AvePoint DocAve 6 User Guide

DocAve® 6 Storage Manager

User Guide

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The Enterprise-Class **Management Platform** for **SharePoint** Governance

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What’s New in this Guide

- Minor edits and cover page update for current release.

About DocAve Storage Manager

As SharePoint 2010 becomes the central repository for enterprise content within organizations, increasing user adoption and integration from data sources can cause unstructured data, called Binary Large Objects (BLOBs), to consume up to 95 percent of SharePoint SQL Server space. If ignored, BLOBs can lead to database performance and user experience degradation.

With DocAve Storage Manager, organizations can mitigate the negative consequences of exponential data growth by combining multiple real-time and scheduled business rules to externalize BLOB content based on file size, type, or other document properties, allowing SharePoint administrators to:

- Reduce SharePoint total cost of ownership by utilizing hierarchical storage management (HSM) systems for BLOB storage
- Improve user experience by optimizing SQL Server resources while maintaining seamless user access and interaction to externalized content
- Easily comply with information governance policies for content lifecycle management within or across multiple SharePoint farms with highly customizable business rules
- Ensure all BLOBs work with SharePoint management functions and most third-party applications by leveraging Microsoft's fully supported External BLOB Storage (EBS) or Remote BLOB Store (RBS) APIs

Complementary Products

Many products and product suites on the DocAve 6 platform work in conjunction with one another. The following products are recommended for use with Storage Manager:

- DocAve Content Manager for SharePoint for restructuring or moving SharePoint content
- DocAve Replicator for SharePoint for copying SharePoint content within the same SharePoint farm or from one SharePoint farm to another. DocAve Replicator performs live, event-driven, scheduled, or offline replication. Synchronization and management of all content, configurations, and securities is performed with full fidelity.
- DocAve Report Center for SharePoint to examine pain points in the SharePoint infrastructure and report on SharePoint user behavior and changes
- DocAve Data Protection for setting backup and recovery points prior to adjusting SharePoint governance policies in this product

Submitting Documentation Feedback to AvePoint

AvePoint encourages customers to provide feedback regarding our product documentation. You can Submit Your Feedback on our website.

Before You Begin

Refer to the following sections for system and farm requirements that must be in place prior to installing and using DocAve Storage Manager.

AvePoint's Testing Policy and Environment Support

Supported Hardware

AvePoint is committed to maintaining a hardware agnostic platform to ensure that DocAve operates on common Windows file sharing and virtualization platforms. To ensure that DocAve is hardware agnostic, AvePoint tests hardware that is intended to support SharePoint and DocAve infrastructure, storage targets, and hardware-based backup and recovery solutions, as supported by AvePoint's partnerships. AvePoint directly integrates with the following platforms: any Net Share, IBM Storwize Family, FTP, Amazon S3, AT&T Synaptic, Dropbox, Box, Caringo Storage, Del DX Storage, EMC Centra, HDS Hitachi Content Platform, Rackspace Cloud Files, TSM, Network File System, and Windows Azure Storage.

All other hardware platforms that support UNC addressable storage devices are supported.

***Note:** Most of the hardware partnerships referenced in this guide are intended to make use of advanced functionality (such as snapshot mirroring, BLOB snapshots, indexing, long-term storage, WORM storage, etc.), and are not indications that any changes to the product are required for basic support. In most cases, hardware can be supported with no change to the product.

Supported Backup and Recovery

DocAve supports BLOB backup storage according to the list of hardware platforms above. BLOB snapshot functionally, however, is currently only supported on OEM versions and NetApp hardware.

DocAve supports SQL content and Application database backups via the SharePoint Volume Shadow Copy Service (VSS) on all Windows and SQL server platforms listed above. DocAve also supports snapshot-based SharePoint VSS on all hardware listed above where the hardware partner has certified support with Microsoft.

DocAve supports application and configuration server backups for all the supported software environments listed above. DocAve 6 SP5 supports VM backup via Hyper-V/VMWare for the following operating systems: Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, and Microsoft Hyper–V Server 2012 R2.

Configuration

In order to use DocAve Storage Manager, the DocAve 6 platform must be installed and configured properly on your farm. Storage Manager will not function without DocAve 6 present on the farm.

Agents

DocAve Agents are responsible for running DocAve jobs and interacting with the SharePoint object model. Agents enable the DocAve Manager to communicate with its respective servers, allowing Storage Manager to function properly.

***Note**: The use of system resources on a server increases when the installed agent is performing actions. This may affect server performance; however, if the agent installed on a server is not being used, the use of system resources is very low, and the effect on server performance is negligible.

For instructions on installing the DocAve Platform (DocAve Manager and DocAve Agents), refer to the DocAve 6 Installation Guide.

Required Permissions

The following permissions are required for the Storage Manager Agent account. These permissions ensure proper functionality of Storage Manager.

1. Local System Permissions: These permissions are automatically configured by DocAve during installation. Refer to Local System Permissions for a list of the permissions automatically configured upon installation. If there are no strict limitations within your organization on the permissions that can be applied, you can simply add the **DocAve Agent Account** to the local **Administrators** group to apply all of the required permissions.
2. SharePoint Permissions:
    - User is a member of the **Farm Administrators** group. Since Administrator works across farms and on all SharePoint settings and configurations, this account is needed in order to provide the best and most complete quality of service.
    - Full Control to all zones of all Web applications via User Policy for Web Applications
3. SQL Permissions:
    - Database Role of **db_owner** for all the databases related with SharePoint, including content databases, stub databases, SharePoint configuration database and Central Administration content database.
    - Database Role of **dbcreator** to SQL Server since DocAve must create a stub database before performing any Storage Manager job.
    - Database role of **securityadmin** since SharePoint API is required the permission to enable RBS.

Local System Permissions

1. User is a member of the following local groups:
    - **IIS_WPG** (for IIS 6.0) or **IIS_IUSRS** (for IIS 7.0)

- **Performance Monitor Users**
- **DocAve Users** (The group is created by DocAve automatically and it has the following permissions)
    - Full Control to the Registry of *HKEY_LOCAL_MACHINE\SOFTWARE\AvePoint\DocAve6*
    - Full Control to the Registry of *HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\eventLog6*
    - Full Control to the Communication Certificate
    - Permission of **Log on as a batch job** (it can be found within *Control Panel > Administrative Tools > Local Security Policy > Security Settings > Local Policies > User Rights Assignment*)
    - Full Control Permission of DocAve Agent installation directory
    - Full Control to GAC in order to install Provider dll into GAC.
    - Full Control to **Microsoft SQL Remote Blob Storage** folder to reconfigure maintainer configuration file.

2. Local Administrator permission to the local server. When installing the related solutions, this permission is required.

Supported Storage Types in DocAve 6 Storage Manager

The following Storage device types are supported by DocAve 6 Storage Manager:

- Net Share
- IBM Spectrum Scale Object
- IBM Storwize Family
- EMC Centera
- Rackspace Cloud File
- Microsoft Azure Storage
- Amazon S3
- EMC Atmos
- AT&T Synaptic
- Dropbox
- DELL DX Storage
- Caringo Storage
- HDS Hitachi Content Platform

- OneDrive

Upgrading to SharePoint 2013

If you are running Storage Manager with SharePoint 2010 and plan on upgrading to SharePoint 2013, consider the following when planning your upgrade:

- Customers who have deployed EBS for SharePoint 2010 will not be able to upgrade their databases to SharePoint 2013. Microsoft no longer supports EBS. Databases marked as having externalized content using EBS will not be able to connect to a SharePoint 2013 environment. Customers using EBS must upgrade first to RBS using the DocAve EBS to RBS Stub functionality in the Control Panel. In cases where the database server does not support RBS, users will also need to upgrade the database server to Enterprise Edition or another compatible version of SQL Server.
- Customers whose SharePoint 2010 environments uses RBS will be able to upgrade to SharePoint 2013:
    - Customers will need to install DocAve Agents in the SharePoint 2013 farm prior to attaching any SharePoint 2010 RBS databases.
    - Customers will need to configure the RBS provider for the SharePoint 2013 environment.
    - When upgrading directly from DocAve 6 SP2, all existing storage system profiles, physical devices, and logical devices will be preserved.
    - When an old SharePoint 2010 content database is attached and upgraded in a new SharePoint 2013 farm, the user will only need to enable RBS for the upgraded content database and assign (or copy) the previous stub database to the new content database. This can be accomplished directly via the stub database configuration wizard in DocAve.

***IMPORTANT**: Microsoft's best practices recommend setting the 2010 environment to a read-only state prior to upgrading to 2013. The reason this setting is imperative for an RBS upgrade is that the 2010 and 2013 farm will both leverage the same underlying BLOB storage layer. You MUST follow this step to prevent corrupting data. (That is, updating storage locations, running garbage collection, or tampering with BLOBs without updating the stub and content databases).

Upgrading a SharePoint 2010 Content Database with Storage Manager Data to a SharePoint 2013 Database

Review the following prerequisites before upgrading a SharePoint 2010 Content Database with Storage Manager Data to a SharePoint 2013 Database:

1. DocAve 6 SP2 or a later version is required. If you are running a previous version of DocAve, upgrade your DocAve version to SP2 or a later version first.

2. If the SharePoint 2010 content databases contain EBS stubs, those content databases cannot be upgraded to SharePoint 2013 because SharePoint 2013 does not support the EBS provider.
3. The SharePoint 2010 farm and SharePoint 2013 farm must use the same DocAve Control Server.
4. Before the upgrade, DocAve Agents must be installed in the SharePoint 2013 farm.

After the upgrade, make sure the upgraded content databases still use the same stub databases. Otherwise, the stubs cannot be accessed after the upgrade. To upgrade a SharePoint 2010 Content Database with Storage Manager Data to a SharePoint 2013 Database, complete the following steps:

1. Attach the SharePoint 2010 content databases to the SQL Server of the SharePoint 2013 environment. For more information, refer to Attach a Database.
2. Mount the attached content databases to a specified Web application using the PowerShell command Mount-SPContentDatabase.

   For example, **Mount-SPContentDatabase** “MyDatabase” **-DatabaseServer** "MyServer" **-WebApplication** http://webapplicationurl.

   ***Note**: For more information on step 1 and step 2, refer to Upgrade databases from SharePoint 2010 to SharePoint 2013.

3. If the user needs to upgrade the user interface style of the SharePoint 2010 site collections in the attached content database to the SharePoint 2013 user interface style, run the Upgrade-SPSite command.

   For example, Upgrade-SPSite http://<site name>/sites/testsite –VersionUpgrade.

After upgrading the SharePoint 2010 content database to a SharePoint 2013 database, you can apply the configured rules to the desired SharePoint 2013 farm nodes.

Getting Started

Refer to the sections below for important information on getting started with Storage Manager.

Launching Storage Manager

To launch Storage Manager and access its functionality, follow the instructions below:

1. Log into DocAve. If you are already in the software, click the **DocAve** tab. The **DocAve** tab displays all modules on the left side of the window.
2. Click **Storage Optimization** to view the Storage Optimization modules.
3. Click **Real-Time Storage Manager** or **Scheduled Storage Manager** to launch the appropriate module.

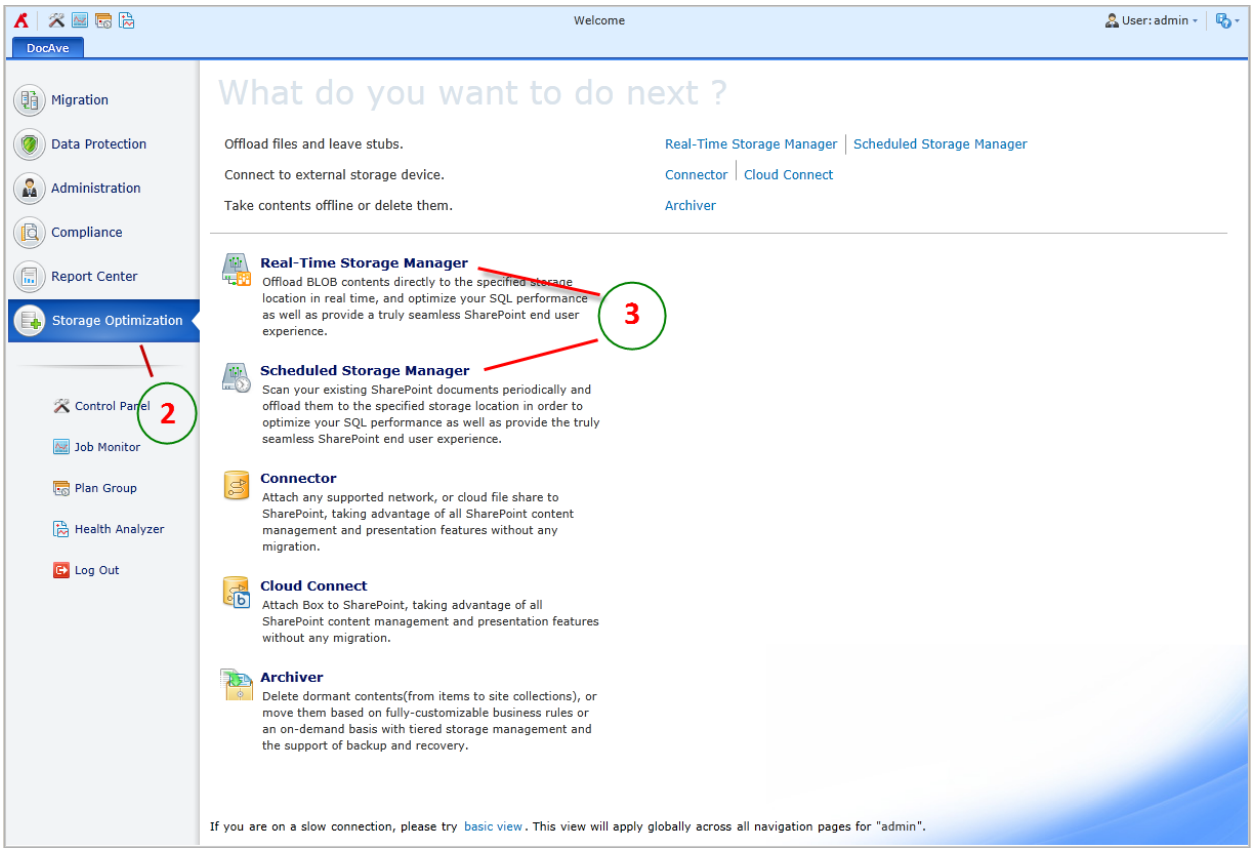


Figure 1: DocAve module launch window.

AvePoint recommends using Health Analyzer to check the prerequisites you need to correctly use DocAve Storage Manager.

***Note:** Only users in the DocAve **Administrators** group can use Health Analyzer.

For more information about Health Analyzer, refer to the DocAve 6 Installation Guide.

Navigating DocAve

DocAve mimics the look and feel of many Windows products, making for an intuitive and familiar working environment. While there are many windows, pop-up displays, and messages within DocAve products, they share similar features and are navigated in the same ways.

Below is a sample window in DocAve. It features a familiar, dynamic ribbon, and a searchable, content list view.

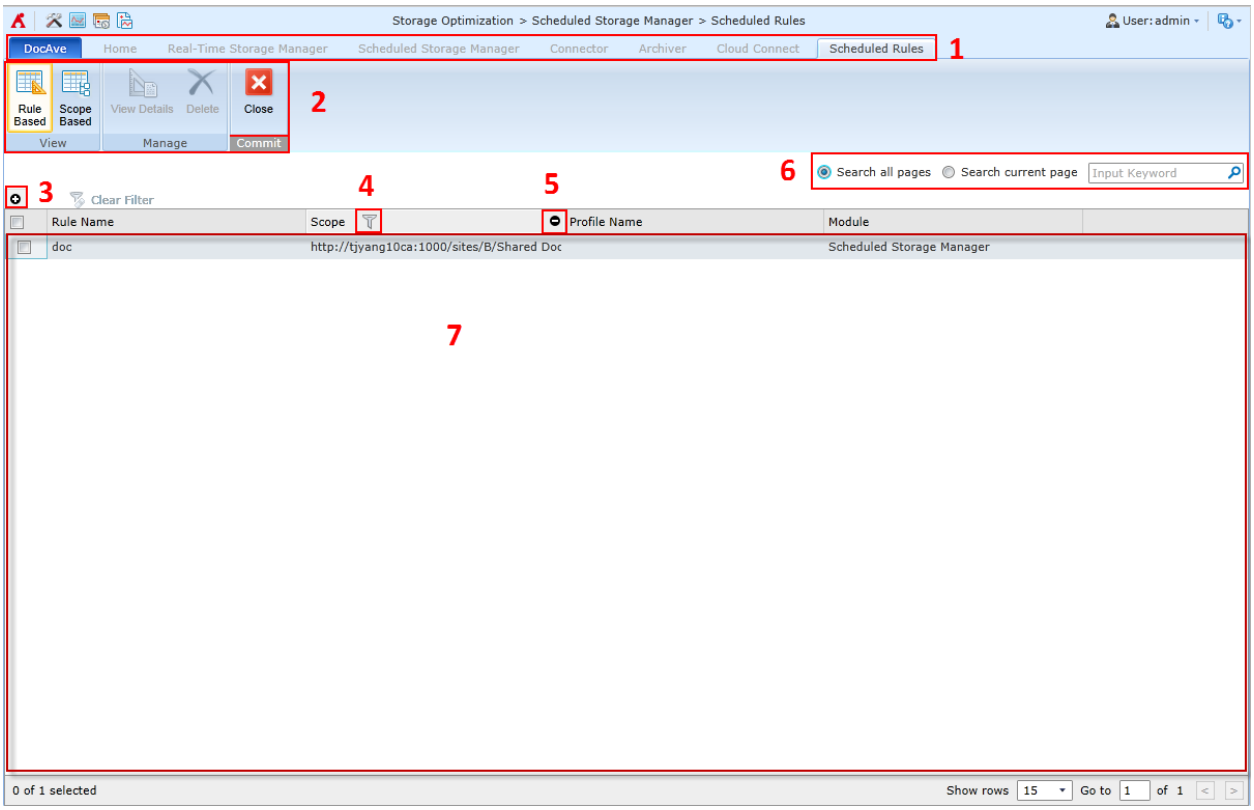


Figure 2: Navigating DocAve.

1. Ribbon Tabs – Allows users to navigate to the DocAve welcome page and within the active module.
2. Ribbon Panes – Allows users to access the functionality of the active DocAve module.
3. Manage columns (⊕) – Allows users to manage which columns are displayed in the list. Click the manage columns (⊕) button, and then select the checkbox next to the column name in the drop-down list.
4. Hide the column (⊖) – Allows users to hide the selected column.
5. Filter the column ( ) – Allows users to filter the information in the List View. Click the filter the column ( ) button next to the column and then select the checkbox next to the column name.

6. **Search** – Allows users to search the List View pane for a keyword or phrase. You can select **Search all pages** or **Search current page** to define the search scope.

   ***Note:** The search function is not case sensitive.

7. Management Pane – Displays the actionable content of the DocAve module.

User Interface Overview

After clicking **Real-Time Storage Manager** or **Scheduled Storage Manager**, the Storage Optimization suite user interface launches with the **Real-Time Storage Manager** or **Scheduled Storage Manager** tab active. The tab displays your farm environment and allows for quick access to all of Storage Manager's features. The How to Use Connector area displays brief configurations and steps about using Storage Manager. The Dashboard displays the rule settings overview for the selected farm. Click **View Details** to view detailed information about the configured rule for the Web applications, site collections, sites, lists, and/or folders in the pop-up window. If you are away from the Dashboard page, click the **Dashboard Page** link at the bottom of your interface to go back to the Dashboard.

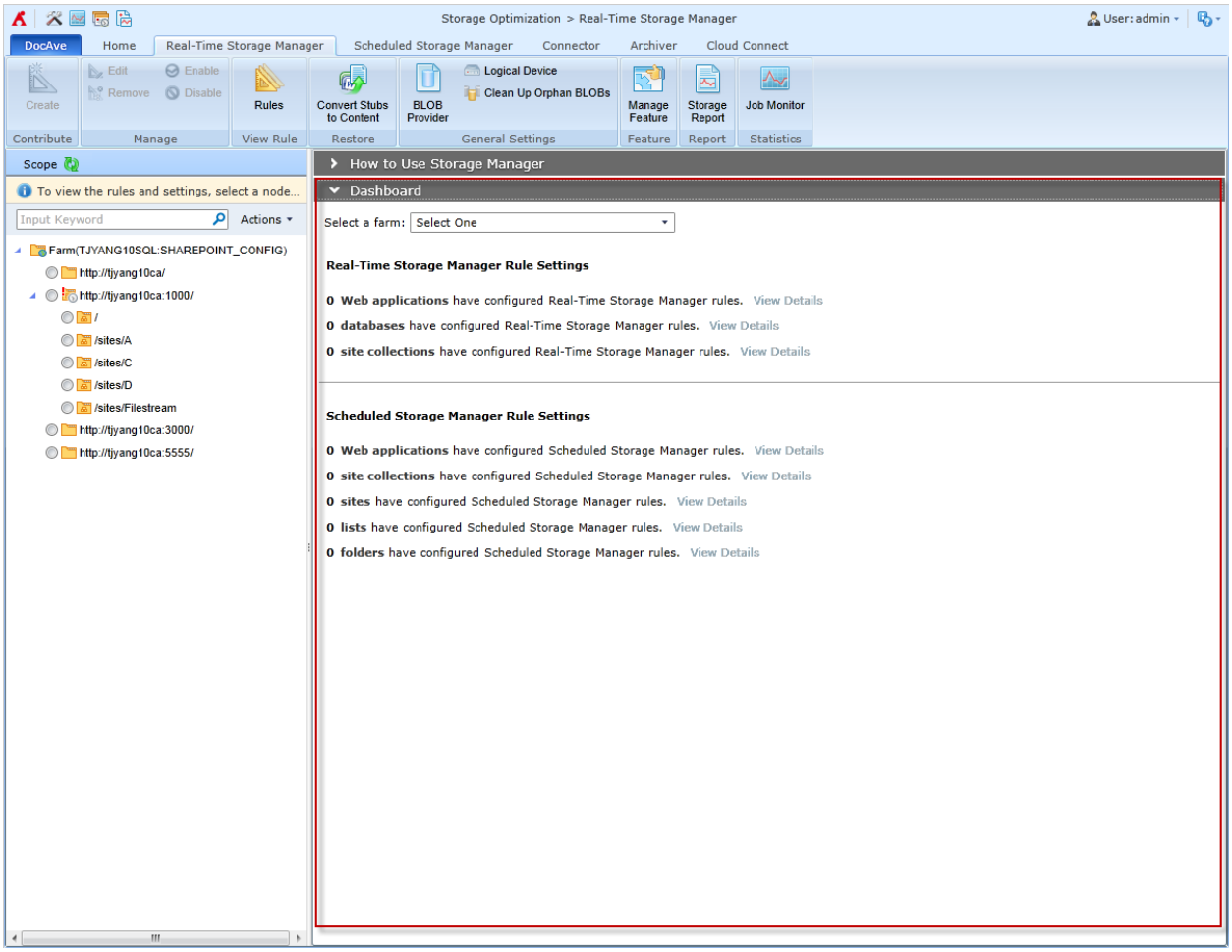


Figure 3: Dashboard interface.

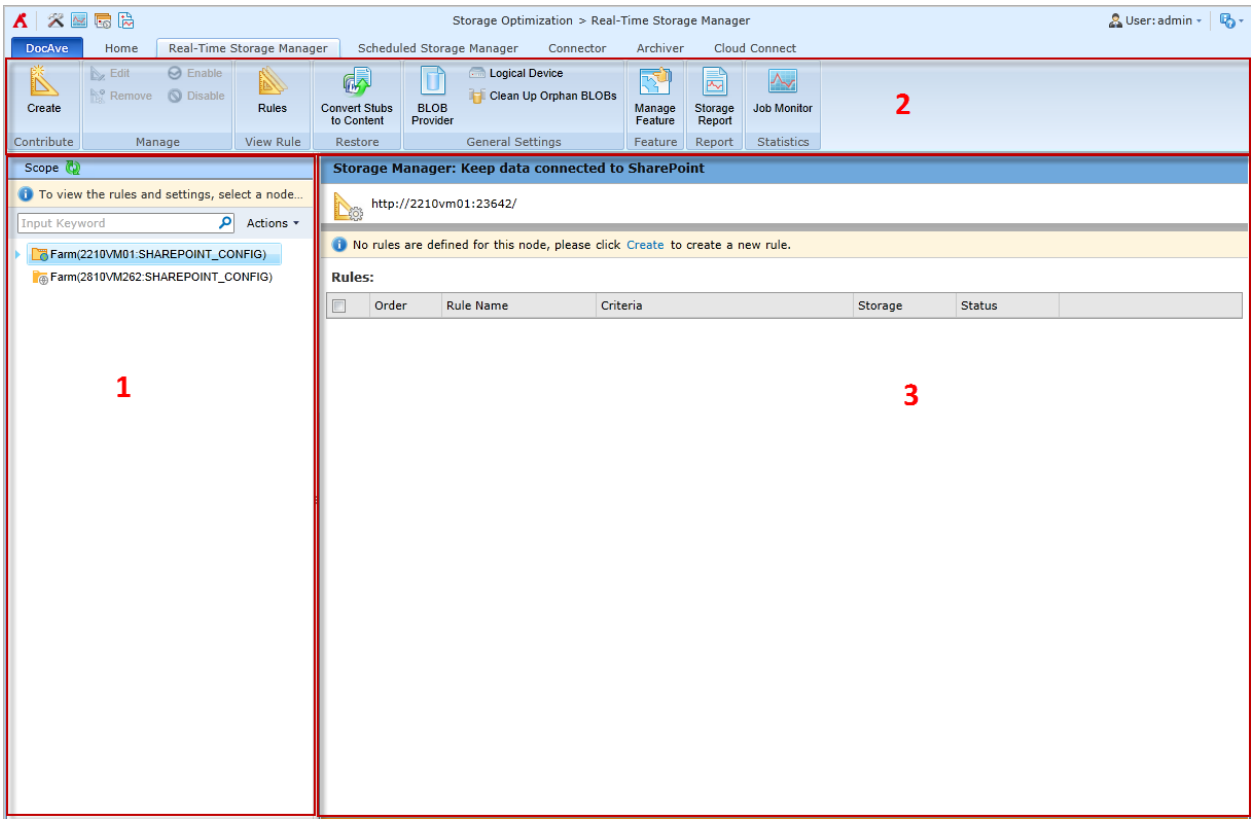


Figure 4: Real-Time Storage Manager user interface.

1. The **SharePoint tree** (**Scope** panel) displays all content within your farms. Use this panel to select the content that you wish to perform actions on. Selecting content often reveals new tabs and functionality on the **ribbon**.
2. The **ribbon** shows the available actions and wizards for the selected nodes. This content is dynamic; it will often change depending on what is selected on the SharePoint tree and in the **workspace** area.
3. The **workspace** shows all form-based content that is used during the configuration of actions performed in DocAve products.

Selecting Farms and Nodes

To select farms and nodes, complete the following steps:

1. From the **Scope** panel on the left, click the farm that contains the relevant SharePoint content.
2. Select the relevant content on which you want to perform further operations by clicking the radio buttons to the left of the content.
3. After selecting content, you will be able to perform the procedures described throughout this guide.

To refresh an object, right-click the object, and then click **Refresh** to refresh the object and expand it.

For sites, you can right-click and select **Copy URL** to copy the URL of this node, or click **Open in browser** to open it in the browser directly.

Click **Actions** beside the **Input Keyword** text box, and then you can select to **Show selected nodes** or **Show all nodes**.

Basic Steps to Configuring and Using Storage Manager

The following basic steps are required in order to properly use Storage Manager. Click the link to jump to the corresponding section, complete the following steps:

1. Configuring the BLOB Provider.
2. Configuring Logical Devices.
3. Configuring Orphan BLOB Cleanup and Configuring the Processing Pool (Scheduled Storage Manager Only).
4. Configuring Real-Time Storage Manager or Configuring and Running Scheduled Storage Manager Jobs.

Configuring the BLOB Provider

In order to use DocAve Storage Manager, the BLOB Provider must be enabled. A binary large object (BLOB) is unstructured data, such as files, attachments, etc., stored in SQL content databases. By default, any file or attachment that is uploaded into SharePoint is stored as a BLOB in the content database. By configuring the BLOB Provider, you are able to externalize BLOBs from a content database to an external storage solution. The BLOB Provider feature intercepts SharePoint database traffic and redirects all of the BLOB traffic to external BLOB storage; what remains in SharePoint is a stub of the data. The BLOB Provider also creates a stub database and enables the provider on the specified farm or node.

In order to provide transparency to SharePoint users and applications, Remote BLOB Storage (RBS) or External BLOB Storage (EBS) is used to expose the file share content through the SharePoint interface. EBS is an interface provided by Microsoft SharePoint Server 2007 and 2010, while RBS is a set of standardized Advanced Programming Interfaces (APIs) that are incorporated as an add-on feature pack for Microsoft SQL Server.

***Note**: Since the DocAve RBS Provider is a remote, third-party provider, SQL 2012 Enterprise Edition or SQL Server 2008 R2 Enterprise Edition is required.

***Note**: RBS can be enabled at the content database level in a SharePoint 2013 farm. EBS is not supported in a SharePoint 2013 environment.

Feature	RBS (for SharePoint 2010 and SharePoint 2013)	EBS (not supported in SharePoint 2013)
BLOB store scope	RBS can be enabled at content database level and Web application level. Each content database can have its own BLOB store. RBS is more flexible.	EBS can be enabled only at the farm level.
Number of providers	Multiple RBS providers can be in the same SharePoint farm.	Only one EBS provider per SharePoint farm. If you enable another EBS provider, the stubs generated by the previous EBS provider will be inaccessible.
Interface	Managed. RBS is a purely .NET-based solution. From a technology perspective, RBS fits in to .NET quite nicely.	Unmanaged. EBS relies on a legacy COM interface.
Migrating BLOBs from SQL Server stores to BLOB stores and vice versa	Windows PowerShell	Custom

Feature	RBS (for SharePoint 2010 and SharePoint 2013)	EBS (not supported in SharePoint 2013)
SharePoint interface	SharePoint 2010 and SharePoint 2013 ship with many Windows PowerShell command lets that can be used to manage RBS installation and configuration.	None

BLOB Provider Recommendations

Before enabling your BLOB Provider, be sure to refer to the following recommendations for BLOB Provider configurations.

You should:

- Start the wizard, verify RBS binaries and DocAve Agents have been installed and enabled on all SharePoint servers that are running Web services in your farms. Including all application and index servers.

  ***IMPORTANT:** All servers must have RBS binaries installed or else access to external content (outside the database) will fail.

- For best performance, choose a database server within the farm for your stub database.
- Choose to manage all stubs (pointers) for EBS and RBS at the farm level – one stub database per farm. Only when item counts of one million objects or greater are expected per container should you apply lower-level settings.
- Consider inheritance if configuring stub databases at a lower level. See Appendix C – Stub Database Inheritance for additional information on stub database inheritance.
- Configure a schedule for enabling RBS to ensure that you have planned for a growing farm.

You should avoid:

- Missing servers when installing the Agents. Failing to install RBS/EBS on a Web front-end (either user-facing or application-facing).
- Getting bogged down by your choice of EBS over RBS: pick what's right for your SQL Server version. We provide you the ability to upgrade from EBS to RBS at a later time as necessary. Refer to the DocAve 6 Control Panel Reference Guide for information on upgrading from EBS to RBS.
- Making these configurations more granular than necessary. The goal is simplicity in management: since this database will be included in your disaster recovery plans for your farm, too many databases can make your failover more complicated than it needs to be.

- Skipping the schedule configuration. Even as you grow your farm, new content databases will be added and need to be enabled for use with the rest of the storage optimization products.

For more information related to BLOB externalization best practices, refer to AvePoint's Optimize SharePoint Storage with BLOB Externalization whitepaper.

Enabling the BLOB Provider

To enable the BLOB Provider on your servers, complete the following steps:

***Note**: When only the RBS provider is enabled, a Real-Time Storage Manager rule is only available at the Web application (content database) level. When only the EBS provider is enabled, a Real-Time Storage Manager rule is available at the Web application level and site collection level. When both the RBS provider and the EBS provider are enabled, RBS is used.

***Note**: In the event that you want to enable the RBS/EBS provider on Web front-ends that have improperly installed Agents, you must use the standalone Agent tools. Refer to Appendix E – Enabling the BLOB Provider Using the Agent Tools for information on enabling the BLOB Provider using these tools.

1. To access the BLOB Provider, click either the **Real-Time Storage Manager** or **Scheduled Storage Manager** tab > **BLOB Provider**. The **BLOB Provider** page appears in the workspace.
2. **Install BLOB Provider Binaries** on the specified servers. This page displays the information for all of the servers in the specified farm. By default, the BLOB Provider binaries are installed with the Agent installation. If some BLOB Provider binaries are not installed, **Not Installed** displays in the **BLOB Provider Binaries** column. If necessary, click **Install** to install the required BLOB Provider binaries.
3. Click **Next** when finished. The **Configure Stub Database** page appears.
4. **Configure Stub Database** – Specify where to store all of the Storage Manager stub information. Click the farm name to expand the tree and to select the farm level, Web application level, and/or the content database level.

   For ease of use, it is recommended to configure one stub database for the entire farm. In some cases (records management, for example, where there may be millions of files), it may be necessary to configure different stub databases down to the Web application or content database level. For more information on this process, see Appendix C – Stub Database Inheritance.

   ***Note:** Ensure that all stub databases are properly backed up. Should a database become corrupt, backed-up stub data is required to fully restore all data.

5. After selecting which nodes to link to a stub database, click **Configure** in the **Manage** group on the ribbon. You can also click the **Configure** button beside each tree node to configure the stub database for the selected node.

- **Configure Stub Database** – Specify the **Database Server** (where the stub database resides) and **Database Name** for the stub database. See Appendix C – Stub Database Inheritance for additional information on stub database inheritance.

  ***Note**: Once the stub database of a content database is configured and saved, the configuration cannot be changed.

  By default, the database server used by the farm is loaded automatically. Considering the management and maintenance of the stub databases, it is recommended to use the default database server. You must specify other database servers if any one of the following conditions is applicable:

  - The account does not have the necessary permissions to connect to the default SQL Server.
  - The account does not have the necessary permissions to create the stub database on the default SQL Server.
  - The default SQL Server is located on a machine in another location and the network status is "poor."

- **Authentication** – Select the authentication method used to access the database.
  - **Windows authentication** (recommended; the default option) – Use this method to confirm the user identity using Windows.
  - **SQL authentication** – SQL Server confirms the user identity according to the specified account and password.

- **Connection String** – Use this feature to create and configure stub databases using command lines. Click **Advanced** to expand the advanced configuration. Select **Edit Connection String Directly** to use **Connection String** method to create and connect the Stub Database using Windows authentication or SQL authentication.

  ***Note**: If you select **Edit Connection String Directly**, the **Configure Stub Database** field and the **Authentication** field above will be unavailable.

  To create a stub database using Windows authentication, input the following information:

  - **Server** – Enter the name of a SQL Server instance. The value must be either the server's name on the network, an IP address, or the name of a Configuration Manager alias. To connect to the default instance on the local server, refer to the following examples:
    - **Server=.;**
    - **Server= IP Address;**
    - **Server=localhost;**
    - **Server=localDatabase\instancename;**

- **Database** – Enter the database name. If a database is not specified, the default database defined for the login is used. To connect to the database, refer to the following example: **Database=Database's name**.
- **Trusted_Connection** – Select the **true** value to use Windows Authentication Mode for login validation.
- **DataSource** – Enter the instance's name, the Hostname, or the IP address of a SQL Server. If this field is not specified, a connection is made to the default instance on the local computer.
- **Failover Partner** – Enter the name of the failover server used for database mirroring.
- **Initial Catalog** – Enter the stub database's name.
- **Integrated Security** – Select the **true** value to accept the value "SSPI" for Windows Authentication.

To create a stub database using SQL authentication, input the following information:

***Note**: Each instruction's key and value must be connected with "=". The instructions are separated using ";".

- **Server** – Enter the name of a SQL Server instance. The value must be either the server's name on the network, an IP address, or the name of a Configuration Manager alias. To connect to the default instance on the local server, refer to the following examples:
  - **Server=.;**
  - **Server=IP Address;**
  - **Server=localhost;**
  - **Server= localDatabase\instancename;**
- **Database** – Enter the database name. If a database is not specified, the default database defined for the login is used. To connect to the database, refer to the following example: **Database=Database's name**.
- **Trusted_Connection** – Select the **False** value to not use Windows Authentication Mode for login validation. You can specify the credentials that will be used to connect to the database.
- **User ID** – Enter the login name.
- **Password** – Enter the password.
- **DataSource** – Enter the instance's name, the Hostname, or the IP address of a SQL server. If not specified, a connection is made to the default instance on the local computer.
- **Failover Partner** – Enter the name of the failover server used for database mirroring.

- **Initial Catalog** – Enter the stub database's name.

6. When finished, click **OK** to proceed to the **Enable BLOB Provider** page.
7. **Enable BLOB Provider** – Shows the **BLOB Provider Status** of the farms that have DocAve Agents installed. Enable or disable the BLOB Provider on the selected farm in this step. Click **Configure** in the **Action** column; the following options appear.

   - **Enable RBS for Farm (farm name)** – Displays the component of the farm and the schedule used to enable RBS.

     - **Tree Structure** – Click the farm name to expand the tree. The Web applications are displayed, and the **Include New Content Databases** node under the farm is displayed.

       - Select the **Enable** checkbox next to the farm, and all of the nodes under the farm will be selected and RBS for all of the nodes will be enabled.
       - Select the **Enable** checkbox next to the **Include New Content Databases** node beneath the farm, and the **Include New Content Databases** nodes under all of the Web applications will be selected and RBS for all of the newly added content databases under the farm will be enabled.

       Expand a Web application, you can view the RBS status and enable the RBS on the selected content database by selecting the checkbox in the **Enable** column. RBS can be enabled at the Web application level and content database level. If RBS is enabled at the Web application level, RBS for both the existing and newly added content databases under the specified Web application is enabled.

       - **Include New Content Databases** – Selecting the **Enable** checkbox at this level enables RBS for all newly added content databases. RBS will be automatically enabled by the scheduled jobs. In order to use this function, a schedule must be configured in the **Schedule** field.

     - **Schedule** (available when **Enable RBS for Farm** is selected) – This schedule checks for newly added content databases; the purpose is to enable RBS. Choose whether to enable RBS based on a schedule. Storage Manager runs a search on your farm for new content databases according to your specified schedule. If any new content databases are found, Storage Manager enables the RBS for them.

       - **No schedule** – Enables the RBS immediately.
       - **Configure the schedule myself** – Configure a schedule and enable RBS according to the schedule. Select a **Start time** and **Interval** value.

   - **Enable EBS for Farm** (farm name) – Shows the EBS status of the farm and allows you to enable EBS. Select **Enable** to enable EBS and select **Disable** to disable it. If using a SharePoint 2010 environment, it is recommended that you enable RBS for the farm. EBS cannot be enabled if using a SharePoint 2013 environment.

     ***Note**: If both EBS and RBS are enabled for a SharePoint object, RBS will be used first.

8. **Overview** – Displays all information for the farms. If desired, click **Edit** to edit the configuration. Click **Finish** to enable or disable the EBS Provider immediately (if selecting EBS) or save the RBS provider configuration without enabling or disabling it (if selecting RBS). Click **Finish and Run Now** to save the configuration and then enable or disable the corresponding BLOB Provider immediately.

   ***Note**: If enabling the RBS provider without using a schedule, you must click **Finish and Run Now** to enable it immediately. Clicking **Finish** only saves the configuration of the RBS provider, and does not enable RBS.

Configuring Logical Devices

Storage Manager stores the uploaded BLOB content to an external device (leaving only a stub of the data in SharePoint), therefore, it is necessary to first configure one or more physical devices and then set up a logical device. Storage Manager can write to any Net Share, IBM Storwize Family, EMC Centera, Rackspace Cloud File, Microsoft Azure Storage, Amazon S3, EMC Atmos, AT&T Synaptic, Dropbox, DELL DX Storage, Caringo Storage, HDS Hitachi Content Platform, IBM Spectrum Scale Object, or OneDrive device, depending upon the external location where the BLOB content is stored. TSM and FTP are not supported.

Additionally, DocAve can treat multiple physical, storage devices as a single logical unit when saving backup data. This is especially useful for Storage Manager plans with a large scope, because many small drives can be combined. A logical device must be defined before creating a Storage Manager rule.

***Note**: Instead of using a Storage Policy, DocAve Storage Manager uses the logical device to ensure that the stubs can be accessed properly from SharePoint, regardless of the DocAve Manager service status. DocAve Storage Manager does not use the Media service.

For instructions on defining physical devices and setting up logical devices, refer to the DocAve 6 Control Panel Reference Guide.

Configuring Storage Manager General Settings

Before creating Real-Time or Scheduled Storage Manager rules, AvePoint recommends that you first define how to clean up orphan BLOBs and configure the processing pool, which is mandatory for only Scheduled Storage Manager rules.

Configuring Orphan BLOB Cleanup

If Storage Manager stubs are removed from SharePoint, the BLOB content remains in the external storage; these BLOBs, separated from their stubs, are called Orphan BLOBs. Configure the **Clean Up Orphan BLOBs** function to have DocAve remove orphan BLOB content in external storage after the corresponding stubs are removed from SharePoint. Although this setting is optional, AvePoint recommends that you use this function to better optimize external storage space.

To configure orphan BLOB cleanup rules, complete the following steps:

1. Click the **Real-Time Storage Manager** tab or **Scheduled Storage Manager** tab.
2. In the **General Settings** group, click **Clean Up Orphan BLOBs**.
3. Click the farm name to expand the tree and select the Web applications or the databases where you want to configure the BLOB cleanup rules. After expanding the tree, you can select the farm node to select all the displayed objects on the tree.
4. Click **Configure**. A message appears on the top of the screen saying that **You can refer to the Storage Report for more detailed information about the orphan BLOBs.** Then select **Storage Report** in the message, which will bring you to the **Dashboard** screen in **Storage Report**. For more details, refer to Viewing Collected Data Information for the Storage Report Profiles.

   The **Enable Clean Up Orphan BLOBs** option appears. Select **No** to disable the **Clean Up Orphan BLOBs** function for the selected scope. Select **Yes** to display the following options:

   - **Scope Definition** – Select the **Include new content databases** checkbox to also apply the configured BLOB cleanup policy to newly added content databases in the selected Web applications.
   - **Large and Blocked Files** – Select whether or not to delete the BLOBs for the large and/or blocked files.
   - **Processing Pool** – Select a processing pool from the drop-down list to manage the Clean Up Orphan BLOBs job threads.
   - **Schedule** – Configure a schedule for cleaning up orphan BLOBs.
     - **Start Time** – The scheduled BLOB cleanup job starts on the time specified. To change the time zone, click the time zone under the **Start time** field.
     - **Interval** – Set an interval for recurring rules based on a schedule using the option of **Day(s)**, **Week(s)** or **Month(s)**.

    - Click **Calendar View** to view all scheduled BLOB cleanup jobs in the pop-up calendar by **Day**, **Week**, or **Month**.

- **Advanced Settings** – Specify a time to delay the deletion of content; deletion can be delayed using either **Day(s)**, **Week(s)** or **Month(s)**.

  Use this option to prevent the permanent deletion of orphan BLOB content if Storage Manager stubs are accidentally deleted. After a stub is removed from SharePoint by an end-user, the orphan BLOB content is retained in the external device for the time period specified here. During this time period, a deleted Storage Manager stub can be restored back to SharePoint and, after a successful restore, can still be accessed normally. When the specified time elapses, the orphan BLOB content is deleted, if it hasn't been restored.

  ***Note**: It is not recommended that you use the SQL Server RBS Maintainer tool in addition to the Advance Settings to delay the deletion time manually because orphan BLOB content might be deleted unexpectedly. If this occurs, backed-up stubs that are restored to SharePoint become orphan stubs with no related BLOB content.

- **Conflict Resolution** – Select which action to perform when a node already has BLOB cleanup settings configured.
    - **Overwrite** – When a conflict occurs, **Overwrite** replaces the previously configured settings with the currently saved settings, and applies the currently saved settings to the selected nodes.
    - **Skip** – When a conflict occurs, **Skip** will keep the previously configured settings. The newly configured settings will not replace the previously configured settings and will not be applied on nodes that have applied settings. For nodes that do not have previously configured settings, the newly configured settings will be applied to them.
    - Click **View Conflict Items** to view nodes with previously configured schedules, delayed deletion settings and alternate file settings.

5. Click **OK** to save the configuration or click **Cancel** to cancel the operation.
6. After saving the BLOB cleanup rule, the configured rule settings for the applicable nodes display in the **Schedule** and **Delay Deletion** columns.

Configuring the Processing Pool (Scheduled Storage Manager Only)

The Processing Pool feature allows you to control the maximum number of Scheduled Storage Manager jobs that can be run at the same time. Normally, a Scheduled Storage Manager job is resource-intensive, so running multiple Storage Manager jobs simultaneously may affect the performance of the server. To avoid this problem, use the Processing Pool feature.

Scheduled Storage Manager jobs that are added into the Processing Pool are run according to processing pool settings. The number of jobs you allow in the processing pool is the maximum number of Scheduled Storage Manager jobs that can be run simultaneously. The remaining jobs are placed in a queue.

Each SharePoint farm has a default processing pool named **Default_Farm(FarmName)**. The number of jobs set in the default processing pool is **5,** which cannot be changed.

To create a new Processing Pool, complete the following steps:

1. Click **Scheduled Storage Manger** tab > **Processing Pool** in the **General Settings** group.
2. Click **Create** in **Manage** group on the **Processing Pool** tab. The **Processing Pool** page appears.
3. Enter a **Processing Pool Name** and an optional **Description** used to distinguish the new processing pool.
4. Select the **Farm** from the drop-down list. The processing pool can only be used for Scheduled Storage Manager rules configured for this farm.
5. Select an **Agent Group** from the drop-down list. The Agents in the specified Agent group are used by this processing pool to perform Scheduled Storage Manager jobs. For more information about creating Agent groups, refer to the DocAve 6 Control Panel Reference Guide.
6. Specify the **Maximum Number of Jobs** that will be used for Scheduled Storage Manager jobs. For example, if you enter **8** in this field, then 8 Scheduled Storage Manager jobs can be run at the same time.

Configuring Real-Time Storage Manager Rules

Real-Time Storage Manager takes BLOB content being uploaded into SharePoint SQL Server and redirects that content to an external device. This is done in **real time**, that is, the BLOB content is never actually uploaded into SQL. As a result, document size is the only criteria you can use to specify which content gets moved to the external device.

To use Real-Time Storage Manager, at least one rule must be created and applied to a selected node.

***Note:** If users upload a document that meets the criteria for Real-Time Storage Manager externalization to a BLOB storage device that has insufficient space, the upload fails.

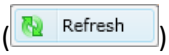
Creating Real-Time Storage Manager Rules

***Note**: When only the RBS provider is enabled, the Real-Time Storage Manager rule is only available at the Web application (content database) level. When only the EBS provider is enabled, the Real-Time Storage Manager rule is available at the Web application and site collection levels. If both the RBS and the EBS providers are enabled, the RBS provider will be used for the Web application level.

***Note**: Insufficient space on the BLOB storage device will result in a failed upload of content.

To create Real-Time Storage Manager rules:

1. Click the **Real-Time Storage Manager** tab and select the content from the Scope panel.

   ***Note**: If newly created SharePoint objects are not displayed on the tree, right-click the corresponding node and click the refresh button (

) to refresh the tree.

   ***Note**: When multiple rules are configured on the same level, the rules are automatically ordered according to their criteria; that is, rules with larger file size criteria are checked first. Uploaded BLOB content is moved to the external device as long as any one of the Storage Manager rules is triggered.

2. Choose to **Reuse an existing rule**, **Copy from an existing rule**, or **Create a new rule**.

   - **Reuse an existing rule** – Uses all settings in the Storage Manager rule selected from the drop-down list. Select this option to use the same Storage Manager rule in a different location, thereby expanding the scope of the rule.
   - **Copy from an existing rule** – Copies the settings from the Storage Manager rule selected from the drop-down list. Update the rule (if necessary) and save this rule with a new name. Select this option to quickly create a new rule from an existing rule.
   - **Create a new rule** – Creates a new Storage Manager rule. Enter a **Name** and optional **Description** for the new rule.

***Note**: It is recommended that you create a common rule that can be directly reused or that can be used after some minor modifications. This can help you make the most use of a created rule.

3. **Which content databases contain content that needs to be externalized** (shown only when RBS is enabled) – Choose the scope of the rule by selecting the content database.

   ***Note**: The options in this field are grayed out if the corresponding database does not have a stub database or does not have RBS enabled.

   - **Include new content databases** – Applies the rule on any newly added content databases. Select this option to enable the same rule on newly added content databases automatically, without having to manually configure them. In order to enable this selection, you must have a stub database configured at the Web application level, and you must select **Include new content databases** when configuring the BLOB Provider.

     ***Note**: If you do not select this option, the selected web application's content databases that only have the EBS provider enabled will not inherit the newly created rule.

   - **Select all** – Selects all existing content databases.

4. **What kind of content needs to be externalized** – Specify the size trigger on the BLOB content to be uploaded to the external device using the option of **KB** or **MB**. If the size of the file is greater than or equal to the threshold specified here, the BLOB content is uploaded to the external device.

   ***Note**: If applying shred settings on a specified Web application in SharePoint 2013, make sure the threshold specified here is less than the specified shred size.

5. **Where would you like to store the externalized data** – Specify a logical device in the drop-down list to which the data will be stored. If desired, click **New Logical Device** to create a new logical device. For the information about creating the storage, refer to Configuring Logical Devices.

6. Select an optional **Data Compression** setting. Select the **Compression** checkbox to enable data compression, and then choose a compression level using the slider. A low compression level results in a faster compression rate but a larger data set, while a high compression level results in a slower compression rate but a smaller, better quality data set.

   ***Note:** Small data sets occupy more system resources and cause slower job times. The compression is performed on the SharePoint Server (**SharePoint Agent**).

7. Select an optional **Data Encryption** setting. Select the **Encryption** checkbox (optional) to enable data encryption. Encryption protects sensitive materials; however, encrypting data causes slower archive times. The encryption is performed on the SharePoint Server (**SharePoint Agent**). Then select a security profile to be used in the encryption from the **Security profile** drop-down list, or click the **New Security Profile** link to create a new security profile. For more information on security profiles, refer to the DocAve 6 Control Panel Reference Guide.

8. After saving the Real-Time Storage Manager rule, it is automatically enabled on the selected node. View it in the **Rules and Settings** field on the right side of the workspace.

Configuring Shred Size

In Real-Time Storage Manager, if you select a web application from a SharePoint 2013 farm tree in the Scope panel, the corresponding farm's shred size will be displayed on the bottom of the right panel.

DocAve Real-Time Storage Manager allows you to change the shred size for the whole SharePoint 2013 farm. Click **Configure** to the right of the shred size, the **Configure Shred Size** window appears. Change the shred size for the entire SharePoint 2013 farm in the window. You can use the slider or select the **Custom Size** checkbox to specify a shred size.

Configuring and Running Scheduled Storage Manager Jobs

In order to run a Scheduled Storage Manager job, a node must have one or more Scheduled Storage Manager rules applied to it, as well as configured settings. Scheduled Storage Manager rules and settings define which content in the selected node gets offloaded, where this content is saved, processing pool information, notification settings, and job schedule.

Scheduled Storage Manager jobs can be configured via two methods. The first method involves creating a Scheduled Storage Manager profile and applying it to a selected node. A Scheduled Storage Manager profile integrates rules and settings configurations into one saved profile. If you've created a Scheduled Storage Manager profile, you can apply the profile to one or more nodes without having to apply the same rules and settings each time. This method should be used if multiple nodes in your farm require the same configurations and/or BLOB offload criteria.

The second method involves configuring rules on a selected node and manually configuring the settings for that node, then applying both the rules and the settings. This method should be used on nodes that require uncommon configurations or criteria.

Regardless of the method you choose, you will need to create, save, and apply at least one Scheduled Storage Manager rule to a node in order to run a job. See the information below for instructions on creating and configuring profiles and rules.

Creating a Scheduled Storage Manager Profile Using Profile Manager

The Profile Manager is where you configure a Storage Manager profile, which integrates rules and settings configurations into one saved profile. This allows you to instantly apply the same set of rules and settings to multiple nodes without having to repeatedly configure the same settings for each node.

To create and configure a Scheduled Storage Manager Profile:

1. Click **Profile Manager** in the **Profile Management** group.
2. In the **Profile Manager** page, click **Create** in the **Manage** group on the ribbon. The **Create Profile** configuration page appears.
3. Configure the following settings:
    - **Profile Name** – Enter the profile **Name**, followed by an optional **Description**.
    - **Farm** – Select the farm from the drop-down list to create the profile on the selected SharePoint farm.

- **Category** – Enter an optional category name (such as DocAve or NetApp) for this profile to be easily recognized by users.

4. Click **Next** in the **Commit** group or on the bottom-right corner of the page. The **Rules** page appears.
5. Click **Create** in the **Rule Management** group to create a Scheduled Storage Manager rule. For detailed information on creating Scheduled Storage Manager rules, refer to Creating and Configuring Scheduled Storage Manager Rules.

   ***Note**: Multiple rules can be created and included in a profile.

6. Click **Next** in the **Commit** group or on the bottom-right corner of the page. The **Settings** configuration page appears.
7. Configure basic settings for the rule. For detailed information on configuring settings, refer to Configuring Settings.
8. Click **Next** in the **Commit** group or on the bottom-right corner of the page. The **Overview** page appears.
9. The settings configured above are displayed in the **Overview** page. To make changes to the configured rules or settings, click **Edit** in the row next to the particular page you want to edit.
10. When satisfied with the configurations, click **Finish** in the **Commit** group or on the bottom-right corner of the page. The **Profile Manager** pane appears.
11. The created profile is displayed in the **Profile Manager** pane. To view, edit, or delete an existing profile, select the checkbox to the left of the profile name and click **View Details**, **Edit**, or **Delete** in the **Manage** group. Click **Close** to leave this page and return to the **Scheduled Storage Manager** tab.
12. For instructions on applying the created profile and running a Storage Manager job, refer to Applying a Scheduled Storage Manager Profile to a Selected Node and Running a Job.

Creating and Configuring Scheduled Storage Manager Rules

Use Scheduled Storage Manager to set more refined criteria as to what BLOB content gets uploaded to the external device, as well as decide when such content is off loaded. The Scheduled Storage Manager offers a more diverse criteria selection. In addition, as opposed to Real-Time Storage Manager rules, the scope of Scheduled Storage Manager rules is not restricted by the BLOB Provider being used.

1. Click the **Scheduled Storage Manager** tab and select the content from the Scope panel.
2. Click **Create** in the **Contribute** group.
3. Choose to **Reuse an existing rule**, **Copy from an existing rule**, or **Create a new rule**.
   - **Reuse an existing rule** – Use the settings from the Storage Manager rule selected from the drop-down list. This option expands the scope of the original rule.

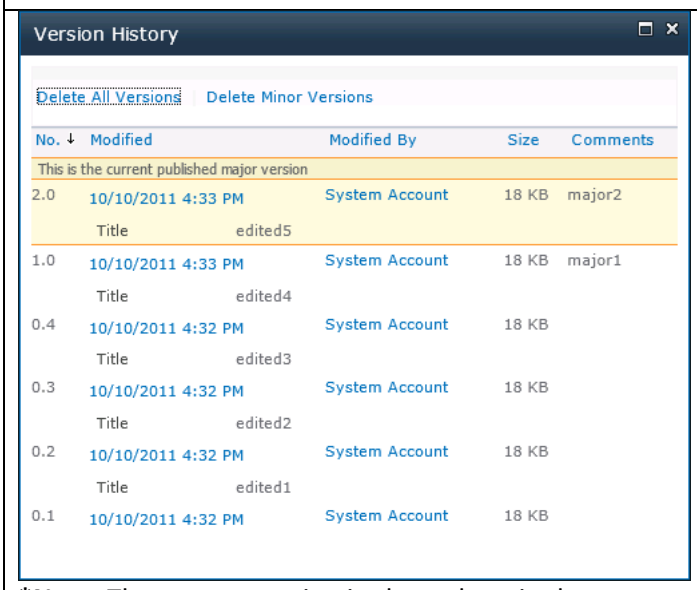
- **Copy from an existing rule** – Copies the settings from the Storage Manager rule selected from the drop-down list. Update the rule if necessary, and save this rule with a new name.
- **Create a new rule** – Creates a new Storage Manager rule. Enter a name for the new rule and an optional **Description**.

***Note**: It is recommended that you create a common rule that can be reused directly or that can be used after some minor modifications. This can help you make the most use of a created rule.

4. **What kind of content needs to be externalized** – Select specific objects or data within the document, document version, and attachment SharePoint levels to be extended to the external device. Each level has a unique set of criteria filters that enhance configurations. Refer to Appendix A – Criteria Filter Conditions for more information.

   The following table details what criteria are supported on each level.

Rule	Level		
	Document	**Document Version**	**Attachment**
Name	√	×	√
Title	×	√	×
Size	√	√	√
Modified Time	√	√	×
Created Time	√	×	√
Modified By	√	√	×
Created By	√	×	√
Content Type	√	×	×
Column (Text)	√	×	√
Column (Number)	√	×	√
Column (Yes/No)	√	×	√
Column (Date and Time)	√	×	√
Keep the Latest Version The selected number of versions is kept in SharePoint; the other versions are stored in external storage.	×	√	×

Rule	Level		
	Document	**Document Version**	**Attachment**
 ***Note**: The current version is always kept in the SharePoint List/Library when this rule is used.			
Parent List Type ID	√	√	√
Last Accessed Time (the Last Accessed Time information is obtained in the DocAve Auditor, refer to DocAve 6 Report Center User Guide.)	√	√	√
Type	√	√	√

***Note:** The **Last Accessed Time** rule with selecting **Document Version** object level in DocAve Scheduled Storage Manager cannot be applied on a SharePoint 2013 platform within the scope that includes the stubs.

The **Type** rule in Scheduled Storage Manager is used to define if the Microsoft Office files will be externalized. You can define the file types that are considered Office files by configuring the **AgentCommonStorageEnv.cfg** file. For example, if you select **Document** as the **Level**, **Type** as the rule, **Is** as the **Condition**, and **Office File** as the **Value**, then the documents whose types are specified in the **AgentCommonStorageEnv.cfg** file will be considered Office files and then externalized. For more information on configuring the configuration file, refer to Defining Office Files for the Scheduled Storage Manager Type Rule for details.

- After configuring one rule, click **Add** to add it to the existing rules. Click the **X** following each rule to delete it.
- When 2 or more rules are configured, change the logical relationship between the rules by clicking the logic icon following the rule. There are two logics: **And** and **Or**. The logic is set to **And** unless you manually change it.
    - **And** – The content that meets all the rules is uploaded to the external device.

- **Or** – The content that meets any one of the rules is uploaded to the external device.

- Under the **Basic Filter Conditions** field, view the rules' logical relationship. For example, if the logical relationship is ((1 And 2) Or 3) in the **Basic Filter Condition** field, the contents which meet both the filter rule 1 and filter rule 2, or meet the filter rule 3 is uploaded to the external device.

5. **Where would you like to store the externalized data** – Select a logical device in the drop-down list to store the data. If desired, click **New Logical Device** to create a new logical device. For more information about creating logical devices, refer to Configuring Logical Devices.

6. Select an optional **Data Compression** setting. Select the **Compression** checkbox to enable data compression, and then choose a compression level using the slider. A low compression level results in a faster compression rate but a larger data set. A high compression level results in a slower compression rate but a smaller, better quality data set.

   ***Note:** Small data sets occupy more system resources and cause slower job times. The compression is performed on the SharePoint Server (**SharePoint Agent**).

7. Select the **Encryption** checkbox (optional) to enable data encryption. Encryption protects sensitive materials; however, encrypting data causes slower archive times. The encryption is performed on the SharePoint Server (**SharePoint Agent**). Then select a security profile to be used in the encryption from the **Security profile** drop-down list, or click the **New Security Profile** link to create a new security profile. For more information on the security profile, refer to the DocAve 6 Control Panel Reference Guide.

8. Select **Generate non-shredded BLOBs** to generate the non-shredded BLOB for each file, which will be externalized in order to maintain data integrity. If the corresponding logical device is using the SharePoint structure format for the BLOB store, users can open the BLOB file in the external device directly.

   ***Note**: This option is only appears when you want to externalize data in SharePoint 2013; this option is not recommended for a Microsoft Office file. The Microsoft Office files are required to be shredded since they are supported for online editing in SharePoint 2013.

9. After saving the Scheduled Storage Manager rule, it will be listed in the **Rules** field in the **Rules and Settings** area. View it in the **Rules and Settings** area on the right side of the workspace.

10. Continue to Configuring Settings for how to create rules and apply the rules and settings to the selected node.

Configuring Settings

Once a Scheduled Storage Manager rule is created and saved, additional options can be configured from the **Rules and Settings** field in the workspace.

Select the order of the rules using the **Order** drop-down list. When multiple Scheduled Storage Manager rules are configured for a particular SharePoint object, the content that meets any one of the applied

rules is uploaded to an external device. You can specify which rule will be checked first by changing their order.

In the **Settings** field, configure the following options:

- **Processing Pool** – Specify a processing pool to be used by the Scheduled Storage Manager rules. Click **New Processing Pool** to create a new pool. Refer to Configuring the Processing Pool (Scheduled Storage Manager Only) for more information.
- **Schedule** – Select when to store the BLOB content to the external storage.
  - **No Schedule** – Run the plan immediately after finishing the configuration.
  - **Configure the schedule myself** – Configure a schedule yourself and run the Scheduled Storage Manager job according to the specified start time and interval.

Click **Advanced** to configure the advanced settings:

- **Exclude System Files** – Select this option to exclude the system files from being externalized in the job. The system files contains:
  - The files that are not in any library, but under a site.
  - The files that are in a hidden library.
  - The files are generated by SharePoint, and they have content. Most of them are ASPX files.

    The files mentioned above are invisible to the users. Users can use Microsoft SharePoint Designer to see these files.
  - The files in the libraries: Site Assets, Site Pages, Style Library and Form Templates.
- **Include Connector Data** – Select this option to extend any data within the scope of a Scheduled Storage Manager rule that has been uploaded to Connector Storage.
- **Exclude Existing Stubs** – Select this option to skip files that have already been externalized when applying the Storage Manager rules to help improve job performance. However, if you are reusing rules and you have changed the logical device, with the intention of moving the BLOBs in the original logical device to the new logical device, leave this option unchecked.
- **Incremental Scan** – Select whether or not to run an incremental scan. Then, select a method of content discovery:
  - **Use the SharePoint Change Logs for incremental scans** – The Scheduled Storage Manager incremental scans will go through the Change Logs to see if eligible content can be processed further according to the rules you have defined. This option should be selected if you are only using metadata-based or size-based criteria for your rules. If you are using time-based criteria (such as Last Accessed

or Last Modified Time), it is recommended that you choose the **Use the Report Center Item Caching Service for incremental** option.

- **Use the Report Center Item Caching Service for incremental scans** – The Scheduled Storage Manager incremental scans will use the information from the DocAve Report Center Item Caching Service in order to see if there is eligible content that can be processed further according to rules you have defined. To use this option, the Item Caching Service in Report Center must first be configured. If the Item Caching Service is not configured, a full scan will be run instead. Please note that this option will include time-based properties such as Last Modified Time.

  For more information on the Report Center Item Caching Service, refer to the DocAve 6 Report Center Reference Guide.

After selecting the method, configure the schedule for scan:

- **Start time** – Select the time when this rule is executed.
- **Interval** – Specify the interval for running the rule.
- **No end date** – The jobs will run on a configured schedule until you manually end it.
- **End after __occurrences** – The jobs will stop running after the number of times you entered here.
- **End by __** – The jobs will end on the date and time you entered here.

- **Notification** – Configure e-mail notification settings. Select a notification profile from the Select a notification profile address and settings drop-down list, or create a new email notification profile by clicking the **New Notification Profile** link. Click **View** to view detailed information about the notification profile.

  ***Note**: The **User Notification Settings** must be configured in Control Panel in order to send email notifications using DocAve. For more information, refer to the DocAve 6 Control Panel Reference Guide.

Click **Apply** to apply the Scheduled Storage Manager rules and job settings to the selected node. After the Scheduled Storage Manager rules and job settings are applied to the selected nodes, the **Run Now** button becomes enabled. Or, click **Apply and Run Now** to save the Scheduled Storage Manager rules and job settings and run the Scheduled Storage Manager job immediately (this button combines the functions of **Apply** and **Run Now**).

After applying the Scheduled Storage Manager rules and job settings to the selected node, click **Run Now** to run the Scheduled Storage Manager job immediately.

If you have configured the **Incremental Scan** function in the **Advanced** settings, the **Run Now** interface appears after you click **Run Now** or **Apply and Run Now**. If you reuse an existing profile, and you have

configured the **Incremental Scan** function, the **Run Now** interface also appears after you click **Run Now** or **Apply and Run Now**. Select an option for **Externalization Scope** in the interface:

- **Evaluate all content** – The externalization will occur based on the schedule configured in the **Settings** section on the previous page (or the schedule configured in the **Settings** step; not in the **Advanced** section of the reused profile).
- **Evaluate modified content only** – The externalization will occur based on the schedule configured in the **Advanced** section on the previous page (or configured in the **Advanced** section of the **Settings** step in the reused profile).

Click **OK** in the **Run Now** interface to run the Scheduled Storage Manager job immediately or click **Cancel** to exit.

Applying a Scheduled Storage Manager Profile to a Selected Node and Running a Job

To apply a profile to a node and run the job, refer to the following steps:

***Note**: To run only a particular rule or rules under a selected node, disable the unneeded rules first. For more information, refer to Disabling an Existing Rule.

1. Select a node from the **Scope** panel.
2. In the **Configure Rules and Settings** pane on the right, select an option or apply a profile to the node selected in the farm tree.
    - To create new rules and settings based on an existing profile, select **Create new rules and settings based on an existing profile** and select a profile from the drop-down list. The rules and settings configured for the selected profile are displayed in the **Rules and Settings** workspace and can be edited as needed.

      ***Note:** Any modified rule will be applied to the rules in the selected profile; however, modified settings do not affect the original settings configured in the selected profile.

      If you have not created a profile, click the **New Profile** link in the drop-down list to create a new profile. For more information, refer to Creating a Scheduled Storage Manager Profile Using Profile Manager.

    - To reuse an existing profile, select **Reuse an existing profile** and select a profile from the drop-down list. The existing profile cannot be modified from this screen.

      If you have not created a profile, click the **New Profile** link in the drop-down list to create a new profile. For more information, refer to Creating a Scheduled Storage Manager Profile Using Profile Manager.

3. Click **Apply** in the **Commit** group to apply the selected profile. The selected profile is applied to the selected node, and all nodes below the selected node inherit the profile rules and settings. For more information on inheritance, see Inheriting and Stop Inheriting.
4. From the **Commit** pane, click **Run Now** to run the job immediately. Running jobs can be observed in Job Monitor. Alternatively, click **Apply and Run Now** to both apply the profile and run the job with one click.

Applying Scheduled Storage Manager Rules to a Selected Node and Running a Job

To apply a Scheduled Storage Manager rule to a selected node and then run a job:

1. Select a node from the **Scope** panel. All rules applied to that particular node are displayed below in the **Configure Rules and Settings** section of the **Rules and Settings** workspace.

   ***Note**: If a site collection associated with a Governance Automation site collection policy has the Scheduled Storage Manager enabled, the rule settings field will be grayed out. You cannot edit the rule settings or create a new rule for the site collection. For more information, refer to the DocAve Governance Automation Administrator User Guide.

2. If desired, create more Scheduled Storage Manager rules or select which rule will run first by changing the number in the **Order** field. Ensure a rule is checked first by changing its order. To reorder rules, modify the value in the **Order** column.
3. Click **Apply** in the **Commit** group to apply all configured rules and corresponding settings. The configured rules and settings are applied to the selected node and all nodes below it. For more information on inheritance, see Inheriting and Stop Inheriting.
4. Click **Run Now** to run the applied rules and settings immediately. The running jobs can be checked in the Job Monitor. Alternatively, click **Apply and Run Now** to both apply the rule and run the job with one click.

Managing Created Rules

Once created and applied, Storage Manager rules can be edited, removed, disabled (enabled), and deleted. In addition, inheritance can be applied or stopped. See the sections below for information on managing Storage Manager rules.

Inheriting and Stop Inheriting

After creating a Storage Manager rule on the selected node, the sub nodes automatically inherit the rules applied to their parent node.

Stop Inheriting logically separates the rule in the lower level-node from the upper-level node; this is useful, for example, in ensuring that often used data is not uploaded to an external device accidentally.

When configuring rules for the first time, you can configure rules directly at any level that the Real-Time or Scheduled Storage Manager allows. After one rule has been configured for a particular level (Level A), you can still configure rules directly to levels that are higher than Level A.

However, if you want to configure rules at levels that are lower than Level A, you must first break the rule inheritance. To break this inheritance, click **Stop Inheriting** in the **Contribute** group.

To manually apply a Storage Manager rule inheritance to a node:

1. Select the node that will inherit the parent node's Storage Manager rule.
2. Click **Inherit** in the **Contribute** group to inherit the rule. After clicking **Inherit**, this button changes to **Stop Inheriting**.

Helpful Notes on Using Inherit

- By default, the Storage Manager rule configured for a higher level is inherited by the lower levels.
- You cannot create a new rule on a node if it inherits the Storage Manager rules of the higher level. Inheritance must first be broken.
- The inherited Storage Manager rule cannot be edited or removed; it can only be viewed.
- Once you have broken the rule inheritance on a node, if you choose to inherit the rules of the higher level again, all of the rules that are added after breaking the inheritance on this node will be removed from the following nodes:
    - The node that inherits the higher level rules again.
    - The nodes that inherit the rules from the node above.

***Note**: The newly added rules in the specified levels are not deleted. They still exist in the Storage Manager Rule list for future use.

The Conditions of Stop Inheriting

- When breaking the rule's inheritance at a specified level, the inheritance is only broken at this level. The rule's inheritance of the lower levels is not broken.
- After the rule's inheritance is broken, you can apply new rules and edit the corresponding rule settings at the lower level.
- If you break the rule inheritance on a node and then disable the inherited rule, this rule can still be used by the upper level.
- If you break the rule inheritance on a node and then edit the inherited rule, the changes will affect all of the SharePoint objects which used this rule.
- If you run a Scheduled Storage Manager job at a higher level after breaking the rule's inheritance on a specified node, this node will not be included in the scope of the specified job, even if it still uses this rule.

Editing or Removing Storage Manager Rules

Existing Storage Manager rules can be edited or removed from nodes. See the information below.

Editing Existing Storage Manager Rules

Certain Storage Manager rule settings can be modified using the **Edit** feature. The **Rule Name Description**, **Criteria**, **Storage Policy**, **Data Compression**, and **Data Encryption** settings can all be edited. The **Rule Name** is fixed and cannot be changed using the **Edit** feature.

To edit an existing Storage Manager rule, complete the following steps:

1. Select the node in the **Scope** panel that contains the rule or rules you would like to edit.
2. Select a rule from the **Rules and Settings** workspace by selecting the checkbox to the left of the rule.
3. Click **Edit** in the **Manage** group. If the current rule you are editing is associated with several SharePoint objects, you can view the associated objects for this rule in the pop-up window.
4. If necessary, click **Continue** in the **Commit** group to continue the editing. The **Storage Manager Rule** page appears; you can view the settings for this rule.

Removing Existing Rules from Nodes

When a rule is no longer useful for the nodes in the farm tree, you can remove this rule from the node.

To remove an existing Storage Manager rule, complete the following steps:

1. Select the node in the **Scope** panel that contains the rule or rules you would like to remove.
2. Select one or more rules from the **Rules and Settings** workspace by selecting the checkboxes to the left of the rule.
3. Click **Remove** in the **Manage** group.
4. The rule or rules are removed from the selected node and sub nodes that inherit this rule in the tree.

***Note**: The removed rule or rules still exist in the Storage Manager Rule list for future use. .

Enabling and Disabling Rules

Once rules are created and applied to a node, they can be enabled and disabled as desired. Disabling is useful, for example, when some of the rules do not need to be run in a particular job. As opposed to deleting the rule, which removes it from the Storage Manager Rule list entirely, disabling the rule omits it from that particular run but saves it in the Storage Manager Rule list for future use.

For information on disabling and enabling rules, refer to the following sections.

Disabling an Existing Rule

After creating and applying the rule, the **Status** of the rule in the **Rules and Settings** pane reads **Enabled** by default. In some situations, you may wish to disable a rule for a particular job.

To disable an enabled Storage Manager rule, complete the following steps:

1. Select the node in the **Scope** panel that contains the rule or rules you would like to disable.
2. Select a rule or rules from the **Rules and Settings** workspace by selecting the checkboxes to the left of the rule.
3. Click **Disable** from the **Manage** group to disable the selected rules. The rule status changes to **Disabled** in the **Status** column.

***Note**: If one Storage Manager rule is disabled at a specified level, the corresponding rule inherited by the lower levels will also be disabled.

Enabling a Disabled Rule

To enable an existing disabled Storage Manager rule, complete the following steps:

1. Select the node in the **Scope** panel that contains the rule or rules you would like to enable.
2. Select a rule or rules from the **Rules and Settings** workspace by selecting the checkboxes to the left of the rule.
3. Click **Enable** from the **Manage** group to enable the selected rules. The rule status changes to **Enabled** in the **Status** column.

Deleting Rules

Delete a rule when it no longer has a use for any node within the entire farm tree. Deleting a rule permanently removes the rule from the Storage Manager Rules list.

To delete a Storage Manager rule, use the Rule Viewer. For more information, refer to Deleting Rules.

***Note**: Since the delete feature is an operation that cannot be undone, be sure that the rule you are deleting is absolutely no longer needed.

Using Rule Viewer

Use the Rule Viewer to search for and manage created Storage Manager rules. The basic operations described below are:

- Viewing and searching for rules using a Rule Based view
- Viewing and searching for rules using a Scope Based view
- Viewing rule details using **View Details**
- Deleting rules that are useless to the whole farm tree
- Removing rules from the selected scopes

To launch the Rule Viewer, click **Rules** in the **View Rule** group. The Rule Viewer page appears. See the sections below for information on using the Rule Viewer.

Rule-Based Viewing

The **Rule Based** table view initially displays all rules sorted alphabetically by the **Rule Name**. You will also find the Rule's **Scope**, **Profile Name** (Scheduled Storage Manager rules only), and **Module**. Only the **Module** column can be deselected from the column list by clicking the icon, deselecting **Module**, and clicking **OK**.

When in the **Rule Based** view, you can use the following functions:

- **Search all pages** – Input a keyword and click to search for the related rules from the first page to the last page.
- **Search current page** – Input a keyword and click to search for the related rules in the page you select.

***Note**: Keywords are not case sensitive, and the search accepts partial word input. However, use of wildcards is not supported.

- **Show rows** –The number of the rules that are displayed on each page is **15** by default. You can reset the number from the drop-down list. Once the number of rules exceeds the number that can be included in a single page, they will be displayed in the next page. You can enter a specific **Number** to directly go to the corresponding page or click **<** or **>** icon to page forwards or backwards.

Deleting Rules

To delete a Storage Manager rule in the **Rule Based** view, complete the following steps:

1. Click the **Real-Time Storage Manager** tab or the **Scheduled Storage Manager** tab.
2. In the **View Rule** group, click **Rules**.
3. In the pop-up window, click **Rule Based** in the **View** group.
4. Select a rule or rules you want to delete in the table by selecting the checkboxes to the left of the rule.
5. Click **Delete** in the **Manage** group to delete the selected rules. The rule is permanently deleted from the Storage Manager Rules list.

Scope-Based Viewing

The **Scope Based** table view initially displays all rule related URLs sorted alphabetically by Scope and includes the **Rule Name** column as well. The **Rule Name** column lists every rule applied to the scope in the same row.

The **Node Level** column displays the level of the selected scope. The **Profile Name** column displays the name of the profile where the specified Scheduled Storage Manager rule resides.

The **Rule Name/Profile Name** column can be deselected from the column list by clicking the icon, deselecting **Rule Name/Profile Name**, and clicking **OK**.

When in the **Scope Based** view, you can use the following functions:

- **Search all pages** – Input a keyword and click to search for the related rules from the first page to the last page.
- **Search current page** – Input a keyword and click to search for the related rules in the page you select.

  ***Note**: Keywords are not case sensitive, and the search accepts partial word input. However, use of wildcards is not supported.

- **Show rows** – The number of the rules that are displayed on each page is **15**. You can reset the number from the drop-down list. Once the number of rules exceeds the number that can be included in a single page, they will be displayed in the next page.

You can enter a specific **Number** to directly go to the corresponding page or click **<** or **>** icon to page forwards or backwards.

Viewing Details of the Created Rules

This function allows you to view detailed information on created Storage Manager Real-Time or Scheduled rules. To view the rules and settings, complete the following steps:

1. Click the **Real-Time Storage Manager** tab or **Scheduled Storage Manager** tab.
2. In the **View Rule** group, click **Rules**.
3. In the pop-up window, select one existing rule from the **Rule Based**/**Scope Based** table and click **View Details** in **Manage** group.
4. In the **View Details** page, the detailed information of the created Storage Manager Real-Time or Scheduled Rules will be displayed.

Removing Rules

To remove a Storage Manager rule in the **Scope Based** view, complete the following steps:

1. Click the **Scheduled Storage Manager** tab.
2. In the **View Rule** group, click **Rules**.
3. In the pop-up window, click **Scope Based** in **View** group.
4. Select a scope or scopes where you want to remove the rules in the table by selecting the checkboxes to the left of the scope.
5. Click **Remove** in the **Manage** group to remove all the rules from the selected scopes.

For more information, refer to Removing Existing Rules from Nodes.

Managing Collected Storage Information

DocAve Storage Manager allows users to collect data information from content databases and show the data in the storage report pane or in a report that is downloaded in a specified file system location. The data includes SQL data, extended BLOB, orphan stubs, orphan BLOBs and alternate file details. The sections below describe how to create a profile and run the storage report and how to download the storage report to the specified file system location.

Creating a Storage Report Profile and Configure the Report Settings

The Profile Manager of Storage Report is where you configure a Storage Report profile, which includes a data collection configuration. This allows you to instantly apply the configuration to multiple nodes, collect the corresponding data information and display the data information in DocAve or the downloaded report.

To create and configure a Storage Report profile, complete the following steps:

1. Click **Storage Report** in the Report group.
2. In the **Storage Report** page, click **Report Profile Manager** in the **View** group on the ribbon. Then, click **Create** in the **Manage** group. The **Create Profile** configuration page appears.
3. Configure the following settings:
    - **Farm** – In the **Scope** pane, select a farm and click it to expand the farm tree. Select one or multiple nodes on the farm tree and apply the Storage Report configuration to the selected nodes.
    - **Profile Name** – Enter the profile name, followed by an optional **Description**.
    - **Optimized Report Settings** – Select one or multiple options to collect BLOB and stub information from the SQL databases.
        - **Include comparison of SQL data and optimized BLOBs** – Select this option to collect the SQL data that is stored in the SQL databases and the information of BLOB data that is extended to the selected file system location after starting the corresponding job.
            - **Include stub reference details** – Select this option to obtain the detailed information of the stubs that are included in the data collection information. The detailed information of the stubs will be displayed in the downloaded **Detail** report. This option is supported for SharePoint 2010 and SharePoint 2013.
        - **Retrieve orphan stub information** – Select this option to collect the orphan stubs information from the SQL databases on the selected nodes after starting the corresponding job.

- **Include orphan stub reference details**– Select this option to obtain the detailed information of the orphan stubs that are included in the data collection information. The detailed information of the orphan stubs is displayed in the downloaded **Detail** report.

Select a notification profile to designate which DocAve user can receive an orphan stub report. Click **View** beside the drop-down list to view details of the notification profile, or click **New Notification Profile** from the drop-down list. For information on creating a notification profile, see the DocAve 6 Control Panel Reference Guide.

- **Retrieve orphan BLOB information** – Select this option to collect the orphan BLOBs information from the SQL databases on the selected nodes after starting the corresponding job.

- **Alternate File Report Settings** – Select this option to collect the alternate file information after starting the corresponding job.
  - **Include reference details** – Select this option to obtain the detailed information of the alternate files that are included in the data collection information.
- **Report Schedule** – Select when to collect the data information specified in **Report Settings**.
  - **No Schedule** – Start running the job of the created storage report profile immediately after finishing the configuration.
  - **Configure the schedule myself** – Configure a schedule yourself and run the job of the created storage report profile according to the specified start time and interval.

4. Click **Save** on the ribbon; a drop-down list appears. Click **Save** from the drop-down list to save the configurations of the storage report profile on the selected nodes of the farm tree, or click **Save and Run Now**. Alternatively, in the Storage Report page, select the created storage report displayed in this page and click **Run Now** in the **Action** group on the ribbon to run the job.

Managing Created Storage Report Profiles

Once created, the storage report profiles can be edited, viewed and deleted. See the sections below for information on managing the storage report profiles.

Editing Existing Storage Report Profiles

Some storage report profiles' settings can be modified using the **Edit** feature. The **Profile Name**, **Report Settings**, **Schedule**, and the nodes on the farm tree can all be edited. To edit an existing storage report profile, complete the following steps:

1. In the **Storage Report** page, click **Report Profile Manager** in the **View** group on the ribbon.
2. Select an existing storage report profile displayed in the **Storage Report** page, and then click **Edit** in the **Manage** group on the ribbon.
3. The **Edit Profile** page appears; you can view the settings for the storage report profile.

Viewing Existing Storage Report Profiles

Detailed information about the created storage report profiles can be viewed using the **View Details** feature. To view an existing storage report profile, complete the following steps:

1. In the **Storage Report** page, click **Report Profile Manager** in the **View** group on the ribbon.
2. Select an existing storage report profile displayed in the **Storage Report** page, and then click **View Details** in the **Manage** group on the ribbon.
3. The **View Details** page appears. You can view the settings for the storage report profile, or click **Edit** to edit this storage report profile.

Deleting Existing Storage Report Profiles

To delete an existing storage report profile, complete the following steps:

1. In the **Storage Report** page, click **Report Profile Manager** in the **View** group on the ribbon.
2. Select one or multiple existing storage report profiles displayed in the **Storage Report** page, and then click **Delete** in the **Manage** group on the ribbon.
3. Click **OK** to delete this selected profile permanently from DocAve, or click **Cancel** to cancel it.

Running Jobs of Existing Storage Report Profiles

When a storage report profile is created for the selected nodes on the specified SharePoint farm, complete the following steps to run this profile:

1. In the **Storage Report** page, click **Report Profile Manager** in the **View** group on the ribbon.

2. Select one or multiple storage report profiles displayed in the **Storage Report** page, and click **Run Now** in the **Action** group on the ribbon. The corresponding jobs for the selected profiles start and are displayed in Job Monitor.

Viewing Collected Data Information for the Storage Report Profiles

After the jobs of the corresponding storage report profile complete running, the data information collected for the selected nodes configured in the saved profiles will be displayed in the **Storage Report** page. The collected data information in this page is displayed in three sections (**SQL and Optimized Data Comparison**, **Orphan Stub Details**, **Orphan BLOB Details** and **Alternate File Details**) according to the storage profiles' configuration and the **Data Collection Time** in **Report Settings**. The storage report records the occupation percentage of each data block and gives a basic view of the optimized storage in the SQL databases.

To view the collected data information for Real-Time or Scheduled Storage Manager, complete the following steps:

1. Click **Storage Report** in the Report group.
2. In the **Storage Report** page, click **Dashboard** in the **View** group on the ribbon. The data information of the last storage report profile job will be displayed after you enter the Dashboard interface.
3. Select an existing storage report profile from the **Profile Name** drop-down list and select a job finishing time from the **Data Collection Time** drop-down list. The data information collected from the specified SQL databases for the nodes configured in the selected profile will be loaded and displayed in this page.
    - **SQL and Optimized Data Comparison** – Select this option tab to view the information of the SQL data that are stored in the SQL databases and the BLOBs that are extended from the SQL databases. Meanwhile, the type of the extended BLOBs is recorded and displayed in this page.
    - **Orphan Stub Details** – Select this option tab to view the information of the orphan stubs that are kept in SharePoint. The bar graph shows the count of orphan stubs that are stored in the corresponding SQL databases.
    - **Orphan BLOB Details** – Select this option tab to view the information of the orphan BLOBs that are kept in the file system location. Meanwhile, on the **Orphan BLOB Details** tab, two modes are provided for displaying the obtained data:
        - **Content Database Mode** – The bar graph shows the size of the orphan BLOBs that are extended from the specified SQL databases. You can see the detailed information (Database Name, Farm, Web Application, Orphan BLOB Size, Physical Device, Orphan BLOBs Cleanup Schedule and the time to delay the deletion of content) by clicking the corresponding bar in the graph. The Physical Device List window appears by double-clicking the bar.

- **Device Mode** – The store locations and the detailed information (Farm, Orphan BLOB Size, Device and the Free Space of the device) of the orphan BLOBs can be viewed by clicking the corresponding bar in the graph.

- **Alternate File Details** – Select this option tab to view the alternate file information.

  You can view the alternate file count, orphan alternate file count, and orphan BLOB size information of each content database in the displayed table. By clicking the **Details** link, you can view the Farm Name, Physical Device, Clean Up Orphan BLOBs Schedule information and can view if the Clean Up Orphan BLOBs job includes the alternate files.

  Select **View Orphan BLOB Information via Physical Device**. A table displayed showing the orphan file information in each physical device.

Downloading Storage Report

To view detailed information about the data information collected from the SQL databases configured in the corresponding storage report profile, you can download the storage report to the specified file system location.

To download a report for an existing storage profile, complete the following steps:

1. Click **Storage Report** in the Report group.
2. In the **Storage Report** page, click **Dashboard** in the **View** group on the ribbon.
3. Select an existing storage report profile from the **Profile Name** drop-down list and select a job finishing time from the **Data Collection Time** drop-down list.
4. Click **Export** in the **Action** group on the ribbon to export the report for specified storage report profile.
5. In the **Export** pop-up window, configure the following settings:
   - **Report Format** – Select a report type from the drop-down list.
   - **Export Settings** – Select an export location type for storing the report.
     - **Download a local copy** – Select this option to export the report to the local file system location of the currently used server.
     - **Export to a specific location** – Select this option to export the report to the location on the specified server. When selecting this option, the **Export Location** field is displayed as the further configuration. Select an existing export location from the drop-down box to store the report before exporting. Select **View** beside the export location drop-down list. The **View Details** window appears. Select **Edit** in the window to edit the export location. For more information on the export location, refer to Configuring Export Location for Storing Storage Report.

   After the configuration of the settings above, click **OK** to start the export operation.

Configuring Export Location for Storing Storage Report

The report for a storage profile is supported exporting to a configured export location.

Creating an Export Location

To configure an export location, complete the following steps:

1. Click **Storage Report** in the Report group.
2. In the **Storage Report** page, click **Dashboard** in the **View** group on the ribbon.
3. Click **Export Location** in the **Action** group on the ribbon. The **Export Location** interface appears.
4. Click **Create** in the **Manage** group on the ribbon. The **Create** window appears.
5. Configure the following settings:
    - **Name and Description** – Enter a Name and an optional description for the export location.
    - **Path** – The export location can be a file share, storage area network (SAN), or network-attached storage (NAS).
        - Enter the **UNC Path** in the following format: *\\admin-PC\c$\data* or *\\admin-PC\shared* folder.
        - Select a managed account profile from the drop-down list or click **New Managed Account Profile** to create a new one, and then click **Validation Test**. DocAve tests the path and user information to make sure it is valid. For more information on the managed account profile, refer to the DocAve 6 Control Panel Reference Guide.
6. Click **OK** in the **Create** window to save the changes, or click **Cancel** to return to the **Export Location** interface without any changes.

Managing Created Export Locations

Once created, the export locations are listed in the **Export Location** interface. They can be edited, viewed and deleted. See the sections below for information on managing the storage report profiles.

Editing Existing Export Locations

To edit an existing export location, complete the following steps:

1. In the **Export Location** interface, select an export location that you want to edit.
2. Click **Edit** in the **Manage** group on the ribbon.
3. The **Edit** window appears. Edit the settings according to your requirement.
4. Click **OK** in the **Edit** window to save the changes, or select **Cancel** to return to the Export Location interface without any changes.

Viewing Existing Export Locations

To view an existing export location, complete the following steps:

1. In the **Export Location** interface, select an export location.
2. Click **View Details** in the **Manage** group on the ribbon.
3. The **View Details** window appears. You can view the settings for the export location, or click **Edit** to edit this export location.

Deleting Existing Export Locations

To delete an existing storage report profile, complete the following steps:

1. In the **Export Location** interface, select one or multiple existing export locations.
2. Click **Delete** in the **Manage** group on the ribbon.
3. A confirmation message appears. Click **OK** to delete this selected profile permanently from DocAve, or click **Cancel**.

Managing Stubs

Once a Storage Manager job is run and the BLOB content is off loaded onto external storage, what remains in SharePoint are stubs of the actual data. The sections below describe how to convert these stubs back to real content, as well as upgrading stubs from former software versions to the latest software version stubs.

Converting Stubs to Content

Use the **Convert Stubs to Content** function to convert stubs back to real data on SharePoint's SQL Server. Refer to How to Determine if the Data is Stub or Real Content for information on identifying stubs and content.

1. Click **Real-Time** or **Scheduled Storage Manager** tab > **Convert Stubs to Content** in the **Restore** group. A pop-up window appears.
2. In the pop-up window, select the scope where you want to perform the stub restore. After expanding the tree, you can enter the criteria in the textbox and click the magnifier to search for the specified object. Press **Enter**; only the object that you specified in the textbox will be displayed on the expanded tree.
3. The tree can be expanded down to the item level. Click **Items** and all stubs of the items stored in the external storage are displayed in the **Stub Browser** area. The name of the stub, the type of the stub, and the size of the stub's real data are displayed.
4. Choose to convert the stubs immediately or at a specified time in the **Schedule** field; configure the following settings.
    - **Convert now** – Choose this option if you want to convert the stubs immediately.
    - **Configure the schedule myself** – Choose this option to convert the stubs based on a schedule. If this option is selected, the following option appears:
        - **Schedule Settings** – Specify the start time of the converting job.

    ***Note**: The stubs that have been deleted and are currently still in the recycle bin can also be converted to real content. To do this, you must must first edit the attribute **RestoreStubsInRecycleBin="false"** in the configuration file **AgentCommonStorageEnv.cfg**. For detailed information on editing the attribute, refer to Configuring for Converting the Stubs in Recycle Bin to Content.

5. Click **OK** to save the configuration and the stubs of the selected scope will be converted to the real data after the converting job.

Refer to Helping a Storage Manager Job Finish Efficiently for information on setting the number of threads that can run simultaneously for each **Convert Stubs to Content** job.

Converting EBS Stubs to RBS Stubs in DocAve 6

For more information on converting the EBS stubs to RBS stubs in DocAve 6, refer to Converting EBS Stubs to RBS Stubs in DocAve 6 in the DocAve 6 Control Panel Reference Guide.

How to Determine if the Data is Stub or Real Content

There are no identifying markers for Storage Manager stubs in SharePoint. Refer to the methods below to determine if the data is a stub or real content.

- If EBS Provider is used, navigate to the content database of the site collection in Microsoft SQL Server Management Studio. In the **AllDocs** table, if the value of the specified item in the **docflags** column is larger than **65535**, this item is stub. Otherwise, it is real content.
- If RBS Provider is used, navigate to the content database of the site collection in Microsoft SQL Server Management Studio. In the **AllDocStreams** table, if the value of the specified item in the **RbsId** column is not **Null**, the item is a stub. If the value of the specified item in the **Content** column is not null, the item is real content.

You can also use the command line to view the stub information for identifying if the data is stub. For more information, refer to Copying BLOBs Special Scenario.

Upgrading DocAve 5 Stubs and BLOB Data to DocAve 6 Format

DocAve 6 enables you to upgrade Storage Manager stubs and BLOB data that were generated in former DocAve versions to the current DocAve format. You must upgrade the former version DocAve to DocAve 5.7 before the stub and BLOB data upgrade can be performed. These operations are performed in Control Panel; refer to the DocAve 6 Control Panel Reference Guide for more information.

Managing Features

Storage Manager provides you with the Stub Trace feature and Alternate File feature. You can use the two features in the **Manage Feature** interface by navigating to **DocAve Storage Optimization** > **Real-Time Storage Manager** or **Scheduled Storage Manager**. Refer to the following section for details.

Using the Stub Trace Feature

The Stub Trace feature is used to view whether a BLOB is externalized directly and also allowed users to view the stub trace information in SharePoint. Ensure that SP2010StorageManagerStubTraceManagement.wsp or SP2013StorageManagerStubTraceManagement.wsp is deployed before using this feature. For more information on deploying the solution, refer to Control Panel Reference Guide for details. This feature is supported in both SharePoint 2010 and SharePoint 2013.

Activating the Stub Trace Feature

After you deploy the SP2010StorageManagerStubTraceManagement.wsp or SP2013StorageManagerStubTraceManagement.wsp solution, you must activate this feature in the specified site collection first. You can activate the feature in DocAve Storage Manager or activate the feature in SharePoint.

Activating the Stub Trace Feature in Storage Manager

Refer to the following steps to activate the feature in DocAve Storage Manager:

1. Navigate to **DocAve Storage Optimization** > **Real-Time Storage Manager** or **Scheduled Storage Manager**.
2. Click **Manage Feature** on the ribbon. The **Manage Feature** interface appears.
3. Click **Stub Trace** on the ribbon. The farms on which the SP2010StorageManagerStubTraceManagement.wsp or SP2013StorageManagerStubTraceManagement.wsp solution is deployed are enabled in the interface.
4. Click on the farm that you want to use. All of the Web applications under the farm are loaded. Under the **Action** column, the **Activate All** and **Deactivate Al**l links appear.
    - Select **Activate All** to activate the feature for all of the site collections under the Web application.
    - Select **Deactivate All** to deactivate the feature for all of the site collections under the Web application.
    - You can continue to expand the Web application to the site collection level, and then activate a specified site collection by clicking **Activate** after the site collection. The feature status for a site collection is displayed in the **Status** column in the interface.

Activating the Stub Trace Feature in SharePoint

You can also activate the feature in SharePoint. In SharePoint 2010, navigate to the specified site collection > **Site Actions** > **Site Settings** > **Site collection features**, and then click **Activate** next to Stub Tracing. In SharePoint 2013, navigate to the specified site collection > **Settings** > **Site Settings** > **Site collection features** then click **Activate** next to Stub Tracing.

Viewing Stub Trace Information in SharePoint

After the Stub Trace feature is activated, you can view the stub trace information of a file in SharePoint. Click the down arrow ( ) after a file or item (in SharePoint 2013, click the ellipsis ( ) after a file or item). Select **Externalization Details** in the drop-down menu. The **Externalization Details** window appears.

***Note:** Only the users who have permission can see **Externalization Details** and view the details. Refer to the table below for details about the permission.

Permission	Action
User is a member of Farm Administrator	Cannot view the **Externalization Details** option or the details.
User is a Site Collection Administrator	Can view the **Externalization Details** option and the details.
User has the Manage Web Site permission	Can view the **Externalization Details** option, but cannot see the details.
User has the Manage Web Site permission and is a member of Farm Administrator	Can view the **Externalization Details** option, and the details.
User is a **System Account** user	Can view the **Externalization Details** option, and the details.

The following stub trace information is displayed in the **Externalization Details** window:

- **Version** – If you select to view the stub trace information of a **file**, this option appears. Select the version of the file. The window will display the stub trace information of this file version.

  Attachment – If you select to view the stub trace information of an **item**, this option appears. Select the attachment to the selected attachment's stub trace information.

- **Item Location** – Displays the file or item location. If the file or item is not a stub, **Content Database** is displayed. If the file or item is a stub, Externalized (EBS/RBS) is displayed.
- **Physical Device** – Displays the physical device where the BLOB resides. If the file or item is not a stub, N/A is displayed here.
- **Storage Type** – Displays the storage type of the physical device. If the file or item is not a stub, N/A is displayed here.
- **BLOB Path** – Displays the URL of the folder where the BLOB resides. If the file or item is not a stub, N/A is displayed here.

- **BLOB Name** – Displays the BLOB ID. If the file or item is not a stub, N/A is displayed here.
- **Compression** – Displays one of the two values: **Yes** or **No**. **Yes** means the file is compressed; **No** means the file is not compressed. If the file or item is not a stub, N/A is displayed here.
- **Encryption** – Displays one of the two values: **Yes** or **No**. **Yes** means the file is encrypted; **No** means the file is not encrypted. If the file or item is not a stub, N/A is displayed here.

Using the Alternate File Access Feature

The Alternate File Access feature allows you to upload large files that exceed the **Maximum Upload Size** configured in SharePoint and the files whose file types are blocked by SharePoint to SharePoint as links. Actually, the real files are uploaded to a pre-configured logical device, only the corresponding links are left in SharePoint which can direct to the real files. You can also view the real files' related information in SharePoint. Ensure that SP2010AlternateFileAccess.wsp or SP2013AlternateFileAccess.wsp is deployed before using this feature. For more information on deploying the solution, refer to Control Panel Reference Guide for details. This feature is supported in both SharePoint 2010 and SharePoint 2013.

Activating the Alternate File Access Feature

After you deploy the SP2010AlternateFileAccess.wsp or SP2013AlternateFileAccess.wsp solution, you must activate this feature in the specified site collection. You can activate the feature in DocAve Storage Manager or SharePoint.

Activating the Alternate File Feature in Storage Manager

To activate the feature in DocAve Storage Manager, complete the following steps:

1. Navigate to **DocAve Storage Optimization** > **Real-Time Storage Manager** or **Scheduled Storage Manager**. Click **Manage Feature** on the ribbon. The **Manage Feature** interface appears.
2. Click **Alternate File Access** on the ribbon. The farms on which the SP2010AlternateFileAccess.wsp or SP2013AlternateFileAccess.wsp solution is deployed are enabled in the interface.
3. Click on the farm that you want to use. All of the Web applications under the farm will load. Under the **Action** column, the **Activate All** and **Deactivate Al**l links will appear.
    - Select **Activate All** to activate the feature for all of the site collections under the Web application.
    - Select **Deactivate All** to deactivate the feature for all of the site collections under the Web application.

Optionally, you can continue to expand the Web application to the site collection level, and then activate a specified site collection by clicking **Activate** after the site collection. The feature status for a site collection is displayed in the **Status** column in the interface.

Activating the Alternate File Access Feature in SharePoint

You can also activate the feature in SharePoint. In SharePoint 2010, navigate to the specified site collection > **Site Actions** > **Site Settings** > **Site collection features**, and then click **Activate** next to Alternate File Access. In SharePoint 2013, navigate to the specified site collection > **Settings** > **Site Settings** > **Site collection features**, and then click **Activate** next to Alternate File Access.

Configuring Settings for the Alternate File Feature

In the **Manage Feature** > **Alternate File Access** interface, click on the farm that you want to use. All of the Web applications under the farm are loaded. Under the **Configuration** column, the **Configure All** link appears after a Web application. You can continue to expand the Web application to the site collection level. The **Not Configured** link appears after the corresponding site collection. Click **Configure All** to configure the Alternate File Feature settings that will apply to all of the site collections under the corresponding Web application. Click **Not Configured** to configure the settings for the corresponding site collection. Configure the Alternate File Feature settings in the **Configure** interface after you click **Configure All** or **Not Configured**:

- **Logical Device** – Select a logical device to store the real file. The uploaded large file or the file whose file type is blocked will be uploaded to the logical device. Only a link is left in the SharePoint library, which is directed to the real file. You can download the file after you click the link in SharePoint. Click **New Logical Device** to create a new logical device.
- **File Limitation Bypass** – If you select **Enable uploading large file**, the large file whose size exceeds the **Maximum Upload Size** configured in SharePoint can be uploaded to SharePoint as a link (the real files are uploaded to the logical device selected above). If you select **Enable uploading blocked file types**, the file whose file type is blocked can be uploaded to SharePoint as a link (the real files are uploaded to the logical device selected above).

  ***Note:** Granular backup jobs will not capture linked content.

Click **OK** in the **Configure** interface to save the settings, or click **Cancel** to exit the interface without saving any changes.

After you finish configuring the settings, the **Configured** link is displayed. Click **Configured** to edit the Alternate File Feature settings.

Uploading Large Files or Blocked Files to SharePoint

After you finish activating the Alternate File Access feature, and configure the settings for the feature, you can upload the large files or the files whose file types are blocked to SharePoint. To upload the large files or blocked files to SharePoint, complete the following steps:

1. In SharePoint 2010, select the SharePoint document library in which you want to upload files.
   a. Under the **Documents** tab, select **Upload Document** on the ribbon. The option **Upload Alternate Files** appears in the drop-down list.
   b. Click **Upload Alternate Files**. The **Upload Alternate File** window appears.
   c. Select one or more large files or blocked files that you want to upload.

   In SharePoint 2013, select the SharePoint document library in which you want to upload files, under the **FILES** tab.

   a. Select **Upload Alternate Files** on the ribbon. The **Upload Alternate Files** window appears.
   b. Drag the large files or blocked files in the **Drag File Here** field, or click **Browse Files for Uploading**, and a pop-up window appears.
   c. Select one or more large files or blocked files that you want to upload.
2. Click **OK**. The files that you want to upload will be displayed in the **Upload Alternate Files** window.

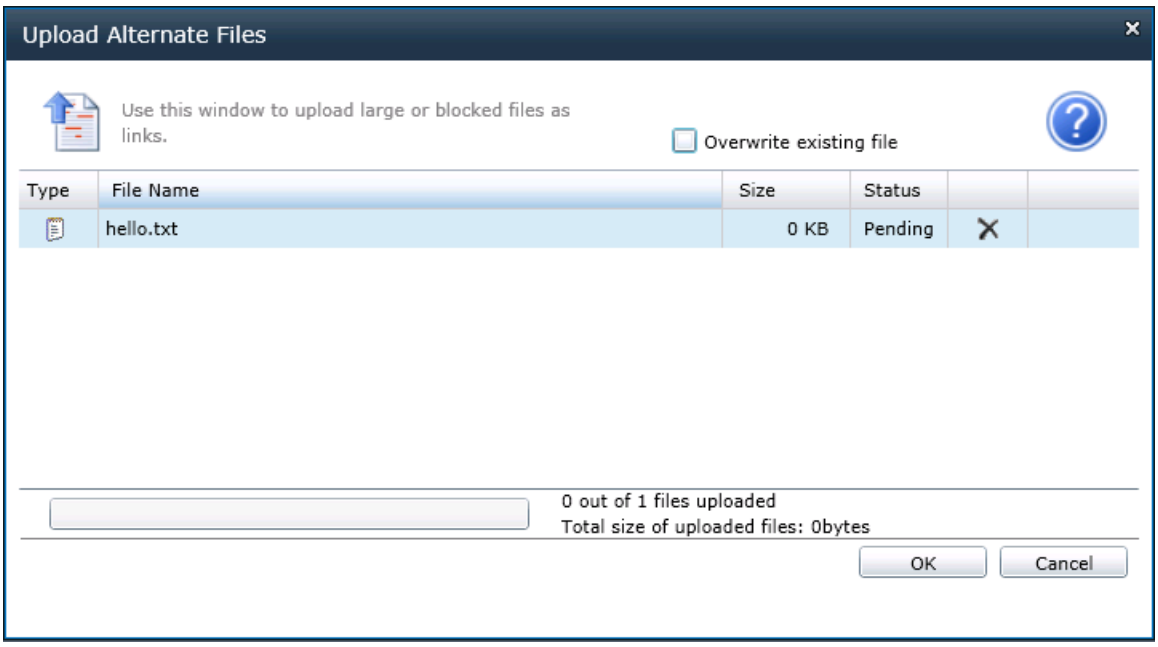


Figure 5: Upload Alternate Files window in SharePoint 2010.

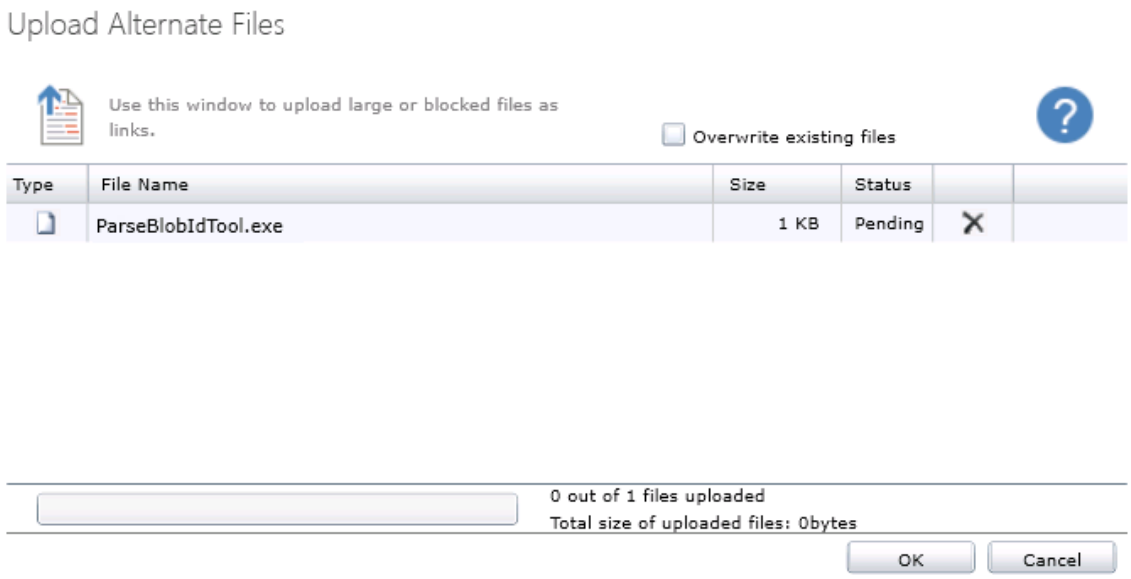


Figure 6: Upload Alternate Files window in SharePoint 2013.

The following information is displayed in the window:

- **Type** – Displays the type of the file.
- **File Name** – Displays the file name.
- **Size** – Displays the file size.
- **Status** – Displays the uploading status of the file.

You have the following options in the **Upload Alternate Files** window:

- Click the delete (✕) button after a file to cancel uploading it.
- Select the **Overwrite existing file** checkbox on the top of the window. The uploaded file will replace the existing file whose name is the same as the uploaded one.

  ***Note**: If the **Overwrite existing file** checkbox is selected, the existing file with the same name as the uploaded one will be replaced, and the existing file's related versions will be deleted.

- Click **OK** to start uploading these files. Then, you can view the uploading status in the **Status** column. After the files are finished uploading, you can view the information of the total uploaded size and the successfully uploaded file number at the bottom of the window.
- Click **Cancel** at any time to exit the window and quit uploading the files.

3. Click **Done** in the **Upload Alternate Files** window to close the window. The large files or blocked files are uploaded in the SharePoint library as links.
4. Click the name of the large file or blocked file in SharePoint to download the file.

Viewing Large Files or Blocked Files' Details

After the large files or the files whose file types are blocked are uploaded to SharePoint as links, you can view the real files' detailed information in SharePoint.

Click the down arrow ( ) after the uploaded large file or blocked file. In SharePoint 2013, click the ellipsis ( ) after a file. Select **Alternate File Details** in the drop-down menu. The **Alternate File Details** window appears.

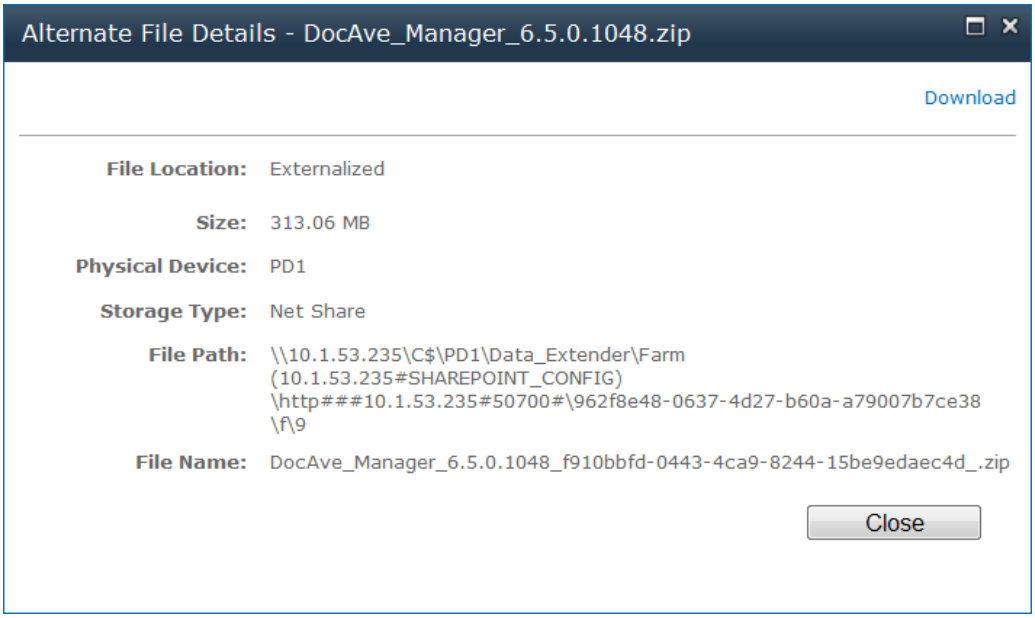


Figure 7: Alternate File Details window in SharePoint 2010.

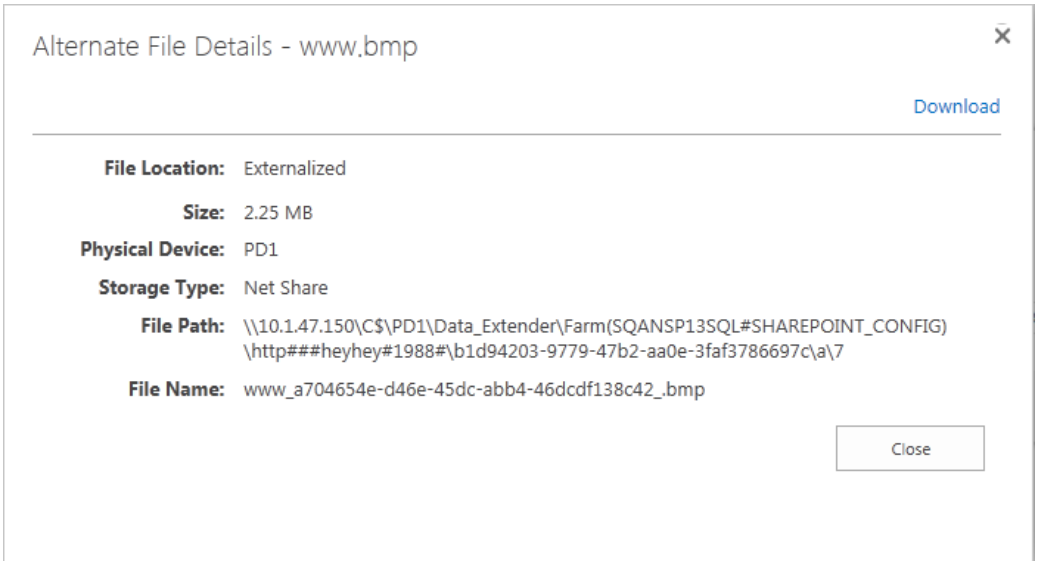


Figure 8: Alternate File Details window in SharePoint 2013.

The following file information is displayed in the **Alternate File Details** window:

- **File Location** – Displays **Externalized**, which means that the real file is stored in a physical device.
- **Size** – Displays the file's real size.
- **Physical Device** – Displays the name of the physical device that stores the real file.
- **Storage Type** – Displays the storage type of the physical device.
- **File Path** – Displays the stored path of the file.
- **File Name** – Displays the name of the real file that stores in the physical device.

***Note**: Only a user who is a member of Farm Administrator or a Site Collection Administrator can view the information of Physical Device, Storage Type, File Path and File Name in the **Alternate File Details** window.

Click **Download** on the upper-right corner of the **Alternate File Details** window to download the large file or blocked file.

Downloading Large Files or Blocked Files

To download the uploaded large or blocked file, click the file directly in SharePoint, or click **Download** on the upper-right corner of the **Alternate File Details** window appeared after you click **Alternate File Details**. The download process can be paused and resumed in the **View Downloads** interface, **Downloads** window or **Downloads** interface if you use the Internet Explorer, Firefox or Google Chrome browser.

Storage Manager Tool

One tool is provided with the Storage Manager module. The **AgentToolSP2010MoveStub Tool**/**AgentToolSP2013MoveStub** tool can be used for three purposes:

- **MoveSPSite** – Move one site collection from the original content database where it resides to another content database. Then, move the stub information stored in the original stub database to the stub database configured for the destination content database.
- **MoveStub** – Move stub information stored in the original stub database to the stub database of the content database where the corresponding site collection resides.

  Use this command after you have moved a site collection to another content database using the SharePoint STSADM operation **Mergecontentdbs** or Windows PowerShell cmdlet **Move-SPSite**.

- **ChangeStubDB** – Change the stub database of the specified SharePoint objects and move all related stub information from the old stub database to the new stub database.

AvePoint recommends that you set the status of the source stub database's corresponding content database to Read Only; this prevents the generation of new stub information in the source stub database during the change stub database process. For more information, refer to the DocAve 6 Supplementary Tools user guide.

Checking the Job Status

In the **Real-Time Storage Manager** or **Scheduled Storage Manager** tabs, click **Job Monitor** in the **Statistics** group to navigate to the Job Monitor of the corresponding module. There you can view the status of the corresponding Storage Manager jobs.

This is the first step to take when monitoring jobs or troubleshooting for errors. For detailed information on each option, refer to the DocAve 6 Job Monitor Reference Guide.

Copying Content Database from Source Farm to Destination Farm

If you want to copy the content database from the source farm to the destination farm, BLOBs and stubs are required to copy to the destination. When copying the BLOBs extended from the source content databases to the destination farm which has the same content databases and stub databases, DocAve provides you a method by using **DocAve 6 Management Shell**. Meanwhile, the corresponding stubs information in the destination stub database is also changed for supporting the copied BLOBs to be normally used.

***Note**: The source farm and the destination farm must use the same DocAve Manager if you want to copy the content database.

To configure the settings of copying the BLOBs to the destination SharePoint farm, complete the following steps:

1. Navigate to **Start** > **All Programs** > **AvePoint DocAve 6** > **DocAve 6 Management Shell** and click **DocAve 6 Management Shell** to prompt the command window.
2. In the command window, refer to the following detailed information below to input the command lines.
    - **Login-DAManager** – Enter this parameter to login the DocAve Manager. After executing this command line, the following parameters will be provided to configure the Control Service Address to connect to the Control service.
        - **ControlHost** – Enter the Control Service hostname or the IP address.
        - **ControlPort** – Enter the Control Service's port.
    - Press the **Enter** key to configure the detailed information of the destination SharePoint farm where to copy the BLOBs.
        - **$config = New-DARemapStorageManagerLogicalDeviceConfiguration** – Enter this parameter to set up the mappings between the source logical devices and the destination logical devices when copying the BLOBs to the destination SharePoint farm.
        - **$config.FarmName = ' '** – Enter this parameter to specify the destination farm name where to copy the BLOBs. Refer to the following example to specify a destination SharePoint farm:

          $config.FarmName = 'Farm(WIN-7SDDEA0TTHM:SHAREPOINT_CONFIG_AVEPOINT)'

        - **$config.ContentDBServer = ' '** – Enter this parameter to specify the name of the server where the destination SharePoint farm is installed and to obtain the information of the corresponding content databases. Refer to the following example to specify a server:

$config.ContentDBServer = 'WIN-7SDDEA0TTHM'

- **$config.ContentDBName = ' '** – Enter this parameter to specify a content database where to copy the specified BLOBs from source. Refer to the following example to specify a destination content database:

  $config.ContentDBName = 'WSS_Content_8787 '

- **$config.LogicalDeviceMapping.Add(' ', ' ')** - Enter this parameter to copy the BLOBs stored in the specified source logical device to the specified destination logical device. Refer to the following example to specify the source and destination logical devices in this parameter:

  $config.LogicalDeviceMapping.Add('Source Logical Device Name', 'Destination Logical Device Name')

- **$config.DefaultDestinationLogicalDevice=' '** – Enter this parameter to specify a default logical device for storing the BLOBs copied from the source SharePoint farm. Refer to the following example to specify a default logical device at destination:

  $config.DefaultDestinationLogicalDevice='logical_device_default '

- **$config.CopyBlobData =** – Enter this parameter to specify whether to copy the BLOBs to the destination SharePoint farm.

  - **$config.CopyBlobData = $true** – If specifying the value as **$true**, the BLOBs will be copied to the destination SharePoint farm.
  - **$config.CopyBlobData = $false** – If specifying the value as **$false**, the BLOBs will not be copied to the destination SharePoint farm. To copy the BLOBs manually to the destination, copy the Storage Manager data under the **Data_Extender** folder of the source physical device to the destination physical device. Only the corresponding stubs information in the destination stub database will be changed for the BLOBs.

- After configuring the settings of the destination SharePoint farm, the BLOBs can be copied from the source SharePoint farm by using the following command line.

  $result = Remap–DAStorageManagerLogicalDevice –Configuration $config

3. When the job finishes, it will indicate **Finish** in the window. Then, you can enter the following command lines to check the number of the BLOBs that are successfully copied to the destination.

   - **$result.Succeeded** – Enter this parameter to display the number of the BLOBs that are successfully copied to the destination.
   - **$result.Failed** – Enter this parameter to display the number of BLOBs that fail to copy to the destination.

Copying BLOBs Special Scenario

If you have a SharePoint 2010 farm and a SharePoint 2013 farm: you want to first update the content database that contains stubs from the SharePoint 2010 farm to SharePoint 2013 farm. Ensure that the two farms can be used normally without affecting each other, you can use the copy BLOBs method.

For example, after the content database is updated, if you restore the stubs in SharePoint 2010, the corresponding BLOBs will be cleaned if you run a Clean Up Orphan BLOBs job. By using this method, the BLOBs of the stubs in different SharePoint version environments are stored in different logical devices, thus the stubs in SharePoint 2013 can be accessed normally.

Prerequisites

The following are prerequisites for realizing the requirement:

- Install the DocAve Agents in the servers that have the SharePoint 2010 and SharePoint 2013 farms installed separately. Then, make the two agents connect to the same DocAve Manager.
- Make sure the content database that will be updated only contains RBS stubs. If there are EBS stubs in the content database, you must first run a converting job to convert these EBS stubs to RBS stubs since only RBS is supported in SharePoint 2013. If there are EBS stubs in the content database that will be updated, the content database will fail to be updated. For more information on how to perform the job to convert EBS stubs to RBS stubs, refer to the DocAve 6 Control Panel Reference Guide.

Using the Copy BLOBs Method for the Case

Refer to the following steps to use the method to realize the requirement:

1. Update the SharePoint 2010 content database that contains the stubs and stub database to SharePoint 2013 databases. For more information on how to update SharePoint 2010 database to SharePoint 2013 database, refer to Upgrading a SharePoint 2010 Content Database with Storage Manager Data to a SharePoint 2013 Database.
2. Copy the SharePoint 2010 stub database to the SQL server of SharePoint 2013.
3. After updating the content database, navigate to **DocAve Manager** > **Storage Optimization** > **BLOB Provider** to configure the stub database for the updated content database. Go to the **Configure Stub Database** step in the **BLOB Provider** interface, and expand the destination SharePoint 2013 farm to find the updated content database in the tree. The stub database configured for the content database must be the stub database copied from the SharePoint 2010 environment. Enable RBS for the content database. For more information on configuring stub databases and enabling RBS, refer to Enabling the BLOB Provider.
4. To cconfigure the settings of copying the BLOBs to the destination SharePoint farm, complete the following steps:

a. Navigate to **Start** > **All Programs** > **AvePoint DocAve 6** > **DocAve 6 Management Shell** and click **DocAve 6 Management Shell** to prompt the command window.

b. In the command window, refer to the following detailed information below to input the command lines.

- **Login-DAManager** – Enter this parameter to login to the DocAve Manager. After executing this command line, the following parameters will be provided to configure the Control Service Address to connect to the Control Service.
  - **ControlHost** – Enter the Control Service hostname or the IP address.
  - **ControlPort** – Enter the Control Service's port.

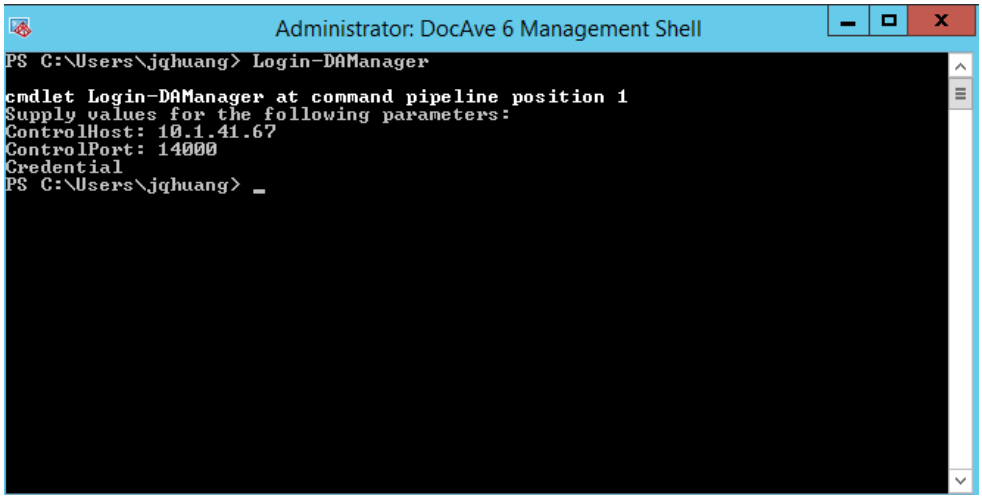


Figure 9: The command line interface.

- Press the **Enter** key to configure the detailed information of the destination SharePoint farm where to copy the BLOBs.
  - **$config = New-DARemapStorageManagerLogicalDeviceConfiguration** – Enter this parameter to set up the mappings between the source logical devices and the destination logical devices when copying the BLOBs to the destination SharePoint farm.
  - **$config.FarmName = ' '** – Enter this parameter to specify the destination SharePoint 2013 farm name where to copy the BLOBs. Refer to the following example to specify a destination SharePoint farm:

    $config.FarmName = 'Farm(WIN-7SDDEA0TTHM:SHAREPOINT_CONFIG_AVEPOINT)'

  - **$config.ContentDBServer = ' '** – Enter this parameter to specify the name of the server where the destination SharePoint farm is installed and to obtain the information of the corresponding content databases. Refer to the following example to specify a server:

$config.ContentDBServer = 'WIN-7SDDEA0TTHM'

- **$config.ContentDBName = ' '** – Enter this parameter to specify a content database where to copy the specified BLOBs from the source. Refer to the following example to specify a destination content database:

  $config.ContentDBName = 'WSS_Content_8787 '

- **$config.LogicalDeviceMapping.Add(' ', ' ')** - Enter this parameter to copy the BLOBs stored in the specified source logical device to the specified destination logical device. Refer to the following example to specify the source and destination logical devices in this parameter:

  $config.LogicalDeviceMapping.Add('Source Logical Device Name', 'Destination Logical Device Name')

- **$config.DefaultDestinationLogicalDevice=' '** – Enter this parameter to specify a default logical device for storing the BLOBs copied from the source SharePoint farm. The BLOBs in the source logical device that is not set as a corresponding destination device will be copied to the default logical device. Refer to the following example to specify a default logical device at destination:

  $config.DefaultDestinationLogicalDevice='logical_device_default '

- **$config.CopyBlobData =** – Enter this parameter to specify whether to copy the BLOBs to the destination SharePoint farm.

  - **$config.CopyBlobData = $true** – If specifying the value as **$true**, the BLOBs will be copied to the destination SharePoint farm.

  - **$config.CopyBlobData = $false** – If specifying the value as **$false**, the BLOBs will not be copied to the destination SharePoint farm. To copy the BLOBs manually to the destination, copy the Storage Manager data under the **Data_Extender** folder of the source physical device to the destination physical device. Only the corresponding stubs information in the destination stub database will be changed for the BLOBs.

- After configuring the settings of the destination SharePoint farm, the BLOBs can be copied from the source SharePoint farm by using the following command line.

  $result = Remap–DAStorageManagerLogicalDevice –Configuration $config

c. When the job finishes, it will indicate **Finish** in the window. Then, you can enter the following command lines to check the number of the BLOBs that are successfully copied to the destination.

- **$result.Succeeded** – Enter this parameter to display the number of the BLOBs that are successfully copied to the destination.
- **$result.Failed** – Enter this parameter to display the number of BLOBs that fail to copy to the destination.

The BLOBs will be copied to the destination, and then the two farms can be used separately.

If you want to copy BLOBs from a SharePoint 2010 farm to another SharePoint 2010 farm, or if you want to copy BLOBs from a SharePoint 2013 farm to another SharePoint 2013 farm, you can also use this method. You are not required to update content database or update EBS stubs to RBS stubs. For details, refer to the steps 2, 3 and 4 above.

Viewing the Stubs Information

This function enables you to view the detailed information of the stubs and the corresponding BLOBs specified in the SharePoint farm by using command lines. You can select to view the stub of an item or you can view the stubs in the specified scope.

Viewing the Stub Information for One Item

To configure the settings for viewing the stub information of one item for the SharePoint farm, complete the following steps:

1. Navigate to **Start** > **All Programs** > **AvePoint DocAve 6** > **DocAve 6 Management Shell** and click **DocAve 6 Management Shell** to prompt the command window.
2. In the command window, enter **Login-DAManager**, and press **Enter**. Then enter the Control service host, Control service port, and the username and password for logging into DocAve.
3. In the command window, refer to the following detailed information below to enter the command lines.
   - **$config = New-Object DocAve.Cmdlet.StorageOptimization.ExportBlobInfoConfiguration** – Enter this parameter to start configuring the following settings to obtain the stub information.
     - **$config.FarmName = ' '** – Enter this parameter to specify the SharePoint farm where you want to obtain the stub information. Refer to the following example to specify a SharePoint farm:

       $config.FarmName = 'Farm(WIN-7SDDEA0TTHM:SHAREPOINT_CONFIG_AVEPOINT)'
     - **$config.URL.Add(' ')** – Enter this parameter to specify the complete URL of the stub that is stored in SharePoint. Refer to the following example to specify the URL of a stub in SharePoint:

       $config.URL.Add('http://avepoint:12345/sites/Shared Documents/file.docx')

       If specifying a version of the stub in SharePoint, refer to the following example:

       $config.URL.Add('http://avepoint:12345/sites/Shared Documents/file.docx:1.1')
   - **$result = Export-DABLOBTraceOfStub –Configuration $config** – Enter this parameter to use the configuration that is previously configured and obtain the stub information from the stub database.
   - **$result.StubTraceInformation** – Enter this parameter to display the stub information in the command window.

Viewing Stubs in a Specified Scope

To configure the settings for viewing all stub information in a specified scope, complete the following steps:

1. Navigate to **Start** > **Administrative Tools** > **Windows PowerShell Modules**, and click **Windows PowerShell Modules** to prompt the command window.
2. In the command window, enter the following command, and press **Enter** to import the Connector Snap-In:

   `Add-PSSnapin StorageManagersnapin`

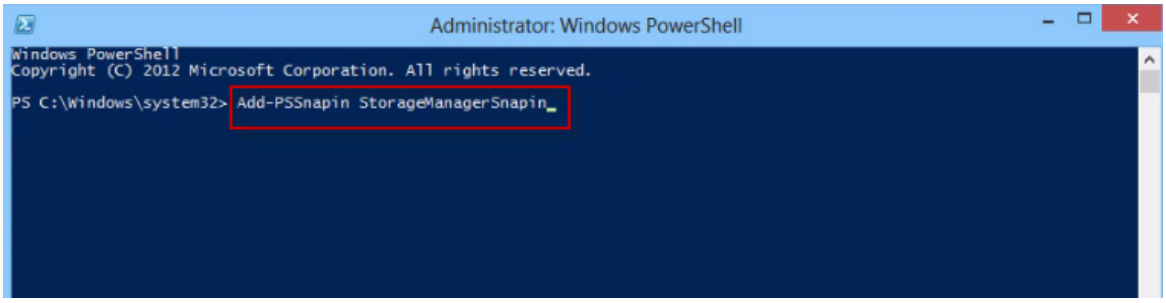
   

   Figure 10: Adding Snap-In.

3. Enter the following command:
   - `Export-BlobTrace` – Enter the scope parameter by entering one of the following scope parameters after the above command:
     - `-WebApplication` – Enter this parameter, and then enter a Web application URL after the parameter. The information of the stubs in this Web application will be exported for your review.
     - `-SiteCollection` – Enter this parameter, and then enter a site collection URL after the parameter. The information of the stubs in this site collection will be exported for your review.
     - `-Site` – Enter this parameter, and then enter a site URL after the parameter. The information of the stubs in this site will be exported for your review.
     - `-List` – Enter this parameter, and then enter a list URL after the parameter. The information of the stubs in this list will be exported for your review.
     - `-Folder` – Enter this parameter, and then enter a folder URL after the parameter. The information of the stubs in this folder will be exported for your review.
     - `-ContentDatabase` – Enter this parameter, and then enter a content database name after the parameter. The information of the stubs in this content database will be exported for your review.
4. Enter the following command for the path parameter after the scope parameter

```
-FilePath
```

Then enter a CSV file path after this parameter.

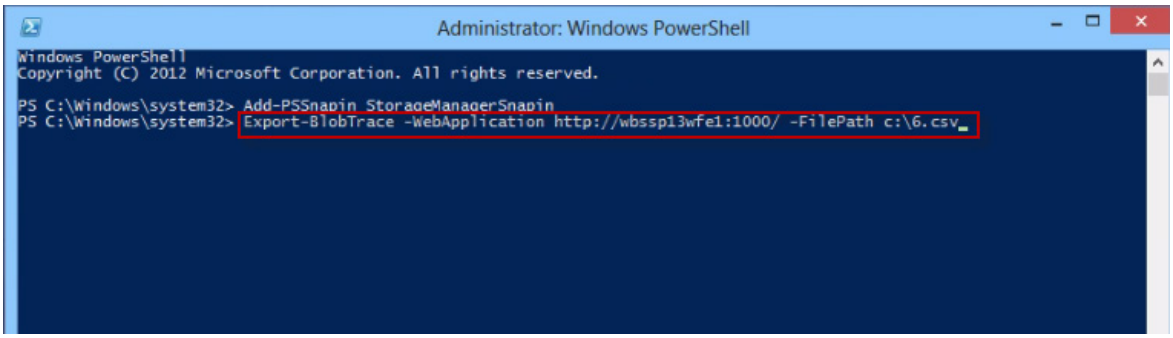


Figure 11: Export information of the stubs in a Web application.

5. Press **Enter**. The stub information of the scope will be exported into the CSV file. After the report finishes exporting, the general stub information will display in the command window:

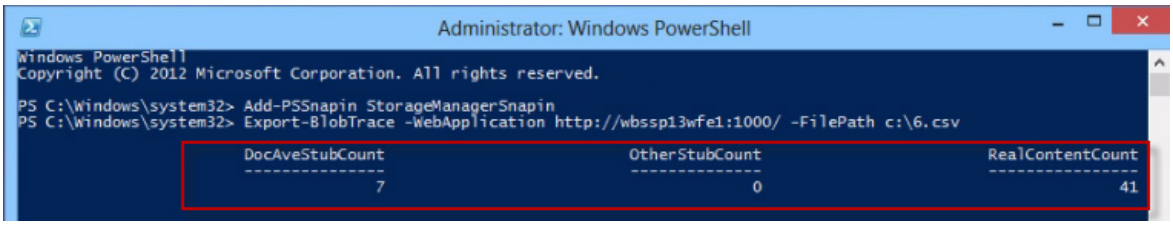


Figure 12: General stub information.

6. Navigate to the specified location to view the exported CSV file and the stub information.

Appendix A – Criteria Filter Conditions

***Note**: Multiple criteria can be added into the **Criteria** row. But, to create a rule successfully, at least one criteria row is required.

***Note**: Before you set a Storage Manager rule with the criteria of Custom Property, the corresponding properties have to be added in the lists or libraries in advance.

Document Object Level

1. **Name** – Enter the name of the document.
    - **Matches** – Wildcards such as ***** and **?** are available when using **Matches**; it is the most flexible way of specifying the objects you would like to extend. The content that matches the entered text will be extended.
    - **Does not Match** – As with **Matches**, wildcards are available. However, this selection extends all of the documents that do not match the entered name.
    - **Contains** – Wildcards cannot be used in this field; all of the objects that contain the entered Name will be extended.
    - **Does not Contain** – You can enter part of the document name here. This selection extends all of the documents that do not contain the entered name. Wildcards are unavailable.
    - **Equals** – Enter the complete document name. This selection extends the document that equals the entered name. Wildcards are unavailable.
    - **Does Not Equal** – Enter the complete document name. This selection extends all of the documents except for those that equal the entered name. Wildcards are unavailable.
2. **Size** – Enter a data size value for the document. The units for this value can be selected as **KB**, **MB** or **GB** from the drop-down list.
    - **>=** – Extend all of the documents whose size is equal to or greater than the entered size.
    - **<=** – Extend all of the documents whose size is equal to or less than the entered size.
3. **Modified Time** – Set a date range for the modified documents.
    - **From … To** – Extend all of the documents that are modified between the two dates selected.
    - **Before** – Extend all of the documents modified before the date selected.
    - **Older Than** – Extend all of the documents with a modification date that is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
4. **Created Time** – Set a date range for the created documents.
    - **From … To** – Extend all of the documents that were created between the two dates selected.

- **Before** – Extend all of the documents that were created before the date selected.
- **Older Than** – Extend all of the documents with a creation date that is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.

5. **Modified By** – Enter the **Name** of the user who latest modified the documents.
    - **Contains** – You can enter part of the modifier's name. This selection extends all of the documents whose modifier's name contains the entered value. Wildcards are unavailable.
    - **Equals** – Enter the complete modifier's name. This selection extends the documents whose modifier's name equals the entered value. Wildcards are unavailable.

      ***Note**: The user name has two different forms (**Log on Name** and **Displayed Name**):

        - **Log on Name** – If entering a Log on Name with **Equals**, enter the value as *Domain\Username*.
        - **Displayed Name** – If entering a Displayed Name with **Equals**, enter the username as how it displays in SharePoint.
6. **Created By** – Enter the name of the user who created the document.
    - **Contains** – You can enter part of the creator's name here. This selection extends all of the documents whose creator's name contains the entered value. Wildcards are unavailable.
    - **Equals** – Enter the complete creator's name. This selection extends the documents whose creator's name equals the entered value. Wildcards are unavailable.
7. **Content Type** – Enter a name for the document content type.
    - **Matches** – Wildcards such as "*" and "?" are available when using **Matches**; it is the most flexible way of specifying the objects you would like to extend. The content that matches the entered text will be extended.
    - **Does not Match** – As with **Matches**, wildcards are available. However, this selection extends all of the documents whose content type name does not match the entered content type name.
    - **Contains** – Wildcards cannot be used in this field; all of the objects that contain the entered content type will be extended.
    - **Does not Contain** – You can enter part of the document content type name here. This selection extends all of the documents whose content type name does not contain the entered content type name. Wildcards are unavailable.
    - **Equals** – Enter the complete content type name. This selection extends the documents whose content type name equals the entered name. Wildcards are unavailable.
    - **Does Not Equal** – Enter the complete content type name. This selection extends all of the documents whose content type name does not equal the entered name. Wildcards are unavailable.

8. **Column (Text)** – Enter the column name that is customized by users, followed by the text content.
    - **Matches** – Wildcards such as "*" and "?" are available when using **Matches**; it is the most flexible way of specifying the objects you would like to extend. The content that matches the entered text will be extended.
    - **Does not Match** – As with **Matches**, wildcards are available. However, this selection extends all of the documents containing a text column whose value does not match the entered value.
    - **Contains** – Wildcards cannot be used in this field; all of the objects that contain the entered text column will be extended.
    - **Does not Contain** – This selection extends all of the documents whose text column does not contain the entered value. Wildcards are unavailable.
    - **Equals** – Enter the complete text column value. This selection extends the documents whose text column value equals the entered value. Wildcards are unavailable.
    - **Does Not Equal**– Enter the complete text column value. This selection extends all of the documents whose text column value does not equal the entered value. Wildcards are unavailable.
9. **Column (Number)** – Enter the column name, followed by an Arabic number.
    - **>=** – Extend documents whose number column value is equal to or greater than the entered number.
    - **<=** – Extend documents whose number column value is equal to or less than the entered number.
    - **=** – Extend documents whose number column value is equal to the entered number.
10. **Column (Yes/No)** – Enter the column name and set **Yes** or **No**.
    - **Yes** – If selected, extends the documents whose Yes/No column value is **Yes**.
    - **No** – If selected, extends the documents whose Yes/No column value is **No**.
11. **Column (Date and Time)** – Enter the column name and set date and time.
    - **From … To** – Extend all of the documents whose Date and Time column value is between the two dates selected.
    - **Before** – Extend all of the documents whose Date and Time column value is before the date selected.
    - **Older Than** – Extend all of the documents whose Date and Time column value is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
12. **Parent List Type ID** – Enter the list's ID number.
    - **Equals** – Enter the complete list's ID value. This selection extends the documents in the specified list whose ID number equals the entered value. Wildcards are unavailable.

- **Does Not Equal** – Enter the complete list's ID value. This selection extends all of the documents in the specified list whose ID number does not equal the entered value. Wildcards are unavailable.

13. **Last Accessed Time** – Set a date range for the documents which are accessed last time.
    - **From … To** – Extend all of the documents that were last accessed between the two dates selected.
    - **Before** – Extend all of the documents that were last accessed before the date selected.
    - **Older Than** – Extend all of the documents with a last accessing date that is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
14. **Type** – Used to define if the Microsoft Office files will be externalized. Select **Is** as the condition.
    - **Non Office File** – The Office files will not be externalized.
    - **Office File** – The Office files will be externalized.

Document Version Object Level

1. **Title** – Enter the **Title** of a document version.
    - **Matches** – Wildcards such as "*" and "?" are available when using **Matches**; it is the most flexible way of specifying the objects you would like to extend. The content that matches the entered text will be extended.
    - **Does not Match** – As with **Matches**, wildcards are available. However, this selection extends all of the document versions whose title does not match the entered title.
    - **Contains** – Wildcards cannot be used in this field; all of the objects that contain the entered title will be extended.
    - **Does not Contain** – You can enter part of the document version title here. This selection extends all of the document versions that do not contain the entered title. Wildcards are unavailable.
    - **Equals** – Enter the complete document version title. This selection extends the document version whose title equals the entered title. Wildcards are unavailable.
    - **Does Not Equal** – Enter the complete document version title. This selection extends all document versions except for those whose titles equal the entered title. Wildcards are unavailable.
2. **Size** – Enter a data size value for the document version. The units for this value can be selected as **KB**, **MB** or **GB** from the drop-down list.
    - **>=** – Extend all of the document versions whose size is equal to or greater than the entered size.
    - **<=** – Extend all of the document versions whose size is equal to or less than the entered size.

3. **Modified Time** – Set a date range for the modified document versions.
    - **From … To** – Extend all of the document versions which were modified between the two dates selected.
    - **Before** – Extend all of the document versions which were modified before the date selected.
    - **Older Than** – Extend all of the document versions whose modification date is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
4. **Modified By** – Enter the name of the user who latest modified the document versions.
    - **Contains** – You can enter part of the modifier's name here. This selection extends all of the document versions whose modifier's name contains the entered value. Wildcards are unavailable.
    - **Equals** – Enter the complete modifier's name. This selection extends the document versions whose modifier's name equals the entered value. Wildcards are unavailable.
5. **Keep Latest Version** – The number of document versions (**Major** and **Minor**) you set in the text box are left in SharePoint. The rest of the versions are extended.
6. **Parent List Type ID** – Enter the list's ID number.
    - **Equals** – Enter the complete list's ID value. This selection extends the document versions in the list whose ID number equals the entered value. Wildcards are unavailable.
    - **Does Not Equal** – Enter the complete list's ID value. This selection extends all of the document versions in the list whose ID number does not equal the entered value. Wildcards are unavailable.
7. **Last Accessed Time** – Set a date range for the document versions which are accessed last time.
    - **From … To** – Extend all of the document versions that were last accessed between the two dates selected.
    - **Before** – Extend all of the document versions that were last accessed before the date selected.
    - **Older Than** – Extend all of the document versions with a last accessing date that is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
8. **Type** – Used to define if the Microsoft Office files will be externalized. Select **Is** as the condition.
    - **Non Office File** – The Office files will not be externalized.
    - **Office File** – The Office files will be externalized.

Attachment Object Level

1. **Name** – Enter the name of the attachment.

- **Matches** – Wildcards such as "*" and "?" are available when using **Matches**; it is the most flexible way of specifying the objects you would like to extend. The content that matches the entered text will be extended.
- **Does not Match** – As with **Matches**, wildcards are available. However, this selection extends all of the attachments that do not match the entered name.
- **Contains** – Wildcards cannot be used in this field; all of the objects that contain the entered name will be extended.
- **Does not Contain** – You can enter part of the attachment name here. This selection extends all of the attachments that do not contain the entered name. Wildcards are unavailable.
- **Equals** – Enter the complete attachment name. This selection extends the attachment that equals the entered name. Wildcards are unavailable.
- **Does Not Equal** – Enter the complete attachment name. This selection extends all of the attachments except for those that equal the entered name. Wildcards are unavailable.

2. **Size** – Enter a data size value for the attachment. The units for this value can be selected as **KB**, **MB** or **GB** from the drop-down list.
    - **>=** – Extend all of the attachments whose size is equal to or greater than the entered size.
    - **<=** – Extend all of the attachments whose size is equal to or less than the entered size.
3. **Created Time** – Set a date range for the created attachments.
    - **From … To** – Extend all of the attachments that were created between the two dates selected.
    - **Before** – Extend all of the attachments that were created before the date selected.
    - **Older Than** – Extend all of the attachments with a creation date that is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
4. **Created By** – Enter the name of the user who created the attachment.
    - **Contains** – You can enter part of the creator's name here. This selection extends all of the attachments whose creator's name contains the entered value. Wildcards are unavailable.
    - **Equals** – Enter the complete creator's name. This selection extends the attachments whose creator's name equals the entered value. Wildcards are unavailable.
5. **Column (Text)** – Enter the column name, followed by the text content.
    - **Matches** – Wildcards such as "*" and "?" are available when using **Matches**; it is the most flexible way of specifying the objects you would like to extend. The content that matches the entered text will be extended.
    - **Does not Match** – As with **Matches**, wildcards are available. However, this selection extends all of the attachments whose text column does not match the entered value.

- **Contains** – Wildcards cannot be used in this field; all of the objects that contain the entered text column will be extended.
- **Does not Contain** – This selection extends all of the attachments whose text column does not contain the entered column name text. Wildcards are unavailable.
- **Equals** – Enter the complete text column value. This selection extends the attachments whose text column value equals the entered value. Wildcards are unavailable.
- **Does Not Equal** – Enter the complete text column value. This selection extends all of the attachments whose text column value does not equal the entered value. Wildcards are unavailable.

6. **Column (Number)** – Enter the column name, followed by an Arabic number.
    - **>=** – Extend attachments whose Number column value is equal to or greater than the entered number.
    - **<=** – Extend attachments whose Number column value is equal to or less than the entered number.
    - **=** – Extend attachments whose Number column value is equal to the entered number.
7. **Column (Yes/No)** – Enter the column name and set **Yes** or **No**.
    - **Yes** – If selected, extends the attachments whose Yes/No column value is **Yes**.
    - **No** – If selected, extends the attachments whose Yes/No column value is **No**.
8. **Column (Date and Time)** – Enter the column name and set date and time.
    - **From … To** – Extend all of the attachments whose Date and Time column value is between the two dates selected.
    - **Before** – Extend all of the attachments whose Date and Time column value is before the date selected.
    - **Older Than** – Extend all of the attachments whose Date and Time column value is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.
9. **Parent List Type ID** – Enter the list's ID number.
    - **Equals** – Enter the complete list's ID value. This selection extends the attachments in the specified list whose ID number equals the entered value. Wildcards are unavailable.
    - **Does Not Equal** – Enter the complete list's ID value. This selection extends all of the attachments in the specified list whose ID number does not equal the entered value. Wildcards are unavailable.
10. **Last Accessed Time** – Set a date range for the attachments which are accessed last time.
    - **From … To** – Extend all of the attachments that were last accessed between the two dates selected.
    - **Before** – Extend all of the attachments that were last accessed before the date selected.

- **Older Than** – Extend all of the attachments with a last accessing date that is older than the **Day(s)**, **Week(s)**, **Month(s)**, or **Year(s)** selected from the drop-down list.

***Note**: If the **Last Accessed Time** rule is selected in Storage Manager:

- For the document and attachment criteria, if implementing this configured rule on the selected node, you must audit the corresponding actions on the specified node before performing the Scheduled Storage Manager job. To start auditing and implementing the Last Accessed Time rule on the selected node, refer to the following settings:
    - Go to the SharePoint site collection that you want to audit, and then enable the audit functions for the events occurred in this site collection.
    - Navigate to **DocAve 6** > **Report Center** > **Settings** > **Auditor Controller** and create an auditing plan for the selected node. Before saving this plan, you must select the **Retrieve data** checkbox in the **Type** field. When performing this job of the created plan, DocAve will start to retrieve the records from SharePoint. For detailed information on configuring an Audit plan in Report Center, refer to the DocAve 6 Report Center Reference Guide.
- For the document version criterion, before you use the **Last Accessed Time** rule for the **Document Version** criterion, you must first navigate to *…\AvePoint\DocAve6\Agent\data\SP2010\Arch*, and then open the configuration file **AgentCommonStorageEnv.cfg**, change the value of the node **UpdateLastAccessTime** from **false** to **true**, then this rule can be used.

11. **Type** – Used to define if the Microsoft Office files will be externalized. Select **Is** as the condition.

- **Non Office File** – The Office files will not be externalized.
- **Office File** – The Office files will be externalized.

Appendix B – Accessing Hot Key Mode

In order to work faster and improve your productivity, DocAve supports hot key mode for you to perform corresponding actions quickly by only using keyboard. To access hot key mode in the Storage Manager interface, press the key combination of **Ctrl** +**Alt** + **Z** (simultaneously) on the keyboard.

The following table provides a list of hot keys for the top level of the **Storage Manager** interface. To return to the top level after accessing a lower-level interface, press **Ctrl** + **Alt** + **Z** on the keyboard simultaneously. For example, continue pressing **H** to return to the Storage Optimization Home page.

Operation Interface and Hot Key	
Storage Optimization Home Page	H
Real-Time Storage Plan Manager	R
Scheduled Storage Manager	S
DocAve Home Page	1
DocAve Online Community	2
Control Panel	3
Job Monitor	4
Plan Group	5
Health Analyzer	6
Account Information	9
Help and About	0

Real-Time Storage Manager

Functionality Name and Hot Key					
Inherit	I				
Stop Inheriting	S				
Create	N	OK	O		
		Cancel	C		
Edit	E	Continue	Z	OK	O
				Cancel	C
		Cancel	C		
Remove	M				
Enable	P				
Disable	Q				
Rules	R				
Convert Stubs to Content	C				
BLOB Provider	B				
Logical Device	T				
Clean Up Orphan BLOBs	O				
Manage Feature	G				
Storage Report	SP				
Job Monitor	J				

BLOB Provider

Functionality Name and Hot Key					
BLOB Provider Page	B	Configure	G	OK	O
				Cancel	C
		Back	B		
		Next	N		
		Finish	F	Finish	F
				Finish and Run Now	R
		Cancel	C		

Clean Up Orphan BLOBs

Functionality Name and Hot Key					
Clean Up Orphan BLOBs Page	O	Configure	C	OK	O
				Cancel	C
		Close	X		

Rules

Functionality Name and Hot Key					
Real-Time Rules Page	R	Rule Based	R	Delete	D
		Scope Based	S	Remove	D
		View Details	V	Cancel	C
		Delete	D		
		Close	X		
Scheduled Rules Page	U	Rule Based	R	Delete	D
		Scope Based	S	Remove	D
		View Details	V	Cancel	C
		Delete	D		
		Close	X		

Convert Stubs to Content

Functionality Name and Hot Key			
Convert Stubs Page (Real-Time Storage Manager)	C	OK	O
		Cancel	C
Convert Stubs Page (Scheduled Storage Manager)	V	OK	O
		Cancel	C

Storage Report

Functionality Name and Hot Key			
Report Profile Manager	P	Report Profile Manager	P

Functionality Name and Hot Key			
		Dashboard	D
		Create	N
		View Details	V
		Edit	E
		Delete	X
		Run Now	R
		Job Monitor	J
		Close	C
Dashboard	D		
Export	E		
Export Location	L		
Job Monitor	J		
Close	C		

Manage Feature

Functionality Name and Hot Key	
Alternate File Access	AF
Stub Trace	ST
Close	C

Scheduled Storage Manager

Functionality Name and Hot Key					
Inherit	I				
Stop Inheriting	S				
Create	N	OK	O		
		Cancel	C		
Edit	E	Continue	T	OK	O
				Cancel	C
		Cancel	C		
Remove	M				
Enable	P				
Disable	D				
Apply	A				
Apply and Run Now	W				
Run Now	R				
Rules	U				
Convert Stubs to Content	V				
BLOB Provider	B				
Logical Device	T				
Processing Pool	F				
Clean Up Orphan BLOBs	O				

Functionality Name and Hot Key	
Manager Feature	G
Profile Manager	X
Storage Report	SP
Job Monitor	J

Profile Manager

Functionality Name and Hot Key															
Create	N	Create Profile Page	N	Create							M		OK		O
													Cancel		C
				Edit				E	Continue		T		OK		O
													Cancel		C
									Cancel		C				
				Remove				R							
				Enable				P							
				Disable				Q							
				Back				B							
				Next				N							
				Finish				F							
				Cancel				C							
View Details	V	View Details Page	V	Edit	E	Edit Page	E	Create		M	OK		O		
											Cancel		C		
								Edit		E	Continue	T	OK		O
													Cancel		C
											Cancel	C			
								Remove			R				
								Enable			P				
								Disable			Q				
								OK			O				
								Cancel			C				
				Cancel		C									
Edit	E	Edit Page	E	Create		M	OK		O						
							Cancel		C						
				Edit		E	OK		O						
							Cancel		C						
				Remove		R									
				Enable		P									
				Disable		Q									
				OK		O									
				Cancel		C									
Delete	D														
Close	C														

Processing Pool

Functionality Name and Hot Key					
Create	N	OK			O
		Cancel			C
View Details	V	Edit	E	OK	O
				Cancel	C
		Cancel			C
Edit	E	OK			O
		Cancel			C
Delete	D				
Close	X				

For the rest of the actions available in the Scheduled Storage Manager page, refer to the configurations in Real-Time Storage Manager.

Appendix C – Stub Database Inheritance

In some cases (records management, for example, where there will be millions of files), it may be necessary to configure stub databases down to the Web application or content database level. Should this be the case, refer to the information below.

Note the following stub database inheritance rules for newly added Web applications and content databases:

- By default, the stub database of the parent node will be used by the lower level.
- If there is no stub database configured for the parent node, the stub database of the grandparent node will be used, and so on.

If the stub database is not configured for a specified SharePoint object when running a Storage Manager job, the object's stub database will also be automatically configured using the rules above. The stub database configuration will then be saved and displayed in DocAve. The corresponding stub database will be used in all of the later Storage Manager jobs performed on the specified SharePoint object.

For example, assume that you only configured a stub database for a Web application and set a Storage Manager rule on it. You did not configure the stub database for any of the content databases under the Web application. When the Storage Manager rule is triggered on a specified content database in the Web application, the content database inherits the stub database of the Web application. The stub database configuration is saved and is used in all of the later Storage Manager jobs performed on this content database.

The **×** in the table below indicates that the corresponding component remains not configured. If you do not wish for a lower level to inherit the stub database of a higher level, expand the tree to the specified level and configure a stub database for the lower level separately.

Selected Nodes	**Configuration Status of the Stub Database**			
	Existing Web Application	**Existing Content Database**	**Newly added Web Application**	**Newly added Content Database**
Only the Farm Node	The Web app that has not configured the stub database will inherit the farm's stub database.	The content database that has not configured the stub database will inherit the farm's stub database.	Inherits the farm's stub database.	Inherits the farm's stub database.

Selected Nodes	Configuration Status of the Stub Database			
	Existing Web Application	**Existing Content Database**	**Newly added Web Application**	**Newly added Content Database**
Only a Web Application Node	Only the stub database of the selected Web application node is configured.	The content database that has not configured the stub database will inherit the Web application's stub database.	×	If the newly added content database is in the selected Web application node, it inherits the Web application's stub database. Otherwise, it remains not configured.
Only a Content Database Node	×	Only the stub database of the selected content database node is configured.	×	×
Farm Node and a Web Application Node	The Web app that has not configured the stub database will inherit the farm's stub database.	The content database that has not configured the stub database will inherit the farm's stub database.	Inherits the farm's stub database.	If the newly added content database is in the selected Web application node, it inherits the Web application's stub database. Otherwise, it inherits the farm's stub database.
Farm Node and a Content Database Node	The Web app that has not configured the stub database will inherit the farm's stub database.	The content database that has not configured the stub database will inherit the farm's stub database.	Inherits the farm's stub database.	Inherits the farm's stub database.
Web Application Node and a Content Database Node	Only the stub database of the selected Web application node is configured.	The content database that has not configured the stub database will inherit the Web application's stub database.	×	If the newly added content database is in the selected Web application node, it inherits the Web application's stub database. Otherwise, it remains not configured.

Selected Nodes	Configuration Status of the Stub Database			
	Existing Web Application	**Existing Content Database**	**Newly added Web Application**	**Newly added Content Database**
Farm Node, a Web Application Node and a Content Database Node	The Web app that has not configured the stub database will inherit the farm's stub database.	The content database that has not configured the stub database will inherit the farm's stub database.	Inherits the farm's stub database.	If the newly added content database is in the selected Web application node, it inherits the Web application's stub database. Otherwise, it inherits the farm's stub database.

Appendix D – Advanced Settings in Configuration Files

The following sections describe advanced settings that can be set in a configuration file. In most cases, these settings do not need to be configured, as they are very detailed settings. Users who configure the settings described below should be very familiar with DocAve functionality.

AgentCommonStorageEnv.cfg

This configuration file provides management settings that help a Storage Manager job finishes efficiently and flexibly.

On all SharePoint 2010 servers that has a DocAve Agent installed, browse to the path *…\Program Files\AvePoint\DocAve6\Agent\Data\SP2010\Arch* and locate the configuration file **AgentCommonStorageEnv.cfg**.

On all SharePoint 2013 servers that has a DocAve Agent installed, browse to the path *…\Program Files\AvePoint\DocAve6\Agent\Data\SP2013\Arch* and locate the configuration file **AgentCommonStorageEnv.cfg**.

Helping a Storage Manager Job Finish Efficiently

Refer to the following sections for details.

Customizing the Number of Storage Manager Job Threads

You can customize the number of threads to be used in **Scheduled Storage Manager** and **Convert Stubs to Content** jobs. Refer to the following steps:

1. Access the installation path of DocAve Agent. The default path is *…\AvePoint\DocAve6\Agent\data\SP2010\Arch* or *…\Program Files\AvePoint\DocAve6\Agent\Data\SP2013\Arch*.
2. Locate **AgentCommonStorageEnv.cfg** and open it with Notepad.
3. Find the node named **MaxThreadCount** and change its value to a bigger number. The default value is **1**, which means **1** thread will be used for each **Scheduled Storage Manager** job and **Convert Stubs to Content** jobs. The maximum value of this attribute is **10**.
4. Save the modification and close the file.
5. Repeat the steps above on each DocAve Agent server.
6. After the modification is saved, all newly started **Scheduled Storage Manager** jobs and **Convert Stubs to Content** jobs will be run using the specified number of threads.

Using Multiple Processes to Run Jobs

By default, Storage Manager has one process, and multiple threads in the process to run jobs. You can select to use multiple processes (each processing has one thread) to run jobs.

Enter a node **UseMultipleProcess="true"** in the AgentCommonStorageEnv.cfg file, and then multiple processes are used for running jobs.

***Note**: Before you add the node into the configuration file, please check to ensure that you have not added the node in the file before. Otherwise, errors may occur during running jobs.

Setting the Time Interval to Asynchronously Extend Storage Manager Data

Edit the configuration file **AgentCommonStorageEnv.cfg** to set the frequency of asynchronous Storage Manager data extension.

***Note**: This function can only be used when the synchronization method for the specified storage groups of the logical device is **Asynchronous**. For details on creating this type of logical device, refer to the DocAve 6 Control Panel Reference Guide.

1. Access the DocAve Agent installation path. The default path is *…\AvePoint\DocAve6\Agent\data\SP2010\Arch* or *…\Program Files\AvePoint\DocAve6\Agent\Data\SP2013\Arch*. Open the file **AgentCommonStorageEnv.cfg** with Notepad.
2. In the configuration file, set the time interval frequency for asynchronously copying extended data to physical devices. Configure the following parameter to set the time interval:
   - **SyncRAIDDeviceInterval = "86400000"** – Enter a value for this attribute to define the time interval used when asynchronously copying extended data. The unit of the time interval is **Millisecond**. The default time interval value of this attribute is 86400000 milliseconds (24 hours), meaning that the data will be asynchronously copied to the physical device every 24 hours.
3. After saving the configuration file, on the server with DocAve Agent installed, navigate to **Start** > **All Programs** > **AvePoint DocAve 6** > **DocAve 6 Agent Tools** > **Agent Restart Service Tool** and restart the Agent Service. Then SharePoint data will be extended asynchronously to physical devices according to the time interval set in the **SyncRAIDDeviceInterval** parameter.

Once asynchronous mode is applied to multiple physical devices, the data extending function follows the logic below:

- If data writes successfully to physical device 1, the written data in physical device 1 is simultaneously copied to physical device 2, 3, 4 … etc. after the specified time interval passes.
- If data fails to write to physical device 1, DocAve attempts to write the data to physical device 2. If data is written successfully, the written data in physical device 2 is simultaneously copied to physical device 1 and 3, 4, etc. after the specified time interval passes.

Configuring the Duration for Keeping Stub Information

To edit the configuration file **AgentCommonStorageEnv.cfg** to set the time period in which the stub information is kept from deletion, complete the following steps:

1. Access the DocAve Agent installation path. The default path is *…\AvePoint\DocAve6\Agent\data\SP2010\Arch* or *…\Program Files\AvePoint\DocAve6\Agent\Data\SP2013\Arch*.
2. Open the file **AgentCommonStorageEnv.cfg** with Notepad.
3. In the configuration file, find **stubKeepDays** under the **StorageManager** element. Set the value of the **KeepDays** attribute to define the time of keeping stub information in the stub database. Then after the corresponding orphan BLOBs are deleted, the stub information will be kept according to the time we specified here, and then will be deleted. The default value is **90** days.
4. Save the modification and close the file.

Keeping Specified Logs

Edit the configuration file and specify the logs that you want to keep.

1. Access the DocAve Agent installation path. The default path is *…\AvePoint\DocAve6\Agent\data\SP2010\Arch* or *…\Program Files\AvePoint\DocAve6\Agent\Data\SP2013\Arch*. Open the file **AgentCommonStorageEnv.cfg** with Notepad.
2. In the configuration file, find **LogSettings** under the **StorageManager** element. Set the value of the **log name** attribute to define the log file names. The log file names contains the names we specified here will be kept from deletion. Go to the **AgentCommonVCEnv.config** file to specify the time of keeping the specified logs. Refer to AgentCommonVCEnv.config for details about configuring time to keep the specified logs.
3. Save the modification and close the file.

Configuring for Converting the Stubs in Recycle Bin to Content

Edit the configuration file for supporting converting stubs that have been deleted in the recycle bin to content:

1. Open the **AgentCommonStorageEnv.cfg** file with Notepad.
2. Find the node **RestoreStubsInRecycleBin="false"**, and change the value from **false** to **true**.
3. Save the modification and close the file.

Defining Office Files for the Scheduled Storage Manager Type Rule

You can edit the file **AgentCommonStorageEnv.cfg** to define the file types that will be considered Microsoft Office files, then these files will have the Scheduled Storage Manager Type rule applied to them.

1. Access the Agent installation path. The default path is *…\AvePoint\DocAve6\Agent\data\SP2010\Arch or …\Program Files\AvePoint\DocAve6\Agent\Data\SP2013\Arch*. Open the file **AgentCommonStorageEnv.cfg** with Notepad.
2. In the configuration file, find **<OfficeFilesSetting fileextension="doc;docx;docm;dotx;dotm;dot;ppt;pptx;pptm;potx;potm;pot;xls;xlsx;xlsm;xltx;**

xltm;xlt;one;onekg;xsn;vsd"/>. The current extensions displayed in the node are the Microsoft Office file extensions. You can add or remove the extensions for your own requirement to define which file types can be considered as Office files for using the Scheduled Storage Manager Type rule.

3. Save the modification and close the file.

AgentCommonVCEnv.config

This configuration file provides management settings that help a Storage Manager job finishes efficiently and flexibly.

On all SharePoint 2010 or SharePoint 2013 servers that have a DocAve Agent installed, browse to the path …*Program Files\AvePoint\DocAve6\Agent\bin* and locate the configuration file **AgentCommonVCEnv.config**.

Configuring the Duration for Keeping Logs

Edit the configuration file and then configure the time to keep selected logs.

1. Access the DocAve Agent installation path. The path is *…\Program Files\AvePoint\DocAve6\Agent\bin*. Open the file **AgentCommonVCEnv.config** with Notepad.
2. In the configuration file, find the **<add value="90" key="agentArchivedLogRetentionDays"/>** node. Change the value. The logs that are specified in the **AgentCommonStorageEnv.cfg** will be kept according to the time we specified here, and then will be deleted. The default value is **90** days.
3. Save the modification and close the file.

Appendix E – Enabling the BLOB Provider Using the Agent Tools

In the event that you are looking to enable the RBS/EBS provider on Web front ends that have improperly installed Agents, this tool can assist you in making sure this vital step can be accomplished.

This section describes the steps required to enable EBS or RBS using the .exe tool. Refer to Configuring the BLOB Provider for more information on BLOB Providers.

It is recommended that you use the Agent Account to run the corresponding .exe tool. Refer to Required Permissions for the permissions needed to run the following two .exe tools.

Enabling EBS

To enable EBS using the tool, complete the following steps:

1. Access the installation path of DocAve Agent. The path is *…\AvePoint\DocAve6\Agent\bin*.
2. Locate **AgentToolSP2010StorageEBS.exe**, right-click on it, and select **Run as administrator**.
3. The following buttons are shown in the tool.
    - In the **Check EBS Status** field:
        - **Check EBS** – Checks if EBS is enabled on the farm.
        - **Enable EBS** – Enables EBS on the farm.
        - **Disable EBS** – Disables EBS on the farm.
    - In the **Install Blob Com** field:
        - **Install** – Installs BLOB Com on the farm.
        - **Uninstall** – Uninstalls BLOB Com from the farm.
    - In the **Check whether the Blob Com has been installed correctly** field:
        - **Check** – Checks the status of the items listed in the left field.

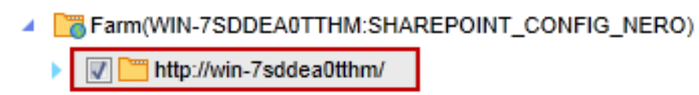
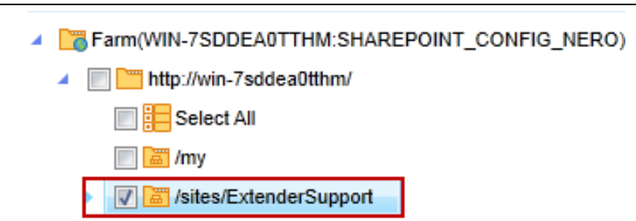
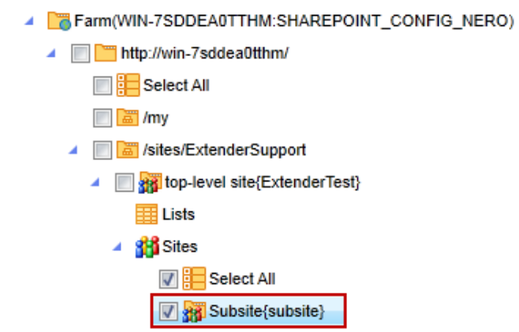
Enabling RBS

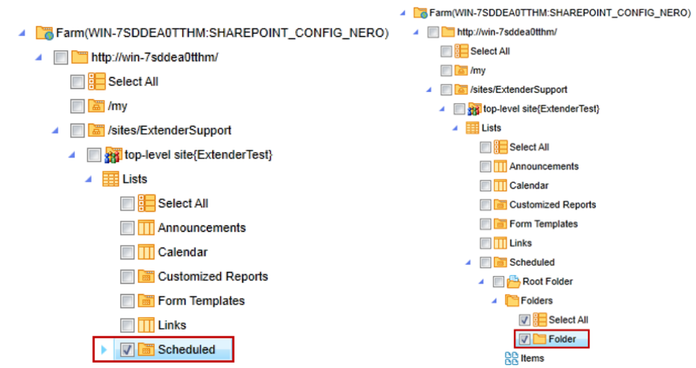
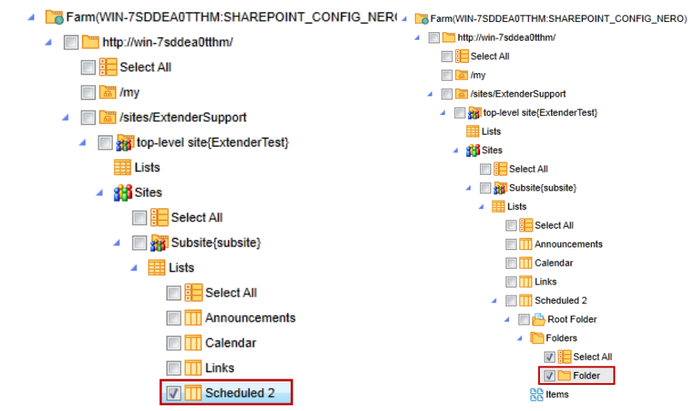
To enable RBS using the tool, complete the following steps:

1. Access the installation path of DocAve Agent. The path is *…\AvePoint\DocAve6\Agent\bin*.
2. Locate **AgentToolSP2010StorageRBS.exe** or **AgentToolSP2013StorageRBS.exe**, right-click on it, and select **Run as administrator**.
3. The following buttons are shown in the tool.
    - In the **Remote Blob Storage Installation Status** field:
        - **Check** – Checks the installation status of RBS in this farm.
        - **Install** – Installs RBS on the farm.
        - **Uninstall** – Uninstalls RBS from the farm.
    - After verifying the RBS installation status using the options above, you can perform the following actions in the **Remote Blob Storage Enable Status** field:
        - **Browse** – Generates a tree structure of the farm. The tree is detailed down to the content database level.
        - **Check** – Select some SharePoint nodes on the tree and click **Check** to check whether RBS is enabled on the selected nodes.
        - **Enable** – Enables RBS on the specified nodes.
        - **Disable** – Disables RBS on the specified nodes. If you select the **Disable via API** checkbox, the RBS will be disabled via the SharePoint API (by invoking the **SPRemoteBlobStorageSettings.Disable method** function), and the RBS will be disabled entirely. If you do not select the **Disable via API** checkbox, only the DocAve RBS provider will be deactivated.

Appendix F – Customizable Support Table

A √ means that the restore is **Supported** at this level, and a blank cell means that the restore is **Not Supported** at this level.

What to Restore / Restore at Level	Content Extended at			What to Select When Restoring
	Document Level	Document Version Level	Attachment Level	
Web Applications	√	√	√	
Site Collections	√	√	√	
Sites	√	√	√	

Libraries/Folders in Library	√	√		
Lists/Folders in List			√	

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