

NEC Storage V Series Plug-In for Veeam Backup & Replication Quick Start Guide

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Preface

This document provides information about the environment settings, operating restrictions, managing, and troubleshooting information that you need in order to introduce NEC Storage V Series Plug-In for Veeam Backup & Replication.

Target Product

NEC Storage V Series Plug-In for Veeam Backup & Replication Ver2.2 (2.2.271.0)

Target storage system

This document is applicable to the products (program products) corresponding to the following storage system.

- NEC Storage V10e
- NEC Storage V100
- NEC Storage V300
- NEC Storage V110
- NEC Storage V310
- NEC Storage V310F

This document may refer to the storage system of the above model simply as "storage system".

Intended audience

This document is intended for the following administrators:

- Storage system administrators who configure Veeam backup servers and storage systems.
- Backup administrators who use Veeam Backup & Replication to perform backup, restore, and replication operations for a virtual machine on a VMware ESXi host.

About the functions and software described in the manual

The following functions and software are not supported on some models of the storage system. If you use an unsupported storage system, the descriptions of the functions and software are invalid.

Functions and Software	Unsupported storage system
Synchronous Replication	NEC Storage V10e
Asynchronous Replication	
Active Mirror	
HA Device Manager	NEC Storage V10e、 V110、 V310、 V310F
Dynamic Tiering	
Storage Navigator	NEC Storage V110、 V310、 V310F
SVP (SuperVisor PC)	
Snapshot (CAW/CoW)	
Snapshot Advanced	NEC Storage V10e、 V100、 V300
Data reduction shared volume	

Chapter 1:

Overview

NEC Storage V Series Plug-In for Veeam Backup & Replication is a plug-in that enables integration of storage systems in Veeam Backup & Replication.

1.1 What is Veeam Backup & Replication?

Veeam Backup & Replication backs up virtual and physical environments, including virtual machines, physical servers, and cloud instances, and replication of virtual machines for orchestrated failover and failback.

If the virtual machine's VM snapshot retention time is long, it takes longer to commit the VM snapshot data after the backup is complete, which increases load on the machine. With NEC Storage V Series Plug-In, you can reduce the VM snapshot retention time, and prevent the performance degradation of the virtual machine.

You can use the following Veeam Backup & Replication functions: Backup from Storage Snapshots, Data Recovery from Storage Snapshots, and Snapshot Orchestration. For details, see the description of Storage System Snapshot Integration in the Veeam Backup & Replication documentation (<https://helpcenter.veeam.com/docs/backup/vsphere/>).

In this document, a server assigned the role of a backup proxy, which is a component of Veeam Backup & Replication, is called a backup proxy server.

1.2 System requirements

The following describes the specific requirements for NEC Storage V Series Plug-In.

- The operations of the following versions of Veeam Backup & Replication are supported.

For details about Veeam Backup & Replication requirements, see the system requirements listed in the *Veeam Backup & Replication User Guide for VMware vSphere*.

- Veeam Backup & Replication V13.0.1
- The following DKCMAIN firmware versions are supported.
 - NEC Storage V10e
88-08-09-XX or later
 - NEC Storage V100/V300
93-04-21-XX or later
 - NEC Storage V110/V310/V310F

A3-03-01-XX or later

- Licenses for the following program products are required.
 - LUN Manager
 - Dynamic Provisioning
 - Resource Partition Manager
 - Snapshot Advanced (For NEC Storage V110/V310/V310F)
 - Snapshot (For NEC Storage V10e/V100/V300)
- NEC Storage V Series Plug-In uses port number 80 or 443 for the REST API connection to the storage system. Refer to this information when setting up a firewall.

1.3 Environment requirements

To use NEC Storage V Series Plug-In, your environment must meet the following requirements:

- You can use Veeam Backup & Replication to perform operations on the VMware ESXi host on which the virtual machine to be backed up is located.

For details on the components and system configuration of Veeam Backup & Replication, see the description of Deployment Scenarios in the Veeam Backup & Replication documentation.

- The datastore where the VMware ESXi host is to be backed up must be created from a volume on a supported storage system.

The volume must meet the following conditions:

- The volumes are connected to some hosts by using a host group or iSCSI target.
 - The host mode of the host group or iSCSI target is [01 [(Deprecated)VMware]] or [21 [VMware Extension]].
- Note the following about the volume to be backed up:
 - For the volume to be backed up, those volumes must have the Dynamic Provisioning attribute specified. Additionally, the following states are supported. If you specify settings other than the supported settings, you will no longer be able to operate the corresponding volumes with Veeam Backup & Replication.
 - * In addition to the Dynamic Provisioning attribute, the Dynamic Tiering attribute is also specified.
 - * The dedupe and compression function is enabled.

Note

When the volume to be backed up is a data reduction shared volume, NEC Storage V Series Plug-In uses Snapshot Advanced to back up the corresponding volume. When the volume to be

backed up is a non-data reduction shared volume, NEC Storage V Series Plug-In uses Snapshot to back up the corresponding volume.

For the volumes to be backed up that are supported by each storage system

The volumes to be backed up that are supported by each storage system are as follows:

- For NEC Storage V110/V310/V310F

NEC Storage V Series Plug-In only supports backup of data reduction shared volumes.

- For NEC Storage V10e/V100/V300

Backup of data reduction shared volumes is not supported.

For Snapshot Immutability

To use backups using Snapshot Immutability, all of the following conditions must be met:

- * The storage systems must have the following DKCMAIN firmware versions:

Storage system	DKCMAIN firmware version
NEC Storage V110/V310/V310F	A3-04-21-XX or later

- * The volume to be backed up must be a data reduction shared volume.
- * The version of Veeam Backup & Replication must be the one that supports Snapshot Immutability.

Note

- + For details on the version requirements and other conditions for using Snapshot Immutability in Veeam Backup & Replication, see the Veeam Backup & Replication documentation.
- + For details on the protection period for snapshots using the Snapshot Immutability function, also see [3.3 Running and checking backup jobs with the Snapshot Immutability function enabled \(on page 29\)](#) .

- The following table outlines the scope of support and required settings for copy-type program products related to the volume to be backed up. If you specify settings outside of the scope of support, or do not specify the required settings, you will no longer be able to operate the corresponding volumes with Veeam Backup & Replication.

Copy-type program product	Volumes supported to be backed up	Required settings
Snapshot	Root volume	-
Snapshot Advanced	Root volume	-
Synchronous Replication	For backup using synchronous replication: Primary volume and secondary volume	- The volume to be backed up must belong to a device group¹ - Settings for such as copy groups must be configured

Copy-type program product	Volumes supported to be backed up	Required settings
	For backup that does not use synchronous replication: Primary volume	- if you are performing backup using synchronous replication.² - Do not connect the secondary volumes to the VMware ESXi host used for restoration.
Asynchronous Replication	Primary volume on the primary site	- The volume to be backed up must belong to a device group¹ - Do not connect the secondary volumes to the VMware ESXi host used for restoration.
Active Mirror	- For backup using synchronous replication: Primary volume and secondary volume - For backup that does not use synchronous replication: Primary volume³	- The volume to be backed up must belong to a device group¹ - Settings for such as copy groups must be configured if you are performing backup using synchronous replication.² - For backup that does not use synchronous replication, if the two volumes in an Active Mirror pair are registered as one datastore, register only one of the two storage systems that make up the pair in Veeam Backup & Replication.
Local Replication	Volumes that have the Local Replication attribute specified are not supported.	-
Notes: - This device group must belong to a copy group created by specifying the same MU number as the Synchronous Replication, Asynchronous Replication, or Active Mirror pair. To back up an Active Mirror volume, specify the copy group name in the following format: <i>VBR_any-string-of-single-byte-characters</i>. - For details on how to backup Synchronous Replication or Active Mirror volumes using synchronous replication, see 1.4 To back up a Synchronous Replication or Active Mirror volume by using synchronous replication (on page 4) and configure the settings in advance. - For backup that does not use synchronous replication, if the pair status of the Active Mirror is PSUS, PSUE, SSUS, or SSWS, and the volume I/O mode is Block, backup jobs will fail.		

1.4 To back up a Synchronous Replication or Active Mirror volume by using synchronous replication

To back up a Synchronous Replication or Active Mirror volume by using synchronous replication, specify settings in advance to meet the following status:

- Both the volumes that belong to the target pair meet the following conditions:

- The volumes are connected to some hosts by using a host group or iSCSI target.
- The host mode of the host group or iSCSI target is [01 [(Deprecated)VMware]] or [21 [VMware Extension]].
- Both the storage systems that make up the target pair are registered on a Veeam backup server on which NEC Storage V Series Plug-In is installed.
- The status of the configured pair is PAIR.
- The following conditions must be met in order for NEC Storage V Series Plug-In to determine whether the volumes that belong to the target pair are ready for backup:
 - Each of the primary and secondary side volumes belonging to the target pair belongs to a device group. Each device group on the primary and secondary sides belongs to a copy group created by specifying the same MU number as the target pair. When the settings are specified by using RAID Manager, the device name used to register the corresponding volume to the device group matches on the primary and secondary sides, and the copy group name to which the device group belongs matches on the primary and the secondary sides. The copy group name is in the following format: *VBR_any-string-of-single-byte-characters*.

Create new copy groups and device groups that meet the requirements. You need to create them regardless of whether the copy groups and device groups that manage the volumes to be backed up already exist. Also, do not make any changes to the existing copy groups and device groups. If a change is made, remote copy pairs might be interrupted or deleted.

For the preceding copy groups, we recommend that you use a configuration in which only a copy group that meets the requirements is created and the following pairs are managed by that copy group:

- * All pairs of Active Mirror volumes to be backed up
- * All pairs of Active Mirror volumes and Synchronous Replication volumes that are to be backed up by using synchronous replication

Note that if multiple combinations of storage systems are used to make up pairs to be backed up, you need to separately create a copy group for each combination of storage systems. At this time, the names of these copy groups must be different. If the names of these copy groups are the same, backup that uses synchronous replication might fail.

For example, if volumes with Active Mirror pairs configured are targeted for backup on both storage A and B, and on storage B and C, you must create a copy group managing the volumes with Active Mirror pairs configured on storage A and B separately from a copy group managing the volumes with Active Mirror pairs configured on storage B and C, and ensure they have different names.

- Both the storage systems that make up the target pair are mutually registered as a remote storage system by the REST API. In addition, when the storage systems are registered

by the REST API, they are registered with the IP address used for registering the storage systems on the Veeam backup server.

- The credentials (the username and password for the Veeam Backup & Replication dedicated user) registered in Veeam Backup & Replication are the same for both the storage systems that make up the target pair.

1.5 Restrictions on using NEC Storage V Series Plug-In

- In this document, descriptions related to the screen display and operation of Veeam Backup & Replication are based on the Veeam Backup & Replication Console. If you are using the Veeam Backup & Replication Web UI, and experience restrictions in screen display or operation, use the Veeam Backup & Replication Console instead.
- When you use storage system management software (such as Device Manager - Storage Navigator or RAID Manager) to perform operations involving resource locks on resource groups (meta_resource or business resource groups) to which LDEVs to be backed up are assigned or on resource groups for backup, the following operations on that storage system might fail or errors might occur:
 - Backup job
 - Rescan (Storage Discovery) Process
 - Data Recovery from Storage Snapshots
 - On-Demand Sandbox for Storage Snapshots
 - Removing Storage Systems

For operations involving resource locks, see the documentation for each management software such as Device Manager - Storage Navigator .

- If dedupe and compression is enabled for the secondary volume of a Snapshot pair or for a volume cloned by using Snapshot, you will not be able to delete snapshots of that volume by using Veeam Backup & Replication. Use the storage system's management software to delete the corresponding volume.
- Do not allocate a serial number of a virtual ID to a backup resource group. Otherwise, different volumes created by NEC Storage V Series Plug-In for Veeam Backup & Replication might be connected to the same host as devices with the same SCSI ID, which can cause a critical problem on the host.
- The NEC Storage V Series Plug-In automatically deletes resources such as temporary snapshots created during backups at regular intervals. In Ver2.0 or later, the automatic deletion cycle is set to every 24 hours, which is a change from Ver1.2 and below (which had a 10-minute cycle). Until the resources such as temporary snapshots are deleted, please allocate an ample number

of unused LDEV IDs to the backup resource group, as it uses the allocated LDEV IDs for the backup.

- When upgrading from NEC Storage V Series Plug-In for Veeam Backup & Replication Ver1.2 and below to Ver2.0 or later, please be aware of the following points:
 - If you are using the backup of volumes with Active Mirror pairs, you need to change the name of the copy group that manages volumes with Active Mirror pairs to the following format: *VBR_any-string-of-single-byte-characters* before upgrading NEC Storage V Series Plug-In. If this configuration is not performed, the backup of the mentioned volumes will fail after upgrading NEC Storage V Series Plug-In.
 - If you are using Veeam Backup & Replication v12.1.1.56 or below, upgrading Veeam Backup & Replication or installing private fix is required before upgrading NEC Storage V Series Plug-In. Please refer to the Deployment Information section in Veeam public information (<https://www.veeam.com/kb4191>) for specific instructions. If the instructions are not followed accordingly, performing an Instant Recovery using the snapshots obtained before upgrading NEC Storage V Series Plug-In may result in the virtual machines not being restored correctly.

1.6 Enhancements and Changes

The following describes the enhancements and changes for each version of NEC Storage V Series Plug-In for Veeam Backup & Replication

- Enhancements and Changes in Ver1.2 (1.2.99.0)
 - Supporting Veeam Backup & Replication v12.
 - Supporting NEC Storage V10e.
 - Dedupe and compression volume is supported as a volume to be backed up.
 - Synchronous Replication volume (primary volume only) is supported as a volume to be backed up.
 - Asynchronous Replication volume (primary volume only) is supported as a volume to be backed up.
 - Dynamic Tiering volume is supported as a volume to be backed up.
- Enhancements and Changes in Ver2.0 (2.0.114.0)
 - Supporting Veeam Backup & Replication v12.1.
 - Supporting synchronous replication (Synchronous replication in Veeam Backup & Replication).

The supported volumes are as follows.

- * Synchronous Replication volume.

- * Active Mirror volume.

The supported Veeam Backup & Replication functions are as follows.

- * Backup from Storage Snapshots.
- * Snapshot Orchestration.
- * Backup from Storage Snapshots with Snapshot Retention.
- Supporting configuration file that allow you to specify storage resources for backup.
- Enhancements and Changes in Ver2.1 (2.1.225.0)
 - Supporting Veeam Backup & Replication v12.3.
 - Supporting NEC Storage V110/V310/V310F.
- Enhancements and Changes in Ver2.2 (2.2.271.0)
 - Supporting Veeam Backup & Replication v13.0.1.
 - Supporting Veeam Software Appliance.
 - Supporting Snapshot Immutability function. In conjunction with the Snapshot Advanced data protection feature, you can now set a retention period for snapshots at the backup destination.

Note

If you upgrade to NEC Storage V Series Plug-In for Veeam Backup & Replication Ver2.0 or later in environments using NEC Storage V Series Plug-In for Veeam Backup & Replication Ver1.2 or lower, there are some settings that are required before upgrading. For details, see [1.5 Restrictions on using NEC Storage V Series Plug-In \(on page 6\)](#) .

Chapter 2:

Setting up the environment

Before introducing NEC Storage V Series Plug-In, the storage system administrator must prepare a backup environment for the storage systems that are in use. The storage system administrator must also use Veeam Backup & Replication to unregister storage systems when they are no longer needed.

Perform the following procedure to set up the environment:

1. [2.1 Preparing the backup environment for the storage system \(on page 9\)](#)
2. [2.2 Installing NEC Storage V Series Plug-In \(on page 20\)](#)
3. [2.3 Registering a storage system in Veeam Backup & Replication \(on page 20\)](#)

2.1 Preparing the backup environment for the storage system

Create backup storage resources for active storage systems, and then configure the settings so that backup operation users can access the backup storage resources and the volumes to be backed up.

Before you begin

- Do not use storage system management software such as Device Manager - Storage Navigator or RAID Manager to perform operations on the following storage resources unless a procedure or other description explicitly instructs you to use such software:

- Snapshots or snapshot clones created by using Veeam Backup & Replication

The following apply for storage system management software:

- * Secondary volumes of Snapshot pairs or Snapshot Advanced pairs
- * Volumes cloned by using Snapshot

- Storage resources created by using the procedure described in this section

If you perform operations by using storage system management software, the following problems might occur:

- The data on the storage system and the data in Veeam Backup & Replication might become inconsistent, and you might not be able to perform operations on snapshots or snapshot clones by using Veeam Backup & Replication.
 - The data in a snapshot or in its clone might change.
 - You might not be able to delete volumes created by using NEC Storage V Series Plug-In.
- Configure the backup infrastructure that is required for Veeam Backup & Replication.

For details, see the description of Backup Infrastructure for Storage Integration in the Veeam Backup & Replication documentation. To register storage systems after you perform this procedure, see [2.3 Registering a storage system in Veeam Backup & Replication \(on page 20\)](#) .

- For details about the prerequisite environment, see [1.3 Environment requirements \(on page 2\)](#) .
- The system configuration varies depending on whether the LDEVs to be backed up are allocated to meta_resource or to a business resource group. For details, see [2.1.1 Example of a system configuration \(on page 17\)](#) .

A host group or iSCSI target corresponding to the VMware ESXi host used for business must be allocated to meta_resource or to a business resource group.

- For storage systems that use NEC Storage V Series Plug-In, do not add _DEL to the end of LDEV names, because such LDEVs are periodically and automatically deleted according to certain conditions.
- Verify that VBR_ has not been added to the beginning of the name for any of the following. If VBR_ has been added, delete it. This is because NEC Storage V Series Plug-In identifies its storage resources based on whether VBR_ is added to the beginning of the resource name.
 - All resource groups on the storage system
 - All Dynamic Provisioning pools on the storage system
 - Host groups or iSCSI targets to which meta_resource or business resource groups have been allocated
- When the volumes to be backed up are the data reduction shared volumes, the following condition applies to the pool volumes of the pool to which the volumes belong:

All LDEVs allocated as pool volumes to the pool must belong to the same resource group (meta_resource or business resource group) as that of the LDEVs to be backed up.

Procedure

1. (Optional) Create a parity group for backup, and then create a volume with an LDEV in this parity group. This step separates the work area from the backup pool area. Although optional, this step helps reduce the impact in case of a failure.
2. Prepare the Dynamic Provisioning pool for backup.

Note

If the volumes to be backed up are data reduction shared volumes, volumes of snapshots or snapshot clones will be created in the same pool as the volumes to be backed up. For this reason, if the volumes to be backed up are all data reduction shared volumes, you do not need to prepare a Dynamic Provisioning pool for backup.

The procedure varies depending on whether you create a new pool for backup or use an existing pool.

- Creating a new pool for backup

If you created an LDEV for backup in step 1, allocate it as a pool volume. If you create a new pool for backup from an existing LDEV, also allocate that LDEV as a pool volume.

Specify the pool name in the following format: *VBR_any-string-of-single-byte-characters*. Alternatively, create a configuration file by referring to

[2.5 Configuration file : For a Microsoft Windows-based backup server \(on page 22\)](#)

and [2.6 Configuration file: For Veeam Software Appliance \(Linux\) \(on page 24\)](#) ,

and then specify the pool name.

- Using an existing pool

Change the pool name to the following format: *VBR_any-string-of-single-byte-characters*. Alternatively, create a configuration file by referring to

[2.5 Configuration file : For a Microsoft Windows-based backup server \(on page 22\)](#)

and [2.6 Configuration file: For Veeam Software Appliance \(Linux\) \(on page 24\)](#) ,

and then specify the pool name.

Note

Although you can use a pool for business as a pool for backup, we recommend that keep the pool for backup and the pool for business separated to avoid potential impacts in case of a failure.

You can use only one Dynamic Provisioning pool shared as the pool for backup that can be used for snapshots or snapshot clones. Do not create more than one such backup pool.

3. Create a host group or an iSCSI target for a backup proxy server. If the VMware ESXi host is used for restoration and the storage system are connected, create a host group or an iSCSI target for the VMware ESXi host.

Note

- When performing this procedure to create a host group or an iSCSI target, do not set LU paths (users manually setting LU paths themselves or setting LU paths by using other software) outside of NEC Storage V Series Plug-In.
 - If the following changes are made to the backup proxy server or the VMware ESXi host used for restoration, you must change the host group or iSCSI target settings.
 - The number of machines
 - The ports to be used and the number of ports
-

Create the host group or iSCSI target by performing the following operations:

- Specify the host group name or iSCSI target name in the following format: *VBR_any-string-of-single-byte-characters*.
- For the host mode, specify [21 [VMware Extension]].

Note

Host mode: [21 [VMware Extension]] also supports backup proxy server operating systems such as Windows and Linux.

- For the host mode options, specify 2, 22, 25, 40, 54, 63, 68, 91, and 110.
- For Fibre Channel and iSCSI connections, note the following:

For a Fibre Channel connection

Register the WWNs of backup proxy servers and the VMware ESXi hosts used for restoration to the host groups. If you are using multipath configuration, create a host group for every storage port that is used to connect to a backup proxy server or a VMware ESXi host used for restoration.

When using backup proxy servers

Use one of the following methods to register the WWNs to host groups:

[1]

Register all of the WWNs of a backup proxy server to the same host group.

[2]

Register one WWN of a backup proxy server per a separate host group.
(Create a different host group for each WWN.)

Note

- If you are using a multipath configuration, use method [1] to register WWNs.
 - If you use method [1] to register WWNs, you can reduce the total number of host groups and optimize the configuration for the backup.
 - If you are using multiple backup proxy servers, do not register the WWNs of different backup proxy servers to the same host group.
-

When using VMware ESXi hosts used for restoration

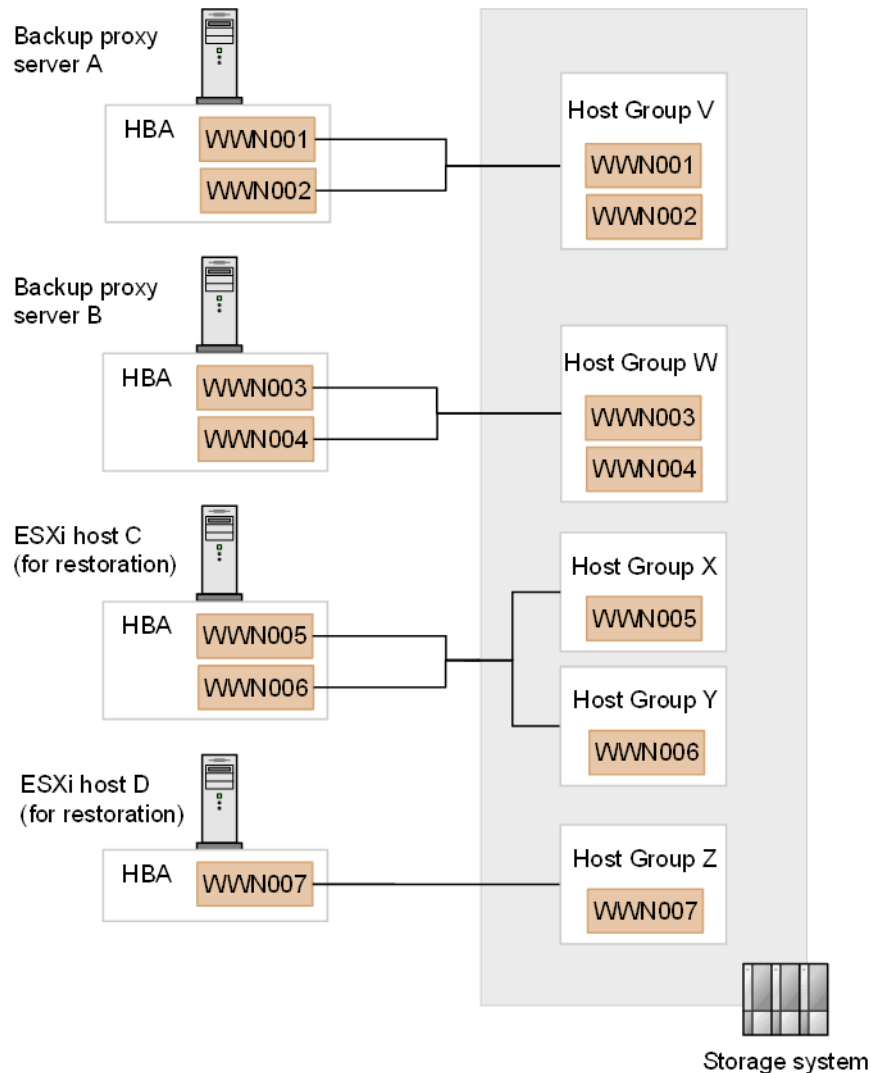
Register one WWN of a VMware ESXi host used for restoration per a separate host group. (Create a different host group for each WWN.)

Note

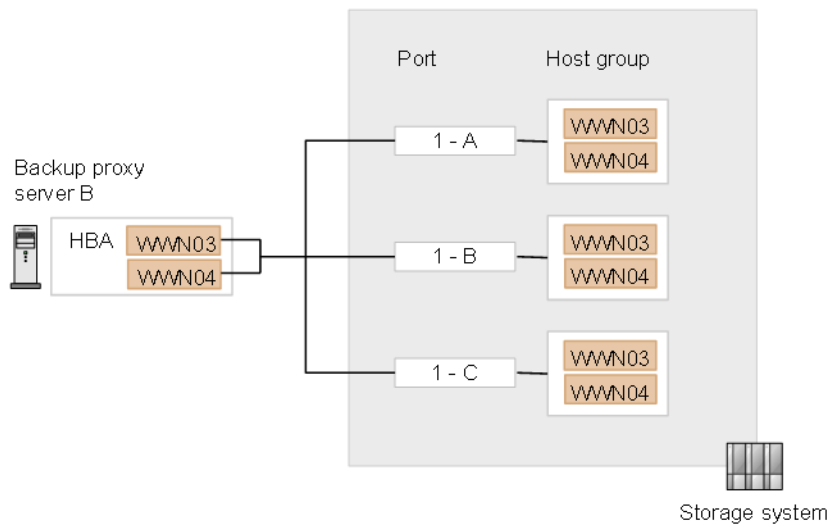
If you are using multiple VMware ESXi hosts used for restoration, do not register the WWNs of different VMware ESXi hosts used for restoration to the same host group.

An example of registering the WWNs of backup proxy servers and VMware ESXi host for restoration in a host group.

The following shows an example of registering the WWNs of backup proxy servers and VMware ESXi host for restoration in a host group.



In addition, the following shows an example of using backup proxy server B in the preceding figure to create a multipath configuration.



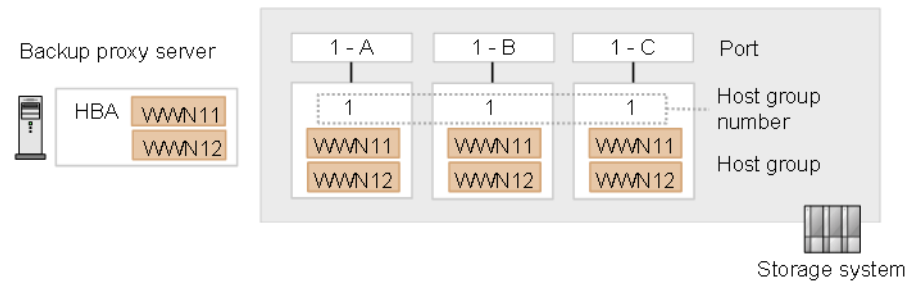
Note

When creating multiple host groups on multiple ports for a single backup proxy server and registering that backup proxy server's WWNs in each host group, if you set in advance a configuration that satisfies all of the following conditions, the execution time of backup jobs in Backup from storage snapshots will be shorter than with configurations that do not satisfy these conditions:

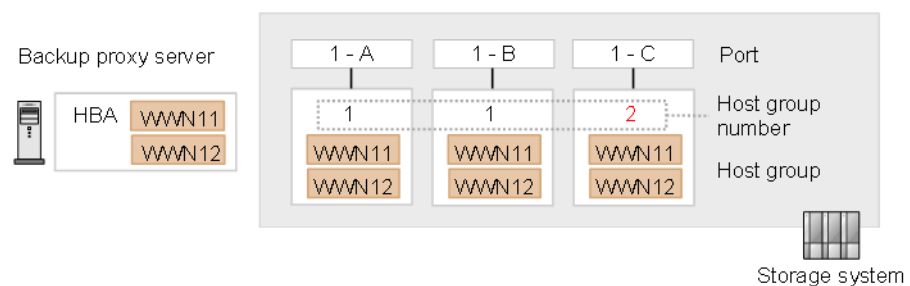
- The host group numbers of all host groups in which the target WWNs are registered must match.
- If multiple WWNs are used on the relevant backup proxy server, the host group numbers of the host groups in which they are registered must match for all WWNs.

The following shows examples of both a configuration that meets and a configuration that does not meet the conditions for reducing the execution time of backup jobs in Backup from storage snapshots.

An example of a configuration that meets the conditions for reducing the execution time of backup jobs in Backup from storage snapshots



An example of a configuration that does not meet the conditions
(The host group number for port 1-C in which WWN11 and WWN12 are registered does not match those for 1-A and 1-B.)



For an iSCSI connection

Create iSCSI targets without registering an iSCSI initiator. The total of all of the following iSCSI targets is required:

- The number of backup proxy servers
- The number of iSCSI initiators of the backup proxy servers or of the VMware ESXi hosts for restoration

When multiple backup proxy servers or multiple VMware ESXi hosts for restoration are to be used, or when there are multiple iSCSI initiators on the machine to be used, the number of iSCSI targets to be created is the total number of all iSCSI initiators.

For example, to use all iSCSI initiators in the following system configuration, you need to create six iSCSI targets:

- Backup proxy server A (number of iSCSI initiators: 2)
- Backup proxy server B (number of iSCSI initiators: 1)
- VMware ESXi host used for restoration (number of iSCSI initiators: 1)

If these settings are set, the iSCSI target is determined randomly, and the iSCSI initiator of the host is automatically registered. If you want to specify the iSCSI target to which the iSCSI initiator of the host is registered, manually register the

target iSCSI initiator to the iSCSI target. In such cases, register one iSCSI initiator for each iSCSI target.

4. Prepare a backup resource group and allocate storage resources as follows:

a. Create a new resource group or use an existing one.

- Specify the resource group name as follows:

- When you are not using a configuration file

You need to specify a resource group name using the storage system management software in the following format: *VBR_single-byte-character-string*

- When you are using a configuration file

Specify a name in the storage system management software, and then specify the same name in the configuration file.

For details about configuration files, see [2.5 Configuration file : For a Microsoft Windows-based backup server \(on page 22\)](#) and [2.6 Configuration file: For Veeam Software Appliance \(Linux\) \(on page 24\)](#) .

- You can use only one backup resource group, so do not create more than one such group.

b. Allocate storage resources to the resource group created or prepared in step 4-a.

Allocate the following resources to the resource group:

- All LDEVs allocated as pool volumes to the Dynamic Provisioning pool for backup that was prepared in step 2
- The host groups or iSCSI targets created in step 3
- The port to which the host groups or iSCSI targets created in step 3 belong

The port to which the host groups or iSCSI targets created in step 3 belong must be allocated to either the resource group (*meta_resource* or *business resource group*) to which the LDEVs to be backed up are allocated, or to a resource group for backup.

- Unused LDEV ID

If you use Veeam Backup & Replication to orchestrate the creation of snapshots or snapshot clones, secondary volumes of Snapshot pairs or Snapshot Advanced pairs, or volumes cloned by using Snapshot will be created on the storage system. You must allocate a number of LDEV IDs equal to the number of these secondary volumes and cloned volumes. For this reason, prepare a sufficient number of unused LDEV IDs. Also, for the unused LDEV IDs, make sure that the virtual LDEV IDs are set equivalent to the actual LDEV IDs.

You can use only one backup resource group, so do not create more than one such group.

Note

Do not allocate the serial number of a virtual ID to the backup resource group. If allocated, multiple different volumes created by using NEC Storage V Series Plug-In are connected to the same host as devices having the same SCSI ID, which might cause serious problems on the host.

5. Create a backup operation user group, and then create a user account for this group.

Assign the role Storage Administrator (View Only), Storage Administrator (Provisioning), and Storage Administrator (Local Copy) to the backup operation user group.

The user account is used to access the resource group where the LDEVs to be backed up are allocated (meta_resource or a business resource group) and the backup resource group you created in step 4. You can access the backup resource group only by using this user account or the built-in user account.

6. Assign the resource group (the meta_resource or business resource group) where the LDEVs that are to be backed up are allocated and the backup resource group you created in step 4 to the user group.

Do not assign any resource group other than the above to the user group you created.

Do not assign the backup resource group to any other user group.

Note

Built-in users also have access to the backup resource group.

7. Check the time zone and time of the Veeam backup server on which NEC Storage V Series Plug-In is installed and the time zone and time of the storage system. If the time zones and times do not match, change the settings so that they match.

2.1.1 Example of a system configuration

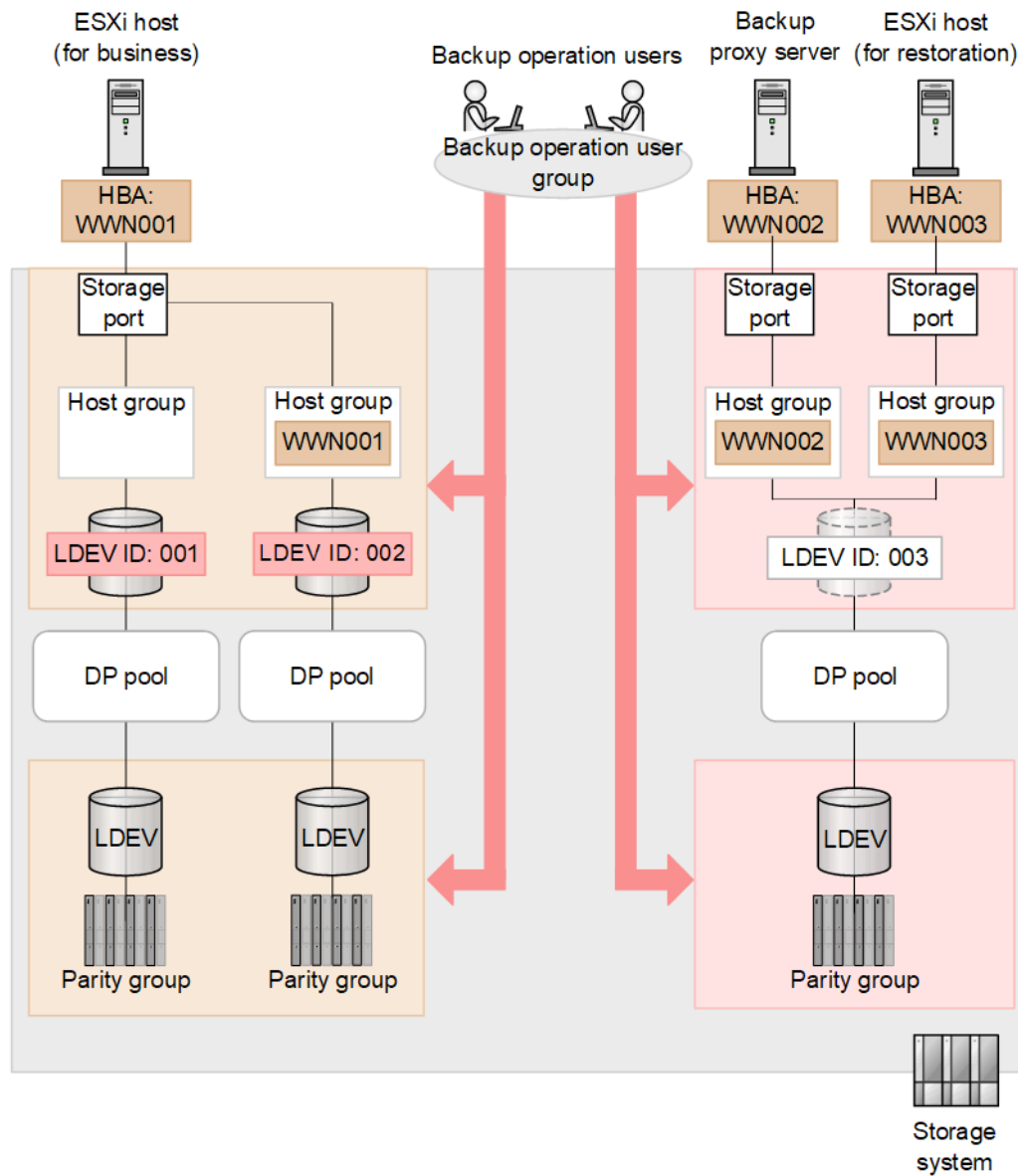
The following shows examples of system configurations for backing up volumes in meta_resource and for backing up volumes in a business resource group. In the provided examples, the following storage resources are created as backup storage resources:

- Parity groups
- LDEVs for pool volumes
- Dynamic Provisioning pool
- Host group for the backup proxy server
- Host group for the VMware ESXi host to be used for restoration

- Unused LDEV ID (LDEV ID: 003)

When backing up volumes in meta_resource

The following shows an example of backing up the LDEV allocated to meta_resource when there is no business resource group.

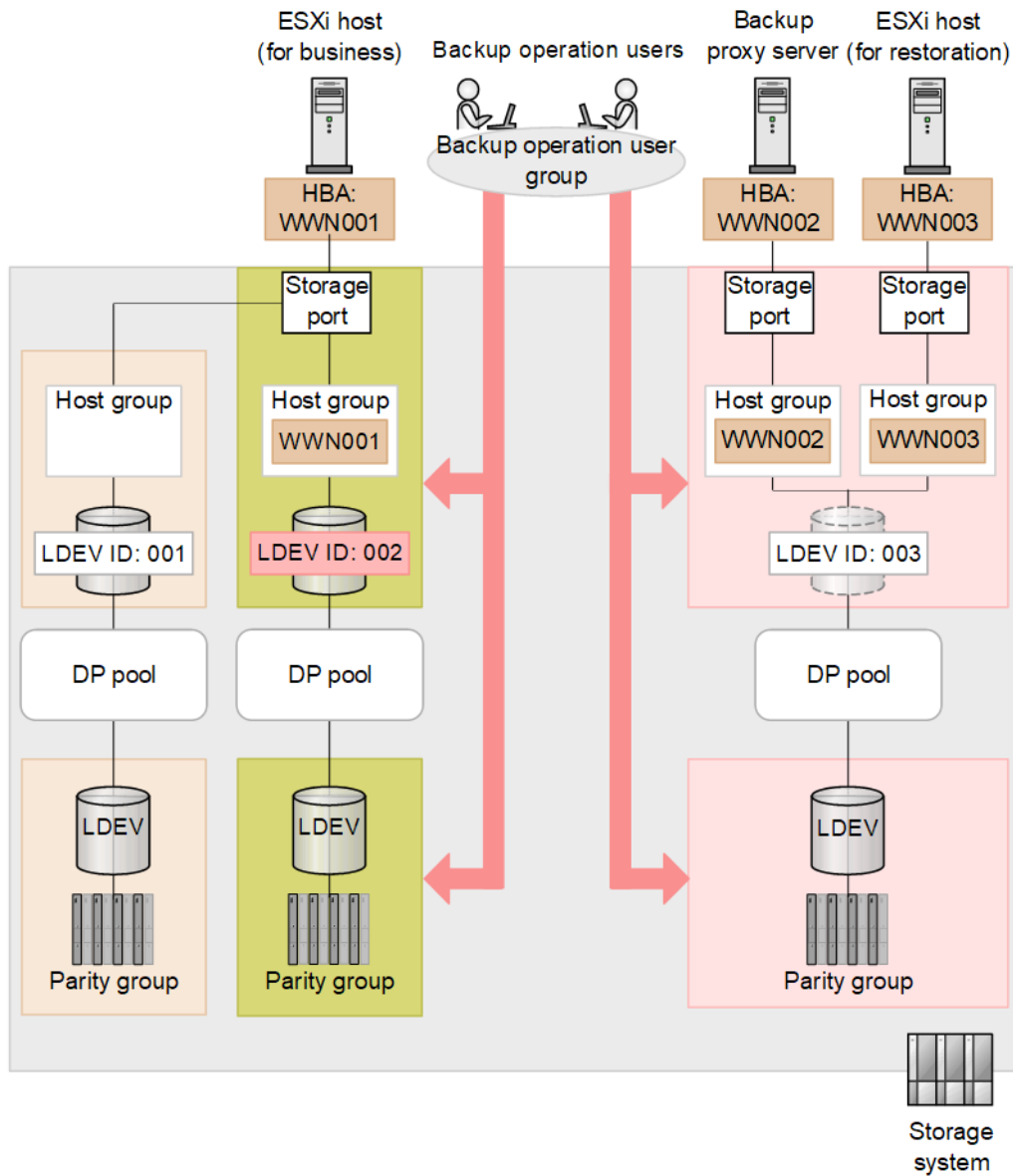


Legend

- : meta_resource
- : Backup resource group
- : Volumes to be backed up
- : User access to resource groups

When backing up volumes in a business resource group

The following shows an example where a business resource group has been created, and you back up the LDEVs allocated to the business resource group.



2.2 Installing NEC Storage V Series Plug-In

Install NEC Storage V Series Plug-In. For details, see the description of Installing Storage System Plug-Ins in the Veeam Backup & Replication documentation.

To output the NEC Storage V Series Plug-In logs to the Veeam Backup & Replication log files in Veeam Backup & Replication V13.0.1, configure the following on the Veeam backup server. For details, please contact Veeam Software support.

For a Microsoft Windows-based backup server:

On the Veeam backup server, add the following registry entry, then restart the Veeam backup server.

```
NAME: LogPublicPluginMethods
LOCATION: HKEY_LOCAL_MACHINE/SOFTWARE/Veeam/Veeam Backup and Replication
TYPE: DWORD
VALUE: 1
```

For Veeam Software Appliance:

Add "LogPublicPluginMethods=1" to the [root] section of the Veeam Software Appliance configuration file (/etc/veeam/veeam_backup_and_replication.conf). For detailed procedures, see the explanation on Managing Configuration Files in the Veeam Backup & Replication documentation.

After modifying the configuration file, restart the `veeambackupsvc.service` or the Veeam Software Appliance. For detailed procedures, see the explanation on Managing Veeam Services, Restarting Appliance in the Veeam Backup & Replication documentation.

2.3 Registering a storage system in Veeam Backup & Replication

Register the storage system in Veeam Backup & Replication.

You can register multiple storage systems for one of the Veeam backup servers configured in the backup environment.

Note

You can register one storage system for multiple Veeam backup servers, but the following operations may fail or unnecessary resources may remain without being deleted.

- Backup job
- Rescan (Storage Discovery) Process
- Data Recovery from Storage Snapshots
- On-Demand Sandbox for Storage Snapshots

- Removing Storage Systems

In such cases, identify the relevant storage resources based on the information displayed in Veeam Backup & Replication console, such as the LDEV ID of the volume to be backed up, and use storage system management software such as Device Manager - Storage Navigator, to perform operations like deleting the relevant storage resources.

For details, see the description of Adding Universal Storage API Integrated Systems in the Veeam Backup & Replication documentation.

When you use the [Add Storage] wizard, note the following:

- In the vendor list, select [NEC Storage V Series].
- For [DNS name or IP address], specify the following IP address.

If an IPv4 address and an IPv6 address are set, specify the IPv4 address.

- For NEC Storage V10e/V100/V300

CTL1 or CTL2

You can register only one of these controllers for each storage system.

- For NEC Storage V110/V310/V310F

service IP address

Note

You can specify an IPv6 address if the version of Veeam Backup & Replication is V12 or later.

- Specify [Block or file storage for VMware vSphere] for [Role].
- For [Credential], specify the user account created in [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) .

2.4 Unregistering a storage system from Veeam Backup & Replication

If a storage system no longer needed to be backed up, unregister the storage system from Veeam Backup & Replication, and then delete the host groups, iSCSI targets and any other related components that are no longer required.

Note

-
- If you unregister a storage system from Veeam Backup & Replication, all of the following storage resources created in the resource group for backup that you created by performing the procedure in [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) will also be deleted.
 - Volumes cloned from snapshots by using Snapshot or Snapshot Advanced (snapshot clones of Veeam Backup & Replication)
-

- LU paths set for these volumes (LU paths set for the snapshots and for the snapshot clones of Veeam Backup & Replication)
- When you unregister a storage system, volumes for which Snapshot cloning is in progress will not be deleted. Instead, `_DEL` will be added to the end of the volume name and the volume will remain in the storage system. In such cases, make sure that the pair between the secondary volume of Snapshot and the volume cloned by Snapshot have been deleted by the storage system's management software, and then delete the corresponding volumes by using the storage system's management software.

Note

This problem occurs for the following combinations of storage models and DKCMAIN firmware versions. The problem has been fixed in DKCMAIN firmware versions later than those listed below. Similarly, the problem does not affect storage models other than those listed below.

Storage model	DKCMAIN firmware version
NEC Storage V100, V300	• Earlier than 93-05-22-XX

Procedure

1. Unregister the storage system from Veeam Backup & Replication.
For details, see the description of Removing Storage Systems in the Veeam Backup & Replication documentation.
2. Delete all of the host groups or iSCSI targets you created by performing the procedure in [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) that remain on the unregistered storage system. However, you can skip this step if you want to continue using them.

2.5 Configuration file : For a Microsoft Windows-based backup server

By using a configuration file, you can specify backup storage resources (the storage resources used for backup).

Note

Use this functionality optionally as needed.

Procedure

1. Create a configuration file in accordance with the following conditions:
 - Configuration file to be created

Create one configuration file for one storage system.

- Configuration file specifications

- File name

serial-number-of-the-storage-system_config.txt

Example:

123456_config.txt

Note

The suffix `_config.txt` at the file name must be lowercase.

- File format

Text

- Character encoding

UTF-8

- Storage resource specification format

Specify the backup storage resources in the following format: *KEY=VALUE*.

- Type of storage resources that can be specified

Resource type	KEY	VALUE
Dynamic Provisioning pool used for backup	PoolName	<i>pool-name</i> Note • For the <i>pool-name</i>, it is not necessary to follow the <code>VBR_single-byte-character-string</code> format. • If the volumes to be backed up are data reduction shared volumes, volumes of snapshots or snapshot clones will be created in the same pool as the volumes to be backed up. For this reason, the specification of a Dynamic Provisioning pool used for backup is not used.
Resource group used for backup	RSGName	<i>resource-group-name</i> Note For the <i>resource-group-name</i>, it is not necessary to follow the <code>VBR_single-byte-character-string</code> format.

The following shows an example of the content of a configuration file.

```
PoolName=Backup_Pool_001
RSGName=Backup_RSG_001
```

2. Place the configuration file in the following location:

```
<Veeam-Backup&Replication-path>\Plugins\Storage\NEC Storage V Series\conf
```

Note

If you place the configuration file or modify the contents of the configuration file, the changes become effective immediately. Therefore, rescanning (Storage Discovery) is unnecessary.

2.6 Configuration file: For Veeam Software Appliance (Linux)

By using a configuration file, you can specify backup storage resources (the storage resources used for backup). For detailed procedures, see the explanation on Managing Configuration Files in the Veeam Backup & Replication documentation.

Note

- Use this functionality optionally as needed.
 - If you place the configuration file or modify the contents of the configuration file, the changes become effective immediately. Therefore, rescanning (Storage Discovery) is unnecessary.
-

Procedure

1. Download the configuration file from the configuration window for setting the Veeam Software Appliance configuration file. When you download the configuration file for the first time, it is an empty file.

The file path for the configuration file is as follows:

```
/etc/veeam/plugins/storages/nec-storage-v-series/storage_plugin_advanced_settings.json
```

2. Edit a configuration file in accordance with the following conditions:

- Configuration file specifications
 - File name


```
storage_plugin_advanced_settings.json
```
 - File format


```
JSON
```
 - Character encoding


```
UTF-8
```
- Contents of the configuration file

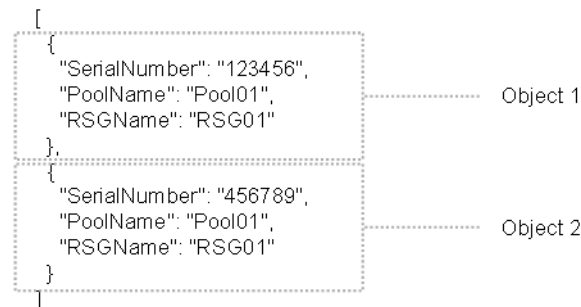
Describe the objects corresponding to the registered storage systems in JSON format .
The following shows an example of the content of a configuration file.

```
[
  {
    "SerialNumber": "123456",
    "PoolName": "Pool01",
    "RSGName": "RSG01"
  },
  {
    "SerialNumber": "456789",
    "PoolName": "Pool01",
    "RSGName": "RSG01"
  }
]
```

About JSON objects

In JSON, data is represented as KEY and VALUE pairs (properties). One or more properties separated by commas and enclosed in curly brackets ({ }) are called objects.

As an example, the object parts of a configuration file are shown as follows.



Note

KEY and VALUE need to be enclosed in double quotation marks (").

Object properties to be specified in the configuration file

For object properties to be specified in the configuration file, specify the following items:

- Serial number of the storage system which is specified as target for backup storage resource

Specification of this item is required.

- Backup storage resource

As this item needs to be specified depends on the user's environment, specification of this item is optional.

The following table shows the properties of each object to be specified in the configuration file.

Item	KEY	VALUE
Storage system to be specified as a backup storage resource	SerialNumber	<i>serial number</i>
Dynamic Provisioning pool used for backup*	PoolName	<i>pool-name</i> Note • For the <i>pool-name</i>, it is not necessary to follow the VBR_single-byte-character-string format. • If the volumes to be backed up are data reduction shared volumes, volumes of snapshots or snapshot clones will be created in the same pool as the volumes to be backed up. For this reason, the specification of a Dynamic Provisioning pool used for backup is not used.
Resource group used for backup*	RSGName	<i>resource-group-name</i> Note For the <i>resource-group-name</i>, it is not necessary to follow the VBR_single-byte-character-string format.
Notes:* It is acceptable to specify only each of them.		

3. Upload the configuration file at the configuration window for setting the Veeam Software Appliance configuration file.

Note

If the configuration file includes errors, you might not be able to successfully perform operations not only for the storage system targeted by the configuration file but also for all storage systems. To avoid any impact on operations, after you edit the configuration file, we recommend that you perform a backup or restore operation in advance for the backup storage resources targeted by the configuration file, and make sure that processing ends successfully without any errors.

Chapter 3:

Backing up and restoring virtual machines using NEC Storage V Series Plug-In

You can use NEC Storage V Series Plug-In to back up virtual machines from primary or secondary storage system and restore them using storage snapshots.

The terms P-VOL and S-VOLs shown in this chapter correspond to Production Volume and Snapshot Volume, indicating their roles in the storage snapshot workflow.

For details on the operational procedures and terminology regarding the Veeam Backup & Replication functions related to backup and restore described in this chapter, refer to the Storage System Snapshot Integration Guide in the Veeam Backup & Replication documentation.

3.1 Restrictions on backup and restore using NEC Storage V Series Plug-In

This section describes the restrictions on backup and restore using NEC Storage V Series Plug-In.

- If you want to back up LDEVs in a Microsoft VSS environment, when you create backup jobs, do not set the Application-Aware Processing options. If you set these options, the backup jobs might not run successfully.
- You can manually create snapshots from Veeam Backup & Replication by specifying the volume to be backed up. In this case, note the following when setting snapshot names; otherwise, if the created snapshots are no longer needed, you might not be able to correctly delete them from NEC Storage V Series Plug-In.
 - Avoid using same character strings for snapshot names. Instead, set unique character strings. It is recommended to use character strings that contain unique information such as the purpose of use or date that can easily identify the snapshots.
 - Do not include symbols in snapshot names, such as the following:
Forward slash (/) or backslash (\)
- If a volume with the name *any-string-of-single-byte-characters_DEL (LDEV-ID)* appears in the [Storage Infrastructure] view, use storage system management software such as Device Manager - Storage Navigator, find the corresponding volume based on the LDEV ID in the volume name, and then delete that volume.

3.2 Restrictions on backup of data reduction shared volumes

When backing up a data reduction shared volume, the larger the capacity of the volume to be backed up, the longer the backup will take. Also, the backup might fail or take longer than expected if the following conditions are met.

The following conditions apply.

Conditions that might cause a backup to fail or take longer than expected:

- Two or more backup jobs (Backup from storage snapshots with snapshot retention) are running concurrently on the same data reduction shared volume.
- Two or more of the following backup operations are running concurrently on the same data reduction shared volume.
 - Backup job (Snapshot Orchestration)
 - Backup job (Backup from storage snapshots)
 - Backup job (Backup from storage snapshots with snapshot retention)
 - Select the volume from the [Storage Infrastructure] view, and then run [Create Snapshot].

Note

If a backup fails, one of the following messages will appear:

- The error is occurred in REST API. Please contact storage system administrat or to check the details in the log file.*

*When this error occurs, a message containing KART40009-E is output to the log file.

- The pre-check process before creating a snapshot/clone has timed out. Please check the status of the pairs created on the target production volume and tr y again after a while.

To prevent the above conditions, we recommend that you use only one backup job targeting virtual machines on a datastore composed of a single data reduction shared volume. This will ensure that the backup does not fail or take longer than expected.

When running multiple backup jobs targeting virtual machines on a datastore composed of a single data reduction shared volume, set a job execution schedule that avoids simultaneous execution of multiple jobs, and ensure sufficient intervals between the start time of each backup job.

After planning your backup operation taking the above into consideration, first run the backup job according to the schedule as a verification to make sure that the backup will not fail. In addition, when a backup job targeting virtual machines on a datastore composed of a data reduction shared volume is running, do not run [Create Snapshot] on the same volume.

3.3 Running and checking backup jobs with the Snapshot Immutability function enabled

You can use the Snapshot Immutability function to set a protection period for snapshots.

Before you begin

When using the Snapshot Immutability function, the storage system must meet the following prerequisites.

- Storage system and DKCMAIN firmware version

To set a protection period for snapshot, you must use a storage system and DKCMAIN firmware version that support the Snapshot Immutability function. For details on the applicable storage systems and DKCMAIN firmware versions, see [1.3 Environment requirements \(on page 2\)](#).

- Volume to be backed up

To specify a protection period for snapshot, the volume to be backed up must be a data reduction shared volume. In this case, when the snapshot is created, a pair using Snapshot Advanced is created, and the specified retention period is applied. When the volume to be backed up is a supported volume other than a data reduction shared volume, even if a backup job with Snapshot Immutability enabled is run, the protection period specified by the user is invalidated.

- Snapshot protection period

The protection period for snapshot is implemented through the snapshot protection period function of Snapshot Advanced. As a result, the protection period that can specify with Snapshot Immutability depends on the snapshot protection period function of Snapshot Advanced. For details on the specifiable length of the protection period, see the storage system documentation.

Note

Veeam Backup & Replication might adjust the user-specified protection period to fit within the specifiable length of the protection period for the actual storage system. To confirm the protection period adjusted by Veeam Backup & Replication, display the snapshot details of the volume targeted by the backup job, and then check the time information of the protection period in the [Immutable Until] field.

When you run a backup job with the Snapshot Immutability function enabled, perform the following steps to confirm that snapshots with a protection period have been created on the target volumes. If the backup job that you run targets multiple data stores, verify all snapshots created within the job.

Procedure

1. Open the [Storage Infrastructure] view in Veeam Backup & Replication, and then select the volume targeted by the backup job that was run to display the list of snapshots under the target volume.
2. From the detailed information on the displayed snapshots, check whether the protection period is set as specified in the [Immutable Until] field.

Note

The [Immutable Until] field might still display the protection end date even after the protection period has expired and become invalid.

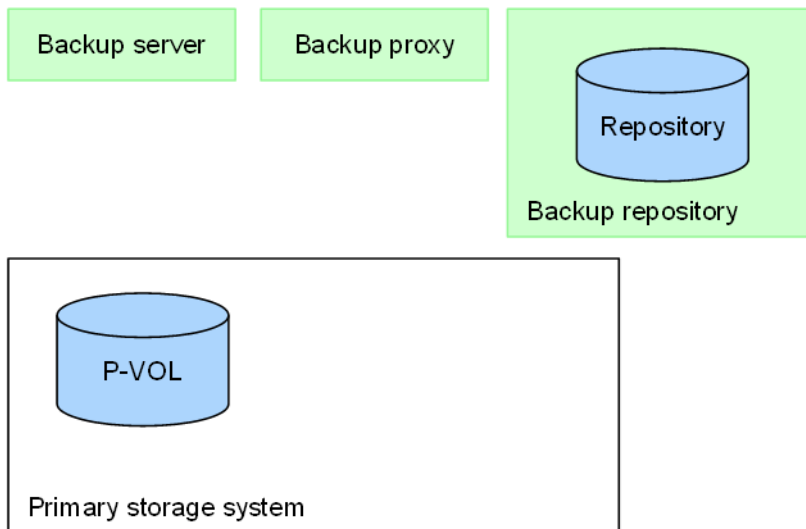
3.4 Backing up on a primary storage system

You can create a backup job by using such as Backup from storage snapshots, Snapshot orchestration, and Backup from storage snapshots with snapshot retention on a primary storage system.

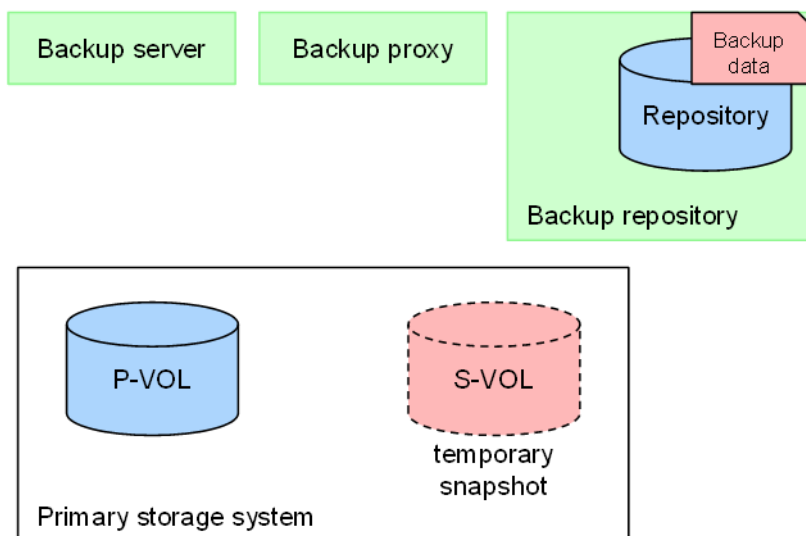
3.4.1 Backup from storage snapshots (primary storage system)

The following figure shows the storage system state before and after the backup job runs. The S-VOL (temporary snapshot) created on the primary storage system is deleted by Veeam Backup & Replication.

Before



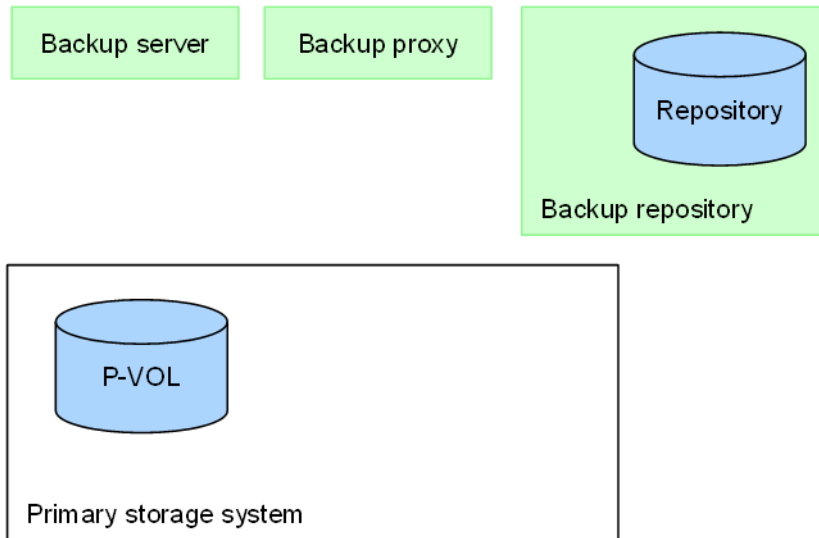
After



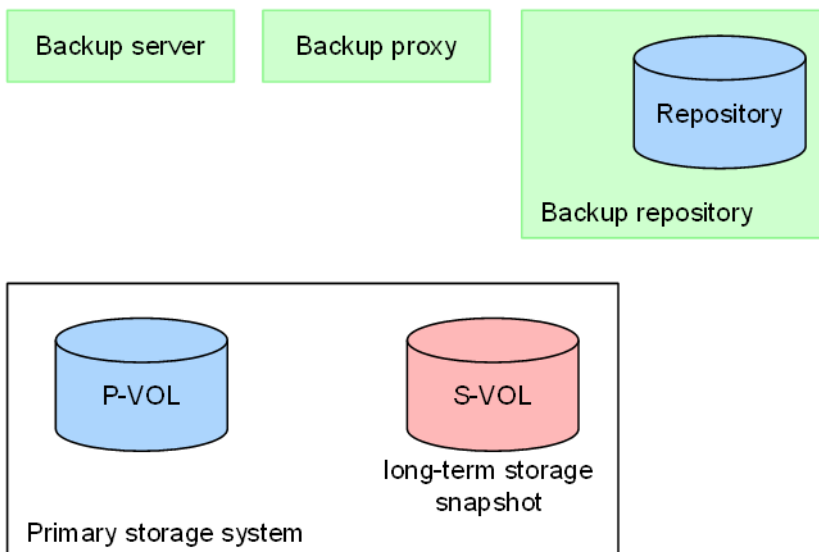
3.4.2 Snapshot orchestration (primary storage system)

The following figure shows the storage system state before and after the backup job runs. The S-VOL (long-term storage snapshot) created on the primary storage system is retained according to the retention policy specified when the job was created. Old storage snapshots (S-VOLs) that are no longer subject to be retained will be deleted by Veeam Backup & Replication.

Before



After



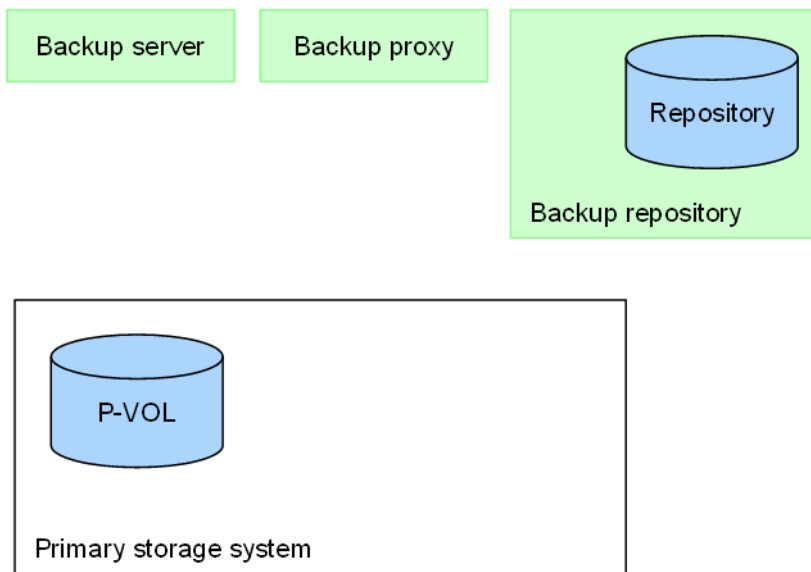
Note

- When operating Veeam Backup & Replication, note the following:
When creating a [Backup Job], for the backup repository in the storage settings, select [NEC Storage V Series Snapshot (Primary storage snapshot only)].
- When backing up data reduction shared volumes, you can use the Snapshot Immutability function to set a protection period for long-term storage snapshots.

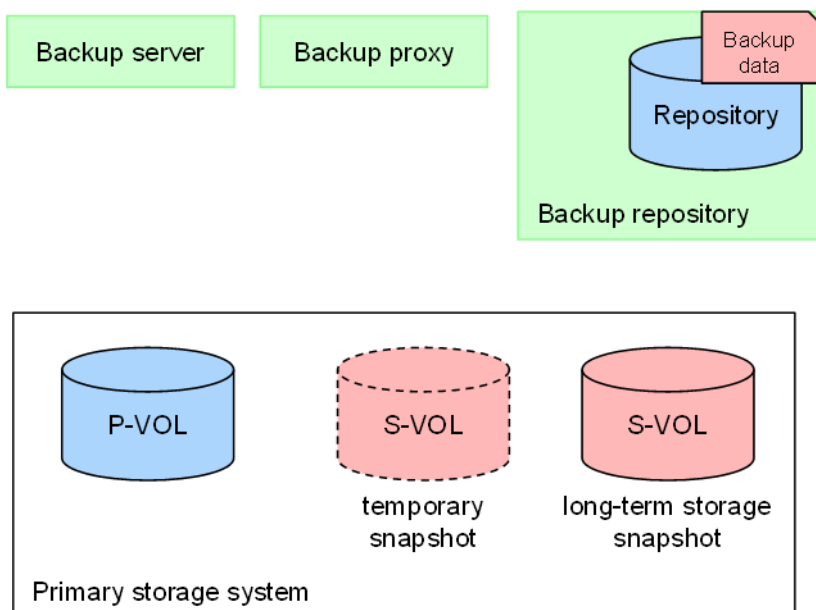
3.4.3 Backup from storage snapshots with snapshot retention (primary storage system)

The following figure shows the storage system state before and after the backup job runs. When the job is run, two S-VOLs, a temporary snapshot and a long-term storage snapshot, are created. The S-VOL (temporary snapshot) created on the primary storage system is deleted by Veeam Backup & Replication. The other S-VOL, which is the long-term storage snapshot, is retained according to the settings specified for saving snapshots when the job was created. Old storage snapshots (S-VOLs) that are no longer subject to be retained will be deleted by Veeam Backup & Replication.

Before



After



Note

- When operating Veeam Backup & Replication, note the following:
When creating a [Backup Job], for the secondary target settings, select [NEC Storage V Series Snapshot].
- When backing up data reduction shared volumes, you can use the Snapshot Immutability function to set a protection period for long-term storage snapshots.

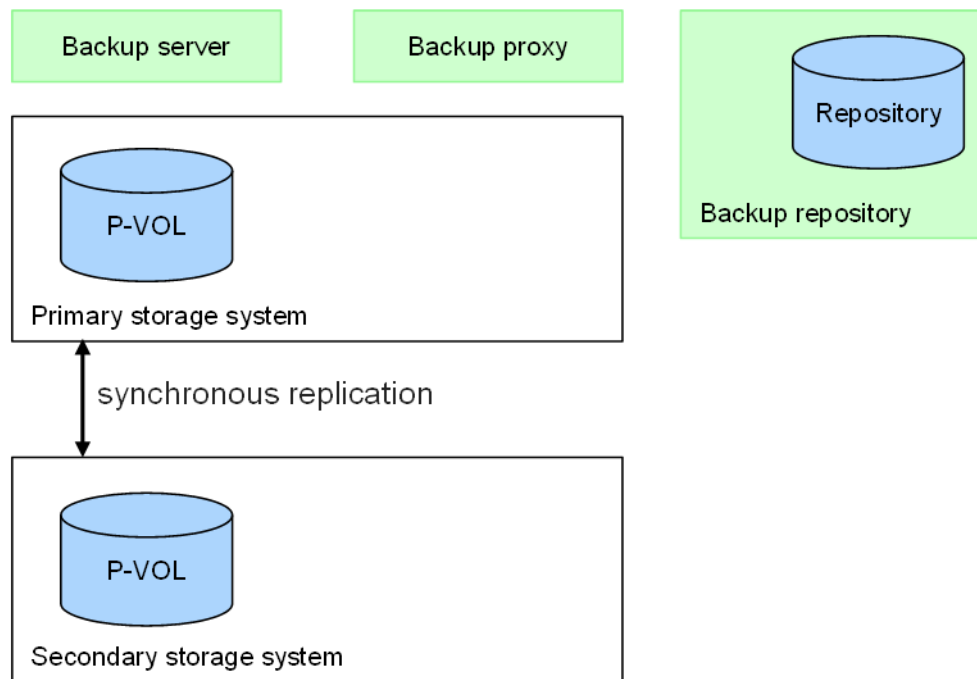
3.5 Backing up on a secondary storage system

You can create a backup job by using such as Backup from storage snapshots, Snapshot orchestration, and Backup from storage snapshots with snapshot retention on a secondary storage system.

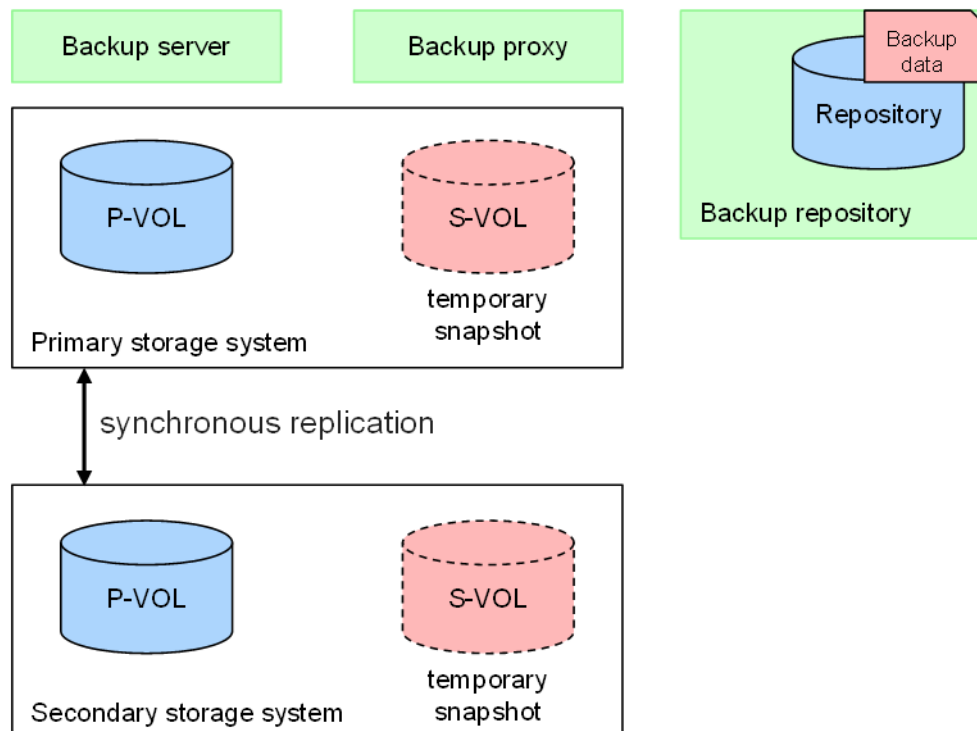
3.5.1 Backup from storage snapshots (secondary storage system)

The following figure shows the storage system state before and after the backup job using synchronous replication runs. When the job is run, S-VOLs (temporary snapshots) are created on both the primary storage system and the secondary storage system. The created S-VOLs are deleted by Veeam Backup & Replication from both the primary storage system and the secondary storage system.

Before



After



Note

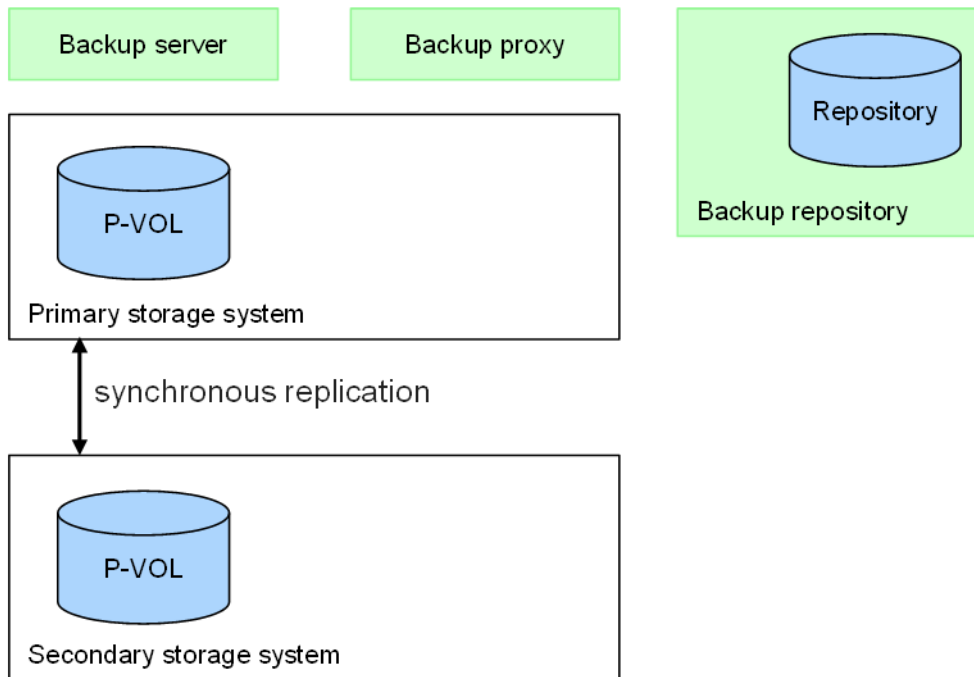
When operating Veeam Backup & Replication, note the following:

When creating a [Backup Job], for the secondary target settings, select [NEC Storage V Series Synchronous Replication] and verify that [NEC Storage V Series Synchronous Replication (data source)] has been added.

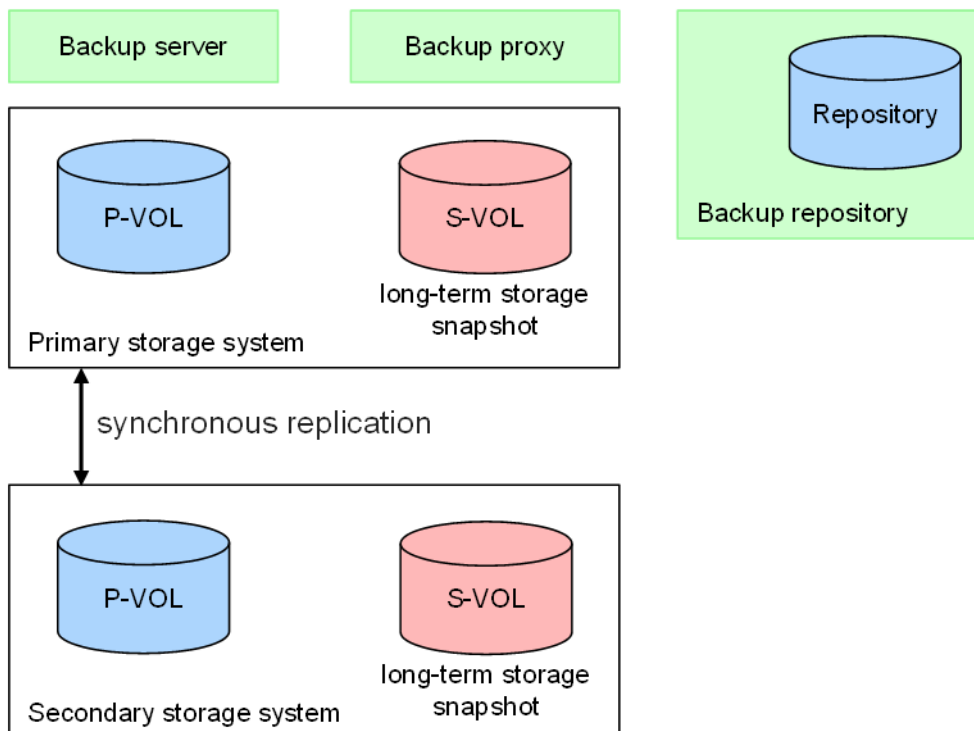
3.5.2 Snapshot orchestration (secondary storage system)

The following figure shows the storage system state before and after the backup job using synchronous replication runs. When the job is run, S-VOLs (long-term storage snapshots) are created on both the primary storage system and the secondary storage system. The created S-VOLs are retained according to the retention policy specified when the job was created. Old storage snapshots (S-VOLs) that are no longer subject to be retained will be deleted by Veeam Backup & Replication from both the primary storage system and the secondary storage system.

Before



After



Note

- When operating Veeam Backup & Replication, note the following:

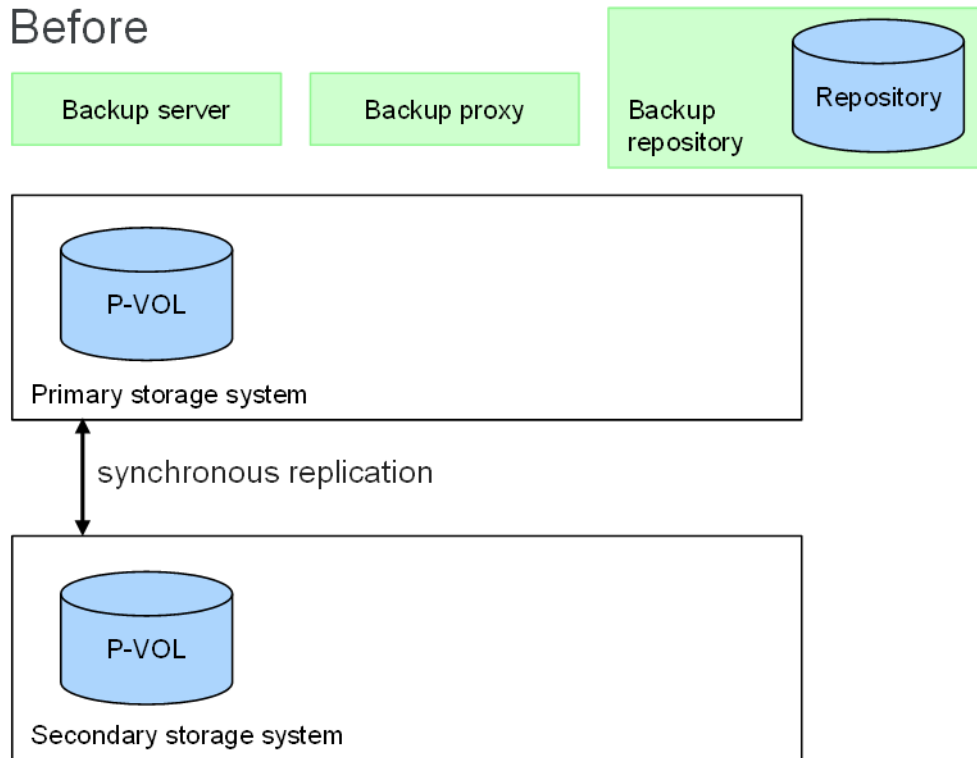
When creating a [Backup Job], for the backup repository in the storage settings, select [NEC Storage V Series Snapshot (Primary storage snapshot only)].

- When backing up data reduction shared volumes, you can use the Snapshot Immutability function to set a protection period for long-term storage snapshots.
-

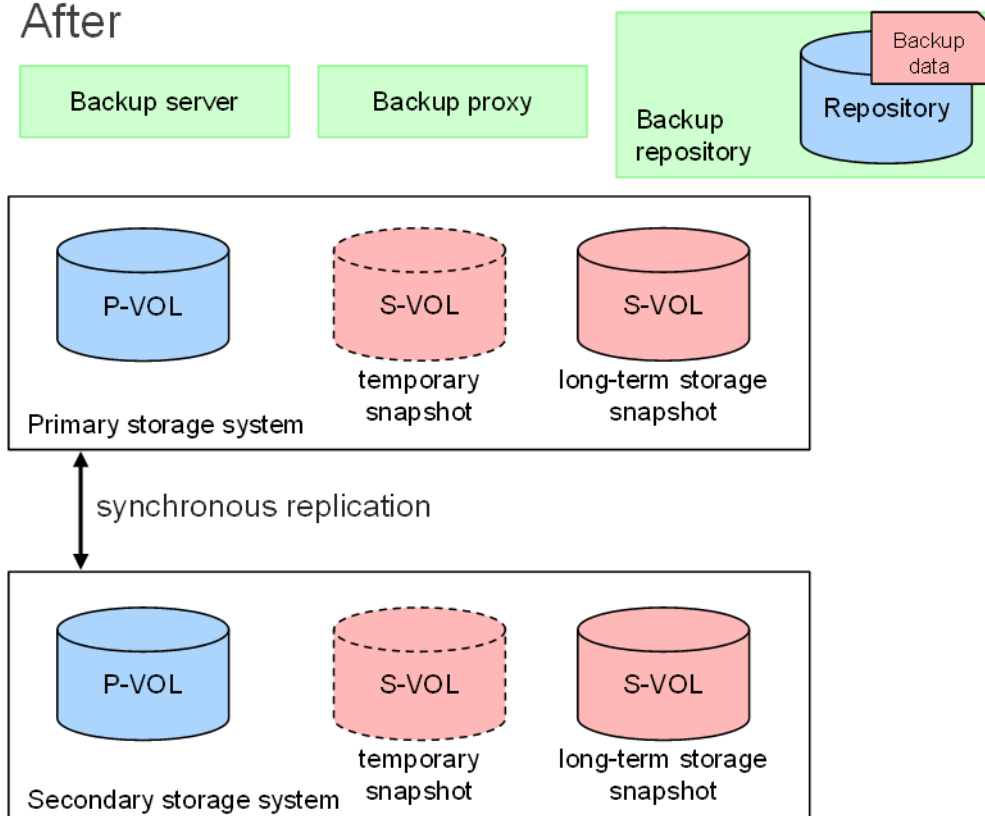
3.5.3 Backup from storage snapshots with snapshot retention (secondary storage system)

The following figure shows the storage system state before and after the backup job using synchronous replication runs. When the job is run, two S-VOLs, a temporary snapshot and a long-term storage snapshot, are created on both the primary storage system and the secondary storage system. The created S-VOLs (temporary snapshots) are deleted by Veeam Backup & Replication from both the primary storage system and the secondary storage system. The other S-VOLs, which are the long-term storage snapshots, are retained according to the settings specified for saving snapshots when the job was created. Old storage snapshots (S-VOLs) that are no longer subject to be retained will be deleted by Veeam Backup & Replication from both the primary storage system and the secondary storage system.

Before



After



Note

- When operating Veeam Backup & Replication, note the following:

When creating a [Backup Job], for the secondary target settings, select [NEC Storage V Series Snapshot] and [NEC Storage V Series Synchronous Replication], and verify that [NEC Storage V Series Snapshot] and [NEC Storage V Series Synchronous Replication (data source)] have been added.

- When backing up data reduction shared volumes, you can use the Snapshot Immutability function to set a protection period for long-term storage snapshots.
-

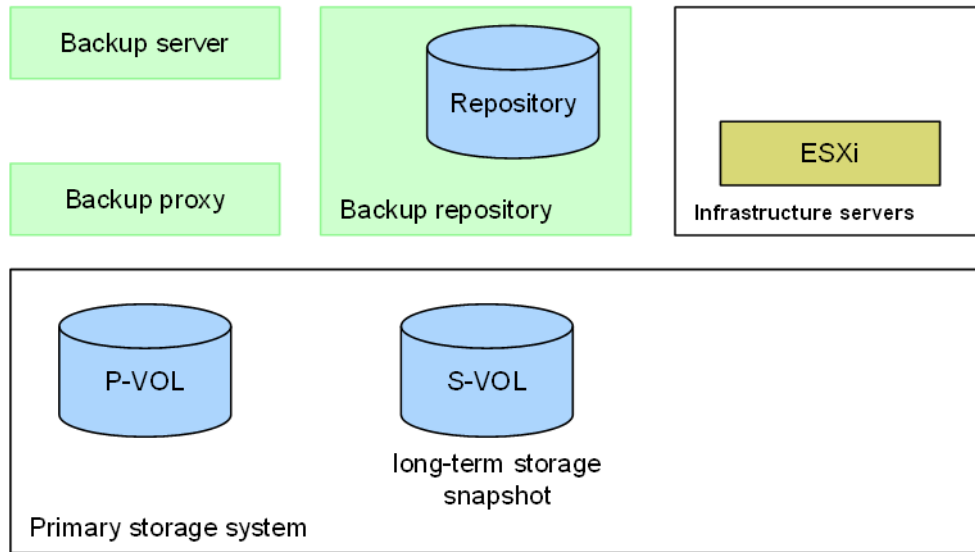
3.6 Restoring from storage snapshot

You can perform an Instant recovery from storage snapshots using a long-term storage snapshot on a storage system.

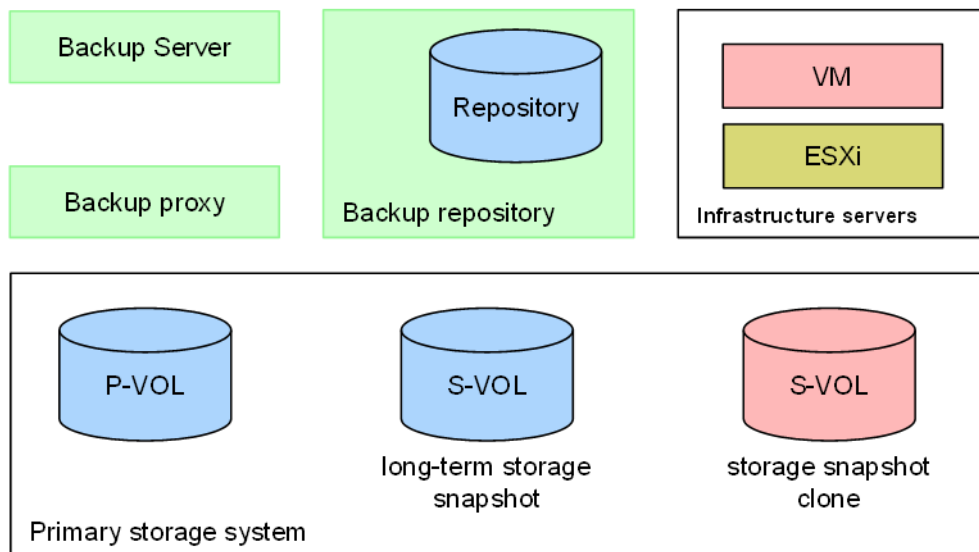
3.6.1 Instant recovery from storage snapshot

The following figure shows the storage system state before and after Instant Recovery. When performing Instant Recovery, a snapshot clone is created using S-VOL (long-term storage snapshot) on the primary storage system. The created snapshot clone is deleted by Veeam Backup & Replication after the Instant Recovery is complete.

Before



After



Chapter 4:

Troubleshooting

The following describes how to handle failures that occur during operation and how to collect maintenance information.

4.1 What to check first

If an error occurs, first check the environment. The procedure for the check is as follows.

Note

If the storage system and Veeam Backup & Replication are performing other processing in parallel, an operation might fail because of a temporarily high load or processing conflict. In such cases, try that operation again.

1. Refer to [Chapter 2: Setting up the environment \(on page 9\)](#) and make sure that the storage system environment is configured correctly.

Also, perform the following checks to ensure that the status is normal.

- Make sure that the status of the network environment is normal.
 - Make sure that the datastore and virtual machine to be operated are working correctly.
2. For the volumes to be used, perform the following checks using the storage system management software to ensure that the settings and status are correct.

For the snapshots and snapshot clones created using Veeam Backup & Replication, verify that the corresponding secondary volumes of the Snapshot pairs or Snapshot Advanced pairs and the corresponding volumes that were cloned by using Snapshot are correct.

- Make sure that the volume to be used and the Snapshot pair or Snapshot Advanced pair created for the volume are correct.
 - Make sure that unused LDEV IDs have been allocated to the backup resource group created in [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) .
Make sure that a sufficient number of LDEV IDs have been allocated.
3. For the connection between the storage system and the backup proxy server or VMware ESXi host used for restoration, make sure that the environment is configured correctly as follows.
- Make sure that the Fibre Channel port or iSCSI port for the backup proxy server is not disabled and that its status is normal.
 - Make sure that the Fibre Channel port or iSCSI port of the VMware ESXi host used for restoration is not disabled and does not have an abnormal status.

- Make sure the Fibre Channel or iSCSI communication channel is functioning properly.

For example, verify the following:

- The path is physically connected.
- Devices such as the relay switch are running.
- Logical settings such as zoning are specified correctly.

4. Refer to [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) and make sure that the host group and iSCSI target are configured correctly.

Make sure that the following items are configured correctly:

- Host group name or iSCSI target name
- Host mode
- Host mode options

4.2 Handling failures

The following describes how to handle failures that occur during operation.

4.2.1 Message: The hostGroup used in the plugin does not exist

If you are using a Fibre Channel connection and the host group is not configured correctly, this message might appear.

Make sure to perform the following procedures listed in [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) .

- Creating a host group for the backup proxy server and VMware ESXi host
- Allocating the host group to a resource group for backup

After performing the above checks, rerun the processing.

4.2.2 Message: There is no iSCSI target to register iSCSI name

If you are using an iSCSI connection and the iSCSI target is not configured correctly, this message might appear.

Make sure to perform the following procedures listed in [2.1 Preparing the backup environment for the storage system \(on page 9\)](#) .

- Creating an iSCSI target for the backup proxy server and VMware ESXi host
- Allocating the iSCSI target to a resource group for backup

After performing the above checks, rerun the processing.

4.2.3 Message: Unable to access file snapshot

If this message is output while the backup processing is running, make sure that there is sufficient space in the pool for business, and then rerun the processing.

4.2.4 Message: Cannot choose between the volume LUNs with the same ID / No synchronous replication relationship was detected for these volumes

If you perform a backup job for an Active Mirror pair, this message might be output.

If backup that uses synchronous replication fails due to the error in this message, see [1.3 Environment requirements \(on page 2\)](#) and correct the incorrect settings related to synchronous replication.

If backup that does not use synchronous replication fails due to the error in this message, register only one of the two storage systems that make up the pair in Veeam Backup & Replication.

4.2.5 Message: Unexpected character encountered while parsing value

A communication problem between NEC Storage V Series Plug-In and the storage system or a problem in the processing tasks on the storage system might prevent to obtain the correct information. To ensure that the status is normal, make sure:

- The status of the network environment is normal.
- The storage system is running.
- The REST API of the storage system is running.
- The load on the storage system is not high. For example, make sure that a large number of processing tasks are not performed on the storage system.

After performing the above checks, rerun the processing.

4.2.6 Message: The timeout (xx:xx:xx) occurred in the REST-API response. Try the operation again when the storage load is light

If there are multiple resource groups allocated to a backup operation user group and the values of those resource group IDs are not close to each other, depending on the load situation of the storage system, an attempt to rescan ([Storage Discovery]) or unregister the storage system might fail, resulting in the output of this message.

In the preceding situation, if this message is output, specify settings so that the values of those resource group IDs are as close to each other as possible.

4.2.7 Message: Synchronous replication relationships not found

If you are backing up a synchronized Synchronous Replication or Active Mirror pair and the settings are incorrect, the backup that uses synchronous replication might not work.

If this message is output, see [1.3 Environment requirements \(on page 2\)](#) and fix the incorrect settings.

4.2.8 Message: The pre-check process before creating a snapshot/clone has timed out. Please check the status of the pairs created on the target production volume and try again after a while

When you perform a backup, if data copy processing is already in progress for the business volumes to be backed up, this message might be output and the backup might fail. In addition, when you run Instant Recovery or SureBackup for storage snapshots, if data copy processing is already in progress for the volume of the target storage snapshots, this message might be output and the operation might fail.

While data copy processing is in progress, the Snapshot Advanced pair for which the primary volume is set as the volume to be backed up exists in the PSUP/PSUS(SP) state. Wait until the relevant Snapshot Advanced pair changes to the PSUS state, and then retry the operation that failed.

Note

This problem occurs when the volumes to be backed up are data reduction shared volumes. For details on how to avoid this problem in backup operation, see [3.2 Restrictions on backup of data reduction shared volumes \(on page 28\)](#).

4.2.9 Message: The error is occurred in REST API. Please contact storage system administrator to check the details in the log file. A message including KART40009-E is output to the log file

When an attempt is made to perform a backup or to run Instant Recovery or SureBackup for storage snapshots, the error message The error is occurred in REST API. Please contact storage system administrator to check the details in the log file appears, and the job fails, after that, if you check the log file, a message including KART40009-E might be output as follows:

```
"messageId" : "KART40009-E",
```

For backup, the reason why the attempt fails is that data copy processing is already in progress for the business volumes to be backed up. In addition, for Instant Recovery or SureBackup, the reason why the attempt fails is that data copy processing is already in progress for the volume of the target storage snapshots.

While data copy processing is in progress, the Snapshot Advanced pair for which the primary volume is set as the volume to be backed up exists in the PSUP/PSUS(SP) state. Wait until the relevant Snapshot Advanced pair changes to the PSUS state, and then retry the operation that failed.

Note

This problem occurs when the volumes to be backed up are data reduction shared volumes. For details on how to avoid this problem in backup operation, see [3.2 Restrictions on backup of data reduction shared volumes \(on page 28\)](#).

4.2.10 Message: The number of files in the gc folder exceeded the limit

If problems such as intermittent failures in NEC Storage V Series Plug-In processing occur on the storage system or the Veeam backup server, this message might appear.

If this message appears, perform the following steps to resolve the problem, and then retry the failed operation.

Procedure

1. Make sure that there is a folder named `gc` in the following folder:

For a Microsoft Windows-based backup server:

```
<Veeam-Backup&Replication-path>\Plugins\Storage\NEC Storage V Series\gc
```

For Veeam Software Appliance (Linux):

```
/etc/veeam/plugins/storages/nec-storage-v-series/gc
```

2. Move some files to any folder on the Veeam backup server, so that the number of files in the `gc` folder is less than 1,000. Do not delete the moved files.
3. Make sure that the number of files in the `gc` folder is less than 1,000, and then retry the failed operation.
4. After the operation succeeds, return the moved files to the `gc` folder.

4.2.11 Files remain in the gc folder after a storage system is unregistered

In the following folder where Veeam Backup & Replication is installed, there is a folder named `gc`:

For a Microsoft Windows-based backup server:

```
<Veeam-Backup&Replication-path>\Plugins\Storage\NEC Storage V Series\gc
```

For Veeam Software Appliance (Linux):

```
/etc/veeam/plugins/storages/nec-storage-v-series/gc
```

In this folder, there might be files that contain the storage system names and storage system serial numbers registered in Veeam Backup & Replication.

File name example (when the storage system is NEC Storage V100, and the serial number is 123456):

```
NEC Storage V100-123456-111-VeeamCL_0112_20240925085242-113,3-20241010083743
```

Although this file is deleted from the `gc` folder when you unregister the target storage system, this file might remain without being deleted. If the file remains, perform the following procedure:

Procedure

1. Re-register the target storage system in Veeam Backup & Replication.
2. Unregister the target storage system again from Veeam Backup & Replication.
3. Check the `gc` folder, and make sure that there is no file containing the name and serial number of the target storage system.

4.2.12 NEC Storage V Series Plug-In processing and storage system processing are slow

When multiple users perform processing tasks at the same time, or when multiple jobs run at the same time, it might take a long time for NEC Storage V Series Plug-In processing and storage system processing to finish.

Avoid running multiple processing tasks simultaneously by reducing the number of users who perform operations, or by staggering the start times of multiple jobs.

4.2.13 An error or warning event is logged in the event log of the backup proxy server

The Windows Server that is operating as the backup proxy server might log any of the events listed in the following table. These events are issued when verification processing of the backup data completes in Veeam Backup & Replication and the volume is successfully disconnected. No action is necessary because this is normal behavior. If a path error occurs due to a cause other than the processing in Veeam Backup & Replication, check the cause of the error and take remedial action.

Event ID	Level	Message	Remarks
157	Warning	Disk <i>number</i> has been surprise removed.	None.
15	Error	The device, <i>a-path-of-device</i> , is not ready for access yet.	None.
20781	Error	KAPL05301-E A path has been removed. (The following part is omitted.)	This is issued when HA Dynamic Link Manager is used.
32787	Error	KAPL08019-E The path (<i>path-id</i>) detected an error (<i>error-code</i>). (The following part is omitted.)	This is issued when HA Dynamic Link Manager is used.
32790	Error	KAPL08022-E A path error occurred. (The following part is omitted.)	This is issued when HA Dynamic Link Manager is used.
32794	Error	KAPL08026-E An error occurred on all the paths of the LU. (The following part is omitted.)	This is issued when HA Dynamic Link Manager is used.

4.3 Information to be collected when a failure occurs

If a failure occurs in NEC Storage V Series Plug-In, collect the information, and then contact your maintenance staff.

4.3.1 Collecting NEC Storage V Series Plug-In information

NEC Storage V Series Plug-In information is included in the log files of the Veeam backup server on which NEC Storage V Series Plug-In is installed. For details on how to collect those log files, see the description of Exporting Logs in the Veeam Backup & Replication documentation. When you select the target component for which to collect log files, select the Veeam backup server on which NEC Storage V Series Plug-In is installed.

4.3.2 Collecting storage system information

If you are using an SVP, collect the normal dump files. If you are not using an SVP, collect system dumps by using the Maintenance Utility.

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Quick Start Guide**

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