

# NetBackup™ for SQLite Administrator's Guide

Windows and Linux

Release 10.0



# NetBackup™ for SQLite Administrator's Guide

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# 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.

See “[The nbsqlite.conf configuration file](#)” on page 14.

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_version number.zip` and is available on [my.veritas.com](http://my.veritas.com) site.

The package contains the following platform files:

- (Windows) `NBSQLiteAgent_version number_AMD64/`
- (Linux RHEL) `NBSQLiteAgent_version number_linuxR_x86/`
- (Linux SLES) `NBSQLiteAgent_version number_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](http://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.<br><br>For more information, See <a href="#">“Verifying the operating systems and platforms ”</a> on page 10. |

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

| Step   | Action                                                                                                                                                                        |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 2 | Verify the prerequisites before you install the agent.<br><br>For more information, See <a href="#">“Installing prerequisites for NetBackup for SQLite Agent”</a> on page 10. |
| Step 3 | Install the agent on your operating system.<br><br>For more information, See <a href="#">“Installing the NetBackup for SQLite Agent”</a> on page 12.                          |

## 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 2012 and later.
- Microsoft Windows 8.1 or later.

## Installing prerequisites for NetBackup for SQLite Agent

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

- NetBackup 8.2 or 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) If the `nbsqlite.conf` file does not exist, create the default configuration file. For more information, See [“The nbsqlite.conf configuration file”](#) on page 14.
- (Linux) Ensure that the user of the agent is a superuser or have superuser privileges.

---

**Note:** Users without root-access, must have read, write, and execute permissions for the *NBSQLiteAgent* directory.

---

## Describing the NetBackup for SQLite Agent package

The agent is packaged in the `NBSQLiteAgent_version number.zip` file and is available on [my.veritas.com](http://my.veritas.com) site.

The package file contains the following platform files:

- (Windows) `NBSQLiteAgent_version number_AMD64/`
- (Linux RHEL) `NBSQLiteAgent_version number_linuxR_x86/`
- (Linux SUSE) `NBSQLiteAgent_version number_linuxS_x86/`

(Windows) `NBSQLiteAgent_version number_AMD64/` includes the following files:

- `NBSQLiteAgent_version number_AMD64/README.txt`
- `NBSQLiteAgent_version number_AMD64/cab1.cab`
- `NBSQLiteAgent_version number_AMD64/Setup.exe`
- `NBSQLiteAgent_version number_AMD64/NBSQLiteAgent.msi`

(Linux RHEL) `NBSQLiteAgent_8.2_linuxR_x86/` includes the following file:

- `VRTSnbsqliteagent.rpm`

(Linux SUSE) `NBSQLiteAgent_8.2_linuxS_x86/` includes the following files:

- `VRTSnbsqliteagent.rpm`

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_version number.zip` file.
- 2 Extract the file that applies to your operating system:  
(Windows) `NBSQLite_version number_AMD64/`  
(Linux RHEL) `NBSQLiteAgent_version number_linuxR_x86/`  
(Linux SUSE) `NBSQLiteAgent_version number_linuxS_x86/`
- 3 Run the file that applies to your operating system:  
(Windows) `NBSQLiteAent_8.2_AMD64/Setup.exe`  
(Linux RHEL) `NBSQLiteAgent_8.2_linuxR_x86/VRTSnbsqliteagent.rpm`  
Use the `rpm -ivh VRTSnbsqliteagent.rpm` command.  
(Linux SUSE) `NBSQLiteAgent_8.2_linuxS_x86/VRTSnbsqliteagent.rpm`  
Use the `rpm -ivh VRTSnbsqliteagent.rpm` command.
- 4 Type `y` to accept the VERITAS LICENSE AGREEMENT. The agent gets installed at the default location.

---

**Note:** To accept the EULA agreement automatically (silent installation), create a `/tmp/AgentInstallAnswer.conf` file with following content:

**Yes** - to accept the EULA agreement

**No** - to decline EULA agreement

---

# Uninstalling the NetBackup for SQLite Agent

## To uninstall the agent

- 1 (Windows) From the **Control Panel**, right-click the `Veritas NetBackup SQLiteAgent_version number` file and **Uninstall** the agent
- 2 (Linux RHEL or SUSE) To uninstall, run the following command:  

```
rpm -e VRTSnbsqliteagent
```

# 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`

## Creating the nbsqlite configuration file

Starting from NetBackup 8.2, the `nbsqlite.conf` file is not created by default when you install the agent on RHEL or SUSE. The existing configuration file is prevented from getting overwritten as the RPM installer simply overwrites any existing files in the destination directory `/usr/NBSQLiteAgent/`.

If the `nbsqlite.conf` file does not exist, you can create the file by running the backup utility command without any options. For example, run the `./nbsqlite` command. This command creates the default `nbsqlite.conf` file.

Table 3-1 lists the parameters for the operations.

**Table 3-1** The `nbsqlite.conf` file

| Parameters                     | Description                                                                                                                | Required parameter for                                                   | Default value                                                                   |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>SQLITE_DB_PATH</b>          | Configures the SQLite database path.                                                                                       | Backups                                                                  | No default value for this parameter.                                            |
| <b>MASTER_SERVER_NAME</b>      | Specifies the NetBackup master server to the <code>nbsqlite</code> operations.                                             | Backups, restores, query, and delete.                                    | No default value for this parameter.                                            |
| <b>POLICY_NAME</b>             | Specifies the <b>DataStore</b> policy name.                                                                                | Backups                                                                  | No default value for this parameter.                                            |
| <b>SCHEDULE_NAME</b>           | Identifies the backup schedule that you configured when creating the <b>DataStore</b> policy.                              | Backups                                                                  | No default value for this parameter.                                            |
| <b>CLIENT_NAME</b>             | 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. |
| <b>SNAPSHOT_SIZE</b>           | (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.                          |
| <b>DB_BACKUP_ID</b>            | 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.                                            |
| <b>SQLITE_TARGET_DIRECTORY</b> | 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                                               |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>NBSQLITE_LOG_LEVEL</b> | <p>The <b>NBSQLITE_LOG_LEVEL</b> 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"> <li>■ <b>1 – ERROR</b>: Conditions that should be corrected, such as configuration errors.</li> <li>■ <b>2 – WARN</b>: Conditions that are not errors, but that might require special handling.</li> <li>■ <b>3 – INFO</b>: Informational messages.</li> <li>■ <b>4 – DEBUG</b>: Debugging the messages that are used for troubleshooting.</li> </ul> | 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. |
| <b>NBSQLITE_LOG_SIZE</b>  | 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 **Application Backup** schedule type.

---

**Note:** The XBSA framework supports the **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 14.

---

**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](#)

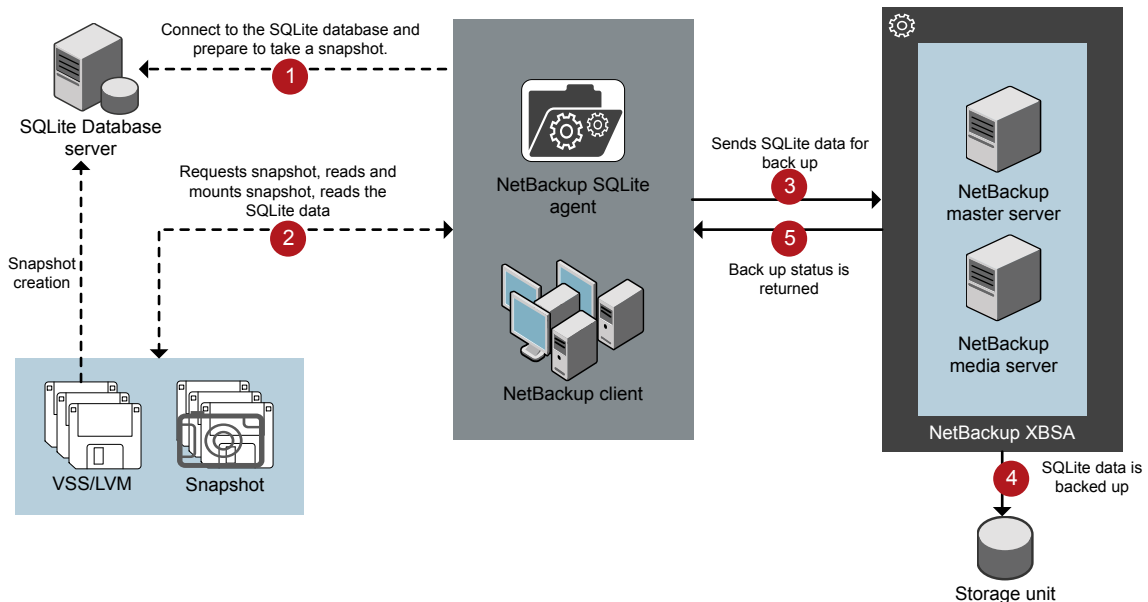
## About SQLite database backups

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.
- Ensure that the user has administrator (Windows) or root (Linux) access.
- (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](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
```

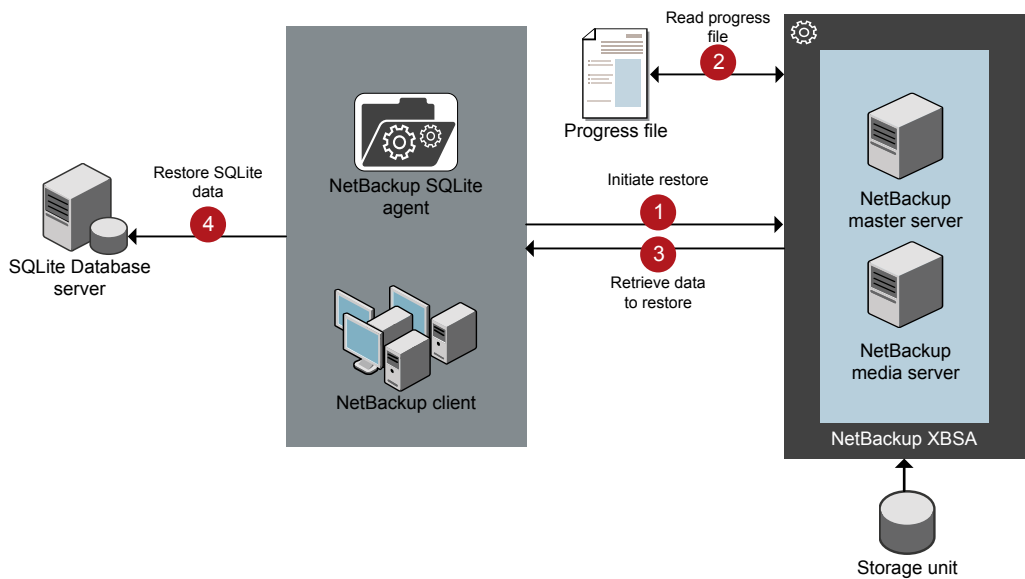
## About restoring SQLite backups

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.
- Ensure that the user has administrator (Windows) or root (Linux) access.
- (LVM users) Ensure that data logs and the logs directory reside on the logical volume.
- 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 24.

# 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"> <li>■ What operation was tried?</li> <li>■ What method did you use?</li> <li>■ What type of server platform and operating system was involved?</li> <li>■ If your site uses both master server and media server, was it a master server or a media server?</li> <li>■ If a client was involved, what type of client was it?</li> <li>■ Have you performed the operation successfully in the past? If so, what is different now?</li> <li>■ What is the service pack level?</li> <li>■ Do you use operating system software with the latest fixes supplied, especially those required for use with NetBackup?</li> <li>■ 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?</li> </ul> |
| Step3 | Record all information.                                 | <p>Capture potentially valuable information:</p> <ul style="list-style-type: none"> <li>■ The NetBackup logs.</li> <li>■ The logs specific to NetBackup for SQLite logs.</li> <li>■ The logs specific to NetBackup XBSA .</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 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 *NetBackup Troubleshooting Guide* and the *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:<br><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"> <li>■ Update the user environment variable <code>path</code> with <code>NetBackup_install_path/bin</code>.</li> </ul>                                                                                                                                                                                                   |
| The <code>nbsqlite</code> backup fails with status code:7648                                                                                   | The backup may fail when the host validation fails for secure connection.<br><br>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:<br><i>XBSA initiation failed</i><br>or<br><i>Failed to create XBSA object</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"> <li>■ Configure the valid master server name, policy name, schedule type in the <code>nbsqlite.conf</code> file or from the command line.</li> <li>■ 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>.</li> </ul> |
| (Windows) <i>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                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The <code>nbsqlite</code> restore operation does not restore any data from the target NetBackup client.                                                                                                                                                                 | 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.                             | For a successful restore <ul style="list-style-type: none"> <li>■ Initiate the restore from the NetBackup source client.</li> <li>■ Set the NetBackup client name and target directory parameters in the <code>nbsqlite.conf</code> file.</li> </ul>                                                                                                                 |
| The <code>nbsqlite</code> backup fails with the following error:<br><br>(Linux) <i>Error creating LVM snapshot</i>                                                                                                                                                      | The <code>nbsqlite</code> backup may fail when the volume group does not have sufficient space for the snapshot.                                                                   | To verify the space in the volume group, use the following command: <ol style="list-style-type: none"> <li><code>\$vgs</code><br/><br/>The command displays the volume group details.</li> <li>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.</li> </ol>     |
| Error messages after a successful backup:<br><br><volume_group>/<snapshot_name><br>Read failure after 0 of 4096 at 29393616896: input or output error.<br><br>OR<br><br><volume_group>/<snapshot_name>:<br>read failure after 0 of 4096 at 4096: input or output error. | 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. | To remove the snapshots <ol style="list-style-type: none"> <li>To list the existing snapshot, run the following command:<br/><br/><code>\$lvs</code><br/><br/>The command displays the snapshot details.</li> <li>To remove the snapshots, run the following command:<br/><br/><code>\$ lvremove -f<br/>&lt;volume_group&gt;/&lt;snapshot_name&gt;</code></li> </ol> |

**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_&lt;timestamp&gt;</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"> <li>1 List all mounted file systems using the following command: <pre>\$ mount-l</pre> </li> <li>2 If the snapshot still exists, run the following command: <pre>\$umount&lt;mount_directory&gt;</pre> <p><b>Note:</b> This directory is created in <code>/mnt/&lt;snapshot_name&gt;</code>. The prefix names for snapshot is <code>sqlitesnap</code>.</p> </li> <li>3 To remove the snapshot manually run the following command: <pre>lvremove -f<br/>&lt;volume_group&gt;/&lt;snapshot_name&gt;</pre> </li> </ol> |
| <p>The <code>nbsqlite.conf</code> file is missing after installing the agent on RHEL or SUSE</p>                                                                                                                                             | <p>Starting from NetBackup 8.2, the <code>nbsqlite.conf</code> file is not created by default when you install the agent on RHEL or SUSE. The existing configuration file is prevented from getting overwritten as the RPM installer simply overwrites any existing files in the destination directory <code>/usr/NBSQLiteAgent/</code>.</p> | <p>If the <code>nbsqlite.conf</code> file does not exist, you can create the file by running the backup utility command without any options. For example, run the <code>./nbsqlite</code> command. This command creates the default <code>nbsqlite.conf</code> file.</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 <b>DataStore</b> 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.

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