

Veritas NetBackup™ Release Notes

Release 8.1.1

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Veritas Services and Operations Readiness Tools (SORT)

Veritas Services and Operations Readiness Tools (SORT) is a website that provides information and tools to automate and simplify certain time-consuming administrative tasks. Depending on the product, SORT helps you prepare for installations and upgrades, identify risks in your datacenters, and improve operational efficiency. To see what services and tools SORT provides for your product, see the data sheet:

https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf

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About NetBackup 8.1.1

This chapter includes the following topics:

- [About the NetBackup 8.1.1 release](#)
- [About NetBackup Late Breaking News](#)
- [About NetBackup third-party legal notices](#)
- [About NetBackup third-party components](#)

About the NetBackup 8.1.1 release

The *NetBackup Release Notes* document is meant to act as a snapshot of information about a version of NetBackup at the time of its release. Old information and any information that no longer applies to a release is either removed from the release notes or migrated elsewhere in the NetBackup documentation set.

See [“About new enhancements and changes in NetBackup”](#) on page 11.

About EEBs and release content

NetBackup 8.1.1 incorporates fixes to many of the known issues that affected customers in previous versions of NetBackup. Some of these fixes are associated with the customer-specific issues that have been documented in the form of Titan or Salesforce.com (SFDC) cases. Several of the customer-related fixes that were incorporated into this release were also made available as emergency engineering binaries (EEBs).

Listings of the EEBs and Etracks that document the known issues that have been fixed in NetBackup 8.1.1 can be found on the Veritas Operations Readiness Tools (SORT) website and in the [NetBackup Emergency Engineering Binary Guide](#).

See [“About Veritas Services and Operations Readiness Tools”](#) on page 40.

About NetBackup appliance releases

The NetBackup appliances run a software package that includes a preconfigured version of NetBackup. When a new appliance software release is developed, the latest version of NetBackup is used as a basis on which the appliance code is built. For example, NetBackup Appliance 3.0 is based on NetBackup 8.0. This development model ensures that all applicable features, enhancements, and fixes that were released within NetBackup are included in the latest release of the appliance.

The NetBackup appliance software is released at the same time as the NetBackup release upon which it is based, or soon thereafter. If you are a NetBackup appliance customer, make sure to review the *NetBackup Release Notes* that correspond to the NetBackup appliance version that you plan to run.

Appliance-specific documentation is available at the following location:

<http://www.veritas.com/docs/000002217>

About NetBackup Late Breaking News

For the most recent NetBackup news and announcements, visit the NetBackup Late Breaking News website at the following location:

<http://www.veritas.com/docs/000040237>

Other NetBackup-specific information can be found at the following location:

https://www.veritas.com/support/en_US/15143.html

About NetBackup third-party legal notices

NetBackup products may contain third-party software for which Veritas is required to provide attribution. Some of the third-party programs are available under open source or free software licenses. The license agreement accompanying NetBackup does not alter any rights or obligations that you may have under those open source or free software licenses.

The proprietary notices and the licenses for these third-party programs are documented in the *NetBackup Third-party Legal Notices* document, which is available at the following website:

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

About NetBackup third-party components

The following table lists some of the most well-known third-party components which are installed by NetBackup 8.1.1:

Table 1-1 Third-party components in NetBackup 8.1.1

Third party	Version
Java Runtime Environment (JRE)	<ul style="list-style-type: none">■ IBM AIX (rs6000) 8.0.5.0■ IBM zLinux 8.0.5.0■ HP-UX (hpie64) 8.0.5.0■ Linux (RedHat, SuSE) 8u151■ Solaris (sparc, x86) 8u151■ Microsoft Windows 8u151
libCURL	7.57.0
openssl	1.0.2n
Tomcat	8.5.23

New features, enhancements, and changes

This chapter includes the following topics:

- [About new enhancements and changes in NetBackup](#)
- [NetBackup 8.1.1 new features, changes, and enhancements](#)

About new enhancements and changes in NetBackup

In addition to new features and product fixes, NetBackup releases often contain new customer-facing enhancements and changes. Examples of common enhancements include new platform support, upgraded internal software components, interface changes, and expanded feature support. Most new enhancements and changes are documented in the *NetBackup Release Notes* and the NetBackup compatibility lists.

Note: The *NetBackup Release Notes* only lists the new platform support that begins at a particular NetBackup version level at the time of its release. However, Veritas routinely backdates platform support to previous versions of NetBackup. Refer to the [NetBackup compatibility lists](#) for the most up-to-date platform support listings.

See [“About the NetBackup 8.1.1 release”](#) on page 8.

See [“About NetBackup compatibility lists and information”](#) on page 56.

NetBackup 8.1.1 new features, changes, and enhancements

New features, changes, and enhancements in NetBackup 8.1.1 are grouped below by category. Select a link to read more information about the topic.

New features

- [New RESTful APIs included in NetBackup 8.1.1](#)
- [Integrated snapshot framework between NetBackup and CloudPoint](#)

Secure communication features, changes, and enhancements

- **Note:** Before you install or upgrade to NetBackup 8.1.1 from a release earlier than 8.1, make sure that you read and understand the *NetBackup Read This First for Secure Communications* document. NetBackup 8.1 includes many enhancements that improve the secure communications of NetBackup components. The *NetBackup Read This First for Secure Communications* document describes the features and benefits of these enhancements:

[NetBackup Read This First for Secure Communications](#)

- [Bare Metal Restore with secure communications support](#)

Support changes and enhancements

- [NetBackup 8.1.1 support additions and changes](#)
- [End-of-life for multiple NetBackup products, features, and platforms](#)
- [Support has ended for vSphere 5.1](#)
- [NetBackup support utility \(nbsu\) has been updated](#)
- [Several shutdown commands to be deprecated in a future release](#)

System requirement changes and enhancements

- [IPv6 support information for NetBackup 8.1.1](#)

Cloud-related changes and enhancements

- [Update cloud configuration file on the master server immediately after install or upgrade to NetBackup 8.1.1](#)
- [NetBackup supports backups to Amazon Glacier storage class](#)
- [NetBackup supports backups using cloud tiering](#)

Database agent changes and enhancements

- Support for `bpstart_notify` and `bpend_notify` scripts using Oracle Intelligent Policy (OIP)

Other announcements

- NetBackup Bare Metal Restore functionality is supported for restoring NetBackup 8.1.1 clients
- MSDP updates in NetBackup 8.1.1
- NetBackup install now includes Nutanix Acropolis Hypervisor and Hadoop plug-ins
- Dependency to select the Enterprise Vault version to configure policy directives is removed

New RESTful APIs included in NetBackup 8.1.1

This release of NetBackup includes a set of RESTful application programming interfaces (APIs). These APIs provide a web-service-based interface that let you configure and administer NetBackup in your environments.

The NetBackup APIs are built on the Representational State Transfer (REST) architecture, which is the most widely used style for building APIs. They use the HTTP protocol to communicate with NetBackup. The NetBackup APIs are therefore easy to use in cloud-based applications, as well as across multiple platforms and programming languages. The APIs use JavaScript Object Notation (JSON) as the message format for request and response messages. They employ client-server communication in the form of HTTP requests and responses. The API client (that is, your program) uses the HTTP protocol to make an API request to the NetBackup server. The NetBackup server processes the request. The server responds to the client with an appropriate HTTP status code indicating either success or failure. The client then extracts the required information from the server's response.

Note: The NetBackup APIs are not supported on environments where NetBackup Access Control (NBAC) is enabled.

NetBackup 8.1.1 includes the following APIs:

- NetBackup Authentication API
The NetBackup Authentication API provides authentication by means of a JSON Web Token (JWT) that is used when making the API requests. The JWT is acquired by executing a login API request and can be invalidated by executing a logout API request.

- **NetBackup Administration API**
NetBackup Administration API provides management of NetBackup jobs. The API can get job details for a specific job or get a list of jobs based on filter criteria; restart or resume a job; suspend, cancel; or delete a job; get a job's file list; and get the job logs.
- **NetBackup Catalog API**
The NetBackup Catalog API provides access to the NetBackup catalog to get details about backup images. The API can list backup images based on filters or get details for a specific backup image ID.
- **NetBackup Configuration API**
The NetBackup Configuration API provides configuration and management controls for NetBackup hosts, NetBackup policies, Web Socket servers, and VM server credentials.
- **NetBackup Recovery API**
The NetBackup Recovery API provides the capability of recovering from VMware backup images. The API supports VMware full VM recovery to the original or alternate location.
- **NetBackup Security API**
The NetBackup Security API provides access to the security resources of NetBackup. The API can manage authorization tokens, host ID-based certificates, security configuration options and auditing.

See the *NetBackup API Reference* documentation on SORT for more information. This HTML document is a reference tool that describes each API and its options.

Note: Make sure to read the Getting Started section of the document.

To locate the NetBackup 8.1.1 API Reference on SORT

- 1** From the SORT Home page, select **KNOWLEDGE BASE > Documents**.
- 2** From the categories under **Show documents for**, select the following values:
 - Product: NetBackup
 - Platform: Windows and UNIX
 - Document categories: All
 - Document languages: ALL
- 3** Find NetBackup 8.1.1 in the list of NetBackup product versions and select **Product guides**.
- 4** Select **NetBackup 8.1.1 API Reference**.

Integrated snapshot framework between NetBackup and CloudPoint

With this release of NetBackup, Veritas delivers an integration framework between NetBackup and the Veritas CloudPoint product. The framework enables NetBackup to support various methods for snapshot-based data protection for disk arrays.

Veritas will add supported hardware platforms and CloudPoint versions asynchronously to NetBackup releases. In the near future, look for integrated snapshot management (ISM) information, such as supported disk arrays and CloudPoint versions, in the [NetBackup Hardware Compatibility List \(HCL\)](#).

More information about integrated snapshot management (ISM) with NetBackup and CloudPoint is also available in the following guides:

- [NetBackup Snapshot Client Administrator's Guide](#)
- [NetBackup Administrator's Guide, Volume I](#)

Bare Metal Restore with secure communications support

Bare Metal Restore (BMR) introduces secure communications support in the NetBackup 8.1.1 release on Linux, Windows, and Solaris platforms. NetBackup 8.1.1 does not currently support Bare Metal Restore on AIX and HP-UX platforms.

BMR requires host ID-based certificates in the recovery and discovery environment for a secure communication between the NetBackup client and the master server. Host ID-based certificate is required to fetch the BMR configurations during the restore and discovery operation.

Note: Review the secure communication compatibility matrix for BMR to learn more about the supported boot server, client, and SRT client versions. See the “Secure communication compatibility matrices for BMR for NetBackup 8.1.1 and later releases” section within the [NetBackup Bare Metal Restore Administrator's Guide](#).

For automated restore operations or **Prepare to Restore (PTR)** and **Prepare to Discover (PTD)** enabled operations, NetBackup BMR 8.1.1 introduces new validations and restrictions. For more information about validation checks in Prepare to Restore (PTR) and Prepare to Discover (PTD) operations, see the following sections within the [NetBackup Bare Metal Restore Administrator's Guide](#):

- "Preparing a client for restore"
- "Discovering a configuration"

Once these validations complete successfully, the selected NetBackup client is marked for automatic recovery or discovery. Automatic recovery means that the `autoreissue` parameter is enabled for the host. It allows you to deploy a certificate

on the host without requiring a reissue token. For more information about **Allow Auto Reissue Certificate**, see the “Allowing or disallowing automatic certificate reissue” section within the [NetBackup Security and Encryption Guide](#).

After a successful completion of restore, the host ID-based certificate is automatically copied on the client that is restored. The `autoreissue` parameter which is required for automatic recovery is reset.

Note: With NetBackup 8.1.1, for a Windows client, after a successful completion of restore during Direct Virtual Machine (VM) conversion (physical to virtual), you must manually deploy the Certificate Authority (CA) certificate and the host ID-based certificate on the client that is restored. To learn more about how to deploy host ID-based certificates manually, see "Deploying when a token is needed" section within the [NetBackup Security and Encryption Guide](#).

In the case of **Generic Bare Metal Restore (BMR) Restore** and **Generic Discovery of Hardware** that is supported on Windows platform only, you are required to manually generate a reissue token with which you can fetch host ID-based certificates for a secure communication between the NetBackup client and the master. You must also validate the Certificate Authority (CA) hash certificate. For more information about how to create a reissue token and validate the Certificate Authority (CA) hash certificate, refer to the following sections within the [NetBackup Security and Encryption Guide](#):

- "Finding and communicating the fingerprint of a CA certificate section"
- "Creating a reissue token"

For more information about **Generic Bare Metal Restore (BMR) Restore** and **Generic Discovery of Hardware**, see the [NetBackup Bare Metal Restore Administrator's Guide](#).

For restore of BMR configurations in a BMR Auto Image Replication (AIR) setup, you are required to add a host in the host database of the Disaster Recovery (DR) domain. To learn more about how to add a host in the host database of the DR domain, see “Adding a host in the host database of the DR domain” section within the [NetBackup Bare Metal Restore Administrator's Guide](#).

NetBackup 8.1.1 support additions and changes

Note: These lists are subject to change. See the [NetBackup Master Compatibility Lists](#) for the most recent product and services support additions and changes.

The following products and services are supported starting with NetBackup 8.1.1:

- The following databases:
 - MariaDB versions 5 and 10
 - PostgreSQL versions 9 and 10
 - SQLite version 3
- IBM AIX 7.2 TL1 for NetBackup master servers and BMR servers
- Microsoft SQL Server 2017
- Microsoft SQL 2012 SP4
- Microsoft Exchange 2016 CU7 and CU8
- Microsoft SharePoint 2010/2013/2016 October 17 to January 18 CU
- Nutranix 5.1 Virtual Infrastructure
 - Backup and restore of Nutranix 5.1 Virtual Infrastructure
- Oracle Linux 7.4
 - Media server and client support on Oracle Linux 7.4
- Red Hat Enterprise Linux (RHEL) 6.9 and 7.4 (x86-64 for master servers and media servers)
- Red Hat Enterprise Linux (RHEL) 6.9 and 7.4 (z/Arch media servers)
- Media server and BMR client support on RHEL 6.9 and Oracle Enterprise (OEL) 6.9
- SAP ASE 16 SP3 for Solaris
- SAP HANA 2.0 SP2 for RHEL and SUSE
- SAP Oracle BR Tools 7.4
- Semi-Annual Channel
 - Client and Hyper-V on Semi-Annual Channel
- VMware VDDK 6.5.2
- VMware vCloud Director 9.0
- Windows Server 2016 for BMR client and BMR boot server
 - More information about this support addition is available in the following article: [During NetBackup BMR restore of Windows 2016, ReFS volumes \(if any\) are downgraded to ReFS version 1.2](#)

With this release of NetBackup, support is added for the following cloud vendors:

- ACP Cloud Storage CS3
- Alibaba Cloud Object Storage Service (OSS)
- China Telecom Cloud OOS S3

- EMC Elastic Cloud Storage (S3)
- FUJITSU Storage ETERNUS - CD10000 Hyperscale Storage Systems
- Huawei OBS - Huawei OBS Object Storage Service
- IBM Cloud Object Storage S3 for Local Network
- IBM Cloud Object Storage for Wide Area Network (WAN)
- NetApp StorageGRID Webscale - WAN
Enterprise grade object storage for the hybrid cloud. Settings optimized for WAN
- Open Telekom Cloud OBS
Cloud object storage service
- Oracle S3 Storage Cloud Service
- Quantum Lattus - Object Storage
- Red Hat Ceph Storage - Software-defined storage, On-premises and in the Cloud
- Scality RING - LAN
Scality S3 On-premises object and Cloud storage, optimized for LAN
- Scality RING - WAN
Scality S3 Multi-cloud storage, optimized for multi-site
- SUSE Enterprise Storage
Software-defined storage solution
- Veritas Access
Scale-out software-defined storage

The following products and services are no longer supported starting with NetBackup 8.1.1:

- Windows Server Failover Cluster (WSFC) on Windows Server 2008

More information about supported products and services is available:

See [“About NetBackup compatibility lists and information”](#) on page 56.

End-of-life for multiple NetBackup products, features, and platforms

Starting with the next release of NetBackup, support is discontinued for the following features, functionality, and OS and database platforms:

- Hewlett Packard Enterprise HP-UX (all versions) as a NetBackup master or media server platform
- IBM AIX (all versions) as a NetBackup master or media server platform

- Red Hat Enterprise Linux (RHEL) 6.7 or older
- CentOS 6.7 or older
- Oracle Linux 6.7 or older
- The following cloud connectors:
 - AT&T (Atmos API-based connector)
 - Rackspace (Swift API-based connector)

This list is subject to change. Complete and up-to-date NetBackup end-of-life (EOL) information is available on [SORT](#). Also check the [NetBackup Master Compatibility list](#) for currently supported features, functionality and platforms.

General information about end-of-life notifications is also available:

See [“About NetBackup end-of-life notifications”](#) on page 57.

Support has ended for vSphere 5.1

Starting with the NetBackup 8.1 release, NetBackup no longer supports VMware vSphere 5.1, 5.1 U1, 5.1 U2, and 5.1 U3. See the [NetBackup Master Compatibility List](#) for the most recent support additions and changes.

NetBackup support utility (nbsu) has been updated

The NetBackup support utility (`nbsu`) has been updated in NetBackup 8.1.1. The previous version of `nbsu` (renamed `old_nbsu`) is deprecated and is to be removed in a future NetBackup release. Veritas recommends use of the newer version (`nbsu`).

More information about the new version of `nbsu` is available in the following guides:

[NetBackup Commands Guide](#)

[NetBackup Troubleshooting Guide](#)

Several shutdown commands to be deprecated in a future release

A new, fully documented command for shutting down NetBackup processes and daemons will be provided in an upcoming release. At that point, the following commands will no longer be available:

- `bp.kill_all`
- `bpdown`
- `bpclusterkill`

Please plan accordingly. The new command will be announced in future release notes and in the *NetBackup Commands Reference Guide*.

IPv6 support information for NetBackup 8.1.1

NetBackup does not support the use of IPv6 addresses (for example: 2001:db8:85a3:8d3:1319:8a2e:370:7348) where you are able to specify a host name. If a host name is required, NetBackup does not support the use of an IPv6 address, even though host names can resolve to IPv6 addresses through DNS, local hosts files, or other means. This rule remains true even though host names can resolve to IPv6 addresses through DNS, local hosts files, or other means. Not all NetBackup commands and options accept IPv6 addresses. See the [NetBackup Commands Reference Guide](#) for release 8.1.1 for details about IPv6 support for specific commands.

Note: More information about IPv6 support limitations is available in the following article. It contains important notes and recommendations that you need to know before you configure IPv6 in your NetBackup environment:

https://www.veritas.com/support/en_US/article.100041420

Update cloud configuration file on the master server immediately after install or upgrade to NetBackup 8.1.1

If you use cloud storage in your NetBackup environment, you may need to update your cloud configuration file on the NetBackup master server immediately after you install or upgrade to NetBackup 8.1.1. If a cloud provider or related enhancement is not available in the cloud configuration file after upgrading to NetBackup 8.1.1, related operations will fail.

Veritas continuously adds new cloud support to the cloud configuration files between releases. The cloud storage support included in the NetBackup 8.1.1 final build matches that which is contained in the cloud configuration package version 2.3.2.

Updating your cloud configuration files is necessary only if your cloud storage provider was added to the cloud configuration package version 2.3.3 or newer. The following cloud support has been added to version 2.3.3 but were not included in the NetBackup 8.1.1 final build:

- Deutsche Telekom Open Telekom Cloud (S3) - Changed default URL style
- IBM Cloud Object Storage (S3) - Cold storage class
- IBM Cloud Object Storage (S3) - Flex storage class
- IBM Cloud Object Storage (S3) - EU Cross Region

- IBM Cloud Object Storage (S3) - EU South Region
- IBM Cloud Object Storage (S3) - Standard storage class
- IBM Cloud Object Storage (S3) - US Cross Region
- IBM Cloud Object Storage (S3) - US East Region
- IBM Cloud Object Storage (S3) - Vault storage class
- Iron Mountain Iron Cloud (S3)
- NetApp StorageGRID (S3) - LAN
- NetApp StorageGRID (S3) - Changed default URL style for WAN
- NooBaa (S3)
- Oracle Cloud Infrastructure (S3)

For the latest cloud configuration package, see the following tech note:

<http://www.veritas.com/docs/100033434>

For additional information on adding cloud storage configuration files, refer to the following tech note:

<http://www.veritas.com/docs/100039095>

NetBackup supports backups to Amazon Glacier storage class

Starting with version 8.1.1, NetBackup supports backup to Amazon Glacier storage class wherein you can protect your data for long-term retention by backing up data to Amazon (AWS) Glacier using NetBackup. See the [NetBackup Cloud Administrator's Guide](#) for details.

NetBackup supports backups using cloud tiering

You can configure cloud tiering to back up your data to STANDARD, STANDARD_IA, or GLACIER storage class by setting the number of days the data resides in each storage class. See the [NetBackup Cloud Administrator's Guide](#) for details.

Support for bpstart_notify and bpend_notify scripts using Oracle Intelligent Policy (OIP)

Support is added for the `bpstart_notify` and `bpend_notify` scripts using an Oracle Intelligent Policy (OIP). The support of these scripts does not extend to non-OIP policies. See the [NetBackup for Oracle Administrator's Guide](#) for more information.

NetBackup Bare Metal Restore functionality is supported for restoring NetBackup 8.1.1 clients

In the NetBackup 8.1.1 release, NetBackup Bare Metal Restore functionality is supported on Windows, Linux, and Solaris platforms for restoring the clients that have NetBackup 8.1.1 installed.

Note: For clients with NetBackup version 8.1.1 installed, NetBackup does not currently support BMR restore operations in AIX and HP-UX environments.

Note that NetBackup Bare Metal Restore functionality is not supported for restoring the clients which have NetBackup version 8.1 installed. You can, however, still use Bare Metal Restore for restoring the clients which have NetBackup version 8.0 and earlier installed. While restoring 8.0 and earlier clients, Veritas recommends that you use Shared Resource Tree (SRT) having 8.0 and earlier client version.

MSDP updates in NetBackup 8.1.1

NetBackup 8.1.1 introduces the following MSDP enhancements:

- MSDP is FIPS validated
MSDP is now Federal Information Processing Standard (FIPS) validated and can be operated in FIPS mode.
- MSDP Encryption using KMS service
NetBackup incorporates Key Management Server (KMS) with MSDP. KMS is a master server-based symmetric Key Management Service that ensures a secure data path for MSDP. A customer key is retrieved from NetBackup KMS to encrypt the data in MSDP.
- Fixed-length deduplication and variable-length deduplication
You can now choose between fixed-length deduplication and variable-length deduplication. In variable-length deduplication, NetBackup processes the data, calculates the size boundaries, and segments the data in variable sizes. Each data segment is assigned a unique ID and NetBackup intelligently evaluates whether any data segment with the same ID exists so that it is not backed up again. Variable-length deduplication improves deduplication rates, reduces backup storage, improves backup performance, and lowers the overall cost that is spent on data protection.

For more information about these updates, see the [NetBackup Deduplication Guide](#).

NetBackup install now includes Nutanix Acropolis Hypervisor and Hadoop plug-ins

With NetBackup version 8.1.1, the Nutanix Acropolis Hypervisor (AHV) plug-in and the Hadoop plug-in are installed as part of the NetBackup installation. Depending on your environment, you can configure only the required plug-in.

More information is available in the following guides:

[NetBackup for Nutanix Acropolis Hypervisor Administrator's Guide](#)

[NetBackup for Hadoop Administrator's Guide](#)

Dependency to select the Enterprise Vault version to configure policy directives is removed

Starting with NetBackup 8.1.1, the dependency to select the Enterprise Vault version to configure policy directives is removed. See the [NetBackup for Enterprise Vault Agent Administrator's Guide](#) for more details.

Operational notes

This chapter includes the following topics:

- [About NetBackup 8.1.1 operational notes](#)
- [NetBackup installation and upgrade operational notes](#)
- [NetBackup administration and general operational notes](#)
- [NetBackup administration interface operational notes](#)
- [NetBackup Accelerator operational notes](#)
- [NetBackup Bare Metal Restore operational notes](#)
- [NetBackup database and application agent operational notes](#)
- [NetBackup internationalization and localization operational notes](#)
- [NetBackup for NDMP operational notes](#)
- [NetBackup Snapshot Client operational notes](#)
- [NetBackup virtualization operational notes](#)

About NetBackup 8.1.1 operational notes

NetBackup operational notes describe and explain important aspects of various NetBackup operations that may not be documented elsewhere in the NetBackup documentation set or on the Veritas Support website. The operational notes can be found in the *NetBackup Release Notes* for each version of NetBackup. Typical operational notes include known issues, compatibility notes, and additional information about installation and upgrade.

Operational notes are often added or updated after a version of NetBackup has been released. As a result, the online versions of the *NetBackup Release Notes* or

other NetBackup documents may have been updated post-release. You can access the most up-to-date version of the documentation set for a given release of NetBackup at the following location on the Veritas Support website:

[NetBackup Release Notes, Administration, Installation, Troubleshooting, Getting Started, and Solutions Guides](#)

See [“About related NetBackup documents”](#) on page 59.

NetBackup installation and upgrade operational notes

NetBackup can be installed and upgraded in heterogeneous environments using a variety of methods. NetBackup is also compatible with a mixture of servers and clients that are at various release levels in the same environment. This topic contains some of the operational notes and known issues that are associated with the installation, upgrade, and software packaging of NetBackup 8.1.1.

Do not install from the menu that appears when the installation DVD is inserted

The operating system may open a user interface window (such as File Manager on Solaris) when the installation DVD is inserted into the disc drive. Veritas recommends that you do not use this window to install NetBackup products because unpredictable results may occur. Make sure to follow the installation instructions that are found in the *NetBackup Installation Guide*.

About support for HP-UX Itanium vPars SRP containers

Hewlett-Packard Enterprise (HPE) introduced a new type of container for HP-UX Virtual Partitions (vPars)-enabled servers called Secure Resource Partitions (SRPs). As part of the security changes introduced by SRPs, native HP-UX install tools such as `swinstall` and `swremove` are disabled from being run within the SRP environment. The `swinstall` and `swremove` tools can only be called from the global host running vPars, which then pushes the native packages to the SRP containers.

NetBackup only supports installing into the global view. NetBackup installation fails if you try to install into an HPE Itanium SRP container (private file system, shared file system, or workload).

Web service connection between NetBackup 8.1.1 IPv6-only master server and 8.1 dual stack host is not established during installation

If the NetBackup master server is 8.1.1 (or 8.1) with IPv6-only configuration and you want to install NetBackup 8.1 software on a host with dual stack configuration, the web service connection between the hosts is not established. Because of this issue, a host ID-based certificate is not deployed on the 8.1 host during NetBackup installation.

Workaround: Manually deploy the host ID-based certificate on the 8.1 host after the installation. Refer to the following article:

https://www.veritas.com/support/en_US/article.000127129

A Java error can occur on AIX 7.1

On AIX 7.1, the following message may appear in the installer:

```
WARNING: Installation of Java LiveUpdate agent failed.  
Refer to file /tmp/JLU-Log/JavaLiveUpdate-Install.log on bmraix57 for more information.
```

If you encounter the message, run the following Java command and verify the error output:

```
# /usr/opensv/java/jre/bin/java  
Error: Port Library failed to initialize: -125  
Error: Could not create the Java Virtual Machine.  
Error: A fatal exception has occurred. Program will exit.
```

If this error output is generated, refer to the following IBM support article to resolve the issue:

<http://www-01.ibm.com/support/docview.wss?uid=swg11V12285>

Note: Other errors can cause the warning message to appear. The output from the Java command can determine if the fix from IBM can resolve the issue.

Installation fails for clients with pure IPV6 enabled on HP-UX 11.31 IA64

NetBackup 8.1.1 installation fails for a client with pure IPv6 enabled on an HP-UX 11.31 IA64 platform. The installation fails because HP-UX commands such as `swlist` and `swinstall` are not supported in pure IPv6 mode.

Workaround:

Enable or configure IPv4 along with IPv6 when you install NetBackup 8.1.1 on a client on an HP-UX platform.

Or

Before you install NetBackup 8.1.1, perform the following procedure to edit default values:

- 1 Open the following file:

```
/var/adm/sw/defaults
```

- 2 Add the following entry to the file:

```
rpc_binding_info=ncacn_ipv6_tcp:[2121] ncadg_ipv6_udp:[2121]
```

- 3 Save and close the file.

- 4 Stop and then start `swagentd` with the following commands:

```
swagentd -k  
swagentd
```

- 5 Open the following file:

```
/${HOME}/.swdefaults
```

- 6 Add the following entry to the file:

```
rpc_binding_info=ncacn_ipv6_tcp:[2121] ncadg_ipv6_udp:[2121]
```

- 7 Save and close the file.

NetBackup administration and general operational notes

NetBackup provides a complete, flexible data protection solution for a variety of platforms. The platforms include Windows, UNIX, and Linux systems. In addition to a standard set of data protection features, NetBackup can also utilize several other licensed and non-licensed components to better protect a variety of different systems and environments. This topic contains some of the general operational notes and known issues that are associated with the administration of NetBackup 8.1.1.

NetBackup limitations when using IPv6 address as client name or image name

The following NetBackup limitations can occur if an IPv6 address is used as a client name or an image name:

- Using IPv6 addresses as client names in a policy do not work with Instant recovery (IR) snapshots on Windows systems. That can cause a backup to fail. Specify a host name instead of an IPv6 address.
Image names are created automatically in NetBackup, and consist of a combination of the client name and a timestamp. If the client name is configured in the policy as the IPv6 address, the result is an image name (in the image catalog) that includes the IPv6 address. That causes the backup to fail.
- Using IPv6 addresses as image names under the catalog do not work with Instant Recovery (IR) snapshots on Windows systems.

Connection time-out issue with IPv6-only NetBackup master server and dual stack host

In a mixed environment of IP addresses where the NetBackup master server is IPv6-only and media server (or client host) is dual stack, then the connection between the master server and media server (client host) is timed out. This can lead to a peer host validation time-out issue with respect to secure communication. The `bptestnetconn -w -H <IPv6-only master server name>` command takes much longer to connect; sometimes more than 120 seconds to execute.

The following error message is displayed:

When `bptestnetconn -w -H <IPv6-only master server name>` is run from a media host or client host, it takes much longer to connect to master server.

The `nbutils vxul` debug log entries show the following output:

```
Connecting to [10.210.71.166]:[1556]..,35:nbclnt_curl_prefnet::helper_connect,5
NON-Blocking connect in progress. Watch WRITE.,35:nbclnt_curl_prefnet::helper_connect,5
New sockfd is [5]..,35:nbclnt_curl_prefnet::helper_connect,5
Returning VN_STATUS_SUCCESS,35:nbclnt_curl_prefnet::helper_connect,5
Returning VN_STATUS_SUCCESS,42:nbclnt_curl_prefnet::tryeach_iface_connect,5
Returning rc,49:nbclnt_curl_prefnet::establish_initial_connection,5
Returning VN_STATUS_SUCCESS,33:nbclnt_curl_prefnet::nbio_connect,5
RC [0] STAT [-1] MAXFD [5] TIMEOUT [150]..,32:nbclnt_curl_prefnet::bio_connect,5
Non-blocking connect attempt failed. errno=[110]=[Connection timed out],48:
  nbclnt_curl_prefnet::helper_check_connect_status,1
:For host [pdqeb126vm12.pne.ven.veritas.com] already tried connecting to [10.210.71.166],
  now trying[2620:128:f0a1:9006::167]..,39:nbclnt_curl_prefnet::iterate_next_iface,5
```

```
[vnet_addrinfo.c:9125] vnet_configured_stacks(), remote_ipv4_supported flag:  
 1 0x1,20:vnet_adjusted_family,1  
[vnet_addrinfo.c:9126] vnet_configured_stacks(), remote_ipv6_supported flag:  
 1 0x1,20:vnet_adjusted_family,1  
[vnet_addrinfo.c:5173] using interface ANY,27:vnet_get_pref_netconnection,4  
Returning VN_STATUS_SUCCESS,44:nbclnt_curl_prefnet::usable_prefnet_settings,5  
Returning VN_STATUS_SUCCESS,39:nbclnt_curl_prefnet::iterate_next_iface,5  
Connecting to [2620:128:f0a1:9006::167]:[1556].,35:nbclnt_curl_prefnet::helper_connect,5
```

The DNS lookup of the IPv6-only master server gives two IP addresses – IPv4 and IPv6 – instead of only IPv6 address. This may be possible as the master server was once configured in dual stack mode. While connection is established between the media server (or client host) and the master server daemon, VNET APIs sort IP addresses. First, all IPv4 addresses are sorted and then IPv6 addresses are sorted irrespective of the IP address family set in the `bp.conf` file. Because of this, the media server (or client host) first tries with the IPv4 address, but times out as the master server is IPv6-only and then tries out the IPv6 address. But finally, the peer host validation operation is timed out before the successful IPv6 connection.

Workaround: Avoid IPv4 (unusable IP address for the IPv6-only master server) connection attempt by setting `PREFERRED_NETWORK` in media server's (or client host's) `bp.conf` file from where the connection is initiated. Set the `PREFERRED_NETWORK` parameter as follows:

```
PREFERRED_NETWORK = <master server ipv4-only address> PROHIBITED
```

NetBackup host communication may fail because of SLAAC configuration

In the case of Stateless Autoconfiguration (SLAAC), auto-configured IPv6 addresses are assigned to NetBackup hosts in addition to the static IP address. If the auto-configured IP address is not added to DNS and a NetBackup host uses that IP address to communicate with another NetBackup host, the receiving host may reject the connection. Certificate deployment may fail because of this issue.

Workaround: Disable SLAAC on the NetBackup host.

NetBackup administration interface operational notes

The NetBackup administrator has a choice of several interfaces to use to administer NetBackup. All of the interfaces have similar capabilities. This topic contains some

of the operational notes and known issues that are associated with these interfaces in NetBackup 8.1.1.

For more information about the specific NetBackup administration interfaces, refer to the *NetBackup Administrator's Guide, Volume I*. For information about how to install the interfaces, refer to the *NetBackup Installation Guide*. For information about platform compatibility with the administration consoles, refer to the various NetBackup compatibility lists available on the Veritas Support website.

See [“About NetBackup compatibility lists and information”](#) on page 56.

- NetBackup Web User Interface (UI)
- NetBackup Administration Console
- Remote Administration Console
- Character-based, menu interfaces for device management
- Command line

"Operation timed out" message appears when policies are accessed from the Remote Administration Console

When you access policies from the NetBackup Remote Administration Console, a warning message is displayed:

```
The operation timed out. The operation has exceeded the time out limit, though service or daemon may still be processing the request.
```

The warning appears because the `NBJAVA_CORBA_DEFAULT_TIMEOUT` default value is less than required. However, the policies still can be accessed after you click **OK**.

Workaround: Modify the `NBJAVA_CORBA_DEFAULT_TIMEOUT` value:

- From:

```
SET NBJAVA_CORBA_DEFAULT_TIMEOUT=60
```
- To:

```
SET NBJAVA_CORBA_DEFAULT_TIMEOUT=300
```

After completing the changes, restart the NetBackup Remote Administration Console. The policies are loaded within maximum 5 minutes (300 seconds).

For more information about setting configuration options for the NetBackup Remote Administration Console, see the [NetBackup Administrator's Guide, Volume I](#) for NetBackup 8.1.1.

Using X forwarding to launch the NetBackup Administration Console can fail on certain Linux platforms

Using X forwarding to launch the NetBackup Administration Console can fail on certain Linux platforms, particularly Red Hat Enterprise Linux 6.0 (RHEL 6.0) on VMware. The issue is a result of incompatibilities between the default GNU C Library (`glibc`) and Advanced Vector Extensions (AVX) on newer hardware. The issue should be fixed in a future release of `glibc`.

Workaround: Run the `export LD_BIND_NOW=1` command before you execute `runInstaller`.

Intermittent issues with X forwarding of NetBackup Administration Console

Intermittent issues may occur with X forwarding of the NetBackup Administration Console. This behavior only occurs when you use X forwarding. This issue does not occur at the local console. The issue is most commonly seen on Linux servers, but not exclusively. The issue generally occurs when older versions of X viewers are used, such as Xming and XBrowser.

The use of MobaXterm seems to minimize or eliminate the issue. If you experience issues with X forwarding, consider upgrading your X viewer and retrying the operation or access the server from the local console.

Reduced functionality during the initialization of the NetBackup Administration Console

The following issues occur if one or more of the NetBackup services or daemons on the host that is specified in the logon dialog is not running:

- Reduced functionality (for example, only the Backup, Archive, and Restore component is available).
- **Cannot Connect** errors occur during initialization of the NetBackup Administration Console

NetBackup Administration Console may encounter a core dump issue when the Simplified Chinese UTF-8 locale is used on a Solaris SPARC 64-bit system with Solaris 10 Update 2 or later

The NetBackup Administration Console may encounter a core dump issue when the Simplified Chinese UTF-8 locale is used on a Solaris SPARC 64-bit system

with Solaris 10 Update 2 and later installed. For more information, refer to Bug ID 6901233 at the following URL on the Oracle Technology Network website:

http://bugs.sun.com/bugdatabase/view_bug.do?bug_id=6901233

If you encounter this issue, apply the appropriate Solaris patches or upgrades that Oracle provides for this issue.

NetBackup Accelerator operational notes

NetBackup Accelerator increases the speed of full backups. The increase in speed is made possible by change detection techniques on the client. The client uses the change detection techniques and the client's current file system to identify the changes that occurred since the last backup. This topic contains some of the operational notes and known issues that are associated with NetBackup Accelerator in version 8.1.1.

Accelerator version requirements for master, media, client, and media servers

NetBackup Accelerator requires master servers, media servers, and client servers to be at NetBackup 7.5 or higher. NetBackup appliance media servers require NetBackup Appliance 2.5 or higher for Accelerator support.

NetBackup Bare Metal Restore operational notes

NetBackup Bare Metal Restore (BMR) automates and streamlines the server recovery process, making it unnecessary to reinstall operating systems or configure hardware manually. This topic contains some of the operational notes and known issues that are associated with BMR in NetBackup 8.1.1.

SRT creation may fail using NetBackup 8.1 or 8.1.1 as the BMR boot server on AIX and HP-UX platforms with NetBackup 8.0 and earlier clients

If you attempt to create a Shared Resource Tree (SRT) using NetBackup 8.1 or NetBackup 8.1.1 as the BMR boot server on AIX and HP-UX platforms with NetBackup 8.0 and earlier clients, the SRT creation operation fails with an error message.

Workaround: Veritas recommends that you not upgrade your BMR boot server on AIX and HP-UX platforms to NetBackup 8.1 or NetBackup 8.1.1.

Allow Auto Reissue Certificate option may remain enabled for a client after a BMR operation is cleaned up by the user

When you perform a BMR Prepare To Restore (PTR) or Prepare To Discover (PTD) operation, the **Allow Auto Reissue Certificate** option is enabled if the selected client is secure. This option remains in the enabled state even after you clean up the BMR restore or discovery task.

Workaround: Verify that the **Allow Auto Reissue Certificate** option for the selected client is enabled after you clean up or abort the BMR task. If you intend to disable this option for the selected client, you may do it using the NetBackup Administration Console or the command-line interface.

For more information, see the "Allowing or disallowing automatic reissue of a certificate" section within the [NetBackup Security and Encryption Guide](#).

Discovery task may remain in Finalizing state after client PTD task completes successfully

For a Solaris client, the discovery task may display the state of the task as 'Finalizing' under the **Bare Metal Restore Management > BMR Tasks** tab even after the Prepare to Discover (PTD) task for the client completes successfully.

Workaround: Either update the state of the task or delete the task manually. To update the state of the task manually, run the following command on the master server for the target client:

```
bmrc -op complete -resource discovertask -client <clientName> -status  
0
```

BMR restore task may remain in Finalizing state after the client is restored successfully

The Bare Metal Restore (BMR) restore task may display the state of the task as "Finalizing" under the **Bare Metal Restore Management > BMR Tasks** tab even after the restore task for the client completes successfully. An external procedure that you have configured for execution during the first boot or clean up may not have been executed.

Workaround: If the client is restored successfully, perform the following steps:

- 1 Open a command prompt or shell on the restored client.
- 2 Navigate to the appropriate directory in command prompt or shell based on the operating system of the restored client.
 - If the restored client runs Linux, then navigate to the following path:

<Installation Directory>/netbackup/bin

- If restored client runs Windows, then navigate to the following path:

<Installation Directory>\netbackup\bin

- 3 Run the following command by providing the correct client host name for <clientName>:

```
bmrc -op complete -resource restoretask -client <clientName>
-status 0
```

- 4 If an external procedure is configured to be executed during the first boot or cleanup, then, execute the external procedure on the restored client manually.

NetBackup database and application agent operational notes

NetBackup offers several methods of protecting various database and application technologies, such as Oracle, Microsoft SQL Server, and Microsoft Exchange Server. This topic contains some of the operational notes and known issues that are associated with the protection of database technologies in NetBackup 8.1.1.

NetBackup for SharePoint operational notes

NetBackup for SharePoint Server extend the capabilities of NetBackup to include online backups and restores of SharePoint databases. This topic contains some of the operational notes and known issues that are associated with NetBackup for SharePoint in NetBackup 8.1.1.

GRT backup fails for SharePoint if the SharePoint database object path exceeds the Windows maximum path limit

A Granular Recovery Technology (GRT) backup fails for SharePoint if the SharePoint database object path exceeds the Windows maximum path limit.

During GRT backup, SharePoint database objects are temporarily stored as files within a folder hierarchy. This folder name consists of the SQL Server host name, Backup image ID, and Content Database name within the NetBackup temporary directory path. Together this combination should not exceed the Windows path length limitation. For more details, refer to the following Microsoft article:

[https://msdn.microsoft.com/en-us/library/windows/desktop/aa365247\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/windows/desktop/aa365247(v=vs.85).aspx)

If the Windows path length limitation is exceeded, then the result can be a failure to capture the backup artifacts for GRT for SharePoint.

Workaround: Ensure that the content database name along with the other parameters mentioned above does not exceed the Windows maximum path limit.

NetBackup internationalization and localization operational notes

This topic contains some of the operational notes and known issues that are associated with internationalization, localization, and non-English locales in NetBackup 8.1.1.

Support for localized environments in database and application agents

Non-ASCII characters are supported in the following fields for NetBackup database and application agents.

- Oracle:
Datafile path, Tablespace name, TNS path
- DB2:
Datafile path, Tablespace name
- SAP:
English SAP runs on localized OS. (No specific SAP fields are localized.)
- Exchange:
Mailboxes, Mails, Attachment names and contents, Public folders, Contacts, Calendar, Folders and Database paths
- SharePoint:
Site Collection Names, Libraries and lists within the site collection
- Lotus Notes:
Emails data /.nsf files
- Enterprise Vault (EV) agent:
Vault store, Partitions, Data
- VMWare:
Username, Password, VM display name, DataCenter, Folder, Datastore, Resource pool, VApp, Network name, VM disk path

NetBackup for NDMP operational notes

NetBackup for NDMP is an optional NetBackup application. It enables NetBackup to use the Network Data Management Protocol (NDMP) to initiate and control backups and restores of Network Attached Storage (NAS) systems. This topic contains some of the operational notes and known issues that are associated with NetBackup for NDMP in NetBackup 8.1.1.

Parent directories in the path of a file may not be present in an NDMP incremental image

An issue can occur if a NetBackup Network Data Management Protocol (NDMP) backup policy is configured with the directive `set type=tar` in the backup selection. Parent directories in the path of a file that an incremental NDMP backup saves may not be present in the backup image. For more information on this issue, refer to the following tech note on the Veritas Support website:

<http://www.veritas.com/docs/000095049>

NetBackup Snapshot Client operational notes

NetBackup Snapshot Client provides a variety of snapshot-based features for NetBackup. It supports clients on UNIX, Linux, and Windows platforms, on Fibre Channel networks (SANs) or traditional LANs. Each snapshot method relies on the snapshot technology that is built into the storage subsystem where the data is stored. This topic contains some of the operational notes and known issues that are associated with Snapshot Client in NetBackup 8.1.1.

CloudPoint plug-in configuration fails with Status 109

CloudPoint plug-in configuration fails with Status 109. You can safely ignore this error. The CloudPoint plug-in that you are trying to configure is already configured from NetBackup or CloudPoint.

NetBackup virtualization operational notes

NetBackup offers several methods of protecting virtual environments. The two primary virtualization technologies that NetBackup can protect are VMware and Hyper-V, although NetBackup can protect other virtualization technologies as well. This topic contains some of the operational notes and known issues that are associated with the protection of virtualization technologies in NetBackup 8.1.1.

NetBackup for VMware operational notes

NetBackup for VMware provides backup and restore of the VMware virtual machines that run on VMware ESX servers. Additionally, the NetBackup plug-in for VMware vCenter (vCenter plug-in) allows the vSphere Client to monitor virtual machine backups and recover a virtual machine from a backup. This topic contains some of the operational notes and known issues that are associated with NetBackup for VMware and the vCenter plug-in in NetBackup 8.1.1.

The NetBackup web UI cannot restore a VM from a replicated backup image

If a virtual machine backup image was replicated to a different domain, the NetBackup web UI does not support restoring the virtual machine from that image.

As a workaround, use the NetBackup Administration Console to restore the virtual machine from the replicated backup image.

The NetBackup web UI does not validate VMware server entries

Under **VMware servers**, if you click **Add** and enter an invalid name or invalid user name or password for a vCenter server or ESXi server, the invalid server is added. NetBackup does not verify whether it can connect to the server.

As a workaround, select the invalid server and click **Delete**.

NetBackup cannot use the nbd or nbdssl transport mode to connect directly to VMware IPv6 ESXi servers

NetBackup cannot establish nbd or nbdssl connections directly to pure IPv6 ESXi servers. This limitation occurs only for ESXi credentials that have been configured in NetBackup.

This problem is a known VMware issue. For more details, refer to the Known Issues and Workarounds section of the Virtual Disk Development Kit 6.5 Release Notes, which are available on the following site:

[VDDK for vSphere 6.5](#).

Note: This issue does not affect the hotadd and SAN transport modes. Also, this issue does not affect NetBackup connections that are established through IPv6 vCenters (with vCenter credentials).

The NetBackup plug-in for vSphere Web Client cannot start a VM recovery by right-clicking on a successful backup event

The NetBackup plug-in for vSphere Web Client provides several methods of starting a VM recovery. In the following method, a GUI issue prevents starting the recovery:

- 1 In vSphere Web Client, in **Hosts and Clusters**, under **Monitor > Veritas NetBackup** tab > **Events > Backup Successful**, you right-click on a successful backup and select **Recover**.
- 2 On the “Virtual Machine Options” screen of the **Recovery Wizard**, two of the restore options are disabled. You cannot complete the wizard to start the recovery.

As an alternative, you can use either of the following methods to complete the wizard and start the recovery:

- Under **Home**, click **Veritas NetBackup** and then click **Recovery Wizard**.
- Or, in the **Virtual Machines** pane, right-click on the VM and click **Veritas NetBackup > Recovery Wizard**.

Note: This issue does not affect the plug-in’s **Instant Recovery Wizard**.

Using the NetBackup appliance to install the NetBackup plug-in for VMware vSphere Web Client

The following information on installing the NetBackup vSphere Web Client plug-in was omitted from the *NetBackup Plug-in for VMware vSphere Web Client Guide*.

To install the NetBackup plug-in from the NetBackup appliance as master server

- ◆ Log on to the appliance as a **NetBackupCLI** user and run the `vwcp_manage` command to install the plug-in.

For example, to install the plug-in on `vcenter_server.example.com`:

```
vwcp_manage --register -v vcenter_server.example.com -u  
vcenter_username -p password
```

To uninstall the plug-in:

```
vwcp_manage --unregister -v vcenter_server.example.com -u  
vcenter_username -p password
```

VMware block-level incremental backups expire when the previous full backup expires

NetBackup VMware block-level incremental backups of a virtual machine are dependent on the previous full backup of the same VM made by the same policy. When a full VMware backup expires, any later block-level incremental backups for the VM that are based on the full backup also expire and are deleted. The expiration occurs without regard to the retention period in the incremental schedule. This issue applies to all versions of NetBackup for VMware.

Note: This issue does not apply to NetBackup Accelerator backups.

A VM restore to a vCenter fails when NetBackup has credentials for a restore ESX server

NetBackup's **VMware Restore ESX Server** option (under **Media and Device Management > Credentials > Virtual Machine Servers**) allows a particular ESXi server to perform the data movement for a VM restore. If the destination for the restore is a vCenter (not the ESXi server), the restore fails with status 2820, "NetBackup VMware policy restore error." The VM is restored but NetBackup cannot revert to the VM snapshot and delete the snapshot.

A NetBackup 8.1 emergency engineering binary (EEB) is available that fixes this issue.

As a workaround, you can use the vSphere interface to revert to the restored VM's snapshot and then remove the snapshot.

To revert to and remove the VM snapshot

- 1 In vSphere Web Client 6.0, right-click on the restored VM and select **Snapshots > Revert to Latest Snapshot**.
- 2 Right-click on the VM again and select **Snapshots > Manage Snapshots**. Use the **Manage VM Snapshots** dialog to remove the snapshot.

For details on your version of vSphere and how to remove snapshots, refer to VMware documentation.

About SORT for NetBackup Users

This appendix includes the following topics:

- [About Veritas Services and Operations Readiness Tools](#)
- [Recommended SORT procedures for new installations](#)
- [Recommended SORT procedures for upgrades](#)

About Veritas Services and Operations Readiness Tools

Veritas Services and Operations Readiness Tools (SORT) is a robust set of standalone and web-based tools that support Veritas enterprise products. For NetBackup, SORT provides the ability to collect, analyze, and report on host configurations across UNIX/Linux or Windows environments. This data is invaluable when you want to assess if your systems are ready for an initial NetBackup installation or for an upgrade.

Access SORT from the following webpage:

<https://sort.veritas.com/netbackup>

Once you get to the SORT page, more information is available as follows:

- **Installation and Upgrade Checklist**
Use this tool to create a checklist to see if your system is ready for a NetBackup installation or an upgrade. This report contains all the software and the hardware compatibility information specific to the information provided. The report also includes product installation or upgrade instructions, as well as links to other references.

- **Hot fix and EEB Release Auditor**
 Use this tool to find out whether a release that you plan to install contains the hot fixes that you need.
- **Custom Reports**
 Use this tool to get recommendations for your system and Veritas enterprise products.
- **NetBackup Future Platform and Feature Plans**
 Use this tool to get information about what items Veritas intends to replace with newer and improved functionality. The tool also provides insight about what items Veritas intends to discontinue without replacement. Some of these items include certain NetBackup features, functionality, 3rd-party product integration, Veritas product integration, applications, databases, and the OS platforms.

Help for the SORT tools is available. Click **Help** in the upper right corner of the SORT home page. You have the option to:

- Page through the contents of the help similar to a book
- Look for topics in the index
- Search the help with the search option

Recommended SORT procedures for new installations

Veritas recommends new NetBackup users perform the three procedures that are listed for an initial introduction to SORT. The tool has many other features and functions, but these serve as a good introduction to SORT. In addition, the procedures provide a helpful base of knowledge for other SORT functionality.

Table A-1

Procedure	Details
Create a Veritas Account on the SORT webpage	See “To create a Veritas Account on the SORT page” on page 42.
Create generic installation reports	See “To create a generic installation checklist” on page 42.
Create system-specific installation reports	See “To create a system-specific installation report for Windows” on page 43. See “To create a system-specific installation report for UNIX or Linux” on page 44.

To create a Veritas Account on the SORT page

- 1 In your web browser, navigate to:
<https://sort.veritas.com/netbackup>
- 2 In the upper right corner, click **Login**, then click **Register now**.
- 3 Enter the requested login and contact information:

Email address	Enter and verify your email address
Password	Enter and verify your password
First name	Enter your first name
Last name	Enter your last name
Company name	Enter your company name
Country	Enter your country
Preferred language	Select your preferred language
CAPTCHA text	Enter the displayed CAPTCHA text. If necessary, refresh the image.

- 4 Click **Submit**.
- 5 When you receive your login information, you can log into SORT and begin uploading your customized information.

To create a generic installation checklist

- 1 In your web browser, navigate to:
<https://sort.veritas.com/netbackup>
- 2 Find and select the **Installation and Upgrade Checklist** widget.

3 Specify the requested information

Product	Select the appropriate product from the drop-down menu. For NetBackup select NetBackup Enterprise Server or NetBackup Server .
Product version you are installing or upgraded to	Select the correct version of NetBackup. The most current version is always shown at the top of the list.
Platform	Select the operating system that corresponds to the checklist you want generated.
Processor	Select the correct processor type for your checklist.
Product version you are upgrading from (optional)	For new installations, do not make any selections. For upgrades, you can select the currently installed version of NetBackup.

4 Click **Generate Checklist**.

- 5** A checklist corresponding to your choices is created. You can modify your selections from this screen, and click **Generate Checklist** to create a new checklist.

You can save the resulting information as a PDF. Numerous options are available for NetBackup and many of them are covered in the generated checklist. Please spend time reviewing each section to determine if it applies to your environment.

To create a system-specific installation report for Windows

- 1** Go to the SORT website:
<https://sort.veritas.com/netbackup>
- 2** In the **Installation and Upgrade** section, select **Installation and Upgrade custom reports by SORT data collectors**.
- 3** Select the **Data Collectors** tab
- 4** Select the radio button for **Graphical user interface** and download the correct data collector for your platform.

The data collector is OS-specific. To collect information about Windows computers, you need the Windows data collector. To collect information about UNIX computers, you need the UNIX data collector.

- 5** Launch the data collector after it finishes downloading.

- 6 On the **Welcome** screen, select **NetBackup** from the product family section and click **Next**.
- 7 On the **System Selection** screen, add all computers you want analyzed. Click **Browse** to see a list of computers you can add to the analysis. Veritas recommends starting the tool with an administrator or a root account.
- 8 When all systems are selected, review the **System names** section and click **Next**.
- 9 In the **Validation Options** screen, under **Validation options**, select the version to which you plan to upgrade.
- 10 Click **Next** to continue
- 11 The utility performs the requested checks and displays the results. You can upload the report to My SORT, print the results, or save them. Veritas recommends that you upload the results to the My SORT website for ease of centralized analysis. Click **Upload** and enter your My SORT login information to upload the data to My SORT.
- 12 When you are finished, click **Finish** to close the utility.

To create a system-specific installation report for UNIX or Linux

- 1 Go to the SORT website:
<https://sort.veritas.com/netbackup>
- 2 In the **Installation and Upgrade** section, select **Installation and Upgrade custom reports by SORT data collectors**.
- 3 Select the **Data Collector** tab.
- 4 Download the appropriate data collector for your platform.

The data collector is OS-specific. To collect information about Windows computers, you need the Windows data collector. To collect information about UNIX computers, you need the UNIX data collector.
- 5 Change to directory that contains downloaded utility.
- 6 Run `./sortdc`

The utility performs checks to confirm the latest version of the utility is installed. In addition, the utility checks to see it has the latest data. The utility then lists the location of the log file for this session.
- 7 If requested, press **Enter** to continue.
- 8 Select the **NetBackup Family** at the **Main Menu**.

- 9** Select **Installation/Upgrade report** when prompted **What task do you want to accomplish?**
 You can select multiple options by separating your response with commas.
- 10** Specify the system or systems you want included in the report.
 If you previously ran a report on the specified system, you may be prompted to run the report again. Select **Yes** to re-run the report.
 The utility again lists the location of the log files for the session.
 The progress of the utility is displayed to the screen.
- 11** Specify **NetBackup** when prompted for the product you want installation or upgrade reports.
- 12** Enter the number that corresponds to the version of NetBackup you want to install.
 The utility again lists the location of the log files for the session.
 The progress of the utility is displayed to the screen.
- 13** The utility prompts you to upload the report to the SORT website if you want to review the report online. The online report provides more detailed information than the text-based on-system report.
- 14** When your tasks are finished, you can exit the utility. You have the option to provide feedback on the tool, which Veritas uses to make improvements to the tool.

Recommended SORT procedures for upgrades

Veritas recommends current NetBackup users perform the three procedures that are listed for an initial introduction to SORT. The tool has many other features and functions, but these serve as a good introduction to SORT for users who already use NetBackup. In addition, the procedures provide a helpful base of knowledge for other SORT functionality.

Table A-2

Procedure	Details
Create a Veritas Account on the SORT webpage	See "To create a Veritas Account on the SORT page" on page 42.

Table A-2 (continued)

Procedure	Details
Create a system-specific upgrade report	See "To create a system-specific installation report for Windows" on page 43. See "To create a system-specific installation report for UNIX or Linux" on page 44.
Review the future platform and feature plans. Review the hot fix and emergency engineering binary release auditor information.	See "To review future platform changes and feature plans" on page 46. See "To review hot fix and emergency engineering binary information" on page 46.

To review future platform changes and feature plans

- 1 In your web browser, navigate to:
<https://sort.veritas.com/netbackup>
- 2 Find and select the **NetBackup Future Platform and Feature Plans** widget.
- 3 Select **Display Information**.
- 4 Review the information provided
- 5 Optional - sign in to create notification - Click **Sign in and create notification**.

To review hot fix and emergency engineering binary information

- 1 In your web browser, navigate to:
<https://sort.veritas.com/netbackup>
- 2 Find and select the **NetBackup Hot Fix and EEB Release Auditor** widget.
- 3 Enter the hot fix or emergency engineering binary (EEB) information.
- 4 Click **Search**.
- 5 The new page shows a table with the following columns:

Hot fix of EEB Identifier	Shows the hot fix or EEB number that was entered on the previous screen.
Description	Displays a description of the problem that is associated with the hot fix or EEB.
Resolved in Versions	Provides the version of NetBackup where this issue is resolved.

NetBackup installation requirements

This appendix includes the following topics:

- [About NetBackup installation requirements](#)
- [Required operating system patches and updates for NetBackup](#)
- [NetBackup 8.1.1 binary sizes](#)

About NetBackup installation requirements

This release of NetBackup may contain changes to the minimum system requirements and procedures that are required for installation. These changes affect the minimum system requirements for both Windows and UNIX platforms. Much of the installation instructional information in the *NetBackup Release Notes* is provided for convenience. Detailed installation instructions are found in the *NetBackup Installation Guide*, the *NetBackup Upgrade Guide*, and the *NetBackup Getting Started Guide*.

See “[NetBackup installation and upgrade operational notes](#)” on page 25.

- Before you upgrade the NetBackup server software, you must back up your NetBackup catalogs and verify that the catalog backup was successful.
- Database rebuilds are likely to occur in each major, minor (single-dot), and release update (double-dot) version of NetBackup. Therefore, before upgrading to NetBackup 8.1.1, you must ensure that you have an amount of free disk space available that is equal to or greater than the size of the NetBackup database. That means for default installations, you are required to have that amount of free space on the file system containing the `/usr/opensv/db/data` (UNIX) or `<install_path>\Veritas\NetBackupDB\data` (Windows) directories. If you

have changed the location of some of the files in either of these directories, free space is required in those locations equal to or greater than the size of the files in those locations. Refer to the *NetBackup Administrator's Guide, Volume I* for more information about storing NBDB database files in alternate locations.

Note: This free disk space requirement assumes that you have already performed the best practice of completing a successful catalog backup before you begin the upgrade.

- Master and media servers must have a minimum soft limit of 8000 file descriptors per process for NetBackup to run correctly.
For more information about the effects of an insufficient number of file descriptors, refer to the following tech note on the Veritas Support website:
<http://www.veritas.com/docs/000013512>
- To install NetBackup on Windows 2008/Vista/2008 R2/ UAC-enabled environments, you must log on as the official administrator. Users that are assigned to the Administrators Group and are not the official administrator cannot install NetBackup in UAC-enabled environments.
To allow users in the Administrators Group to install NetBackup, disable UAC.
- NetBackup master and media servers exchange server version information at startup, and every 24 hours. This exchange occurs automatically. During startup after an upgrade, the upgraded media server uses the `vmd` service to push its version information to all of the servers that are listed in its server list.
- Veritas recommends that you have the master server services up and available during a media server upgrade.
- All compressed files are compressed using `gzip`. The installation of these files requires `gunzip` and `gzip`, so make sure that they are installed on the computer before you attempt to install NetBackup. For all UNIX platforms except HP-UX, the binaries are expected to be in `/bin` or `/usr/bin` and that directory is a part of the root user's `PATH` variable. On HP-UX systems, the `gzip` and `gunzip` commands are expected to be in `/usr/contrib/bin`. Installation scripts add that directory to the `PATH` variable. These commands must be present to have successful UNIX installations.

Required operating system patches and updates for NetBackup

NetBackup server and client installations are only supported on a defined set of operating systems (OSs) that are listed in the NetBackup compatibility lists. Most OS vendors provide patches, updates, and service packs (SPs) for their products. The best practice of NetBackup Quality Engineering is to test with the latest SP or update level of the OS when a platform is tested. Therefore, NetBackup is supported on all vendor GA updates (n.1, n.2, etc.) or SPs (SP1, SP2, and so on). However, if a known compatibility issue exists on a specific SP or updated OS level, this information is identified in the compatibility lists. If no such compatibility issues are noted, Veritas recommends that you install the latest OS updates on your servers and clients before you install or upgrade NetBackup.

The compatibility lists include information about the minimum OS level that is required to support a minimum NetBackup version in the latest major release line. In some cases, new releases of NetBackup may require specific vendor OS updates or patches. [Table B-1](#) includes the OS updates and patches that are required for NetBackup 8.1.1. However, this information may sometimes change in between releases. The most up-to-date required OS patch information for NetBackup 8.1.1 and other NetBackup releases can be found on the Veritas Services and Operational Readiness Tools (SORT) website and in the NetBackup compatibility lists.

See [“About NetBackup compatibility lists and information”](#) on page 56.

See [“About Veritas Services and Operations Readiness Tools”](#) on page 40.

Note: An OS vendor may have released a more recent update or patch that supersedes or replaces a patch that is listed in [Table B-1](#). The OS patches that are listed here and in SORT should be considered at the minimum patch level that is required to install and run NetBackup. Any OS updates, patches, or patch bundles that supersede or replace those listed in [Table B-1](#) are supported unless otherwise specified. Veritas recommends that you visit the Support website of your particular OS vendor for their latest patch information.

Note: Any required patch that is listed in [Table B-1](#) for the NetBackup client should also be installed on your master servers and media servers to ensure proper client functionality.

Table B-1 Required operating system patches and updates for NetBackup 8.1.1

Operating system type and version	NetBackup role	Patch	Notes
AIX 6.1	Master, media, client	AIX run-time libraries 9.0.0.3 or later	The run-time libraries need to be at 9.0.0.3 or later. You may need to restart after you change to version 9.0.0.3.
Beijing Linx Software Corp Linx OS	Master, media, client	Kernel 2.6.32.26 or later	
CentOS 6.x	Master, media, client	Kernel 2.6.32-608.el6 or later	
CentOS 7.x	Master, media, client	Kernel 3.10.0-241.el7 or later	
Debian 8	Master, media, client	Kernel 3.16.7-1 or later	More information is available: Debian 8 release notes
HP-UX	Master, media, client	COMPLIBS.LIBM-PS32	If you install AT on an HP-UX platform, this patch is required.
HP-UX IA-64	Master, media, client	Networking.NET-RUN: /usr/lib/libip6.sl	
	Master, media, client	Networking.NET-RUN-64: /usr/lib/pa20_64/libip6.1	
	Master, media, client	Networking.NET-RUN-64: /usr/lib/pa20_64/libip6.sl	
	Master, media, client	Networking.NET2-RUN: /usr/lib/hpux32/libip6.so	
	Master, media, client	Networking.NET2-RUN: /usr/lib/hpux32/libip6.so.1	
	Master, media, client	Networking.NET2-RUN: /usr/lib/hpux64/libip6.so	
	Master, media, client	Networking.NET2-RUN: /usr/lib/hpux64/libip6.so.1	
	Master, media, client	Networking.NET2-RUN: /usr/lib/libip6.1	

Table B-1 Required operating system patches and updates for NetBackup 8.1.1 (continued)

Operating system type and version	NetBackup role	Patch	Notes
HP-UX 11.31	Media	QPK1131 (B.11.31.1003.347a) patch bundle	This patch bundle is required for NetBackup media server support. It is an HP-UX March 2010 patch bundle.
Oracle Linux 6	Master, media, client	Kernel 2.6.32-504.14.1 or later	More information is available: Kernel security and bug fix update
Oracle Linux 7	Master, media, client	Kernel 3.10.0-229.7.1 or later	More information is available: Kernel security and bug fix update
Red Hat Enterprise Linux 6	Master, media, client	Kernel 2.6.32-504.16.2.el6 or later	More information is available: Red Hat tech note RHSA-2015:0864 - Security Advisory
Red Hat Enterprise Linux 7	Master, media, client	Kernel 3.10.0-229.7.2.el7 or later	More information is available: Red Hat tech note RHSA-2015:1137 - Security Advisory
SUSE Linux 11	Master, media, client	SUSE Linux Enterprise 11 Service Pack 3 or later	More information is available: Security update for Linux kernel:SUSE-SU-2014:1695-1
SUSE Linux 12	Master, media, client	Kernel 3.12.31 or later	More information is available: Security update for the Linux Kernel: SUSE-SU-2015:0068-1
Windows Vista x86-64	Client	KB936357	Microsoft microcode reliability update (suggested)
	Client	KB952696	Contains the necessary updates to ensure that you can back up encrypted files.
Windows Server 2008 x86-64	Client	KB952696	Contains the necessary updates to ensure that you can back up encrypted files.

Table B-1 Required operating system patches and updates for NetBackup 8.1.1 (continued)

Operating system type and version	NetBackup role	Patch	Notes
Windows Server 2008 x86-64 (SP2)	Master, media, client	KB979612	Hot fix to improve TCP loopback latency and UDP latency
Windows Server 2008 x86-64 R2	Master, media, client	KB2265716	Hot fix for when a computer randomly stops responding. Note that this patch is also contained in Windows Server 2008 R2 SP1.
	Master, media, client	KB982383	Hot fix for a decrease in I/O performance under a heavy disk I/O load. Note that this patch is also contained in Windows Server 2008 R2 SP1.
	Master, media, client	KB983544	Update for the "Modified time" file attribute of a registry hive file. Note that this patch is also contained in Windows Server 2008 R2 SP1.
	Master, media, client	KB979612	Hot fix to improve TCP loopback latency and UDP latency Note that this patch is also contained in Windows Server 2008 R2 SP1.

Veritas recommends the following updates when you run NetBackup on Windows operating systems:

- Microsoft `storport` hot fix. This fix applies to Windows x86 and x64, on both SP1 and SP2: (required) <http://support.microsoft.com/?id=932755>
- Symantec AntiVirus. Update to latest version and latest update (required).
- The `Symevent` driver updates (required). Update to latest driver version.

NetBackup 8.1.1 binary sizes

Table B-2 contains the approximate binary sizes of the NetBackup 8.1.1 master server, media server, and client software for the various supported operating systems. These binary size indicate the amount of disk space occupied by the product after an initial installation.

Note: Table B-2 and Table B-3 only list the supported operating systems. For up-to-date information about the specific operating system versions that NetBackup currently supports, check the Installation and Upgrade Checklist on the Symantec Operations Readiness Tools (SORT) website, or the *NetBackup Operating System Compatibility List* document at <http://www.netbackup.com/compatibility>.

See “About Veritas Services and Operations Readiness Tools” on page 40.

Table B-2 NetBackup binary sizes for compatible platforms

OS	CPU Architecture	32-bit client	64-bit client	64-bit server	Notes
AIX	POWER		1692 MB	7722 MB	
Canonical Ubuntu	x86-64		1700 MB		
CentOS	x86-64		1105 MB	6860 MB	Media server or client compatibility only.
Debian GNU/Linux	x86-64		1700 MB		
HP-UX	IA-64		2162 MB	2162 MB	
OpenVMS	IA-64		128 MB		The listed sizes are for the NetBackup 7.5 binaries. No NetBackup 8.1.1 binaries for OpenVMS are provided.
Oracle Linux	x86-64		1105 MB	6423 MB	
Red Hat Enterprise Linux Server	x86-64		1105 MB	6861 MB	
Red Hat Enterprise Linux Server	z/Architecture		889 MB	3905 MB	Media server or client compatibility only.

Table B-2 NetBackup binary sizes for compatible platforms (*continued*)

OS	CPU Architecture	32-bit client	64-bit client	64-bit server	Notes
Solaris	SPARC		1191 MB	6111 MB	
Solaris	x86-64		1180 MB	6111 MB	
SUSE Linux Enterprise Server	x86-64		1059 MB	6597 MB	
SUSE Linux Enterprise Server	z/Architecture		883 MB	3857 MB	Media server or client compatibility only.
Windows	x86-64		442 MB	2255 MB	Covers all compatible Windows x64 platforms

The following space requirements also apply to some NetBackup installations on Windows:

- If you install NetBackup in a custom location on a Windows system, some portions of the software are installed on the system drive regardless of the primary application folder location. The space that is required on the system drive generally accounts for 40 to 50 percent of the total binary size that is listed in [Table B-2](#).
- If you install NetBackup server on a Windows cluster, some portions of the software are installed on the cluster shared disk. Note, the space that is required on the cluster shared disk is in addition to the binary size that is listed in [Table B-2](#). The additional required space is equivalent to 15 to 20 percent of the total binary size.

NetBackup OpsCenter

[Table B-3](#) contains the approximate binary sizes of the OpsCenter Agent, Server, and **ViewBuilder** for the various operating systems that are compatible with NetBackup OpsCenter 8.1.1.

Table B-3 NetBackup OpsCenter binary sizes for compatible platforms

OS	CPU Architecture	Agent	Server	ViewBuilder
Oracle Linux	x86-64		710 MB	
Red Hat Enterprise Linux Server	x86-64		709 MB	

Table B-3 NetBackup OpsCenter binary sizes for compatible platforms
(continued)

OS	CPU Architecture	Agent	Server	ViewBuilder
SUSE Linux Enterprise Server	x86-64		678 MB	
Windows Server	x86-64	246 MB	676 MB	236 MB

NetBackup plug-ins

Disk space requirements for the NetBackup vCenter Web Client Plug-in and the NetBackup System Center Virtual Machine Manager Add-in can be found in the *NetBackup Plug-in for VMware vSphere Web Client Guide* and the *NetBackup Add-in for Microsoft SCVMM Console Guide*, respectively.

NetBackup compatibility requirements

This appendix includes the following topics:

- [About NetBackup compatibility lists and information](#)
- [About NetBackup end-of-life notifications](#)

About NetBackup compatibility lists and information

The *NetBackup Release Notes* document contains a great deal of the compatibility changes that are made between NetBackup versions. However, the most up-to-date compatibility information on platforms, peripherals, drives, and libraries can be found on the Veritas Operations Readiness Tools (SORT) for NetBackup website.

See “[About Veritas Services and Operations Readiness Tools](#)” on page 40.

For NetBackup, SORT provides an Installation and Upgrade Checklist report as well as the ability to collect, analyze, and report on host configurations across your environments. In addition, you can determine which release contains the hot fixes or EEBs that you may have installed in your environment. You can use this data to assess whether your systems are ready to install or upgrade to a given release.

NetBackup compatibility lists

In addition to SORT, Veritas has made available a variety of compatibility lists to help customers quickly reference up-to-date compatibility information for NetBackup. These compatibility lists can be found on the Veritas Support website at the following location:

<http://www.netbackup.com/compatibility>

Note: Select "Compatibility Between NetBackup Versions" from the compatibility lists for information about which versions of NetBackup are compatible with each other.

About NetBackup end-of-life notifications

Veritas is committed to providing the best possible data protection experience for the widest variety of systems: platforms, operating systems, CPU architecture, databases, applications, and hardware. Veritas continuously reviews NetBackup system support. This review ensures that the proper balance is made between maintaining support for existing versions of products, while also introducing new support for the following:

- General availability releases
- Latest versions of new software and hardware
- New NetBackup features and functionality

While Veritas continually adds support for new features and systems, it may be necessary to improve, replace, or remove certain support in NetBackup. These support actions may affect older and lesser-used features and functionality. The affected features and functionality may include support for software, OS, databases, applications, hardware, and 3rd-party product integration. Other affected items may include the products that are no longer supported or nearing their end-of-support life with their manufacturer.

Veritas provides advance notification to better help its customers to plan for upcoming changes to the support status of the various features in NetBackup. Veritas intends to list older product functionality, features, systems, and the 3rd-party software products that are no longer supported in the next release of NetBackup. Veritas makes these support listings available as soon as possible with a minimum of 6 months where feasible before major releases.

Using SORT

Advance notification of future platform and feature support including end-of-life (EOL) information is available through a widget on the Veritas Services and Operations Readiness Tools (SORT) for NetBackup home page. The NetBackup Future Platform and Feature Plans widget on the SORT for NetBackup home page can be found directly at the following location:

<https://sort.veritas.com/nbufutureplans>

NetBackup end-of-support-life (EOSL) information is also available at the following location:

https://sort.veritas.com/eosl/show_matrix

See “[About Veritas Services and Operations Readiness Tools](#)” on page 40.

About changes in platform compatibility

The NetBackup 8.1.1 release may contain changes in support for various systems. In addition to using SORT, you should make sure to review the *NetBackup Release Notes* document and the NetBackup compatibility lists before installing or upgrading NetBackup software.

See “[About new enhancements and changes in NetBackup](#)” on page 11.

<http://www.netbackup.com/compatibility>

Other NetBackup documentation and related documents

This appendix includes the following topics:

- [About related NetBackup documents](#)
- [About NetBackup release notes documents](#)
- [About NetBackup administration documents](#)
- [About NetBackup installation documents](#)
- [About NetBackup configuration documents](#)
- [About NetBackup troubleshooting documents](#)
- [About other NetBackup documents](#)

About related NetBackup documents

Note: All references to UNIX also apply to Linux platforms unless otherwise specified.

Veritas releases various guides and technical manuals that relate to NetBackup software. These documents are published for new versions of NetBackup based on release type.

Unless otherwise specified, the NetBackup documents can be downloaded in PDF format from the following location:

<http://www.veritas.com/docs/000003214>

Note: Veritas assumes no responsibility for the correct installation or use of PDF reader software.

About NetBackup release notes documents

The following release notes documents are published for NetBackup software:

- *NetBackup Release Notes*
This document contains a great deal of assorted information about particular releases of NetBackup for both UNIX and Windows platforms. This information includes, but is not limited to, new features, platform compatibility changes, patch requirements, documentation corrections, and known issues. This document also contains any operational notes that may not be found elsewhere in the NetBackup manuals or the online Help.
- *NetBackup Emergency Engineering Binary Guide*
This document contains listings of some of the known issues that were identified, fixed, and available to NetBackup customers in the form of an Emergency Engineering Binary (EEB). It also lists a certain number of the issues that were fixed in a given release, but that may not have resulted in an EEB.

About NetBackup administration documents

The following administrator guides are published for NetBackup software:

- *NetBackup Administrator's Guide, Volume I*
This guide explains how to configure and manage NetBackup on a UNIX or Windows server. This guide describes the NetBackup interfaces and how to configure hosts, storage devices and media, storage lifecycle policies (SLPs), backups, replication, and monitoring and reporting.
- *NetBackup Administrator's Guide, Volume II*
This guide explains additional configuration and interface options for NetBackup. This guide also contains reference topics and information about NetBackup licensing.

About administration of NetBackup options

The following administrator guides for NetBackup options are published for NetBackup software:

- *NetBackup Add-in for Microsoft SCVMM Console Guide*

This guide describes how to install and troubleshoot the NetBackup Add-in for System Center Virtual Machine Manager (SCVMM), and how to use it to recover virtual machines from NetBackup backup images.

- *NetBackup AdvancedDisk Storage Solutions Guide*
This guide explains how to configure, manage, and troubleshoot the NetBackup AdvancedDisk storage option. This guide describes how to use the disk storage that is exposed to NetBackup as a file system for backups.
- *NetBackup Bare Metal Restore Administrator's Guide*
This guide explains how to install, configure, and manage NetBackup Bare Metal Restore (BMR) boot servers and clients to automate and streamline the server recovery process.
- *NetBackup Cloud Administrator's Guide*
This guide explains how to configure and manage NetBackup to back up and restore data from cloud Storage as a Service (STaaS) vendors through Veritas OpenStorage.
- *NetBackup DataStore SDK Programmer's Guide for XBSA*
This guide explains how to set up and use the XBSA Application Programming Interface to create a backup or archive application that communicates with NetBackup.
- *NetBackup Deduplication Guide*
This guide explains how to plan, configure, migrate, monitor, and manage data deduplication in a NetBackup environment using the NetBackup Media Server Deduplication Option.
- *NetBackup for Acropolis Hypervisor (AHV) Administrator's Guide*
This guide explains how to protect Acropolis Hypervisor (AHV) with NetBackup.
- *NetBackup for Hadoop Administrator's Guide*
This guide explains how to protect Hadoop data using NetBackup, as well as how to deploy the Hadoop plug-in and configure NetBackup for Hadoop.
- *NetBackup for Hyper-V Administrator's Guide*
This guide explains how to configure and manage snapshot-based backup policies for the virtual machines that run on Windows Hyper-V servers.
- *NetBackup for NDMP Administrator's Guide*
This guide explains how to install, configure, and use NetBackup for Network Data Management Protocol (NDMP) to initiate and control backups and restores of Network Attached Storage (NAS) systems.
- *NetBackup for VMware Administrator's Guide*
This guide describes how to configure NetBackup to perform such functions as off-host backups of VMware virtual machines that run on VMware ESX servers.

- *NetBackup Logging Reference Guide*
This guide explains the various NetBackup logs and reports which can help you troubleshoot any problems that you encounter, including how to run reports from the NetBackup Administration Console and where logs are stored on your system.
- *NetBackup OpenStorage Solutions Guide for Disk*
This guide describes how to configure and use an intelligent disk appliance in NetBackup for backups.
- *NetBackup OpsCenter Administrator's Guide*
This guide describes how to use the NetBackup OpsCenter user interface to provide reporting, monitoring, and alerts for NetBackup and its agents and options.
- *NetBackup OpsCenter Reporting Guide*
This guide explains how to use NetBackup OpsCenter to generate and use comprehensive business-level reports to track the effectiveness of data backup and archive operations.
- *NetBackup OpsCenter Performance and Tuning Guide*
This performance and tuning guide is for administrators who want to analyze, evaluate, and tune OpsCenter performance. This document is intended to provide guidance on how to tune OpsCenter for maximum performance, which system configurations you should use for OpsCenter depending on your backup environment, and best practices to follow for increased OpsCenter performance.
- *NetBackup Plug-in for VMware vSphere Web Client*
This guide describes how to install and troubleshoot the vSphere Web Client plug-in for NetBackup. The vSphere Web Client plug-in allows you to monitor backups of virtual machines which are managed by vCenter servers, recover virtual machines from backups, and monitor VM backup status and related messages.
- *NetBackup Replication Director Solutions Guide*
This guide describes how to implement NetBackup OpenStorage-managed snapshots and snapshot replication, where the snapshots are stored on the storage systems of partnering companies.
- *NetBackup SAN Client and Fibre Transport Guide*
This guide describes how to set up, configure, and manage the NetBackup SAN Client feature to use the Fibre Transport method for high-speed client backups.
- *NetBackup Snapshot Client Administrator's Guide*
This guide explains how to install, configure, and use NetBackup Snapshot Client to enable a variety of snapshot-based features, including integration with VMware, Hyper-V, and Replication Director.

- *NetBackup Vault Administrator's Guide*
This guide explains how to install, configure, and use NetBackup Vault to automate selection and duplication of backup images for off-site media storage.
- *NetBackup Vault Operator's Guide*
This guide explains how to use NetBackup Vault to vault media as part of two major task areas: Administration and operation. Some of the described tasks include procedures for sending tapes off site, receiving tapes on site, and running reports on off-site media and vault jobs.
- *WebSocket Service (NBWSS) Reference Guide*
This guide explains how to use the NetBackup WebSocket Service (NBWSS) for communication with a cloud application and how to configure WebSocket endpoints for NBWSS.

About administration of NetBackup database agents

The following administrator guides for NetBackup database agents are published for NetBackup software:

- *NetBackup for DB2 Administrator's Guide*
This guide explains how to install, configure, and use the NetBackup for DB2 database agent.
- *NetBackup for Enterprise Vault Agent Administrator's Guide*
This guide explains how to install, configure, and use the NetBackup for Enterprise Vault agent to protect Veritas Enterprise Vault configuration information and archived data.
- *NetBackup for Informix Administrator's Guide*
This guide explains how to install, configure, and use the NetBackup for Informix agent to back up and restore the Informix databases that are on a UNIX NetBackup client.
- *NetBackup for Lotus Notes Administrator's Guide*
This guide explains how to configure and use the NetBackup for Lotus Notes agent to back up and restore Lotus Notes databases and transaction logs on NetBackup clients.
- *NetBackup for MariaDB Administrator's Guide*
This guide describes how to install, configure, and manage the NetBackup for MariaDB agent.
- *NetBackup for Microsoft Exchange Server Administrator's Guide*
This guide explains how to configure and use the NetBackup for Exchange Server agent to perform online backups and restores of Microsoft Exchange Server.

- *NetBackup for Microsoft SharePoint Server Administrator's Guide*
This guide explains how to configure and use the NetBackup for SharePoint Server agent to back up and restore the SharePoint databases that are on a Windows NetBackup client.
- *NetBackup for Microsoft SQL Server Administrator's Guide*
This guide explains how to configure and use the NetBackup for Microsoft SQL Server agent to back up and restore Microsoft SQL Server databases and transaction logs.
- *NetBackup for Oracle Administrator's Guide*
This guide explains how to configure and use the NetBackup for Oracle agent to back up and restore the Oracle databases that are on a NetBackup client.
- *NetBackup for PostgreSQL Administrator's Guide*
This guide describes how to install, configure, and manage the NetBackup for PostgreSQL agent.
- *NetBackup for SAP Administrator's Guide*
This guide explains how to configure and use the NetBackup for SAP agent to back up and restore SAP and SAP HANA databases that are on a NetBackup client.
- *NetBackup for SQLite Administrator's Guide*
This guide describes how to install, configure, and manage the NetBackup for SQLite agent.
- *NetBackup for Sybase Administrator's Guide*
This guide explains how to configure and use the NetBackup for Sybase agent to back up and restore Sybase databases that are on a NetBackup client.

About NetBackup installation documents

The following installation documents are published for NetBackup software:

- *NetBackup Installation Guide*
This guide explains how to install NetBackup server, client, and administrative software on UNIX and Windows platforms.
- *NetBackup LiveUpdate Guide*
This guide explains how to set up a NetBackup LiveUpdate server to provide a policy-driven method of distributing NetBackup software releases within your environment.
- *NetBackup Quick-Start Upgrade Guide*
This guide is designed as a supplement to the *NetBackup Upgrade Guide* for the experienced user. The information in this guide assumes that you have

already read and understand the upgrade prerequisites. (Use of this guide by novice or inexperienced NetBackup administrators is not recommended. These administrators should use the *NetBackup Upgrade Guide*.)

- *NetBackup Upgrade Guide*
This guide is provided to help assist you plan and accomplish your upgrade of NetBackup software. This guide is updated periodically to provide you with the most up-to-date information.

About NetBackup configuration documents

The following configuration guides for NetBackup options are published for NetBackup software:

- *NetBackup Device Configuration Guide*
This guide describes how to set up and configure the operating systems of the storage device hosts you use for NetBackup servers.

About NetBackup troubleshooting documents

The following troubleshooting guides are published for NetBackup software:

- *NetBackup Status Codes Reference Guide*
This guide provides a complete list of the status codes for NetBackup, Media Manager, device configuration, device management, and robotic errors. Each status code listing includes an explanation and the recommended actions.
- *NetBackup Troubleshooting Guide*
This guide provides general troubleshooting information and explains the various troubleshooting methods that can be used for NetBackup products and features.

About other NetBackup documents

The following documents are published for NetBackup software:

- *NetBackup Backup, Archive, and Restore Getting Started Guide*
This guide provides basic information about backup and restore procedures for new users of NetBackup. These procedures include how to back up, archive, and restore files, folders or directories, and volumes or partitions that reside on a computer.
- *NetBackup Commands Reference Guide*

This guide contains detailed information on the commands that run on UNIX systems and Windows systems, including all of the NetBackup man page commands.

- *NetBackup Clustered Master Server Administrator's Guide*
This guide provides information on how to install and configure a NetBackup master server in a cluster.
- *NetBackup Getting Started Guide*
This guide provides a high-level description of preinstallation information that is related to this release of NetBackup. The guide also includes descriptions of the NetBackup media kit, the NetBackup Electronic Software Distribution (ESD) images, and the NetBackup license key requirements.
- *NetBackup in Highly Available Environments Guide*
This guide discusses various methods for using NetBackup in highly available environments and provides guidelines for protecting NetBackup against single points of failure.
- *NetBackup Network Ports Reference Guide*
This guide provides a reference to NetBackup network ports, including master server and media server ports, client ports, default ports, and other ports that NetBackup uses.
- *NetBackup Security and Encryption Guide*
This guide provides information about on how to secure NetBackup using access control, enhanced authorization and authentication, and encryption.
- *NetBackup Third-party Legal Notices*
This document contains proprietary notices for the Third-Party Programs and the licenses for the Third-Party Programs, where applicable, that pertain to the Veritas NetBackup and OpsCenter products.