Implement Arkivio Autostor 6.0 with Hitachi Content Platform

Implementation Guide

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Feedback

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Implement Arkivio Autostor 6.0 with Hitachi Content Platform

Implementation Guide

Hitachi Data Systems addresses file growth in enterprise environments with a complete solution based on Hitachi Content Platform and Rocket Arkivio Autostor. This technical paper describes the installation, configuration, and how to execute and integrate this Arkivio Autostor solution. It also describes how to store, restore, and migrate data on Hitachi Content Platform.

This solution uses Hitachi Content Platform 300 as a target storage device for Arkivio Autostor backup, restore, and migration. Hitachi Adaptable Modular Storage 2000 runs Arkivio Autostor. For the various servers, this solution uses Hitachi Compute Rack 220. Data sources can be from a server running any operating system.

Arkivio Autostor is certified to work with Hitachi Content Platform. Arkivio Autostor integrates with Content Platform using HTTP. This is the preferred protocol because it provides the highest performance for archiving and retrieval of data.

Arkivio Autostor supports authenticated namespaces on Content Platform. It also sets retention periods for files.

Hitachi Content Platform intelligently stores files and associated metadata as objects. This allows advanced, metadata-driven management to automate and streamline storage following business goals and policies. Content Platform is a distributed storage system you can use to support large, growing repositories of data.

This document is written for support, service, engineers, and administrators responsible for storage administration. You must have basic knowledge of SAN concepts and basic skills with Arkivio Autostor 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

Figure 1 shows the tested environment overview.

Figure 1
Table 1 lists the tested hardware components in this solution.

Table 1. Tested Hardware Components

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Quantity</th>
<th>Configuration</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi Adaptable Modular Storage 2500</td>
<td>1</td>
<td>• 8 Fibre Channel ports used</td>
<td>Arkivio storage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 16 GB cache</td>
<td></td>
</tr>
<tr>
<td>Hitachi Compute Rack 220 server</td>
<td>2</td>
<td>• 2 x 4-Core Intel Xeon E5620 Processor, 2.4 GHz</td>
<td>Arkivio Central Server (ACS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 8 GB of RAM</td>
<td>• One instance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Arkivio Remote Server Assistants (RSA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Can be multiple instances</td>
</tr>
<tr>
<td>Hitachi Content Platform 300</td>
<td>4</td>
<td>• 4-core Intel Xeon E5504 processor, 2.00 GHz</td>
<td>Storage nodes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 12 GB RAM</td>
<td></td>
</tr>
<tr>
<td>Brocade 5000 Fibre Channel Switch</td>
<td>1</td>
<td>• 32-Port</td>
<td>Storage Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 4Gbit/sec</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 lists the tested software components in this solution.

Table 2. Shows Tested Software Components

<table>
<thead>
<tr>
<th>Software</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi Adaptable Modular Storage 2500 firmware</td>
<td>08A0/J-Z</td>
</tr>
<tr>
<td>Rocket Arkivio Central Server (ACS)</td>
<td>6.0</td>
</tr>
<tr>
<td>Rocket Arkivio Remote Server Assistant (RSA)</td>
<td>6.0</td>
</tr>
<tr>
<td>Hitachi Content Platform</td>
<td>5.0</td>
</tr>
<tr>
<td>Microsoft® Windows Server® 2008 R2 (on server blades hosting Arkivio Autostore)</td>
<td>Enterprise Edition, 64 bit</td>
</tr>
</tbody>
</table>

**Hitachi Content Platform**

Hitachi Content Platform 300 runs on a redundant array of independent nodes (RAIN). This enables each node to store data in internal disks.

**Hitachi Storage Navigator**

Use Hitachi Storage Navigator to map security levels of the SAN ports and for intersystem path mapping. Also, use it for logical unit (LU) creation and expansion, and for online volume migrations.
Rocket Arkivio Autostor

Rocket Arkivio Autostor integrates with Hitachi Content Platform using HTTP. This is the preferred protocol, because it provides the highest performance for archiving and retrieval of data.

Arkivio Auto-Migrator uses auto-discovery to find servers and network shares.
Solution Implementation

Deploy this solution using these steps:

1. “Configure the SAN” on page 5
2. “Configure the Storage,” starting on page 5
3. “Install and Setup Rocket Arkivio Autostor 6.0 Server,” starting on page 8
4. “Deploy Hitachi Content Platform,” starting on page 11
5. “Configure Hitachi Content Platform as a Arkivio Autostor Target Device,” starting on page 13

Adapt your deployment checklist, based on your environment.

Configure the SAN

In the tested deployment, connect all servers shown in Figure 1 on page 2 using two HBAs on each physical server to a Brocade 5000 Fibre Channel switch.

Table 3 lists the path configuration used when validating this solution. Adapt this table to your environment.

Table 3. Path Configuration

<table>
<thead>
<tr>
<th>Host</th>
<th>Storage Port</th>
<th>Storage Host Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkivio Remote Server Assistants (RSA)</td>
<td>0B</td>
<td>048:G002-SCISV38-179-RSA</td>
</tr>
<tr>
<td>Arkivio Central Server (ACS)</td>
<td>1B</td>
<td>007:G002-SCISV38-180-ACS</td>
</tr>
</tbody>
</table>

Configure the Storage

This configuration uses Hitachi Adaptable Modular Storage 2500 and Hitachi Content Platform to store, backup, and migrate objects using Arkivio Autostor software. Assign the World Wide Name (WWN) of the HBAs residing on a physical server to a host group. Associate the assigned LUNs with each host group.

Use this configuration for each RAID group: RAID-5 (3D+1P).

Table 4 shows the storage provisioning for this configuration as used in these procedures. Adapt this table and the procedures for your environment.

Table 4. Storage Configuration

<table>
<thead>
<tr>
<th>RAID Group</th>
<th>LUN</th>
<th>Size (GB)</th>
<th>Hitachi Adaptable Modular Storage 2500 Port</th>
<th>Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>004</td>
<td>0458</td>
<td>600</td>
<td>0B</td>
<td>Arkivio Remote Server Assistants (RSA)</td>
</tr>
<tr>
<td>005</td>
<td>0457</td>
<td>600</td>
<td>1B</td>
<td>Arkivio Central Server (ACS)</td>
</tr>
</tbody>
</table>
Configure RAID Groups on Hitachi Adaptable Modular Storage 2500

To configure the RAID groups on Hitachi Adaptable Modular Storage 2500 with Hitachi Storage Navigator Modular 2, do the following.

1. In the Explorer pane, expand Resources and click the Subsystems link. The Subsystems pane displays.

2. Expand your storage system and groups in the navigation tree.

3. Click the Logical Units link. The Logical Units pane displays.

4. On the RAID Groups tab, click Create RG. The Create RAID Group dialog box displays.

5. Create each RAID in the solution.

   Repeat this step for each RAID group in Table 4 on page 5.

   (1) To identify a RAID Group, type a three-digit number.

   ▪ Use the RAID group number in Table 4 on page 5, or use your own numbering plan.

   (2) To set the RAID Level, click RAID5 from the list.

   (3) To specify the Combination, click 3D+1P from the list.

   (4) To set the Number of Parity Groups, type the following: 1

      ▪ Hitachi Data Systems recommends against creating LUs that span multiple RAID groups using Hitachi Storage Navigator Modular 2. While increasing the number of parity groups above the default of 1 allows creating LUs that span multiple RAID groups, it is preferable to use Hitachi Dynamic Provisioning to create these types of LUs.

   (5) For the Drives, make these settings:

      ▪ Click the Automatic Selection option.

      ▪ From the Drive Type list, click Automatic Selection.

      ▪ From the Drive Capacity list, click the capacity for the RAID group, using Table 4 on page 5.

   (6) Click OK. A message displays saying that the RAID group was created.
Configure Logical Units on Hitachi Adaptable Modular Storage 2500

To configure logical units on Hitachi Adaptable Modular Storage 2500 with Hitachi Storage Navigator Modular 2, do the following.

1. In the Explorer pane, expand Resources and click the Subsystems link. The Subsystems pane displays.

2. Expand your storage system and groups in the navigation pane.

3. Click the Logical Units link. The Logical Units pane displays.

4. Click the RAID Groups tab.

5. Create a logical unit for each RAID group.

   Repeat this for each logical unit in Table 4 on page 5.

   (1) Click the ID number for the RAID group (Table 4 on page 5). The RAID Group<ID> pane displays details about this RAID Group.

   (2) Click Create LU. The Create Logical Unit dialog box displays.

   (3) To identify the LUN, type a four-digit number.

      ▪ Use the LUN number used in Table 4 on page 5, or use your own numbering plan.

   (4) To set the Capacity, click RG ALL from the list.

   (5) Click OK. A message displays saying that the logical unit was created.

Create Host Groups

To configure host groups on Hitachi Adaptable Modular Storage 2500 with Hitachi Storage Navigator Modular 2, do the following.

1. From the Actions menu, click Ports/Host Groups, and then click Create Host Groups. The Create Host Groups window displays.

2. In Host Group Name, type a name for host group.

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

4. In the Available Hosts pane, select each host (one or more) to add to the host group.

5. In the Available Ports pane, select each port (one or more ports) for the host group.

6. Click Add. The Selected Host Groups pane populates with the host group.

7. Click Finish. The Create Host Groups window displays.

8. Click Apply.
Install and Setup Rocket Arkivio Autostor 6.0 Server

Complete these prerequisites before installing Rocket Arkivio Autostor 6.0 Server:

- **Site and Network Prerequisites**
  - Join the Arkivio servers (Arkivio Central Server, each Remote Server Assistant) and file servers with CIFS volumes to be managed to a single (common) Microsoft Active Directory® domain.
  - An ARKIVIO server cannot operate as a domain controller or have any installed SQL application.
  - Service account user identification and password that is a domain user with logon rights and has at least local administrator privileges on the following:
    - Arkivio servers
    - All servers with managed CIFS shares
  - This user account is in the domain administrator group.
  - DNS resolution of the following:
    - Fully qualified (and short) host names
    - IP Address (forward and reverse)
    - nslookup fully-qualified_domain_name, short_name, IP_addr
  - Static IP addresses for Arkivio Central Server and each Remote Server Assistant

- **Arkivio Central Server**
  - **Operating System** — Microsoft Windows Server 2008 R2 (64-Bit) Standard/Enterprise SP1 or later. Virtual machine is supported with dedicated resource.
  - **Server Roles** — Services selected by default shown. Do not clear the selection of any service. Those that may need to be added are preceded by a plus sign (+).
    - **Application Server** — .NET Framework 3.5.1, web server (IIS) support, Windows Process Activation Service, Support (HTTP activation)
    - **Web Server** — Common HTTP Features, application development (+ASP), health and diagnostics, security, performance, management tools (+IIS 6 management compatibility)
- **Java Runtime Environment** for 64-bit Windows — Required for Dashboard.
- **Web Browser** — Microsoft Internet Explorer® 8.0 or later
  - Enhanced Security Controls *uninstalled*.
- Windows Task Scheduler service started and set to automatic.
- Remote Server Assistant (may be more than once instance)
- **Operating System** — Microsoft Windows Server 2008 R2 (64-Bit) Standard/Enterprise SP1 or later. Virtual machine is supported with dedicated resource,
- Windows Task Scheduler service started and set to automatic.
To install and configure Arkivio Autostor 6.0 Server, do the following.

1. **Install Arkivio Autostor.**
   
   (1) Start the installation wizard.
   
   - Double-click the **Setup** file in Windows Explorer.
   
   (2) On the Arkivio Autostor installation wizard, click **Next**.
   
   (3) Click the option to accept the terms for license agreement, and then click **Next**.
   
   (4) On the **Customer Information** page, type the **User Name** and **Organization**, and then click **Next**.
   
   (5) On the **Custom Setup** page, click **Central Server** and then click **Next**.
   
   (6) On the **License File** page, type **Browse** to select the Arkivio Autostor License Key file (an XML file), and then click **Next**.
   
   (7) On the **Install Windows Service** page, install Arkivio NetArc Service to a user account.
   
   i. Select the **Install Arkivio NetArc Service to a user account** check box.
   
   ii. For the administrator account, type the **Domain\User Name**.
   
   iii. For the administrator account, type the **Password**.
   
   iv. For the administrator account, type the password again in **Confirm Password**.
   
   v. Click **Next**.
   
   (8) On the **Database Folder** page, do one of the following actions:
   
   - To change the folder for the database installation, click **Change** to select a new folder. When finished, click **Next**.
   
   - To accept the default folder for the database installation, click **Next**.
   
   (9) On the **Migration Cache** page, specify a local volume for the migration cache, and then click **Next**.
   
   - Assign the volume by typing the drive letter in **Migration Cache volume**.
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(10) On the **Date Format Selection** page, click the date format option used in your environment, and then click **Next**.

(11) On the **Ready to Install the Program** page, click **Install**.

(12) After the wizard completes, select the **Launch Management Console** check box and then click **Finish**.

- Select the **Launch Management Console** check box to make the settings in Arkivio Autostor.

2. **Setup Arkivio Autostor.**

(1) Log on to the management console

- Enter the **Domain\User Name** and **Password** from the **Install Windows Service** page during installation, and then click **OK**.

(2) On the **Arkivio Management Console** page (with the important notice), click **Next**.

(3) On the **Initial Setup—Set the Arkivio Software Service User Account** page, type the following information, and then click **Next**.

- **Domain name**
- **Administrator Name**
- **Administrator Password**

Recommended practice is to create a user account with full administrative rights for Arkivio Software Service that is different than the default administrator account.

(4) On the **Initial Setup—Server List** page, verify the server list, and then click **Next**.

- To add a new server, click **New**.

3. On the **Initial Setup—Alert Settings** page, set what default critical alerts, warning, and informational alerts you receive and how you receive them.

4. On the **Initial Setup—Setup Complete** page, click **Finish**, Now you can perform administrative tasks in Arkivio.

The **Arkivio Management Console** displays when finished.
Deploy Hitachi Content Platform

Deploy Hitachi Content Platform with four data nodes in a SAIN configuration. For more information, see *Installing an HCP System* (MK-99ARC026-08). This guide accompanies each Hitachi Content Platform.

Define Tenant

Before Arkivio Autostor can read or write to Hitachi Content Platform, you must define a tenant on it.

To define a tenant on Hitachi Content Platform, make these settings and then click **Update Settings**:

- To name it, type a name in **Tenant Name**.
- To tell any account administrator what this tenant is, type a **Description**.
- In the **Hard Quota** area, do the following:
  - Type this in the box: 100.00
  - Click the **GB** option.
- In the **Soft Quota** area, type this for the percent: 85
- In the Namespace Quota area, do the following:
  - Type this in the box: 2
  - Clear the **No quota** check box, if selected.
- For **Authentication Types**, select the **Local** check box.
- For the **Enable features that this tenant can manage** area, select the following:
  - The **Retention Mode Selection** check box
  - The **Versioning** check box
Create Namespace

After creating the tenant, create the namespace. Arkivio Autostor references this namespace when defining or mapping Hitachi Content Platform.

To create a namespace on Hitachi Content Platform, make these settings and then click Create Namespace:

- To name it, type a name in Namespace Name.
- To tell any account administrator what this namespace is, type a Description.
- From the DPL list, click Dynamic (2).
- From the Hash Algorithm list, click SHA-256.
- In the Hard Quota area, do the following:
  - Type the following in the box: 100
  - Click the GB option.
- In the Soft Quota box, type the following: 85
- For Retention Mode, click the Enterprise option.
- For Versioning, click the Off option.
Configure Hitachi Content Platform as a Arkivio Autostor Target Device

To configure Hitachi Content Platform as a target device for Arkivio Autostore, do the following.

1. From the Arkivio Management Console, click **Global Administration**, then click **Server List**, and then click **Add Servers**.

2. From the first list in the **System** column, click **HDS HCP**.

![Figure 2](image)

3. Add the configuration information for the new server.
   
   (1) Type the **Server Name** in the first box.
   
   (2) Select the **Enable Namespace** check box.
   
   (3) Type the **User name** and **Password**. Then, type the password again in **Confirm Password**.
   
   (4) Click **Save**.
   
   This adds the new Hitachi Content Platform to the server list.

4. Click the **Test Connection** link for Hitachi Content Platform to confirm it works.

   - If the link works, the **Message from webpage** dialog box has this message: Connected successfully.
The Arkivio Administration Guide has information on how to setup and run these Autostor policies:

- Copy
- Move
- Delete
- Restore
- Tagmigrate
- Linkmigrate
For More Information

Hitachi Data Systems Global Services offers experienced storage consultants, proven methodologies and a comprehensive services portfolio to assist you in implementing Hitachi products and solutions in your environment. For more information, see the Hitachi Data Systems Global Services website.

Live and recorded product demonstrations are available for many Hitachi products. To schedule a live demonstration, contact a sales representative. To view a recorded demonstration, see the Hitachi Data Systems Corporate Resources website. Click the Product Demos tab for a list of available recorded demonstrations.

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