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Hitachi Content Platform using AvePoint DocAve 6

Implementation Guide

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Hitachi Content Platform using AvePoint DocAve 6

Implementation Guide

Hitachi Content Platform using AvePoint DocAve 6.0 combines intelligent object storage with business-aware content management and data protection to enhance Microsoft SharePoint-enabled business solutions.

After storing content in SharePoint databases, DocAve uses customizable storage policies in Content Platform to reduce the burden on the SQL databases used by SharePoint. Use DocAve to store or archive your SharePoint infrastructure and content without any interruptions or disturbances to the end users.

The implementation uses Hitachi Content Platform as target storage device for DocAve backup and archiving. Hitachi Adaptable Modular Storage 2500 runs DocAve Manager Server.

This implementation guide describes the installation, configuration, and the execution and integration of AvePoint DocAve to store backup or archived data on Hitachi Content Platform. Use the guide if you have any of the following:

- Responsibility for storage administration

- DocAve system administration and implementation

This implementation guide requires you to have the following:

- Knowledge of SAN concepts

- Skills with DocAve administration

Note—These procedures were developed in a lab environment. Many things affect production environments beyond prediction or duplication in a lab environment. Follow recommended practice by conducting proof-of-concept testing for acceptable results before implementing this solution in your production environment. Test the implementation in a non-production, isolated test environment that otherwise matches your production environment.

Tested Solution Components

These are the components needed to implement this solution in your data center.

Hardware and operating system requirements are in "DocAve Manager System Requirements" and "DocAve Agent System Requirements" in *DocAve 6 Installation Guide* (AvePoint, Inc., 2012) available from the Resources web page of the AvePoint website.

Hardware Components

These are the hardware components to implement an environment using Hitachi Content Platform and AvePoint DocAve.

Table 1 lists the hardware for a deployment in a single site environment. Table 2 on page 3 lists the hardware for deployment in a disaster recovery environment using a primary and secondary site.

Table 1. Hardware for Deployment in a Single Site Environment

Hardware	Quantity	Configuration	Role
Hitachi Adaptable Modular Storage 2500	1	▪ 8 Fibre Channel ports ▪ 16 GB cache	▪ AvePoint DocAve storage
Hitachi Compute Rack 220	1	▪ 2 × 4-core Intel Xeon E5620 CPU, 2.4 GHz ▪ 8 GB of RAM	One Compute Rack for each of the following roles: ▪ Microsoft SQL Server 2008 Enterprise ▪ Microsoft SharePoint 2010 server and AvePoint DocAve 6.0 server ▪ ESX server 5.0 ▪ AvePoint DocAve client
Hitachi Content Platform 300	4	▪ 1 × 4-core Intel Xeon E5504 CPU, 2.00 GHz ▪ 12 GB of RAM ▪ 4-node	▪ Hitachi Content Platform storage nodes

Table 2. Hardware for Deployment in a Disaster Recovery Environment (Primary Site and Secondary Site)

Hardware	Quantity	Configuration	Role
Hitachi Adaptable Modular Storage 2500	1	▪ 8 Fibre Channel ports ▪ 16 GB cache	▪ AvePoint DocAve storage
Hitachi Compute Rack 220 [**primary site**]	4	▪ 2 × 4-core Intel Xeon E5620 CPU, 2.4 GHz ▪ 8 GB of RAM	One Compute Rack for each of the following roles: ▪ Microsoft SQL Server 2008 Enterprise ▪ Microsoft SharePoint 2010 server and AvePoint DocAve 6.0 server ▪ ESX server 5.0 ▪ AvePoint DocAve client
Hitachi Compute Rack 220 [**secondary site**]	3	▪ 2 × 4-core Intel Xeon E5620 CPU, 2.4 GHz ▪ 8 GB of RAM	One Compute Rack for each of the following roles: ▪ Microsoft SQL Server 2008 Enterprise ▪ Microsoft SharePoint 2010 server and AvePoint DocAve 6.0 server ▪ Microsoft SQL Server 2008 Enterprise (witness)
Hitachi Content Platform 300 [**primary site**]	4	▪ 1 × 4-core Intel Xeon E5504 CPU, 2.00 GHz ▪ 12 GB of RAM ▪ 4-node	▪ Hitachi Content Platform storage nodes
Hitachi Content Platform 300 [**secondary site**]	4	▪ 1 × 4-core Intel Xeon E5504 CPU, 2.00 GHz ▪ 12 GB of RAM ▪ 4-node ▪ 6 × 500 GB HDD	▪ Hitachi Content Platform storage nodes

Hitachi Content Platform

Hitachi Content Platform is a distributed object store that provides advanced storage and data management capabilities. This helps you address challenges posed by ever-growing volumes of unstructured data. Divide a single Content Platform into multiple virtual object stores, secure access to each store, and uniquely configure each store for a particular workload.

Eliminate storage silos using Content Platform with a single object storage infrastructure that supports a wide range of data types, applications, and users with different service level needs in enterprise and cloud environments.

Software Components

Table 3 lists the software for deployment in a single site environment or a disaster recovery environment.

Table 3. Software for Deployment in a Single Site Environment or Disaster Recovery Environment

Software	Version
Microsoft Windows Server	2008 R2 Enterprise (64-Bit)
Microsoft SQL Server	2008 Enterprise (64-Bit)
Microsoft SharePoint	5.5 Build 44586
AvePoint DocAve Manager	6.0
Hitachi Content Platform	4.1.1.56
AvePoint DocAve Client	6.0
AvePoint DocAve Manager Patch (Hot fix)	6.0.0.600106_20120319
ESX Server	5.0

AvePoint DocAve

AvePoint DocAve 6 simplifies the deployment, monitoring, and enforcement of Microsoft SharePoint 2010 governance policies. As a fully integrated platform, DocAve 6 enables centralized or delegated management of SharePoint farms.

This solution uses the following DocAve components:

- **Granular Backup and Restore**—Provides full backup and recovery

- **Storage Manager**—Off-loads BLOBs to file-based storage

- **Archiver**—Manages data growth and long term retention

- **Storage Manager**—Reduces accumulating storage costs and optimize platform performance

For more information about AvePoint DocAve, see the following documents from the **User Guide** area of the [Resources](#) page on the AvePoint web site:

- *DocAve 6 Archiver*

- *DocAve 6 Storage Manager*

- *DocAve 6 Backup and Restore*

Solution Implementation

To deploy this solution, follow these steps:

1. "Configure the SAN" on page 6

2. "Configure Storage" on page 6

3. "Deploy DocAve Server" on page 9

4. "Deploy Hitachi Content Platform" on page 13

5. "Configure AvePoint DocAve" on page 14

Create your installation checklist, based on the needs of your environment.

Configure the SAN

Connect all servers using two HBAs on each physical server to the Brocade 5000 Fibre Channel switches.

Recommended practice is to configure each port to use a different switch for redundancy. However, your organization's guidelines for might vary. Check with your IT department.

Table 4 lists the path configuration used in this solution.

Table 4. Path Configuration

Host	Port Name	Storage Port	Storage Host Group
SCISV38-166	10000000C9AAA872	0B	002:G002-SCISV38-166-AvePt-SQLServer
SCISV38-167	10000000C9AAA258	0B	003:G002-SCISV38-167-AvePt-AvePtSrvr
SCISV38-170	10000000C9AAA1F6	0B	004:G002-SCISV38-170-AvePt-ESX5
SCISV38-178	10000000C9AAA270	1B	005:G002-SCISV38-178-AvePt-SQLStndby
SCISV38-179	10000000C9BB4A20	1B	048:G002-SCISV38-179-AvePt-Svr2
SCISV38-180	10000000C9AAAA58	1B	007:G002-SCISV38-180-AvePt-SQLWitns

Configure Storage

Use Hitachi Storage Navigator Modular 2 to provision storage to DocAve Server. Use a RAID 6 (8D+2P) configuration with 1 TB 7200k RPM SATA disk drives. Allocate 600 GB LUNs and assign each LUN to a server.

Table 5 lists the storage provisioning for this environment.

Table 5. Storage Configuration

RAID	LUN	Size (GB)	Port	Server
RAID-6 (8D+2P)	0037	600	0B	SCISV38-166
RAID-6 (8D+2P)	0038	600	0B	SCISV38-167
RAID-6 (8D+2P)	0039	600	0B	SCISV38-170

Table 5. Storage Configuration (Continued)

RAID	LUN	Size (GB)	Port	Server
RAID-6 (8D+2P)	0047	600	1B	SCISV38-178
RAID-6 (8D+2P)	0048	600	1B	SCISV38-179
RAID-6 (8D+2P)	0049	600	1B	SCISV38-180

Configure RAID Groups on Hitachi Adaptable Modular Storage 2500

Repeat this process for every RAID group in Table 5 on page 6.

To create and configure a RAID group on Hitachi Adaptable Modular Storage 2500, do the following.

1. Open the Logical Units pane.

   (1) In the Explorer pane of Hitachi Storage Navigator Modular 2, expand the resource tree and then click the **Subsystems** link.

   The Subsystems pane displays.

   (2) Expand the storage system and groups in the navigation tree.

   (3) Click the **Logical Units** link.

   The Logical Units pane displays.

2. Configure a RAID group.

   (1) On the **RAID Groups** tab, click **Create RG**.

   The **Create RAID Group** dialog box opens.

   (2) In **RAID Group**, type a unique numeric value.

   ▪ Use any value to identify this new RAID group.

   (3) From the **RAID Level** list, click **RAID 6.**

   (4) From the **Combination** list, click **8D+2P**.

   (5) In **Number of Parity Groups**, type the following: 1

   Increasing the number of parity groups above the default of value of 1 allows the creation of large LUs across multiple RAID groups. However, Hitachi Data Systems recommends against the creation of LUs that span across multiple RAID groups.

   Instead, use Hitachi Dynamic Provisioning to create LUs that automatically span a greater number of hard drives.

(6) For **Drives**, do the following:

- Click the **Automatic Selection** option.

- From the **Drive Type** list, click **SATA**.

- From the **Drive Capacity** list, click **1 TB**.

3. Create the RAID group.

- Click **OK**.

A message says the RAID group is created.

Configure Logical Units on Hitachi Adaptable Modular Storage 2500

Repeat this process for every logical unit (LUN) in Table 5 on page 6.

To create and configure a LUN on Hitachi Adaptable Modular Storage 2500, do the following.

1. Open the Logical Units pane.

(1) In the Explorer pane of Hitachi Storage Navigator Modular 2, expand the resource tree and then click the **Subsystems** link.

The Subsystems pane displays.

(2) Expand the storage system and groups in the navigation tree.

(3) Click the **Logical Units** link.

The Logical Units pane displays.

2. Configure a LUN.

(1) Click the **RAID Groups** tab.

(2) Click the ID number for a RAID group.

The RAID Group <ID> pane displays details about this RAID group.

(3) Click **Create LU**.

The **Create Logical Unit** dialog box opens.

(4) Type the ID in LUN. See Table 5 on page 6 for example naming.

(5) From the **Capacity** list, click **RG ALL**.

(6) Do not select a **Provisioning Attribute**.

3. Create the LUN.

- Click **OK**.

There is a message that says the LUN is created.

Create Host Groups

To create host groups, do the following.

1. From Hitachi Storage Navigator Modular 2, from the **Actions** menu, point to **Ports/Host Groups**, and then click **Create Host Groups**.

   The **Create Host Groups** window opens.

2. In **Host Group Name**, type a name.

3. From the **Host Mode** list, click **00 [Standard]**.

4. Add hosts and ports to the host group.

   (1) In the Available Hosts pane, select one or more hosts.

   (2) In the Available Ports pane, select one or more ports.

5. Click **Add**.

   The Selected Host Groups pane populates.

6. Click **Finish**.

   The **Create Host Groups** dialog box opens.

7. Click **Apply**.

Deploy DocAve Server

Install AvePoint DocAve 6 in each server listed in Table 5 on page 6. There are two different server names used when typing configuration information during installation wizard.

- The server name, as it is found in Table 5 on page 6

- The SQL server name, which is the server name from Table 5 on page 6, a backslash, and "AVEP1SQLSERVER"

  - For example, for the server SCISV38-166, the SQL server name is SCISV38-166\AVEP1SQLSERVER

Before installing AvePoint DocAve 6, the following must be installed on the server:

- Microsoft SQL Server 2008 Enterprise

- Microsoft Windows server 2008

To install DocAve Server, do the following.

1. Start the AvePoint DocAve installation.

   (1) Start the DocAve installer by running the Setup file.

      The DocAve 6 Installation Wizard opens.

   (2) Click **Next**.

2. Prepare the installation using the installation wizard.

    (1) Type the following in the Customer Information pane, and then click **Next**:

- Name

- Organization

    (2) In the DocAve License Agreement pane, select the license agreement acceptance check box and then click **Next**.

    (3) In the Installation Location pane, set the application installation folder and then click **Next**.

- Use the default location displayed in the text box, or click **Browse** to select a different location.

    (4) In the Services Installation pane, click the **Complete** option and then click **Next**.

       The installation wizard then checks to verify the installation prerequisites. The progress of the checking displays in the **Installation Rule Scanning** pane.

- If any check does not pass, fix the problem and then rescan.

    (5) After the setup prerequisite checks finish, in the Installation Rule Scanning pane, click **Next**.

    (6) In the first Control Service Configuration pane, supply the information and then click **Next**.

- In the **Control Service Address** area, type the **Control Service Host**. See the Server column in Table 5 on page 6.

- In the IIS Web Site Settings area, click the **Create a new IIS web site** option, type DocAve6 in text box beside the option button, and type 14000 in **Web Site Port**.

- In the Application Pool Settings area, click the **Create a new application pool** option, type DocAve6 in text box beside the option button, and type an administrator user credential in **Username**, and the password for that credential in **Password**.

    (7) In the second Control Service Configuration pane, supply the information and then click **Next**.

- In the **Database Settings** area, click **MS SQL** from the **Database Type** list, and type Doc_Ave6_Control DB in **Control Service Database Name**.

- In the **Database Credentials** area, click the **Windows Authentication** option.

- In the **Advanced Database Settings** area, do not select **Failover Database Server** or type a name in the text box.

After clicking **Next**, DocAve validates the database name, Doc_Ave6_ControlDB.

- If the database name DocAve6_ControlDB does not exist, the installation wizard opens a dialog box asking if you want to create a new database with the name DocAve6_ControlDB. Click **OK** to proceed.

(8) In the Media Service Configuration pane, supply the information and then click **Next**.

- In the **Media Service Settings** area, type the server name from Table 5 on page 6 in **Media Service Host**, and the port numbers in **Media Service Post** and **Media Service Data Port**.

- In the **Control Service Address** area, type the server name from Table 5 on page 6 in **Control Service Host** and the port number in **Control Service Port**.

(9) In the first Report Service Configuration pane, supply the Information and then click **Next**.

- In the **Report Service Settings** area, type the server name from Table 5 on page 6 in **Report Service Host** and the port number in **Report Service Port**.

- In the **Control Service Address** area, type the server name from Table 5 on page 6 in **Control Service Host** and the port number in **Control Service Port**.

(10) In the second Report Service Configuration pane, supply the Information and then click **Next**.

- In the **Database Settings** area, type the SQL server name based on the server name from Table 5 on page 6 in **Report Service Host** and DocAve6_ReportDB in **Report Service Port**.

- In the **Database Credentials** area, click the **Windows Authentication** option, and type the **Username** and **Password** credentials.

- In the Advanced Database Settings area, do not select the **Failover Database Server** check box or type a name in the text box.

After clicking **Next**, DocAve validates the database name, Doc_Ave6_ReportDB.

- If the database name DocAve6_ReportDB does not exist, the installation wizard opens a dialog box asking if you want to create a new database with the name DocAve6_ReportDB. Click **OK** to proceed.

(11) In the third Report Service Configuration pane, supply the Information and then click **Next**.

- In the **Auditor Settings** area, type the SQL server name based on the server name from Table 5 on page 6 in **Report Service Host** and DocAve6_AuditorDB in **Report Service Port**.

- In the **Database Credentials** area, click the **Windows Authentication** option, and type the **Username** and **Password** credentials.

- In the Advanced Database Settings area, do not select the **Failover Database Server** check box or type a name in the text box.

  After clicking **Next**, DocAve validates the database name, Doc_Ave6_AuditorDB.

- If the database name DocAve6_AuditorDB does not exist, the installation wizard opens a dialog box asking if you want to create a new database with the name DocAve6_AuditorDB. Click **OK** to proceed.

(12) In the Advanced Configuration pane, click the **Built-in Certificate** option and then click **Next**.

The Ready to install DocAve Manager pane summarizes the entries made in this wizard for your review.

3. Install DocAve 6.

   (1) Click **Install**.

   The DocAve installer proceeds with the installation. When completed, the Install Completed pane displays the **Passphrase** for this installation. Every agent that joins this manager requires using this passphrase. See Figure 1.
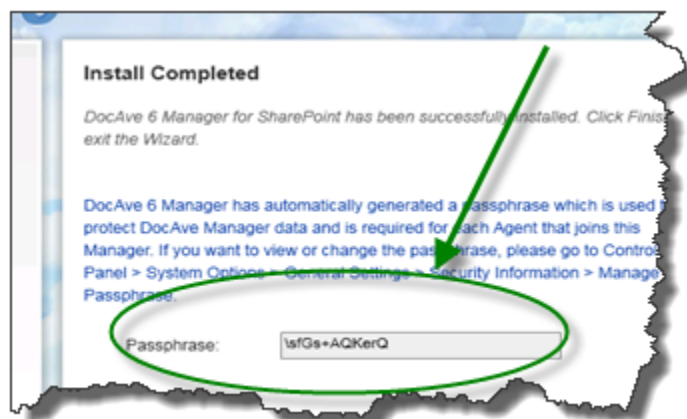

Figure 1

(2) Record and save the **Passphrase** for use when joining an agent to this manager.

(3) Click **Finish** to complete installation.

4. After finishing the installation, open a DocAve server instance by typing the following in the Address bar of a browser:

```
https://<server name>:14000
```

Use the default user credentials:

> **Login ID:** admin
>
> **Password:** admin

Deploy Hitachi Content Platform

Deploy Hitachi Content Platform with four data nodes in a SAIN configuration.

For more information, see *Hitachi Content Platform: Installing an HCP System* (Hitachi Data Systems, 2012), which accompanies Hitachi Content Platform.

To deploy Hitachi Content Platform, do the following.

1. Set up the tenant in Hitachi Content Platform by completing the following information:

   - **Tenant Name**—Use a descriptive name
   - **Hard Quota**—100.00 GB
   - **Soft Quota**—85%
   - **Namespace Quota**—5
   - **Description**—Describe the purpose of the tenant, such as "DocAve Granular Backup/Restore"

2. Set up the namespace in Hitachi Content Platform by completing the following information:

   - **Namespace Name**—Use a descriptive name
   - **Description**—Describe the purpose of the namespace, such as "DocAve Primary Namespace"
   - **DPL**—Dynamic (1)
   - **Hash Algorithm**—SHA-256
   - **Hard Quota**—100 GB
   - **Soft Quota**—85%

   Reference this namespace during mapping and defining the DocAve physical device.

Configure AvePoint DocAve

This is how you configure AvePoint DocAve.

Set Up AvePoint DocAve Physical Device

The physical device is the direct mapping of the Hitachi Content Platform namespace with AvePoint DocAve.

To map the physical device in DocAve, open the Control Panel window in DocAve and define the following:

1. **Physical Device Name**—Use a descriptive name to identify the physical device

2. **Physical Device Description**—Describe the purpose of the physical device, such as "Human Resources department"

3. **Storage Type**—HDS Hitachi Content Platform

4. **Primary Namespace Address**—Path to the namespace

5. **Secondary Namespace Address**—Do not change

6. **Root Folder**—The folder name where objects will be written on Content Platform, such as docave

7. **Username** and **Password**—The credentials with permissions to access the primary namespace used in step 4

After completing all the entries, click **Validation Test** to test the connection.

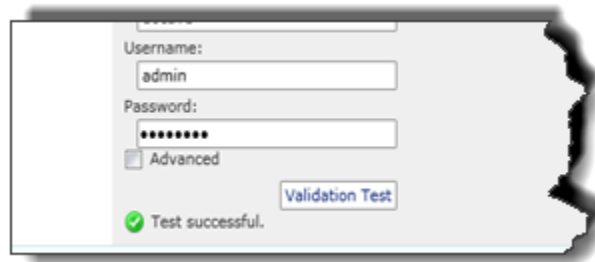- **Test Successful**—The configuration passes the test (Figure 2)

Figure 2

- **Error message**—Correct the problem before continuing

Set Up AvePoint DocAve Logical Device

AvePoint DocAve can treat multiple storage drives as a single logical unit when saving backup data. With very large backup plans, you can combine many smaller drives. Define a logical device before creating a backup plan.

To define logical device, define the following:

1. **Logical Device Name**—Use a descriptive a name to identify the logical device

2. **Physical DocAve Description**—Describe the purpose of the physical device, such as "Payroll Section"

3. **Storage Type**—HDS Hitachi Content Platform

4. **Physical Device**—Click a device from the **Physical Device** list and then click **Add**

   - For each physical device added, select the **Storage Data** check box and/ or the **Storage Index** check box

To save the configuration and return to the **Logical Device Details** page, click **OK.** After saving the logical device, it is on the **Logical Device Details** page, as shown in Figure 3.

   - To return to the **Logical Device Details** page without saving any changes, click **Cancel**.
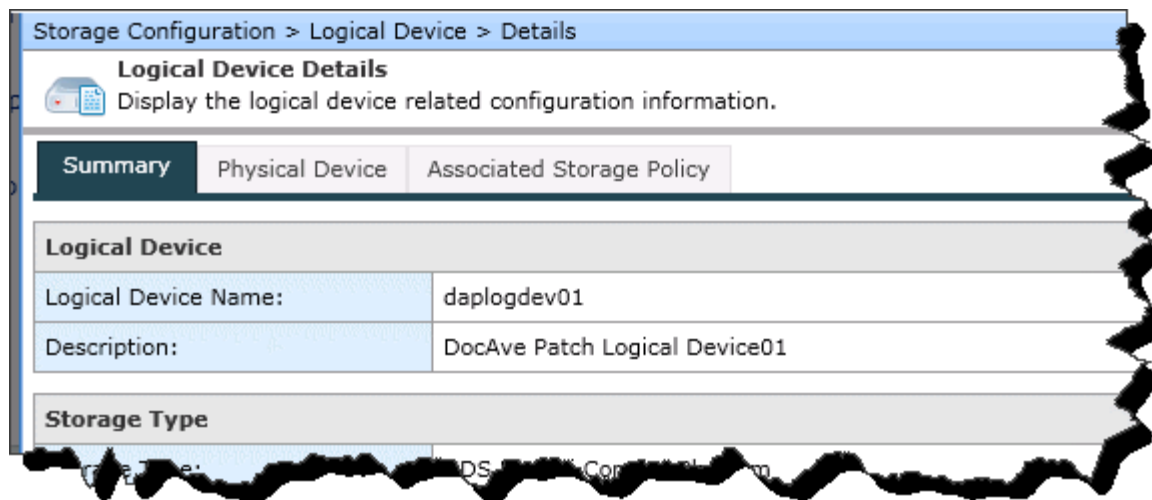

Figure 3

Set Up AvePoint DocAve Storage Policy

Creating a storage policy allows you to do the following:

- Specify which logical device to use when saving backup data

- Establish the retention policy for the data in logical device

For information about storage policy, see *DocAve 6 Service Pack 1 Control Panel Reference Guide* (AvePoint, Inc., 2012). This document is in the **User Guides** area on the [Resources](#) page on the AvePoint website.

To create a storage policy, define the following:

1. **Storage Policy Name**—Use a descriptive name to identify storage policy

    - Recommended practice is to add "_bkp" to the end of the storage policy name, such as *dappolicy01_bkp*.

2. **Storage Policy Description**—Describe the storage policy

3. **Media Service**—Click a service from **Media Service** list and then click **Add**

    - For each media service added, click **Test.** A successful test message displays if it passes. Otherwise, solve the problem before proceeding.

4. **Logical Device**—Use a defined logical device

To save the configuration and return to the **Storage Policy** page, click **OK**. After saving the storage policy, it is on the **Storage Policy** page.

- To return to the **Storage Policy** page without saving any changes, click **Cancel**.

Set Up AvePoint DocAve Advanced Options

Use the AvePoint DocAve advanced options to specify the following extended parameters, if necessary.

- **RetryInterval**—Specify the time interval of the Retry operation when the connection with the Hitachi Content Platform server is not available.

  - The format is `RetryInterval =100`

  - The unit for this parameter is millisecond

  - Default value is **200**

- **RetryCount**—Specify the count of the Retry operation when the connection with the Hitachi Content Platform server is not available.

  - The format is `RetryCount=6`

  - The unit for this parameter is millisecond

  - Default value is **6**

- **FlushDNS**—Specify whether to flush the DNS before connecting to the specified secondary namespace address.

  - The format is `FlushDN=true`

  - Parameter default value is **true**

- **FailOverMode**—Specify when to use the configured secondary namespace address if the primary namespace address is not accessible.

  - The format is FailOverMode=ReadWrite

  - Parameter default value is **ReadWrite**

  - Use **Read** for FailOverMode to use the secondary namespace address when DocAve fails to perform the Read operation using the primary namespace address.

  - Use **Off** for FailOverMode to not use the secondary namespace address when DocAve fails to perform any operation using the primary namespace address

Click **Validation Test** to verify the correct entry of one or more parameters.

Click **OK** to save the configuration or click **Back** to cancel it.

After saving the physical device, it displays on the **Physical Device** page.

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