Hitachi Content Platform v7 Self-Certification on Symantec Enterprise Vault 11

Lab Validation Report

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August 18, 2014
Feedback

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# Table of Contents

**Product Features** ...................................................................................................................... 2  
  Hitachi Content Platform ............................................................................................................ 2  
  Hitachi Content Platform Adapter for Symantec Enterprise Vault ..................................... 2  
  Symantec Enterprise Vault ........................................................................................................ 2  

**Test Environment Configuration** .......................................................................................... 4  

**Test Methodology** .................................................................................................................. 5  

**Analysis** ................................................................................................................................... 7  

**Appendix- Test Results** .......................................................................................................... 9  

**References** ............................................................................................................................. 10
Hitachi Content Platform v7
Self-Certification on Symantec Enterprise Vault 11

Lab Validation Report

The purpose of this report is to document the lab validation results achieved during Hitachi Content Platform v7 self-certification tests on Symantec Enterprise Vault 11. The results ascertain the integration between Hitachi Content Platform (HCP) version 7, Enterprise Vault (EV) version 11 and Hitachi Content Platform Adapter for Symantec Enterprise Vault streamer interface version 1.3. For the purposes of this paper, Hitachi Content Platform v7 will be referred to as HCP and Enterprise Vault will be referred to as EV.

The results demonstrated that both functional and performance tests met the Symantec defined goals satisfactorily and successfully. The lab validation results have been accepted by Symantec and they have officially confirmed HCP v7 support by EV 11.0. The certified HCP v7 will appear in the next possible Enterprise Vault release, in the next release of the compatibility charts, and will also automatically appear in subsequent Enterprise Vault releases.

The converged solution stack of HCP, EV along with the streamer interface, provides robust, flexible, scalable, and easy to manage active archives for both compliance and reference data over REST interfaces that delivers enhanced functionality and better functionality than the legacy CIFS/NFS protocol. It also provides support for many of the advanced storage features of HCP, including replication.
Product Features

Hitachi Content Platform

Hitachi Content Platform (HCP) is an object storage solution that allows IT organizations and cloud service providers to store, share, synchronize, protect, preserve, analyze and retrieve file data in a single system. The system is more efficient, easier to use, and handles more data than traditional file storage solutions. HCP automates day-to-day IT operations, such as data protection, and readily evolves with changes in scale, scope, applications, and storage and server technologies over the life of data. The platform provides massive scale, multiple storage tiers, powerful security, Hitachi reliability, cloud capabilities, multitenancy and broad protocol support.

It has a powerful REST-based interface as well as S3 compatible interface. It automatically moves content based on its business value or your storage related service level agreement to your choice of public cloud storage tiers, including Amazon S3, Microsoft® Azure™, and Google cloud storage based on policy, and still retain control and visibility at all times because the metadata is securely stored on site.

Hitachi Content Platform Adapter for Symantec Enterprise Vault

Hitachi Content Platform and Symantec Enterprise Vault integrate and communicate using the REST interface through the implementation of Hitachi Content Platform Adapter for Symantec Enterprise Vault. The adapter/streamer has full support for tenants and namespaces and allows EV to access HCP in on-premises, cloud, and mixed environments. The streamer interface provides a robust, high performance interface between HCP and Symantec EV. High performance means that more objects can be archived per hour over the legacy CIFS interface and provide replica awareness for EV.

The HCP Adapter for Symantec Enterprise Vault supports storing, retrieving, and deleting EV content streams to and from HCP at the request of EV. HCP systems are presented as primary and/or secondary storage within the Enterprise Vault Administration Console. It also provides support for many of the advanced storage features of HCP, including replication.

Symantec Enterprise Vault

Symantec Enterprise Vault, the industry leader in archiving, enables organizations to efficiently store, effectively manage, and easily discover and retrieve unstructured information as needed for business. Enterprise Vault archives emails and files from primary storage and servers to a centrally managed repository. Retention policies can be placed on content and are centrally managed and enforced by HCP at the storage layer. Once stored, EV allows quick search and retrieval of archived emails and files.
Enterprise archiving reduces the storage footprint and costs by up to 60% or more by moving deduplication and compression closer to the source while retention and deletion policies keep information for only as long as it is needed. It archives to the cloud, leveraging cloud storage connectors to designate Hitachi Data Systems and other providers as a storage tier for archiving.
Test Environment Configuration

Table 1. Hardware Components

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Configuration</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi Content Platform (HCP)</td>
<td>▪ Dell r710 Intel Xeon E5620 @ 2.4Ghz</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>▪ Single Quad core, RAM 12 GB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ 4 node HCP</td>
<td></td>
</tr>
<tr>
<td>Symantec Enterprise Vault and Microsoft® SQL Server®</td>
<td>▪ Microsoft Windows Server® 2008 R2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>▪ Dual Quad core Intel Xeon E5504 @ 2.00 GHz, 12GB RAM</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Software Components

<table>
<thead>
<tr>
<th>Software</th>
<th>Configuration</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi Content Platform</td>
<td>v7.0.0.109</td>
<td>1</td>
</tr>
<tr>
<td>Symantec Enterprise Vault</td>
<td>v11.0</td>
<td>1</td>
</tr>
<tr>
<td>Microsoft® SQL Server®</td>
<td>SQL Server 2008 R2</td>
<td>1</td>
</tr>
<tr>
<td>Hitachi Content Platform Adapter for Symantec Enterprise Vault</td>
<td>v1.3</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 1: High-Level Configuration Overview
Test Methodology

In order to certify major releases of Hitachi Content Platform with major releases of Enterprise Vault, Symantec furnishes a self-certification kit that encompasses the test case document, questionnaire, and test result template. The test case document is comprehensive and lists all the test configuration steps and pre-checks that need to be incorporated for seamless test execution.

The test scope of this self-certification exercise is to certify HCP v7, which is a WORM device with EV11. Symantec must receive successful functional and performance test results for their analysis in order for HCP v7 to achieve certification status.

The test case is divided into two categories:

**Functional tests**

- Setting-up Vault Stores for Self Certification Testing
- Archiving with Safety Copies set to in the Storage Queue
- Archiving with Safety Copies set to in the Original Location
- Archiving with Safety Copies set to Immediately After Archiving
- Rebuild Indexes
- Verification with EVSVR Operations
- Partition Rollover
- Storage Expiry
- WORM Storage Systems: Extending Retention
- WORM Storage Systems: Storage Expiry
- Vault Store Delete Test

**Performance Tests**

- Archive
- Retrieval
- Storage Expiry
Table 3 provides guidelines for the performance rates that are to be achieved for successful completion of Self Certification.

Table 3. Performance Rates

<table>
<thead>
<tr>
<th>Performance Type</th>
<th>Minimum Rate (Items per hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archiving</td>
<td>60,000</td>
</tr>
<tr>
<td>Retrieval</td>
<td>120,000</td>
</tr>
<tr>
<td>Storage Expiry</td>
<td>60,000</td>
</tr>
</tbody>
</table>

The following points are taken into consideration:

1. The test cases should be run using the Enterprise Vault Service Account.
2. All the required Tenants and Namespaces are created on HCP.
3. All the required data access users with permissions are created on HCP tenant and namespace.
4. HTTP and HTTPS protocols are selected from within the HCP namespace used for testing.
5. In our testing, the EV server also holds the role of file server.
6. All NON-WORM test case section is ignored and not applicable.
7. Any feature of EV that utilizes the streamer interface such as reading, creation, modification and deletion of archived items is tested in conjunction with HCP.
8. HCP is located on the same physical LAN as the Enterprise Vault environment to ensure the performance is not impacted.
9. The archival and retrieval performance is measured in conjunction with HCP.
10. The archival performance test will archive 500,000 files to HCP.
11. The retrieval performance test will retrieve 100,000 files and writes elapsed seconds for every 1000 items downloaded. Retrieve objects/hour is derived using this metric.
12. The storage expiry will delete all 500,000 archived items. This test is executed after the objects have expired i.e. 24 hours from the time they were archived. The retention period is set to 1 day in order to execute this test.
Analysis

This section includes the observations made during the testing and suggests appropriate recommendations accordingly.

Observations

1. All the test cases were successfully executed with status of "passed."

2. Test case "verify archive objects" verifies the integrity of data archived to the storage system. The test was successfully executed for each vault store separately. The reason for executing this test for each vault store is because EV marks a deleted vault store partition and its containing vault store as "pending delete." EVSVR terminates with errors on this vault store on its pre-check, so to verify objects, each vault store was processed separately.

3. Test case "verify database references" was successfully executed for each vault store separately. The reason for executing this test for each vault store is because EV marked a deleted vault store partition and its containing vault store as "pending delete." EVSVR terminates with errors on this vault store on its pre-check, so to verify database references, processed each vault store separately.

4. Test case "enable partition rollover" was successfully executed; however, it is not recommended the use of partition rollover with HCP.

5. With respect to the archive performance test, per the test case requirement 500,000 files are archived during the test run. All the files were archived successfully with status of "archived." The archival rate was well over the minimum threshold value of 60,000 items/hour.

6. An important counter to monitor and consider is memory consumption. The memory consumption on HCP nodes during the archive process averaged 93% and averaged 85% on Enterprise Vault server. High memory consumption could result in reduced archived items/hour and system slowness.

7. The retrieval performance test successfully downloaded 100,000 archived items. The test significantly exceeded the minimum rate of 120,000 items/hour and retrieved more than 1 million items/hour.

8. The storage expiry test successfully deleted all the 500,000 files from HCP. The test significantly exceeded the minimum rate of 60,000 items/hour.
Recommendations
The following best practices are recommended:

1. Have the storage queue location on a different dedicated physical drive than the system drive.

2. Increase the number of threads for the storage archive process to achieve a higher archival rate.

3. Even though Symantec Enterprise Vault and Microsoft SQL Servers resided on the same server for these tests, it is always advisable to use two physical servers in a production environment for Enterprise Vault and SQL Server to free some cycles for EV to improve performance.

4. For SQL Server, have different disks for SQL installation, data, and logs. Refer to Symantec Enterprise Vault 11.0: SQL Best Practices Guide.

5. With the latest release of HCP v7, it is recommended that all HCP systems have 32 GB of RAM.

6. Enterprise Vault server should have 16 GB of RAM.

Appendix- Test Results

Table 4 provides a list of test results.

Table 4. Test Results

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting-up Vault Stores for Self Certification Testing</td>
<td>Pass</td>
</tr>
<tr>
<td>Archiving with Safety Copies set to in the Storage Queue</td>
<td>Pass</td>
</tr>
<tr>
<td>Archiving with Safety Copies set to in the Original Location</td>
<td>Pass</td>
</tr>
<tr>
<td>Archiving with Safety Copies set to Immediately After Archiving</td>
<td>Pass</td>
</tr>
<tr>
<td>Rebuild Indexes</td>
<td>Pass</td>
</tr>
<tr>
<td>Verification with EVSVR Operations</td>
<td>Pass</td>
</tr>
<tr>
<td>Partition Rollover</td>
<td>Pass</td>
</tr>
<tr>
<td>Storage Expiry</td>
<td>Pass</td>
</tr>
<tr>
<td>WORM Storage Systems: Extending Retention</td>
<td>Pass</td>
</tr>
<tr>
<td>WORM Storage Systems: Storage Expiry</td>
<td>Pass</td>
</tr>
<tr>
<td>Vault Store Delete Test</td>
<td>Pass</td>
</tr>
<tr>
<td>Archiving Performance Test</td>
<td>Pass</td>
</tr>
<tr>
<td>Retrieval Performance Test</td>
<td>Pass</td>
</tr>
<tr>
<td>Storage Expiry Performance Test</td>
<td>Pass</td>
</tr>
</tbody>
</table>
References

Hitachi Data Systems
- Hitachi Content Platform
- Hitachi Content Platform and Symantec Enterprise Vault
- Hitachi Content Platform Failover Processing Using Storage Adapter for Symantec Enterprise Vault

Symantec
- Enterprise Vault 11.0 - Documentation
- Enterprise Vault 11.0 - Performance Guide
- Symantec Enterprise Vault 11.0: SQL Best Practices Guide
- How to automatically back up and perform recommended maintenance for Enterprise Vault SQL databases
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