

A complex, dense red scribble or abstract line drawing on the left side of the page, consisting of many overlapping loops and curves. A thin horizontal red line extends from the right edge of this scribble across the page.

# NetBackup Master Server Migration Guide

Source master server:

HP-UX or AIX

Target master server:

NetBackup Appliance, RHEL,

SUSE, Solaris (SPARC),

Solaris\_x86

Supported NetBackup versions:

7.7 to 8.1.1



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**Document Control**

**Revision History**

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# 1. Introduction

Veritas wants to make you aware of the End of Life (EOL) for NetBackup master and media servers that run on both HP-UX and AIX platforms; this EOL does not apply to client support for either platform. Starting with version 8.1.2, NetBackup no longer supports HP-UX and AIX platforms for master and media servers. You must migrate from HP-UX or AIX platform to NetBackup Appliance or a supported version of either a Linux or Solaris platform before you attempt to upgrade NetBackup to the targeted release.

Veritas has made this change to better align with our customers' current and future platform needs. This change increases our speed to delivery while we maintain our high-quality standards of the product and decrease risks associated with potential security concerns. Veritas has released the **NbServerMigrator** tool to assist customers to migrate a master server from these platforms to a supported platform.

To migrate a media server from the HP-UX or AIX platform to a NetBackup Appliance or a NetBackup supported platform, see the [NetBackup Media Server Migration Guide](#).

You can also request a cost quote from Veritas Consulting services to perform the migration for you. You can also request a cost quote from Veritas Consulting services to perform the migration for you.

NetBackup 8.1.1 and earlier versions continue to support both platforms and follow the published End of Support for Prior NetBackup Versions guidelines.

This guide describes an automated way to migrate NetBackup master servers running on HP-UX and AIX platforms to NetBackup Appliance or to all NetBackup master server supported platforms except Windows.

Both source and target NetBackup master server versions must be the same.

While this guide tries to be as accurate as possible, you may encounter situations that this guide does not cover. You may discover new or different approaches that are not described here.

When using this guide, bear in mind the following points:

- This guide is not definitive. If you encounter any issue contact Veritas support team at [support](#).
- This guide references tech notes, NetBackup guides, or any new notes that may have replaced them. Read this information to know the implications.

## 1.1 Intended audience

This guide is intended to provide information to NetBackup administrators.

Before you start the migration, ensure to read all sections of the guide to familiarize yourself with the techniques available, rules to be followed, and limitations that are associated with these activities.

## 1.2 NetBackup version support

NbServerMigrator tool supports migration to NetBackup Appliances as target master servers. Target Appliance versions that are supported are 2.7.x and later (3.1.1). NbServerMigrator tool also supports migration of source master to target master servers with NetBackup versions 7.7 and later (8.1.1).

## 1.3 Glossary of terms

The following terms are used throughout this guide:

- Catalog - Refers to the complete set of NetBackup databases, configuration files, and flat files.
- Source server - Refers to the NetBackup master server hosted on HP-UX or AIX platform and that needs to be migrated.
- Target server - Refers to the NetBackup Appliance or the NetBackup master server hosted on all other NetBackup master server supported platforms except Windows and that hosts the migrated contents.



## 2. NetBackup master server migration approaches

According to NetBackup catalog size and configurations, Veritas suggests the following approaches for migration:

- For a simple NetBackup master server environment with an approximate configuration as follows:
  - 300-GB catalog size
  - 5 media servers
  - 200-300 clients

You can directly back up the catalog and DR packages and restore them on the target master server. See [https://www.veritas.com/support/en\\_US/article.100022624](https://www.veritas.com/support/en_US/article.100022624) for general guidelines about disaster recovery. For specific catalog recovery steps, see About catalog recovery in the *NetBackup Administrator's Guide Volume I* for the respective NetBackup release.

- For a complex NetBackup master server environment, use the NbServerMigrator tool for migration.

### 2.1 Planning the master server migration

1. Note down the HP-UX and AIX master server NetBackup domains by OS and name. Based upon the catalog size, plan the server migration.
2. Master and media server migrations are independent processes. Depending on your preference, you may start migrating either of them. However, if your master server is used as a media server, see [NetBackup master server used as a media server](#).
3. Some configuration scenarios follow a different procedure. Review the following sections before you start the migration:
  - If you have BMR configured, see section [Bare Metal Restore \(BMR\) migration](#).
  - If you have NetBackup Vault configured, see section [NetBackup Vault migration](#).
  - If you have AIR configured, see section [Migrating the Auto Image Replication \(AIR\) master server](#).
  - If you have a clustered master server, see section [NetBackup clustered master server migration](#).
  - If your target master server is a NetBackup Appliance, see section [NetBackup Appliance migration](#).
  - If you have NBAC configured, see section [NetBackup Access Control \(NBAC\) migration](#).
4. Identify the downtime for the master and media servers as the migration process requires a downtime. Ensure you complete all pre-requisites before migration. Also, migrate the catalog images before all prerequisites are adhered to, to reduce the overall downtime. Identify the downtime based on your backup processes.
  - Obtain the appropriate change request approvals before starting the migration. These tasks include server identifications, network modifications, migration downtime, and so on.

- Identify the documented back-out plan during the migration. In case of failures that cannot be solved, consider these back-out plans. Ensure you enable verbose log levels before migration for troubleshooting issues. After applying the back-out plan and after you have successfully moved your data back to the original servers, involve Veritas Support to investigate and fix issues.
- 5. Obtain a NetBackup Appliance as your target master and media server to reduce configuration time and management activities. You can also use existing or new NetBackup servers as a target server for the migration. Ensure hardware configuration is similar or higher compared to the source master server. It includes disk space, disk partitions, memory, number of CPUs, number of NICs, and so on. Target master server must be fresh NetBackup installation with minimal additional configuration. See [Setting up the target master server](#).
  - a. Install same NetBackup version that is present on the source master server. Use source master server hostname on target master server. Ensure time, locale, and OS users and their groups match the source master server.
  - b. MSDP migration requires an additional proxy or staging server: MSDP migration is a two-step process when migrating to same hostname server. See [NetBackup Media Server Migration Guide](#).
- 6. Migrate the NetBackup master server using the NbServerMigrator tool. The steps are as follows:
  - a. Download and Install the NbServerMigrator tool. See section [Downloading and Installing the NbServerMigrator tool](#).
  - b. Complete the pre-migration steps. See section [About the pre-migration tasks](#).
  - c. Migrate the master server using the NbServerMigrator tool. See section [About migrating the master server using NbServerMigrator](#).
  - d. Continue with the post migration steps. See section [About the post-migration tasks](#).
  - e. Complete the additional configurations based on your environment.
- 7. For Shared Storage Option (SSO), migrate all associated media servers and run robot inventory for SSO configuration.

## 3. NetBackup master server migration using NbServerMigrator

NbServerMigrator tool provides an automated way to migrate NetBackup master server running on HP-UX or AIX platforms to NetBackup Appliance or all other NetBackup master server supported platforms except Windows running on the same NetBackup version.

See the NetBackup Software Compatibility List at

[https://www.veritas.com/support/en\\_US/article.000033647](https://www.veritas.com/support/en_US/article.000033647) to know about the supported NetBackup versions and operating systems.

The NbServerMigrator tool can be used to migrate data in the following NetBackup deployments:

- Standalone master server. See [Overview of the migration process](#).
- Master server used a media server. [NetBackup master server used as a media server](#).
- Clustered master server. See [NetBackup clustered master server migration](#).

NbServerMigrator tool compresses and securely transfers the data to the target master server. This section describes the prerequisites, pre-manipulation, migration, and post-manipulation tasks for NetBackup master to master server migration.

**Note:** If you are migrating to Solaris\_X86 and cloud storage is configured, see section [Configuring the Cloud](#) for details.

### 3.1 Disclaimers and Notes

- You must have a back out plan prepared before you start the migration. See section [Back-out plan](#) for details. You must implement your own change controls and change management procedures to ensure sufficient downtime.
- Downtime that is required to migrate the master server depends on the catalog size, network speed, and disk IO speed of the master server that needs to be migrated.
- If NetBackup 7.7, 7.7.1, or 7.7.2 is installed on the source master server, Veritas recommends that you upgrade to NetBackup 7.7.3 and then start the migration.
- Veritas recommends that you take full catalog backup of source master server. This task must be done even though the NbServerMigrator tool does not change the source master server configuration.
- NbServerMigrator tool manipulates the NetBackup catalog. Run the tool cautiously.
- NbServerMigrator tool does not change the source master server.
- Veritas insists not to destroy the source master server for at least 90 days after successful migration and after you verify that the target master server works as expected.

### 3.2 System and NetBackup prerequisites

- Source NetBackup master server platform must be HP-UX or AIX.

- Target platform can be NetBackup Appliance or all other platforms that are supported by NetBackup master server except Windows.  
See *NetBackup Software Compatibility List* for NetBackup and OS compatibility details.
- The source and target master server must use the same locale.
- The target master server system time must be synchronized with the time zone on the source master server.
- Source and target master server name must have same format, FQDN, or short name. If NetBackup source server name is set to FQDN, target master server name must also be set to FQDN. See section [Setting up the target master server](#) for details.
- NetBackup source and target master server must have same NetBackup version installed.

**Note:** NbServerMigrator tool supports migration of NetBackup version 7.7 and later (8.1.1).

- Veritas recommends to install NetBackup on target master server at the same path as the source master server.
- All the licenses present on source must be present at target master server as well.
- Install GNU tar 1.29 or later after you have installed NetBackup. The GNU tar must be present on both source and target master servers. See section [About tar requirements](#).
- Veritas recommends that you set high logging level for NetBackup master server on both source and target. These settings help get detailed logs and for quick troubleshooting of failures if any. See *NetBackup Logging Reference Guide* to increase logging level of NetBackup.

**Note:** Ensure to reset the verbose logging level after successful migration on target master server.

- Any devices, machines, clients, or media attached to source master must be connected or attached until migration is successful. This is useful when creating a back-out plan. See section [Back-out plan](#).

### 3.3 About NbServerMigrator tool

The NbServerMigrator tool provides an automated way to migrate NetBackup master server running on HP-UX or AIX platforms to NetBackup Appliance or all other NetBackup master server supported platforms except Windows running on the same NetBackup version.

#### 3.3.1 NbServerMigrator prerequisites

- The same user who installed NetBackup on both source and target master server must run the NbServerMigrator tool.
- You must have root privileges on both source and target master server to run NbServerMigrator tool.
- NetBackup services should be up and running before you start the migration by using NbServerMigrator tool.

- By default, NbServerMigrator uses ports 9998 and 9999 (bidirectional on source and target) for communication and data transfer. If your operating system processes already use any or both of these ports, you must specify other ports for communication and data transfer. Use port and cport options to specify the ports. See section [About NbServerMigrator target](#) and [About NbServerMigrator source](#). Ensure that the ports are open for communication in your firewall settings.
- By default, NbServerMigrator tool uses SSL for secure communication. To use SSL communication on NetBackup versions 7.7, 7.7.1, and 7.7.2, openssl libraries must be present on the source and target master servers. For other NetBackup versions, openssl libraries are included in the NetBackup packages. You may disable the SSL. See [About the nbservermigrator.conf configuration file](#).
- Source and target master server should have gzip installed if you want to use the compression feature of the NbServerMigrator tool.
- Disable NBAC on source master server and restart the NetBackup services. If NBAC is configured in REQUIRED mode on source master server, disable NBAC on associated media server and restart the NetBackup services.

### 3.3.2 Downloading and Installing the NbServerMigrator tool

Complete the following steps to download and install the NbServerMigrator tool:

1. Download the NbServerMigrator tool from [https://www.veritas.com/support/en\\_US/article.100043116](https://www.veritas.com/support/en_US/article.100043116)
2. Create a directory named NbServerMigrator at /usr/openssl/ on the source and target master servers.

**Note:** You must have root permissions to create this directory.

3. Extract the NbServerMigrator (NbServerMigrator.tar.gz) package.
4. Copy the NbServerMigrator tool binaries located inside the platform specific directories to /usr/openssl/NbServerMigrator on the respective master servers.

**Note:** To execute NbServerMigrator tool binaries, your current working directory must be:

```
/usr/openssl/NbServerMigrator
```

To uninstall the NbServerMigrator tool, remove the /usr/openssl/NbServerMigrator directory.

### 3.4 Overview of the migration process

As a part of migration process, you need to perform following steps:

Task	Reference
Pre-migration	See section <a href="#">About the pre-migration tasks</a>
Migration	See section <a href="#">About migrating the master server using NbServerMigrator</a>
Post-migration	See section <a href="#">About the post-migration tasks</a>

The following table describes the high level steps involved when you migrate the master server. For details, see the relevant sections in this guide:

Step No.	Source Master Server	Target Master Server
1	Check prerequisites.	Check prerequisites.
2	Run NetBackup Catalog Consistency (NBCC) utility and fix reported issues.	Install same NetBackup master server version as source on the target master server.
3	Run Pre-Environment Checklist (PEC) report to get environment details.	Run Pre-Environment Checklist (PEC) report to get environment details.
4		Run the <code>generate_sourcesecret</code> command to generate <code>sourcesecret.tar</code> file that is used for secure communication between target and source master server.
5	Copy the <code>sourcesecret.tar</code> file generated on target master server to set up a secure communication between target and source master server.	
6		Run the <code>data_transfer</code> command to migrate image data.
7	Run the <code>data_transfer</code> command as prompted from target master server to migrate image data. <b>Note:</b> This activity takes time based on the size of the NetBackup image data to be migrated.	

<b>Caution:</b> Your source NetBackup master server environment is hence forth down for the migration activity. Downtime required is based on total data size, network bandwidth, server resources (memory, DISK IO, and so on).		
8	Deactivate policies and SLPs.	
9		Run the <code>overwrite</code> command to migrate image data.
10	Run the <code>overwrite</code> command as prompted from target master server to migrate image data.	
11		Run post manipulation checks to verify the migration is successful.
12	Shut down the source master server.	

## 3.5 About the pre-migration tasks

The following sections describe the tasks that must be performed before you start the migration:

### 3.5.1 About NetBackup Catalog Consistency (NBCC)

NBCC is a utility that is used to confirm the integrity of portions of the NetBackup configuration and catalog or databases. Run the NBCC utility on the source master server to ensure that the catalog is clean and consistent. Ensure that all issues reported by NBCC are resolved before you start the migration.

See [https://www.veritas.com/support/en\\_US/article.100005778](https://www.veritas.com/support/en_US/article.100005778) on how to use the NetBackup Catalog Consistency utility (NBCC).

NBCC is shipped with NetBackup installer and is available at  
`/usr/opensv/netbackup/bin/support`

### 3.5.2 Setting up the target master server

You must identify a NetBackup Appliance or a NetBackup target master server. The following sections describe the procedure to configure the NetBackup Appliance or the target master server.

#### 3.5.2.1 Configuring a NetBackup Appliance as a target master server

NetBackup Appliances integrate multiple components into a single device, streamlining management, operation, and support, saving you money and critical IT resources. Tight integration with NetBackup software gives you a way to cut costs and remove complexity across the entire organization.

- Save time and money versus building your own master server
- Easily scale capacity and performance as your organization grows

- Quickly deploy new data protection capabilities

- [Configuring a target master server on an existing NetBackup Appliance](#)
- [Configuring a target master server on a new NetBackup Appliance](#)

#### **A. Configuring a target master server on an existing NetBackup Appliance**

- On the Appliance console, select `Main_Menu > Support > FactoryReset`.  
**Warning:** Factory Reset deletes all existing data.
- Restart the NetBackup Appliance after factory reset.
- Login to Appliance console.
- Enter `Main_Menu > Network` and configure the following:
  - Configure `<IP address of target host> <subnet mask> <Gateway> eth1`
  - DNS Add `NameServer <DNS server IP address>`
  - DNS Add `SearchDomain <DNS server name>`
- To add a license, select `Main_Menu > Manage > License > Add`.
- To set the time zone, do the following:
  - Enter `Main_Menu > Network > TimeZone set`.
  - Enter `Main_Menu > Network > Date set`.
- Add the target's host IP address and source master server's host name in `/etc/hosts`.
- On the Appliance console (`Main_Menu > Network`), configure the following:
  - `Hosts Add <IP address FQDN-hostname short-hostname>`
  - `Hosts Show`
  - `Hosts Add <IP-address FQDN-Source-name Short-Source-name>`
- Verify the changes are successfully applied.
  - Enter `Main_Menu > Network > Hosts Show`.
  - Enter `Main_Menu > Network > Hostname Set <FQDN hostname as per source>`.
  - Enter `Main_Menu > Support > Reboot`.
- To configure the NetBackup Appliance as a master server:
  - Login to the NetBackup Appliance console (`Main_Menu > Appliance`).
  - Run the master commands.
  - Enter the required parameters.

#### **B. Configuring a target master server on a new NetBackup Appliance**

- Install the NetBackup Appliance console as follows:
  - On the NetBackup Appliance console, select `Main_Menu > Network`.
  - Configure `<IP address of target host> <subnet mask> <Gateway> eth1`



- c. DNS Add NameServer <DNS Server IP address>
  - d. DNS Add SearchDomain <DNS server name>
2. To add a license, select Main\_Menu > Manage > License > Add.
3. To set the time zone, do the following:
  - a. Enter Main\_Menu > Network > TimeZone set.
  - b. Enter Main\_Menu > Network > Date set.
4. Add the target's host IP address and source master server's host name in /etc/hosts.
5. On the Appliance console (Main\_Menu > Network), configure the following:
  - a. Hosts Add <IP address FQDN-hostname short-hostname>
  - b. Hosts Show
  - c. Hosts Add <IP-address FQDN-Source-name Short-Source-name>
6. Verify the changes are successfully applied.
  - a. Enter Main\_Menu > Network > Hosts Show.
  - b. Enter Main\_Menu > Network > Hostname Set <FQDN hostname as per source>.
  - c. Enter Main\_Menu > Support > Reboot.
7. To configure the NetBackup Appliance as a master server:
  - a. Login to the NetBackup Appliance console (Main\_Menu > Appliance).
  - b. Run the master commands.
  - c. Enter the required parameters.

**Note:** After successful migration, you can modify the DNS entry with hostname and target IP address.

In case Appliance configuration, installation, or migration fails due to IP address and same host name, you must add the target IP and host name in DNS.

For more information about installing and configuring the NetBackup Appliance, see the following:

- *NetBackup Appliance Initial Configuration Guide*
- *NetBackup Appliance Hardware Installation Guide*
- *NetBackup Appliance Commands Reference Guide*

### 3.5.2.2 Configuring a NetBackup target master server

To set up the target master server, perform the following steps:

1. Identify a target master server or NetBackup Appliance. Ensure that the target server has same or higher system configuration (for example, memory, disk space, disk partitions, CPUs, and so on) than source master server.
2. Set the target master server hostname to be the same as the source master server host name.

- a. System host name of target master server must be same as the system host name of source master server. Veritas recommends that the system host name is case-sensitive.

For example, for RHEL run following command:

```
hostnamectl set-hostname <source master server hostname>
```

- b. Check your system preferences for DNS or local host. The system preference should be local host. For example: `/etc/nsswitch.conf`.
- c. Update the master server `/etc/hosts` entry with the target master server IP address. While modifying the `/etc/hosts` file of target, ensure to specify `bp.conf` entry of source master server name first and then specify the other names before you install NetBackup.

For example, if `bp.conf` at source master server has entry in the format

```
EMMSERVER = <host.domain_name>
```

then target master server `/etc/hosts` entry must be in the format

```
<IP address of target master server> <host.domain_name>  
<host_name>
```

- d. Verify the updated hostname and IP address on the target master server.
3. Install NetBackup on target master server with version same as that on source master server.
4. Install EEB's if applicable.
5. Set the system time to be synchronized with the time zone on source master server.
6. Ensure to create NBAC OS users and groups on target master server similar to those present on the source master server. Then start the NetBackup installation on the target master server. You can get the list of users and groups in the 'Action Required' section after running `pre_manipulation` report on the source master server.
7. Ensure that you perform all pre-migration steps on target master server. See section [About the pre-migration tasks](#), as applicable.
8. For cluster target master server, ensure the following:
  - Ensure that the virtual host name (FQDN) must be same as the target master server name.
  - System time is in-sync with the time zone on source master server.
  - Ensure that the same users and respective user groups are present on both source and target master servers.
  - Install NetBackup on target master server with version same as that on source master server.

Ensure that you perform all pre-migration steps on target master server. See section [About the pre-migration tasks](#), as applicable.

### 3.5.3 About the NbServerMigrator\_report

NbServerMigrator\_report with `pre_manipulation` option is used to validate environments. It performs NetBackup environment checks like EMM server, test backup and restore, and issues in NetBackup environment. Run this report on both source and target master server.

### Usage:

```
NbServerMigrator_report -pre_manipulation
```

The report's output is displayed on the screen and recorded in a log file available at `/usr/opensv/NbServerMigrator/NbServerMigrator_source_premanipulation_report_YYYYMMDDHHMMSS.log`.

You must analyze the report and address all issues (if any) reported in the 'Action Required' section of the report.

`NbServerMigrator_report`, with `pre_manipulation` option, also generates the Pre-Environment Checklist (PEC) report. This report analyses an environment by gathering the NetBackup and system configuration details before you start the migration. This report is recorded at `/usr/opensv/NbServerMigrator/NbServerMigrator_pec_source_report_YYYYMMDDHHMMSS.txt`.

This report is useful in case the migration process fails and you need to revert the NetBackup environment. Veritas recommends that you to save the most recent copy of the PEC report.

Examples of commands are as follows:

1. Validate the NetBackup environment and generate configuration report.

```
"NbServerMigrator_report -pre_manipulation"
```

2. Verify target master NetBackup environment after successful migration.

```
"NbServerMigrator_report -post_manipulation"
```

3. Get the version of `NbServerMigrator_report`.

```
"NbServerMigrator_report -version"
```

### 3.5.4 About custom scripts and touch files

`NbServerMigrator_report` lists most of the custom scripts and touch files on source master server when you run the pre-manipulation option. You must manually copy these touch files to the target master server as applicable.

However, the `NbServerMigrator_report` may not list some custom touch files. You must manually identify and copy these touch files to the target master server as applicable.

List containing the touch files on source master server is present at:

```
/usr/opensv/NbServerMigrator/touchfiledetails_<YYYY-MM-DD_HHMMSS>.txt.
```

`NbServerMigrator` tool does not copy or restore any custom scripts or touch files automatically.

**Note:** All scripts and touch files (for example, OS-specific files or scripts), may not be applicable for the target server.

### 3.5.5 About tar requirements

Source and target master servers must have the GNU tar version 1.29 or later. If the requirement is not met, NbServerMigrator tool exits with an error. Veritas recommends same GNU tar version present on both source and target master server.

There may be multiple tar files (GNU tar or native tar) present at system. To check details of the tar file that is installed on the system, run the `tar --version` command. If the command does not work, it means the tar is not a GNU tar. It may be a native tar.

You can specify GNU tar path in `nbservermigrator.conf` file with `source_tar` and `target_tar` attributes on both source and target master server respectively. See [About the nbservermigrator.conf configuration file](#). NbServerMigrator tool first checks the tar path in `nbservermigrator.conf`. If the tar path is not found, the command checks for system tar.

### 3.5.6 About the nbservermigrator.conf configuration file

The NbServerMigrator tool uses configuration entries by reading values from the `nbservermigrator.conf` file.

Ensure that the `nbservermigrator.conf` configuration file is present at `/usr/opensv/NbServerMigrator` on both source and target master server.

The format to add attributes in `nbservermigrator.conf` is: `key=<value>`

For example, `ssl=no`.

#### 3.5.6.1 Common configurations

The following table describes the commonly used attributes and their details that can be set in `nbservermigrator.conf` file:

**Note:** Attribute values must be same in `nbservermigrator.conf` file on both source and target master server. However, your `tar_path` attribute value may be different.

Attribute(key)	Value	Description
<code>source_tar</code>	<code>&lt;tar_path&gt;/tar</code>	Specifies the GNU 1.29 tar file path at source.
<code>target_tar</code>	<code>&lt;tar_path&gt;/tar</code>	Specifies the GNU 1.29 tar file path at target.
<code>ssl</code>	yes, no Default is yes	Specifies if secure communication is used.

<code>compression</code>	<p>Range is 1-9</p> <p>1 is lowest compression</p> <p>9 is highest compression</p> <p>Default is 1</p>	<p>Specifies the level of compression that is used for tar. You can set these values depending on network, IO, or CPU settings.</p> <p>For no compression, set <code>compression=0</code>.</p>
<code>usetoolcertificates</code>	<p>yes, no</p> <p>Default is yes</p>	<p>Specifies if the NbServerMigrator tool uses certificates that are generated by the tool itself. Select <code>usetoolcertificates=no</code> to use custom certificates. See <a href="#">Custom certificate configurations</a></p> <p>This option is not applicable if <code>ssl=no</code> is set in the <code>nbservermigrator.conf</code> file.</p>
<code>maxsize</code>	<p>Default is 10 GB</p>	<p>Allows you to change the size of the data chunks to transfer.</p> <p>See <a href="#">Best Practices</a>.</p>
<code>timeout</code>	<p>Default is 2</p>	<p>Provides the ability to change the duration in seconds so that the source can pause to communicate with the target. This option allows the target to close the last connection and open a new one. This option is useful when the target performs slowly or in case of network latency.</p>
<code>bppstimeout</code>	<p>Default is 20</p>	<p>Wait time before you re-run <code>bps</code> command. Used to check if NetBackup services are up and running.</p>
<code>max_filesize</code>	<p>Default is 2147483647 bytes</p>	<p>Catalog backup files with size less than or equal to <code>max_filesize</code> are bundled with the .tar file and sent to target master server.</p> <p>Catalog backup files with size greater than <code>max_filesize</code> are sent directly to the target master server.</p> <p><b>Note:</b> This attribute is in bytes.</p>

### 3.5.6.2 Custom certificate configurations

This section is applicable if you plan to use custom certificate configurations. Use the `openssl` command to create custom certificates.

For example,

1. Run the following OpenSSL commands to generate a custom certificate on the target master server:
  - `openssl genrsa -des3 -out CA-key.pem 2048`
  - `openssl req -new -key CA-key.pem -x509 -days 1000 -out CA-cert.pem`
  - `openssl genrsa -des3 -out server-key.pem 2048`
  - `openssl req -new -key server-key.pem -out server.csr`
  - `openssl genrsa -des3 -out client-key.pem 2048`
  - `openssl req -new -key client-key.pem -out client.csr`
  - `openssl x509 -req -days 365 -in server.csr -CA CA-cert.pem -CAkey key/CA-key.pem -CAcreateserial -out server-cert.pem`
  - `openssl x509 -req -days 365 -in client.csr -CA CA-cert.pem -CAkey key/CA-key.pem -CAcreateserial -out client-cert.pem`
2. Enter the following key-value pairs in `/usr/opencv/NbServerMigrator/nbservermigrator.conf` on the target master server:

```
usetoolcertificates = no
SSL_cert_file = <PATH>/server-cert.pem
SSL_key_file = <PATH>/server-key.pem
SSL_passwd_cb = PASSWORD
SSL_ca_file = <PATH>/CA-cert.pem
SSL_client_ca_file = <PATH>/CA-cert.pem
```
3. Copy `CA-cert.pem`, `client-cert.pem`, and `client-key.pem` on the source master server at any path (for example `PATH1`).
4. Enter the following key value pairs in `/usr/opencv/NbServerMigrator/nbservermigrator.conf` on source master server:

```
usetoolcertificates = no
SSL_cert_file = <PATH1>/client-cert.pem
SSL_key_file = <PATH1>/client-key.pem
SSL_passwd_cb = PASSWORD
SSL_ca_file = <PATH1>/CA-cert.pem
```

The following table describes the key value to be used in the `nbservermigrator.conf` file. The file exists on the source and target master servers:

Attribute(key)	Value	Description
<code>SSL_cert_file</code>	<code>&lt;SSL_cert_file_path&gt;</code>	If you create a server you must specify a server certificate that must be verified by the client. The attribute specifies the path of custom <code>SSL_cert_file</code> attribute. This attribute is used only if <code>usetoolcertificates=no</code> .
<code>SSL_key_file</code>	<code>&lt;SSL_key_file_path&gt;</code>	Each (custom) certificate requires a key that is given as a file with <code>SSL_key_file</code> . This attribute specifies the path of the custom <code>SSL_key_file</code> . This attribute is used only if <code>usetoolcertificates=no</code> .
<code>SSL_passwd_cb</code>	<code>&lt;SSL_passwd_cb&gt;</code>	If your private key is encrypted, you might not want the default password prompt from <code>Net::SSL</code> . This attribute takes a reference to a subroutine that returns the password that is required to decrypt your private key. This attribute is used only if <code>usetoolcertificates=no</code> .
<code>SSL_ca_file</code>	<code>&lt;SSL_ca_file_path&gt;</code>	Verifies if a trusted certificate authority has signed the peer certificate. This attribute specifies the file path of <code>SSL_ca_file</code> . This attribute is used only if <code>usetoolcertificates=no</code> .
<code>SSL_client_ca_file</code>	<code>&lt;SSL_client_ca_file_path&gt;</code>	Specifies the path of <code>SSL_client_ca_file</code> . The attribute can be used to set the list of acceptable CAs for the client. This way the client can select the required certificate from a list of certificates.

		This attribute is used only if usetoolcertificates=no.
--	--	---

### 3.5.7 About rebuilding the NetBackup database

Veritas recommends that you rebuild the BMRDB and NBDB databases to reduce the database size. This reduction in database size reduces the downtime required for the master server migration.

See the `Database Rebuild` option in the *NetBackup Administrator's Guide Volume I*.

### 3.5.8 About image catalog compression

NbServerMigrator tool supports migration of catalog images that use the latest version of NetBackup supported compression options (`zlib`). If your catalog images are compressed with any other compression option, follow one of the following options:

- Update the compression to `zlib`. (This option is recommended to save disk space and reduces the time taken for migration.)

```
/usr/opensv/netbackup/bin/admincmd/bpimage -update_compression
```

- Decompress all the images on the source master server and then migrate them to the target master server.

```
/usr/opensv/netbackup/bin/admincmd/bpimage -decompress -client  
<name> -M <master_server_name>
```

**Note:** After successful migration, images can be compressed again at the target master server.

For uncompressing catalog images, see section Uncompressing the NetBackup catalog in *NetBackup Administrator's Guide, Volume I*.

To know if your catalog images are compressed using `zlib`, check the 'Action Required' section in the

`NbServerMigrator_source_premanipulation_report_YYYYMMDDHHMMSS.log`.

If you ignore the 'Action Required' section, the migration fails.

### 3.5.9 About archiving the catalog images

NbServerMigrator tool supports the migration of archived catalog images.

### 3.5.10 About additional configurations

This section describes the additional configurations as per your NetBackup environment setup.

- If you have NetBackup master used as a media server, see section [NetBackup master server used as a media server](#).



- If you are migrating a NetBackup Clustered master server, see section [NetBackup clustered master server migration](#).
- If you are migrating to NetBackup Appliance, see section [NetBackup Appliance migration](#).
- If you have configured NBAC, see section [NetBackup Access Control \(NBAC\) migration](#).

#### 3.5.10.1 About additional configurations for NetBackup 8.1 or later versions

If you have NetBackup 8.1 or higher, you must perform additional steps to migrate NetBackup certificate details and security settings. To successfully migrate NetBackup certificate details and security settings, consider the following:

- Disaster Recovery (DR) passphrase must be set on source master server before you start the migration. The same passphrase must be used on the target master server when you import the DR package. For DR package details, see the *NetBackup Security and Encryption Guide*.
- All users and groups that NetBackup uses on source master server must also be present on target master server. Manually create these users and associated groups on target master server.

To know the exact list of users and associated groups, see section 'Action Required' in `NbServerMigrator_report` generated on the source master server.

### 3.6 About migrating the master server using NbServerMigrator

Master server migration, which uses the `NbServerMigrator` tool, is an automated process. The process starts when you first run `NbServerMigrator_target` on the target master server and then you run `NbServerMigrator_source` on source master server.

To reduce downtime, Veritas recommends completing the migration by first transferring the catalog images using the `data_transfer` option and then proceeding with the migration using the `overwrite` option.

For more information on command options see sections [About NbServerMigrator\\_target](#) and [About NbServerMigrator\\_source](#).

1. By default, `NbServerMigrator` tool uses secure communication for data and image transfer. Run the `NbServerMigrator_target -generate_sourcesecret` command on target to generate the `sourcesecret.tar` file. Copy the `sourcesecret.tar` file from `/user/openssl/NbServerMigrator` on the target master server to the source master server at `/user/openssl/NbServerMigrator`.
2. Run the `NbServerMigrator_target -data_transfer` command to start the data transfer between source master server (`/usr/openssl/netbackup/db/images/*`) and target master server's temporary location (`/usr/openssl/netbackup/tempdb/db/images/`).

The NetBackup environment does not need to be down for image data transfer. This command prompts the command to be run on the source master server.

**Note:** This process takes time to complete.

3. Run the `NbServerMigrator_source -deactivate_slps_policies` command on the source master server to deactivate the SLPs and policies. This command causes your NetBackup environment to be down. Henceforth, scheduled backups do not run. See section [About deactivating NetBackup policies and SLPs](#).
4. Run the `NbServerMigrator_target -overwrite` on the target master server to start the catalog data overwrite operation.

The `-overwrite` option does the following operations:

- a) Copies the remaining catalog images from source master server to the temporary location on the target master server.
  - b) Overwrites the catalog and configuration files on the target master server.
5. Perform post migration steps. See section [About the post-migration tasks](#).

### 3.6.1 About deactivating NetBackup policies and SLPs

Before you run the `-overwrite` command on the target, you must deactivate the policies and Storage Lifecycle Policies (SLPs) on the source master server using `NbServerMigrator` tool. This step ensures that scheduled backups do not start.

The following command enables `NbServerMigrator` tool to track the SLPs and policies that are deactivated and helps in reactivating them on the target master server.

```
NbServerMigrator_source -deactivate_slps_policies
```

**Note:** The `deactivate_slps_policies` option is not applicable for target master server.

You also need to deactivate disk-staging storage units.

See `/usr/opensv/netbackup/bin/admincmd/nbdevconfig -changestate` command for details.

### 3.6.2 About `NbServerMigrator_target`

`NbServerMigrator_target` is used to start the migration process on the target master server. As the name suggests, it should be run on the target master server. This tool works with `NbServerMigrator_source` and provides you commands to be executed on the source master server.

Usage:

```
NbServerMigrator_target [ -data_transfer ] [ -overwrite ] [ -clean_up  
] [-clean_up_all] [-activate_slps_policies] [ -port PORT ] [ -cport PORT  
] [-generate_sourcesecret] [ -version | -v ] [-resume] [ -help ]
```

For example:

To migrate, run following command:

```
NbServerMigrator_target -overwrite -port <PORT> -cport <CPORT>
```

The following table describes each option:

Option	Description
<code>-activate_slps_policies</code>	During the migration, active SLPs and NetBackup policies are recorded and deactivated. This option identifies the SLPs and policies from the record and reactivates it on the target master server.
<code>-clean_up</code>	<p>Cleans up any working areas, temporary files, and touch files that are created during previous runs of <code>NbServerMigrator_target</code>. Useful when you re-run the script if migration has failed in between.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"><li>• Cleans up the <code>NOexpire</code> touch file and also history about the <code>data_transfer</code>.</li><li>• When this option is run on the target, it removes all the source or target dumps, so use with caution.</li><li>• Avoid using the <code>clean_up</code> option if you want to resume migration after migration failure.</li><li>• If you have run the <code>clean_up</code> command on target, run the same command on the source to avoid failures.</li></ul>
<code>-clean_up_all</code>	<p>Cleans up any working areas, temporary files, and touch files that are created during previous runs of <code>NbServerMigrator_target</code>. This option is useful when you re-run the script from the beginning or after successful migration.</p> <p>You must reactivate SLPs or policies that were deactivated if you want to run this option.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"><li>• This option removes <code>NOexpire</code> touch file and also the history from the <code>data_transfer</code>. Use this option with caution as it deletes all the source or target dumps when run on the target master server.</li><li>• This option removes the <code>sourcesecret.tar</code> file.</li><li>• If you have run the <code>clean_up_all</code> command on target, run the same command on the source to avoid failures.</li></ul>

-cport	Specifies the port to use for communication. Default is 9998.
-data_transfer	<p>Starts the image data transfer between source master server (/usr/opensv/netbackup/db/images/*) and target master server's temporary location (/usr/opensv/netbackup/tempdb/db/images/).</p> <p>This option has to be run from target by using command <code>NbServerMigrator_target -data_transfer</code></p> <p>Run this option even if your backup jobs are running. This option transfers image data for all completed backup images. Incomplete backup image data is not transferred. Run <code>NbServerMigrator_target -overwrite</code> after successfully completing the <code>data_transfer</code>.</p> <p><b>Note:</b> Do not run the <code>clean_up</code> command as it deletes the temporary folder on the target master server.</p>
-generate_sourcesecret	<p>Generates the <code>sourcesecret.tar</code> file on target master server at /usr/opensv/NbServerMigrator. This tar file contains SSL certificates for secure communication. Copy this tar file to the source master server at /usr/opensv/NbServerMigrator. If you want to use your own custom certificates, see <a href="#">usetoolcertificates</a>.</p> <p><b>Note:</b> Before running this option, ensure that system time on your source and target master server is synchronized with the configured time zone.</p>
-help	Provides the summary of <code>NbServerMigrator_target</code> options. This option is the default option.
-overwrite	<p>Specifies that the migration is in progress and all existing data in the target NetBackup databases are overwritten by the source data. The option excludes NetBackup backed-up images transferred earlier by using the <code>data_transfer</code> option.</p> <p>This option copies any new images that are created after you run the <code>data_transfer</code> command.</p>
-port	Specifies the port used for communication. Default is 9998.
-resume	Proceeds with the migration rather than starting from the first step. However, you must identify the underlying issues and resolve them before you resume the migration. You must either complete the procedure that failed, or roll it back before you proceed. Usually, manual intervention is needed to resolve the causes of the failure as determined from the

	log files. This option is enabled only after successful data transfer.
-version or -v	Displays the version and subversion of the NbServerMigrator tool.

Examples of commands are as follows:

1. Start the catalog image migration while NetBackup processes are running.

```
"NbServerMigrator_target -data_transfer -port <PORT> -cport <CPORT>"
```

2. Start the catalog data overwrite operation using specified communication ports for data and control-data transfer:

```
"NbServerMigrator_target -overwrite -port <PORT> -cport <CPORT>"
```

3. Resume previously failed execution.

```
"NbServerMigrator_target -overwrite -resume"
```

4. Perform clean up if migration fails.

```
"NbServerMigrator_target -clean_up"
```

5. Perform clean up all after successful migration.

```
"NbServerMigrator_target -clean_up_all"
```

6. Activate the policies and SLPs.

```
"NbServerMigrator_target -activate_slps_policies"
```

7. Get the version of NbServerMigrator\_target.

```
"NbServerMigrator_target -version"
```

8. Generate the sourcesecret file.

```
"NbServerMigrator_target -generate_sourcesecret"
```

### 3.6.3 About NbServerMigrator\_source

NbServerMigrator\_source is run on source master server as instructed by NbServerMigrator\_target.

Usage:

```
NbServerMigrator_source -target_ip IP_ADDRESS -target_name HOSTNAME [ -data_transfer | -migrate | -wait_for_target ] [ -port PORT ] [ -cport
```

PORT ] [ -version | -v ] [ -clean\_up | -clean\_up\_all ] [ -verbose ] [ -deactivate\_slps\_policies ] [ -activate\_slps\_policies ] [ -help ]

The following table describes each option:

Option	Description
-activate_slps_policies	Activates the SLPs and NetBackup policies on the source that were deactivated before you start the migration.
-clean_up	<p>Cleans up any working areas, temporary files, and touch files that are created during previous runs of <code>NbServerMigrator_source</code>. This option is useful when you have to rerun the script if migration has failed in between.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• If you have run the <code>clean_up</code> command on source, run the same command on the target to avoid failures.</li> <li>• Avoid using the <code>clean_up</code> option if you want to resume migration after migration failure.</li> </ul>
-clean_up_all	<p>Cleans up any working areas, temporary files, and touch files that are created during previous runs of <code>NbServerMigrator_source</code>. Useful when rerunning the script from the beginning and after successful migration.</p> <p>You must reactivate SLPs or policies that were deactivated if you want to run this option.</p> <p>This option removes the <code>sourcesecret.tar</code> file.</p> <p><b>Note:</b> If you are using the <code>clean_up_all</code> command on source, run the same command on the target to avoid failures.</p>
-cport	Specifies the port used for communication. Default is 9998.
-data_transfer	<p><code>NbServerMigrator_source -data_transfer</code> works with <code>NbServerMigrator_target -data_transfer</code>. Run this option only if the target prompts you to do so.</p> <p><b>Note:</b> Do not run the <code>clean_up</code> command as it deletes the temporary folder on the target master server.</p>

<code>-deactivate_slps_policies</code>	Deactivates the SLPs and NetBackup policies on the source and creates a record of the affected policy names in a file. This file can later be transferred to the target.
<code>-help</code>	Provides the summary of NbServerMigrator_source options.
<code>-migrate</code>	Initiates the migration on the source side. This option works along with NbServerMigrator_target and sends source data to target for migration.  Run this option only if the target prompts you to do so.
<code>-port</code>	Specifies the port used for data transfer. Default is 9999.
<code>-target_ip</code>	Specifies the IP address of target master server.
<code>-target_name</code>	Specifies the host name of the target master server.
<code>-verbose</code>	This option when set, logs a list of the files that are transferred to target master server.
<code>-version</code> or <code>-v</code>	Displays version and subversion of the NbServerMigrator tool.
<code>-wait_for_target</code>	Place the source back into listen for command mode. When the source has timed out or terminated, this option allows the target to send commands to the source again.  If the target does not detect that the source is listening, it prompts to rerun the NbServerMigrator_source command with this option. Do not use this option if the target does not prompt you to do so.

Examples of commands are as follows:

1. Start the catalog image migration while NetBackup processes are running.  
Refer the command prompted on target master server.  
  
"NbServerMigrator\_source -data\_transfer -target\_ip <IP> -target\_name <HOSTNAME> -port <PORT> -cport <CPORT>"
2. Start the catalog data migration using specified communication ports for data and control-data transfer.  
Refer the command prompted on target master server.

- ```
"NbServerMigrator_source -migrate -target_ip <IP> -target_name
<HOSTNAME> -port <PORT> -cport <CPORT>"
```
3. Perform clean up if migration fails.

```
"NbServerMigrator_source -clean_up"
```
  4. Perform clean up all after successful migration.

```
"NbServerMigrator_source -clean_up_all"
```
  5. Activate the policies and SLPs.

```
"NbServerMigrator_source -activate_slps_policies"
```
  6. Deactivate the policies and SLPs.

```
"NbServerMigrator_source -deactivate_slps_policies"
```
  7. Perform wait\_for\_target operation.

```
"NbServerMigrator_source -target_ip <IP> -target_name <HOSTNAME> -
wait_for_target"
```
  8. Get the version of NbServerMigrator\_source.

```
"NbServerMigrator_source -version"
```

## 3.7 About the post-migration tasks

The following sections describe the post migration tasks:

### 3.7.1 Configuring network settings for the target master server

- If you opted to use same IP address as source master server (target and source master have same IPs), perform the following steps:
  1. Turn off the source master server.
  2. Stop NetBackup services on the target master server.
  3. Change the IP address of the target master server to be same as the source master server.
  4. Ensure that the network connectivity between the following:
    - a) Target master server and media servers.
    - b) Target master server and associated clients.

Perform this step by updating the DNS server entries or the `/etc/hosts` file entries.

5. Start the NetBackup services on the target master server.
6. (Optional) Clear the cache on media servers and associated clients. To do this step, run the following command:
  - For UNIX: `/usr/opensv/netbackup/bin/bpclntcmd -clear_host_cache`



- For Windows: `<install path>\VERITAS\NetBackup\bin\bpclntcmd.exe -clear_host_cache`

**Note:** This step is optional as NetBackup clears the host cache after every hour.

- If you opted for existing IP address of target master server (target and source master have different IPs), perform the following steps:
  1. Update DNS server entry to map to new IP address or `/etc/hosts` file entries on media server and connected clients.
  2. Ensure that the network connectivity between the following:
    - a) Target master server and media servers.
    - b) Target master server and associated clients.

This can be done by updating the DNS server entries or the `/etc/hosts` file entries.

3. (Optional) Clear the cache on connected clients. To do this, run the following command:

```
/usr/opensv/netbackup/bin/bpclntcmd -clear_host_cache
```

**Note:** This step is optional as NetBackup clears the host cache after every hour.

### 3.7.2 About migrating the `bp.conf` file

NbServerMigrator copies only selective entries of `/usr/opensv/netbackup/bp.conf` in target master server. Veritas recommends you to review `bp.conf` of source master server and add or update the required entries on target master server.

### 3.7.3 About resetting the database password

NbServerMigrator tool resets all NetBackup catalog database passwords to the default password during migration. You can reset it after successful migration by using the following command:

```
/usr/opensv/db/bin/nbdb_admin -dba <new password>
```

**Note:** You must restart the NetBackup services after you change the database password.

### 3.7.4 Configuring the Cloud

You cannot configure Solaris\_x86 as a NetBackup cloud master server. Hence, manual intervention is needed if target master server is Solaris\_x86 and cloud is configured on source master server.

You need to promote any non-Solaris media server as a cloud master server and copy configuration files to that media server manually.

See Using media server as NetBackup Cloud master host in *NetBackup Cloud Administrator's Guide*.

Complete the following additional steps:

- For NetBackup 7.7.2 and later versions:
  1. Stop NetBackup service on the media server.
  2. Copy all files from `/usr/opensv/netbackup/db/cloud/` directory on the source master server to the same location on the media server.
  3. Start NetBackup service on the media server.
- For versions before NetBackup 7.7.2:
  1. Stop NetBackup service on the media server.
  2. Copy all files from `/usr/opensv/lib/ost-plugins` directory (excluding libraries (for example \*.so)) of source master server to the same location on media server.
  3. Start the NetBackup service on the media server.

### 3.7.5 Reactivating policies and SLPs

- SLPs and policies that were deactivated before you start the migration by using NbServerMigrator tool on source master server needs to be reactivated on target master server after successful migration.

Run `NbServerMigrator_target -activate_slps_policies` to activate SLPs and policies.

- Any policies that were manually disabled must be manually reactivated.

You also need to deactivate disk-staging storage units.

See `/usr/opensv/netbackup/bin/admincmd/nbdevconfig -changestate` command for details.

4. Verify the backup policies that take a backup of the master server. You must check for any modifications that are required in the backup selection option based on the target master server configuration.

### 3.7.6 About using NbServerMigrator\_report for post manipulation tasks

NbServerMigrator\_report with `post_manipulation` option is used to verify target master NetBackup environment. It performs tasks like verifying server connectivity, backup-restore tests, and so on.

Usage:

```
NbServerMigrator_report -post_manipulation
```

The log file `NbServerMigrator_target_postmanipulation_report_YYYY-MM-DD_HHMMSS.log` is displayed on the screen. This log file must be checked for issues.

### 3.7.7 About running acceptance tests

Veritas recommends testing the NetBackup functionality on target master after successful migration.

**Note:** The following is a list of tests that can be performed on the target. This list is not exhaustive and includes only some of the most common tests.

Verify the NetBackup base functionality as applicable:

- NetBackup Administrator Console functionality
- Storage unit
- Disk pool or storage server
- Media devices
- SLP configuration
- AIR configuration
- Policy configuration
- Stopping and restarting NetBackup

Verify the NetBackup extended functionality as applicable:

- Client connectivity
- Server connectivity
- Client deduplication
- Fiber transport
- NDMP
- OST credentials
- AIR

Verify the NetBackup operational functionality as applicable:

- Scheduled/manual backup works
- Scheduled/manual restore works
- NBCC/consistency checks

### 3.7.8 About other post migration tasks

The other post migration tasks include running full catalog backup after migration.

### 3.7.9 About cleaning up temporary files

During migration, various files are backed up, modified, or created as temporary files. Delete these files after migration on both source and target servers.

Usage:

```
NbServerMigrator_target -clean_up_all  
NbServerMigrator_source -clean_up_all
```

### 3.8 About NbServerMigrator tool limitations

Complete all jobs before you start the migration. After migration you cannot resume any suspended, canceled, or incomplete jobs on the target master server.

### 3.9 About not supported scenarios for NbServerMigrator tool

- Renaming the master
- Splitting the NetBackup domain
- Merging multiple NetBackup domains
- Migrating to Windows master server
- IPv6 support
- Supporting target master as Flex Appliance

## 4. Bare Metal Restore (BMR) migration

The following sections describe the BMR migration process.

### 4.1 About BMR master server migration

BMR master server relies on the NetBackup master server. If BMR is configured on the source master server, the NbServerMigrator tool performs the following tasks:

- Configures the BMR database (`bmrsetupmaster`) on the target master server if BMR is not configured.
- Migrates the BMR database along with the NetBackup database. The BMR database includes NetBackup client configurations (current, copied, PIT, and so on), list of boot servers, list of SRTs per boot server and so on.

### 4.2 About the BMR boot server migration

The BMR boot server can be configured on the NetBackup master server, NetBackup media server, or NetBackup client.

**Note:** This section is applicable only if you have configured the BMR boot server on the NetBackup master server that runs on the HP-UX or AIX platform.

NetBackup master server and NetBackup media server does not support HP-UX and AIX platforms. Hence, if the BMR boot server is configured on either or both these servers, you must manually migrate the boot server along with the Shared Resource Trees (SRTs). The NbServerMigrator tool does not migrate the BMR boot server.

NetBackup continues to support the BMR boot server if it is configured on a NetBackup client running on HP-UX or AIX platform.

Choose one of the following procedures to manually migrate the BMR boot server that is configured on NetBackup master server and/or NetBackup media server:

- About importing Shared Resource Trees (SRTs)
- About creating new Shared Resource Trees (SRTs)

In both methods, you must create a target boot server in the target master server domain.

#### 4.2.1 About importing Shared Resource Trees (SRTs)

This section describes how to import SRTs from an existing boot server to a target boot server.

**Note:** Follow this procedure before the migration to avoid any issues.

On any NetBackup client running on HP-UX or AIX platform, run the following command to register the client as a BMR boot server:

```
<install_path>/netbackup/bin/bmrsetupboot -r
```

For more details, see section Configuring BMR Boot Server in the *NetBackup Bare Metal Restore Administrator's Guide*.

Once the boot server is registered with the source master server, you can choose to import the SRTs from the source boot server (source NetBackup master or media server acting as source BMR boot server) to target boot server.

#### 4.2.1.1 Importing the network SRT from source master server running on AIX or HP-UX to target boot server

1. Run the following command to create a tar file of existing network SRT:  
For AIX: `tar -cdf <Tar file name> <Network SRT Path>`  
For HP-UX: `tar -cvf <Tar file name> <Network SRT Path>`
2. Copy the tar file to the target BMR boot server.
3. Run the following command to untar the file:  
`tar -xvf`
4. Import SRT using `bmrstrtadm`.

For more details about importing SRTs on target boot server, see section Importing a shared resource tree in the *NetBackup Bare Metal Restore Administrator's Guide*.

For more details about importing SRTs on target boot server, see section Importing a shared resource tree in the *NetBackup Bare Metal Restore Administrator's Guide*.

#### 4.2.2 About creating new Shared Resource Trees (SRTs)

This section describes how to create new SRTs on a target boot server.

On any NetBackup client running on HP-UX or AIX platform, run the following command to register the client as a BMR boot server:

```
<install_path>/netbackup/bin/bmrsetupboot -r
```

For more details, see section Configuring BMR Boot Server in the *NetBackup Bare Metal Restore Administrator's Guide*.

Once the boot server is registered with target master server, you must recreate the SRTs on the target boot server as per your existing source boot server (source NetBackup master or media server acting as the BMR boot server).

For more details about creating SRTs on target boot server, see section Creating an SRT for UNIX or Linux in the *NetBackup Bare Metal Restore Administrator's Guide*.

## 4.3 About restoring a client post migration

As part of the migration, NetBackup backup images are also migrated to target master server from source master server. Your existing scheduled backup policies start to run post migration. You can also restore data using the pre-migration backed-up images.

The following topics describe the possible scenarios to performing Bare Metal Restore (BMR) of a NetBackup client after successful migration:

**Note:** The sections assume that appropriate SRTs exist on the boot server to restore a NetBackup client.

### 4.3.1 Restoring a client using backed-up images taken before the migration

During BMR backup, the `/etc/hosts` files are captured in the BMR database. If you have an entry of source master server in this host file, it needs to be changed for successful restore.

Complete the following steps to change the host file entry to point to new target master server. Two possible ways to change the IP address of master server are as follows:

**Note:** The following commands are applicable for Windows and UNIX clients.

#### 4.3.1.1 Modifying the host configuration using the NetBackup Administrator Console

1. Create a Point-In-Time (PIT) BMR backup.  
See the *NetBackup Bare Metal Restore Administrator's Guide* for details.
2. Make a copy from the PIT backup.
3. Select copied configuration.
4. Select **Change**.
5. Select **Hosts** and change the IP address of the master server.

#### 4.3.1.2 Modifying the host configuration using the Command Line Interface

1. Run the following command to copy the configuration:  

```
bmrs -operation copy -resource config-name <configName> -client  
<clientName> -destination <newConfigName> [-destconfigtype <b2v>]
```
2. Modify the hosts entry  

```
bmrconfig -operation change -resource host-name <name of master> -  
client <name of client> -configuration <name of config> -attributes  
ipaddress=<IP in decimal> gateway=<gateway in decimal>  
role=masterserver newname=<new master server name>  
newrole=masterserver
```

**Note:** The target master server name is the same as source master server name.

### 4.3.2 Restoring a client using backed-up images taken after the migration

If you have an entry of source master server in the host file, it needs to be manually changed to target master server before a backup.

Once BMR starts capturing the changed `/etc/hosts` file configuration as part of regular backups, no additional steps are required to perform BMR of a NetBackup client from target master server. You must complete the usual steps to do such a restore.



## 5. NetBackup Vault migration

NbServerMigrator supports NetBackup vault migration. If you have vault configured at source master server and report configuration has any of the following destinations, ensure these are present at target master server:

- Email
- Printer
- File

## 6. NetBackup master server used as a media server

If you have configured any storage devices such as BasicDisk or AdvancedDisk, MSDP, OST, on master server, see the [NetBackup Media Server Migration Guide](#) for details about media server migration.

See [NetBackup master server migration approaches](#) for details about migrating the master server.

**Note:** After you start the master server migration, you need to pause it in between to start the media server migration. After a point, you will have to pause the media server migration to resume the master server migration and then resume the media server migration.

The following table describes the high level steps involved when you migrate the master server used as a media server. For details, see the relevant sections in this guide:

| Step No. | Source Master Server                                                                                                                                                                                 | Target Master Server                                                                                                                                                             |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Check prerequisites.                                                                                                                                                                                 | Check prerequisites.                                                                                                                                                             |
| 2        | Run NetBackup Catalog Consistency (NBCC) utility and fix reported issues.                                                                                                                            | Install same NetBackup master server version as source on the target master server.                                                                                              |
| 3        | Run Pre-Environment Checklist (PEC) report to get environment details.                                                                                                                               | Run Pre-Environment Checklist (PEC) report to get environment details.                                                                                                           |
| 4        |                                                                                                                                                                                                      | Run the <code>generate_sourcesecret</code> command to generate <code>sourcesecret.tar</code> file that is used for secure communication between target and source master server. |
| 5        | Copy the <code>sourcesecret.tar</code> file generated on target master server to set up a secure communication between target and source master server.                                              |                                                                                                                                                                                  |
| 6        | If you have MSDP configured on master server, migrate MSDP to the proxy media server.<br><br>For detailed steps, see <a href="#">NetBackup Media Server Migration Guide</a> .                        |                                                                                                                                                                                  |
| 6        |                                                                                                                                                                                                      | Run the <code>data_transfer</code> command to migrate image data.                                                                                                                |
| 7        | Run the <code>data_transfer</code> command as prompted from target to migrate image data.<br><br><b>Note:</b> This activity takes time based on the size of the NetBackup image data to be migrated. |                                                                                                                                                                                  |

|                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                 |                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>Caution:</b> Your source NetBackup master server environment is hence forth down for the migration activity. Downtime required is based on total data size, network bandwidth, server resources (memory, DISK IO, and so on). |                                                                                                                                                                                                                                                                                 |                                                                                                               |
| 8                                                                                                                                                                                                                                | Deactivate policies and SLPs.                                                                                                                                                                                                                                                   |                                                                                                               |
| 9                                                                                                                                                                                                                                | Identify the configured or connected storage devices on source master server and migrate the storage devices. This migration activity includes operations on the target server as well.<br><br>For detailed steps, see <a href="#">NetBackup Media Server Migration Guide</a> . |                                                                                                               |
| 10                                                                                                                                                                                                                               | Resume the master server migration.                                                                                                                                                                                                                                             |                                                                                                               |
| 11                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                 | Run the <code>overwrite</code> command to migrate image data.                                                 |
| 12                                                                                                                                                                                                                               | Run the <code>overwrite</code> command as prompted from target to migrate image data.                                                                                                                                                                                           |                                                                                                               |
| 13                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                 | Resume the media migration steps as described in the <a href="#">NetBackup Media Server Migration Guide</a> . |
| 14                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                 | Run post manipulation checks to verify the migration is successful.                                           |
| 14                                                                                                                                                                                                                               | Shut down the source master server.                                                                                                                                                                                                                                             |                                                                                                               |

The detailed steps to migrate the master server that is used as a media server is as follows:

1. By default, NbServerMigrator tool uses secure communication for data and image transfer. Run the `NbServerMigrator_target -generate_sourcesecret` command on target to generate the `sourcesecret.tar` file. Copy the `sourcesecret.tar` file from `/user/opencv/NbServerMigrator` on the target master server to the source master server at `/user/opencv/NbServerMigrator`.
2. If you have MSDP configured on source master server, migrate the MSDP data to proxy MSDP server. See [NetBackup Media Server Migration Guide](#).
3. Run the `NbServerMigrator_target -data_transfer` command to start the data transfer between source master server (`/usr/opencv/netbackup/db/images/*`) and target master server's temporary location (`/usr/opencv/netbackup/tempdb/db/images/`).

The NetBackup environment does not need to be down for image data transfer. This command prompts the command to be run on the source master server.

**Note:** This process takes time to complete.

4. Run the `NbServerMigrator_source -deactivate_slps_policies` command to deactivate the SLPs and policies. This command causes your NetBackup environment to

be down so that scheduled backups do not start. See section [About deactivating NetBackup policies and SLPs](#).

5. Start the media server migration. See [NetBackup Media Server Migration Guide](#).
6. During the media server migration, you are required to resume the master server migration. Run the `NbServerMigrator_target -overwrite` command to start the catalog data overwrite operation.

The `-overwrite` option does the following operations:

- a) Copies the remaining catalog images from source master server to the temporary location on the target master server.
  - b) Overwrites the catalog and configuration files on the target master server
7. Perform post migration steps. See [About the post-migration tasks](#).
  8. Resume and complete the media server migration. See [NetBackup Media Server Migration Guide](#).
  9. If you have MSDP configured on source master server, migrate the MSDP data from proxy MSDP server to target NetBackup Appliance or target NetBackup master server.

## 7. Migrating the Auto Image Replication (AIR) master server

In AIR configuration, if source AIR or target AIR master server is running on HP-UX or AIX platform, you must migrate it to NetBackup Appliance or to all NetBackup master server supported platforms except Windows.

Migrate the AIR master server using NbServerMigrator tool (as explained in sections [About the pre-migration tasks](#), [About migrating the master server using NbServerMigrator](#), and [About the post-migration tasks](#)).

Complete the following steps to migrate AIR target master server running on HP-UX or AIX platform:

1. Run NbServerMigrator tool to migrate AIR source (pre-migration) master server to new AIR source (post migration) master server.
2. Post successful migration, change DNS setting or hosts file so that new AIR source (post migration) master server can communicate with its media servers and AIR target master server.
3. Run the `bpcintcmd -clear_host_cache` to clear the host cache on AIR target master server and all media servers of new AIR source master server.
4. For successful migration, check trust relation between new AIR source master server and AIR target master server.

To do this:

- Run `nbemmcmd -listhost` command on new AIR source master server. Also, check that AIR target master server name is displayed as `remote_master`.
  - Run `nbemmcmd -listhost` command on AIR target master server and check that new AIR source master name is displayed as `remote_master`.
  - Verify `TRUSTED_SERVER` entry in `bp.conf` file for new AIR source and AIR target master server.
5. Verify that AIR is enabled and backup and restore jobs are running successfully with the new AIR configuration.

**Note:** If both AIR source and AIR target master server are running on HP-UX or AIX platform, first migrate AIR source and once successful and verified, migrate AIR target master server.

See [https://www.veritas.com/content/support/en\\_US/doc/25074086-127355784-0/AIR-127355784](https://www.veritas.com/content/support/en_US/doc/25074086-127355784-0/AIR-127355784).

## 8. NetBackup clustered master server migration

NbServerMigrator tool supports NetBackup clustered master server migration. Perform the following tasks for NetBackup clustered master server migration:

The following table describes the high level steps involved when you migrate the clustered master server. For details, see the relevant sections in this guide:

| Step No.                                                                                                                                                                                                                         | Source Master Server                                                                                                                                                                             | Target Master Server                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                                                                                                                                                                                                | Check prerequisites.                                                                                                                                                                             | Check prerequisites.                                                                                                                                                             |
| 2                                                                                                                                                                                                                                | Run NetBackup Catalog Consistency (NBCC) utility and fix reported issues.                                                                                                                        | Install same NetBackup master server version as source on the target master server.                                                                                              |
| 3                                                                                                                                                                                                                                | Run Pre-Environment Checklist (PEC) report to get environment details.                                                                                                                           | Run Pre-Environment Checklist (PEC) report to get environment details.                                                                                                           |
| 4                                                                                                                                                                                                                                |                                                                                                                                                                                                  | Run the <code>generate_sourcesecret</code> command to generate <code>sourcesecret.tar</code> file that is used for secure communication between target and source master server. |
| 5                                                                                                                                                                                                                                | Copy the <code>sourcesecret.tar</code> file generated on target master server to set up a secure communication between target and source master server.                                          |                                                                                                                                                                                  |
| 6                                                                                                                                                                                                                                |                                                                                                                                                                                                  | Run the <code>data_transfer</code> command to migrate image data.                                                                                                                |
| 7                                                                                                                                                                                                                                | Run the <code>data_transfer</code> command as prompted from target to migrate image data.<br><b>Note:</b> This activity takes time based on the size of the NetBackup image data to be migrated. |                                                                                                                                                                                  |
| <b>Caution:</b> Your source NetBackup master server environment is hence forth down for the migration activity. Downtime required is based on total data size, network bandwidth, server resources (memory, DISK IO, and so on). |                                                                                                                                                                                                  |                                                                                                                                                                                  |
| 8                                                                                                                                                                                                                                | Deactivate policies and SLPs.                                                                                                                                                                    |                                                                                                                                                                                  |
| 9                                                                                                                                                                                                                                | Freeze the NetBackup cluster on the source clustered master server.                                                                                                                              | Freeze the NetBackup cluster on the target clustered master server.                                                                                                              |
| 10                                                                                                                                                                                                                               |                                                                                                                                                                                                  | Run the <code>overwrite</code> command to migrate image data.                                                                                                                    |
| 11                                                                                                                                                                                                                               | Run the <code>overwrite</code> command to migrate image data as prompted from target.                                                                                                            |                                                                                                                                                                                  |

|    |                                     |                                                                       |
|----|-------------------------------------|-----------------------------------------------------------------------|
| 12 |                                     | Unfreeze the NetBackup cluster on the target clustered master server. |
| 13 |                                     | Run post manipulation checks to verify the migration is successful.   |
| 14 | Shut down the source master server. |                                                                       |

## 8.1 About the pre-migration tasks

- Follow all pre-migration tasks that are mentioned in section [About the pre-migration tasks](#).
- Set up the target cluster.
  - Virtual Name of target NetBackup clustered master server must be same as source.
  - Only VCS (Veritas Cluster Server) is supported as a target NetBackup clustered master server.
  - Veritas recommends that mount point for the NetBackup disk (shared disk) on both source and target cluster should be same (default VCS mount path for NetBackup is `/opt/VRTSnbu`).
- Veritas recommends that the clustered target master server should be single node cluster.
- Migration occurs from source active node to target active node.
- Freeze NetBackup cluster group on both source and target clustered master server.
- NbServerMigrator must be run on active node of both source and target clustered master server.
- To start or stop the NetBackup in the cluster  
`/usr/opensv/netbackup/bin/cluster/util/online` or `offline`.
- NetBackup does not support configuring storage devices on NetBackup clustered master server. Hence the NbServerMigrator tool does not support migration if any storage devices are configured or attached to the NetBackup clustered master server.

## 8.2 Migrating the NetBackup clustered master server

To migrate clustered master server, follow the steps in section [About migrating the master server using NbServerMigrator](#).

## 8.3 About the post-migration tasks

- Follow all post-migration tasks that are mentioned in section [About the post-migration tasks](#).
- Target cluster has a different virtual IP, you must map the target cluster virtual IP address with the virtual host name. To do this, choose one of the following
  - Update the DNS entry of the virtual host name to use the target virtual IP.

- Change the target cluster virtual IP to the virtual IP used by the source cluster master server.
- Update the network settings on media servers and associated clients to use new virtual IP.
- Ensure that the network connectivity between the following:
  - Target cluster master server and media servers.
  - Target cluster master server and associated clients.
- Only virtual server certificates are migrated. Certificates for local node(s) should be fetched manually. See section [About certificate handling after migration](#).
- Unfreeze the NetBackup cluster group on the target cluster master server.
- Check target cluster state and ensure that the cluster is up and running.

## 8.4 About certificate handling after migration

The following sections describe the certificate handling after migration:

### 8.4.1 About NetBackup 8.0 and later versions

1. To store the Certificate Authority certificate for virtual identity, run the following command on the active node:

```
/usr/opensv/netbackup/bin/nbcertcmd-getCACertificate -cluster
```

2. To store host ID-based certificate for virtual identity, run the following command on the active node:

```
/usr/opensv/netbackup/bin/nbcertcmd-getCertificate -cluster -force
```

3. To store the Certificate Authority certificate for local identity, run the following command on each node:

```
/usr/opensv/netbackup/bin/nbcertcmd-getCACertificate
```

4. To store host ID-based certificate for local identity, run the following command on each node:

```
/usr/opensv/netbackup/bin/nbcertcmd-getCertificate -force
```

5. To authenticate your web services login, run the following command on the active node:

```
/usr/opensv/netbackup/bin/bpnbat -login
```

When prompted for the authorization broker, enter the virtual server name.

6. To generate the host ID-based certificate on active node, run the following command on the active node:

```
/usr/opensv/netbackup/bin/admincmd/bpnbaz -ProvisionCert <virtual  
node name>
```



7. To generate the host ID-based certificate on all cluster nodes, run the following command on the master server for each node of the cluster:  

```
/usr/opensv/netbackup/bin/admincmd/bpnbaz -ProvisionCert <local  
node name>
```
8. (Optional) To remove stale entries of source node host names, remove the mapping of source node host name. Using the NetBackup Administrator Console, go to **NetBackup Management > Security management > Host management**.

#### 8.4.2 About NetBackup 7.7 and 7.7.x:

1. To generate the host name-based certificate on active node, run the following command on the active node:  

```
/usr/opensv/netbackup/bin/admincmd/bpnbaz -ProvisionCert <virtual  
node name>
```
2. To generate the host name-based certificate on each cluster node, run the following command on the master server for each node of the cluster:  

```
/usr/opensv/netbackup/bin/admincmd/bpnbaz -ProvisionCert <local  
node name>
```

See *NetBackup Security and Encryption Guide* and *NetBackup Commands Reference Guide*.

### 8.5 Not supported scenarios for cluster

- Migrating NetBackup clustered master server to standalone NetBackup master server.
- Migrating standalone NetBackup master server to NetBackup clustered master server.
- Migrating NetBackup clustered master server to NetBackup appliance master server.

## 9. NetBackup Appliance migration

The NbServerMigrator tool supports migration to NetBackup Appliance. You must have root privileges migrate to a NetBackup Appliance. To migrate to NetBackup Appliance, EMM server name must not contain '\_' (underscore). Such migrations fail.

Before you start the migration, you must override the appliance IPS policy to elevate.

See section Overriding the NetBackup appliance intrusion prevention system policy in *NetBackup Appliance Security Guide*. In step 4, Enter the Maintenance user account password. The following options are displayed:

You must select 2. Override Prevention Completely.

After overriding the Appliance IPS policy, you can start migrating the source master server to the Appliance master server using NbServerMigrator tool. See section [NetBackup master server migration approaches](#).

### 9.1 Limitations

To migrate software to NetBackup Appliance, EMM server name must not contain '\_' (underscore).

## 10. NetBackup Access Control (NBAC) migration

The NetBackup Access Control (NBAC) is a role-based access control that is used for master servers, media servers, and clients. Veritas Security Services (VSS) is used for secure communication between NetBackup master, media, and clients.

NetBackup Appliance does not support NBAC. Hence, NBAC is not migrated on target master server if target master server is a NetBackup Appliance.

### 10.1 About migrating NBAC from master server

The following sections describe the steps to migrate NBAC from source master server (except for NetBackup Appliance) if NBAC is configured on source master server.

### 10.2 About the pre-migration tasks

The following sections describe the pre-migration tasks:

#### 10.2.1 About migrating NBAC users

You must manually create all NBAC users and their respective groups on target NetBackup master server before you start the migration. The NbServerMigrator tool takes care of the NBAZDB database migration, which includes roles and permissions that are specified for the NBAC users. The NbServerMigrator report presents the list of users or you can run following command:

```
<install_path>/netbackup/bin/admincmd/bpnbaz
```

For more information, see *NetBackup Commands Reference Guide*.

**Note:** To execute `bpnbaz` command successfully, `USE_VXSS` value in `bp.conf` must be either `REQUIRED` or `AUTOMATIC`.

#### 10.2.2 Disabling NBAC

If NBAC is enabled, it must be disabled on source and target master server before you start the migration. Steps to disable NBAC:

- Stop NetBackup services on master server.
- `echo "USE_VXSS=PROHIBITED" > nbac_settings`
- `<install_path>/netbackup/bin/admincmd/bpsetconfig nbac_settings`
- Start NetBackup services on master server.

**Note:** To disable NBAC in clustered environment, see section Configuring NetBackup Access Control (NBAC) on a clustered master server in *NetBackup Security and Encryption Guide*.

## 10.3 About the post-migration tasks

The following sections describe the post migration tasks.

### 10.3.1 Enabling NBAC

Complete the following steps to re-enable NBAC on target master server:

1. Stop NetBackup services on master server.
2. As per the NBAC configuration, the `USE_VXSS` value on the source master server was either `AUTOMATIC` or `REQUIRED`. In this example, the `USE_VXSS` value is set to `AUTOMATIC`.

```
echo "USE_VXSS=AUTOMATIC" > nbac_settings
```

```
<install_path>/netbackup/bin/admincmd/bpsetconfig nbac_settings
```

3. Start the NetBackup services on master server.

## 10.4 About migrating NBAC on media server

Since HP-UX or AIX media server migration is a manual process, reconfigure NBAC on migrated media server.

For more information, see section Configuring NetBackup Access Control (NBAC) on media servers in the *NetBackup NBAC Configuration Guide*.

## 11. Best Practices

NbServerMigrator tool performance varies according to network bandwidth, speed, and data chunk size.

This section describes the best practices to be followed while tuning the NbServerMigrator tool to obtain optimum performance.

To improve the performance you can tune attributes like `compression` and `maxsize` in the `nbservermigrator.conf` file. See

[https://www.veritas.com/content/support/en\\_US/doc/MasterServerMigration](https://www.veritas.com/content/support/en_US/doc/MasterServerMigration).

Consider the following factors to achieve better performance:

- For high I/O speed:
  - If network bandwidth is high, set compression level to 1.
  - If network bandwidth is moderate, set compression level in the range of 3 to 6.
- For low and moderate I/O speed:
  - If network bandwidth is high, set compression to 'no'.
  - If network bandwidth is very low, set compression level to 1.
- For high disk I/O speed, you can increase `maxsize` (up to 15 GB). Increasing `maxsize` results in more I/O operations. To optimize the performance, increase `maxsize` along with the compression level.
- By default, NbServerMigrator tool uses Secure Socket Layer (SSL) to establish encrypted connection between source and target master server. If your NetBackup setup is in a controlled environment (no external interferences), disable SSL by setting `ssl` attribute to `no`. This setting reduces data transfer time.
- If your NetBackup catalog data contains files with size greater than 2 GB, you can increase `max_filesize` up to 4 GB if `maxsize` is set to the default value (10 GB).

## 12. Back-out plan

This section describes the back-out plan to be applied in case the migration fails.

- You must apply the back-out plan only after you experience an issue and you cannot find a solution in the troubleshooting section in this guide, NetBackup Knowledge Base, or the NetBackup product guides. Contact Veritas support to investigate the cause of failure of the migration.
- If the migration fails and you want to continue to use the source master server, you must restart NetBackup services on source master server and also activate SLPs and policies on it.
- If you have migrated a media server that was attached or configured on a source master server and the master server migration fails, consider the following:
  - If you plan to back out the master server, you must back out the media server as well.  
See [NetBackup Media Server Migration Guide](#).
- During migration, NbServerMigrator tool resets all NetBackup catalog database passwords to the default password. You can reset it using the following command:

```
nbdb_admin -dba <new password>
```

## 13. Troubleshooting

The following sections describe the issues you might experience during migration

### 13.1 Issues with migration using the NbServerMigrator tool

1. During migration, if you encounter errors, you must exit the script, investigate, and resolve the issues.
  - a. After resolving the issues, do the following:
    - On the target server, execute the following command:  
`NbServerMigrator_target -overwrite -resume`
    - On the source server execute the following command:  
`NbServerMigrator_source -target_ip <target IP address> -target_name <target hostname> -wait_for_target`
  - b. If the issue still persists, run the NbServerMigrator tool's `clean_up` option on both source and target and then restart the migration process from the beginning.  
**Caution:** The `clean_up` or `clean_up_all` option removes the temporary data from both target master server and source master server. These options also delete the data that was transferred during `data_transfer`.
  - c. If the issue still persists, revert back to the source master server. See section [Back-out plan](#).
  - d. If the failure has left the target master in the failed state and the target master server does not operate, do one of the following:
    - Attempt to recover the target master server from a catalog backup.
    - Re-install NetBackup on the target master server.
2. During migration, if you encounter the following error:

```
Checking that all files from source are on the target
```

```
TEST: "There are files missing in the target images folder.
```

```
The file "/usr/opensv/netbackup/tempdb/missingfiles.txt" lists  
missing files in target". In function crosscheck_images, exiting  
script with exit status 1.
```

Investigate and resolve issues before using the following command to re-try.

**Solution:**

Check for the following:

- a. If you have interrupted or failed migration and you have not performed clean-up, run the `clean_up` option on both source and target and then continue with the migration.

- b. If the error still persists, check if the `/usr/opensv/netbackup/db/images/` subfolders are empty on the source master server.  
You can get empty folder name from the `/usr/opensv/netbackup/tempdb/missingfiles.txt` file.  
To fix this issue, create at least one backup on source master server and continue with migration.
3. The migration fails when you migrate the source master server with BMR or NBAC configuration to different path on target master server.  
  
After migration, NBAC and BMR databases still use the old transaction log path. NBAC and BMR databases do not start.  
  
To fix this issue, change the transaction log path manually using `dblog` tool. To do this:
  - a. Set the shell environment for running database commands  
`. /usr/opensv/db/vxdbms_env.sh`
  - b. Use `/usr/opensv/db/bin/dblog -t` to change the transaction log path.  
  
For example: `/usr/opensv/db/bin/dblog -t  
<NetBackup_db_path>/data/NBAZDB.log <NetBackup_db_path>/data/NBAZDB.db`
4. After successful migration, if you cannot connect to the target master server using the remote NetBackup Administrator Console, add target master server IP address and host name entry in `/etc/hosts` or  
  
`<OS install drive>:\Windows\System32\drivers\etc\hosts` file on the server on which the remote console is open.
5. If you have upgraded NetBackup since version 1.1 to 7.7 or later versions, check the Image Directory Structure Version
  - Version 1 - All client backup images in single folder
  - Version 2 - Client backup images in `CTIME` folders (NetBackup 2.0+)

For any catalogs that are still in Version1 format, use `IDIRSTRUCT` file and change the value from Version 1 to Version 2 when you restore.

See [https://www.veritas.com/support/en\\_US/article.100030174](https://www.veritas.com/support/en_US/article.100030174).
6. If `gzip` is not present on either source or target master server, the migration fails.  
  
Use any one of the following options to resolve the issue:
  - Install `gzip` on both source and target
  - In `/usr/opensv/NbServerMigrator/nbservermigrator.conf` file of both source and target master server, update the following entry (case-sensitive):  
`compression=0`



7. If the migration fails during starting or stopping the database, check log file present at `/usr/opensv/db/log/server.log`.

To resolve this issue, see [https://www.veritas.com/support/en\\_US/article.100029920](https://www.veritas.com/support/en_US/article.100029920).

8. If migration fails when you deactivate SLPs, that is, the migration fails when you run the following command:

```
/usr/opensv/netbackup/bin/admincmd/nbstlutil inactive -lifecycle  
<SLP name>
```

To fix this issue, set the `bpptimeout=60` seconds in the `nbservermigrator.conf` file. See [About the nbservermigrator.conf configuration file](#) for more details about `bpptimeout` option.

9. SSL connection fails on source master server with any of the following errors:

- SSL connection failed on port 9999. Trying again...
- SSL connection failed on port 9999. See the Troubleshooting section in the NetBackup Master Server Migration Guide.

Possible causes and solution are as follows:

- a. Target master server has exited or is not ready to acknowledge the source.
  - i. If the target master server has exited, fix the issue as displayed on the target master server and re-run the command.
  - ii. If the target master server is not ready to acknowledge the source, the server might be involved with other processes. Wait for the target server to acknowledge the source.
- b. Firewall does not allow connection to port 9999. To fix the issue, enable port 9999 along with communication port 9998 (by default) in your firewall settings.
- c. Default ports 9998 and 9999 are being used by another process. If yes, specify other ports using `port` and `cport` options.
- d. Multiple instances of `NbServerMigrator_source` are running. Kill the process manually and restart the migration after few minutes.
- e. The system time on your source and target master server is not synchronized with the configured time zone. To fix the issue,
  - i. Synchronize the system time with the configured time zone.
  - ii. Remove the `targetssl` folder and `sourcesecret.tar` from `/usr/opensv/NbServerMigrator` on the target master server and `/usr/opensv/NbServerMigrator/sourcesecret.tar` on the source master server.
  - iii. Regenerate the certificates using `-generate_sourcesecret` command on the target master server.
  - iv. Copy the certificates to the source maser server on `/usr/opensv/NbServerMigrator`.

- f. You have changed the system time post certificate generation. To fix the issue,
    - i. Remove the `targetssl` folder and `sourcesecret.tar` from `/usr/opensv/NbServerMigrator` on the target master server and `/usr/opensv/NbServerMigrator/sourcesecret.tar` on the source master server.
    - ii. Regenerate the certificates using `-generate_sourcesecret` command on the target master server.
    - iii. Copy the certificates to the source maser server on `/usr/opensv/NbServerMigrator`.
  - g. The issue may be due to the custom certificates (`usetoolcertificates=no`) that are being used. To fix the issue, regenerate the SSL certificates.
10. SSL connection fails on target master server with following error:
- TEST: "SSL connection failed on port 9999. Check for the following: SSL certificate, firewall, or port in use." In function `transfer_com`, exiting script with exit status 1.
- Possible causes and solution are as follows:
- a. Firewall does not allow connection to port 9999. To fix the issue, enable port 9999 along with communication port 9998 (by default) in your firewall settings.
  - b. Default ports 9998 and 9999 are being used by another process. If yes, specify other ports using `port` and `cport` options.
  - c. Multiple instances of `NbServerMigrator_target` are running. Kill the process manually and restart the migration after few minutes.
  - d. The system time on your source and target master server is not synchronized with the configured time zone. To fix the issue,
    - i. Synchronize the system time with the configured time zone.
    - ii. Remove the `targetssl` folder and `sourcesecret.tar` from `/usr/opensv/NbServerMigrator` on the target master server and `/usr/opensv/NbServerMigrator/sourcesecret.tar` on the source master server.
    - iii. Regenerate the certificates using `-generate_sourcesecret` command on target master server.
    - iv. Copy the certificates to the source maser server on `/usr/opensv/NbServerMigrator`.
  - e. You have changed the system time post certificate generation. To fix the issue,
    - i. Remove the `targetssl` folder and `sourcesecret.tar` from `/usr/opensv/NbServerMigrator` on the target master server and `/usr/opensv/NbServerMigrator/sourcesecret.tar` on the source master server.
    - ii. Regenerate the certificates using `-generate_sourcesecret` command on target master server.
    - iii. Copy the certificates to the source maser server on `/usr/opensv/NbServerMigrator`.

- f. The issue may be due to the custom certificates (`usetoolcertificates=no`) that are being used. To fix the issue, regenerate the SSL certificates.

## 13.2 Issues with BMR migration

1. Bare Metal Restore fails after first startup with the following error:  
Operation failed.  
WARNING! Could not set restore task status on BMR server. Verify network interface settings and manually repair as needed.  
Solution:
  - a. Run `/usr/opensv/netbackup/bin/bmrc -op complete -res restoretask -client <client_name> -status 0` command to update the job status.
  - b. Verify and repair the network interface settings.
  - c. Update the job status for the client.
2. During Bare Metal Restore (BMR) final cleanup, you might get the following error message:  
Unable to update client state on the NetBackup server, error=200  
Solution: See [https://support.symantec.com/en\\_US/article.TECH73586.html](https://support.symantec.com/en_US/article.TECH73586.html).

## 13.3 Issues with NBAC migration

After migration, the backup and restore operations fail if NBAC is enabled.

Solution: See [https://www.veritas.com/support/en\\_US/article.100032052](https://www.veritas.com/support/en_US/article.100032052).

## 13.4 Issues with VMware migration

1. Incorrect or empty Datastore value that is included in the VMware restore wizard causes restore failures. This error is observed in the following scenario:
  - a. In restore operation, select **Virtual Machine Backups**.
  - b. Click **Restore** to obtain the Virtual Machine Recovery wizard.
  - c. In the wizard, choose the alternate location for restore and click **Next**.
  - d. In the following dialog box, you do not see the Datastore or Datastore cluster values that correspond to the ESX. Thus, the restore fails.

Solution: In same Virtual Machine Recovery wizard dialog box do the following:

  - a. Click **Change** against the ESX server or cluster option to reselect the ESX server.
  - b. Select the correct ESX server. The correct Datastore values get populated and restore succeeds.

2. After migration, VMware backup host list in policy is empty

Solution:

- a. Click the drop down of the VMware backup host.
- b. Select the appropriate host entry.
- c. Click **OK** to save the entries.

3. vCloud backups fail due to VMware server login failure.

Solution:

Delete credentials using the NetBackup Administrator Console. To do this:

- a. Select **Media and Device Management > Credentials > Virtual Machine Servers**, right-click and delete the particular vCloud director and associated vCenter.
- b. Update the `/etc/hosts` file on the master and media servers as applicable.
- c. Run `clear_host_cache` on the media server.
- d. Restart the NetBackup services on the media server.