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Veritas Access Appliance with Enterprise Vault

Archival Solution

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Revision History

Rev 1.0 8 Mar 2018	Initial version
Rev 2.0 1 Oct 2018	Updated for 7.4.2 Release
Rev 2.1 4 Apr 2018	Modified info on EV encryption
Rev 3.0 3 May 2021	Updated for 7.4.3 Release

Introduction

Executive Summary

With the exponential growth of data, strategies for information lifecycle management and data archival have become increasingly important for numerous organizations who are grappling to control costs and meet business compliance and regulatory requirements. Veritas Technologies Enterprise Vault with Access Appliance provides a complete solution to address these challenges. Enterprise Vault is a platform for managing information capable of archiving from an 80+ data sources including native support for Microsoft® Exchange, IBM Domino®, Skype for Business, Microsoft SharePoint and file systems. The Access Appliance acts as a dense on-premises storage target for data that has been archived using Enterprise Vault. Used together with Veritas Technologies other products, such as NetBackup and Data Insight, they improve the visibility of an organization's data and allows for better data management to reduce cost, waste, and risk. The integration of these Veritas products provides a compelling solution for the archival use case.

Scope

The purpose of this document is to provide technical details to assist in understanding the Access Appliance with Enterprise Vault as a solution for archival. It describes the components of this solution, its value, key features, sizing guidance, and some best practices. **NOTE**: This document gets updated periodically and if you downloaded a local copy of this document, please get the latest from this link.

Target Audience

This document is targeted for customers, partners, and Veritas field personnel interested in learning more about the Veritas Access Appliance with the Enterprise solution for archival. It provides a technical overview of this solution, guidance in sizing, and highlights some best practices.

Solution Value

Archival of data is the process of storing data that has not been referenced for a long period of time in such a way to save space or resources and still be easily accessible when it is needed. Some reasons for archiving data include controlling cost, freeing up space for incoming data, improving security, complying with legal and regulatory requirements, and classifying of content for search and discovery. Archived data is best stored in a centralized storage media on-premises or in the public cloud instead of on individual laptops, desktops or disparate storage so it is secure, manageable and easy to locate. Data growth, management, retention, visibility and cost are some challenges when selecting the appropriate storage platform for archived data. The Access Appliance addresses these challenges and provides the following key value as a target storage platform for Enterprise Vault:

- **Minimize cost** Access Appliance provides a low-cost, disk-based solution that is easy to manage. With Enterprise Vault single instance storage and compression features which is maintained on Access Appliance reduces overall costs and enhances storage efficiency.
- Simplify Management maintenance and management of varying secondary storage types, media, and protocols present challenges to IT departments. Having a single vendor to handle an organization's archival and information lifecycle management requirements improves issue resolution and simplifies management and ordering.
- Increase visibility and control insight and characterizations on how data is utilized assists in planning and helps identify storage that are not being used, orphaned, and/or no longer required. Enterprise Vault's seamless

integration with Veritas Data Insight provides greater visibility to your data to reduce inefficient utilization of resources, storage waste, and overall cost.

Solution Key Features

There are certain key features that companies look for in an archival solution product. The main features that are often sought include compliance, flexibility, storage efficiency, and ease of management. The Access Appliance with Enterprise Vault provides these features plus more to assist customers in preserving their most valued data.

WORM (Write Once Read Many)

For compliance and regulatory requirements, having WORM features in a storage platform is important when selecting a storage platform for archived data. Industries such as financial and government institutions must adhere to certain data retention rules or be penalized and fined. With the WORM feature, the specified data cannot be modified or deleted until the retention period expires.

The WORM feature must be first enabled on the Access Appliance for the file system that is shared and then retention period is set at file level by Enterprise Vault. Files that are WORM enabled are protected from access by any user including root and administrative users.

NOTE: The WORM feature is only supported on an SMB share created on a CFS type file system.

Storage Efficiency

Support for storage efficiency is one of the main factors in the decision-making during the purchase of a storage platform solution for archival. The ability to maximize storage space assists in reducing overall cost. The Access Appliance can leverage Enterprise Vault compression and SIS features. Both these features are maintained in the Access Appliance. Data compression is a mechanism that reduces the size of the file by encoding the data using fewer bits. The Enterprise Vault SIS feature allows for a single instance of a file or data storage across multiple source contents (such as email, file systems, and SharePoint). For instance, an email attachment can be sent to numerous recipients, but Enterprise Vault only maintains or archives one instance of the file in the target storage and subsequent copies are a reference to that single file.

Replication

As previously mentioned, for additional data protection, Access Appliance has the ability to perform "<u>episodic replication</u>". This feature can replicate data or files asynchronously to another Access Appliance or Access Software Defined Storage (SDS) cluster. The utility rsync is used to transfer data from the Access Appliance to another Access cluster via port 22 at set intervals as shown in Figure 1. After the data has been replicated, the Access Appliance acting as the source has an option to send partition secure notification to Enterprise Vault. This notification triggers Enterprise Vault to remove its safety copies.





Seamless Integration with NetBackup

Being prepared for disasters is imperative for business continuity and productivity. The Access Appliance is integrated with NetBackup such that the data archived by Enterprise Vault in Access Appliance can be further backed up to a NetBackup media server and restored in case of failures. A container-based <u>NetBackup client add-on package</u> is available and can be installed via the command-line shell.

Encryption

Any data encryption done by an application and archived using Enterprise Vault is maintained on the Access Appliance. The Access Appliance also has encryption capabilities in conjunction with an external Key Management System (KMS). The appliance encrypts the volume that the "file system" resides on. An external KMS such as IBM KMS is required to create the keys for the encryption.

Shadow Copy with Versioning

If customers desire to utilize the Microsoft Windows® Server Volume Shadow Copy Service with Enterprise Vault stores, then the Access Appliance supports the creation of "shadow copies" (copies of the data within a volume at a specific point in time). The advantage of enabling shadow copies on shared folders is that one can quickly recover data in case of corruption, accidental deletion or being overwritten. Each shadow copy is versioned so a specific version of the data can be recovered. The Access Appliance has support for shadow copy and it is specified as an export option when the SMB share is created. By turning on this option, Access has awareness of and the ability to store shadow copies created by Microsoft Windows Server. For more information, refer to <u>Storage Foundation - Quick Recovery Solutions Guide for Enterprise Vault - Windows</u> and the Veritas Access Administrator's Guide.

Tight Integration with Data Insight for Better Visibility

Veritas Technologies offers Data Insight to provide better visibility of data sources within an organization's environment. It has features in either illuminating the data either by classification to identify certain content within the file or by inspecting your entire environment across numerous locations to determine where your data is located. Data Insight is tightly integrated with Enterprise Vault to facilitate the archival of data with storage tier optimization to Access Appliance in addition to security and management of information.

<u>Veritas Data Insight</u> product scans and analyzes unstructured data sources such as filers, SharePoint web applications, Documentum repositories and cloud storage accounts. It classifies the data into certain categories such as ownership, age, size, activity, data access patterns, user risk, type, etc. in order that administrators can identify data that can be archived or tiered to cheaper storage, enforce security, conduct data chargeback, and perform information lifecycle management and risk analysis.

With regards to this solution, Data Insight is a powerful tool to identify areas in the data sources that can be archived due to inactivity, age, or compliance. As pictured in Figure 2, data sources are scanned, analyzed and classified by Data Insight. These sources can then be manually inspected, or policies can be defined to determine the data that can be archived using Enterprise Vault and stored in the Access Appliance. Knowledge of what are in the data sources allows organizations to make more informed decisions on what to do with the data for storage optimization, security, and archival.



Figure 2 - Data Insight with Enterprise Vault and Access Appliance

Figure 3 is a sample view of the Data Insight Console displaying a list of group shares and folders with their sizes and number of inactive files being monitored. The inactive folders or files can either be selected for deletion or archival using Enterprise Vault. For more information, refer to <u>Data Insight Product Documentation</u>.



Figure 3 - Sample View of Data Insight Console - Inactive Files in Group Shares

AutoSupport Feature

For the Access Appliance, there is an AutoSupport feature that can call-home in case of hardware and software issues observed in the production deployment. The advantages of using Veritas appliances for the entire solution are the ability to automate support case management and leverage guided workflows for faster resolutions of issues and mitigation of risks. Veritas AutoSupport service provides proactive monitoring and alerting 24x7 on the health of the appliances. This feature alerts customers and/or service engineers to quickly handle the issue and reduce further risks. Enabling this feature can be done simply by registering the appliance(s) at the Veritas MyAppliance portal as shown in Figure 4 and enabling the call-home functionality. A single vendor provides end-to-end support for quicker resolution and response as opposed to having to contact multiple vendors to handle issues related to varying products and/or hardware implemented in the solution.



Figure 4- MyAppliance Portal View

Monitoring and Detection

Available on the Access Appliance is Symantec Data Center Security (SDCS), an intrusion detection system. SDCS is a real-time monitoring and auditing software. It offers host intrusion detection, file integrity monitoring, configuration monitoring, user access tracking and monitoring, and logging and event reports. SDCS adds security hardening and monitoring for the Access Appliance to reduce security risks and attacks.

Solution Architecture

At a high level, the basic components of this solution consist of data sources to archive, Enterprise Vault and Access Appliance as shown in Figure 5. Enterprise Vault archives diverse sources such as Microsoft Exchange, Microsoft SharePoint, IBM Domino, SMTP messages and file system (i.e. NTFS and UNIX). Enterprise Vault sends archive data to the Access Appliance using the Server Messaging Block/Common Internet File System (SMB/CIFS) protocol. The following sections expand on each of these components.



Figure 5 - Access Appliance with Enterprise Vault Solution High-Level Architecture

Enterprise Vault (EV)

Enterprise Vault software is a scalable archiving platform and well-known for managing information in the following featured areas:

- **Compliance** reduces risk by proactively monitoring electronic communications to comply with industry and government regulations.
- **Discovery** allows for IT and Legal discovery with guided review to assist in reducing costs of eDiscovery, litigation and compliance demonstration.
- **Retention** provides policy-based retention of data to keep what is important and delete waste. Data can be stored via automatic or manual classification.
- **Optimization** reduces storage with the single instance storage (SIS) feature. With SIS, if a file has already been found within the sharing boundary, then another copy of file is not stored. Data is also compressed prior to sending to the target storage platform.

Enterprise Vault main components as shown in Figure 6 include:

- Enterprise Vault (EV) Server runs several tasks and services comprising the following:
 - Archiving task which connects to target system and find items that should be archived.
 - Storage services responsible for storing the items in Vault Store partitions (i.e. folder in storage).
 - o Indexing services that index any text, document, text of email, etc. for fast searching and retrieval.
 - Web access components to enable viewing, searching and restoring archived data by user via a web client.
- Microsoft® SQL Server contains numerous database tables relating to configuration information of Enterprise Vault, the hashes or fingerprint of every single item archived, monitoring and reporting data, and the vault store meta-data.
- Vault Store partitions storage for the data archives.

The components of Enterprise Vault can be run on a single large system or distributed over several servers. For instance, multiple Enterprise Vault servers can be managed by a single administration console with each server handling different sources to archive and running various tasks and services.

Figure 6- Enterprise Vault Main Components



There is a graphical user interface (GUI) for Enterprise Vault that is responsible for administration, configuration and management of archival targets and storage, along with the ability to change the settings relating to retention of data, monitoring, and reporting. In addition, there are add-ons that are bundled with Enterprise Vault to support archiving the various data sources such as email exchange, file systems, SharePoint data, SMTP messages, etc. Extensions developed or co-developed with partners that extend the functionality of Enterprise Vault are available in the <u>Veritas</u> <u>Technology Partner Program</u>. Also, refer to the <u>Enterprise Vault Compatibility Charts</u> for more information on third party integrations.

There are other components such as EV Cache, SMTP holding folder, PST holding folder, etc that is beyond the scope of this whitepaper. However, for more information on Enterprise Vault, refer to <u>Veritas Enterprise Vault Product</u> <u>Documentation</u>.

Access Appliance

Enterprise Vault can send archive data to varying storage types (disk, tape, and cloud). For those seeking an onpremises disk-based solution for faster recovery times, fine-grained control and/or greater simplicity when compared to tape or cloud, Veritas has developed the Access Appliance for ease of acquisition, management, and support. Access Appliance is a turn-key storage solution designed for high capacity and cost optimization, making it well suited for archival use case. The Access Appliance model 3340 is comprised of two clustered nodes and one primary storage shelf and up to three additional expansion storage shelves. The appliance can scale up to 2,800 TB of usable space as shown in Figure 7.



Figure 7 - Access Appliance Rack Units

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Highlights of the Access Appliance specifications are shown in Table 1. Refer to the <u>Access Appliance datasheet</u> for more detailed information.

Model	CPU	RAM	Ports		Capacity	Rack
	Processor		1 GbE	10 GbE		Units
3340 (2 nodes)	2 x Intel® Xeon® 4108 (1.8 GHz) per node Total: 16 core per node	384 GB per node	4 per node	2 per node	280 TB – 2800 TB (254 TiB– 2544 TiB)	Server: 2U Storage per Shelf: 5U

Note: TB - Capacity values are calculated using Base 10; TiB - Capacity values are calculated using Base 2.

The two nodes are clustered in active/active configuration such that each node can handle I/O requests, and each node is able to take over the tasks of its partner in the event of failure. Storage shelves are connected to each node and configured with dynamic multi-pathing capabilities so I/O can be sent to either node for performance and availability purposes. The redundant hardware RAID controllers in the primary shelf aggregate its storage into RAID 6 volumes with two parity disks for every 14 data disks, in 5 data volumes per shelf. Each volume can survive up to two simultaneous disk failures.

Access Appliance runs Red Hat Enterprise Linux (RHEL) version 7.4 or later as the operating system platform and Access software version 7.3.2 or later. The Access Appliance is a scale-up Network-Attached Storage (NAS) platform that supports multiple protocols, including NFS, SMB/CIFS, FTP, and S3. For Enterprise Vault's purposes, data is written to the Access Appliance using the SMB/CIFS protocol. An SMB share is exported and maps to a single file system of type clustered file system (CFS). The size of a CFS file system can scale up to 2800 TB on the Access Appliance.

Additionally, the Access Appliance supports WORM (Write-Once-Read-Many). WORM is first enabled at the file system level, then the retention period is set at the file level. After the retention period is set, it cannot be modified or deleted by any user including root and admin until the retention period expires.

Data can also be replicated synchronously and asynchronously to another Access Appliance for additional data protection. There are two methods to replicate data to an Access Appliance:

- Episodic Replication file system replication asynchronously.
- Continuous Replication block level replication of volumes in synchronous or asynchronous modes.

If there is a requirement to inform Enterprise Vault to remove the safety copies, then episodic replication should be used. Episodic replication runs at regularly scheduled intervals of a minimum of 15 minutes. After replication of data to another Access Appliance, the source Access Appliance can send a partition secure notification to Enterprise Vault to remove the safety copies. This can be achieved by setting the "evpsn" flag to "yes" when creating the replication job or schedule. **NOTE**: The "evpsn" option is only available for episodic replication on a CFS file system. Refer to the Appendix section for examples of how to deploy and configure the Access Appliance with Enterprise Vault. For more information on configuration of WORM and replication, refer to the <u>Veritas Access Administrator's Guide</u>.

Solution Data Flow

Depending on the applications or data (i.e. SharePoint, Exchange, Domino, etc.) being archived, the data flow and process within Enterprise Vault may differ. For more detailed process descriptions on the varying data flows within Enterprise Vault, refer to the <u>Enterprise Vault Process Diagrams</u>. However, in context with the storage aspects of this solution, the Access Appliance acts as a SMB/CIFS target for Enterprise Vault store partitions and/or a secondary storage location where files can be migrated from the vault store partition. When data is archived from Enterprise Vault, a shortcut or stub of the data is created on the client side and the contents of the data are moved to Access Appliance using the SMB/CIFS protocol to free space on the client. When the archived data is once again accessed, a restore is initiated from Enterprise Vault to retrieve the data from the Access Appliance.

In Enterprise Vault 8.0 and later, an archived item is stored in <u>several proprietary formats</u> onto the Access Appliance which includes:

- **DVS (saveset)** message header information of data. In the case of email, this refers to the date sent, senders, recipients, and main portion of the message body.
- **DVSSP (saveset shared part)** shared part of the data (i.e. attachments in email).
- **DVSCC (saveset converted content)** converted content of the attachment into HTML, text or raw text. The DVSCC file is what is used by the indexing services.

If collections are enabled, the files are stored as <u>CAB</u> (Microsoft Windows® Cabinet) files. An example where collections are created is when the data within Enterprise Vault partition is collected and migrated to secondary storage in which the Access Appliance can also be a storage target. A sample view of archived data on the Access Appliance is pictured in Figure 8.

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File Home Share View						~ 😮
€ 💮 ▾ ↑ 🌗 ► Network ► 192.168.	10.140 → evstores → FileArchive → 2018 → 08-09 → 0 → 1	51		~ C	Search 151	م
Second Second	Name	Date modified	Туре	Size		^
Desktop	0151A098B87914DA01BEBC07FF3068F1.D	8/8/2018 6:25 PM	DVS File	3 KB		
Downloads	0151A320710B43224DC3946BA3CFCD41	8/8/2018 6:25 PM	DVS File	4 KB		
Recent places	0151A320710B43224DC3946BA3CFCD41~	8/8/2018 6:25 PM	DVSCC File	1 KB		=
	0151A320710B43224DC3946BA3CFCD41~	8/8/2018 6:25 PM	DVSSP File	6 KB		-
🌉 This PC	0151ADC2BA7FDF3B31476E8F5073A2D1	8/8/2018 6:25 PM	DVS File	17 KB		
📜 Desktop	0151AF5BC50551D3B3C124CF98271421.D	8/8/2018 6:25 PM	DVS File	3 KB		
Documents	0151AF5BC50551D3B3C124CF98271421~	8/8/2018 6:25 PM	DVSCC File	44 KB		
〕 Downloads	0151AF5BC50551D3B3C124CF98271421~	8/8/2018 6:25 PM	DVSSP File	4,601 KB		
🜗 Music	0151AFB36B7879C4CF992D54FF3A00F1.D	8/8/2018 6:25 PM	DVS File	3 KB		
崖 Pictures	0151B1BEC4447814C43077E21D926EC1.DVS	8/8/2018 6:25 PM	DVS File	14 KB		
📴 Videos	0151B8FD43201ED31F40B8ECCC4A3011.D	8/8/2018 6:25 PM	DVS File	6 KB		
🚢 Local Disk (C:)	0151B56FCEE1763A1E924B52EAA291B1.D	8/8/2018 6:25 PM	DVS File	13 KB		
👝 New Volume (D:)	0151B68CCBE55766C150B5514A704F91.D	8/8/2018 6:25 PM	DVS File	3 KB		
	0151B68CCBE55766C150B5514A704F91~	8/8/2018 6:25 PM	DVSCC File	9 KB		
🙀 Network	0151B68CCBE55766C150B5514A704F91~	8/8/2018 6:25 PM	DVSSP File	155 KB		
	0151B84D1D0F3ECEB5C91AA788099501.D	8/8/2018 6:25 PM	DVS File	4 KB		
	0151B711D0696D332726934868808901.DVS	8/8/2018 6:25 PM	DVS File	5 KB		
	0151B711D0696D332726934868808901~D	8/8/2018 6:25 PM	DVSCC File	7 KB		
	0151B711D0696D332726934868808901~D	8/8/2018 6:25 PM	DVSSP File	194 KB		
	0151B4226DC079163E36FFBFAEB643C1.D	8/8/2018 6:25 PM	DVS File	4 KB		
	0151B958315F82D17479CEA20DAD9FF1.D	8/8/2018 6:25 PM	DVS File	4 KB		×
66 items	2					

Figure 8- Sample View of EV Archived Data on Access Appliance

The next sections describe the data flow for archival and retrieval between Access Appliance and Enterprise Vault.

Archival Data Flow

Enterprise Vault archives unstructured data based on a schedule. Archival policies are defined to determine what data to archive and when, retention categories, automated deletion, and other configurable parameters. Several Enterprise Vault services and tasks are involved prior to data being stored in the Access Appliance. In general, when a data is archived, Enterprise Vault services and tasks queue up requests, and process the queues as follows (illustrated in Figure 9):

- 1. Archive data based on scheduled policies.
- 2. Enterprise Vault services run the following:
 - a. Indexing services extract the text from the document, indexes the data along with the meta-data, and places them in the assigned index storage location.
 - b. Storage services check the fingerprint database to determine if the data has been archived already and if so, it is not stored again.
- 3. Once the data has been indexed and checked, the storage service places a reference of the data in the vault store database and the single instance parts of the data are compressed and converted into several proprietary files (DVS, DVSSP, DVSCC) that contains the data and its associated information.
- 4. A placeholder or stub of the data replaces the file in the client view.



Figure 9 - Archival Data Flow

NOTE: The indexes and database are not recommended to be stored on the Access Appliance. Only the archived data in the vault store partitions are stored on the Access Appliance.

Retrieval Data Flow

Once a data is archive, Enterprise Vault presents data to the client as a shortcut and the end-user can seamlessly access the file as if the file was not archived. For instance, the original extension or file type, icon, and size of file can be seen and if user double-clicks on the archived file or email from their browser the data will be restored. As shown in Figure 10, when the client requests for the archived data the following occurs:

- 1. Request is sent to EV and goes through the web server (Microsoft IIS) running on the EV server to handle the request.
- 2. The storage services query the SQL database regarding the location of data.
- 3. The archived parts are retrieved from the vault stores residing on the Access Appliance.
- 4. File is uncompressed and parts are re-constituted by the Enterprise Vault services and returned to client.



Figure 10 – Retrieval Data Flow

Enterprise Vault Migrator Data Flow

A vault store partition can be further migrated to a secondary storage target. The Access Appliance can also act as secondary storage target for the Enterprise Vault migrator. The data archived in a partition is migrated as a collection file (CAB). Collections are migrated based on age or according to a specified schedule. As illustrated in Figure 11, the sequence of events includes:

- 1. The Enterprise Vault collector is run based on the age of files and run daily at a specified time.
- 2. The saveset files (DVS, DVSSP and DVSCC) from the vault store partition (not WORM enabled) stored in the Access Appliance are retrieved. A collection (CAB) file is generated.
- 3. Collection files are migrated based on age
- 4. Collection files are then migrated to an SMB/CIFS share on another Access Appliance.

Figure 11 - Migration of Enterprise Vault Collections to the Access Appliance for Secondary Storage.



Best Practices and Recommendations

Following best practices is important in creating an optimum deployment. This section covers some best practices relating to the Access Appliance as an archival storage solution for Enterprise Vault.

File System and Data Layout on the Access Appliance

The Access Appliance contains hardware RAID 6 controllers in its primary storage shelf, so, the simple data layout should be used. Mirroring or other software RAID layout is not necessary for data protection and availability purposes. The simple layout also makes it easier to grow the volume later without having to be concerned about matching the stripe volume size for a striped layout or consuming additional storage as in a mirrored layout. Finally, it is not recommended to use the predefined policies for Enterprise Vault on the Access Appliance GUI since it creates a CFS file system with a mirrored layout. These predefined policies were designed to be used with Access Software Defined Storage.

Enterprise Vault requires storage for the SQL database, indexes, and vault stores (archive data). As a best practice, use Access only for the vault store partition since the database and index components of Enterprise Vault require faster storage. In addition, although the Access Appliance has a scale-out file system, Enterprise Vault has been fully certified with the CFS file system, and thus it is recommended to use the CFS file system type for Enterprise Vault.

By default, the SMB/CIFS share is in normal clustering mode. In this mode, only one node is responsible for servicing the requests. For simultaneous servicing of a share in which either node can service the requests, the SMB/CIFS share should be configured in Clustered Trivial Database mode (CTDB). The Appendix describes how to configure the clustering mode to CTDB.

The Access Appliance can be a target for multiple Enterprise Vault deployments. In these scenarios, it is best practice to not to allocate one filesystem as the target for multiple Enterprise Vault deployments. Each Enterprise Vault deployment does not have knowledge that the filesystem is being used by other Enterprise Vault partitions and will perceive that it has full use of the filesystem capacity. Thus, use one or more Access filesystems per Enterprise Vault deployments. Using more than one filesystem provides parallelism of reads and writes.

Since some operations such as filesystem check and NetBackup client backups are done at the filesystem level, it is recommended to create file systems not more than 5 TB in size and use partition rollover especially for archives that have a lot of files of small files (40 KB – 50 KB) such as in email archives. **NOTE**: Maximum filesystems supported on Access Appliance is 50.

Network Connectivity

The Access Appliance has two 10 GbE uplinks per node. Each physical port maps to a virtual IP. Thus, there are four virtual IP addresses. Always present the virtual IP to clients or client applications so that they will automatically transition to the other node if one node fails or the physical links on one node fails or becomes unreachable. Refer to Appendix section to determine how to get a listing of the virtual IPs.

Monitoring

It is important to monitor or be aware of alerts, especially storage utilization warnings and hardware critical alerts. The AutoSupport features assists in this manner, but as a best practice, it is advisable to be pro-active instead of re-active. For instance, once the storage capacity reaches 60%, it might be a good time to revisit storage utilization or plan for growth.

Load Balancing

There are two nodes on the Access Appliance configured as active/active. As a best practice, balancing the load across nodes on Access is recommended. Load balancing can be achieved using any of the following techniques:

- External load balancing using an external load balancer such as HAProxy or F5, allows for more algorithms to distribute load across nodes such as least connections or weights. It also frees the Access nodes from the proxy handling and balances the network traffic between the nodes.
- **Manual load balancing** virtual IP addresses of the nodes can be manually assigned to applications in a distributed manner. The disadvantage of this approach is that even distribution may be difficult to gauge since applications are not all equal in sense of workload.
- **DNS load balancing** –DNS includes all the virtual IP addresses of the Access nodes. DNS round-robins through the virtual IP addresses. The disadvantage of using DNS is when there are connectivity issues, the virtual IP is still in rotation until it is manually removed.

NTP Server

Connecting the Access Appliance to an NTP server is a recommended best practice in order that the hosts running Enterprise Vault, data sources, Active Directory are time synchronized. If date and time are not synchronized between the hosts and Access Appliance, issues may arise. For instance, communication to authenticate user via Active Directory may fail.

Sizing Guidance

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Access Appliance is used as a storage target for Enterprise Vault stores partitions. In planning for the vault store partitions for Enterprise Vault, there are two considerations:

- Capacity how much archive data can be stored. As previously mentioned, Enterprise Vault archives items in several proprietary formats such as DVS, DVSSP, and DVSCC, single DVS file, or CAB file depending on EV version.
- **Performance** how much workload (throughput and bandwidth) the storage platform can handle.

The Veritas account team will assist in the sizing of the Access Appliance based on your requirements using these factors. Some parameters that might enter in the equation when estimating archival storage requirements include:

- 1. Archiving type (Microsoft Exchange, SharePoint, Domino, SMTP Journaling, file system, etc).
- 2. Based on archiving type there will be other questions including state of archiving such as steady state (on-going incremental archive), backlog (initial archiving of documents) and journal archiving. Some questions may include:
 - Microsoft Exchange/Domino Mailbox
 - i. Number of mailboxes
 - ii. Average size of messages and attachments
 - iii. Estimated percentage of messages with attachments
 - iv. Average number of messages sent daily/yearly per mailbox
 - v. Average number of messages received internally and externally , daily/yearly per mailbox
 - vi. Annual growth in number of mailboxes archived, messages, and average size of messages and attachments
 - SharePoint
 - i. Number of documents to archive daily
 - ii. Typical average size of documents (Office documents, images, PDF files, etc).
 - iii. Percentage of documents greater than 20 KB.
 - iv. Annual percentage growth of number and average size of files

- v. Typical ingest rate
- SMTP Journaling
 - i. Initial number of SMTP journal messages daily
 - ii. Average size of messages and attachments
 - iii. Estimated percentage of messages with attachments
 - iv. Average number of messages sent daily/yearly per mailbox
 - v. Average number of messages received internally and externally, daily/yearly per mailbox
 - vi. Annual growth in number of mailboxes archived, messages, and average size of messages and attachments
- File system
 - i. Number of files
 - ii. Typical compressed size of file in percentage or average number of duplicates of each file
 - iii. Average size of files
 - iv. Typical ingest rate
 - v. Annual growth of number and average size of files
- PST Migration
 - i. Number of messages and attachments in PST file
 - ii. Total size of messages in PST files
 - iii. Average message and attachment sizes
 - iv. Percentage of messages with attachments
- 3. Performance and/or service level requirements.

Also refer to the <u>Enterprise Vault Performance Guide</u> which is a useful document that describes how to calculate the estimated disk space for Enterprise Vault storage (indexes, database, and vault store partitions), performance (EV hourly ingest rate, rules of thumb for IOPS), and other considerations for each archive type.

Conclusion

Veritas Enterprise Vault with Access Appliance offers an end-to-end solution for information cycle management and data archival. Implementing the Access Appliance with Enterprise Vault as a target storage platform simplifies management and support, minimizes costs, and improves control and visibility. This solution is rich with features such as WORM, replication, storage efficiencies, encryption, monitoring, auto support and integration with other Veritas products such as NetBackup and Data Insight.

References

- Enterprise Vault
 - Landing Page <u>https://www.veritas.com/support/en_US/article.100040095</u>
 - o Performance Guides https://www.veritas.com/support/en_US/article.100000918
- Access Appliance 3340
 - o 7.3.2 <u>https://sort.veritas.com/documents/doc_details/AAPP/7.3.2/Appliance%203340/ProductGuides/</u>

Veritas Access Appliance with Enterprise Vault – Archive Solution

- o 7.4.2 https://sort.veritas.com/documents/doc_details/AAPP/7.4.2/Appliance%203340/ProductGuides/
- o 7.4.3 https://sort.veritas.com/documents/doc_details/AAPP/7.4.3/Veritas%203340/Documentation/
- Veritas Data Insight
 - o https://www.veritas.com/content/support/en_US/DocumentBrowsing.html?product=Data%20Insight

Appendix

This section describes the basic steps to configure Access Appliance for Enterprise Vault. This is only a sample configuration and readers are expected to refer to the Veritas Product Documentation for Veritas <u>Access Appliance</u> and <u>Enterprise Vault</u> for definitive and specific installation, administration and configuration details.

For the configuration examples in this section, it is assumed that the following have been pre-installed and configured:

- Enterprise Vault 12.3 on Windows Server 2012 R2
 - Vault Store Group (VSG1) 0
 - Vault store (VS1) 0
- Microsoft SQL Server on Windows Server 2012 R2
- Active Directory/DNS is enabled on Access Appliance.
- NTP Server is enabled on Access Appliance.

The Enterprise Vault Server and components are networked together with the Access Appliance running Access software version 7.3.2 as shown in Figure 14. This section will go over the creation and provisioning of the Access Appliance for Enterprise Vault and configuration of the Access Appliance as target vault stores for Enterprise Vault. A directory will be created on the server hosting Enterprise Vault and data in the directory is archived during the validation section.

Figure 12 - Enterprise Vault with Access Appliance Environment Example



Access Appliance 3340

Access Appliance Setup

As previously mentioned, as a best practice it is not recommended to use the policies for EV. The high-level step to configure Access Appliance involves:

- 1. Create storage pool.
- 2. Create CIFS file system.
- 3. Set SMB/CIFS to clustering mode and enable the SMB/CIFS Server.
- 4. Provision storage for Enterprise Vault on Access Appliance
- 5. Enable WORM on file system (Optional).
- 6. Setup Access Appliance share as a Storage Target on Enterprise Vault.
- 7. Validate archival to Access Appliance

The next sections walk through the configuration of Access Appliance with Enterprise Vault.

Create Storage Pool

1. Click Infrastructure on left pane. Check mark four disks and click Add to Storage Pool.

	«	NAS Infrastructure						
⊕	Overview	Disks	Nodes H	Hardware <				
₽	Shares	Total: 26 Add to S	Storage Pool Rur	1 Scanbus	More 👻		Search	٩
	File Systems	Name] [*] 2	Usage	Storage Pool	Spare	Enclosure	Nodes	
<u> </u>	Infrastructure	🧭 🥝 vrts_appliances0_0	0.00% of 127.00 TB		no	vrts_appliances0	va732_01,va732_02	
E	Policies	✓ ✓ vrts_appliances0_1	0.00% of 127.00 TB		no	vrts_appliances0	va732_01,va732_02	1
Ŀ	Reports	✓ ✓ vrts_appliances0	0.00% of 127.00 TB		no	vrts_appliances0	va732_01,va732_02	÷
۵	Settings	vrts_appliances0_2	0.00% of 127.00 TB		no	vrts_appliances0	va732_01,va732_02	I

2. Select add new storage pool. Enter name pool1. Click Next.

Add to Storage Pool						?	×
Select Disks to Add into E	xisting or New S	Storage Pool					
Selected: 4	Storage Po	ool Capacity: 0 byte					
Name		Usage	Storage Pool	Enclosure	Nodes		
vrts_appliances0	0_0	0.00% of 127.00 TB		vrts_appliances0	va732_01,va732_02		1
vrts_appliances0	L1	0.00% of 127.00 TB		vrts_appliances0	va732_01,va732_02		I
vrts_appliances0	L	0.00% of 127.00 TB		vrts_appliances0	va732_01,va732_02		I
vrts_appliances0	1_2	0.00% of 127.00 TB		vrts_appliances0	va732_01,va732_02		l
Select Storage Pool :	Add to new s	storage Pool	•				
Storage Pool Name :	pool1						
					Next	Can	cel

3. Click clock icon on top to check the status of this activity. Click Show All Recent Activities. Wait for the operation to show success.

				All Re	cent Activities				? ×
Quick	Actions +	e			Click any task to view the details.				
	1				Total: 5 of 5			Search	Q
	Recent Activity				Name	Status	Start Time	End Time	
					+ Create Storage Pool pool1	Success	2018-07-23 05:47:16	2018-07-23 05:47:52	
	Ongoing	Completed			Run full discovery	Running	2018-03-10 08:52:49		
- 1	Create Storage P	and pool 1			Run full discovery	Success	2018-03-07 05:29:05	2018-03-07 05:30:48	
Engl	create Storage P	50% E0%			Run Scanbus	Success	2018-03-07 05:27:30	2018-03-07 05:27:46	
Ench		50%			Run full discovery	Success	2018-03-07 05:24:11	2018-03-07 05:25:53	
emc0	Show All Re	cent Activities							
			,						

	α	NAS Infrast	ructure						
⊕	Overview	D	isks	Nodes	Hardware	9			
œ	Shares	Total: 26	Add to Storage Pool	Run Scanbus More	-				Search Q
	File Systems		Namel [*]	Usage	Storage Pool	Spare	Enclosure	Nodes	
		. •	vrts_appliances0_0		pool1	no	vrts_appliances0	va732_01,va732_02	1
<u> </u>	Infrastructure			0.00% of 127.00 TB			vrte appliances0	700.01700.00	
E	Policies		vrts_appliances0_1	0.00% of 127.00 TB	pooli	no	vita_applianceso	va/32_01,va/32_02	:
5		. 0	vrts_appliances0	0.00% of 127.00 TB	pool1	no	vrts_appliances0	va732_01,va732_02	1
	Reports	. 🥥	vrts_appliances0_2	0.00% of 127.00 TB	pool1	no	vrts_appliances0	va732_01,va732_02	1

4. After success, pool1 is created.

Creating File System

1. Click Quick Actions at top and select Create File System.



2. Follow the wizard to create the File System. Click Next.

Create File System		? ×
Welcome	Welcome	
2 File System Options		
3 Summary	A storage pool is a user-defined group of disks. Select a storage pool for You can optionally add a cloud disks. This is the primary tier for the storage pool for Use policies to control which	
4 Result	your storage	
	A file system organizes your data on the disks	NFS CIFS 3
	Create File System	A share provides access to a file system using the CIFS, NFS, or the S3 protocol.
		Next Cancel

3. Set **name** of file system, file system **type** to CFS and **size** of file system with a **Simple** layout and **Block Size** (default: 8192). For this example, name is **evfs-simple**, size is **20 GB**. Click on **Select storage pool**.



4. Check mark the desired storage pool: pool1

Select On-Premises Stor	age
Total :1 Selected :1	Search Q
Storage Pool Name	Free Size
✓ pool1	232.94 TB
	Select

5. Review Summary and click **Next** and **Finish**.

Create File System		? ×
1 Welcome	Summary File system name: evfs	
2 File System Options	Primary tier Location: On-Premises Size: 10 GB	
3 Summary	Block size: 8192 Bytes Enable Partition Directory: no Selected Pools: pool1	
4 Result		
		Back Next Cancel

6. Click the **Clock icon** and check the activity of creation.

					Red	☆ :
Quick	Actions 🔹	 L_0	o	P	?	
	Recent Activity					
	Ongoing	Compl	eted	Search		Q
torage Pool.	🔮 Create File Sys	stem evfs-s	imple _{Os}	£ Enc	cryption] ^A	
pol1	Show All Rec	ent Activiti	es	No		:

7. Click File Systems on left pane and validate that the evfs-simple file system has been created.

		«	File Syst	tems							
()	Overview			File Syste	ms	S3 Buckets					
Ð	Shares		Total	: 1 Cre	ate File System				S	earch	۹
	File Systems			Namelå	Status 1 ^A	Usage	Storage Pool $L_{\mathbb{Z}}^{\mathbb{A}}$	Layout] ^A	S3 Bucket	Encryption 2	
			0	evfs-simple	Online	1.26% of 20.00 GB	pool1	simple	No	No	:
<u> </u>	Infrastructure										
E	Policies										
Ŀ	Reports										
⇔	Settings										
	0.000										

Set SMB/CIFS Clustering Mode and Enable the SMB/CIFS Server

- 1. Before enabling the SMB/CIFS services, set the mode of the SMB/CIFS share to CTDB. Enter the Access CLISH via ssh. Setting the SMB/CIFS mode involves the following steps to be done from the CIFS prompt:
 - a. **server status** check the server status. If status indicates that the clustering mode is already in CTDB mode, then resume to step 2.
 - b. server stop stop the SMB/CIFS service.
 - c. set clustering_mode ctdb set the clustering mode to CTDB
 - d. server start start the SMB/CIFS service.
 - e. server status check the server status to verify that clustering mode has been set to ctdb.

Sample output is shown below.

```
va732> cifs
Entering CIFS share mode ...
ajva.CIFS> server status
CIFS Status on va732 01 : ONLINE
CIFS Status on va732 02 : ONLINE
Homedirfs
                         :
Security
                        : user
Clustering Mode
                        : normal
va732.CIFS> server stop
Stopping CIFS Server....Success.
va732.CIFS> set clustering mode ctdb
Global option updated. Note: Restart the CIFS server.
va732.CIFS> server start
Uninstalling 'normal' Clustering Mode....Success.
Installing 'ctdb' Clustering Mode.....Success.
Starting CIFS Server....Success.
va732.CIFS> server status
CIFS Status on va732 01 : ONLINE
CIFS Status on va732 02 : ONLINE
Homedirfs
                         :
                        : user
Security
Clustering Mode
                        : ctdb
```

Enable Worm on File System (Optional)

1. Log on to the Access Appliance CLISH and enable WORM on files ystem created using "**storage fs worm set evfs-simple**" command. Check that WORM has been set by entering "storage fs list evfs-simple".

```
va732> storage fs worm set evfs-simple
 ACCESS fs SUCCESS V-493-10-2189 Enabled WORM for evfs-simple file
 system.
va732> storage fs list evfs-simple
General Info:
_____
Block Size: 8192 Bytes
Version: Version 13
Volume Encrypted: No
Max IOPS: 0
va732_01: online
va732_02: online
 Primary Tier
 _____
20.00G
3%
Used: 257.58M
Layout: simple
Mirrors: -
Columns:
Stripe Unit: 0.00 K
Meta Data: metaOk
FastResync: Disabled
 1. Mirror 01:
 List of pools: pool1
 List of disks: vrts_appliances0_1
 FS Type:
                     Normal
 Defrag Status: Not Running
 Fullfsck Status: Not Running
 Resync Status: Not Running
Rollsync Status: Not Running
Relayout Status: Not Running
 WORM Enabled: Yes
```

Provision Storage for Enterprise Vault on Access Appliance

1. Click Quick Actions, select Provision Storage and follow the wizard.



2. Select the Provisioning type as Storage for Enterprise Vault.

Provision Storage		? ×
Provisioning Option	Select Provisioning type	
2 Storage Options	 Storage for NFS Storage for CIFS S3 Storage for NetBackup Storage for Enterprise Vault 	
		Next

3. Select File System as Storage Type and select evfs-simple as the file system to create the shares on.

Provision Storage						? 🗙
Provisioning Option	Selec	ct Storage type				
2 Storage Options	• Select Total:	File System a File System:				Search Q
3 Share Options		Name	Status	S3 Bucket	Layout	Usage
4 Summary	۲	✓ evfs-simple	online	No	simple	1 1.26% of 20.00 GB
5 Result						
						Back Next Cancel

4. Enter **name** of Share Name to be evstores. Select the **Access Type** and **Export Options**. In this example, the settings are **rw**, **owner is lab\\evsvc and file system mode 1777.** Click on **Set** to set the export options.

Provision Storage				? ×
Provisioning Option				Add New Share
2 Storage Options	CIFS Options			Actions
3 Share Options	Share Name* evstores			ŵ
4 Summary	Access Type Read Only Advanced CIFS Export Options			
5 Result	Hide Unreadable Guest OpLocks Owner Iab\\evsvc	Group		
	File system mode 1777	Virtual IP		
	Allow user and user group	Deny user and user group		Set
			Back	Next Cancel

5. Review the options and click **Next**.

Provision Storage	· · · · · · · · · · · · · · · · · · ·	? ×
 Provisioning Option Storage Options 	Summary Share Details Selected File System:evfs-simple Directory Path:/vx/evfs-simple	
 Share Options Summary 	Protocol Uption: Uns Share Name: evstores Export Options: rw,guest,full_acl,owner=lab\\evsvc,fs_mode=1777	
5 Result		
	Back Next C	Cancel

6. Click on Shares on the left pane and check that the evstores share has been created successfully.

	×	Shares					How to provision st	torage?
Ð	Overview	Total: 1	Provision Storage				Search	٩
₽	Shares	F	Path↓ [≜]	Share Name $l_z^{\mathbb{A}}$	Access Protocol $l_z^{\mathbb{A}}$	File System $l_z^{\mathbb{A}}$	File System Status $J_z^{\mathbb{A}}$	
	File Systems	0	vx/evfs-simple	evstores	CIFS	evfs-simple	online	ł
	Infrastructure							
E	Policies							
Ŀ	Reports							
*	Settings							

Setup Access Appliance Share as a Storage Target on Enterprise Vault

1. On the Access Appliance CLISH, execute the "**network ip addr show**" command and use one of the **virtual IPs** for the Enterprise Vault configuration of vault store partition.

va732> network	ip addr show				
IP	Netmask/Prefix	Device	Node	Туре	Status
192.168.10.125	255.255.255.0	pubeth0	va732_01	Physical	
192.168.10.126	255.255.255.0	pubeth1	va732_01	Physical	
192.168.10.127	255.255.255.0	pubeth0	va732_02	Physical	
192.168.10.128	255.255.255.0	pubeth1	va732_02	Physical	
192.168.10.130	255.255.255.0	pubeth0	va732_01	Virtual	ONLINE
(Con IP)					
192.168.10.140	255.255.255.0	pubeth0	va732_02	Virtual	ONLINE
192.168.10.141	255.255.255.0	pubeth0	va732_01	Virtual	ONLINE
192.168.10.142	255.255.255.0	pubeth1	va732_02	Virtual	ONLINE
192.168.10.143	255.255.255.0	pubeth1	va732_01	Virtual	ONLINE

2. On the Enterprise Vault server, connect to the **SMB/CIFS share** (<u>\\<IP address>\evstores</u>) on the Access Appliance using the virtual IP noted in previous step and **create a directory**, **FileArchive**.

🤽 I 🕞 🔃 = I	е	vstores			_ 🗆 X
File Home Share	View				v 😮
🔄 💿 🔻 🕆 🖳 🕨 N	etwork ▶ 192.168.10.140 ▶ evstores ▶		~ ¢	Search evstores	Q
☆ Favorites	Name	Date modified	Туре	Size	
Desktop	🐌 lost+found	8/8/2018 5:39 PM	File folder		
\rm Downloads	퉬 FileArchive	8/8/2018 5:51 PM	File folder		
🗐 Recent places					
This PC Desktop Documents Downloads Music Pictures Videos Local Disk (C:) New Volume (D:)					
2 items 1 item selected					

Start the Enterprise Vault management console and traverse to Directory → Site (i.e. Lab) → Vault Store Groups → (VSG1) → VS1 → Partitions. Right-click and click New → Partition to start the partition creation wizard. Users can also create Smart Partition similarly if classification tags are desired. In this example, a regular partition is created.

0		Enterprise	e Vault		X
3 File Action View Tools Window Help					- 8 >
🗢 🔿 🙇 🖬 📋 🗟 🗟 🖬 📍	<u>n 00- 88 (()</u>				
Console Root	Name	Description			
⊿ 🔞 Enterprise Vault	Partitions	New A	Dastition		
△ (Directory on ev	🗑 Smart Partiti 🗕	INEW F	Parution	tch the tags assigned to them.	
status (o Critical)		New Window from Here	-		
> (a) Targets		Refresh			
Client Access		Help			
Policies		- 11 - 20			
Enterprise Vault Servers					
Archives					
⊿ 🥶 VSG1					
⊿ 🏫 VS1					
Partitions					
Smart Partitions					
Personal Store Management					
Extensions					
Enterprise Vault Online					
1					
Creates a new item in this container.					

4. Enter name of new partition as VS1 Ptn2, and description as Partition of Vault Store VS1.

	New Partition
	Enter a name and a description for the new Vault Store Partition. Name: VS1Ptn2 Description:
VERITAS	A Vault Store can have only one partition open for archiving. If you open this new partition, any existing open partition will be closed.
	Create this new partition:
	Create this new partition: Ready < Back

5. Select **Veritas Access** as the storage type to use.

	New Partition	
	Enterprise Vault can create a Vault Store Partition on variou storage. Click Help for more information. Storage type:	us types of
	NTFS Volume	¥
VERITAS	Network Share NTFS Volume HYDRAstor Dell EMC Data Domain FUJITSU ETERNUS CS8000 Oracle ZFS Storage Appliance Dell EMC Isilon OneFS Scale Out Storage IBM Storwize V7000 Unified IBM Scale Out Network Attached Storage (SONAS) Veritas InfoScale Storage (Cluster File System) Quantum StorNext Appliances (Artico / Xcellis) Huawei Device	
	Veritas Access	
	Dell EMC Celerra Unified Storage Platforms Dell EMC Centera Dell EMC Atmos Dell EMC Elastic Cloud Storage (ECS) Hitachi Content Platform (HCP) NetApp Device NetApp StorageGRID (HTTP) IBM Cloud Object Storage Storiant iTernity Compliant Archive Solution HP StoreAl Storage	
	HPE 3PAR File Persona Caringo Swarm	

6. Enter the **path** of the Veritas Access **shares**. In this example, Exchange Archive is a directory that was created in step 2. Place a checkmark on **Device stores data in WORM mode** (optional) since the Veritas Access file system for the share has been WORM enabled.

	New Partition ×
VERITA	Enter the path to the folder that you want to use for the partition, or dick Browse. Location for the new Vault Store Partition: \\192.168.10.140\evstores\FileArchive Browse Veritas Access storage settings How is the storage device configured for this volume? Pevice stores data in WORM mode Device performs data deduplication Device performs data compression Click Help for more information on these settings.
	< Back Next > Cancel Help

7. Click **Run Test** to test connectivity.

	New Run the connectiv in single instance Connectivity test	Partition vity test to indicate the storage. Click Run Test progress:	performance of this partition t to start the test.
	Source ev.lab.com EVSERVER EVSERVER	Destination 192.168.10.140 192.168.10.140 SQLADSERVER	Connection rating Good Good Good
VERITAS	<	111	Run Test Report
	< Back	Next >	Cancel Help

8. Use the **default Partition Rollover**. In this example, it is set to **Not Enabled**.

	Partition Rollover:	Not Enabled
	Volume (i) When volume	reaches 5 🔦 % free
	O When volume	reaches 1 GB v fre
	After 3	Months v
VERITAS	0 On	

9. Use the default setting to create vault store partition with security ACLS.

	New Partition	X
VERITAS	Enterprise Vault can create a Vault Store Partition with or without security ACLs. Click Help for more information.	
	< Back Next > Cancel Help	

10. Use the **default archive attribute**.

	New Partition					
	It is critical that you configure backups for this partition. Click help for information about backup best practices.					
	How do you want to check whether items have been secured?					
	• Use the archive attribute					
	Select this option if your backup solution clears the archive attribute on files after backing up.					
	O Check for a trigger file					
	Select this option if your backup solution does not dear the archive attribute on files after backing up, for example snapshots.					
VERITAS	You can set a partition scan interval to perform additional checks for the trigger file, if required.					
	Scan partition every 60 minutes					

11. Review the configuration and **click Finish**.

New Partition						
	You have now entered all the information required to create the r Vault Store Partition:	new				
	Vault Store Partition	~				
	Name: VS1Ptn2 Description: Partition of Vault Store VS1	=				
	Computer: EVSERVER Location: \\192.168.10.140\evstores\FileArchive Storage: Veritas Access Volume mode: WORM					
	You have chosen:					
VERITAS		~				
	Click Finish to create the new Partition.					
	< Back Finish Cancel He	lp				

12. Validate that the **partition VS1 Ptn2** is created.

	Enterprise Va	ult				_ ×
elp						_ 8 ×
₽ <u>₽</u> 88: 111 ⑦						
elp ¹ g ² g ² f	Description Partition of Vault Store VS1 Partition of Vault Store VS1	Status Open Ready	Device Type NTFS Volume Veritas Access [WORM]	Rollover Not Ena Not Ena	Collector Type Enterprise Vault None	▲ m ×
4		II	1			>
	⁴ p ⁸ g ⁶ g- ∰ ∰ ∰ ⑦ Name ☆ VS1 Ptn1 ☆ VS1 Ptn2 √ S1 Ptn2 √ S1 Ptn2	Ip R S- III III III IIII Partition of Vault Store VS1 VS1 Ptn1 Partition of Vault Store VS1 VS1 VS1 Ptn2 Partition of Vault Store VS1	Ip Image: Second product start of the second product store vs1 Image: Second product store vs1 Open Image: Image: Vs1 Ptn1 Partition of Vault Store Vs1 Ready Image: Ima	Image: Second	Ip R S S- EE III III O VSI Ptn1 Partition of Vault Store VS1 Open NTFS Volume Not Ena ♥ VSI Ptn2 Partition of Vault Store VS1 Ready Veritas Access [WORM] Not Ena VSI Ptn2 Veritas Access [WORM] Not Ena	Ap R the transmission of the second of the

Validation of Access Appliance as a Storage Target for Enterprise Vault

1. Change the VS1 Ptn2 (Veritas Access) partition created from previous section to **Open** such that the archives will be directed to this partition. If there is another partition that is open, close those first.

9	E E	_	Vault Store Partition Properties - VS1 Ptn2		
9 File Action View Tools Window Help ← → 2 17 11 🗙 🗊 → 🛿 10 43 55	a *a ≫ ⊞ /// ®				General Volume Rollover Backup
Create Roll Create Roll Create Roll Create Roll	Description Partition of Value Steen VS1 Partition of Value Steen VS1 Dolate Properties Help	South Device Type Cosed MTS Volume Ready Vertex Access (VODM)	Ritow Collector year No Ena — Receiptiv Audi Not Ena — Nore	Magneto Type Hane Hene	VS1 Phn2

2. Create a file share to archive. Create a directory on server.

👝 💽 🚺 =		New Volume (D:)			-	o x
File Home Share	View					~ ?
🔄 🕘 🔻 🕯 🖃 T	Search New \	/olume (D:)	<i>م</i>			
Desktop ^	Name	Date modified	Туре	Size		
bownloads	EVCache	8/8/2018 5:22 PM	File folder			
🔛 Recent places	File_Share	4/10/2018 7:28 AM	File folder			
	Indexes	7/13/2017 2:42 PM	File folder			
1 This PC	INSTALL	7/12/2017 2:43 PM	File folder			
📙 Desktop	\mu StorageQueue	7/13/2017 2:40 PM	File folder			
Documents	鷆 temp	4/10/2018 6:05 AM	File folder			
Uownloads	퉬 VICShared	4/10/2018 9:55 AM	File folder			
Music	퉬 VS1	8/1/2017 5:30 PM	File folder			
Pictures	D_FileShare	8/8/2018 6:05 PM	File folder			
Videos =						
LOCal Disk (C:)						
D EileShare						
EVCache						
File Share						
StorageOueue						
temp						
VICShared						
VS1						
~						
9 items 1 item selected						:==

3. **Right-click** and select the **properties** of the D_Share folder. Click on **Share** tab. Select the **people** to share with and click **Share**.



4. Click Done and Close.

	D_FileShare Properties
	Previous Versions Customize Classification General Sharing Security
8 File Sharing	Network File and Folder Sharing
Your folder is shared.	Network Path: \\EVSERVER\D_FileShare Share
Individual Items	Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options.
D_FileShare VLEVSERVER\D_FileShare	Advanced Sharing
Show me all the network shares on this computer.	
Done	Close Cancel Appl

5. **Copy** some **files** into the D_Share folder to archive.

📕 L 🐊 D_FileShare 🗖 🗖									
File Home Share View									
🛞 💿 👻 🕆 闄 🕨 This PC 🕨 New Volume (D:)	D_FileShare	,P							
_	^	Name	Date modi	fied	Туре	Size			
This PC Cesktop Counents Counents Music Pictures Videos Coal Disk (C:) Coal Disk (C:)	II	is classdata.zip ig putty-64bit-0.70-installer.msi ig SetupVCD5500.exe	4/10/2018 1/12/2018 4/10/2018	7:27 AM 4:16 AM 6:04 AM	Compressed (zipp Windows Installer Application		7,7 2,9 1,6		
3 items	~	< 111					>		

Add the file share (directory) created, as a target on Enterprise Vault. On Enterprise Vault, expand Target
 →File Servers. Click on <u>\\EVSERVER</u> and on right pane, do a right-click and select New → Volume.
 Click Next.

0		Enterprise Vault								-
Sile Action View Tools Window Help									New Volume	<u>•</u>
🔶 🔿 🙇 🛅 📋 🖾 🤉 📓 🖬 🚳 🕯	b 🦀 🗛 🎘 🔠 💷	(?)								
Console Root	Volume File_Share	Policy Name Vault Store Classification VS1	Task File System Archiving Ta	Archivi. sk On	Reporti Off	Not enabled			This wizard will help you to add an existing volume for archiving on file server 'evserver.lab.com'.	
 Ji Schange Draving Draving		Install PSA Agent Upgaba PSA Agent Upgaba Service Credentiala PSA Charter Configuration Rum PSA Reporting Scan Stop PSA Reporting Scan New Refersh Export List View Arrange Icons Line up Icons Properties Help	r FSA Reporting	Volume	-		•	VERITAS	<back next=""> Cancel Help</back>	

7. Click on **Browse** and select **Regular** on share type.





v I

8. Select D_FileShare on next pane. Click Next.

Browse for Folder Select a regular share. <p< th=""></p<>
OK Cancel

9. Select VS1 as the Vault Group which contains the Veritas Access partition and click OK. Then, select File System Archiving Task to do the archive. Click Next.

New Volume X	New Volume ×
Select a Vault Store for the archived files.	Select the File System Archiving task you want to be used when processing this volume. File System Archiving Task v
VERITAS < Back Next > Cancel Help	VERITAS < Back Next > Cancel Help

10. Select the Volume Policy to be **Default FSA Volume Policy**. Click on **View** and the policy indicates the Archive Rules. In this example, all files are archived except for certain windows and MAC files. Click **Next**, **Finish** and **Close**.

	New Volume X	View Dellas
	Select an archiving policy for volume 'D_FileShare' on file server 'evserver.lab.com'.	View Policy View Policy Details of Volume Policy 'Default FSA Volume Policy' are shown below. To modify the policy, go to the policy properties.
	To view the policy, click View:	Archiving Rules: The following archiving rules are applied to this policy: Exclude Mac Files - Description: Exclude Mac files from archiving (disabled) Exclude Windows Files - Description: Exclude Windows files from archiving (disab All Files - Description: (enabled)
VERITAS	Enable FSA Reporting (not configured)	Close
	< Back Next > Cancel Help	

11. Click and expand the Enterprise Vault Servers → *.lab.com → Tasks. Right-click on the right pane and select Start to start the File System Archiving Task.

٩		Enterprise Vault				_ D X
File Action View Tools Window Help						_ 8 ×
(+ ->) 2 📷 🛍 🗙 🖾 🕞 📓 🖬 🎕 2	b 🖴 🗛 🎥 🔠 🕐 🕨 🖷					
Console Root	Name	Туре	Exchange Server	Status	Startup type	
⊿ ③ Enterprise Vault	File System Archiving Task	File System Archiving	N/A	Stopped	Manual	
⊿ 🐚 Directory on ev				Start		
Status (6 Critical)				Stop		
⊿ 🔩 Lab				Rectart		
⊿ (@ Targets				Restort		
▷ Ø Exchange				Pause		
Domino				Resume		
				Run Now		
D_FileShare				Delete		
G File_Share				Properties		
SharePoint SMTP				Help		
Skype for Business						
Client Access						
Policies						
⊿ Interprise Vault Servers						
⊿ 🔋 ev.lab.com (EVSERVER)						
Services						
Tasks						
Archives						
Vault Store Groups						
P milexing						
A Stepsions						
Content Providers						
Enterprise Vault Online						
Constant and	н					

12. After the File System Archiving Task is in Running status, right-click on task again and select **Run Now** to start the file system archiving task on the target file shares (e.g. D_FileShare).

٩		Enterprise Vault				_ 🗆 🗙
6 File Action View Tools Window Help						_ 8 ×
	🕹 🚑 🔩 📴 🔡 🏥 🌐 🎱 🕨 🔳	11 IID 11 D				
🗀 Console Root	Name	Туре	Exchange Server	Status	Startup type	
⊿ 🞯 Enterprise Vault	File System Archiving Task	File System Archiving	N/A	Running	Manual	
⊿ I Directory on ev					Start	
Status (6 Critical)					Stop	
J A G Lab					Restart	
e a top raiges					Pause	
b iii Domino					Resume	
A 😽 File Servers					Run Now	
A 🛃 \\EVSERVER					0.1.1	
D_FileShare					Delete	
B Ble_Share					Properties	
b ₩ SMICFOR					Help	
Skype for Business						
Client Access						
Policies						
▲ Enterprise Vault Servers						
A (ev.lab.com (EVSERVER) On Services						
Tasks						
Archives						
Vault Store Groups						
🕨 🍋 Indexing						
Personal Store Management						
A 🙀 Extensions						
Content Providers						
Citterprise value onnine						
1						
1						

13. On next pane, select In normal mode and click OK.

Enterprise Vault		
You have chosen to perform an archiving run on the targets of File System Archiving Task 'File System Archiving Task'.	Enterprise Vault	x
Now would you like these to be processed? In normal mode In report mode	The File System Archiving Task 'File System Archiving Task' has started processing.	I
Run the task for creation of shortcuts only. Click OK to start the run.	ОК	
OK Cancel		

14. The status will change from **Running to Processing**.

I	3		Enterprise Vault						
	File Action View Tools Window Help								
1									
	🗀 Console Root	Name	Туре	Exchange Server	Status	Startup type			
	⊿ 🔞 Enterprise Vault	🐻 File System Archiving Task	File System Archiving	N/A	Processing	Manual			
	⊿ 🐚 Directory on ev								
rd	Status (6 Critical)								
e	🔺 🎑 Lab								
	⊿ @ Targets								
1	Exchange								
٩	⊳ 🤲 Domino								
	⊿ 🛃 File Servers								
s	⊿ 🏪 \\EVSERVER								
e	D_FileShare								
d	File_Share								
d	SharePoint		•						
4	⊳ 🔤 SMIP								
.]	Skype for Business								
14	Client Access								

15. After the status moves from processing to running again. Go to the Veritas Access SMB/CIFS share (\\<IP address>\evstores\FileArchive) and check that the file share has been archived. There will be directory that would contain the archives.

👫 l 🚬 🚯 🖛 l	FileArchive			X I
File Home Share View				~ ()
	tores 🕨 FileArchive	✓ C Search	h FileArchive	Q
⊿ 🔆 Favorites	Name	Date modified	Туре	Size
E Desktop	Julia 2018	8/8/2018 6:25 PM	File folder	
Downloads	EnterpriseVaultPartitionRoot.xml	8/8/2018 5:56 PM	XML Document	
Recent places				
🔺 📭 This PC				
▷ 📜 Desktop				
Documents				
Downloads				
Music Picturer				
Videos				
Þ 🏭 Local Disk (C:)				
▷ 🧫 New Volume (D:)				
N Constant and a second s				
P Network				
2 itams	<			>
2 items				

16. Traversing the EV archives directory, file types *.DVS, *.DVSCC, and *.DVSSP can be seen.

🏨 l 🕞 🚺 🖛 l	151						×
File Home Share View						~	0
	1.10.140 → evstores → FileArchive → 2018 → 08-09 → 0 → 1	51		~ C	Search 151	۶	C
	Name	Date modified	Туре	Size			^
Desktop	0151A098B87914DA01BEBC07FF3068F1.D	8/8/2018 6:25 PM	DVS File	3 KB			
Downloads	0151A320710B43224DC3946BA3CECD41	8/8/2018 6:25 PM	DVS File	4 KB			
Recent places	0151A320710B43224DC3946BA3CFCD41~	8/8/2018 6:25 PM	DVSCC File	1 KB			-
	0151A320710B43224DC3946BA3CFCD41~	8/8/2018 6:25 PM	DVSSP File	6 KB			_
💻 This PC	0151ADC2BA7FDF3B31476E8F5073A2D1	8/8/2018 6:25 PM	DVS File	17 KB			
📜 Desktop	0151AF5BC50551D3B3C124CF98271421.D	8/8/2018 6:25 PM	DVS File	3 KB			
Documents	0151AF5BC50551D3B3C124CF98271421~	8/8/2018 6:25 PM	DVSCC File	44 KB			
🐌 Downloads	0151AF5BC50551D3B3C124CF98271421~	8/8/2018 6:25 PM	DVSSP File	4,601 KB			
👪 Music	0151AFB36B7879C4CF992D54FF3A00F1.D	8/8/2018 6:25 PM	DVS File	3 KB			
📔 Pictures	0151B1BEC4447814C43077E21D926EC1.DVS	8/8/2018 6:25 PM	DVS File	14 KB			
🗎 Videos	0151B8FD43201ED31F40B8ECCC4A3011.D	8/8/2018 6:25 PM	DVS File	6 KB			
Local Disk (C:)	0151B56FCEE1763A1E924B52EAA291B1.D	8/8/2018 6:25 PM	DVS File	13 KB			
i New Volume (D:)	0151B68CCBE55766C150B5514A704F91.D	8/8/2018 6:25 PM	DVS File	3 KB			
	0151B68CCBE55766C150B5514A704F91~	8/8/2018 6:25 PM	DVSCC File	9 KB			
👽 Network	0151B68CCBE55766C150B5514A704F91~	8/8/2018 6:25 PM	DVSSP File	155 KB			
	0151B84D1D0F3ECEB5C91AA788099501.D	8/8/2018 6:25 PM	DVS File	4 KB			
	0151B711D0696D332726934868808901.DVS	8/8/2018 6:25 PM	DVS File	5 KB			
	0151B711D0696D332726934868808901~D	8/8/2018 6:25 PM	DVSCC File	7 KB			
	0151B711D0696D332726934868808901~D	8/8/2018 6:25 PM	DVSSP File	194 KB			
	0151B4226DC079163E36FFBFAEB643C1.D	8/8/2018 6:25 PM	DVS File	4 KB			
	0151B958315F82D17479CEA20DAD9FF1.D	8/8/2018 6:25 PM	DVS File	4 KB			v
бб items						8==	

Setup Access Appliance as a Secondary Storage Target for Enterprise Vault Collections

Provision Storage on the Access Appliance

1. Similarly, as described in the previous sections, create a file system (ev-secondary) and provision storage (evfs-secondcopy – CIFS) on the Access Appliance for Enterprise Vault.

	e.	Shares					How to provision a	storage?
⊕	Overview	Total: 3	Provision Storage				Search	٩
₽	Shares		Path1 [*] 2	Share Namel ²	Access Protocol12	File System↓2	File System Status $l_{\mathbb{Z}}^{\wedge}$	
æ.	File Systems	٥	/vx/ev-secondary	evfsa-secondcopy	CIFS	ev-secondary	online	:
	Infrastructure	0	/vx/ev-fsa	evfsa-store	CIFS	ev-fsa	online	I
E	Policies	0	/vx/evfs-simple -	evstores	CIFS	evfs-simple	online	I
Ŀ	Reports							
⇔	Settings							

 Create a directory (FSA-SecondCopy) on the host where Enterprise Vault is running for the Access Appliance share that acts as the secondary storage target (<u>\\<IP Address>\evfs-secondcopy</u>).

🔔 ⊋ 🚺 = I		evfsa-secondcopy			_ 0	×
File Home Share	View					~ ()
€ 🕘 ▾ ↑ 🚂 🚻	2.168.10.140\evfsa-secondcopy		✓ C	Search evfsa-se	condcopy	Q
☆ Favorites	Name	Date modified	Туре	Size		
E Desktop	FSA-SecondCopy	8/5/2018 7:21 PM	File folder			
〕 Downloads	🍌 lost+found	8/5/2018 7:14 PM	File folder			
🔛 Recent places						
-						
P This PC						
Downloads						
Music						
崖 Pictures						
📔 Videos						
🚢 Local Disk (C:)						
👝 New Volume (D:)						
Setwork						
T						

Configure EV Migrator with Access Appliance as a Secondary Storage Target.

1. On Enterprise Vault, **right-click on vault store partition (VS1 Ptn3**) and select **Properties**. In this example, vault store partition named VS1 Ptn3 is a non-WORM Veritas Access device type that will be migrated to another CIFS share on the Access Appliance.

File Action View Tools Window Help)					
🗢 🔿 📶 📋 🗙 🗟 🖬 🍕	🖢 🕹 🚑 🗛 📴 🔡	(III 🕐				
Console Root	Name	Description	Status	Device Type	Rollover	Collector Type
⊿	VS1 Ptn1	Partition of Vault Store VS1	Open	NTFS Volume	Not Ena	Enterprise Vault
Directory on ev	😪 VS1 Ptn2	Partition of Vault Store VS1	Ready	Veritas Access [WORM]	Not Ena	None
Status (6 Critical)	😪 VS1 Ptn3	Partition of Vault Store VS1	Ready	Veritar Access	Not Ena	None
🔺 🍓 Lab			Delete			
⊿ @ Targets			Properti	ies		
▷ III Exchange						
Domino			Help			
File Servers						
b 🔐 SharePoint						
D 👱 SMIP						
Skype for Business						
Delisies						
Enterprise Vault Servers						
Archives						
4 B Vault Store Groups						
4 1 VS1						
Partitions						
Smart Partitions						
Indexing						
Personal Store Management						
Extensions						

Collections would need to be first enabled on vault store partition such that the collections are migrated to the secondary storage target. Thus, go to Collections Tab and check mark Use collection files and select
 Collector to be Enterprise Vault. Set the start and end of the daily collection files and the maximum collection file size and the age at which files will be collected. Click Apply and then select Yes to use the file collection software.

General	Volume	Rollover	Backup	Collections	Migration	Advanced
V 1	Jse collect	ion files				
	Collector:	Enterpr	ise Vault			~
_	Daily file (collection ti	imes:			
	Start at:	10:00:	MA 00:	~ ~		
	End at:	4:00:	:00 PM	~	Run No	W
_	Maximum	collection	file size:			
	Limit colle	ction files t	to: 10	~	megabytes	
_	Age at w	nich files w	ill be colle	cted:		
	Collect file	es older th	an: 10	÷ Day	's v	

3. Click on Migration tab. Check mark the box next to Migrate files and select Enterprise Vault as Migrator. Click OK when on the message indicating that some secondary storage affects the response time of Enterprise Vault. Enter the age at which collection files will be migrated and age at which migrated collection files will be removed from primary storage. Then enter the secondary storage location: <u>\\<IP address>\evfsa-</u> secondcopy\FSA-SecondCopy. Click Apply and then Yes to use file migrator software.

				uis	Enterprise Vault
General Volume	Rollover Bac	ckup Collections	Migration	Advanced	Secondary storage that is slow to respond can make some Enterprise Vault operations take a long time. For example, both tape and cloud
Migrator: Enterprise Vault				~	storage can be very slow. Click Help for a list of affected operations.
Migrate fi	Years	~			ОК
Enter the removed Remove (age at which m from primary st collection files fr	nigrated collection torage. rom primary storag	files will be ge: gration.		Enterprise Vault x
Secondar	y storage locat fsa-secondcopy	ion: /\FSA-SecondCopy	Brows	;e	You are changing this partition to use file migrator software. You cannot undo this change. Are you sure you want to use file migrator software?
	OK	Cancel	Apply		Yes No

Configuration of Episodic Replication Notes

For configuration of episodic replication, please follow the procedure outlined in the <u>Access Administrator Guide</u>. For Access 7.3.2 release, use the Access CLISH to configure the replication for both source and destination Access cluster. NOTE the following:

- a) Both source and destination Access cluster need to be on the same version.
- b) An un-used virtual IP is required on both source and destination Access cluster.
- c) Both the source and destination would need to export and import keys in order to establish communication. If NOT using the URL path to specify the key location during the import keys, enter the command "episodic config import keys" first and hit carriage return. Then you are prompted to enter the key. Refer to below figure for an example where the Access cluster destination is doing an import of the key generated from the source Access cluster:

- d) In Access Appliance, the "evpsn" flag is set when creating an episodic replication job.
- e) In Enterprise Vault, set the vault store Partitions properties to check for a trigger file. Set the partition scan interval.

General	Volume	Rollover	Backup	Collections	Migration	Advanced
How	do you wa	ant to chec	k whether	items have b	been secure	d?
OL	Jse the ar	chive attrib	oute			
	Select this attribute	s option if y on files afte	vour backu er backing	up solution cle up,	ears the ard	nive
•	Check for	a trigger fil	e			
	Select this archive at snapshots	s option if y ttribute on s.	vour back. files after	up solution do backing up, t	es not dear for example	the
	You can s for the tri	et a partitio gger file, if	on scan in required.	terval to perf	form addition	nal checks
	✓ S	Scan partitio	on every	60	minut	tes
Sta	tus					
La	st item se	cured:		No backup detected		
La	st scan st	arted:		Never started		
Un	nsecured i	tems found	l in last sc	an:		
Ite	ems secur	ed in last s	can:			
					De	tails

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ABOUT VERITAS

Veritas Technologies is a global leader in data protection and availability. Over 50,000 enterprises—including 99 of the Fortune 100—rely on us to abstract IT complexity and simplify data management. Veritas Enterprise Data Services Platform automates the protection and orchestrates the recovery of data everywhere it lives, ensures 24/7 availability of business-critical applications, and provides enterprises with the insights they need to comply with evolving data regulations. With a reputation for reliability at scale and a deployment model to fit any need, Veritas supports more than 500 data sources and over 150 storage targets, including 60 clouds. Learn more at www.veritas.com. Follow us on Twitter at @veritastechllc.

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