* file to extract the software.
 - For Solaris computers, use the following command to extract the software:


```
# gunzip nmsxx_solaris.pkg.gz
```
 - For HP-UX computers, use the following command to extract the software:


```
# gunzip nmsxx_hpux10.pkg.gz
```
 - For AIX computers, use the following commands to extract the software:


```
# gunzip nmsxx_aix.tar.gz
```

```
# tar -xvpf nms_aix.tar
```
5. When the extraction is completed, continue with the installation instructions appropriate for your platform.

Installing NetWorker Module for Sybase

The following sections describe how to install the NetWorker Module for Sybase.



Important: You must install the NetWorker Module software in the same directory where you installed the NetWorker client binaries.

Files Installed during Installation

The NetWorker Module installation process installs the following files:

- NetWorker Module binaries and program files, installed in */usr/sbin* for Solaris, in */usr/bin* for AIX, in */opt/networker/bin* for HP-UX, and in the *bin* directory of your Windows NT NetWorker installation:
 - **nsrsybsv** (**nsrsybsv.exe** for Windows NT), the save program used for on-demand backups
 - **nsrsybrc** (**nsrsybrc.exe** for Windows NT), the recover program
 - **nsrsybcc** (**nsrsybcc.exe** for Windows NT), the database consistency check program
 - *nsrsyb* (*nsrsyb.bat* for Windows NT), the backup command used for scheduled backups
 - The NetWorker shared library used to connect the Sybase Backup Server with the NetWorker server:
 - libbms.dll* for Windows NT
 - libbms.so* for Solaris
 - libbms.sl* for AIX and HP-UX
 - Windows NT only: *threshold.sql*, a sample threshold procedure that you can use to implement transaction log backups to free log space. For details, see the *Legato NetWorker Module for Sybase Administrator's Guide*.
 - Windows NT only: **nwbms.exe** (NetWorker Module for Sybase 1.1) or **nwbms2.exe** (NetWorker Module for Sybase 2.0), the command used to launch the NetWorker Module graphical user interface.
- UNIX platforms only: the following files are installed in */nsr/examples/sybase* on Solaris, AIX, and HP-UX:
 - *threshold.sql*, a sample threshold procedure that you can use to implement transaction log backups to free log space. For details, see the *Legato NetWorker Module for Sybase Administrator's Guide*.
 - *nsrsyb.sh*, an editable copy of the *nsrsyb* backup command script.
- Manual (man) pages (UNIX installations only), installed in */usr/man/man8* for Solaris and AIX, and */opt/networker/man/man8* on HP-UX:
 - *nsrsyb.8*
 - *nsrsybsv.8*
 - *nsrsybrc.8*
 - *nsrsybcc.8*

- For UNIX platforms, a symbolic link to the shared NetWorker library is installed in *\$\$SYBASE/lib* (or, for Sybase ASE 12.0, *\$\$SYBASE/\$SYBASE_ASE/lib*).
- For Windows NT, a copy of the NetWorker shared library *libbms.dll*, may be installed in *%SYBASE%/lib* (for Sybase ASE 12.0, the location is *%SYBASE%/SYBASE_ASE/lib*). For more details, see "[Install the NetWorker Module on Windows NT](#)", below.

How to Install the NetWorker Module on Windows NT

Use the Install Shield program to install NetWorker Module on a Windows NT computer running the NetWorker client software.

To install NetWorker Module:

1. Log on to the computer as *administrator* or equivalent.
2. Double-click the *setup.exe* file to start the installation.
3. When the *setup.exe* file is complete, verify that the NetWorker shared library *libbms.dll* was copied into the *%SYBASE%/lib* or *%SYBASE%/SYBASE_ASE/lib* directory. If the installation program can not determine the location of your Sybase installation, the shared library will not be copied into the appropriate Sybase *lib* directory. If this is the case, you must manually copy the NetWorker shared library *libbms.dll* from the *bin* directory of your Windows NT NetWorker installation to the *%SYBASE%/lib* or *%SYBASE%/SYBASE_ASE/lib* directory.
4. To complete the installation, following the instructions in "[Finalizing the Installation](#)" on page 21.

How to Install the NetWorker Module on Solaris

Use the **pkgadd** command to install the NetWorker Module on a Solaris computer running the NetWorker client software.



Important: You must install the NetWorker Module software in the same directory where you installed the NetWorker client binaries.

To install the NetWorker Module:

1. Become root on the computer running the NetWorker client software.
2. Change directories to the proper install directory on the CD-ROM, or change to the directory created for the downloaded software.
3. Install the NetWorker Module with the following command:


```
# pkgadd -d BMS.PKG
```
4. Enter the pathname to the *\$\$SYBASE* directory (or, for Sybase ASE 12.0, *\$\$SYBASE/\$SYBASE_ASE*) so the installation script can create a symbolic link to the shared library, *libbms.so*.
5. To complete the installation, following the instructions in "[Finalizing the Installation](#)" on page 21.

How to Install the NetWorker Module on HP-UX

Use the **swinstall** command to install the NetWorker Module on an HP-UX computer running the NetWorker Client software. You can use either the System Administration Software (SAM) graphical user interface (GUI) version or the terminal version of the **swinstall** utility to install the NetWorker Module software, depending on whether you have X Windows on your computer. The following instructions describe how to install the software using the GUI version.



Important: You must install the NetWorker Module software in the same directory where you installed the NetWorker client binaries.

To install the NetWorker Module:

1. Initiate the software installation program for HP-UX with the command:


```
# swinstall
```
2. In the Specify Source dialog box, select the source depot type, the source hostname, and the source depot path.
3. Click OK.
4. In the SW Install - Software Selection dialog box, select the BMS.PKG software package.
5. Select Actions>Install (analysis) to open the Install Analysis dialog box. Click OK to begin the software analysis.
6. When the software analysis is completed, a Confirmation dialog box appears. Click Yes to begin installing the NetWorker Module.
7. When the installation is completed, the Install Window appears with installation information. Click Done.
8. Create a symbolic link to the shared *libbms.sl* library in the NetWorker directory.

For an installation with Sybase SQL Server or Sybase ASE 11.x, use the following command:

```
# ln -s /opt/networker/bin/libbms.sl $SYBASE/lib/libbms.sl
```

For an installation with Sybase ASE 12.0, use the following command:

```
# ln -s /opt/networker/bin/libbms.sl
$SYBASE/$SYBASE_ASE/lib/libbms.sl
```

Note: This link is not removed when the NetWorker Module software is uninstalled. You must remove this link manual if the software is uninstalled.

9. For a NetWorker Module release 2.0 installation with Sybase ASE 12.5, create a symbolic link for the Net-Library driver in the \$SYBASE/\$ASE_OCS/lib directory:


```
# ln -s $SYBASE/$ASE_OCS/lib/libinsck.sl.12.5.0
$SYBASE/$ASE_OCS/lib/libinsck.sl
```
10. To complete the installation, following the instructions in ["Finalizing the Installation" on page 21](#).

How to Install the NetWorker Module on AIX

Use the **syb_ize** command to install the NetWorker Module on an AIX computer running the NetWorker Client software.

To install the NetWorker Module on an AIX computer:

1. Become root on the computer running the NetWorker client software.
2. Change to the temporary directory where you extracted the software.
3. Begin the installation for the AIX client with the command:

```
# ./syb_ize -i
```

The installation script appears and periodically prompts you for information. If the default pathnames are suitable, press [Return] on the keyboard. If you want the software or man pages placed in different directories, enter the new pathnames at the system prompt.

4. Enter the pathname to the `$$SYBASE` directory (or, for Sybase ASE 12.0, `$$SYBASE/$$SYBASE_ASE`) so the installation script can create a symbolic link to the shared library, `libbms.sl`.
5. If you want to save disk space, remove the temporary directory now.
6. To complete the installation, following the instructions in ["Finalizing the Installation" on page 21](#).

Finalizing the Installation

To finish the installation of the NetWorker Module:

1. When the installation process is completed, edit the **nsrsyb** shell script or batch file so that the `SYBASE=` entry includes the pathname of the `$$SYBASE` directory.
2. Enable and register the software.
3. Configure the database server as a NetWorker client.
4. Run a test backup from the command line to ensure that the NetWorker Module software is installed correctly.
5. Run a test scheduled NetWorker backup to ensure that the NetWorker server recognizes the database server as a client.
6. Refer to the *Legato NetWorker Module for Sybase Administrator's Guide* for complete instructions on how to configure and use the NetWorker Module.

Editing nsrsyb before Running Your First Backup

Before you run your first scheduled NetWorker backup, you must first edit the *nsrsyb* shell script or batch file.



Important: If you do not edit the *nsrsyb* shell script or batch file, scheduled backups fail.

To edit the *nsrsyb* shell script or batch file:

1. Open the *nsrsyb* file in a text editor. The file name and location are:
 - Solaris: */usr/sbin/nsrsyb*
 - AIX: */usr/bin/nsrsyb*
 - HP-UX: */opt/networker/bin/nsrsyb*
 - Windows NT: *nsrsyb.bat* in the *bin* directory of your NetWorker installation.
2. Edit the `SYBASE=` line to include the complete path to the `$$SYBASE` directory. For example:


```
SYBASE=/space2/sybase11
```
3. If the NetWorker Module for Sybase is not installed in the default location, change the `PATH=` variable to the location where the NetWorker client binary files are installed.

By default, the NetWorker Module for Sybase software is installed in the same location as the NetWorker Client software. The default location for the NetWorker client binary files is the following:

 - Solaris: */usr/sbin*
 - AIX: */usr/bin*
 - HP-UX: */opt/networker/bin*
 - Windows NT: the *bin* directory of your NetWorker installation.
4. Save your changes.

Enabling and Registering the Software

You must enable and register the NetWorker Module software.

- If you *purchased* the NetWorker Module, look for the *Enabler Certificate* in your package. You need the enabler code on the certificate to enable and register the NetWorker Module on the NetWorker storage management server. Follow the instructions on your Enabler Certificate to enable and register the NetWorker Module. Be sure that you enter the correct enabler code for your NetWorker *server* operating system.

After you enable the product, you have 45 days to register the NetWorker Module before the process is disabled. Once you have registered the product, Legato will send you an authorization code, which permanently enables the NetWorker Module. To register and authorize your Legato products, go to license.legato.com and follow the instructions.

- If you are *evaluating* the NetWorker Module, you might need to enable it with a temporary enabler code, depending on whether your NetWorker server is running in evaluation mode or in enabled mode. Determine whether you need a temporary enabler for the NetWorker Module as follows:
 - If you have not entered any enabler code in your NetWorker server software, you do *not* need a temporary enabler for your NetWorker Module evaluation. You have 30 days to use the software before you must enable the product. A message displays in the NetWorker administration program's main window to notify you when 30 days elapse.

- If you have already entered an enabler code in your NetWorker server software and you want to evaluate the NetWorker Module, enter the temporary enabler code listed for your NetWorker server platform in [Table 4](#) to evaluate the product with your existing NetWorker server software for 45 days.

Table 4. NetWorker Module Temporary Enabler Codes

NetWorker Server Platform	Temporary Enabler Code
UNIX	c44146-803009-4aef8e
Windows NT	e8736a-ac142d-6ecbb2

To purchase the NetWorker Module, choose one of the following methods:

- Contact Legato Inside Sales at (650) 812-6000.
- Send e-mail to sales@legato.com.
- Contact an Authorized Legato Reseller.

Configuring the NetWorker Module for Sybase

To ensure that you installed the NetWorker Module software properly, configure the database server as a NetWorker client and run a test scheduled backup. To use Legato NetWorker to back up the database server with the NetWorker Module, you must perform the following tasks:

- Create a backup group and schedule for scheduled backups of the database server.
- Add the database server to the NetWorker server's list of storage management clients, assigning the database server to the backup group you just created.

Refer to the *Legato NetWorker Administrator's Guide* for instructions on using the NetWorker administration program.



Important: If there are multiple instances of the database server on the same computer that use different Sybase user names and passwords, you only need to install one copy of the NetWorker Module for Sybase, but you must create different NetWorker client resources for each database instance.

How to Create a Backup Group

To create a backup group for scheduled NetWorker backups of your database server:

1. Start the NetWorker Administrator program. Be sure that you have NetWorker administrator privileges so that you can make configuration changes to the NetWorker server.

2. Create a customized backup group.
Enter a group name, a start time, and enable the Autostart feature.
3. Save the new group configuration.

Customizing a Schedule

You can create a customized schedule using the values **full** and **incremental** for the levels. [Table 5](#) lists the NetWorker backup levels you can use with your database server.

Table 5. NetWorker and Sybase Backup Levels

NetWorker	SQL Server or Adaptive Server	Actions
full	dump database	completes full backup of a database and its transaction logs
incremental	dump transaction log	backs up all changes to the database since the last dump (<i>i.e.</i> , the transaction log)
skip	skip	skips the scheduled backup

The first time you perform a scheduled backup, the NetWorker Module automatically performs a full backup regardless of the scheduled level.

How to Add the Database Server as a NetWorker Client

To add your database server to the NetWorker server's list of backup clients:

1. Create a new Client resource, using the name of the computer where your database server is installed as the entry for the client's name.
2. Choose the Default schedule or a customized schedule you created for the Schedule option.
3. Choose the backup group you created for the Group option.
4. Deselect the Default Group.
5. Delete the All choice from the Save set list.
6. Specify the save set you want to back up. For the NetWorker Module, you can specify a backup of all the databases on the Sybase Server or only selected databases.
 - If you want to specify a backup of all databases for the database server, enter the database server name in the Save set list. In the following example, the database server name is "venus":
SYBASE: /venus
 - If you want to back up selected databases for the database server, include the database name in the save set string. You can specify more than one database by making separate save set entries for each database. In the following example, the database server name is "venus":
SYBASE: /venus/pubs2

7. Enter your Sybase user name in the Remote user text box.
8. Enter your Sybase password in the Password text box.
9. Enter **nsrsyb** (nsrsyb.bat for Windows NT) in the Backup command text box. The `SYBASE=` variable in the **nsrsyb** script must include the complete path to the database server. For instructions, see ["Editing nsrsyb before Running Your First Backup" on page 21](#).
10. Enter all known aliases for the computer running your database server. For example:

```
venus  
venus.acme.com
```
11. Save the configuration.

Running Test Backups

The following sections describe how to perform test backups with the NetWorker Module for Sybase.

How to Run a Test Scheduled Backup

After you configure the database server as a NetWorker client, try a test scheduled backup of the database server to make sure that you installed the software properly and that NetWorker can access the database server to back up and restore data.

The **nsrexecd** client-side daemon ensures that the NetWorker server can contact the client. Make sure that **nsrexecd** is running on the database server—this daemon starts when you install the NetWorker client software. If you need to shut down and restart the database server after installing NetWorker or the NetWorker Module, be sure **nsrexecd** is started.



Important: You must edit the **nsrsyb** shell script or batch file to include the pathname of the `$$SYBASE` directory (and the location of the NetWorker client, if it was not installed in the default location) before you run a scheduled backup. For instructions, see ["Editing nsrsyb before Running Your First Backup" on page 21](#).

To test a scheduled backup of the database server, do the following:

1. Start the NetWorker administration program as root or equivalent on the NetWorker server.
2. Load new media into a storage device.
3. Label the media and select the Default pool.
4. From the list of available groups, start the backup group that was created in ["How to Create a Backup Group" on page 23](#).

When the backup is completed:

- The status for the selected backup group is displayed in the Group window.
- A message is logged in the NetWorker server's *daemon.log* file (in Windows NT, this message is also logged in *savegrp.log*), and an e-mail message is sent to root notifying you of the save group completion.
- The client file index for the computer running the database server is backed.
- If the computer running your database server is also the NetWorker server (or the NetWorker server is not assigned to an enabled backup group), the server's *bootstrap* file is backed up to the NetWorker server. A printout containing vital information for disaster recovery is sent to the printer assigned to your NetWorker server.

If you receive any error messages indicating the backup was unsuccessful, see ["Troubleshooting Installation Problems" on page 28](#) for help with common installation and configuration problems. Additionally, you can check the *xbsa.messages* file in the *applogs* directory of your NetWorker installation for NetWorker error.

Refer to the *Legato NetWorker Module for Sybase Administrator's Guide* for complete instructions on using the NetWorker Module for Sybase to provide scheduled or on-demand storage management services for your database server.

How to Run a Test On-Demand Backup

You can perform on-demand backups of the entire database server or a specific database from the command line. At this point you should run a test backup of a database to make sure that you installed the software properly and that NetWorker can access the database server to back up and restore data.

To test an on-demand back up of a database, do the following:

1. Log on to the database server as root.
2. Ensure that the Sybase variables are set correctly.
3. Load a storage volume from the Default pool into a storage device.
4. Run the following command:

```
# nsrsybsv -U name -P password -l Full -s networker_server_name \
SYBASE:/Sybase_Server_name/model
```



Important: The `-s networker_server_name` option is not required. If this option is not used, NetWorker searches the network to locate the correct server. Using the `-s` option to explicitly set the NetWorker server name may avoid a potential delay in the backup process.

If you receive any error messages indicating the backup was unsuccessful, see ["Troubleshooting Installation Problems" on page 28](#) for help with common installation and configuration problems. Additionally, you can check the *xbsa.messages* file in the *applogs* directory of your NetWorker installation for NetWorker error.

Uninstalling NetWorker Module

Complete the following steps to uninstall the NetWorker Module for Sybase.

Windows NT

To uninstall the NetWorker Module on Windows NT:

1. Log on with administrator privileges on the computer containing the NetWorker Module binaries.
2. Run the **Setup.exe** command from the installation CD-ROM.
3. Select the Uninstall option.
4. Click Next. The software will be uninstalled.

UNIX

To uninstall the NetWorker Module on UNIX:

1. Become root on the computer containing the NetWorker Module binaries.
2. Change to the directory where you installed the NetWorker Module.
3. Issue the appropriate command for your platform:
 - For a Solaris computer, use the **pkgrm LGTObms** command.
 - For an HP-UX computer, use the **swremove** command or select Remove from the HP-UX System Administration Management software GUI.
Note: the symbolic link to the shared *libbms.sl* library in the NetWorker directory, created during installation, must be manual removed after the software is uninstalled.
 - For an AIX computer, use the **syb_ize -r** command. By default, this command is in the */usr/bin* directory.

Troubleshooting Installation Problems

This section describes common installation and configuration problems and solutions.

Error – Msg 916, Level 14, State 1

Description	Server user ID <i>n</i> is not a valid user in database 'dbname'. The SQL Server is terminating this process.
Problem	The user does not have access to the database. If this occurs during nsrsybcc , the user doesn't have permission to run a database consistency check on that database.
Solution	This error indicates that this user does not have access to the database, or have sufficient permissions to run a database consistency check. Grant this user sufficient permissions to run backups (OPER, SA, or DBO), or sufficient permissions to run database consistency checks (SA or DBO).

Error – Msg 2565, Level 14, State 1

Description	Only the DBO of the database or a user with a System Administrator (SA) role can run the DBCC CHECKALLOC command.
Problem	The SQL Server user ID doesn't have sufficient permissions to run dbcc on the given database.
Solution	Grant SA role to the user ID, or use another user ID that has sufficient permissions to run the DBCC CHECKALLOC command.

Error – NetWorker Module Does Not Backup (hangs)

Description	the NetWorker Module was installed successfully, but it will not back up (hangs on backup).
Problem	On some platforms, the Sybase Backup Server does not recognize the <i>libbms</i> shared library until you restart the Sybase Backup Server.
Solution	Bring down the Sybase Backup Server and then restart it. You must restart the Sybase Backup Server after the shared library is installed.

Error – Msg 412402, Level 2, State 1 or Msg 8009, Level 15, State 1 Error Encountered by Backup Server

Description	Archive API error for device ='bms::xxx.xxx.xxx./nsr/tmp/xxxx:00': Vendor application name=<UNINIT>, Library version=0, API routine=<UNINT>, Message=Unable to open API library for device 'bms::server_name:instance_name.model./nsr/tmp/sya0028h'. Library path is '/net/server_name/space2/sybase11/lib/libbms.so'. dlopen() returned: Code=0, Message=ld.so.1: /space2/sybase11/bin/sybmultbuf: fatal: /net/server_name/space2/sybase11/lib/libbms.so: can't open file: errno=2
Problem	The <i>libbms</i> shared library is not available in the <i>\$\$SYBASE/lib</i> directory (for Sybase ASE 12.0, the location is <i>\$\$SYBASE/\$\$SYBASE_ASE/lib</i>).
Solution	Copy the <i>libbms</i> shared library to the <i>\$\$SYBASE/lib</i> or <i>\$\$SYBASE/\$\$SYBASE_ASE/lib</i> directory or create a symbolic link to it in the <i>\$\$SYBASE/lib</i> or <i>\$\$SYBASE/\$\$SYBASE_ASE/lib</i> directory.

Error – NetWorker Module for Sybase Has Not Been Properly Enabled

Description	Installation was successful, but the shared library fails to back up, indicating a problem with how the NetWorker Module is configured on the NetWorker server.
Problem	_nwbsa_open_saveset_session: received a network error (Severity 5 Number 13): The NetWorker Module for Sybase has not been properly enabled.
Solution	If the NetWorker Module software is not enabled, enter an enabler code for it on the NetWorker server.

Error – Context Allocation Routine Failed When It Tried to Load Localization Files

Description	One or more of the following problems might cause the context allocation routing to fail: <ul style="list-style-type: none"> Your SYBASE home directory is <i>/home/server_name/sybase</i>. Check the SYBASE environment variable if it is not the one you want. Cannot access the <i>/home/server_name/sybase/config/objectid.dat</i> file.
Problem	Open Client 11.1 is not installed, or the SYBASE environment variable is not set.
Solution	If Open Client 11.1 is not installed, install it. If the SYBASE environment variable is not set: <ul style="list-style-type: none"> From the command line, set the SYBASE environment variable to include the complete path to the Sybase server. For a scheduled backup, edit the nrsyb script to add the SYBASE environment variable value.

Error – Machinename Is Not a Registered Client

Description	Installation was successful, but the shared library failed to back up, indicating a problem with how the NetWorker Module is configured on the NetWorker server.
Problem	_nwbsa_open_saveset_session: received a network error (Severity 5 Number 13): 'machinename' is not a registered client.
Solution	Create a client resource for it on the NetWorker server.

Error – No Backup Was Found for Database “Dbname”

Description	Can create backups, but cannot restore them using nsrsybrc .
Problem	The user id that runs Sybase Backup Server is the same one that needs to run nsrsybsv and nsrsybrc .
Solution	Run nsrsybrc from the same user ID that launched Sybase Backup Server.

Error – No Group “Groupname” Configured on Server

Description	Installation was successful, but the shared library failed to back up, indicating a problem with how the NetWorker Module is configured on the NetWorker server.
Problem	_nwbsa_open_saveset_session: received a network error (Severity 5 Number 13): no group 'groupname' configured on server.
Solution	Make sure that there is a group with the specified name on the NetWorker server.

Error – Open Client Message 131

Description	Open Client Message number: LAYER = (5) ORIGIN = (3) SEVERITY = (5) NUMBER = (131) Message String: ct_init(): network packet layer: internal net library error: Netlib state error - Netlib initialization may have failed
Problem	The wrong version of Open Client is installed on the database server.
Solution	Make sure that Open Client 11.1 or later is installed on the database server. Additionally, you should remove any Open Client 10.x paths from the database server lib directory.

Error – Requested Server Name Not Found

Description	nsrsybsv (or other command-line utility) gives the message: “ct_connect() directory service layer: internal directory control layer error: Requested server name not found.”
Problem	The Sybase server name is typed incorrectly or the server is down.
Solution	Correct typing and retry, or use the showserver command to find out whether the server is up.

Error – Unable to Authenticate to Server or a Bad bsa Handle Was Supplied

Description	Recovery fails with the message of “Error: unable to authenticate to server” or “Error: a bad bsa handle was supplied.”
Problem	This can indicate that there is no enabler code for the NetWorker Module on the NetWorker server. Check the <i>/nsr/applogs/xbsa.messages</i> file for the error text.
Solution	If the error text reads “_nwbsa_auth_index_session: received a network error (Severity 5 Number 13),” that NetWorker Module has not been properly enabled. Enter an enabler code on the NetWorker server and try again.

Error – Volume Pool Not Found

Description	Installation was successful, but the shared library failed to back up, indicating a problem with how the NetWorker Module is configured on the NetWorker server.
Problem	_nwbsa_open_saveset_session: received a network error (Severity 5 Number 22): volume pool not found.
Solution	Make sure that the volume pool specified (with the -b option or the NSR_LOG_VOLUME or NSR_DATA_VOLUME variables) is defined on the NetWorker server.