



DocAve® 6 Storage Manager

User Guide

Service Pack 3, Cumulative Update 1

Revision I

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

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 DocAve Manager to communicate with the respective servers, allowing for 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, therefore, 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; they 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.

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
2. Full Control to GAC in order to install Provider dll into GAC.
3. Full Control to **Microsoft SQL Remote Blob Storage** folder to reconfigure maintainer configuration file.

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.

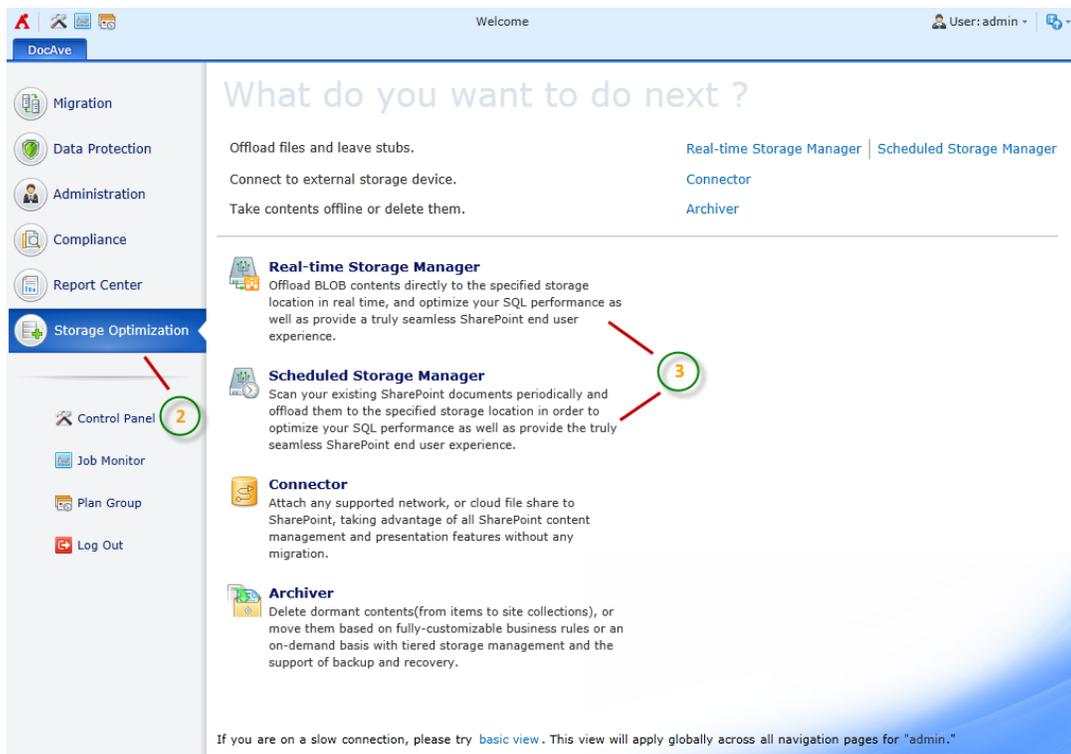


Figure 1: DocAve module launch window.

User Interface Overview

After selecting **Real-Time Storage Manager** or **Scheduled Storage Manager**, the Storage Optimization suite user interface launches with the appropriate **Storage Manager** tab active. This tab displays your farm environment and allows for quick access to a list of Storage Manager features.

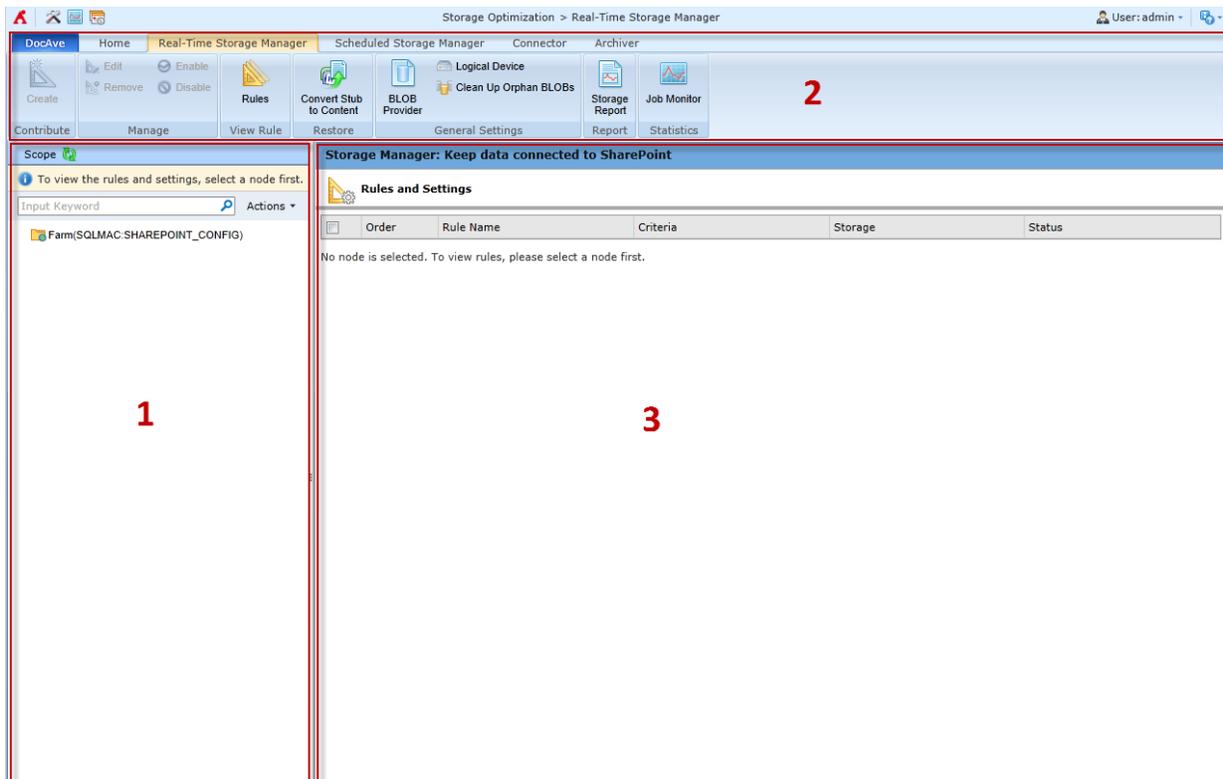


Figure 2: Real-Time Storage Manager user interface.

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.

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 (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 a user-specified external storage. 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 contents 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:** Uploading a document that meets the criteria for Real-Time Storage Manager externalization to a BLOB storage device that has insufficient space results in a failed upload.

***Note:** Since the DocAve RBS Provider is a third-party provider, 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. |
| 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 reference the following “dos and don’ts” to BLOB Provider configurations.

You should:

- Start the wizard verify RBS binaries (DocAve Agents) have been installed and enabled on all SharePoint servers that are running Web services in your farms. This also includes 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; you can view the RBS status and enable the RBS on the selected content database by selecting the checkbox in the **Enable** column, if necessary. The RBS can be enabled at the Web application level and content database level. If enabling RBS 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/disable the EBS Provider immediately (if selecting EBS) or save the RBS provider configuration without enabling/disabling it (if selecting RBS). Click **Finish and Run Now** to save the configuration and then enable/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

Because Storage Manager stores the uploaded BLOB content to an external device (leaving only a stub of the data in SharePoint), 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, EMC Centera, Cloud Storage, Dropbox, DELL DX Storage, Caringo Storage, HDS Hitachi Content Platform, or SkyDrive device, depending upon the external location where the BLOB content is stored.

In addition, DocAve has the ability to treat multiple storage devices (physical devices) as a single logical unit (known as a logical device) when saving backup data. This is especially useful for very large Storage Manager scopes, as many small drives can be combined. A logical device must be defined before creating an archive Storage Manager plan.

***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.

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, you should first define how to clean up orphan BLOBs (optional but recommended) and configure the processing pool (mandatory for Scheduled Storage Manager).

Configuring Orphan BLOB Cleanup

If Storage Manager stubs are removed from SharePoint, the BLOB content remains in the external storage by default. 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. Though this setting is optional, it is recommended that you use this function to better optimize external storage space.

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

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**. The **Enable Clean Up Orphan BLOBs** option appears. Selecting **No** disables the **Clean Up Orphan BLOBs** function for the selected scope. Selecting **Yes** displays 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.
 - **Processing Pool** – Select a processing pool from the drop-down list to manage the Clean Up Orphan BLOBs job of threads for the configuration applied on the selected nodes.
 - **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; the deletion can be delayed using the options **Day(s)**, **Week(s)** or **Month(s)**.

Use this option to prevent the 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, still be accessed normally. When the specified time elapses, the orphan BLOB content is deleted.

***Note:** It is not recommended that you use the SQL Server RBS Maintainer tool 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 selected 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.
 - **Not overwrite** – When a conflict occurs, **Not overwrite** 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 and delayed deletion 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 fairly resource-intensive, so running multiple Storage Manager jobs simultaneously may affect the performance of the server. To avoid this condition, 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**.

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 a specified 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.

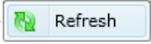
Creating Real-Time Storage Manager Rules

***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 level and site collection level. If both the RBS provider and the EBS provider are enabled, the RBS provider will be used.

***Note:** Insufficient space on the BLOB storage device results 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 ( Refresh) 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. **Database Selection** (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. **Criteria** – 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. **Storage** – 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 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 off-loaded, 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 re-apply the same rules and settings repeatedly. This method should be used if multiple nodes in your farm require the same configurations and/or BLOB off-load 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; that is, configurations or criteria that are not likely to be re-used elsewhere in the farm.

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. When finished, 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. When finished, 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. When finished, 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 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** –Uses the settings from the Storage Manager rule selected from the drop-down list. This option expands the scope of the original rule. Select this option to re-use an existing Storage Manager rule in a different location.

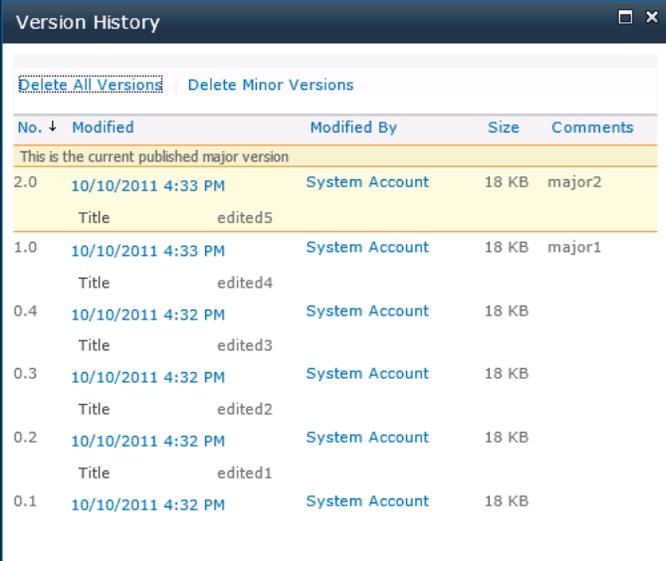
- **Copy from an existing rule** – Copies the settings from the Storage Manager rule selected from the drop-down list. Update the rule if necessary, and save this rule with a new name.
- **Create a new rule** – Creates a new Storage Manager rule. Enter a name for the new rule and an optional **Description**.

***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. **Criteria** – 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 |
|  <p>*Note: The current version is always kept in the SharePoint List/Library when this rule is used.</p> | | | |
| Parent List Type ID | √ | √ | √ |
| Last Accessed Time | √ | √ | √ |

***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.

- 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 default logic is **And**.
 - **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. **Storage** – Specify 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, 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 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. 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.
9. Continue to [Configuring Settings](#) for the created 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.

Configure the following options:

1. Specify 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.
2. **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.
3. **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.
4. **Notification** – Configure e-mail notification settings. Select a previously-configured notification profile from the **Select a notification profile address and settings** drop-down list, or create a new e-mail notification profile by clicking the **New Notification** link. Click **View** to view detailed information for selected notification profile.

***Note:** The **Send E-Mail Settings** must be configured in Control Panel in order to send e-mail notifications using DocAve. For more information, refer to the [DocAve 6 Control Panel Reference Guide](#).

5. **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.

6. 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**).
7. 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.

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

To apply a created profile to a selected 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 to 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 rules are also 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 display below the **Configure Rules and Settings** section of the **Rules and Settings** workspace.
2. If desired, create more Scheduled Storage Manager rules or specify which rule will run first by changing the number in the **Order** field. Ensure a rule is checked first by changing its **order**. To re-order 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 rule that is 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/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 re-applying if necessary.

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 created 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 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 created rule is no longer useful for the nodes in the farm tree, you can remove this rule from the node. Use the **Remove** feature to simplify rules management and lessen unnecessary created rules in the nodes.

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 re-applying if necessary.

Enabling and Disabling Rules

Once rules are created and applied to a node, they can be enabled (to be included in a run) and disabled (to be omitted from a run) 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 rule in the **Rules and Settings** pane reads **Enabled** by default. In some situations, it may be desired 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 created 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 in the first (**Rule Name**) column and includes several other columns: **Rule Name**, **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 **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 page 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 in the first (**Scope**) column 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 **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 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 page backwards.

Viewing Details of the Created Rules

This function allows you to view detailed information on created Storage Manager Real-Time/Scheduled rules. To view Storage Manager Real-Time/Scheduled 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/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 supports to collect the data information from the content databases and show these collected data information in the storage report pane or in the report that is downloaded in the specified file system location. The collected information of these data includes SQL data, extended BLOB, orphan stubs and orphan BLOBs. The sections below describe how to create a profile and run the storage report to collect the data information and also describe how to download the storage report in the specified file system location to obtain the detailed collected data information.

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 data collection 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 on the selected nodes.
 - **Profile Name** – Enter the profile name, followed by an optional **Description**.
 - **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 both the information of SQL data that are stored in the SQL databases and the information of BLOB data that are extended to the specified file system location after starting the corresponding job for this created Storage Report profile.
 - **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 for this created Storage Report profile.
 - **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 displayed in the downloaded **Detail** report.
 - **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 for this created Storage Report profile.
 - **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 **OK and Run Now** to save and run the job of the created storage report profile. 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 existing storage report profiles displayed in the **Storage Report** page, and then click **Run Now** in the **Action** group on the ribbon. Then, 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** and **Orphan BLOB 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 **Mode** group on the ribbon. By default, 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. Then, 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** and **Device Mode**. For **Content Database Mode**, the bar graph shows the size of orphan BLOBs that are extended from the specified SQL databases. For **Device Mode**, the store locations of the orphan BLOBs can be viewed by clicking the corresponding bar in the graph.

Downloading Storage Report

To view detailed information about the data information collected from the specified 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 **Mode** 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, select **CSV** or **XLS** file format from the drop-down list in the **Report Format** field, and then click **OK** to start to download the report.

Managing Stubs

Once a Storage Manager job is run and 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 Stub 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 Stub 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 on 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.
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 [Customizing the Number of Storage Manager Job Threads](#) 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.

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.

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 specified 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.

For more information, refer to the [DocAve 6 Supplementary Tools](#) user guide.

Checking the Job Status

In the **Real-Time Storage Manager** tab or **Scheduled Storage Manager** tab, 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](#).

DocAve Storage Manager Use Cases

The following use cases apply the procedures described in this guide to several real-world situations. These use cases are intended to give the user an idea of when and why one would use common DocAve Storage Manager functionality. These situations assume that the DocAve platform and applicable modules have been installed successfully, and that the prerequisite conditions are met (appropriate permissions for the Agent account, creation of logical devices, etc.).

DocAve Storage Optimization Suite in Conjunction with Tiered Storage

The DocAve Storage Optimization Suite enables SharePoint administrators to better manage data storage using hierarchical storage management (HSM). Moving data to an appropriate tier of storage lowers storage costs and improves SQL Server performance. With DocAve Storage Manager, the data can be extended to an appropriate tier, depending upon how frequently data is accessed or modified in SharePoint. An example of a tiered storage structure as it relates to extended SharePoint content is below:

- Content modified or accessed frequently is extended to Tier 1 storage (most expensive, exceptional system performance).
- Content that has not been modified for 6 months or more is extended to Tier 2 storage (less expensive than Tier 1, moderate system performance).
- Content that has not been modified for over 2 years is extended to Tier 3 storage (the cheapest of the three tiers).
- When there is no longer an immediate need for content to be accessible, use DocAve Archiver to move the data to NAS or Cloud storage.

To set up this tiered storage structure, Joe (the SharePoint administrator) must first determine the threshold size of data to leave in SQL. As [DocAve's whitepaper](#) explains, BLOBs greater than 512 KB or 1 MB should be externalized. Doing so improves performance for both reads and writes (given similar performance characteristics of the underlying storage platform), whereas access to a document smaller than 256 KB is faster with the BLOB stored in the SQL Server content database.

Given this information, Joe selects the target Web application and sets up the following Real-Time Storage Manager rule.

***Note:** Joe can also apply Storage Manager rules to content that was connected with [DocAve Connector](#).

Storage Manager: Keep data connected to SharePoint



Rules and Settings

http://win-temfqhs9fq4/

| <input checked="" type="checkbox"/> | Order | Rule Name | Criteria | Storage | Status |
|---------------------------------------------------|-------|-------------------------------|----------------|---------|---------|
| <input checked="" type="checkbox"/> | 1 | Active Content Tier 1 Storage | Size >= 512KB; | T1 LD | Enabled |
| Details: | | | | | |
| Criteria: File size equal to or larger than 512KB | | | | | |
| Storage: T1 LD | | | | | |
| Compression: None | | | | | |
| Encryption: None | | | | | |
| Database Selection: WSS_Content | | | | | |
| Include New Content Databases: Yes | | | | | |

Figure 3: Extending active content larger than 512 KB.

Joe then uses Scheduled Storage Manager to configure rules for less-frequently accessed data:

| <input checked="" type="checkbox"/> | Order | Rule Name | Logical Device | Status |
|--------------------------------------------------|-------|-------------------------------|----------------|---------|
| <input checked="" type="checkbox"/> | 1 | Active Content Tier 2 Storage | T2 LD | Enabled |
| Details: | | | | |
| Criteria: | | | | |
| 1.Document, Size, >=, 512KB; | | | | |
| 2.Document, Modified Time, Older Than, 6Month(s) | | | | |
| Criteria Filters: (1 And 2) | | | | |
| Storage: T2 LD | | | | |
| Compression: None | | | | |
| Encryption: None | | | | |

Figure 4: Moving content older than 6 months to tier 2 (T2) storage.

Lastly, Joe configures a rule for Scheduled Storage Manager to extend old content:

| <input type="checkbox"/> | Order | Rule Name | Logical Device | Status |
|-------------------------------------------------|-------|-------------------------------|----------------|---------|
| <input type="checkbox"/> | 1 | Active Content Tier 2 Storage | T2 LD | Enabled |
| <input checked="" type="checkbox"/> | 2 | Old Content Tier 3 Storage | T3 LD | Enabled |
| Details: | | | | |
| Criteria: | | | | |
| 1.Document, Size, >=, 512KB; | | | | |
| 2.Document, Modified Time, Older Than, 2Year(s) | | | | |
| Criteria Filters: (1 And 2) | | | | |
| Storage: T3 LD | | | | |
| Compression: None | | | | |
| Encryption: None | | | | |

Figure 5: Moving content older than 2 years to tier 2 (T3) storage.

Now that he's created rules for active data, Joe wants to configure a rule that manages "old" data (data that has not been modified for 3 years or later). For this content, Joe configures an [Archiver rule](#) that moves the old data to NAS storage.

By using a combination of Storage Manager and Archiver (and even incorporating “connected” content into his storage management scope), Joe is able to increase SQL Server storage space and improve SQL Server performance. He uses Storage Manager to disseminate content to various tiers of storage, dependent upon how frequently the data is modified. Using information gleaned from AvePoint’s whitepaper on externalizing BLOB storage, Joe chooses to extend BLOBs that are 512 KB or greater. Finally, Joe configures Archiver to move the data to NAS (or Cloud) storage at the end of the content’s lifecycle, ensuring proper and timely archiving of documents within his scope.

DocAve Storage Optimization and Data Protection Suites in Compliance Environments

DocAve Storage Manager is not only used to better manage SharePoint data storage, it is also advantageous in a compliance environment. When using SharePoint in a compliance/regulated environment, it is essential that:

- All versions of active, editable content are kept in a compliance storage device where information, once written, cannot be modified (WORM storage or Dell DX Storage, for example).
- Active documents that should not be edited are preserved and immutable.
- Non-active documents are archived properly and remain preserved and immutable, but only for as long as necessary.

While the latter requirement can be accomplished using DocAve Archiver (to be discussed later in this section), the two former requirements can be accomplished using Scheduled Storage Manager. To that end, Scheduled Storage Manager can be configured to run routine searches on SharePoint content databases for data that matches specified criteria. When such data is found, Scheduled Storage Manager moves the real data to compliance storage while creating a data stub in SharePoint. So, in addition to increasing SQL storage space, Scheduled Storage Manager ensures that there will always be a record (or “breadcrumb”) of every document version.

To establish this system using the DocAve Storage Optimization Suite, Joe (the SharePoint administrator) first selects the Web application to which he wants to create and apply a rule. Joe must decide what criteria he will use to identify the data that should be “extended” from SharePoint to external BLOB storage. Knowing that his company classifies sensitive legal contract documents using a **Contract** Content Type in SharePoint, Joe creates the following criteria rule in the Scheduled Storage Manager rule creator:

| | Level | Rule | Condition | Value | |
|---|----------|--------------|-----------|----------|--|
| 1 | Document | Content Type | Matches | Contract | |

With this criteria rule, Scheduled Storage Manager will externalize all SharePoint content that is classified with the **Contracts** Content Type. In the Rules and Settings pane, Joe configures Scheduled Storage Manager to run on a schedule of every evening. This configuration ensures that:

- All **Contract** documents (including newly-uploaded ones) are extended to compliance storage.
- The Scheduled Storage Manager plan will run during business off-hours, so the plan will not affect SharePoint performance during work hours.

In addition, Joe configures Data Protection Suite module [Granular Backup and Restore rules](#) to back up the Web application content on a nightly basis. By configuring rules for both the Storage Manager and

Granular Backup and Restore modules, Joe is now guaranteed to have a record in compliance storage of all active content versions.

***Note:** The Storage Manager BLOBs also can be backed up and restored through DocAve Platform Backup and Restore.

Lastly, to further manage compliance data in storage, Joe wants to remove old **Contract** Content Type documents from SharePoint. Joe configures an [Archiver rule](#) to archive these documents if their modification date is older than 6 months. Joe chooses to run this Archiver job on a weekly basis.

By leveraging the DocAve Storage Optimization Suite and Data Protection Suite functionality, Joe is able to manage compliance data storage appropriately. Scheduled Storage Manager extends **Contract** Content Type documents to compliance storage. Regular Granular Backup and Restore backups ensure a record of all content versions, even if the content is deleted from SharePoint. Finally, DocAve Archiver removes the data stub from SharePoint, removes the real data from compliance storage, and archives the content in compliance storage.

Copying Content Database from Source Farm to Destination Farm

When copying the BLOBs extended from the specified 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** to achieve to copy the BLOBs to the specified destination SharePoint farm. Meanwhile, the corresponding stubs information in the destination stub database is also changed for supporting the copied BLOBs to be normally used.

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.DefaultLogicalDeviceName=''** – 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.DefaultLogicalDeviceName='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. 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-DASStorageManagerLogicalDevice –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 the BLOBs that are successfully copied to the destination.

Viewing the Stubs Information

This function enables you to view the detailed information of the stubs specified in the SharePoint farm by using command lines. To configure the settings of viewing the stubs information 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 in 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.

Notes for Customers Upgrading to SharePoint 2013

If you are running DocAve Storage Manager with SharePoint 2010 and plan on upgrading to SharePoint 2013, take the following information into consideration when planning your upgrade:

- Customers who have deployed EBS for SharePoint 2010 will not be able to upgrade their databases to SharePoint 2013. Because Microsoft no longer supports EBS, databases marked as having externalized content in EBS will not be able to connect. Customers using EBS must upgrade first to RBS using the SMSP EBS to RBS 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 other compatible versions of SQL Server).
- Customers who have deployed either Real-Time or Scheduled Storage Manager rules for SharePoint 2010 and have externalized content using RBS will be able to upgrade their databases to 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.
 - Customers will need to create new Storage Manager plans and policies for their 2013 farm to capture new RBS content.
 - 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-DB configuration wizard in the product. The existing Storage Manager BLOBs can still access the externalized content.

***Important:** Microsoft's best practices recommends setting the 2010 environment to a read-only state prior to upgrading to 2013. The reason this 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).

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/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.

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 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 document versions in the specified 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.

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 Real-Time or 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 the actions on it, 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.

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 |
| 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 Stub to Content | C | | | | |
| BLOB Provider | B | | | | |
| Logical Device | T | | | | |
| Clean Up Orphan BLOBs | O | | | | |
| 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 (Scheduled Rules Page) | Z | Rule Based | R | Delete | D | |
| | | Scope Based | S | Remove | D | |
| | | View Details | V | Cancel | C | |
| | | Delete | D | | | |
| | | Close | X | | | |

Convert Stub to Content

| Functionality Name and Hot Key | | | | | |
|--------------------------------|---|--------|--|---|--|
| Convert Stub Page | U | OK | | O | |
| | | Cancel | | C | |

Storage Report

| Functionality Name and Hot Key | | | | | | |
|--------------------------------|---|------------------------|--|--|---|--|
| Report Profile Manager | P | Report Profile Manager | | | P | |
| | | Dashboard | | | D | |
| | | Create | | | N | |
| | | View Details | | | V | |
| | | Edit | | | E | |
| | | Delete | | | X | |
| | | Run Now | | | R | |
| | | Job Monitor | | | J | |
| | | Close | | | C | |
| Dashboard | D | | | | | |

| Functionality Name and Hot Key | |
|--------------------------------|---|
| Export | E |
| Job Monitor | J |
| 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 Stub to Content | V | | | | |
| BLOB Provider | B | | | | |
| Logical Device | T | | | | |
| Processing Pool | F | | | | |
| Clean Up Orphan BLOBs | O | | | | |
| Profile Manager | X | | | | |
| Storage Report | SP | | | | |
| Job Monitor | J | | | | |

Profile Manager

| Functionality Name and Hot Key | | | | | | | | | | | |
|--------------------------------|---|--------|---------|---------------------|----------|--------|--------|---|---|--------|---|
| Profile Manager Page | M | Create | N | Create Profile Page | N | Create | | | M | OK | O |
| | | | | | | | | | | Cancel | C |
| | | | Edit | E | Continue | T | OK | O | | | |
| | | | | | | | Cancel | C | | | |
| | | | Remove | R | | | | | | | |
| | | | Enable | P | | | | | | | |
| | | | Disable | Q | | | | | | | |
| | | | Back | B | | | | | | | |
| | | | Next | N | | | | | | | |
| | | | Finish | F | | | | | | | |
| | | Cancel | C | | | | | | | | |

| Functionality Name and Hot Key | | | | | | | | | | | | | | |
|--------------------------------|--------------|---|-------------------|---|---------|---|-----------|---|---------|---|----------|---|--------|---|
| | 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 |
| | | | | | | | | | | | | | 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 | | | | | | | | | | | | | |

Storage Report

| Functionality Name and Hot Key | | | |
|--------------------------------|---|------------------------|---|
| Report Profile Manager | P | Report Profile Manager | P |
| | | Dashboard | D |
| | | Create | N |
| | | View Details | V |
| | | Edit | E |
| | | Delete | X |
| | | Run Now | R |
| | | Job Monitor | J |
| | | Close | C |
| Dashboard | D | | |
| Export | E | | |
| Job Monitor | J | | |
| Close | C | | |

Processing Pool

| Functionality Name and Hot Key | | | | | | | | |
|--------------------------------|---|--------------|---|--------|---|--------|---|--|
| Processing Pool Page | P | 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 | × | × | Inherits the farm’s stub database. | Inherits the farm’s stub database. |
| Only a Web Application Node | Only the stub database of the selected Web application node is configured. | × | × | 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 |
| Only a Content Database Node | × | Only the stub database of the selected content database node is configured. | × | × |
| Farm Node and a Web Application Node | Only the stub databases of the farm node and the selected Web application node is configured. | × | 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 | × | Only the stub databases of the farm node and the selected content database node is configured. | Inherits the farm's stub database. | Inherits the farm's stub database. |
| Web Application Node and a Content Database Node | Only the stub databases of the selected Web application node and content database node is configured. | Only the stub databases of the selected Web application node and content database node is configured. | × | 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. |
| Farm Node, a Web Application Node and a Content Database Node | Only the stub databases of the farm node, the selected Web application node, and the content database node are configured. | Only the stub databases of the farm node, the selected Web application node, and the content database node are configured. | 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**.

Customizing the Number of Storage Manager Job Threads

You can customize the number of threads to be used in **Scheduled Storage Manager** jobs 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.

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 sync data type of the logical device for a Storage Manager rule 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 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.

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, follow the steps below.

***Note:** The EBS .dll files are reloaded when you enable EBS, so an IIS restart is required.

1. Access the installation path of DocAve Agent. The default 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. You can choose to restart the IIS now or later in the pop-up.
 - **Disable EBS** – Disables EBS on the farm. You can choose to restart the IIS now or later in the pop-up.
 - In the **Install Blob Com** field:
 - **Install** – Installs BLOB Com on the farm. You can choose to restart the IIS now or later in the pop-up.
 - **Uninstall** – Uninstalls BLOB Com from the farm. You can choose to restart the IIS now or later in the pop-up.
 - In the **Check whether the Blob Com has been installed correctly** field:
 - **Check** – Checks the status of the items listed in the left field.

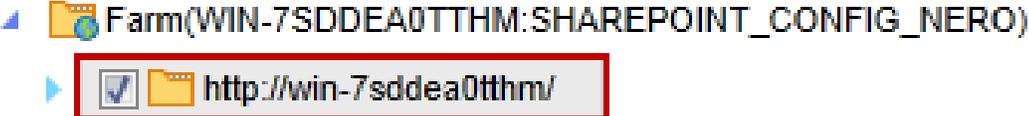
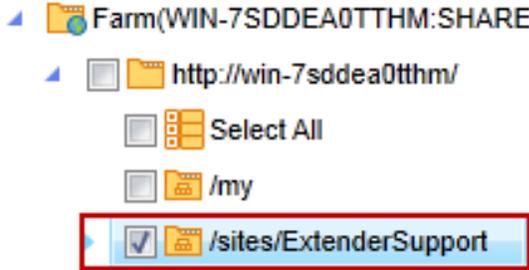
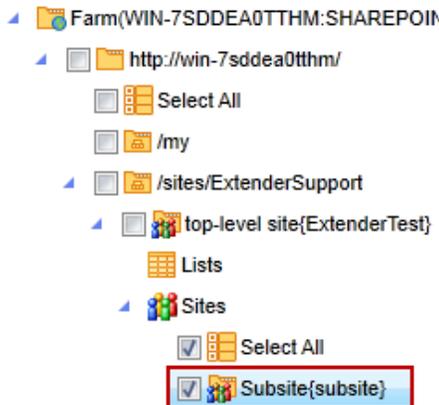
Enabling RBS

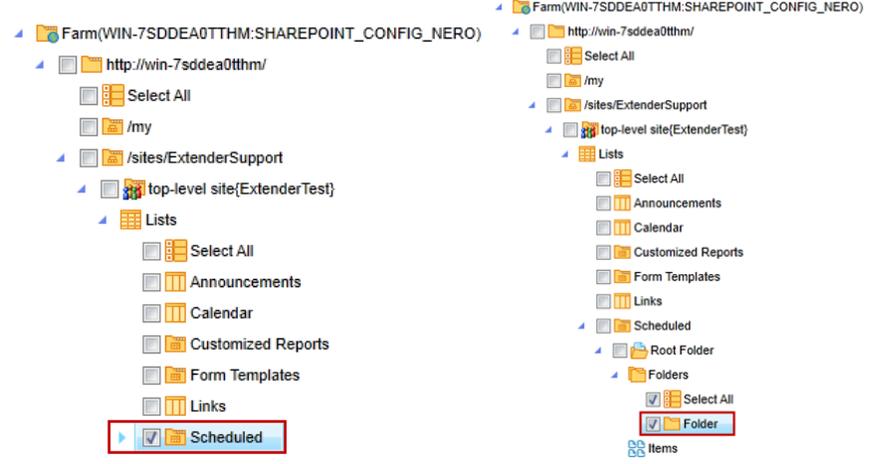
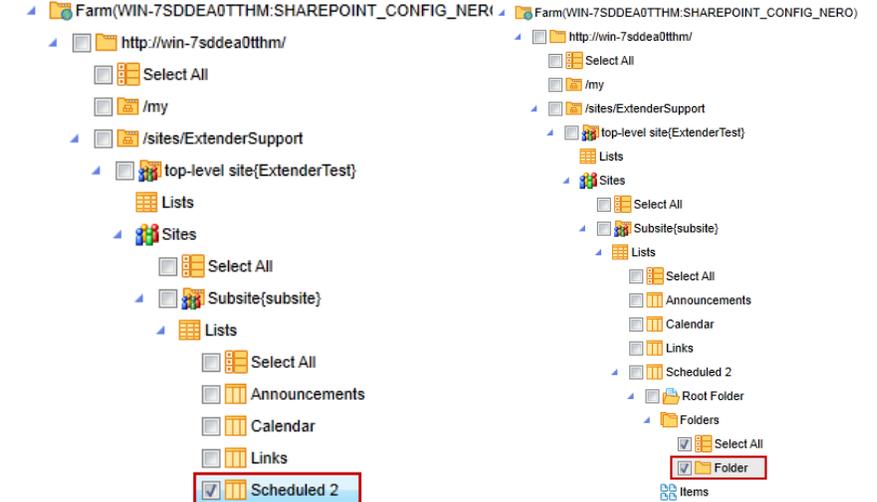
To enable RBS using the tool, complete the following steps:

1. Access the installation path of DocAve Agent. The default 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.

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 | √ | √ | |  <p>The screenshot shows a SharePoint library view for a farm named 'Farm(WIN-7SDDEA0TTHM:SHAREPOINT_CONFIG_NERO)'. The view is filtered to show 'Scheduled' items. A red box highlights the 'Scheduled' folder icon in the list view.</p> |
| Lists/Folders in List | | √ | |  <p>The screenshot shows a SharePoint list view for a farm named 'Farm(WIN-7SDDEA0TTHM:SHAREPOINT_CONFIG_NERO)'. The view is filtered to show 'Scheduled 2' items. A red box highlights the 'Scheduled 2' item icon in the list view.</p> |

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