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Revision History

This revision history summarizes the changes made in each published version of this document.

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1 Introduction

SPDR-PR is a farm level recovery solution which enables SharePoint Administrators to backup and to recover Web Applications, Content Databases, search and index servers and front-end servers. SPDR-PR can also backup the file system on the front-end servers.

![SPDR-PR Overview](image)

By using the DocAve **SPDR-PR** solution, SharePoint administrators can:

1. Setup a scheduled or run immediate FULL, Incremental, or Differential backups for any SharePoint environment where DocAve SPDR-PR agents are installed.
2. Backup to a specific data location, with optional pruning, by selecting **Data Retention**.
3. Setup encryption and compression to backup data via **Data Manager**.
4. Select email notification rules created in the Control Panel's **Email Notification**.
5. Choose designated DocAve media server to offload backup Jobs.
6. Selectively restore SharePoint content; down to content database level.
7. Monitor real-time progress of any backup or restore jobs (via DocAve **Job Monitor**)
8. DocAve backup plans **DO NOT** lock up SharePoint SQL database index files, and thus can be scheduled to run during normal production hours.

DocAve 4.1 operates on the concept of backup plans, where each backup plan allows SharePoint administrators to specify:

1. What to backup via URL tree selection.
2. When to backup (Schedule a future time to run a backup plan via scheduling carousel. Schedule up to seven customizable schedules per plan. Scheduling options are: One time only, hourly, daily, weekly, or monthly schedules)
3. How to backup (Full, Incremental, or Differential)
4. Where to backup (via media servers which then writes data to designated network/local/mapped disk drives)
5. How to handle backup data (pruning and coalescing via Data Retention Manager). Security and Compression (data compression with a five to one ratio and encryption up 128 bits via Data Security Manager)

Figure 1.2 shows an example of building a FULL backup plan for SPDR-PR. SharePoint front end server **“avepoint-demo01”** is the control agent in the displayed example. The blue triangle in the folder icon indicates that all future modifications and additions to the selected folder will be **automatically** included in the backup plan. All the other servers in the SharePoint farm are loaded and listed under the “**avepoint-demo01**” control agent. The red icon before **“Search instance”** (e.g. Enterprise Search) and **“avePoint-demo04”** means control agent found these servers, but since no member agent is installed on the servers, they are not selectable to be included in the backup.

DocAve media server that handles the backup data processing is **“avepoint-demo00”**.

Email Notification rule is Demo_SMTP, and a notification rule can be setup by going to the Control Panel.

Data Retention rule is Demo_Retention, and Data Security is Demo_Security, which implies perpetual data retention on disk and data compression and encryption.

Please refer to the Control Panel User Guide for further instructions on how to setup these optional features.

*Please note that currently the SharePoint Disaster Recovery High Availability solution is not compatible with SQL Express.*
Figure 1.2 - SPDR-PR Backup Builder
2 Installation

Before the administrator can use SharePoint Disaster Recovery – Platform Recovery (SPDR-PR), SPDR-PR feature needs to be enabled. For more information on installing DocAve agent, please refer to the DocAve Installation Guide for an in-depth installation walk through.

To ensure that SPDR-PR is enabled on the DocAve Agent Host, please proceed as follows:

Log onto the server where DocAve Agent is installed.

1. Click the **Start** button located on the menu taskbar.
2. Select **all Programs**.
3. Navigate to **AvePoint DocAve 4.1**.
4. Open the **Client Configuration Tool**.

DocAve Agent Configuration screen lists two types of Platform Recovery agents. These two agents must be installed in order to use the **SPDR-PR** solution. The two agents can be installed separately on two different SharePoint Servers.

Platform Recovery **Control Agent**: This component is required to be installed on the SharePoint front-end web server. In SharePoint farm with multiple front-end web servers, only one SharePoint front-end web server should be configured as Platform Recovery Control Agent.

Platform Recovery **Member Agent**: This component can be installed on any servers in the SharePoint farm. For example, Plateform Recovery Member Agent can be installed on the Database server, Index server, Search server, and/or front-end server.
DocAve SPDR-PR loads and browses for the member agents through the control agent and performs backup for all the agents (including both control and member agents).

Once the proper Platform Recovery Agents are selected for the DocAve agent, confirm the selection and restart the service. Please repeat above steps for all the DocAve agents in a SharePoint farm which SPDR-PR needs to backup.

**NOTE:** SPDR PR can support SQL clustering, but the user must install a member agent on each node. Also in order to run SPDR backup in cluster SQL environment, the DocAve agent account should also have ‘View Server State’ permission to query the nodes of the cluster.
3 SPDR-PR Backup Builder

SPDR-PR backs up data based on rules that administrator specifies. To build a new SPDR-PR rule, please proceed to the “Backup Builder” under the SPDR-PR section of the navigation menu. The SPDR-PR menu has the following two options: Backup Builder and Recovery Controller (reference Figure 3.1).

![Figure 4 - DocAve Navigation Menu]

3.1 Setting up Rule Properties

When creating a new rule, plan properties need to be set up as follows:

1. Select the Agent Host by bringing down the drop down box. Only SPDR-PR Control Agents are listed under Agent Host drop down window. This is a mandatory input field.

2. Select the Media Server which will process the backup. This is a mandatory input field.
3. Select a storage drive from Drive drop down box. A Logical Drive is created from Control Panel -> Data Management -> Storage Manager. For more information on adding new Logical Drive, refer to the Control Panel User Guide. By default, “Default Logical Drive” in the media is selected.

![Drive Selection](image.png)

**Figure 8 - Rule Builder - Drive**

4. The Email Notification drop down box contains a list of profiles that have an associated email account. The email notification profile listed are manually populated by going into the Control Panel -> Reporting -> Email Notification and adding new profiles. For more information on adding new email reporting profiles, please refer to the DocAve Control Panel User Guide. Please note that this field is optional.

5. The Data Retention drop down box is where the administrator can specify the pruning policy for the data generated by this backup plan. By picking a Data Retention profile, administrator can specify how long the backup data should be kept on disk. For more information on adding new data retention profiles, please refer to the DocAve Control Panel User Guide. Please note that this field is optional.

6. The Data Security drop down box is where the administrator can specify the security profile for the backup data. Data Security includes encryption and compression profiles, and is set from Control Panel -> Data Management -> Data Security Manager. For more information on adding new data security profiles, please refer to the DocAve Control Panel User Guide. Please note that this field is optional.
### 3.2 Selecting Content on the Data Tree

After completing the configuration of the common backup options, proceed on to selecting the data to be backed up.

1. On the backup tree builder window, name of the Agent Host selected should be displayed in the area directly underneath. Clicking on the Control Agent “avepoint-demo01” expands and displays the SharePoint Farm topology.

2. Expanded tree mode lists the SharePoint_Config, Windows SharePoint Services Web Application, WSS_Administrator, Global Search Settings, Windows SharePoint Service Help Search, Windows SharePoint Solutions and SharePoint front-end web servers. Except for the SharePoint front-end web servers, tree can be expanded to the lowest level.
3. Clicking on the name of SharePoint front-end web server displays IIS Settings, SharePoint Templates and File System.

4. Clicking on the IIS Setting displays all the virtual server names, and clicking on the virtual server name, then displays the Local Disk folder.

5. The SharePoint Templates can be expanded to the lowest template folders.

6. When clicking the “File System”, all the disks and folders are expanded level by level, and the tree can display the lowest folder.

7. There is a check box corresponding to each level on the data tree, the box is by default unchecked; checking the box indicates that all content on that level and underneath that level needs to be backed up.

8. When checking a box to specify content to be backed up, the folder icon of the folder included in the backup plan includes a blue triangle. The blue triangle indicates that all new data created in those sites or folders/lists will be automatically picked up by the backup plan, this option is turned on by default. Clicking on the folder icon itself will remove the yellow triangle, hence indicating that only content that is recognized at this current time will be backed up, new content added in the future to that site or folder/list will not be backed up.
3.3 Scheduling Backup Job

1. After selecting the data content to be backed up, specify the frequency of the backup job.

   ![Figure 10 - Scheduling Carousel - enabling a Schedule](image)

2. Note that multiple schedules can be created, by cycling through the schedule carousel. Un-check the “no schedule” box in order to activate a new schedule. An active schedule is shown in a blue color and inactive schedules are shown in red.

3. After activating a schedule, select the backup type to use. Different backup types are discussed below:

   **Full**: a complete backup of the selected data content.

   **Incremental**: backs up data that has been modified or added since the last incremental, differential or full backup. Incremental backup saves time...
and storage space by backing up only the changes since the previous backup (instead of backing up the entire data content as in Full backup).

**Differential:** backs up data that has been modified or added since the last full backup. A differential backup compares the data to be backed up against the last previous full backup; data previously backed up by either an incremental or differential backup is irrelevant.

**NOTE:** It is not recommended to run full or differential backup jobs too frequently as this can potentially fill up the storage space by creating duplicate backup data. For best results in high frequency backups, please use incremental backups.

4. Next set a start time for the backup plan. Click on the calendar by the Start Time field. A calendar will pop up in a new window. Use the calendar to specify when the backup will begin (Select the dates by clicking numbers inside the calendar).

![Figure 11 - Scheduling Carousel - Specifying a Start Time](image)

5. Just beneath the days on the calendar there is a time clock. To specify a time, click on the hour and minute fields to go forward or Shift-click to go backward.
6. Specify the interval at which the backup plan will be executed. Choices are: Only Once, By Hour, By Day, By Week, and By Month.

7. After successfully selecting the data content and scheduling the backup plan, save the plan by clicking on “Save As” tab. Then provide a name for the new backup plan. After the plan is successfully saved, it will be displayed in the Backup Plan section under the corresponding control agent.
4. Recovery Controller

After a backup job successfully completes backing up the data, the backup data is ready for browsing. To perform a restore, click the Recovery Controller under SPDR-PR to begin browsing the backup data.

4.1 Choosing a Plan Through the Job Browser

**Backup Job Browser**

- Backup Data
  - avepoint-demo00 (Media Server)
  - avepoint-demo01 (Agent Host)
    - Content Database(PLAN20070517174049)
      - May 17, 2007 05:41:15PM (F920070517174115)(Complete)

**Backup Data Browser**

- avepoint-demo01
  - Farm
    - SharePoint_Config(AVEPOINT-DEMO00)
    - Windows SharePoint Services Web Application
      - SharePoint - 8001
        - WSS_Content(AVEPOINT-DEMO00)
    - SharePoint - 8002
    - WSS_Content_dbe3d65be580df6e94f-803b84a460c(AVEPOINT-DEMO00)
    - SharePoint - 8008
    - WSS_Content_45f87031308d990e86182b6ee8b3aa9b(AVEPOINT-DEMO00)
  - WSS_Administration
    - Central Admin Web Application
      - SharePoint_AdminContent_c56de708-827f-4622-81c0-1ccd7500de9(AVEPOINT-DEMO00)
  - Global Search Settings
    - Windows SharePoint Services Help Search
      - Search instance(AVEPOINT-DEMO04)
      - WSS_Search_AVEPOINT-DEMO04(AVEPOINT-DEMO00)

**Figure 14 - Backup Job Browser & SPDR-PR Restore Browsers**

1. Across the top of the GUI, locate the section that is titled Backup Job Browser.
2. Click on the Media server.
3. Click on the Agent Host.
4. Select the backup plan from which data needs to be restored.

5. Select the date that the backup plan was run to retrieve the data from that date.

4.2 Specifying the Type of Restore

1. At the bottom section of the restore controller, the administrator can specify the type of restore. An **In Place** restore, restores the backup data to the original location from where it was backed up from. An **Out of Place** restore will allow the user to restore the data to another farm.

2. After Selecting the restore type, administrator can fill out the schedule section if restore needs to be run at a later time. To run the restore immediately, click **Go**.

3. Restore Option provides two types of Restore Options: Not Overwrite, Overwrite.

   **Not Overwrite:** This means that SPDR-PR will not restore the content if it already exists on the destination. For example, if an entire folder’s content is selected for restore, but content already exists in the SharePoint farm, it will not be overwritten by the data from the backup.

   **Overwrite:** This option will cause SPDR-PR to restore the content over whatever exists on the destination. Essentially this will delete the content on the destination and replace it with the content from backup data.

4. Advanced options: There are 3 options in advanced settings:

   **Restore Databases Only:** SPDR-PR will restore the databases to the database server, but will not make the connections with the database to the SharePoint environment. That means no relationship will be created between the restored databases and SharePoint server because the SSP (share service Provider) has not yet been installed.
**Restore Databases to Most Recent State:** The SPDR-PR solution will restore the databases to the most recent state. For example, a backup job completed at 1:00 PM and the database server crashes at 2:00 PM. SPDR-PR will try to restore the databases to the most recent functioning state which is 1:59 PM even though the last backup data is from 1:00 PM.

**Restore Front-end files:** The administrator is able to specify the location to restore the front-end files (This will include the SharePoint templates and extra file system folders). If the folder specified does not exist, SPDR-PR will create the folder on each front-end Server to restore the files. By default, if no location is entered, the SPDR-PR will restore the files to the original locations. If the file exists, SPDR-PR will proceed to overwrite the old file, however if the file is in use it will be skipped.

![Backup Data Browser](image)

**Figure 16 - SPDR-PR - Advance Restore Options**

Once the restore settings are configured, click the **Go** button and SPDR-PR will begin the restore process or schedule the restore job to be executed at a later time.
Out of Place Restore

The out of place restore feature will allow the end user to copy the data from one SharePoint farm over to another farm.

Figure 17 - Out of Place Restore

1. Select Out of Place
2. Select the Destination Agent
3. Click on Set Restore Parameter
   • Depending on the source content the Restore Parameter will auto populate.
   • If the user selected just a database then the user will have to provide the following:
     o **Database Server** - this is the name of the Database server where the database will be moved to.
     o **Database Name** - this will be the new database name you will give on the destination database server.
     o **Database Location** - this will be the file location of the database
     o **Parent WebApp URL** - this is the web application on SharePoint where you will attach the database to.
     o **Windows Authentication** - this is a TRUE and FALSE drop down box for the Windows Authentication
     o **Database User** - specify the database user if the DocAve Agent does not have an account with administrative rights to the SQL
     o **Database Password** - specify the database user password if the DocAve Agent does not have an account with administrative rights to the SQL
   • If the user selected just a web application then the user will have to provide the following:
     o **New Name** - specify the new name of the web application
     o **New URL** - specify the new URL for the web application
     o **App Pool User** - this will be the Application pool user for that new web application
     o **App Pool Password** - this will be the Application pool user's password

4. After selecting the restore type, the administrator can fill out the schedule section if restore needs to be run at a later time. To run the restore immediately, click **Go**.

5. Restore Option provides two types of Restore Options: Not Overwrite, Overwrite.

   **Not Overwrite:** This means that SPDR-PR will not restore the content if it already exists on the destination. For example, if an entire folder's content is selected for restore, but content already exists in the SharePoint farm, it will not be overwritten by the data from the backup.

   **Overwrite:** This option will cause SPDR-PR to restore the content over whatever exists on the destination. Essentially this will delete the content on the destination and replace it with the content from backup data.

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   **Restore Databases Only:** SPDR-PR will restore the databases to the database server, but will not make the connections with the database to the SharePoint environment. That means no relationship will be created
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Once the restore settings are configured, click the **Go** button and SPDR-PR will begin the restore process or schedule the restore job to be executed at a later time.

**4.4 An Example of Backing up and Restoring a Farm**

It is fairly simple to backup an entire SharePoint farm by selecting all the nodes under the farm from the backup builder. However, task of restoring an entire farm requires sequence of steps. When creating a backup plan to backup the SharePoint farm, it is suggested that at least the SharePoint configuration database and the central admin content database are backed up.

The following example displays the farm level backup of AvePoint Demo01 and the farm restoration using SPDR-PR.

1. Create a backup plan from backup builder, with the entire SharePoint farm selected then run the backup plan.
2. Shutdown all the connection between the SharePoint front-end servers and other SharePoint servers in the farm. (For this process it is necessary to refer to SharePoint Products and Technologies Configuration Wizard). For example, if SQL server is corrupted, shutdown the connection between SharePoint front-end server and SQL server before performing SPDR-PR restoration. If restoring entire SharePoint farm, SharePoint and all prerequisite software need to be installed before performing SPDR-PR restoration.

3. Remove all the databases related to SharePoint from SQL Server

4. Go to SPDR-PR recovery controller; Select the SharePoint configuration database, and the SharePoint administrator content database (it’s mandatory that the “Restore Databases Only” option from Advance settings is selected. Refer to Figure 4.6).
5. Then restore the Web applications and solutions, except SSP (Shared Services Provider). Please make sure SharePoint configuration database, and the SharePoint administrator content database are restored before restoring other servers in the SharePoint farm.
Figure 21 - Restore Web Applications and Solutions
6. To restore SSP (Shared Service Provider), following steps must be taken:

1. First it is required to restore all the SSP related databases from Recovery Controller (With **Restore Databases Only** option selected)
2. Then restart all “osearch” (Manages the Office SharePoint Server Search service) services in the entire farm.
3. Then restore SSP without “**Restore Database Only**” option selected.
4. Lastly, restart spsearch service and restore spsearch server.

**Backup Job Browser**

![Backup Job Browser](image)

**Figure 22 - Restore SSP**