From Development to Production: Streamlining SharePoint Deployment with DocAve® Deployment Manager

Summary:

Organizations deploying Microsoft SharePoint are often confronted with the daunting challenge of transitioning customizations and services from one staging environment to another. Because countless policies and manual tasks are required to ensure successful execution, the propagation of these applications into a production SharePoint environment is often a complex, labor-intensive, and error prone process.

DocAve Deployment Manager streamlines many release propagation processes, providing SharePoint administrators with an automated, orderly method to deliver applications, customizations, services, and solutions onto a production environment. This greatly simplifies the staging process, reduces the risk of service interruption, and accelerates the time-to-value of these SharePoint components.

About AvePoint:

Since 2001, AvePoint has been a global leader in enterprise-strength infrastructure management software solutions for all Microsoft SharePoint Products and Technologies. Propelled by one of the world's largest SharePoint-exclusive development teams outside of Microsoft, AvePoint's award-winning DocAve software delivers comprehensive and flexible infrastructure support for backup and recovery, replication, migration, administration, archiving and compliance solutions for Microsoft SharePoint.

AvePoint's globally recognized pioneering technology pilots the products of OEM partners such as NetApp and IBM. Headquartered in Jersey City, NJ, AvePoint serves over 3,000 enterprise customers, including many Fortune-500 companies, across 6 continents, via offices in Jersey City, San Jose, Dallas, Chicago, and Washington D.C., USA; London, UK; Melbourne, Australia; Tokyo, Japan, and Changchun, Dalian, China. AvePoint is a Managed Gold Certified Microsoft Partner and GSA Certified Provider. For more information, visit http://www.avepoint.com

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Introduction

Effective management and automation of release operations is vital to a successful SharePoint deployment. Without proper planning or control, errors or changes during the staging process can result in increased time-to-value, project delays, and poor application reliability.

DocAve Deployment Manager meets this growing demand with a dependable, robust, and breakthrough solution that helps minimize risk of human error and cost overruns, accelerates service delivery, and facilitates pre-production operations for a successful SharePoint implementation. It delivers a unique way to manage and streamline the various stages of a release process, and efficiently provision the platform for deployment. DocAve Deployment Manager automates the staging process via several key workbenches – Front End Deployment, Solution Center, and Design Manager.

This document examines the capabilities of DocAve Deployment Manager and offers tips and guidance to help streamline the SharePoint deployment process while maintaining the integrity of all SharePoint staging instances.

Installing Prerequisite Components

The DocAve Software Platform employs a fully distributed agent-server deployment model that allows it to scale across multiple SharePoint farm instances, while enabling centralized management and control from a single browser-based interface, accessible from anywhere within the organization's internal and external networks. This architecture is depicted in Figure 1 below.
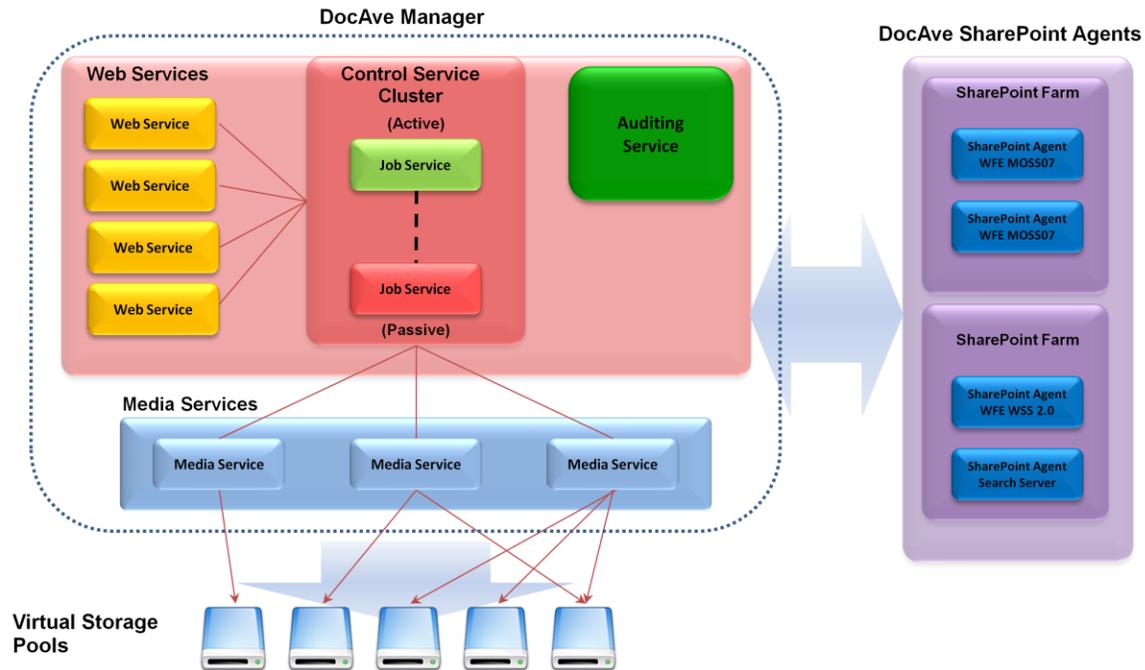
Figure 1: DocAve Software Platform Architecture

DocAve Manager

The DocAve Manager centrally administers all activities performed by the DocAve Software Platform, and allows administrators to control routines, schedule jobs, and view and act upon any error conditions raised by the agent processes. The Manager can be installed on any Microsoft Windows-based hardware with appropriate processing power and access to its member agents throughout the network. It is recommended to install the DocAve Manager on a machine with high availability, although it does provide an active-passive control services cluster to ensure continuous availability. The DocAve Manager is also the server process responsible for delivering the DocAve Web-based interface to the end-user's browser. The DocAve client agents communicate with the DocAve Manager via lightweight XML control messages over TCP/IP socket connections, allowing one Manager to control multiple agents and representing a distributed network of SharePoint servers across multiple SharePoint farms.

DocAve Media Service

The DocAve Media Service is designated to provide dedicated computing resources to read and write to storage media. While the Media Service plays a critical role for other data/storage driven DocAve modules like Backup and Recovery and Extension Archiver, it also serves as a central repository for Deployment Manager to manage SharePoint solution packages. For largely distributed deployments, it is recommended to have the Media Service(s) deployed within close proximity of the front-end Web servers and the physical storage, but not on the same hardware. It is also recommended to host the Media Service(s) on hardware with high reliability. Multiple dedicated Media Services can be installed to handle additional process workload across multiple

SharePoint environments. Additionally, the Media Services also support the ability to persist data to multiple logical storage devices.

DocAve Agent

Each DocAve Client Agent is a lightweight, application-specific client component. In the case of DocAve Deployment Manager, the Client Agent resides on a SharePoint front-end Web server. The operations of the agent are controlled by the DocAve Manager via XML messages over a network. The client agent reads and streams selected data via the SharePoint front-end Web server.

Multiple DocAve client agents can be directed to communicate with one another, allowing the transfer of data between SharePoint environments. This is the means by which Deployment Manager routes custom elements from one location in a SharePoint environment to a different location. Unique capabilities within the DocAve architecture ensure that communication between agents can endure very noisy or even intermittent data channels. Successful results from strenuous data transfer performance and stress tests have showcased the strength of DocAve's data packet level fault tolerance features.

Propagating Front End Components across Environments

Although the SharePoint solution framework is gaining in popularity, many customizations must still be deployed manually. These include features, site definitions, IIS settings, web.config, .NET assemblies in the Global Assembly Cache, as well as additional file dependencies on the WFE file systems. These configurations and components reside on the SharePoint front-end Web servers (WFE) and need to be promoted across different SharePoint farms to maintain consistency across various staging environments. This could be a lengthy and error prone process especially when dealing with multiple farms and many Web Front-End servers. DocAve Deployment Manager supports the replication of these front-end components across multiple environments, delivering automated one-to-many deployment of IIS settings, web.config, GAC assemblies, and additional files and folders. Before creating or executing any DocAve Deployment Manager plan, it is advisable to first configure a few useful settings – the Rollback Storage Location, and Filter Options.

Rollback Storage Location refers to a file system location where DocAve Deployment Manager can cache recent WFE deployment activities. This can be configured to point to a file system local WFE, or to any other file system that is accessible via an authenticated UNC file path. **Filter Options** allow administrators to define certain filter rules to either include or exclude files or assemblies based on file or folder names or assembly versions. This provides administrators with greater control over which components are deployed via the DocAve Deployment Manager.

Propagating IIS Configurations

Many SharePoint deployments include unique IIS configurations that do not reside in the configuration database. While managing multiple environments, it is critical that these IIS settings are replicated across environments appropriately. DocAve Deployment Manager has the ability to propagate settings such as the IIS metabase, the web.config, and other file-based IIS configuration files between various SharePoint WFE servers. While uncommon, it is also possible to replicate the IIS settings for non-SharePoint related sites.

DocAve Deployment Manager intelligently groups IIS Web Sites into three separate nodes – SharePoint Web Applications, Default Site, and Other non-SharePoint Sites. Users can select each of these nodes to deploy onto the destination servers. Users can likewise drilldown further into the data tree and select each SharePoint Web Application individually. Since each web application can be extended to five different authentication zones (Default, Intranet, Internet, Custom, Extranet), each of the extended zones can also be selected independently.
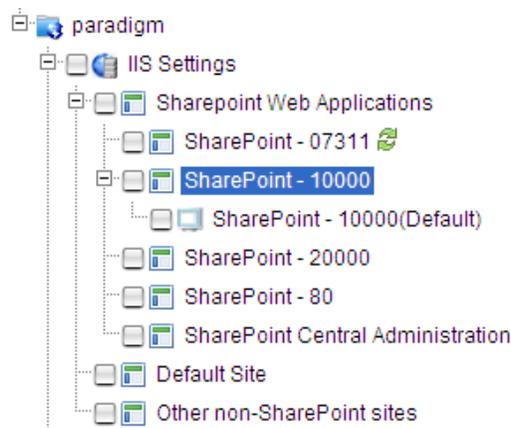
Figure 2: IIS Settings node in DocAve Deployment Manager

IIS Best Practices

In addition to properly propagating IIS settings to ensure consistency and acceptable Web server behavior across all instances, Microsoft also recommends some general IIS best practices. The guidelines are outlined below.

- Restrict write access permissions for the IUSR_*computername* account. This will help limit the access anonymous users have to your computer.
- Store executable files in a separate directory. This makes it easier to assign access permissions and audit for administrators.

- Create a group for all anonymous user accounts. You can deny access permissions to resources based on this group membership.
- Deny execute permissions for anonymous users to all executables in Windows directories and subdirectories.
- Use IP address restriction if administering IIS remotely. For more information, see Securing Sites with IP Address Restrictions.
- Assign the most restrictive permissions possible. For example, if your Web site is used only for viewing information, assign only Read permissions. If a directory or site contains applications, assign Scripts Only permissions instead of Scripts and Executables permissions. For more information, see Securing Sites with Web Site Permissions.
- Do not assign Write and Script source access permissions or Scripts and Executables permissions. Use this combination with extreme caution. It can allow a user to upload potentially harmful executable files to your server and run them. For more information, see Securing Sites with Web Site Permissions.
- Enable data encryption in all WMI-based remote administration scripts. For more information, see Encrypting Data When Running WMI–Based Remote Administration Scripts.

For **IIS 7.x** details and best practices please visit http://learn.iis.net/ .

General IIS Security Best Practices

Microsoft also recommends several Web server general security best practices. The guidelines are outlined below and should be adhered to, especially for mission-critical and enterprise-wide platforms like Microsoft SharePoint.

- **Always log on with the least credentials**. Log on to a computer using an account that is not in the Administrators group, and then use the *Run as* command to run IIS Manager as an administrator.
- **Reduce the attack surface**. Disable all services that are not running, including IIS services such as FTP, NNTP or SMTP. If a feature or service is not enabled, then there is no need to secure it.
- **Do not download or run programs from untrusted sources**. Programs can contain instructions to violate security in a number of ways, including data theft, denial of service, and data destruction.
- **Keep virus scanners up to date**. Virus scanners frequently identify infected files by scanning for a signature that is a known component of a previously identified virus. The scanners keep these virus signatures in a signature file, which is usually stored on the local hard disk.
- **Keep current with all software updates**. Software updates provide solutions to known security issues. Check software provider Web sites periodically to see if there are new updates available for software used in your organization.

o   The new process model in IIS 6.0 includes process recycling, which means an administrator can easily install most IIS updates and most new worker process DLLs without any interruption of service.

o   Auto Update version 1.0 provides three options to customers: Notify update availability the moment it is available; Download the update, and notify that it has been downloaded; and Scheduled install.

- **Use NTFS**. The NTFS file system is more secure than the FAT or FAT32 file system.
- **Assign strong NTFS permissions for your resources**.
- **Exercise caution with domain controllers**. If you use a domain controller as an application server, be aware that if security is compromised on the domain controller, then security is compromised on the entire domain.

Replicating .NET Assemblies in the Global Assembly Cache

Many SharePoint development projects often include DLL's or .NET assemblies that are deployed in the WFE server's global assembly cache (GAC). These artifacts must also be replicated over to destination environments in order to keep the custom code in sync across all servers. DocAve Deployment Manager offers users the ability to select appropriate assemblies and have those promoted across all related destination environments. Note that only the .NET assemblies are replicated from a source GAC to destination GAC locations. Occasionally, organizations would develop certain customizations that require additional dependencies or install steps (e.g. registry settings) to ensure that the feature is fully functional. If necessary, these steps should still be performed after the individual assemblies have been replicated over.

DocAve Deployment Manager intelligently groups .NET assemblies into two separate nodes – those with .NET Framework version 1.0/1.1, and those with .NET Framework version 2.0 and greater. While the simplest option is to select the entire global assembly cache to propagate to destination environments, it is advisable that users only select the assemblies that are relevant for the SharePoint deployment operation. Users can also select assemblies that are not SharePoint-related, providing the ultimate flexibility in managing .NET code across your enterprise-wide network of Windows Servers. Due to the inherent differences between the underlying .NET Framework versions, special care should be exercised so that the appropriate .NET versions are available at the destination instances when the assemblies are propagated over.

Due to the number of assemblies that will be displayed under the Global Assembly Cache node in the data tree, it is recommended to define filter rules to more easily determine the appropriate assemblies to propagate. As shown in Figure 3 below, the *Filter Options* simplify this result set by allowing users to specify rules that include or exclude certain assemblies either by filename or by assembly version. For BIN deployments beyond the scope of the GAC, these additional dependencies residing on the WFE file system can be selected through the File System data tree.

Figure 3: Defining GAC filter rules.

Considerations for Additional Dependencies on the Front End File System

As mentioned earlier, certain customizations span multiple entities. For example, certain customizations involving .NET code might include callouts to other elements that are not necessarily compiled or packaged together with the resulting assembly. Often times, these dependencies may be located directly on the local file system of the WFE. There could also be additional source code or file system-based elements that users may wish to promote to other staging environments. To satisfy these requirements, DocAve Deployment Manager provides a file system-level view of the front end web server, enabling users to browse the file system and select related files that need to be properly propagated to the destination environments.

The File System node in DocAve Deployment Manager lists all the available files and folders that can be propagated across environments. Users can select folders, as well as individual files when they define their deployment plans. Similar to the GAC deployment, there is a File System Filter option that allows users to define rules to limit the files and folders that are included or excluded from the data tree. Users can also perform a real-time search for applicable folders by clicking on the Search (🔍) icon and defining a search criterion. If there are specific files within the file system folders that need to be selected more granularly, the Info (ⓘ) icon allows users to drill down and select the appropriate files.
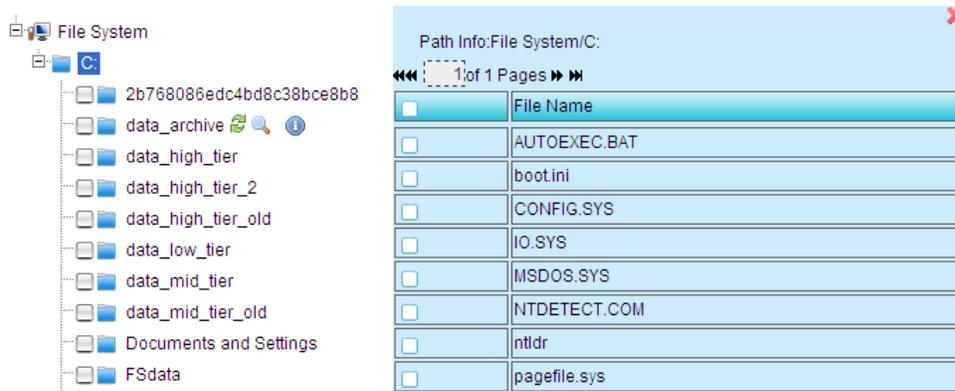
Figure 4: File System node in Deployment Manager

Destination Deployment Options

Once the appropriate elements from the source environment have been selected, a deployment plan can be completed by selecting the destination staging environments. Note that only a single source can be included within each deployment plan, whereas multiple destination staging environments can be designated. Once selected, a time can be scheduled for the deployment operation to be executed.

DocAve Deployment Manager supports three deployment options:

- **Overwrite if source is newer:** DocAve will overwrite the selected element (IIS setting, .NET assembly, file/folder) if the source environment contains a more current version
- **Overwrite:** DocAve will overwrite the destination element with whatever that is replicated over from the source environment.
- **Not Overwrite**: DocAve will not replicate the source element over if it already exists in the destination environment

Front-End Deployment Scenarios

This section briefly describes two sample Front-End deployment scenarios that can be efficiently established using DocAve Deployment Manager.

Deploying SharePoint Features to multiple WFE

In order to promote SharePoint Features onto multiple front-end Web servers, follow the steps outlined below:

1. Install SharePoint feature onto a WFE
2. Define a deployment plan that includes the feature's file folders, along with any related assemblies, including those deployed in the GAC
3. Include IIS settings if assemblies are copied into the IIS virtual directory, or if any IIS settings or the web.config file is updated

4. Select the target WFE – note that you can select more than one destination WFE
5. Schedule and execute the plan
6. Verify the SharePoint feature is properly deployed on the destination WFE by visiting the target SharePoint site

<u>Deploying Site Definitions to multiple WFE</u>

In order to replicate site definitions onto multiple front-end Web servers, follow the steps outlined below:

1. Install site definition onto a SharePoint WFE
2. Define a deployment plan that includes that site definition's dependent files and folders
3. Select the target WFE – note that you can select more than one destination WFE
4. Schedule and execute the plan
5. Verify the site definition is properly deployed on the destination WFE by visiting the target SharePoint site

Rolling Back Your Customizations

Occasionally, a deployment plan may result in undesirable outcomes, or even unexpected failures. For example, there could be instances within a release process where user acceptance testing reveals a defect that was not discovered in prior unit testing environments. For such scenarios, users require the ability to perform a rollback operation, to undo all changes and return the deployment to its original state. Before a rollback operation can be executed, several settings must be configured.

First, the Rollback Storage Location needs to be defined. This setting is found in the WFE Deployment Settings, and sets the file system location where DocAve Deployment Manager can cache recent WFE deployment activities. It can be configured to point to a file system local WFE, or to any other file system that is accessible via an authenticated UNC file path. Second, the Enable Rollback option must be selected. When enabled, DocAve will back up the destination elements to the Rollback Storage Location before a deployment operation is performed. The storage allocated for the backup snapshots can be managed by specifying either (1) a Storage Limit to limit the size of the storage location used by the snapshot, or (2) the maximum number of Rollback Points to keep.

Once the Rollback Storage Location has been defined and the Enable Rollback option established, users can perform a rollback operation via the Rollback Center. By selecting a destination agent and the appropriate deployment plan, the Job ID's of the available snapshots (i.e. Rollback Points) will be listed. Each Job ID corresponds with a backup job that was executed prior to the performance of a deployment plan. Users can select the appropriate data or configurations to rollback from the Rollback Data Browser. Rollback operations can be performed immediately, or can be scheduled.

Centralized Solution Deployment via the Solution Center

Microsoft's recommended approach to deploying SharePoint customizations is via the solution framework. This provides a unified infrastructure to bundle all the components into a single deployable, reusable package containing a set of Web Parts, Features, site definitions, and assemblies that can be enabled or retracted independently. While vastly simplifying the customization packaging and deployment process, the proliferation of solution packages contributes to the customization drift and inconsistent behavior across SharePoint environments. DocAve Deployment Manager's Solution Center facilitates global solution deployment and the release management process and helps ensure consistency across all environments. Leveraging the Solution Center, administrators can realize the following benefits:

- Global, holistic view of all SharePoint solutions across multiple farms, including solution status and versions
- Streamlined deployment of multiple solution files to multiple destination farm instances
- Execute actions across multiple solutions
- Centrally manage and deploy solutions from a unifed solution repository

DocAve Deployment Manager's Solution Center propagates SharePoint across farms, from a local file system, or from a centralized solution store managed by DocAve.

Deploying Packaged Solutions across Farms

The simplest technique for deploying solutions across different SharePoint farm instances is to use DocAve's *Deploy from Farm* option. This is ideal for situations when you have a single trusted source environment from which you wish to copy solutions. Using the *Deploy from Farm* option, the Solution Center enumerates the available SharePoint solution files from a source farm. Each solution file can be selected granularly and details of the solution are displayed (see Figure 5). Once selected, users have the ability to retract the solution from any desired scope, or to delete it from the farm altogether. You can also promote the selected solutions to other destination farms or web applications.

Users also have the option to deploy the solution to a central solution repository managed by DocAve. By selecting the DocAve Solution Store from the destination tree, the solutions will be replicated from a SharePoint farm to a logical device accessible through DocAve. This device will host the solution repository containing solutions that other SharePoint farms can deploy to.
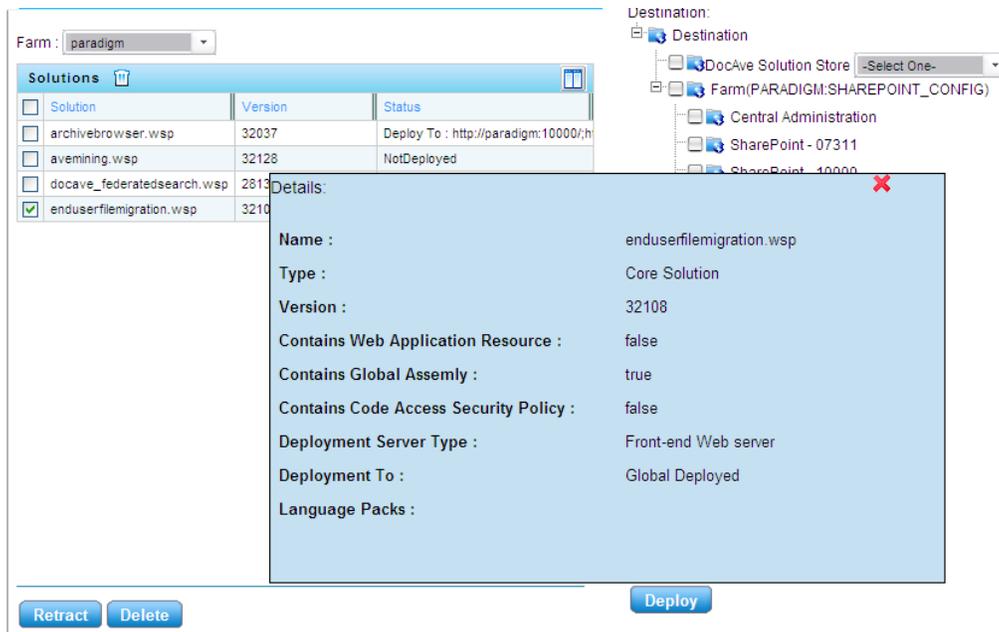
Figure 5: Details and properties of solution packages in DocAve Deployment Manager

Deploying Packaged Solutions from a File System

If you currently manage SharePoint solutions from an applicable file system, the *Deploy from File System* may be an appropriate option. This is ideal for situations when users have only "vanilla" SharePoint environments and are looking to deploy solutions directly from a file system. In order to leverage this option, users must first define the source devices that host the SharePoint solution files. These devices will be accessed by a DocAve agent to scan all the available solution files within that source file system. Since these solution files can be scattered across different folders within the file system, it is also recommended to define filter options to limit the scope of the files or folders that are relevant to the solution deployment. Users can also perform advanced searches for applicable folders by clicking on the Search (🔍) icon and defining a search criterion. If there are specific solution files within the file system folders that need to be selected more granularly, the Info icon (ℹ️) allows users to drill down and view or select the appropriate files.

Just like the other deployment options, the Deploy from File System option allows users to propagate the selected solution files to the appropriate destination farm or web applications, or to a centralized solution repository managed by DocAve.

Deploying Packaged Solutions from a Centralized Solution Store

In order to better manage and synchronize the solution packages and versions across sprawling SharePoint environments, it is recommend to export solution files to a centralized solution store. From this repository, organizations can leverage a "hub-and-spoke" model for deploying solution packages. This central repository will serve as the "solution hub" or "solution directory" developers and administrators can use as a test bed and maintain the latest iterations of their custom packages. Accessible via DocAve Deployment Manager, this acts as the repository where all other pre-production and production farm instances can have their solution packages replicated from.

With the DocAve Solution Store, administrators will be provided with a holistic view of all available SharePoint solutions, along with their versions, and deploy them from a central location – thereby accelerating service delivery and ensuring consistency across all environments.

Solution Manager Deployment Scenarios

This section describes three sample SharePoint solution deployment scenarios and how they can be efficiently executed using the DocAve Deployment Manager.

Copy multiple SharePoint solutions from a single farm to multiple farms

1. Using the *Deploy from Farm* option, browse and select the solutions to be propagated over to the destination farm instances
2. Select the destination farms and web applications, and click *Deploy*
3. Navigate to SharePoint Central Administration on the destination farms and verify that the solutions have been deployed

Deploy multiple solution files to multiple farms

1. Define a source device on a file system where solution files are maintained
2. Using the *Deploy from File System* Option, browse and select the solution files to be deployed and add them to the deployment list
3. Select the destination farms and web applications, and click *Deploy*
4. Navigate to SharePoint Central Administration on the destination farms and verify that the solutions have been deployed

Delete multiple SharePoint solutions

1. Using the *Deploy from Farm* option, browse and select the solutions to be deleted
2. Click Retract or Delete
3. Navigate to SharePoint Central Administration and verify that the solutions are retracted or deleted

Promoting SharePoint Design Elements

DocAve Deployment Manager's Design Manager module empowers organizations to efficiently transition site-level design elements from one stage in the release process to the next. This allows administrators and developers to make faithful copies of custom elements – such as site columns, content types, and site templates – and manage those copies across various staging environments. Design Manager helps maintain consistency across site-level design components, eliminates the need for manual design deployments, and reduces the additional provisioning activity required during each environment build out.

Supported Design Elements

Design Manager provides comprehensive support for replicating the following design elements:

- Site Columns
- Content Types
- Converted forms
- Form Templates
- List Template Gallery
- Site Template Gallery
- Master Page Gallery
- User Information List
- Web Part Gallery

For further detail on the associated support for each of the elements listed above, please refer to the DocAve User Guide.

Live Mode vs. Stage Mode

Design Manager offers the flexibility of two modes for deployment: **Live mode** and **Stage mode**. Live mode transmits selected design elements without the use of a storage media device, whereas stage mode employs an export/import process during which components are exported to a temporary storage location, then imported and restored to the desired destination location. Using either mode, administrators are provided with point-and-click simplicity to associate elements from source to destination instances.

Stage mode is often preferred in circumstances when bandwidth is limited or when network latency is an issue. In such scenarios, the staging process will be more resilient to network contention and congestion, as it first exports a snapshot of the desired design elements to a staging location. However, this storage location must first be defined via the Export Location configuration option located within the Design Manager Setting interface. This can be configured to point to a file system local to a DocAve Deployment Manager Agent, or to any other file system accessible via an authenticated UNC file path. Once the list of storage location profiles are properly defined, Design

Manager deployment plans can be created that reference established storage location profiles as export or import locations.

Both Live mode and Stage mode have advanced scheduling options that allow users to automate and execute deployment processes according to organizational timetables, thereby facilitating more effective project management and satisfying IT best practices. Up to two deployment schedules can be created for each plan, with intervals down to the hour. Utilizing the incremental option, only elements that have been updated between deployment intervals will be processed, drastically reducing the both the process footprint and the release management window.

Replicating Content Together With Design Elements

Propagating design changes from one environment to another using the Design Manager is quite simple. In most cases, deployment plans will only consist of design components crucial to the usability of the environment. However, there are occasions when the staging process requires exact copies of not just system configurations and design elements, but also of SharePoint content. To accommodate such scenarios, DocAve Deployment Manager provides the option to replicate user created content between environments.

User created content such as Announcements, Tasks, and Document libraries will be displayed in the source data tree when the *Hide All User Lists* option is unchecked. Administrators can granularly select this content, and combine it with the selected design elements to create a consolidated "content-plus-custom-design" deployment plan. Due to the potentially large number of lists displayed on the data tree, it is recommended to define filter options to include only relevant lists and items. Administrators can likewise leverage the advanced search option at each tree node to more easily identify and select content for replication.

Design Manager Deployment Scenarios

This section describes a three sample Design Manager deployment scenarios, and how they can be efficiently accomplished using DocAve Deployment Manager.

Deploy site designs to multiple destination sites
1. Perform custom design changes on the source environment, including elements such as master page settings, Web Part settings, content types, etc…
2. Define a Design Manager deployment plan, selecting a source site and multiple destination sites.
3. Select the relevant design elements to promote
4. Schedule and execute the Design Manager plan
5. Navigate to the destination sites and verify the updated design changes

Deploy page layout changes
1. Using SharePoint Designer, make page layout changes, and add Web Parts to the page

2. Define a Design Manager deployment plan, selecting relevant lists/folders containing page layout files
3. Schedule and execute the Design Manager plan
4. Navigate to the destination sites and verify the updated design changes

Deploy SharePoint Designer workflow definitions

1. Using SharePoint Designer, create a workflow definition in the source site
2. Create a Design Manager deployment plan, and select a source site and multiple destination sites
3. Select the relevant workflow definitions to propagate
4. Schedule and execute the Design Manager plan
5. Navigate to the destination sites and verify the updated workflow definitions

Design Manager Backup/Rollback

Occasionally, execution of a Design Manager deployment plan may result in undesirable outcomes, or even unexpected failures. For example, there could be circumstances where user acceptance testing reveals a custom design flaw that was not discovered in prior unit testing environments. For such scenarios, administrators have the opportunity to perform a rollback operation to undo the changes and revert the environment to its original state. To enable backup and subsequent rollback of environment design components and content, a deployment plan needs to be defined with the "Backup before Design Manager" option selected. This creates a backup of the destination sites prior to the execution of the scheduled Design Manager plan. If the outcome of the job prove undesirable, administrators will have the opportunity to revert the destination sites back to their original state by restoring the backup file.

Monitoring Deployment Processes

After deployment processes have been scheduled, administrators can access DocAve's Job Monitor to view the status of the running process. The Job Monitor offers administrators a centralized interface to monitor not only Deployment Manager processes, but also other infrastructure management processes. For each completed job, a corresponding log file provides details of the processes, presenting administrators with valuable insight in the event of a process failure. Administrators can take corrective actions by performing the rollback options detailed in the preceding section.

Integrating Deployment Manager into the Release Process

Just like any real IT project, successful SharePoint deployments are reliant on clear application development lifecycle roles, proper testing, configuration, and release processes. The figure below outlines a simplified application lifecycle composed of four different environment roles: Development, Testing, Staging, and Production. Even the most trivial custom development or patch testing activity on SharePoint should adhere to the rigors of such a staging process.

Figure 6: Typical staging process and environment roles

To assist the typical release management process, DocAve Deployment Manager allows for multiple applications and objects to be propagated as a single unit, thereby reducing complexity and ensuring consistency across all instances. When deploying custom applications or patches, each environment can be thoroughly tested and verified before progressing onto the next stage. By supporting multiple target instances, Deployment Manager can simultaneously deploy custom elements to their corresponding destinations promptly, mitigating the impact of environment complications, and reducing the time-to-value of each deployment. Should a deployment process fail, or if a defect is detected, administrators can easily rollback the deployment and quickly revert the environment back to its original state.

Conclusion

DocAve Deployment Manager streamlines the SharePoint application lifecycle by automating deployment across the staging process. The solution is optimized to support the deployment of a wide spectrum of SharePoint front-end and platform-level components throughout the development, test, and production stages. It enables efficient and flexible movement of complex server configurations and custom solutions by effectively cloning an entire multi-tier environment for each phase of the release process, thereby minimizing risk of breakage during deployment or upgrades, and minimizing risk of service disruption to an organization's production environment. By

automating low-level and time consuming tasks, DocAve Deployment Manager revolutionizes the way administrators deploy and manage SharePoint, and empowers them to focus on higher value activities.

Key benefits include:

- **Reduced operational costs with automated release processes:** Enhance IT efficiency by automating and simplifying repetitive and time consuming processes, allowing skilled resources to focus on more strategic, higher-value activities.

- **Consistency across all pre-production environments and production systems:** Perform complex system changes systematically and accurately throughout the staging environment, resulting in a consistent and dependable production system.

- **Improved service levels via standardized SharePoint deployment and implementation processes:** Improve IT's quality of service and responsiveness by providing greater visibility and control over diverse environments.

- **Risk and liability prevention by reducing manual efforts and limiting human error:** Automation results in faster deployment, minimizes risk of error and eliminates the possibility of breakage caused by poorly executed upgrades or change propagation.

References

This section lists resources where you can find more information about the topics discussed in this document.

Microsoft Internet Information Services (IIS)

- http://www.microsoft.com/windowsserver2008/en/us/internet-information-services.aspx

DocAve Deployment Manager

- Website:
  http://www.avepoint.com/products/deployment-manager

- Datasheet:
  http://www.avepoint.com/assets/doc50/DocAve_Deployment_Manager_v5.0Datasheet.pdf

- User Guide:
  http://www.avepoint.com/assets/sharepoint_user_guides/DocAve_v5_User_Guide.pdf

- QuickStart Guide:
  http://www.avepoint.com/assets/sharepoint_user_guides/QuickStart_Deployment_Manager.pdf