

Veritas NetBackup™ for SQLite Administrator's Guide

Windows and Linux

Release 8.1.1

VERITAS™

Documentation version: 8.1.1

Legal Notice

Copyright © 2018 Veritas Technologies LLC. All rights reserved.

Veritas and the Veritas Logo are trademarks or registered trademarks of Veritas Technologies LLC or its affiliates in the U.S. and other countries. Other names may be trademarks of their respective owners.

This product may contain third-party software for which Veritas is required to provide attribution to the third party ("Third-party Programs"). Some of the Third-party Programs are available under open source or free software licenses. The License Agreement accompanying the Software does not alter any rights or obligations you may have under those open source or free software licenses. Refer to the Third-party Legal Notices document accompanying this Veritas product or available at:

<https://www.veritas.com/about/legal/license-agreements>

The product described in this document is distributed under licenses restricting its use, copying, distribution, and decompilation/reverse engineering. No part of this document may be reproduced in any form by any means without prior written authorization of Veritas Technologies LLC and its licensors, if any.

THE DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. VERITAS TECHNOLOGIES LLC SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

The Licensed Software and Documentation are deemed to be commercial computer software as defined in FAR 12.212 and subject to restricted rights as defined in FAR Section 52.227-19 "Commercial Computer Software - Restricted Rights" and DFARS 227.7202, et seq. "Commercial Computer Software and Commercial Computer Software Documentation," as applicable, and any successor regulations, whether delivered by Veritas as on premises or hosted services. Any use, modification, reproduction release, performance, display or disclosure of the Licensed Software and Documentation by the U.S. Government shall be solely in accordance with the terms of this Agreement.

Veritas Technologies LLC
500 E Middlefield Road
Mountain View, CA 94043

<http://www.veritas.com>

Technical Support

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 the company to answer your questions in a timely fashion.

Our 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 our support offerings, you can visit our website at the following URL:

www.veritas.com/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.veritas.com/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 Technical Support
 - Recent software configuration changes and network changes

Licensing and registration

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

www.veritas.com/support

Customer service

Customer service information is available at the following URL:

www.veritas.com/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
- Advice about technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs, DVDs, or manuals

Support agreement resources

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

Worldwide (except Japan)

CustomerCare@veritas.com

Contents

Technical Support	4	
Chapter 1	Introduction to NetBackup for SQLite Agent	9
	About NetBackup for SQLite Agent	9
	Features supported by NetBackup for SQLite Agent	10
	The NetBackup for SQLite Agent package	10
	About NetBackup for SQLite Agent License	11
	NetBackup for SQLite Agent Documentation	11
Chapter 2	Installing the NetBackup for SQLite Agent	12
	Planning the installation of NetBackup for SQLite Agent	12
	Verifying the operating systems and platforms	13
	Installing prerequisites for NetBackup for SQLite Agent	13
	Post-installation requirements for NetBackup for SQLite Agent	14
	Describing the NetBackup for SQLite Agent package	14
	Installing the NetBackup for SQLite Agent	15
	Uninstalling the NetBackup for SQLite Agent	15
Chapter 3	Configuring the NetBackup for SQLite	16
	The nbsqlite.conf configuration file	16
	Configuring SQLite backups with DataStore policies	18
Chapter 4	NetBackup for SQLite backup and restore	20
	About SQLite database backups	20
	Performing SQLite backups	22
	Validating the backup information	23
	Querying the backups	23
	Deleting backup information from the NetBackup catalog files	24
	About restoring SQLite backups	24
	Performing restores for SQLite backups	26
	Redirected restores	26
	Disaster recovery	27

Chapter 5	Troubleshooting for NetBackup for SQLite	28
	Troubleshooting errors when using NetBackup for SQLite Agent	28
Appendix A	NetBackup for SQLite commands and conventions	33
	About NetBackup for SQLite Agent commands	33
	About NetBackup for SQLite Agent command conventions	34
Appendix B	NetBackup for SQLite commands	35
	nbsqlite -o backup	36
	nbsqlite -o restore	37
	nbsqlite -o query	38
	nbsqlite -o delete	39
Index		40

Introduction to NetBackup for SQLite Agent

This chapter includes the following topics:

- [About NetBackup for SQLite Agent](#)
- [Features supported by NetBackup for SQLite Agent](#)
- [The NetBackup for SQLite Agent package](#)
- [About NetBackup for SQLite Agent License](#)
- [NetBackup for SQLite Agent Documentation](#)

About NetBackup for SQLite Agent

NetBackup for SQLite Agent extends the capabilities of NetBackup to include backup and restore of SQLite databases. The agent is located on the NetBackup client and supports the operations on standalone setups. The agent supports the SQLite version 3.10.0 and later.

Note: Ensure that the SQLite agent and NetBackup are of same version for successful backup and restore operations.

The agent also supports to:

- Validate the backup.
- Query a backup and restore.
- Delete the backup information from the catalog files.
- Redirect restores.

NetBackup for SQLite workflow

The agent reads the parameters from the `nbsqlite.conf` file and then initiates the operations. The `nbsqlite.conf` file contains the parameters that you must set before you run the respective operations.

The agent creates a snapshot of the volume where the single database file exists. The Volume Shadow Copy Services (VSS) for Windows or Logical Volume Manager (LVM) for Linux, takes a snapshot of the SQLite database.

The agent mounts the snapshot, copies the file into the XBSA data object and then sends it to the NetBackup XBSA interface. The NetBackup XBSA interface writes this data to the mounted media or disk storage managed by the NetBackup media server.

The Linux operating systems that are not configured with LVM, the agent copies the database file directly from the file system.

Features supported by NetBackup for SQLite Agent

Table 1-1 lists the features that are supported by the agent.

Table 1-1 Features supported by the agent

Feature	Description
Backup	The agent supports single file based backups of the SQLite database.
Restore	The agent supports to restore the SQLite backup files.
Redirected Restores	The agent supports to restore the SQLite backup files to alternate NetBackup clients.

The NetBackup for SQLite Agent package

The agent is packaged in `NBSQLiteAgent_8.1.zip` and is available on my.veritas.com site.

The package contains the following platform files:

- (Windows) `NBSQLiteAgent_8.1_AMD64/`
- (Linux RHEL) `NBSQLiteAgent_8.1_linuxR_x86/`
- (Linux SLES) `NBSQLiteAgent_8.1_linuxS_x86/`

About NetBackup for SQLite Agent License

The NetBackup for SQLite Agent is installed on the NetBackup client software and is not a separately licensed option of NetBackup. The NetBackup for SQLite Agent is available to customers who are entitled with a valid license of the Application and Database License Pack. In general, licensing of the NetBackup for SQLite Agent follows the existing capacity licensing models for supported database agents.

NetBackup for SQLite Agent Documentation

The NetBackup for SQLite Agent documentation is available at the following URL:

www.veritas.com/support/en_US/article.DOC5332

Installing the NetBackup for SQLite Agent

This chapter includes the following topics:

- [Planning the installation of NetBackup for SQLite Agent](#)
- [Verifying the operating systems and platforms](#)
- [Installing prerequisites for NetBackup for SQLite Agent](#)
- [Post-installation requirements for NetBackup for SQLite Agent](#)
- [Describing the NetBackup for SQLite Agent package](#)
- [Installing the NetBackup for SQLite Agent](#)
- [Uninstalling the NetBackup for SQLite Agent](#)

Planning the installation of NetBackup for SQLite Agent

[Table 2-1](#) lists the planning steps that are mandatory for installing the agent.

Table 2-1 General steps for installing the agent

Step	Action
Step 1	Verify the operating systems. For more information, See “Verifying the operating systems and platforms ” on page 13.

Table 2-1 General steps for installing the agent (*continued*)

Step	Action
Step 2	Verify the prerequisites before you install the agent. For more information, See “Installing prerequisites for NetBackup for SQLite Agent” on page 13.
Step 3	Install the agent on your operating system. For more information, See “Installing the NetBackup for SQLite Agent” on page 15.

Verifying the operating systems and platforms

Verify that the NetBackup for SQLite Agent is supported on your operating system or platforms.

The agent supports the operations on following platforms:

- Red Hat Enterprise Linux (RHEL) 6.8 and later.
- Red Hat Enterprise Linux (RHEL) 7.0 and later.
- SUSE Enterprise Linux Server 11 SP4 and later.
- SUSE Enterprise Linux Server 12 and later.
- Microsoft Windows Server 2008 R2 and later.
- Microsoft Windows 8.1 and later.

Installing prerequisites for NetBackup for SQLite Agent

Before you install, ensure that you meet the following prerequisites:

- NetBackup 8.1 and later is installed and operational on the master server, media server, and the client.
- Ensure that versions of the SQLite agent and NetBackup are same. If you upgrade NetBackup to newer version, then you must upgrade the agent version also.
- The SQLite database is installed and operational on the client.

Post-installation requirements for NetBackup for SQLite Agent

After you install

- (Windows) Configure the NetBackup for SQLite Agent to run with administrative privileges.
- (Windows) Add the NetBackup `bin` directory to the `PATH` user environment variable.
- (Linux) Ensure that the user of the agent is a superuser or have superuser privileges.

Describing the NetBackup for SQLite Agent package

The agent is packaged in the `NBSQLiteAgent_8.1.zip` file and is available on my.veritas.com site.

The package file contains the following platform files:

- (Windows) `NBSQLiteAgent_8.1_AMD64/`
- (Linux RHEL) `NBSQLiteAgent_8.1_linuxR_x86/`
- (Linux SUSE) `NBSQLiteAgent_8.1_linuxS_x86/`

(Windows) `NBSQLiteAgent_8.1_AMD64/` includes the following files:

- `NBSQLiteAgent_8.1_AMD64/README.txt`
- `NBSQLiteAgent_8.1_AMD64/cab1.cab`
- `NBSQLiteAgent_8.1_AMD64/Setup.exe`
- `NBSQLiteAgent_8.1_AMD64/NBSQLiteAgent.msi`

(Linux RHEL) `NBSQLiteAgent_8.1_linuxR_x86/` includes the following files:

- `NBSQLiteAgent_8.1_linuxR_x86/README`
- `NBSQLiteAgent_8.1_linuxR_x86/install`
- `NBSQLiteAgent_8.1_linuxR_x86/LICENSE`
- `NBSQLiteAgent_8.1_linuxR_x86/pkg.tar`

(Linux SUSE) `NBSQLiteAgent_8.1_linuxS_x86/` includes the following files:

- `NBSQLiteAgent_8.1_linuxS_x86/README`

- `NBSQLiteAgent_8.1_linuxS_x86/install`
- `NBSQLiteAgent_8.1_linuxS_x86/LICENSE`
- `NBSQLiteAgent_8.1_linuxS_x86/pkg.tar`

When you install the agent, accept the VERITAS LICENSE AGREEMENT to proceed with installing the agent successfully.

The agent by default gets installed at the following locations:

- (Windows) `C:\Program Files\VERITAS\NBSQLiteAgent`
- (Linux RHEL & SUSE) `/usr/NBSQLiteAgent/`

Installing the NetBackup for SQLite Agent

To install the agent

- 1 Download the `NBSQLiteAgent_8.1.zip` file.
- 2 Extract the file that applies to your operating system:
 - (Windows) `NBSQLite_8.1_AMD64/`
 - (Linux RHEL) `NBSQLiteAgent_8.1_linuxR_x86/`
 - (Linux SUSE) `NBSQLiteAgent_8.1_linuxS_x86/`
- 3 Run the file that applies to your operating system:
 - (Windows) `NBSQLiteAgent_8.1_AMD64/Setup.exe`
 - (Linux RHEL) `NBSQLiteAgent_8.1_linuxR_x86/install`
 - (Linux SUSE) `NBSQLiteAgent_8.1_linuxS_x86/install`
- 4 Type `y` to accept the VERITAS LICENSE AGREEMENT. The agent gets installed at the default location.

Uninstalling the NetBackup for SQLite Agent

To uninstall the agent

- 1 (Windows) From the **Control Panel**, right-click the `Veritas NetBackup SQLiteAgent_8.1` file and **Uninstall** the agent
- 2 (Linux RHEL and SUSE) To uninstall, delete the `/usr/NBSQLiteAgent` directory from the installed location.

Configuring the NetBackup for SQLite

This chapter includes the following topics:

- [The `nbsqlite.conf` configuration file](#)
- [Configuring SQLite backups with DataStore policies](#)

The `nbsqlite.conf` configuration file

The configuration file (`nbsqlite.conf`) contains the parameters that you must specify for the respective operations. It contains predefined settings and is located on the client. You can configure the parameters in the `nbsqlite.conf` file or provide them on the command line. The parameters on the command line take precedence over the `nbsqlite.conf` file.

When you do not specify the parameter, the default values take precedence.

The `nbsqlite.conf` file keeps you from providing the parameters every time you run operations.

The `nbsqlite.conf` file is located in the following locations:

- (Windows)
`C:\Program Files\Veritas\NBSQLiteAgent\nbsqlite.conf`
- (Linux RHEL and SUSE) `/usr/NBSQLiteAgent/nbsqlite.conf`

[Table 3-1](#) lists the parameters for the operations.

Table 3-1 The nbsqlite.conf file

Parameters	Description	Required parameter for	Default value
SQLITE_DB_PATH	Configures the SQLite database path.	Backups	No default value for this parameter.
MASTER_SERVER_NAME	Specifies the NetBackup master server to the <code>nbsqlite</code> operations.	Backups, restores, query, and delete.	No default value for this parameter.
POLICY_NAME	Specifies the DataStore policy name.	Backups	No default value for this parameter.
SCHEDULE_NAME	Identifies the backup schedule that you configured when creating the DataStore policy.	Backups	No default value for this parameter.
CLIENT_NAME	Defines the NetBackup client that has the agent.	Redirected restores and query	When you do not set this parameter, it defaults to the NetBackup master server.
SNAPSHOT_SIZE	(Linux) Specifies the snapshot size for LVM snapshots in kilobytes, megabytes, or gigabytes in KB, MB, or GB respectively.	LVM backups	When you do not set this parameter, it defaults to MB.
DB_BACKUP_ID	Represents the backup image name. This parameter configures the backup file that you specify using the backup image name.	To delete and restore a backup file by specifying the backup image name.	No default value for this parameter.
SQLITE_TARGET_DIRECTORY	Specifies the destination directory where you want to restore the backups.	Restores	No default value for this parameter.

Table 3-1 The `nbsqlite.conf` file (continued)

Parameters	Description	Required parameter for	Default value
NBSQLITE_LOG_LEVEL	<p>The NBSQLITE_LOG_LEVEL parameter lets you set the logging level for the <code>nbsqlite</code> logs. For a particular logging level, all details at that level or lower are logged.</p> <p>The <code>nbsqlite</code> debug logs includes the following verbose levels:</p> <ul style="list-style-type: none"> ■ 1 – ERROR: Conditions that should be corrected, such as configuration errors. ■ 2 – WARN: Conditions that are not errors, but that might require special handling. ■ 3 – INFO: Informational messages. ■ 4 – DEBUG: Debugging the messages that are used for troubleshooting. 	The log levels help to control the amount of information that you want to access for troubleshooting errors.	When you do not set this value, it defaults to log level 1.
NBSQLITE_LOG_SIZE	Specifies the <code>nbsqlite</code> log size in MB. When the log reaches the specified size, it overwrites the existing log information.	You can specify the value according to the events that you want to write into the logs.	When you do not set this parameter, it defaults to 10MB.

Configuring SQLite backups with DataStore policies

The agent supports the **DataStore** policies to define the attributes, schedules, clients list, and backup selections.

To configure the SQLite database backups with DataStore policies

- 1** Log on to the master server as an administrator (Windows) or root (Linux).
- 2** In the **NetBackup Administration Console**, expand **NetBackup Management**, and then click **Policies**.
- 3** In the **All Policies** pane, right-click **Summary of All Policies**, and then click **New Policy**.
- 4** In **Add a New Policy** dialog box, enter a unique name for the policy.
- 5** In the **Change Policy** dialog box, select **DataStore Policy** from **Policy Type** drop-down list.
- 6** From the **Policy Storage** drop-down list, select a **disk-based storage unit** for storage.
- 7** To select the schedule type, under the **Schedules** tab, click **OK** to select the **Default-Application-Backup** schedule type.

Note: The XBSA framework supports the **Default-Application-Backup** schedule type only.

- 8** Under the **Clients** tab, click **New** and then add the NetBackup client that has the **NetBackup for SQLite Agent**.
- 9** In the **Add Client** screen, click **New**, and then in the **Client Name** field, type the name of the client.
- 10** In the **NetBackup Administration Console**, click **NetBackup Management > Policies** to view the policy in the existing policies list.
- 11** Verify the settings in the `nbsqlite.conf` file before you run the backup.
- 12** For more information, See [“The nbsqlite.conf configuration file”](#) on page 16.

Note: Ensure that the SQLite agent and NetBackup are of same version for successful backup and restore operations.

NetBackup for SQLite backup and restore

This chapter includes the following topics:

- [About SQLite database backups](#)
- [Performing SQLite backups](#)
- [Validating the backup information](#)
- [Querying the backups](#)
- [Deleting backup information from the NetBackup catalog files](#)
- [About restoring SQLite backups](#)
- [Performing restores for SQLite backups](#)
- [Redirected restores](#)
- [Disaster recovery](#)

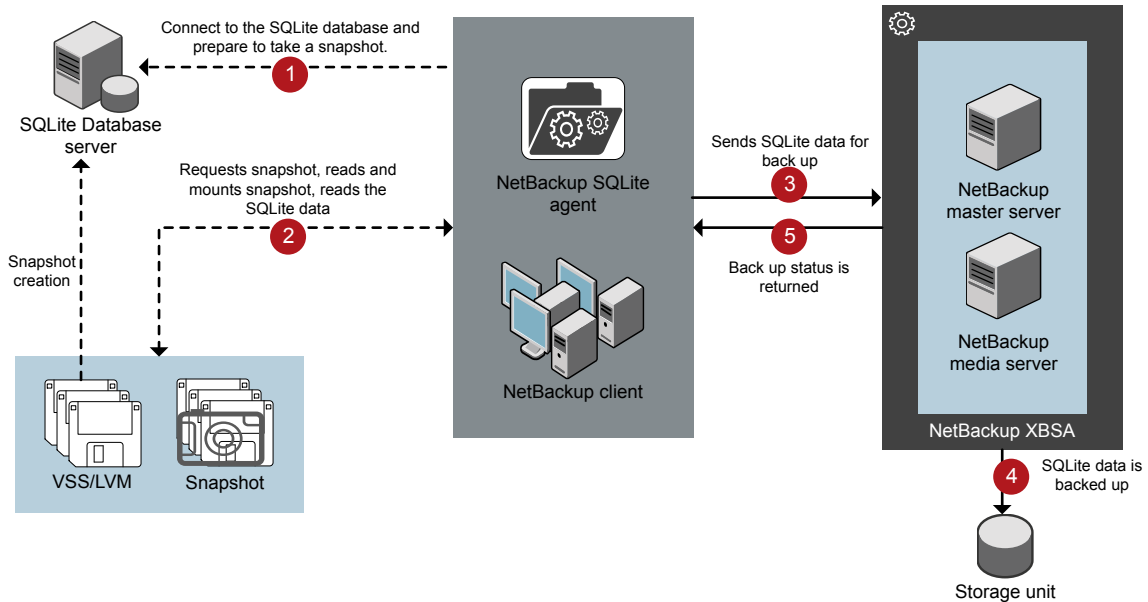
About SQLite database backups

The `nbsqlite -o backup` command initiates the backup operation using the `-s`, `-P`, `-d`, and `-s` as the required parameters. The parameter `-z` is the required parameter for Linux LVM configured systems.

Configure these parameters in the `nbsqlite.conf` file or provide them on the `nbsqlite` command line, when the parameters provided on the command line takes precedence.

Note: Ensure that the SQLite agent and NetBackup are of same version for successful backup and restore operations.

Figure 4-1 NetBackup for SQLite backup workflow



The NetBackup for SQLite backup workflow

When you initiate a backup, the agent creates a snapshot, mounts the snapshot, copies the file into the XBSA data object. The agent then sends the file to the NetBackup XBSA interface.

The NetBackup XBSA interface writes this data to the mounted media or disk storage managed by the NetBackup media server.

The command prompt displays the successful completion status of the backup. The **Activity Monitor** also displays the status for the backup job.

Performing SQLite backups

Prerequisites

Before you perform the backups, you must meet the following prerequisites:

- Ensure that versions of the SQLite agent and NetBackup are same. If you upgrade NetBackup to newer version, then you must upgrade the agent version also.
- (Windows) Set the `NetBackup\bin` directory in the user variable path.
- Configure the **DataStore** policy from the **NetBackup Administration Console**.
- (LVM) Verify that there is enough space for the snapshot in the volume group, and then set the snapshot size in `nbsqlite.conf` file or by the command line.

Note: Ensure that the snapshot size is 110% of the file size that you want to backup.

- Set the following parameters in the `nbsqlite.conf` file:
 - **SQLITE_DB_PATH**
 - **MASTER_SERVER_NAME**
 - **POLICY_NAME**
 - **SCHEDULE_NAME**
 - (Linux) **SNAPSHOT_SIZE**

To run backup

- 1 Configure the parameters in the `nbsqlite.conf` file or on the `nbsqlite` command line.
- 2 Run the following command:

```
nbsqlite -o backup
-S master_server_name
-P policy_name
-s schedule_name
(Linux) -z snapshot_size
-d sqlitedb_db_path
```

Note: Ensure that the SQLite agent and NetBackup are of same version for successful backup and restore operations.

Scheduling the SQLite backups from the NetBackup

You can schedule SQLite backups from the **NetBackup Administration Console** using the **DataStore** policy to call a backup script.

For more information, see https://www.veritas.com/support/en_US/article.100041699

Validating the backup information

After a successful backup, you can list the backups to view and verify the backup information using the following command:

```
nbsqlite -o query
```

Querying the backups

The `nbsqlite -o query` command lists the backup files according to the options that you specify. You can configure these parameters from the `nbsqlite.conf` file or provide the parameters using the `nbsqlite` command line.

The parameter `-s` is the required parameter. Alternatively, you can query the backups using the `-C` and `-P` options to define a different client and policy.

By default, NetBackup uses the values that you have configured in the `nbsqlite.conf` file.

Before you run a query, set the following parameters in the `nbsqlite.conf` file or provide on the command line:

- `CLIENT_NAME`
- `POLICY_NAME`
- `MASTER_SERVER_NAME`

To query backup

- 1 Configure the parameters in the `nbsqlite.conf` file or on the `nbsqlite` command line.
- 2 Run the following command:

```
nbsqlite -o query -S master_server_name [-C ClientA] [-P  
policy_name]
```

For example, to query a backup from the client `ClientA`, run the following command:

```
nbsqlite -o query -S master_server_name [-C ClientA]
```

For example, to list backup files with the policy name `policy_name`, run the following command:

```
nbsqlite -o query -S master_server_name [-P policy_name]
```

For example, to query a backup from the client `ClientA` with policy name `policy_name`, run the following command:

```
nbsqlite -o query -S master_server_name [-C ClientA] [-P policy_name]
```

Deleting backup information from the NetBackup catalog files

The `nbsqlite` command for `delete`, removes the backup information from the catalog files but retains the backup files on the NetBackup media server. The parameter `-s` and `-id` are required parameters.

Prerequisites

Before you delete the backups, set the following parameter in the `nbsqlite.conf` file or provide them on the command line:

- `DB_BACKUP_ID`
- `MASTER_SERVER_NAME`

To delete backup

- 1 Configure the parameters, in the `nbsqlite.conf` file or provide on the command line.
- 2 Run the following command:

```
nbsqlite -o delete -S master_server_name -id db_backup_image_name
```

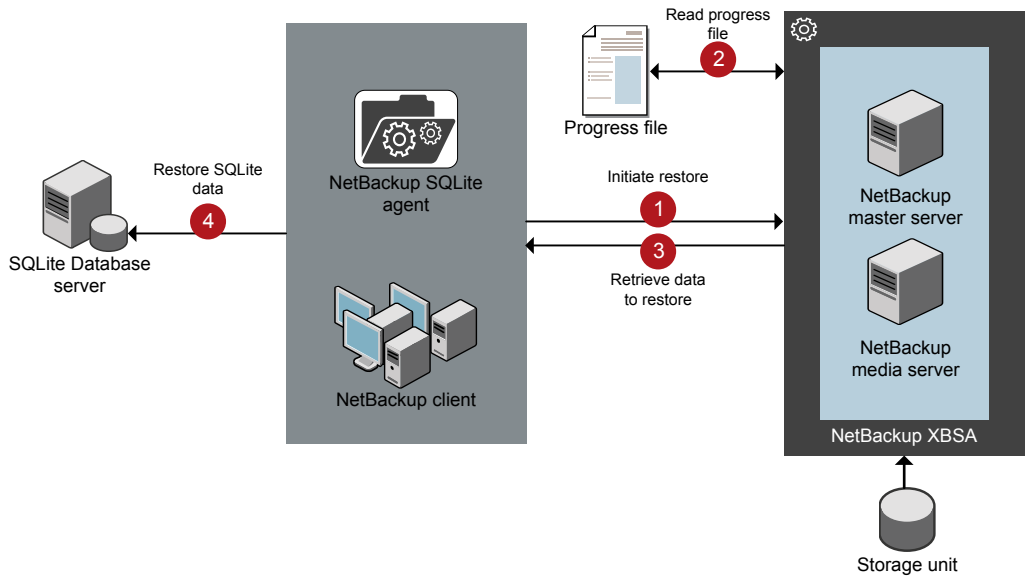
About restoring SQLite backups

The `nbsqlite -o restore` command for `restore` initiates the restore operation using `-s` and `-t` as required parameters. The parameters `-id` and `-c` are optional parameters.

The parameter `-id` restores the backup using the specified backup image name. The parameter `-c` lists all the backups that exists on the specified client. When you do not specify the client, it defaults to the NetBackup master server.

Note: Ensure that the SQLite agent and NetBackup are of same version for successful backup and restore operations.

Figure 4-2 NetBackup for SQLite restore workflow



The NetBackup for SQLite restore workflow

When you initiate a restore, the agent reads the command line arguments and parses the `nbsqlite.conf` configuration file. The agent then interacts with the NetBackup XBSA interface to retrieve the backup according to the specified parameters.

The NetBackup XBSA interface reads the progress files to receive the SQLite backup files to restore them to the target directory.

The command prompt indicates the successful completion status of the restore. The **Activity Monitor** also displays the status for the restore job.

Performing restores for SQLite backups

Prerequisites

Before you run a restore, you must meet the following prerequisites:

- Ensure that versions of the SQLite agent and NetBackup are same. If you upgrade NetBackup to newer version, then you must upgrade the agent version also.
- Set the following parameters in the `nbsqlite.conf` file:
 - `CLIENT_NAME`
 - `DB_BACKUP_ID`
 - `TARGET_DIRECTORY`
 - `MASTER_SERVER_NAME`

To restore backup

- 1 Configure the parameters in the `nbsqlite.conf` file, or provide them on the command line.
- 2 Run the following command:

```
nbsqlite -o restore -S master_server_name -t target_directory  
[-id db_backup_image_name] [-C client_name]
```

Redirected restores

Redirected restores lets you restore backup files to a client different from the client that originally performed the backup. The new location can be a different host or a different file path using a different name for the redirected restore. To redirect a restore to a different host, include the destination client name in the `install_path\NetBackup\db\altnames` directory.

Note: Ensure that the SQLite agent and NetBackup are of same version for successful backup and restore operations.

Performing redirected restores

To redirect a restore to a different host

- 1 Update the `nbsqlite.conf` file with the NetBackup client name as the host and the SQLite target directory as the directory where you want to redirect the restore.
- 2 On the NetBackup master server, create an `altnames` directory for the host that you want to have permission to perform the redirected restore. For example, to give Host B permissions to restore from another host, create the following file:
 - (Windows) `install_path\NetBackup\db\altnames\HostB`
 - (Linux RHEL and SLES) `/usr/openv/netbackup/db/altnames/HostB`
- 3 In the `altnames` directory, add the names of the client(s) whose files the requesting client wants to restore. For example, if you want Host B to have permissions to redirect restores from Host A, add Host A to the Host B file.
- 4 Run the following command:

```
nbsqlite -o restore -S master_server_name -t target_directory -id db_backup_image_name] [-C client_name]
```
- 5 After a successful redirected restore, undo the changes that you made on the master server and the client.

Disaster recovery

Disaster recovery is a plan to recover the data that can get lost in a disaster event. The agent supports redirected restore as a disaster recovery strategy.

For more information, See [“Redirected restores”](#) on page 26.

Troubleshooting for NetBackup for SQLite

This chapter includes the following topics:

- [Troubleshooting errors when using NetBackup for SQLite Agent](#)

Troubleshooting errors when using NetBackup for SQLite Agent

General guidelines to resolve problems

[Table 5-1](#) lists the general steps that help you resolve problems you may encounter when using the agent.

Table 5-1 General steps to resolve errors

Steps	Action	Action
Step1	Remember the error message.	Error messages are usually the vehicles for telling you something went wrong. If you do not see an error on the command line, but still suspect a problem, check the logs and the reports. These can provide an error message that directly points to the problem. The logs and reports are essential troubleshooting tools.

Table 5-1 General steps to resolve errors (*continued*)

Steps	Action	Action
Step2	Identify what you were doing when the problem occurred.	<p>Ask the following questions:</p> <ul style="list-style-type: none"> ■ What operation was tried? ■ What method did you use? ■ What type of server platform and operating system was involved? ■ If your site uses both master server and media server, was it a master server or a media server? ■ If a client was involved, what type of client was it? ■ Have you performed the operation successfully in the past? If so, what is different now? ■ What is the service pack level? ■ Do you use operating system software with the latest fixes supplied, especially those required for use with NetBackup? ■ Is your device firmware at a level, or higher than the level, at which it has been tested according to the posted device compatibility lists?
Step3	Record all information.	<p>Capture potentially valuable information:</p> <ul style="list-style-type: none"> ■ The NetBackup logs. ■ The logs specific to NetBackup for SQLite logs. ■ The logs specific to NetBackup XBSA .
Step4	Correct the problem.	After you define the problem, use the information to correct it.
Step5	Contact Technical Support	If you cannot solve the error, contact the Technical support.

Troubleshooting errors using logs

To troubleshoot the errors, you can refer to the NetBackup logs, NetBackup for SQLite Agent logs, and the NetBackup XBSA logs. These logs are located at the following locations:

The NetBackup logs are located at:

- `install_path\NetBackup\logs\bprd`
- `install_path\NetBackup\logs\bpcd`
- `install_path\NetBackup\logs\user_ops\dbext\logs`

You must enable the `bprd` and the `bpcd` log files. For more information, see the *NetBackup Troubleshooting Guide*

The logs that are specific to the NetBackup for SQLite Agent are located at:

- `install_path\nbsqlite.log`

The logs that are specific to NetBackup XBSA are located at:

- `<NetBackup_install_path>/netbackup/logs/exten_client`

For troubleshooting NetBackup errors, see *Veritas NetBackup Troubleshooting Guide* and the *Veritas NetBackup Commands Reference Guide*

Troubleshooting NetBackup for SQLite Agent errors

Table 5-2 lists the errors and the solutions to troubleshoot the problems when running the operations.

Table 5-2 Troubleshooting NetBackup for SQLite errors

Error	Description	Solution
The <code>nbsqlite</code> backup fails with the following error: <i>Unable to load xbsa.dll</i>	The <code>nbsqlite</code> backup fails if the user environment variable <code>path</code> is not updated with NetBackup <code>bin</code> directory.	To run a <code>nbsqlite</code> backup successfully: <ul style="list-style-type: none"> ■ Update the user environment variable <code>path</code> with <code>NetBackup_install_path/bin</code>.
The <code>nbsqlite</code> backup fails with status code:7648	The backup may fail when the host validation fails for secure connection. The agent may take some time to terminate the backup operation and display the job status on the <code>nbsqlite</code> command prompt.	Verify that you configure the valid master server name and the host name.
The <code>nbsqlite</code> backup fails with the following error: <i>XBSA initiation failed</i>	The <code>nbsqlite</code> backup fails if the <code>nbsqlite.conf</code> file is not updated with the required parameters.	To run the backup successfully <ul style="list-style-type: none"> ■ Configure the valid master server name, policy name, schedule type in the <code>nbsqlite.conf</code> file or from the command line. ■ Verify for communication errors between the <code>nbsqlite</code> agent and the NetBackup master server. For more information see the <i>NetBackup Administration guide</i>.
<i>(Windows)VSS snapshot creation failed</i>	The <code>nbsqlite</code> backup may fail when the user does not have the privileges to run the <code>nbsqlite</code> operations.	Run <code>cmd.exe</code> in Administrator mode.

Table 5-2 Troubleshooting NetBackup for SQLite errors (*continued*)

Error	Description	Solution
<p>The <code>nbsqlite</code> restore operation does not restore any data from the target NetBackup client.</p>	<p>The <code>nbsqlite</code> restore fails if the <code>nbsqlite.conf</code> file is not updated with the NetBackup client name and the target directory.</p>	<p>For a successful restore</p> <ul style="list-style-type: none"> ■ Initiate the restore from the NetBackup source client. ■ Set the NetBackup client name and target directory parameters in the <code>nbsqlite.conf</code> file.
<p>The <code>nbsqlite</code> backup fails with the following error: (Linux) <i>Error creating LVM snapshot</i></p>	<p>The <code>nbsqlite</code> backup may fail when the volume group does not have sufficient space for the snapshot.</p>	<p>To verify the space in the volume group, use the following command:</p> <ol style="list-style-type: none"> 1 <code>\$vgs</code> The command displays the volume group details. 2 Update the <code>nbsqlite.conf</code> file with the appropriate snapshot size. The snapshot should be equivalent to or more than the backup file size.
<p>Error messages after a successful backup: <volume_group>/<snapshot_name> Read failure after 0 of 4096 at 29393616896: input or output error. OR <volume_group>/<snapshot_name>: read failure after 0 of 4096 at 4096: input or output error.</p>	<p>The <code>nbsqlite</code> backup gives these errors when the volume group contains the snapshots. You can list the snapshots and then remove them before you run the backup again.</p>	<p>To remove the snapshots</p> <ol style="list-style-type: none"> 1 To list the existing snapshot, run the following command: <code>\$lvs</code> The command displays the snapshot details. 2 To remove the snapshots, run the following command: <code>\$ lvremove -f <volume_group>/<snapshot_name></code>

Table 5-2 Troubleshooting NetBackup for SQLite errors (*continued*)

Error	Description	Solution
<p>The <code>nbsqlite</code> backup on Linux (LVM), fails with the following error:</p> <p><i>Error unmounting the snapshot-Device or resource busy</i></p> <p>OR</p> <p><i>Error removing the snapshot-sqlitesnap_<timestamp></i></p>	<p>The <code>nbsqlite</code> backup fails during an attempt to unmount the snapshot, the device, or when you remove the existing snapshots.</p>	<p>To unmount the snapshot</p> <ol style="list-style-type: none"> 1 List all mounted file systems using the following command: <pre>\$ mount-l</pre> 2 If the snapshot still exists, run the following command: <pre>\$umount<mount_directory></pre> <p>Note: This directory is created in <code>/mnt/<snapshot_name></code>. The prefix names for snapshot is <code>sqlitesnap</code>.</p> 3 To remove the snapshot manually run the following command: <pre>lvremove -f <volume_group>/<snapshot_name></pre>
<p>Even after a successful restore, the SQLite services, failed to start.</p>	<p>The restore operation is successful, only when you restore the backup on a machine having the same minor version.</p> <p>For example, if you backup a file on SQLite version 5.5.x, then you must restore the backup on a machine of version 5.5.x. It may not support to restore on a machine not having similar versions.</p>	<p>Verify that the SQLite agent and NetBackup are of same version for successful restore operations.</p>

NetBackup for SQLite commands and conventions

This appendix includes the following topics:

- [About NetBackup for SQLite Agent commands](#)
- [About NetBackup for SQLite Agent command conventions](#)

About NetBackup for SQLite Agent commands

This section describes the commands, options, and parameters that are available to run the `nbsqlite` operations. Each command contains a brief description, required parameters, and optional parameters for the respective operations. The agent supports only those commands, options, and parameters that are mentioned in this document.

The `nbsqlite.conf` file keeps you from providing the parameters every time you run the operations.

Observe for the following:

- Set the parameters in the `nbsqlite.conf` file or on the `nbsqlite` command line.
The parameters you set on the command line, takes precedence over the `nbsqlite.conf` file.
- Set the operation type (`-o`) on the `nbsqlite` command line.
- Set the other parameters and options for the respective operation on the `nbsqlite` command line or in the `nbsqlite.conf` file.

About NetBackup for SQLite Agent command conventions

This document uses the following conventions when describing commands that are specific to the agent.

Run the following commands in the command line interface to see the results:

- The `-help` command (`-h`) option prints a command-line usage message when it is the only option on the command line. For example,

```
nbsqlite -h
```

- Brackets [] indicate that the enclosed component of the command line is optional. Other parameters are required.

- Italics indicate that the information is user supplied. For example, you may provide the policy name and the schedule name for a backup operation.

```
nbsqlite -o backup -S master_server_name -P policy_name -s schedule_name
```

The NetBackup for SQLite command options

[Table A-1](#) lists the options for `nbsqlite` operations.

Table A-1 The `nbsqlite` command options

Option	Description
-C	Configures the NetBackup client name for redirected restores.
-d	Configures the SQLite database path.
-h	Displays the Help usage, when it is the only option on the <code>nbsqlite</code> command line.
-id	Configures the specified backup using the backup image name.
-o	Configures the operation type (backup, restore, query, and delete).
-P	Configures the DataStore policy.
-s	Configures the NetBackup schedule.
-S	Configures the NetBackup master server.
-t	Configures the target directory to restore the data.
-z	Configures the LVM snapshot size.

NetBackup for SQLite commands

This appendix includes the following topics:

- [nbsqlite -o backup](#)
- [nbsqlite -o restore](#)
- [nbsqlite -o query](#)
- [nbsqlite -o delete](#)

nbsqlite -o backup

`nbsqlite -o backup` – runs the backup operation from the NetBackup client.

SYNOPSIS

```
nbsqlite -o backup
-S master_server_name
-P policy_name
-s schedule_name
(LVM) -z snapshot_size
[-d sqlite_db_path]
```

Description

This command invokes the backup operation from the NetBackup client using the NetBackup **DataStore** policy name and the schedule type. The parameter `-S`, `-d`, and `-P` are required parameters for Windows. The parameter `-z` is required parameters for LVM users.

On Windows, the directory path is `install_path\NBSQLiteAgent\`

On Linux systems, the directory path is `/usr/NBSQLiteAgent/`

Options

- `-d` Configures the path to connect to the SQLite database.
- `-P` Configures the NetBackup **DataStore** policy name.
- `-S` Configures the NetBackup server name.
- `-s` Specifies the schedule name that you have configure for the **DataStore** policy.
- `-z` (LVM backups) Specifies the LVM snapshot size.

nbsqlite -o restore

`nbsqlite -o restore` – restores the backup files from the NetBackup server.

SYNOPSIS

```
nbsqlite -o restore  
-S master_server_name  
-t target_directory  
[-id db_backup_id]  
[-C NetBackup_client_name]
```

Description

The `nbsqlite` command restores the backup file using `-t` and `-s` as the required parameters. The `-id` and `-C` are optional parameters.

On Windows systems, the directory path to this command is
`install_path\NBSQLiteAgent\`

On Linux systems, the directory path to this command is `/usr/NBSQLiteAgent/`

Options

- `-C` Specifies the client name.
- `-id`
Specifies the backup image name.
- `-s` Configures the NetBackup server name.
- `-t` Specifies the target directory.

nbsqlite -o query

nbsqlite -o query – queries the backups performed for SQLite database.

SYNOPSIS

```
nbsqlite - o query  
-S master_server_name  
[-P policy_name]  
[-C client_name]
```

Description

The `nbsqlite -o query` command gets the backup using `-S` as the required parameter and `-C` and `-P` as optional parameters.

On Windows systems, the directory path to this command is `install_path\NBSQLiteAgent\`

On Linux systems, the directory path to this command is `/usr/NBSQLiteAgent/`

Options

- C Retrieves and lists all the backups of the specified client.
- P Retrieves and lists all backups with the specified policy name.
- S Configures the NetBackup master server.

nbsqlite -o delete

`nbsqlite -o delete` – deletes the backup information from the NetBackup catalog files.

SYNOPSIS

```
nbsqlite -o delete  
-S master_server_name  
-id db_backup-id
```

Description

The `nbsqlite -o delete` command deletes the backup information from the NetBackup catalog files, but retains the backups in the storage media.

The parameter `-s` and `-id` are the required parameters.

Options

`-id`
Specifies the backup using the backup image name.

`-s` Configures the NetBackup master server.

Index

B

- backup
 - backup image 21
 - backup information 21
 - delete 21
 - LVM configured systems 21
 - parameter 21
 - validate 21
- backup schedule 16

C

- CLIENT_NAME 16

D

- DataStore policy 18
- DB_BACKUP_ID 16
- Default Application Backup 18
- default location 15

I

- installing 12

L

- license 11
- LOG_LEVEL 16
- LOG_SIZE 16

N

- nbsqlite.conf 10
- nbsqlite.conf file
 - client 16
 - command line 16
 - configure 16
 - default 16
 - locations 16
 - parameters 16
 - pre-defined settings 16
 - required parameters 16

O

- operations 16
- optional parameters 16

P

- package 14
- platform files 14
- platforms 13
- POLICY_NAME 16
- precedence 16
- prerequisites 13

S

- SCHEDULE_NAME 16
- single file 10
- snapshot 10
- SNAPSHOT_SIZE 16
- SQLITE_TARGET_DIRECTORY 16

U

- uninstall 15