

# Hitachi Data Ingestor

6.4.0

---

## Backup Restore Features Supplement for Hitachi Data Protection Suite

This document describes the instructions for setting up an HDI environment to work with Hitachi Data Protection Suite powered by CommVault®.

© 2017 Hitachi Vantara Corporation. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or stored in a database or retrieval system for commercial purposes without the express written permission of Hitachi, Ltd., or Hitachi Vantara Corporation (collectively, "Hitachi"). Licensee may make copies of the Materials provided that any such copy is: (i) created as an essential step in utilization of the Software as licensed and is used in no other manner; or (ii) used for archival purposes. Licensee may not make any other copies of the Materials. "Materials" mean text, data, photographs, graphics, audio, video and documents.

Hitachi reserves the right to make changes to this Material at any time without notice and assumes no responsibility for its use. The Materials contain the most current information available at the time of publication.

Some of the features described in the Materials might not be currently available. Refer to the most recent product announcement for information about feature and product availability, or contact Hitachi Vantara Corporation at [https://support.HitachiVantara.com/en\\_us/contact-us.html](https://support.HitachiVantara.com/en_us/contact-us.html).

**Notice:** Hitachi products and services can be ordered only under the terms and conditions of the applicable Hitachi agreements. The use of Hitachi products is governed by the terms of your agreements with Hitachi Vantara Corporation.

By using this software, you agree that you are responsible for:

- 1) Acquiring the relevant consents as may be required under local privacy laws or otherwise from authorized employees and other individuals to access relevant data; and
- 2) Verifying that data continues to be held, retrieved, deleted, or otherwise processed in accordance with relevant laws.

**Notice on Export Controls.** The technical data and technology inherent in this Document may be subject to U.S. export control laws, including the U.S. Export Administration Act and its associated regulations, and may be subject to export or import regulations in other countries. Reader agrees to comply strictly with all such regulations and acknowledges that Reader has the responsibility to obtain licenses to export, re-export, or import the Document and any Compliant Products.

**EXPORT CONTROLS** - Licensee will comply fully with all applicable export laws and regulations of the United States and other countries, and Licensee shall not export, or allow the export or re-export of, the Software, API, or Materials in violation of any such laws or regulations. By downloading or using the Software, API, or Materials, Licensee agrees to the foregoing and represents and warrants that Licensee is not located in, under the control of, or a national or resident of any embargoed or restricted country.

Hitachi is a registered trademark of Hitachi, Ltd., in the United States and other countries.

AIX, AS/400e, DB2, Domino, DS6000, DS8000, Enterprise Storage Server, eServer, FICON, FlashCopy, IBM, Lotus, MVS, OS/390, PowerPC, RS6000, S/390, System z9, System z10, Tivoli, z/OS, z9, z10, z13, z/VM, and z/VSE are registered trademarks or trademarks of International Business Machines Corporation.

Active Directory, ActiveX, Bing, Excel, Hyper-V, Internet Explorer, the Internet Explorer logo, Microsoft, the Microsoft Corporate Logo, MS-DOS, Outlook, PowerPoint, SharePoint, Silverlight, SmartScreen, SQL Server, Visual Basic, Visual C++, Visual Studio, Windows, the Windows logo, Windows Azure, Windows PowerShell, Windows Server, the Windows start button, and Windows Vista are registered trademarks or trademarks of Microsoft Corporation. Microsoft product screen shots are reprinted with permission from Microsoft Corporation.

All other trademarks, service marks, and company names in this document or web site are properties of their respective owners.





# Contents

Preface.....	vii
Product version.....	viii
Release notes.....	viii
Abbreviation conventions.....	viii
Document conventions.....	viii
Accessing product documentation.....	ix
Getting help.....	ix
Comments.....	ix
<b>1 Setting Up the Operating Environment.....</b>	<b>1-1</b>
Tasks necessary for linking with Data Protection Suite.....	1-2
Installing Data Protection Suite.....	1-2
Setting up the Data Protection Suite environment.....	1-2
Setting up NAS Client.....	1-2
First-time setup.....	1-2
Changing the NAS Client settings.....	1-3
Setting up the robot and tape drives.....	1-3
To use a tape device connected to a node via a SAN.....	1-4
To use a tape device connected to the media server.....	1-4
Creating a storage policy.....	1-5
Adding a subclient.....	1-5
<b>2 Troubleshooting.....</b>	<b>2-1</b>
When a backup or restore operation has terminated with an error.....	2-2
When a problem has occurred on the connection between the backup server or media server and the NDMP server.....	2-2
When a tape drive is in the Offline status.....	2-2
<b>A Notes on Using Data Protection Suite.....</b>	<b>A-1</b>
Notes of Hitachi Data Ingestor.....	A-2
Notes of Data Protection Suite.....	A-2

## Index





# Preface

The purpose of this document is to supplement the documentation for Hitachi Data Protection Suite (powered by CommVault(R)<sup>#</sup>), by explaining how to set up the environment needed to use Data Protection Suite with Backup Restore and by summarizing the troubleshooting procedures. In this document, Hitachi Data Protection Suite (powered by CommVault(R)) is abbreviated as *Data Protection Suite*.

For details on the Data Protection Suite functions, see the Data Protection Suite documentation.

#:

This Suite -V6.1 (SP3)- incorporates rebranded CommVault products:

- Hitachi Backup and Recovery (CommVault Galaxy)
- Hitachi Quick Recovery (CommVault QuickRecovery)
- Hitachi Data Migrator (CommVault DataMigrator)
- Hitachi Data Archiver (CommVault DataArchiver)
- Hitachi Data Protection Monitor (CommVault QNET)

- [Product version](#)
- [Release notes](#)
- [Abbreviation conventions](#)
- [Document conventions](#)
- [Accessing product documentation](#)
- [Getting help](#)
- [Comments](#)

## Product version

This document revision applies to Hitachi Data Ingestor version 4.2.1 or later.

## Release notes

Read the release notes before installing and using this product. They may contain requirements or restrictions that are not fully described in this document or updates or corrections to this document. Release notes are available on Hitachi Vantara Support Connect: <https://knowledge.hitachivantara.com/Documents>.

## Abbreviation conventions

This document uses the following abbreviations for product names:

Abbreviation	Full name or meaning
Data Protection Suite	A generic name for the following: <ul style="list-style-type: none"><li>• Hitachi Data Protection Suite, powered by CommVault(R)</li></ul>
File Services Manager	A generic name for the following: <ul style="list-style-type: none"><li>• Configuration Manager</li><li>• Hitachi File Services Manager</li></ul>

## Document conventions

This document uses the following typographic conventions:

Convention	Description
<b>Bold</b>	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels. Example: Click <b>OK</b> .
<i>Italic</i>	Indicates a variable, which is a placeholder for actual text provided by the user or system. Example: <i>copy source-file target-file</i> <i>Note:</i> Angled brackets (< >) are also used to indicate variables.
screen/code	Indicates text that is displayed on screen or entered by the user. Example: # pairdisplay -g oradb
...	In code examples, ellipses (...) indicate that some code has been removed for the sake of clarity.



## Accessing product documentation

Product user documentation is available on Hitachi Vantara Support Connect: <https://knowledge.hitachivantara.com/Documents>. Check this site for the most current documentation, including important updates that may have been made after the release of the product.

## Getting help

[Hitachi Vantara Support Connect](#) is the destination for technical support of products and solutions sold by Hitachi Vantara. To contact technical support, log on to Hitachi Vantara Support Connect for contact information: [https://support.hitachivantara.com/en\\_us/contact-us.html](https://support.hitachivantara.com/en_us/contact-us.html).

[Hitachi Vantara Community](#) is a global online community for Hitachi Vantara customers, partners, independent software vendors, employees, and prospects. It is the destination to get answers, discover insights, and make connections. **Join the conversation today!** Go to [community.hitachivantara.com](https://community.hitachivantara.com), register, and complete your profile.

## Comments

Please send us your comments on this document to [doc.comments@hitachivantara.com](mailto:doc.comments@hitachivantara.com). Include the document title and number, including the revision level (for example, -07), and refer to specific sections and paragraphs whenever possible. All comments become the property of Hitachi Vantara Corporation.

**Thank you!**



# Setting Up the Operating Environment

This chapter provides an overview of the tasks required on the backup servers and media servers in order to use Data Protection Suite to perform backup and restore operations.

- [Tasks necessary for linking with Data Protection Suite](#)
- [Installing Data Protection Suite](#)
- [Setting up the Data Protection Suite environment](#)
- [Setting up NAS Client](#)
- [Setting up the robot and tape drives](#)
- [Creating a storage policy](#)
- [Adding a subclient](#)

## Tasks necessary for linking with Data Protection Suite

To use Data Protection Suite to perform backup and restore operations, you must perform the following tasks on the backup servers and media servers:

- Install Data Protection Suite
- Set up the Data Protection Suite environment
- Set up NAS Client
- Set up the robot and tape drives
- Create a storage policy
- Add a subclient

## Installing Data Protection Suite

Install Data Protection Suite on backup servers and media servers and enable iDataAgent for Hitachi NAS, which is an optional product.

In addition, to use Data Protection Suite, you must also specify several license settings. To share tape drives with multiple nodes , you need to set the Shared Storage License.

## Setting up the Data Protection Suite environment

Adjust the log file size and the number of log file generations according to the disk capacity of the backup servers.

## Setting up NAS Client

This section describes how to set up NAS Client.

### First-time setup

This subsection describes how to set up NAS Client for the first time.

Note:

If the password for the NDMP server is changed, the password set in NAS Client must also be changed.

1. In CommCell Browser, choose **Client Computers**, in the Add New Client window, choose **NAS Client**, and in the Add NDMP Server window, set up NAS Client.

The following table describes the items to be specified in the Add NDMP Server window.

**Table 1-1 Items to be specified in the Add NDMP Server window of Data Protection Suite**

Item	Description
<b>NDMP Server Hostname</b>	Specify the host name or virtual IP address of a node . Do not specify a fixed IP address. If you do so, a backup or restore operation terminates with an error when the system is operating in the degenerate mode.
<b>NDMP Login</b>	Specify the user name for the NDMP server.
<b>NDMP Password</b>	Specify the password for the NDMP server.
<b>Confirm NDMP Password</b>	Specify the password for the NDMP server again for confirmation.
<b>Listen Port</b>	Specify 10000.

## Changing the NAS Client settings

### To change the NAS Client settings:

1. In CommCell Browser, choose **Client Computers**, *NDMP-server-host-name*, and then **Hitachi NAS**, in the Hitachi NAS Properties window, choose **NDMP Properties**. In the NDMP Server Properties window, change the NAS Client settings.

The following table describes the items that can be specified in the NDMP Server Properties window.

**Table 1-2 Items to be specified in the NDMP Server Properties window of Data Protection Suite**

Item	Description
<b>Change Password</b>	Select this check box if the password for the NDMP server has been changed.
<b>NDMP Login</b>	Specify the user name for the NDMP server.
<b>NDMP Password</b>	Specify the password for the NDMP server.
<b>Confirm NDMP Password</b>	Specify the password for the NDMP server again for confirmation.
<b>Listen Port</b>	Specify 10000.

## Setting up the robot and tape drives

Set up the devices for storing backed-up data.

## To use a tape device connected to a node via a SAN

Display the Control Panel window from CommCell Console, and set up the robot and tape drives in the Library and Drive Configuration window.

### To set up the robot and tape drives:

1. Choose **Start** and then **Detect/Config Devices...**. In the Detect Library window, add a robot.
2. Choose **Start, NDMP**, and then **Add Drive...**. In the Add NDMP Drive window, add tape drives.

To use tape drives for each node :

Register the tape drive on each node under the robot (registered in step 1).

To share tape drives among multiple nodes :

Register the tape drive on each node as a different drive. For the tape drive registered on a node , register it under the robot (registered in step 1). For the tape drive registered on the other node , register it as Stand Alone.

The following table describes the items to be specified in the Add NDMP Drive window.

**Table 1-3 Items to be specified in the Add NDMP Drive window of Data Protection Suite**

Item	Description
<b>NDMP Server Host Name</b>	Specify the host name or virtual IP address of the NDMP server.
<b>NDMP Server Drive Path</b>	Specify the path of the device file for a tape drive. You can use the <code>tape list</code> command to check the paths of device files.
<b>Drive Serial Number</b>	Specified automatically by clicking the <b>Populate Serial Number and Model</b> button.
<b>Drive Vendor/ Model</b>	Specified automatically by clicking the <b>Populate Serial Number and Model</b> button.

Note:

Specify the other items according to operational requirements.

3. If a tape drive is to be shared by multiple nodes , execute **Create DDS DrivePool...** on the Stand Alone tape drive registered in step 2 to create a DDS Drive Pool under the Master Pool of the robot.
4. Execute **Configure** to configure the robot and tape drives.

## To use a tape device connected to the media server

Display the Control Panel window from CommCell Console, and set up the robot and tape drives in the Library and Drive Configuration window.

### To set up the robot and tape drives:

1. Choose **Start, Detect/Config Devices...**, and then **Detect Library** to add a robot and tape drives.
2. Execute **Configure** to configure the tape device.

## Creating a storage policy

### To create a storage policy:

1. In CommCell Browser, choose **Policies, Storage Policies**, and then choose **New Storage Policy**, the **Create Storage Policy Wizard** window is displayed.
2. Following the Create Storage Policy wizard instructions, specify the necessary information.

The following table describes the information required by the Create Storage Policy wizard.

**Table 1-4 Information required by the Create Storage Policy wizard of Data Protection Suite**

Item	Description
<b>Media Agent</b>	Specify the host name or virtual IP address of a node .

Note:

Specify the other items according to operational requirements.

## Adding a subclient

To back up and restore data, you (the system administrator) need to configure a subclient.

Specify each of the files and directories to be backed up in **Backup Content Path** of a subclient in the following format:

*/mnt/path-name-of-a-file-or-directory-to-be-backed-up/*

Note the following when you specify **Backup Content Path**:

- In **Backup Content Path**, you can specify one or more directory paths. If a specified directory path is incorrect, only directories that have valid paths are backed up.
- A path specified in **Backup Content Path** cannot exceed 254 bytes, including `/mnt/`. The forward slash (/) at the end of a path can be omitted.
- Wildcard characters cannot be used.
- The paths specified in **Backup Content Path** cannot include a backslash (\), comma (,), semicolon (;), question mark (?), double quotation mark

("), vertical bar (|), left angle bracket (<), and right angle bracket (>). A backslash (\) cannot be used as an escape character.

- If the name of a directory to be backed up includes space characters, specify an upper-level directory whose name does not include space characters.
- Note that `.history` cannot be specified for a directory name. Also, `.arc`, `.system_gi`, and `.system_reorganize` cannot be specified for the name of a directory immediately under the file system.

You can specify options for each subclient as necessary. You specify options in the **NAS Options** tab of the Advanced Backup Option window.



# Troubleshooting

This chapter describes how to troubleshoot problems that occur when Data Protection Suite is used to back up or restore data in the Hitachi Data Ingestor.

- [When a backup or restore operation has terminated with an error](#)
- [When a problem has occurred on the connection between the backup server or media server and the NDMP server](#)
- [When a tape drive is in the Offline status](#)

## When a backup or restore operation has terminated with an error

The result of a backup operation is displayed in the Backup History window, the Job Controller window, or the Event Viewer window of CommCell Browser. The result of a restore operation is displayed in the Job Controller window or the Event Viewer window of CommCell Browser.

For details on the Data Protection Suite error messages displayed in the Event Details window of CommCell Console, see the Data Protection Suite documentation.

Note that Data Protection Suite log information is output to the following directory:

*Data Protection Suite-installation-directory/Log Files/*

Notes:

- In Backup Restore, KAQB14208-W is a Warning level message. In Data Protection Suite, however, the **Severity** level of this message is an error (that is, the **Severity** level is not *Information*).
- If a message without a message ID is output, look for the message in the NDMP server log (*/enas/log/ndmpserver.log*) on the **List of RAS Information** page (for *List of other log files*) of File Services Manager, and then investigate and take appropriate action.

## When a problem has occurred on the connection between the backup server or media server and the NDMP server

Use the following procedure to check whether the user name and password registered on the backup server are identical to those registered on the NDMP server and media server.

### To check the user name and password:

1. In CommCell Browser, choose **Client Computers**, *NDMP-server-host-name*, and then **Hitachi NAS**.
2. From the **File** menu, choose **Properties**.  
The Hitachi NAS Properties window appears.
3. On the **General** tab, click the **NDMP Properties** button.  
The NDMP Server Properties window appears.
4. Click the **Detect** button to check whether the settings are correct.

## When a tape drive is in the Offline status

Reset the tape drive to place it in the *Ready* status. For details on resetting the tape drive, see the Data Protection Suite documentation.

# Notes on Using Data Protection Suite

Note the following when you use Data Protection Suite.

- [Notes of Hitachi Data Ingestor](#)
- [Notes of Data Protection Suite](#)

## Notes of Hitachi Data Ingestor

Note the following of Hitachi Data Ingestor when you use Data Protection Suite:

- Backup Restore manages history information of incremental backups by using the .backupdates file for each file system. Note the following when performing an incremental backup.
  - Make sure that you do not delete, rename, or change the .backupdates file.
  - The .backupdates file must be updated when an incremental backup is performed. Therefore you must mount the file system with the read and write permissions enabled.
  - If space is insufficient on the file system, the history of incremental backups might not be correctly written to the .backupdates file. After the history is not correctly written, an incremental backup might not be performed correctly.

## Notes of Data Protection Suite

Note the following when you use Data Protection Suite to perform backup and restore operations:

- The length of a path for data to be backed up must be no more than 1,027 bytes.
- Do not attempt to perform a restore operation for a file system while another restore operation or a backup operation is being performed for the file system, because the file system data will become inconsistent. You can perform multiple backup operations at the same time.
- If the KARB14208-W message is output while a backup or restore operation is being performed, the Data Protection Suite processing might end with an error. If this message is output again even after retrying the operation, take action according to the information in the message to remove the cause of the error, and then retry the operation.
- When using a SCSI Reservation function, use SCSI3. When SCSI2 is used and if a backup or restore operation is terminated due to an error such as a failover, the tape device might be in a status that prevents it from being used. If this happens, restart the tape device.
- When performing a restore operation by specifying the base point of the target backup data, even if you have disabled **Recursive Restore** in the **NAS options** tab, the data will be restored recursively.
- If the backup fails with the message "Failed to mount media with barcode [*bar-code-number*]" while SCSI Reservation is enabled, Please contact with CommVault Customer Service.



# Index

## A

adding  
    subclient 1-5

## C

changing  
    NAS Client settings 1-3  
creating  
    storage policy 1-5

## D

Data Protection Suite  
    installing 1-2  
    setting up environment 1-2

## I

installing  
    Data Protection Suite 1-2

## N

NAS Client  
    changing settings 1-3  
    setting up 1-2

## R

robot and tape drives  
    setting up 1-3

## S

setting  
    Data Protection Suite environment 1-2  
    NAS Client 1-2  
    Robot and tape drives 1-3  
storage policy  
    creating 1-5  
subclient  
    adding 1-5





## Hitachi Vantara

Corporate Headquarters  
2845 Lafayette Street  
Santa Clara, CA 95050-2639 USA  
[www.HitachiVantara.co](http://www.HitachiVantara.co)  
[community.HitachiVantara.com](http://community.HitachiVantara.com)

### Regional Contact Information

Americas: +1 866 374 5822 or [info@hitachivantara.com](mailto:info@hitachivantara.com)  
Europe, Middle East and Africa: +44 (0) 1753 618000 or [info.emea@hitachivantara.com](mailto:info.emea@hitachivantara.com)  
Asia Pacific: +852 3189 7900 or [info.marketing.apac@hitachivantara.com](mailto:info.marketing.apac@hitachivantara.com)

