



IBM System Storage™



IBM TSM for Microsoft Office SharePoint Server 2007 Backup and Restore Solution

IBM System Storage DS4000 Series &
AvePoint DocAve 4.1



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Introduction

Many customers rely on Microsoft Office SharePoint Server (MOSS) 2007 as a key business application, and even short periods of unexpected downtime can seriously affect company productivity and collaboration. Tight integration with Microsoft Exchange Server 2007 offers customers enhanced collaboration features by leveraging SQL as the preferred data repository versus traditional public folders. Companies of all sizes are using the advanced data management & web integration features of MOSS 2007 as well, creating large content repositories serviced by front-end portals. Workflow processes are also greatly enhanced, particularly when clients connect with Office 2007 applications, due to the greatly enhanced & seamless integration capabilities of MOSS 2007.

Because of this ability to easily store and manage multiple application databases, data repositories, and web portals serviced through a variety of interfaces, the ability to backup and restore disparate data types, at a granular level, efficiently and consistently is essential. The demand for accurate backup and restore is growing as companies store more of their business-critical data on SharePoint Server 2007. In addition, many organizations are moving towards SharePoint as a replacement for traditional file servers.

IBM® TSM (Tivoli Storage Manager) for SharePoint Server 2007 provides site, subsite, and item-level backup and restore granularity down to the single document level. Granular restore capability is the key to quicker restore times with SharePoint. When TSM is combined with a reliable, scalable disk subsystem like the IBM System Storage™ DS4000 series, the result is a highly effective solution that is ready to help your organization meet demanding backup and recovery time objectives, without added administrative complexity.

IBM® System Storage™ DS4000 series

The IBM® System Storage® DS4000 series storage arrays target medium to large-sized enterprises seeking high performance, reliability, and scalability combined with support for optional advanced copy and replication features such as FlashCopy®, VolumeCopy®, and Remote Mirror.

Note: The solution outlined in this document, is available on all IBM System Storage™ disk products.

The IBM DS4000 series delivers breakthrough disk performance and outstanding reliability for demanding applications in data-intensive computing environments. In addition, the DS4000 is designed to offer investment protection and flexible, advanced functions by providing the following standard features:

- **Scalable storage:** Modular expansion enclosures provide additional disk capacity as your enterprise grows.



- **Enterprise-class data protection:** Dual redundant components, multiple RAID levels, LUN masking, battery-backed cache, hot-swappable components, non-disruptive concurrent code loads, and enhanced management options.
- **Fast connectivity:** 2 or 4GB Fibre Channel connectivity provides fast, responsive access to data.
- **Centralized management:** Storage Manger software provides centralized web-based or command line storage management. The web-based interface simplifies the configuration of new volumes and drive mappings, performance tuning, routine maintenance, and the dynamic addition of new disk enclosures or drives.

The DS4000 offers additional, optional features as well, including:

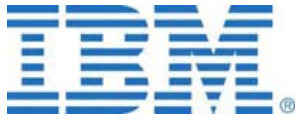
- **IBM DS 4000 FlashCopy®:** Flashcopy creates an immediate single-point-in-time copy of all stored data that requires only a fraction of the original disk space. This feature fully integrates with the native SharePoint VSS writer, through the array's VSS hardware provider, providing advanced data management, disaster recovery, and backup/restore options.
- **VolumeCopy:** VolumeCopy provides the ability to create a full VolumeCopy of a point-in-time logical drive generated by FlashCopy on a single DS4000.
- **Enhanced Remote Mirror:** This feature includes Global Mirror with Asynchronous Write-order Consistency, which is critical for mirroring multi-LUN applications. It also includes Global Copy with Asynchronous, and Metro Mirror with Synchronous replication.

DS4000 Storage Management software

The DS4000 Storage Manager software is used for the following functions:

- Configuring arrays and logical drives
- Assigning logical drives to storage partitions
- Replacing and rebuilding failed disk drives
- Expanding the size of arrays and logical drives
- Converting from one RAID level to another.

Storage Manager also allows you to perform troubleshooting and management tasks, such as checking the status of the Storage Server components or updating the firmware of RAID controllers, for example.



Overview of components

The IBM DS4000 Storage Manager software is packaged as two separate groups of software:

- The host-based software, which consists of all the software components that must be installed on a host system using the Storage Server or a management station controlling the server.
- The controller-based software, which is all of the firmware that is required for the different components of the Storage Server.

Host-based Storage Manager software components

The host-based Storage Manager software components include the following:

- **Storage Manager Client.** The SMclient component provides the graphical user interface (GUI) for managing Storage Subsystems through the Ethernet network, or from the host computer. The command-line interface (SMcli) is also packaged with this component, and provides command line access to perform all management functions.
- **Storage Manager Agent.** This component allows in-band management of the DS4000 Storage Server. It is a required component when using the VSS storage hardware provider. This agent allows you to manage your Storage Server using the same path as the I/O requests coming from the system, instead of using an Ethernet connection.
- **Storage Manager Utilities.** This package contains command line tools that provide viewing or dynamic discovery of logical drives, and flushing of buffers for FlashCopy operations.
- **Multipathing.** Includes RDAC or MPIO compliant multi-pathing software. This is a Fibre Channel I/O path failover and load balancing driver that is installed on host systems accessing data on the DS4000 series storage array.

Installing the Storage Manager software

This section covers the installation of the DS4000 Storage Manager software on a Windows Server 2003 host. After the installation is completed, you must also verify that all of the components installed successfully.

Important Note: There are two separate installation packages: One is for Windows 2000, and the other is for Windows Server 2003. If you are setting up a Windows XP management station, you should use the Windows 2003 package.



The host software for Windows Server 2003 includes the following components:

- SMclient
- RDAC / MPIO driver
- SMagent
- SMutil

Installation steps

Important Note: If you want to use the Event Monitor with SNMP, you have to install the Microsoft SNMP service first, because the Event Monitor uses this functionality.

1. Log on to the server with an account that has full administrative rights. (Administrative rights are required to install new software and drivers.)
2. Locate and run the installation file from the appropriate CD-ROM directory or from the file that you have downloaded from the IBM Web site. Accept the terms of the License Agreement; this is required to proceed with the installation.
3. Select the installation target directory. The default installation path is **C:\Program Files\IBM_DS4000**, but you may select another directory.
4. Select the type of installation that is appropriate for your configuration. The installation type you select defines the components that will be installed. For example, if you select Management Station, then the RDAC/MPIO and Agent components will not be installed, because they are not required on the management computer. In most cases, you would select either the Management Station or Host installation type. (Two additional choices are also offered, Full and Custom Installation.)
5. The next dialog box asks about automatically starting the Storage Manager Event Monitor. This depends on your particular management setup: If there are several management machines, the Event Monitor should only run on one.
6. Review the Pre-Installation Summary dialog box and verify that you have selected the correct installation options. Click **Install** to begin the installation.
7. After the installation process has completed, restart the computer.



Verifying the installation

The installation process produces a log file and places it into the directory where Storage Manager is installed. The file name is **IBM_DS4000_InstallLog.log**.

Should you encounter problems during the installation process, review this file for troubleshooting information and additional details regarding any error messages.

Verifying the SMagent installation

This section provides instructions on how to verify that SMagent has been correctly installed for the Windows operating systems.

Before proceeding, ensure that all storage subsystems are connected to the host computer and that they are powered on.

1. Click **Start** -> **Administrative Tools** -> **Services** to open the Services window.
2. Scroll through the list of services until you find **IBM DS4000/FAStT Storage Manager Agent**.
3. If **IBM DS4000/FAStT Storage Manager Agent** is not started, right-click it and then select **Start**.

Note: Make sure the **Startup Type** is set to **Automatic**. If you are installing the host server and you do not plan to use the host-agent software to manage one or more Storage Subsystems, you can set the Startup Type to Manual.

Verifying the SMutil installation

To verify that you have installed the SMutil correctly, browse to the directory where SMutil is installed. This would typically be **C:\Program Files\IBM_DS4000\Util**.

Verify that the directory contains the following files:

- hot_add.exe
- SMdevices.bat
- SMrepassist.exe



Storage sizing and configuration

In order to fully leverage the performance capabilities of the IBM System Storage™ DS4000 series, consideration needs to be given to the logical configuration of the unit. Because most of SharePoint's data is stored within SQL Server (with the exception of SharePoint index files), the LUN setup and tuning recommendations are similar to our SQL server recommendations. As a result, the storage is normally configured with a focus on storage space rather than I/O performance.

Note: For more information on configuring IBM® System Storage™ for use with Microsoft SQL Server 2005, please refer to the *SQL Server 2005 with IBM® System Storage™ DS8000 & DS4000 Best Practices Guide*, available at:

<http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP101126>

It is important during the planning stages to understand how large the SharePoint index files can become, particularly if external file servers are being indexed as content sources. SharePoint indexes can grow up to 50% of the size of the content being indexed. If indexing is pointed at a file server with 800GB of data, your SharePoint index file could be as large as 400GB for that content source.

From a backup and restore perspective, many organizations do not backup the index files because they are regularly refreshed, or they can simply be rebuilt. If demanding RTO requirements include SharePoint search capability however, then the index should also be backed up.

The SharePoint indexes are not backed up as part of the TSM for SharePoint site backups. If index backups are required, then a separate file level TSM backup must be configured.

In order to minimize application and user impact:

- Backups should occur when application is least active.
- Volume creation & storage sizing for maximum performance should follow published Microsoft® guidelines. Contact Microsoft® for further information.

Note: For additional information on configuring your IBM® DS4000 for maximum performance, please refer to the *IBM® System Storage DS4000 Series: Performance Monitoring and Tuning Redbook*, which can be found at:

<http://www.redbooks.ibm.com/abstracts/sq246363.html?Open>



Tivoli Storage Manager for SharePoint

Overview

The Tivoli Storage Manager for SharePoint solution uses the AvePoint DocAve 4.1 software, which fully integrates with the TSM backup server.

DocAve is an Enterprise scale, item level backup and restore solution for MOSS 2007. Combined with the powerful TSM backup server, all SharePoint backup operations can be completely automated.

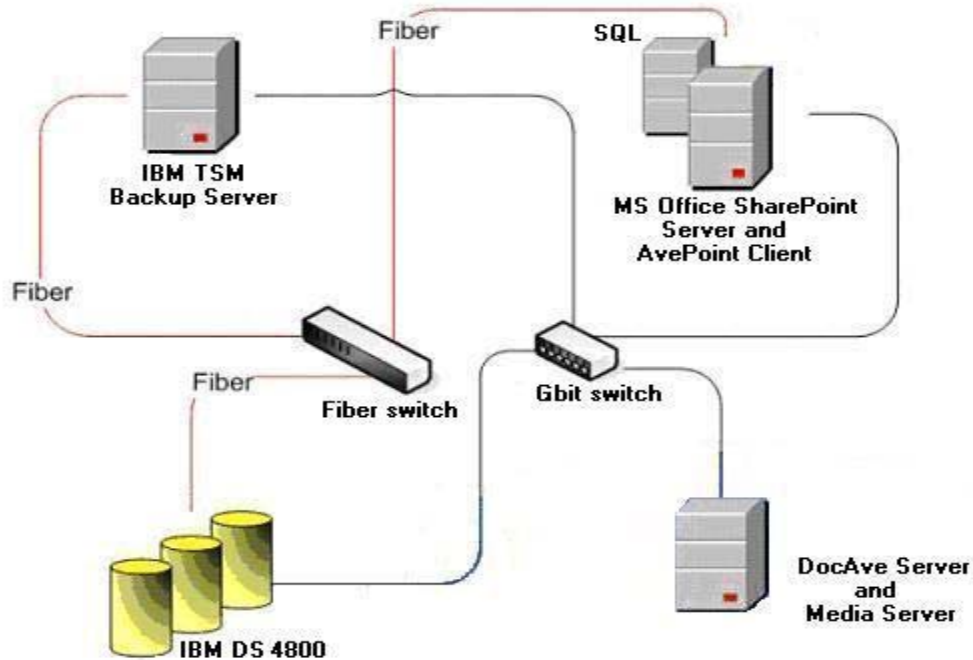
There are three DocAve modules required by the solution; the DocAve Server, DocAve Media Server, and the DocAve Client.

The following SharePoint backup and restore methods are supported:

- **Site Level:** Backs up and restores the entire site collection.
- **Sub-Site Level:** Backs up and restores an entire sub-site.
- **Item Level:** allows selective backup within a site or sub-site and provides granular restore options down to the item level. This is the most powerful and often used backup method in an enterprise environment.
- **Full, Incremental, or Differential:** Each of these backup methods are available for each level (Site, Sub-Site, and Item Level) of backup.

Real-time restores written directly onto a production SharePoint server are possible. Cross restores to an alternate server on the network are also supported. DocAve uses the terms “in place” for restores to the original server location, or “out of place” for restores to an alternate server

Automated data pruning, and a web-based centralized administration console simplifies scheduling, monitoring, reporting, and account management.



TSM server requirements

This solution requires some specific policy settings on the TSM backup server (described later in this document). The TSM server should be installed and configured first, before installing the DocAve software, because the DocAve installation will request information and query the TSM backup server.

The DocAve Media Server communicates with the TSM Backup Server, and stores the backup data in the TSM server's backup pools. In this configuration, only indexing data is stored on the Media Server for catalog purposes, while the actual backup data resides on the TSM server.

Note: The installation and configuration of a TSM backup server is beyond the scope of this document. However, detailed information on the subject can be found in the *IBM® Tivoli Storage Manager for Windows Administrator's Guide* available at the following URL:

<http://publib.boulder.ibm.com/tividd/td/IBMTivoliStorageManagerforWindows5.2.2.html>



TSM server policy requirements

DocAve uses unique names for all backup objects stored on the TSM server. Because of this, all DocAve backup objects are considered active backup objects and won't expire through the Tivoli Storage Manager expiration policies. As a result, DocAve requires the following special Tivoli Storage Manager settings:

Management classes:

Tivoli Storage Manager uses management classes to manage backups on the Tivoli Storage Manager server. If the default management class for the policy domain in which the DocAve node is registered is not the one to be used to manage the SharePoint backup data, a different management class can be specified by adding the following statement to the **dsm.opt** file used by DocAve:

```
include * <management class name>
```

Note: DocAve stores all objects as backup objects within Tivoli Storage Manager storage pools, so an archive copy group is not required (although it can exist).

See your Tivoli Storage Manager administrator, or the Tivoli Storage Manager Administrator's Guide for more information on defining or updating Tivoli Storage Manager policy domains and copy groups.

Backup copy group values:

It is recommended that the following Tivoli Storage Manager backup copy group options be set in the management class used for the DocAve backup data:

- verdeleted 0
- reonly 0

The following backup copy group options are not applicable to DocAve:

- frequency
- verexists
- retextra
- mode
- serialization

DocAve accepts default values for these options.



Installing TSM for SharePoint

This section provides information on the server and client environments that must exist before you install IBM® Tivoli Storage Manager for SharePoint.

Before starting the DocAve Server installation, the following tasks should be prepared in advance:

- **The TSM server node** with adequate disk and storage pool space assigned to it for your environment.
- **A TSM service account**, and or **Node password** (if a password has been set).
- **A SQL Server instance**, with standard SharePoint permissions configured, and service account information.
- **A SharePoint service account** with full access to SQL Server content.

System requirements

This section describes the minimum hardware, software, and operating system requirements for a successful installation.

DocAve Server requirements

Computer and processor	PC with an Intel Pentium III-compatible 700-MHz processor minimum. Intel Pentium 4-compatible processor (or greater) recommended
Memory	1GB of RAM minimum, 2GB (or greater) recommended
Hard disk	1GB minimum available, 3GB (or greater) recommended
Operating system	Requires one of the following: Windows XP SP2 (supported for application design, development, and testing; no support for production use) Windows Server 2003 SP1 (32bit and 64bit)



DocAve Media Server system requirements

Computer and processor	PC with an Intel Pentium III-compatible 700-MHz processor minimum. Intel Pentium 4-compatible processor (or greater) recommended
Memory	1GB of RAM minimum, 2GB (or greater) recommended
Hard disk	1GB minimum available, 3GB (or greater) Recommended
Operating system	Requires one of the following: Microsoft Windows XP, Microsoft Server 2000, Microsoft Windows Server 2003 Standard Edition, Windows Server 2003 Enterprise Edition, Windows Server 2003 Datacenter Edition, or Windows Server 2003 Web Edition (includes x64 editions)

DocAve Client system requirements

Computer and processor	PC with an Intel Pentium III-compatible 700-MHz processor. Dual Intel Xeon 3.0 GHz or faster recommended.
Memory	512 MB of RAM minimum, 1GB recommended
Hard disk	1GB minimum available, 3GB Recommended
Operating system	Requires one of the following servers: Microsoft Windows Server 2003 Standard Edition, Windows Server 2003 Enterprise Edition, Windows Server 2003 Datacenter Edition, or Windows Server 2003 Web Edition

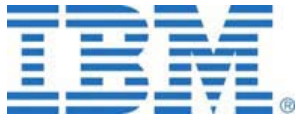
Distributed installation options

DocAve Server

DocAve Server can be installed on any machine on your network meeting the minimum system requirements described in the previous section.

The machine which DocAve will be installed on will serve as the DocAve Server, or the interface to access the DocAve application from other machines.

It is recommended that you install DocAve Server on a machine with high availability due to its critical roles.



DocAve Media Server

DocAve Media Server can be installed on any machine on your network. The machine it is installed on will serve as the backup data storage and management server.

If backup data is being stored on TSM, only backup index files are stored in Media server. If backup data is being stored on disk, be sure to provide enough disk space to accommodate the amount of backup data that you are expecting to store.

It is recommended that you install DocAve Media Server on a highly-available system. You can also install DocAve Media Server on the same machine that you install the DocAve Server on.

DocAve Client

The DocAve Client should be installed on the SharePoint Server.

If you have configured your environment in a SharePoint farm configuration (rather than single server), it is important to install the client on the front-end web server(s).

Installing DocAve Server

Follow the steps below to install the DocAve Server:

1. Log on to the computer (be sure to use an account with local administrator rights) to which you wish to install the DocAve Server.
2. Double-click on the DocAve Server installation file.
3. Choose the installation language, and then click **Next**.
4. The DocAve 4.1 Install Wizard will launch. Click **Next** to continue.
5. Enter the desired User Name and Organization name at the Customer Information screen, and click **Next**.
6. Select the **Setup Type** and then click **Next** to continue. **Note:** Select **Custom** to install the server on a drive other than the C: drive (default).
7. Select the type of server(s) to install. The DocAve Server is the web and communication server to access the DocAve User Interface. The DocAve server component can be installed on any machine.

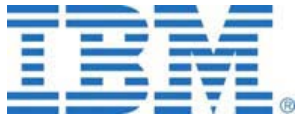
Additional Notes:

- The DocAve Media Server is the media management server which will communicate with the SharePoint front-end server(s) and the SQL Server(s). This server component handles the process load of the backup



jobs.

- For optimal performance, it is recommended that you install the Media Server on a server separate from the SharePoint front-end server. (Note that this does not apply to DocAve Small Business.)
 - To install the DocAve Media Server on a separate machine, uncheck the box next to DocAve Media Server. After completing this section, you will need to follow the instructions later in this document to install the DocAve Media Server on a different machine.
8. Click **Next** to continue.
 9. The Database Installation dialog box allows you to use the built-in database packaged with DocAve or an existing IBM DB2 server. The DocAve database stores DocAve user account information, DocAve settings, and any created backup plans.
 10. Select the IBM TSM System option to store backup data on the IBM® Tivoli Storage Manager backup server
 11. Click **Install** to begin installing DocAve Server.
 12. The TSM Configuration dialog box allows you to configure information to communicate with the TSM server.
 - **TCP Server Address** is the IP address for the TSM server.
 - **TCP port setting** needs to reflect TSM server configuration. The Node is created in TSM manually, so create a Node in TSM before entering the Node Name.
 - **Filespace** setting is for logical grouping in the TSM database. Take the specified default values for Occupancy and Capacity. The Capacity value needs to be larger than Occupancy value. The Password is for the TSM password on the specified TSM Node.
 13. If the **IBM DB2** option is selected, the DocAve Database dialog box will be displayed. (If this is option is not selected, proceed to step 16.)
 14. For the **Database Server Host**, type the IP address of the DB2 server. The Database User needs to have full administrative authority. Before installing DocAve with DB2, the DocAve database needs to be created manually.
 15. Type the DB2 Server name, followed by the standard DB2 sa account and password. The default Database Server Port is 50000. If this port was changed in DB2, please adjust the port for the Database Server Port accordingly.



16. After the file installation has finished, the **DocAve 4.1 Service(s) Configuration** dialog box will be displayed. It is recommended to use the default port settings, unless a known conflict with an existing port exists.
17. Enter the Account information.
 - To integrate DocAve with an Active Directory domain, enter a domain account into the provided fields. Integration with Active Directory will allow system administrators to use existing Active Directory accounts and groups to assign user permissions in DocAve.
 - If configured as a local user, there is no Active Directory integration. Only local DocAve accounts can be created and added to DocAve.
18. Specify Media Server Host Name. If you plan to install the media server on a different machine, enter the machine name of the Media Server next to Media Server Host Name. Otherwise, the Media Server Host Name should be the current machine name.
19. The installer will configure the DocAve 4.1 Server with the chosen name and port designations.
20. Installation is now complete. Click **Finish** to exit the DocAve Server Install Wizard.
21. Proceed to Installing the Media Server to install the DocAve 4.1 Media Server, if it was not installed at the same time on the Server machine.

Installing the Media Server

Follow the steps in this section if you have opted to install the Media Server *on a server separate from the DocAve Server*.

If you installed both the Server and Media Server on the same machine, then proceed to Installing the DocAve Client in the next section to install the DocAve Client on your SharePoint server.

The Media Server installation steps are identical to the installation steps for the DocAve server (see the previous section), with the exception of the following configuration details:

- Once the installation is complete, the DocAve 4.1 Service(s) Configuration dialog box is displayed.
- The DocAve Media Server requires the *identical* Tomcat and Network Service Port settings as the *DocAve Server* to function properly.
- The **Media Service Host Name** and **Host Name** should be the computer name of the current machine.



- The **Network Service Host Name** and the **Apache Tomcat Host Name** value *must be the computer name of the DocAve Server machine.*

Installing the DocAve Client

The machine you plan to install the DocAve Client on must be a SharePoint Front-End Web Server.

1. Log in to the machine with an account that has local administrator rights.
2. Double-click on the DocAve Client file.
3. Choose the installation language and then click **Next**.
4. The DocAve 4.1 InstallShield Wizard will launch. Click **Next** to continue.
5. Enter the desired User Name and Organization name, and then click **Next**.
6. Select the **Setup Type** and then click **Next** to continue. **Note:** Select **Custom** to install the client on a drive other than the C drive (default).
7. Select the version of SharePoint which the DocAve agent will be installed to. For this solution, we selected **MOSS 2007**.
8. Click the **Install** button to begin installing the DocAve Client.
9. Once file installation is complete, the DocAve Agent Configuration dialog box will be displayed.
 - The **DocAve Server Name** is the computer name for the machine on which the DocAve Server is installed on. *Do not confuse this with the Media Server, if you have those two components installed on separate machines.*
 - The **DocAve Agent Host Name** and **Agent Host Full Name** should both be the name of the current machine.
 - It is recommended to use the default port settings unless a known conflict with an existing port exists.
 - The DocAve Client requires the identical Tomcat port and DocAve Network Service Port settings as the DocAve Server in order to function properly. To accept the settings, click **Confirm**.

Important Note: For the User Account, you **must** select an account which has administrative access to both the SharePoint Front-End Web Server and your SQL Server. Use of a SharePoint service account is recommended.

10. Click **Finish** to complete the DocAve Client installation. Proceed to the next section to verify the DocAve installation.



Verifying the DocAve installation

To verify the DocAve installation:

11. Open the Services MMC on the machine where the DocAve Server is installed.
12. In the services listing, multiple services are listed for the DocAve components. The related service for each installation is listed below:
 - Which services are running on which server will depend on how you distributed your installation. All AvePoint services must be running for DocAve to function properly.

DocAve Server Services

- AvePoint DocAve Database (If DB2 is chosen as database, AvePoint DocAve Database service will not be displayed)
- AvePoint DocAve Network
- AvePoint DocAve Web
- AvePoint DocAve Patch

DocAve Media Server services

- AvePoint DocAve Media
- AvePoint DocAve Patch

DocAve Client service

- AvePoint Communication Service

Important note: To ensure proper communication between the DocAve Server and the DocAve Client, the following ports must be open and available if a firewall is in place: TCP Ports 11000, 11001, 11002, 11003, 8080

Making configuration changes

- To change configuration settings within DocAve for the Server, Media Server, or Client installations, click **Start, Programs, DocAve, Configuration Tool**.
- Also available in **Start, Programs, DocAve**, is a SharePoint Site Counter Tool and an AvePoint Service Restart Tool for both the Server and Client.
- To change connection information to TSM, go to **Start, All Programs, AvePoint DocAve, DocAve Server Tools, Server Configuration Tool**.

Accessing the DocAve Management Console

1. To open the DocAve Management Console, open Internet Explorer and type the following into the address bar:

http://<machine>:8080/docave

Where **<machine>** is the hostname or IP address of the machine running DocAve Server

Note: All pop-up blockers must be disabled, or exceptions must be configured.

2. At the DocAve login page (see figure 1), select **Local System**.
3. Type the Login ID and Password. The default values are:
 - Login ID: **admin**
 - Password: **admin**



Figure 1: DocAve login screen

Backing up SharePoint sites

There is not a significant difference between the three types of backups (Item, Site, or SubSite) when creating the Backup Plans. The DocAve control panel (see figure 2) is intuitive and simple to navigate.

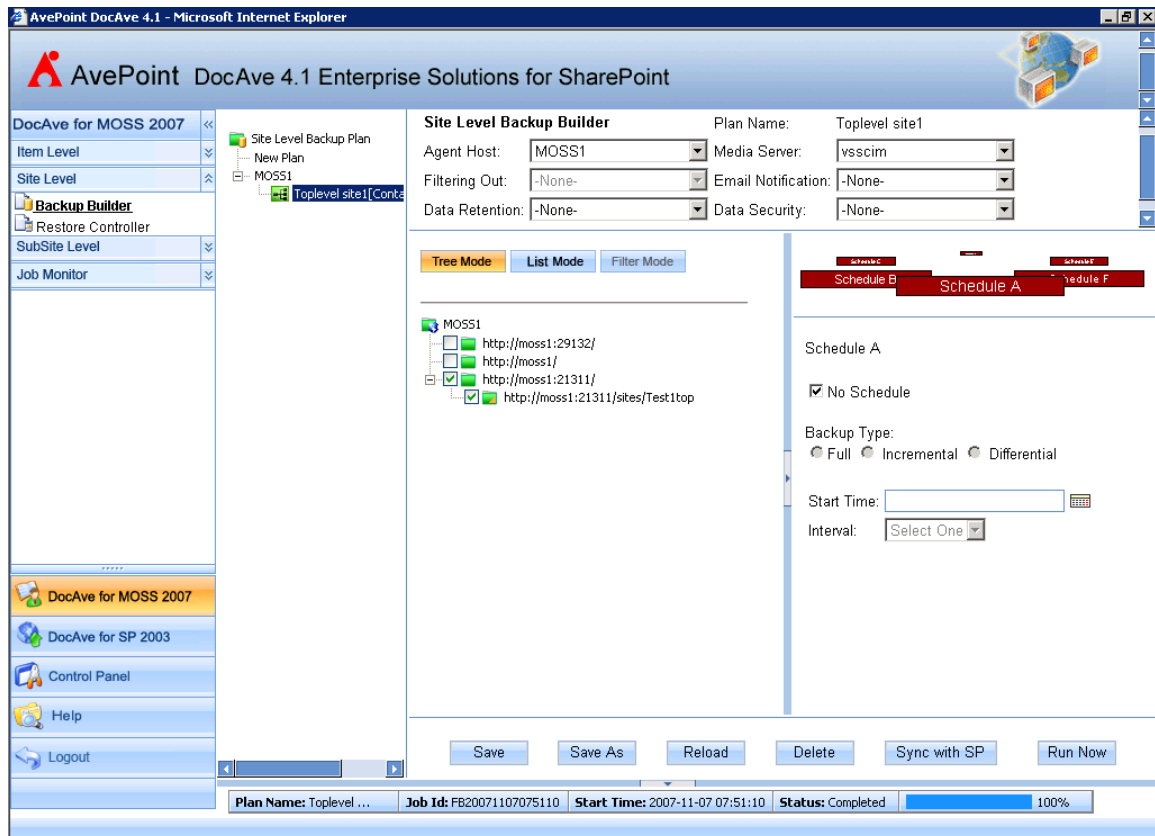


Figure 2: Configured Site Level backup console

Configuring and starting a backup plan

1. From the DocAve for Moss 2007 Column (left), select the type of Backup: Item, Site, or SubSite Level.
2. In the Backup Builder pane (top right), the only *required* selections are **Agent Host** and **Media Server**.
3. A tree view displays the name of the **Agent Host**.
4. Click on the **Agent Host**, and DocAve will automatically retrieve topology information for the SharePoint sites.
5. You can select Tree, List, or Filter Mode (search) buttons to toggle between viewing options. For very large SharePoint environments, List or Filter modes are recommended for optimal performance.

6. Depending on the backup type and mode, use the radio buttons or check boxes to select the various levels of the sites to backup.
7. After you've finished making selections, click **Save**, and type a name for the Backup Plan. After the plan is saved it will appear in the Backup Plan pane for future use.
8. You also have the option to schedule the backup, or manually start the backup job immediately by clicking **Run Now**.
9. Once the backup job is running, you can go to the Job Monitor (see figure 3) to follow the progress and view status messages. You can also observe the progress on the status bar of the browser.

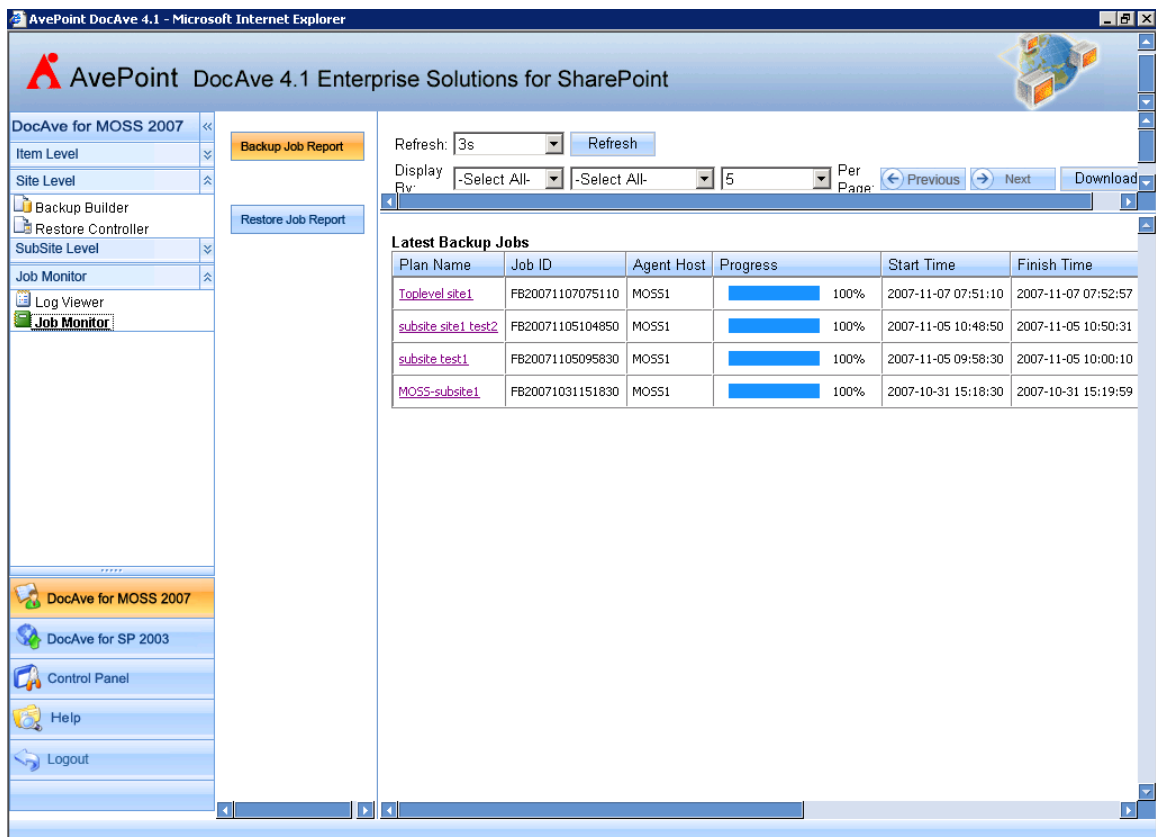


Figure 3: Job Monitor showing completed backup jobs and status

Restoring SharePoint sites

The restore process is very intuitive, and the steps for each type of restore job are similar, regardless of which type of backup job you are restoring from.

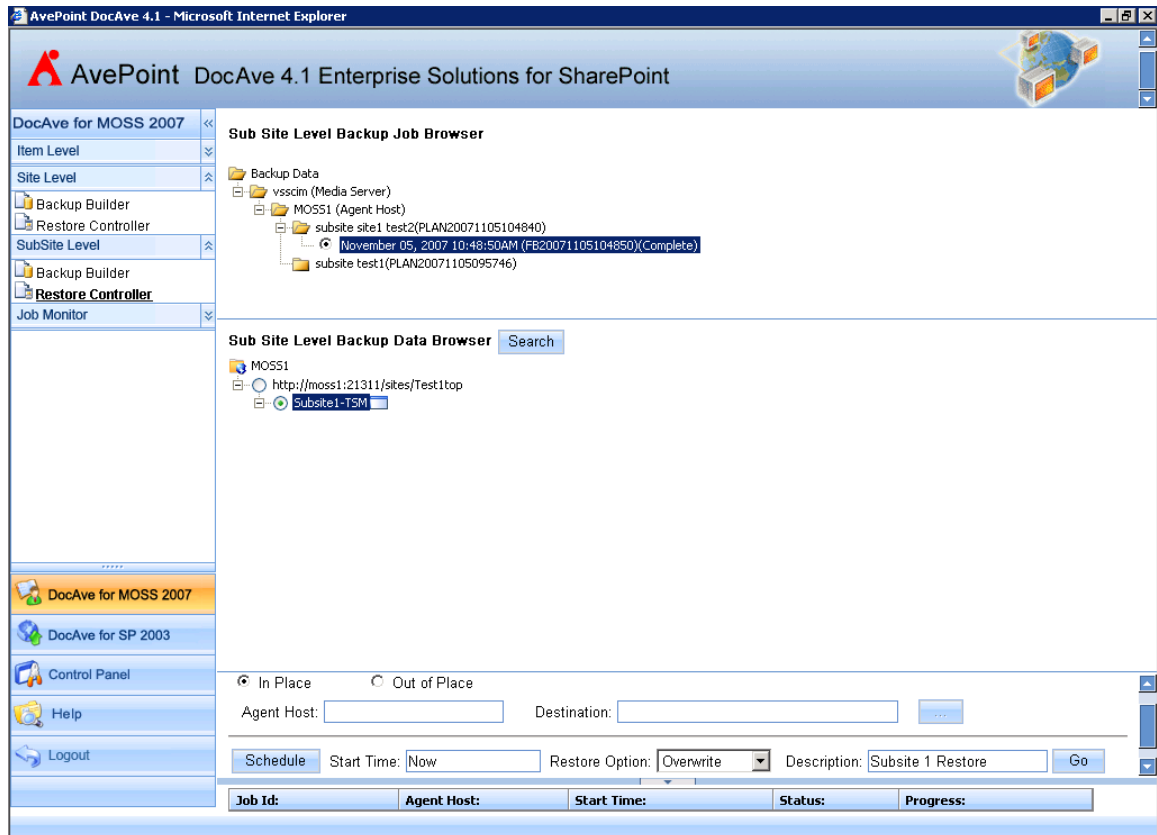
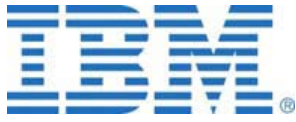


Figure 4: Configured SubSite Level Restore console

Configuring and starting the restore job

1. Select **Restore Controller** in the **Restore Type** pane.
2. Select the **Agent Host** in the **Job Browser** pane.
3. Click on a radio button that corresponds to the date of the backup you want to restore.
4. In the **Backup Data Browser** pane (below), expand **Host and Sites** and select the appropriate site or item to restore.
5. You have the option in the lower pane to do an In Place restore or an Out of Place restore.
 - An In Place restore places the site or item in the original location.
 - An Out of Place restore provides the ability to restore to an alternate server and site.



6. In the **Restore Option** drop down list, select one of the following options:
 - **No Overwrite:** DocAve will not restore the content if it already exists within the destination. For example, if an entire folder's content is selected for restore, but only one document was removed from the destination folder that the content is being restored to, only that one document will be restored.
 - **Overwrite:** DocAve will restore the content over whatever exists on the destination. This will delete the content on the destination and replace it with the content selected to be restored.
 - **Append:** DocAve will update the destination with the selected data to be restored. Data that already exists will not be deleted; data that is not already present will be added.
7. Click on **Schedule** to schedule a future job, or **Go** to initiate the restore job.
8. The progress of the restore can be viewed in the status bar of the browser console, or from the Job Monitor console.

Note: If you are performing an Item Level restore, there are additional options, due to the granular nature of the backup data. When you check a box during an item level restore, you have the option of restoring all security and properties from the original data.

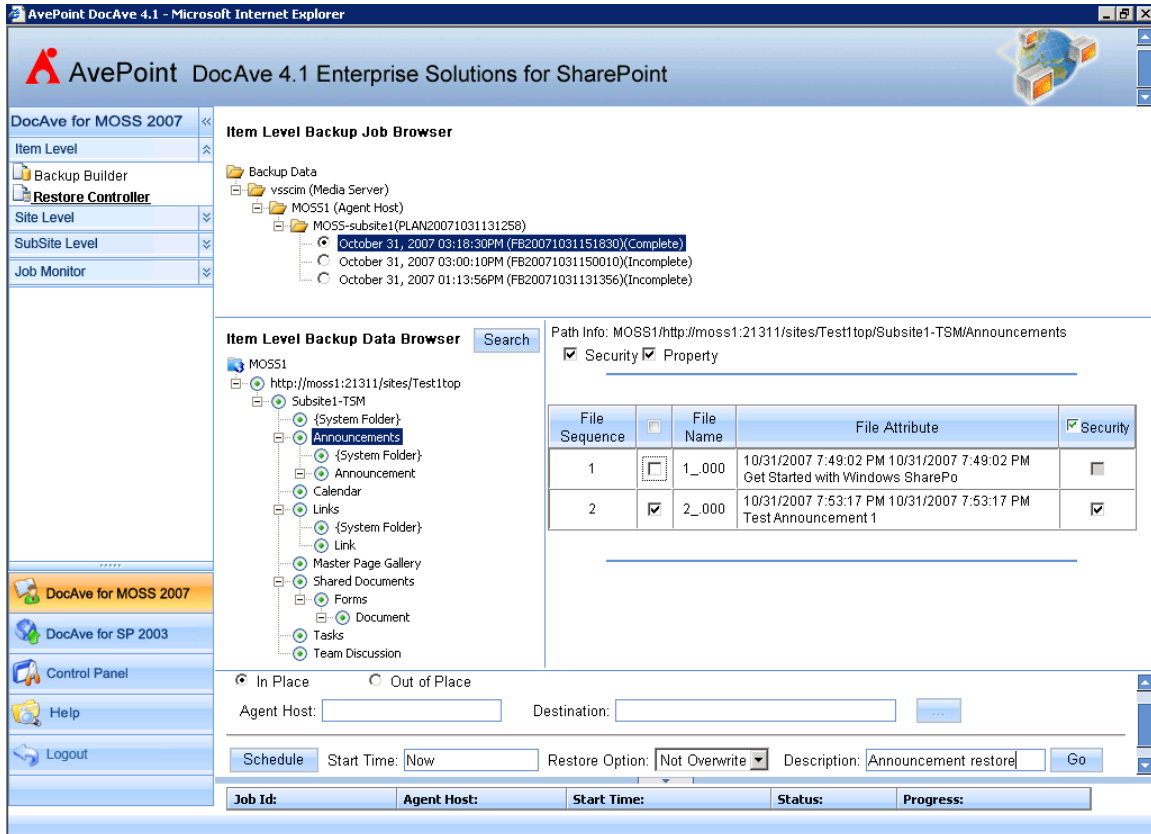


Figure 5: Item Level Restore showing granular restore options

Conclusion

The system configurations described in this document are designed to address demanding enterprise requirements for highly available Microsoft® Office SharePoint servers. Tivoli Storage Manager for SharePoint is designed to enable granular, reliable backups of SharePoint sites, sub-sites, and items.

The granular restore capabilities help reduce backup and restore times because restores are performed directly on the production server, and only the needed data is restored.

IBM® System x™ servers and System Storage™ arrays are designed to provide the processing throughput and scalable storage needed for large SharePoint environments. IBM® Tivoli Storage Manager for SharePoint is designed to help support true fault and disaster tolerance. The combination of IBM® Tivoli Storage Manager and SharePoint forms a high-availability platform for mission-critical SharePoint servers.



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