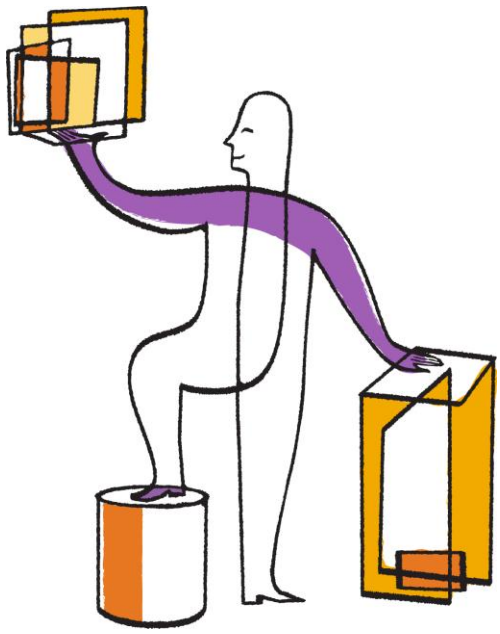
SnapManager® 8.2 for Microsoft SharePoint®

Disaster Recovery User's Guide



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What Is New in this Guide

- Updated the information in Overview.
- Added information about cloning to another farm using backup data. For details, refer to Performing a Farm Clone.
- New Farm Rebuild information:
    - Added information about restoring backup data from the SnapMirror destination during Farm Rebuild.
    - Added information about choosing to build a production farm or a temporary farm in Farm Rebuild wizard. For details, refer to Restore Purpose.
    - Added information about restoring AlwaysOn Availability Group replica backup data for Farm Rebuild.
    - Added information about configuring User Mappings and Domain Mappings to map security, properties, or other metadata information for Farm Rebuild.
    - Added information about rebuilding your farm to a later version of SharePoint. Users can update the farm automatically in the Farm Rebuild wizard or manually update the farm after the job completes.

Overview

SnapManager for SharePoint is an enterprise-strength backup, recovery, and data management solution for SharePoint Foundation 2010 and SharePoint Server 2010 (all current and future service packs), as well as SharePoint Foundation 2013 and SharePoint Server 2013 (all current and future service packs).

Operating on NetApp's latest distributed software platform, SnapManager for SharePoint is accessible from anywhere in the network through Internet Explorer® (other browsers are supported), and can monitor multiple SharePoint environments across a network. SnapManager for SharePoint Manager's main features include the following:

- The ability to centrally manage SharePoint backup and recovery jobs including scheduling, monitoring, reporting (logging and e-mail notifications), user account management, and software Agent management across multiple SharePoint farms from a single accessible-from-anywhere Web interface
- Fast backup speeds leveraging NetApp Snapshot backups, as well as real- time granular restore of items, item versions, lists, libraries, sites, and site collections directly onto the production server or an alternate location
- Backup coverage of all SharePoint 2010 and 2013 databases
- Backup of SharePoint search index files
- Backup of various SharePoint component settings including SharePoint and third-party solutions, IIS settings on Web front-end servers, SharePoint Global Search settings, and InfoPath Forms Services
- SnapMirror replication for backups of SharePoint databases and search indexes, Storage Manager BLOB data and Connector BLOB data, and verification of SnapMirror destination targets
- SnapVault data set for backups of: SharePoint databases and search indexes, Storage Manager BLOB data and Connector BLOB data, and verification of SnapVault targets
- Configure multiple schedules for different restore granularity levels in a single backup plan
- Separately schedule verification jobs apart from backup or restore jobs
- Separately schedule granular indexing jobs apart from backup jobs
- Ability to browse and restore individual items from backup directly without generating an index at backup time
- Different retention settings for the same backup components in multiple plans
- Extend contents from the primary SQL content database storage to more affordable file system based locations (for example, NetApp CIFS devices) leveraging RBS

- End-user-initiated archiving can delete historical contents (from items to site collections), or move them based on fully customizable business rules or an on-demand basis with tiered storage management and the support of backup and recovery
- Connector can attach any NetApp CIFS Share to SharePoint, taking advantage of all SharePoint content management and presentation features without any ingestion of content into the SharePoint content database
- Integration with NetApp SnapLock technology
- Integration with NetApp ASUP system for streamlined support
- Integration with SCOM (Microsoft System Center Operations Manager) event log
- Backup and restore of FAST Search Server Farms
- Full farm cloning to build a new farm using backup data.
- Store index and backup data in an alternate location in LUN rather than the root location of the LUN.
- Back up and restore the databases via AlwaysOn Availability Group replicas.
- Generate non-shredded BLOB data in a BLOB storage device for each externalized file.

In addition, SnapManager for SharePoint offers the option to evaluate various DocAve products for 90 days, including Migration, Granular Backup and Restore, Administration, Compliance products, and Report Center.

Performing Disaster Recovery

The following sections contain information on three types of disaster recovery: farm repair without disconnecting the farm servers, full farm recovery in a primary site, and full farm recovery in a secondary site (SnapMirror destination). Note that this document covers disaster recovery of medium-sized farms.

About Farm Repair

Farm Repair jobs may resolve minor issues with your SharePoint farm; these jobs are typically performed when the SharePoint farm is connected but experiencing minor issues such as unavailable services, deficiency of permissions in the SharePoint Registry, and so on. As opposed to a Farm Rebuild, which requires you to disconnect and then reconnect all servers in the farm, a Farm Repair job is much quicker as it does not require you to disconnect any servers in the farm.

To repair a farm without disconnecting the servers from the farm, complete the following steps:

1. Select the **Restore** tab and click **Farm Repair** in the **Manage** group.
2. In the **Farm Repair** interface, select the SharePoint farm from the **Farm** drop-down list.
3. In the table, view and select the following as needed:
    - Select the SharePoint farm servers you wish to repair
    - View the services that are running on the corresponding server.

    The selection information is displayed at the bottom of the table. You can deselect the checkboxes by clicking **Clear Selection**.

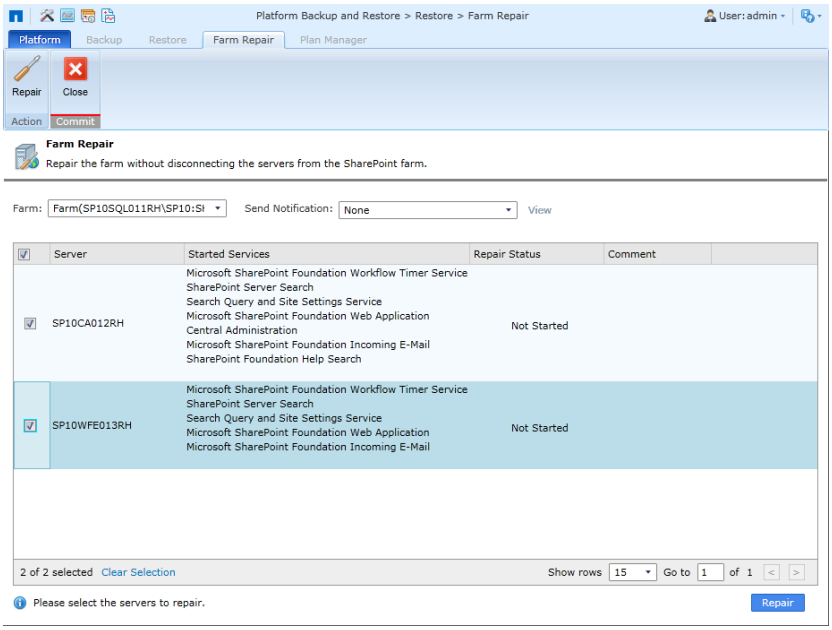

Figure 1: The Farm Repair interface.

4. Optionally, select a notification profile from the **Send Notification** drop-down list.
5. Click the **Repair** button on the ribbon to run the Farm Repair job.
6. After the job is finished, the repair status for each server in the farm will be displayed under the **Repair Status** column. You can also access Job Monitor to view this information.

About Farm Clone

The Farm Clone feature duplicates your SharePoint farm, providing you with two fully functional farms. The Farm Clone wizard will leverage the whole farm backup data to create a point-in-time sibling farm that is derived fromthe original farm for the purpose of creating a test, development, or disaster recovery environment.

The Farm Clone job supports cloning the farm to a different domain with user mapping and domain mapping configured, but the source domain and the destination domain must be trusted by each other.

By default, the Farm Clone job will make the source farm and the destination farm use the same farm ID. If you want to make the destination farm use a different farm ID, go to the *…\NetApp\SMSP8\Agent\data\SP2010\Platform* directory on the destination SharePoint Central Administration server, find the **SP2010PlatformConfiguration.xml** file, and set the value of the **IsFarmCloneChangeFarmId** attribute to **true**.

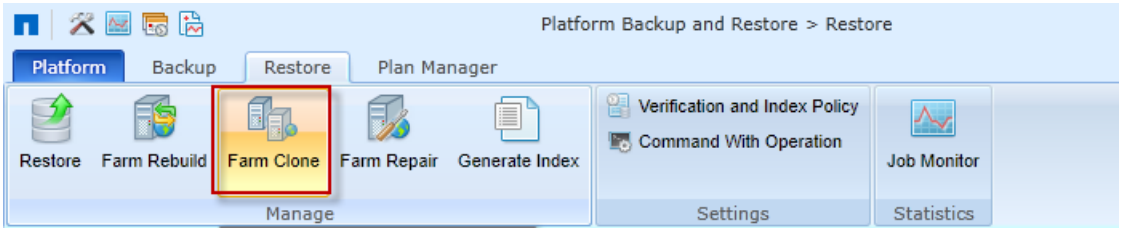

Figure 2: The Farm Clone button.

Performing a Farm Clone

To perform a Farm Clone, complete the steps below:

1. Select the **Restore** tab and click **Farm Clone** in the **Manage** group. From the **Farm Clone** tab, configure the following options in the **Filter By** area.

   ***Note:** In the **Farm Clone** tab, only the backup jobs that backed up the whole farm can be displayed and filtered in the calendar view, and Farm Clone does not support cloning the Web front-end backup data. For details on restoring the Web front end data, refer to the *SnapManager for SharePoint Platform Backup and Restore User's Guide*.

   Filter By – Limit the scope of backup data restored by filtering out specified full farm backup jobs.

a. **Filter by Plan** – Filter the full farm backup data by plan information using this drop-down list.

   - **Farm** – Select a farm from the drop-down list to display the plans for that particular farm. Select **All Farms** to display all plans of all farms.
   - **Plan Name** – Select the plan that you want to display from the drop-down list. Select **All Plans** to display the jobs of all the plans.
   - **Restore granularity level** – Select the restore granularity level from the drop-down list; only the backup jobs of the specified restore granularity levels are displayed. Select **All Types** to list the backup jobs of all levels.

a. **Filter by Time Range** – Filter the full farm backup data by completion time range using this drop-down list.

   - **All Jobs** – Select this option to display all Finished and Finished with Exception Platform backup jobs.
   - **Backup jobs start within …** – Select this option to specify a time period. All of the Finished and Finished with Exception Platform backup jobs that have a start time within the specified time period will be displayed.

2. After configuring the filters above, click the **Filter** button in the **Filter By** area or on the ribbon to filter the backup jobs. All of the full farm backup jobs that meet all the filter rules are listed in the calendar. You can click **Reset** in the **Filter By** area or click **Reset** on the ribbon to clear all the filters and display all the Finished and Finished with Exception Platform backup jobs.
3. Select the backup job that you want to restore by clicking the job. Additional actions that can be performed:
   - Place the mouse cursor over the full farm backup job to display job information such as the **Plan Name**, **Job ID**, **Backup Option**, **Restore Granularity Level**, **Backup Method**, **Create Persistent Snapshot**, **Index Status**, **Copy Data**, **Job Status**, and **Data Import**. Click on **Day**, **Week**, or **Month** to change the view to see all the available full farm backup jobs during that time period.
   - Click the page turning buttons () at the top-left corner to turn the page.
4. Click **Next** to enter the **View** step.
5. **View** – View all the backed up SharePoint components, farm topology, and server roles of the farm in the whole farm backup job. Refer to the following three view tabs:
   - **Farm Backup Data** – Displays all of the farm components backed up in the selected job.

     ***Note:** To ensure consistency between the source farm and the cloned sibling farm, the selections on the tree cannot be edited. The **Web Front-End Servers** node and **Custom Database** node are deselected.

   - **Topology By Role** – Displays the farm topology of the backed up farm.
   - **Topology Details** – Displays the server name and the corresponding server role in the backed up farm.

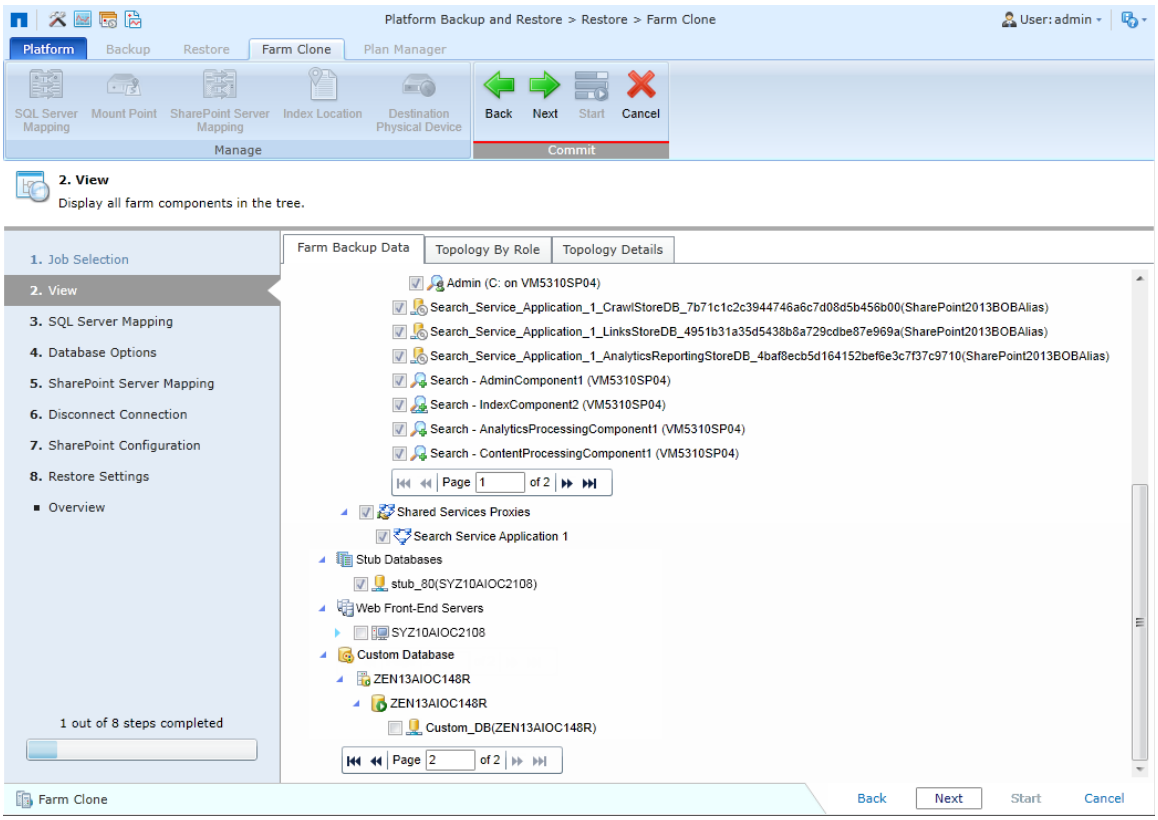

Figure 3: The View interface.

6. Click **Next** to enter the **SQL Server Mapping** step.

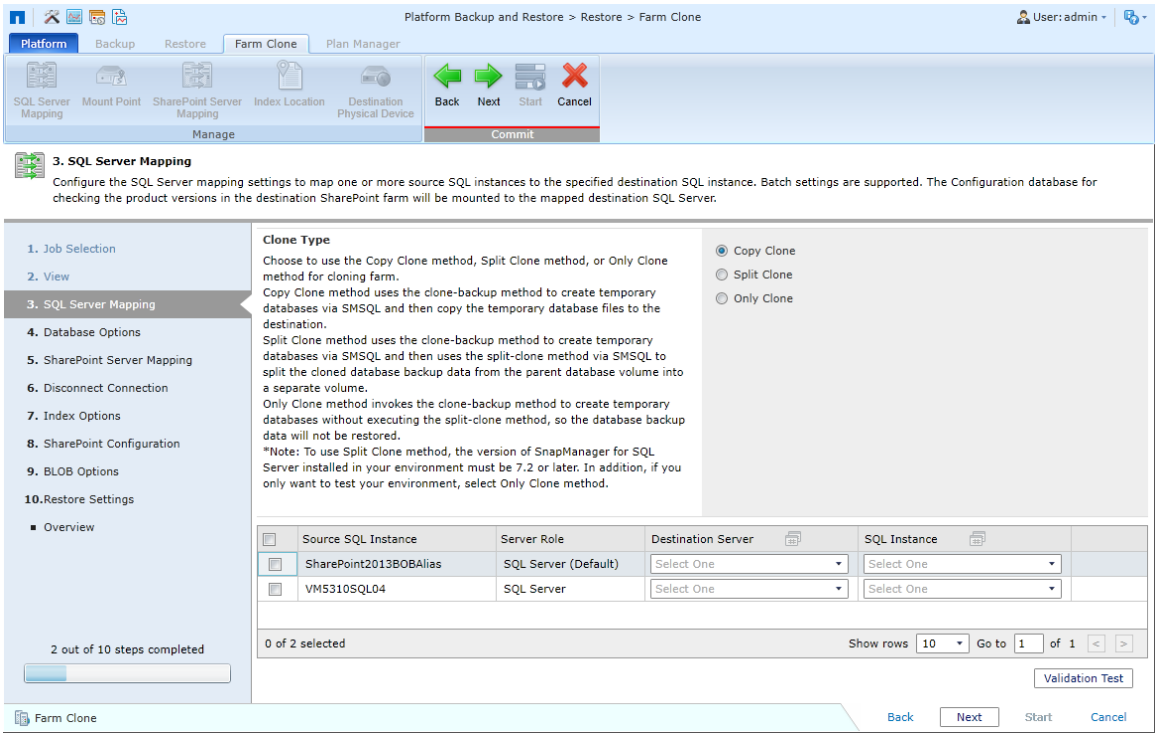

Figure 4: The SQL Server Mapping interface.

7. **Clone Type** – Choose to use one of the following clone types to clone the farm backup data to another farm.

    - **Copy Clone** – Creates temporary databases via SMSQL and then copies the temporary database files to the destination. Copy Clone will use existing storage resources of the destination server.

    - **Split Clone** – Creates temporary databases via SMSQL and then uses the split-clone method via SMSQL to split the cloned database backup data from the parent volume into a separate volume. Split Clone takes less job time than a Copy Clone and Split Clone will create new volumes for the storage of the cloned farm.

      ***Note**: To use Split Clone, you must be on SMSQL 7.2 or later and SnapDrive 7.1 or later.

    - **Only Clone** – Creates temporary databases in the destination SQL instance via SMSQL, but keeps the parent child relationship and does not use the split-clone method to restore the real backup data to the destination. If you only want to test your environment, select **Only Clone**.

      ***Note**: The destination farm must be able to map all of the backed up components of the source farm.

8. **SQL Server Mapping** – Configure the SQL Server Mapping to map the source SQL Server instance to a desired destination SQL Server instance. Select the Destination Server and Destination SQL instance for each source SQL Instance. Batch settings are also supported.

   ***Note**: If there are several source SQL instances containing databases that use the same database name, these source SQL instances cannot be mapped to the same destination SQL instance.

   To configure the SQL Server Mapping settings in batch, complete the steps below:

   a. Select one or more source SQL Server instance from the table, and then click the Batch Settings () button. The Destination SQL Server window appears.

   b. Select a destination SQL Server from the drop-down list to load all of its SQL instances

   c. Select a SQL instance from the **SQL Instance** drop-down list.

   d. Click **Save**.

9. Click **Next** to enter the **Database Options** step.

10. **Database Options** – The databases in the source farm will be cloned to the corresponding destination SQL instance selected in the **SQL Server Mapping** step. Click **Edit** under the **Details** column to view and edit the destination database settings. Only if the **Clone Type** is set to **Copy Clone**, can the destination database settings be edited.

11. **Conflict Resolution** – Choose a resolution in the event that a conflict occurs during this restore. To skip cloning the backed up database with destination database kept intact, select **Skip**; to remove the conflicting database in the destination, and clone the backup data to the destination, select **Overwrite**.

    ***Note**: The Farm Clone job will always overwrite the SharePoint Configuration database regardless of the selected conflict resolution. The Farm Clone job will change the SharePoint Configuration database ID in order to let SMSP process the two farms at the same time. The following information in the SharePoint Configuration database will be updated:

    - The SQL Server information and the associated databases recorded in the Configuration database.
    - The information recorded in the Object table of the Configuration database.
    - If you configured the destination farm to use a different farm ID than the source one, the Farm ID for all of the objects recorded in the Configuration database will also be updated.

12. Click **Next** to enter the **SharePoint Server Mapping** step**.**

13. **SharePoint Server Mapping** – Select the destination servers for the mapping of each source SharePoint server. The server role of each source SharePoint server is displayed under the **Server Role** column. Select a destination server from the **Destination Server** drop-down list for the mapping of the corresponding source server. Repeat this operation for each source

SharePoint server. Batch settings for configuring the mapping are also supported. Complete the steps below:

a. Select one or more source servers from the table.

b. Click the Batch Settings () button on the **Destination Server** column header. The **Destination SharePoint Server** window appears.

c. Select a SharePoint server from the **Destination SharePoint Server** drop-down list as the mapping destination for all of the selected source SharePoint servers.

***Note**: The selected destination SharePoint server must be in the same SharePoint product version as the source server.

d. Click **Save**.

***Note**: If the selected destination SharePoint server is already connected to a SharePoint farm, the SharePoint server will be disconnected from the original farm in the **Disconnect Connection** step. If the server you select as the destination server for this Farm Clone job is included in a farm that has been backed up or configured in this platform, the backup data or configurations of the original farm may be unavailable after running this Farm Clone job.

14. After configuring the mappings for the SharePoint servers, click **Validation Test** to verify the mapping settings. In the verification process, the SharePoint configuration database will be restored to the mapped destination SQL Server for verifying the production versions and passphrase in the later steps. It may take a while.
15. After the validation is finished, click **Next**. The **Disconnect Connection** page appears.

    ***Note**: If all of the destination SharePoint servers are not connected to any farm, the **Disconnect Connection** step will be skipped.

16. **Disconnect Connection** – Disconnect all the SharePoint servers in this farm. All the SharePoint servers which have connected to the current farm will be displayed here.
    - **Manage columns** () – Manage which columns are displayed in the list so that only the information you want to see will be shown. Select the manage columns button (), and then check the checkbox next to the column name to have that column shown in the list.
    - **Hide the column** () – Hover over a column heading and then select the hide the column button () to hide the column.
17. Click **Disconnect** to disconnect the connections of all the displayed SharePoint servers from this farm. If some of the SharePoint servers are not disconnected successfully, click the **Disconnect** button to disconnect those servers again. For the second **Disconnect** operation, only the SharePoint servers that have not been successfully disconnected in the first time will be disconnected from the farm.

    If all of the displayed SharePoint servers have already been disconnected from this farm, go to the next step.

18. **Index Option** – Choose whether to clone the index components of Search Service Application to the destination index server. To clone the index components, select **Yes** in the **Clone Index** field. Otherwise, select **No**. If you select to clone the index components, configure the index location in the Index Information table. If the location is not configured, the default location for storing the index components in the SharePoint server, configured in the **SharePoint Server Mapping**, will be used.

    Follow the two methods below to configure the location to store the backup data of the index components:

    - Separate configuration – Enter a local directory of the destination index server into the **Location** column to store the cloned index component, and then repeat this operation for each index component.
    - Batch setting – Select one or more index components from the table, and then select the Batch Settings () button on the **Location** column header. The **Index Location** window appears. Enter a local directory in the format of *C:\data* to store the cloned index components that you selected in the table. Click **Save**.

    ***Note**: Help Search Index components are not supported for Farm Clone.

19. Click **Next** to go to the **SharePoint Configuration** step.
20. **SharePoint Configuration** – Configure the settings required for reconfiguring the restored SharePoint farm.

    - **Passphrase** – Enter the passphrase for this farm before reconnecting all the servers back.
    - **Port Number** – Displays the port used by the SharePoint 2010/2013 Central Administration.
    - **Authentication Provider** – Display the security authentication type for this newly cloned farm. Platform Backup and Restore supports the two following security authentication types: **NTLM** and **Negotiate (Kerberos)**. The authentication provider of the cloned farm will be the same as the backed up farm and cannot be changed in this step.

    Click **Validation Test** to verify the information you entered. When the test is successful, click **Next**.

21. **BLOB Options**– Choose whether or not to clone the BLOB data in the farm.

    If you select the **Clone Storage Manager BLOB data** option, you are required to configure the physical device mapping to map the source physical device to a destination physical device. Click the box under the **Destination Physical Device** column to load all of the available destination physical devices that are using the same storage type, and then select a destination physical device for the source one.

    The physical device mapping supports batch settings to map all of the selected source physical devices to the same destination physical device. Complete the steps below:

a. Select the checkbox beside a physical device mapping item, and then click **Destination Physical Device** on the ribbon. The **BLOB Batch Settings Page** appears.

b. Choose a destination physical device from the drop-down list. Click **Show** to view the path and usage information of the selected physical device.

c. Click **OK** to save the batch settings and return to the **Physical Device Mapping** interface.

***Note**: Farm Clone does not support cloning Connector BLOB data.

22. Click **Next** to enter the **Restore Settings** step.

- **Mapping Settings** – Select a user mapping profile or a domain mapping profile from the corresponding drop-down list to update the permissions and metadata when restoring database to an alternate destination.
    - **User mapping** – Select a user mapping profile from the drop-down list or select **New User Mapping** from the drop-down list to create a new one. After you have selected a user mapping profile, click **View** to view the details of the user mapping profile settings. For specific instructions on setting up the user mapping, refer to the *SnapManager for SharePoint Control Panel User's Guide*.

      ***Note**: The User Mapping at database level does not support using default user or placeholder in the mapping settings. User Mapping cannot map user groups in SharePoint 2013 farm to the destination during a Farm Clone.

    - **Domain mapping** – Select a domain mapping profile from the drop-down list or select **New Domain Mapping** from the drop-down list to create a new one. After you have selected a domain mapping profile, click **View** to view the details of the domain profile settings. For specific instructions on setting up the domain mapping, refer to the *SnapManager for SharePoint Control Panel User's Guide*.

  ***Note**: The job details about the user mappings and domain mappings can be viewed in the **Security Details** tab of the job report.

  ***Note**: If configuring the user mapping by entering username in the e-mail format, or configuring the domain mapping by entering the domain with full qualified domain name, the User Mapping or Domain Mapping will not function.

- **Notification** – Configure the email **Notification** settings. Select a previously configured notification profile from the **Select a profile** drop-down list. You can also choose to create a new e-mail notification profile by clicking the **New Notification Profile** link. Click **View** to view the detailed configuration of the selected notification profile. Click **Next**.

23. **Overview** – View the current farm settings you have configured. You can click **Edit** to go back to each step to change the settings.
24. Click **Start** to run the farm clone.

***Note**: Farm Clone does not support cloning some specific SharePoint components to the destination. For details on restoring those components, refer to Configuring Specific Components after Farm Clone.

Configuring Specific Components after Farm Clone

Some of the farm components may not work well after the Farm Clone job. Refer to the section below to do some configurations on the specific components to make them functional after the Farm Clone job is finished.

Configuring Custom Web Parts and Custom Solutions

If the Custom Web Parts and Custom Solutions exist in your source farm, you must manually install and deploy them in the cloned farm in order to make them functional in the cloned Web applications.

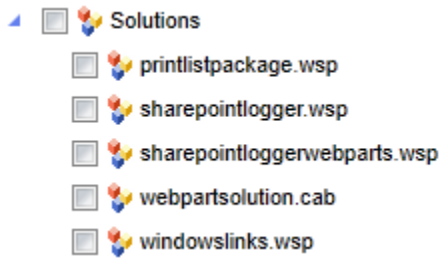

Figure 5: Selecting the custom solutions to restore.

After you have manually installed and deployed the Custom Web Parts and Custom Solutions, navigate to **SharePoint Central Administration** > **System Settings** > **Manage farm solutions** to check whether the solutions have been successfully deployed.

Name	Status	Deployed To
printlistpackage.wsp	Deployed	http://sp10ca04624/,...
sharepointlogger.wsp	Deployed	Globally deployed.
sharepointloggerwebparts.wsp	Deployed	http://sp10ca04624/,...
webpartsolution.cab	Deployed	http://sp10ca04624/,...
windowslinks.wsp	Deployed	Globally deployed.

Figure 6: Deploying the custom solutions.

Configuring NewsGator after Farm Clone

Immediately after cloning your farm, NewsGator will not be functional in the destination farm. To enable it, perform the following instructions:

1. Make sure the User Profile Service is **Started**.
2. Retract the NewsGator solutions that are globally deployed, and then redeploy the solutions. Note that the NewsGator solutions that are globally deployed all start with **NewsGator**.

3. After successfully deploying the NewsGator solutions, deactivate the features even though they may already be active after Farm Clone. Then, activate the NewsGator features again.
4. After successfully activating the NewsGator features, make sure the service instances are created and **Started**.

   ***Note**: For NewsGator VideoStream Service, edit the properties of the NewsGator VideoStream, and reconfigure the folders in the **VideoStream Configuration** field.

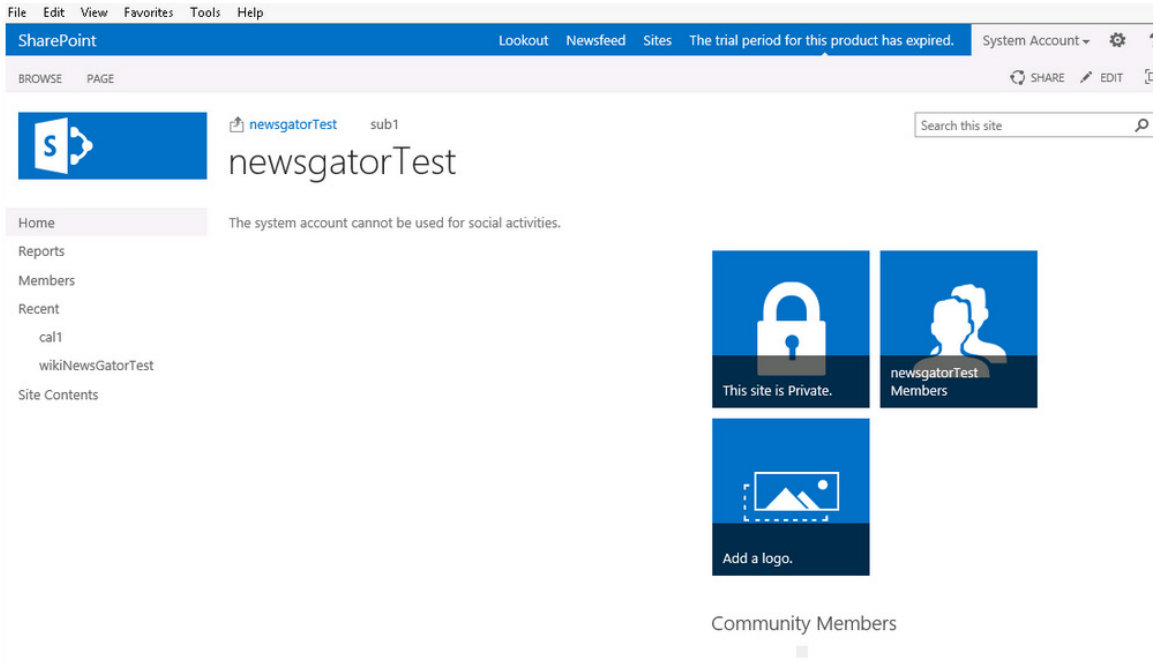

Figure 7: Accessing NewsGator site collection.

Configuring Nintex Workflow after Farm Clone

Immediately after cloning your farm, Nintex Workflow is not functional in the destination farm. To enable it, perform the following:

1. Navigate to **Central Administration** > **Nintex Workflow Management** > **Nintex Workflow Database Setup**.

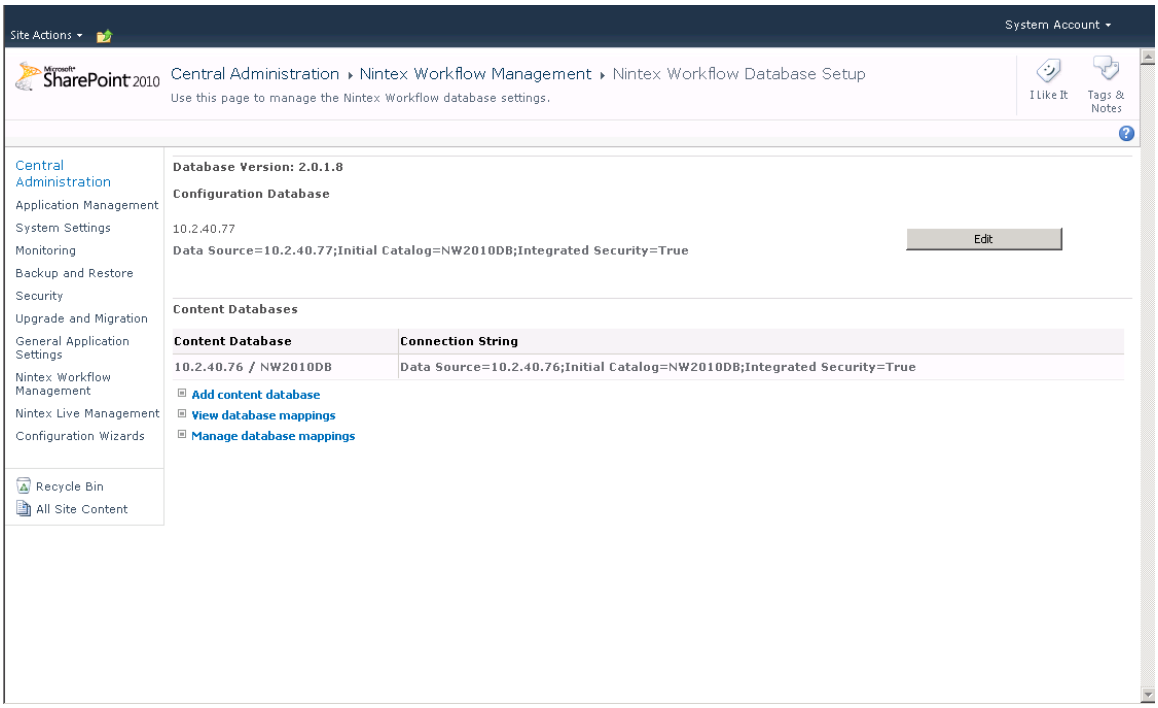

Figure 8: Accessing the Nintex Workflow Database Setup interface.

2. Click **Edit** to change the Nintex configuration database server to the destination server. Save the configurations.
3. Log into the destination SQL Server where the Nintex configuration database resides. Locate the Nintex configuration database and change the value under the **ServerName** column in the **dbo.Database** table to the destination SQL Server.

Helpful Notes about Farm Clone

Be sure to review the following helpful notes before and after a Farm Clone:

- **Project Server** –Project Server must be installed on each SharePoint server in the destination SharePoint farm before performing Farm Clone. If they are not installed, verification of the SharePoint Server Mapping will fail.
- **OWA for SharePoint 2010** – The OWA Server for SharePoint 2010 must be installed on each destination SharePoint server before performing Farm Clone. If this is not done, verification of SharePoint Server Mapping will fail.
- **OWA for SharePoint 2013** – The OWA Server for SharePoint 2013 is a separate application server from the SharePoint farm, thus the same OWA farm can be used by both production and disaster recovery environment. After the Farm Clone, the SharePoint configuration database will automatically continue pointing to the same OWA Server as the source farm, and then no further configurations are required.

- **FAST Search Server** –After a Farm Clone, configure the properties of the FAST Search Connector and Query in the destination farm, associate them with the newly configured FAST Search Server, and then crawl.
- **Windows Azure workflow** – Windows Azure Workflow Server is independent of the SharePoint farm. After a Farm Clone, configure the destination farm to use the same Windows Azure Workflow Server as the source farm. Install Workflow Manager Client on each of the SharePoint Web front-end servers in the destination farm, use a new **ScopeName**, and register the service again using **Register-SPWorkflowService** with the **-Force** parameter. Publish the workflow to the SharePoint Designer 2013, if you want to use the SharePoint 2013 Designer Workflow.
- **SQL Server PowerPivot for SQL Server 2012 and SharePoint 2013** – SQL Server PowerPivot feature cannot be installed without an existing farm. After a Farm Clone, you must reinstall the SQL Server PowerPivot Feature and the related Data Providers, retract the solution in SharePoint Central Administration, and then configure SQL Server PowerPivot using the **PowerPivot Configuration Tool**.
- **SQL Server PowerPivot for SQL Server 2008 and SharePoint 2010** is not supported in Farm Clone. The destination servers cannot be connected to the farm since there are no PowerPivot-related bins in the Global Assembly Cache.
- **SQL Server Reporting Services for SQL Server 2012 and SharePoint 2013** – Before performing a Farm Clone, install the SQL Server Reporting Services feature and add-ins. After the Farm Clone completes, run PowerShell commands to install the Reporting Services, Proxy, and Service Instance, and then start the Service Instance.
- **SQL Server Reporting Services for SQL Server 2008 R2 and SharePoint 2010** – Install the SQL Server Reporting Services feature with SharePoint integrated mode in the destination SharePoint farm after the Farm Clone job, manually configure the settings of the destination Reporting Server and configure the Reporting URL of the destination server.
- SMSP does not support **SharePoint Foundation Help Search** being cloned to another farm.
- SMSP does not support **Web front-end server data** being cloned to another farm.
- SMSP does not support **KnowledgeLake Imaging** being cloned to another farm.
- This version of the software will assume that the SharePoint servers have already been deployed and installed and will not support clone of service applications or web-front-ends. Since both farms are intended to be active, it is assumed that the server names will be different from the source to the destination. SMSP Agents must be deployed on the servers in the cloned sibling farm, to ensure that this farm will be added to the original SMSP Manager.
- SharePoint version and patches must match, a validation test in the wizard will check the SharePoint version and CU history for missing patches.
- The snapshot to create the new environment must have been taken after the upgrade to SMSP 8.2.

- Backup plans must be created for the newly cloned farm, and it will appear as a new farm with a different name in the backup wizard interface. This will create a new backup data set for this farm.

Full Farm Rebuild in Primary Site

After you have backed up the entire farm using Platform Backup, you can use the **Farm Rebuild** function to perform a rebuilding of your farm should the need arise.

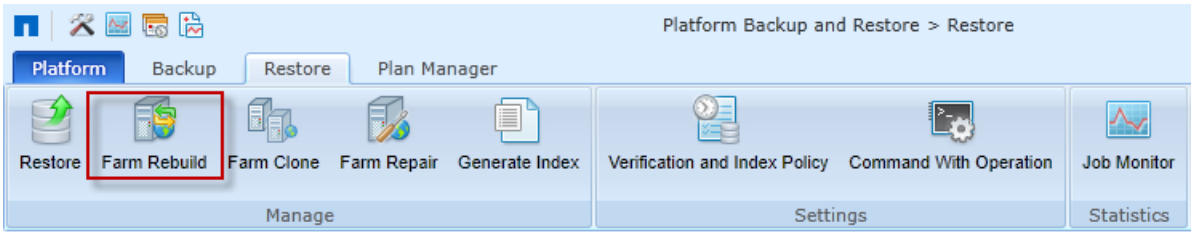

Figure 9: The Farm Rebuild button.

***Note**: The **Web-Front-End Servers** data that you have backed up (including the IIS Settings, SharePoint Hive, Global Assembly Cache, Custom Features, SharePoint Site Definitions, and file system folders) will not be restored during the farm rebuild. If necessary, select the desired **Web-Front-End Servers** nodes to restore the corresponding backup data after the farm rebuild.

Mandatory Prerequisites for Disaster Recovery

To perform the farm rebuild, the following requirements must be met prior to a restore. **Be sure that these prerequisites are complete before proceeding!**

- A SnapManager for SharePoint backup of the data for the entire farm (including the SharePoint configuration database and the Central Administration database) must be available.
- The SharePoint farm server topology should be identical to the topology at the time of backup. The system architecture must also match the platform at the time of backup. For example, an x64-bit architecture should be used if x64 architecture was used at the time of the backup.
- All related software installed on the rebuilt destination should be the identical version and the patch level as before. Examples of related software are: SharePoint, SQL Server, SnapManager for Microsoft SQL Server, SnapManager for SharePoint, as well as the .NET Framework.
- User permissions on both the local server and SQL Server should be set to the same as before.
- Configure the same LUN storage layout as before.

Warnings and Assumptions

- **NTLM** and **Negotiate (Kerberos)** are the supported security authentication types.
- During the farm rebuild process, the farm will be unavailable for use.
- The time for a Farm Rebuild to complete is associated with data size and the number of servers in the SharePoint farm. The more the data and the servers in the farm, the longer the job will take.
- Do not close your IE browser when executing a Farm Rebuild. If the Farm Rebuild process is interrupted before it completes, you will have to restart the Farm Rebuild wizard from the beginning.
- The IIS service will restart during the Farm Rebuild process. You will be notified through a pop-up message before the restart occurs.

Rebuilding the Farm

Generally speaking, the Farm Rebuild has five main procedures:

1. Disconnecting the Farm – Disconnect the servers from the original farm.
2. Restore BLOB – Restore the backed-up BLOB data. (This step is required if any BLOB data is backed up.)
3. Restoring Databases – Restore the following databases:
    - SharePoint Configuration database
    - SharePoint Central Administration database
    - Service application databases
    - Content database
    - Stub database
4. Connecting the Farm – Connect the servers to the target farm using two procedures:
    - Connect the servers to the SharePoint Configuration database, and configure the farm topology.
    - Provision the services on the SharePoint servers, and make sure the components in the farm are functional.
5. Restore Index – Restore the index components of the Search Service Applications. (This step is required if any index components are backed up.)

Detailed full farm rebuild steps are as follows:

1. Select the **Restore** tab and click **Farm Rebuild** in the **Manage** group.

2. From the **Farm Rebuild** tab, configure the options in the **Filter By** area, which limits the scope of backup data to be restored by filtering out specified Full farm backup jobs.

   ***Note:** The **Farm Rebuild** calendar displays only those jobs that have backed-up the SharePoint Configuration database.

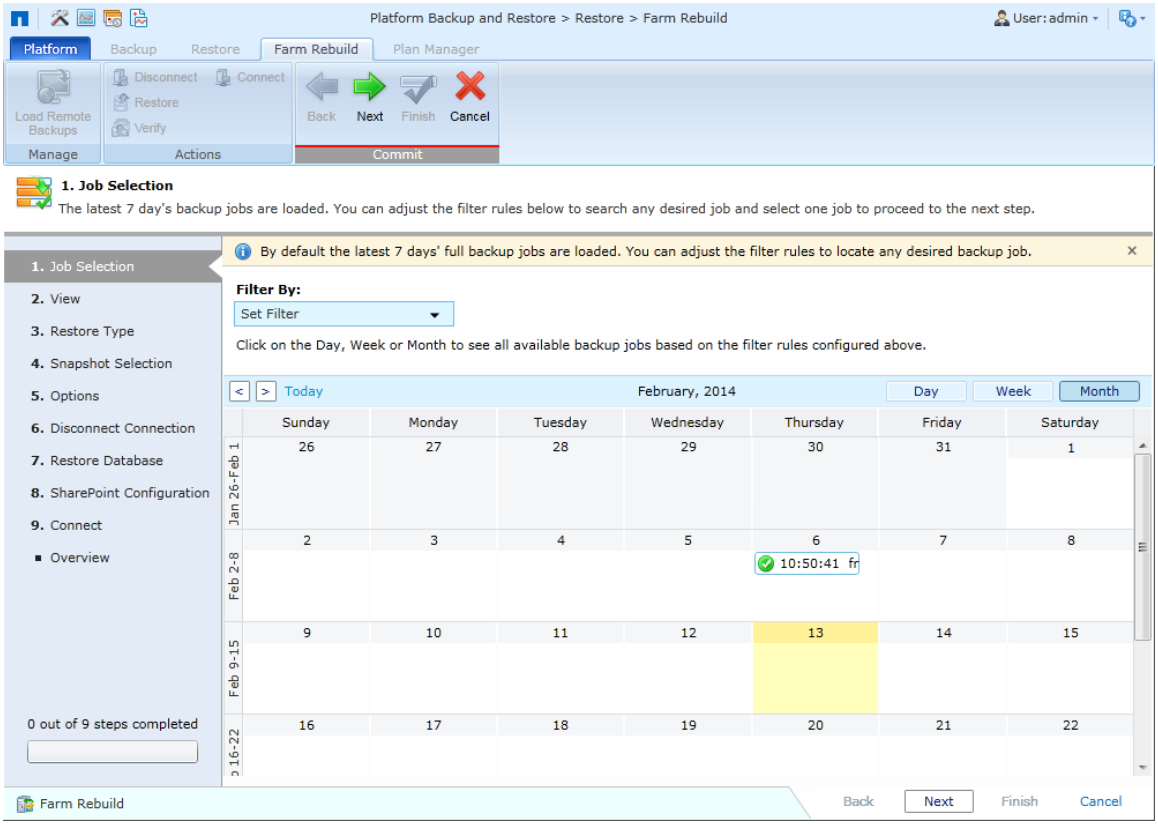

Figure 10: Performing a farm rebuild.

- **Plan Filter** – Filter the full farm backup data by plan information using this drop-down list.
  - **Farm** – Select a farm from the drop-down list to display the plans for that particular farm. Select **All Farms** to display all plans for all farms.
  - **Plan Name** – Select the plan that you want to display from the drop-down list. Select **All Plans** to display the jobs of all the plans.
  - **Restore granularity level** – Select the restore granularity level from the drop-down list; only backup jobs of the specified restore granularity levels are displayed. Select **All Types** to list the backup jobs of all levels.
- **Time Range** – Filter the Full farm backup data by completion time range using this drop-down list.
  - **All Jobs** – Select this option to display all **Finished/Finished with Exception** Platform backup jobs.

- **Backup jobs start within …** – Select this option to specify a time period. All of the **Finished**/**Finished with Exception** Platform backup jobs whose start time is in the specified time period are displayed.

3. After configuring the three filters above, click the **Filter** button in the **Filter By** area or on the ribbon to filter the backup jobs. All of the Full farm backup jobs that meet all of the filter rules are listed in the calendar. You can click **Clear All Filters** in the **Filter By** area or click **Clear** on the ribbon to clear all the filters and display all the **Finished**/**Finished with Exception** Platform backup jobs.
4. Place the mouse cursor over the Full farm backup job to display job information such as the Plan Name, Job ID, Restore Granularity Level, Index Status, Job Status and Data Import. Click on **Day**, **Week**, or **Month** to change the view to see all the available full farm backup jobs during that time period. Click the page turning button < > at the top-left corner to turn the page.
5. Select the Full farm backup job that you want to restore. Click **Next**.
6. **View** – View all of the backed-up SharePoint components in the Full farm backup job.

   ***Note:** The selection on the tree is disabled and cannot be changed. The **Web Front-End Servers** node and **Custom Database** node are deselected.

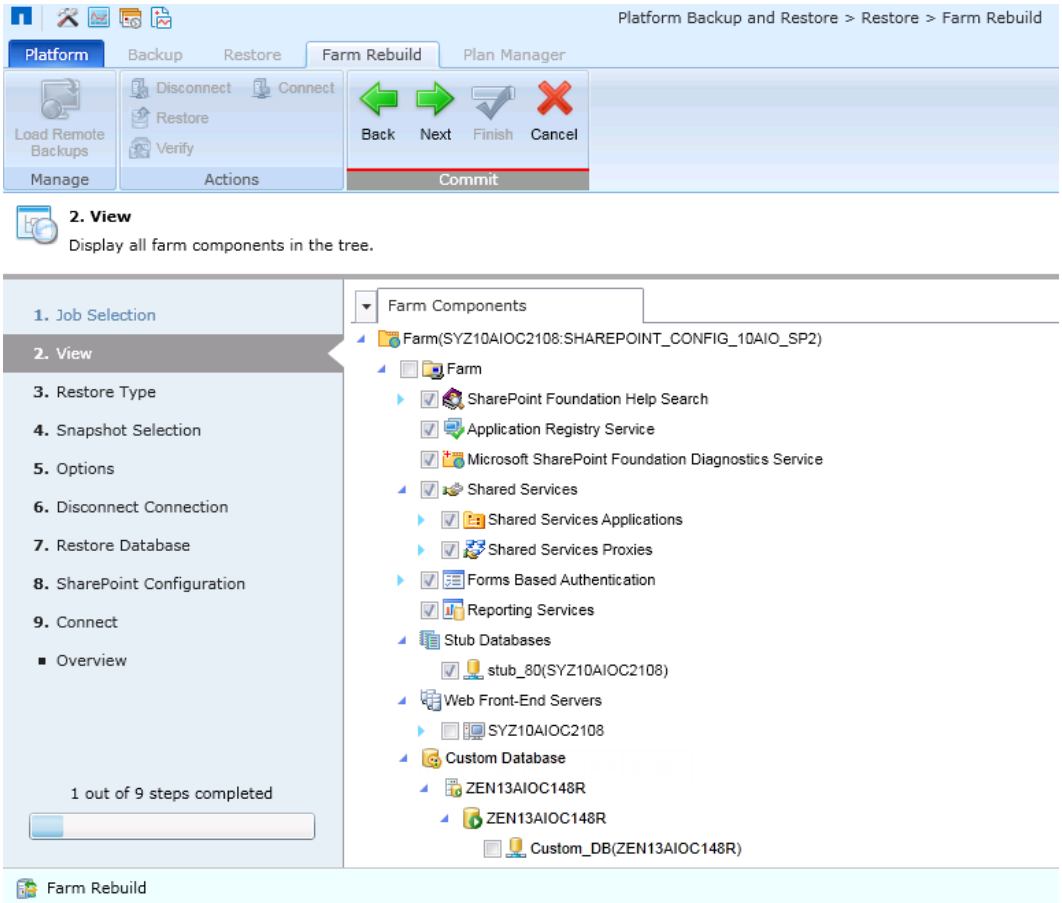

Figure 11: Viewing the backup data.

7. **Restore Type** – Choose how the content will be restored.

    - **Restore Type** – To restore the backup data to the original farm with custom configurations, select **Restore to original farm**; to restore the farm by manually performing the restore via SMSQL, select **Restore from alternate storage location**.

        - **Restore to original farm** – Use this option to restore the databases normally by configuring the corresponding configurations.

        - **Restore from Alternate Storage Location** – Use this option to restore the databases from an alternate storage location by manually restoring the databases in SMSQL. For more information, refer to **Restoring from an Alternate Storage Location** in the *SnapManager® for Microsoft® SharePoint® Platform Backup and Restore User's Guide*.

    - **Restore from SnapMirror Destination** – Choose whether or not restore the backup data from the SnapMirror destination. You can select this option to restore the backup data from SnapMirror destination if your environment has SnapMirror configured but the backup data in the SnapMirror source location is corrupted. With this option selected, you must make sure the backups in the SnapMirror destination are available for restore.

      ***Note**: If you are restoring from a SnapMirror destination, the **Snapshot Selection** step that configures the restore with SnapVault will be hidden from the wizard.

    - **Restore Purpose** – To build a production farm using the original farm's backup data, select **Build a production farm**; to build a temporary farm using the backup data, select **Build a temporary farm**. A temporary farm will allow you to test your backup data and environment after the Farm Rebuild. This allows you to make changes to your environment if you encounter any problems. The same backup job can be used over and over again until the Farm Rebuild works properly.

8. **Snapshot Selection** – Click **Load Remote Snapshot** on the ribbon to load the remote snapshots in SnapVault. After the remote backups are loaded in the tree, select local or remote snapshots for the selected content database. Click **View Details** next to the snapshot to view the content databases. Make sure that all of the selected content databases have the corresponding local or remote snapshots selected.

9. **Options** – Select whether or not to restore BLOB data.

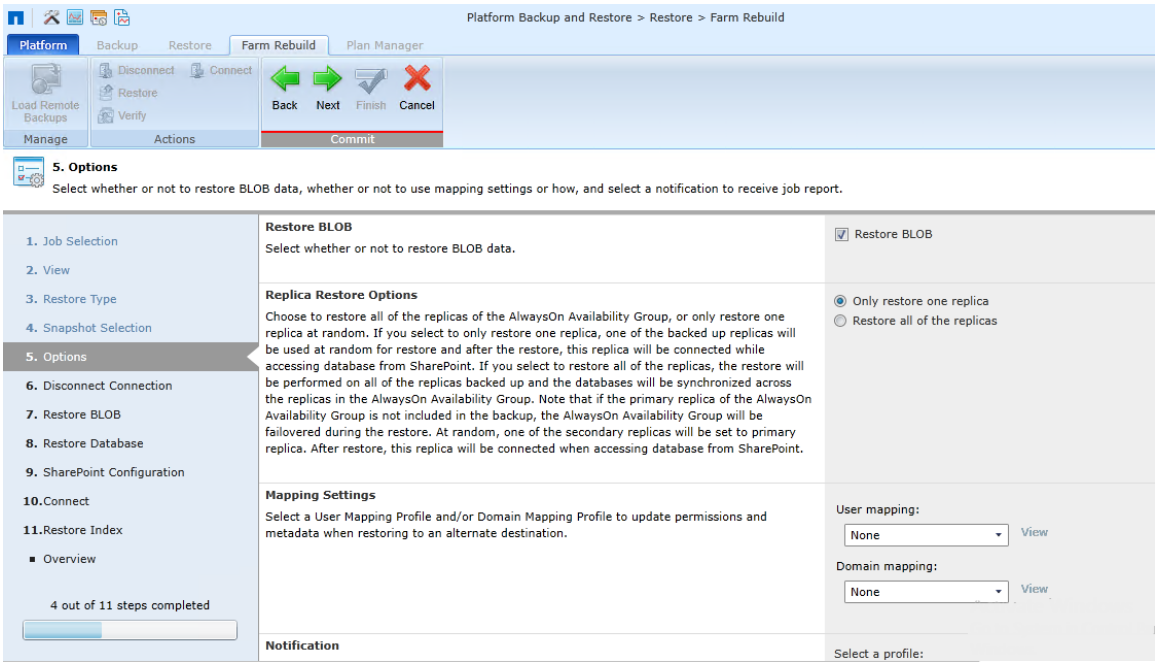

Figure 12: The Options interface.

- **Restore BLOB** – Select whether or not to restore the BLOB data.
- **Replica Restore Options** – Choose to restore only one of the backed-up replicas at random, or to restore all of the replicas of the AlwaysOn Availability Group.
    - **Only restore one replica** – One of the backed-up replicas will be selected at random for the restore. This replica will be connected while accessing the database from SharePoint.
    - **Restore all of the replicas** – All of the backed-up replicas will be restored and the databases will be synchronized across the replicas in the AlwaysOn Availability Group.

  ***Note**: If the Primary replica of the AlwaysOn Availability Group is not backed up, the AlwaysOn Availability Group will fail over during the restore. At random, one of the Secondary replicas will be set to Primary, and this replica will be connected while accessing the database from SharePoint.

- **Mapping Settings** – Select a user mapping profile or a domain mapping profile from the corresponding drop-down list to update the permissions and metadata when restoring database to an alternate destination.
    - **User mapping** – Select a user mapping profile from the drop-down list or select **New User Mapping** from the drop-down list to create a new one. After you have selected a user mapping profile, click **View** to view the details of the user mapping profile settings. For specific instructions on setting up user mapping, refer to the *SnapManager for SharePoint Control Panel User's Guide*.

***Note**: User Mapping at the database level does not support using default users or placeholders in mapping settings.

- **Domain mapping** – Select a domain mapping profile from the drop-down list or select **New Domain Mapping** from the drop-down list to create a new one. After you have selected a domain mapping profile, click **View** to view the details of the domain profile. For specific instructions on setting up domain mapping, refer to the *SnapManager for SharePoint Control Panel User's Guide*.

***Note**: Do not configure user mapping by entering a username in e-mail format, or configure domain mapping by entering a fully qualified domain name.

- **Notification** – Configure the e-mail **Notification** settings. Select a previously configured notification profile from the **Select a profile** drop-down list, or create a new e-mail notification profile by clicking the **New Notification Profile** link. Click **View** to view the detailed configuration of the selected notification profile.

10. **Disconnect Connection** – Disconnect all of the SharePoint servers in this farm. All SharePoint servers that are connected to the current farm will be displayed here. Hovering the mouse over one column displays a ⊖. Click ⊖ to hide this column from the current view. You can also select which column to be displayed in the current view by clicking ⊕, selecting the checkboxes of the columns you want to be displayed in the current view, and clicking **OK**.

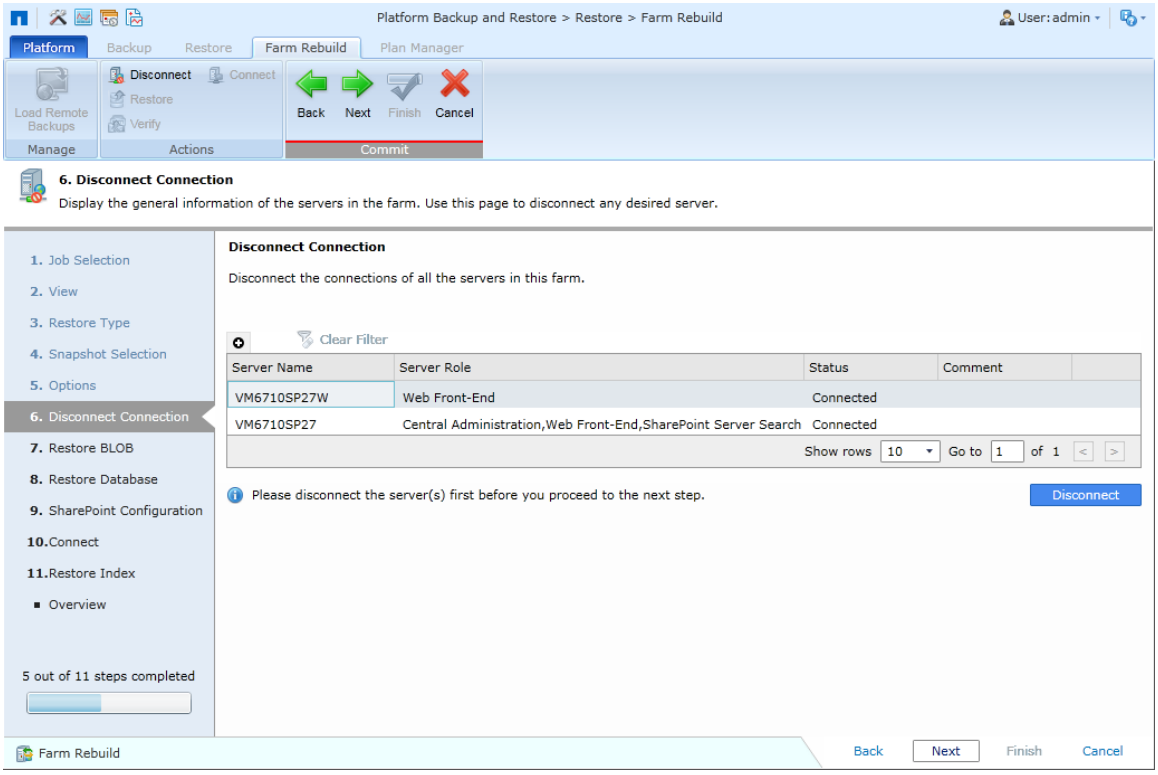

Figure 13: The Disconnect Connection interface.

11. Click **Disconnect** to disconnect all of the displayed SharePoint servers from this farm. If all the displayed SharePoint servers have already been disconnected from this farm, go to the next step directly.
12. **Restore BLOB** – Restore the BLOB data in the farm. It is recommended that you restore all of the BLOB data listed in the table. Specify the **Conflict Resolution** to choose whether or not to overwrite the BLOB data in the event that a conflict occurs during a restore.
13. **Restore Database** – Restore all of the backed up databases in the full farm backup job. The databases are all restored with no attempt to connect them to the SharePoint environment according to the selected conflict resolution.

    ***Note:** To restore the SQL Server logins when restoring a backed-up database, locate the **SP2010PlatformConfiguration.xml** file in the SMSP Agent installation path: *…\NetApp\SMSP8\Agent\data\SP2010\Platform*. In the **SP2010PlatformConfiguration.xml** file, enable the **RestoreLoginsConfig RestoreLogins** parameter by setting its value to **True**. The default value is **False**, so by default, the SQL Server logins will not be restored when performing a restore job. It is recommended that you have the database role of **Sysadmin** in SQL Server to restore the SQL Server logins; this ensures that high-level role logins are restored.

    - **Conflict Resolution** – Specify whether or not to overwrite the original contents if there is a conflict between the original database name and that of the backed-up database.
        - **Skip –** If a selected database in the backup has the same name as a database in the original farm, then the selected database in the backup is not restored.
        - **Overwrite –** If a selected database in the backup has the same name as a database in the original farm, then the original database is deleted first and the database in the backup is then restored.

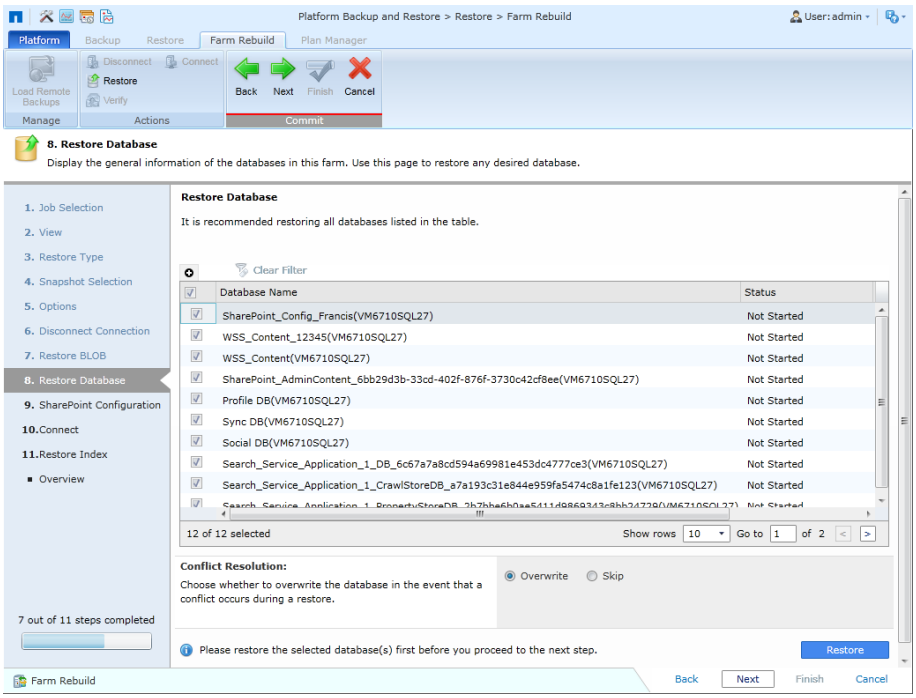

Figure 14: The Restore Database interface.

14. Click **Restore** to begin the restore process. After the restore of the databases is finished, the restore status will be updated in the **Status** column and the checkboxes before all the databases will become clickable. If the restore of an individual database fails, only select this database, specify the restore setting, and perform the restore job again.

15. **SharePoint Configuration** – Configure the settings required for reconfiguring the restored SharePoint farm. You must enter the passphrase for this farm before reconnecting all of the servers. Select the **Specify Port Number** checkbox, and you are able to change the port used by the SharePoint 2010 or SharePoint 2013 Central Administration. **NTLM** and **Negotiate (Kerberos)** are the supported security authentication types.

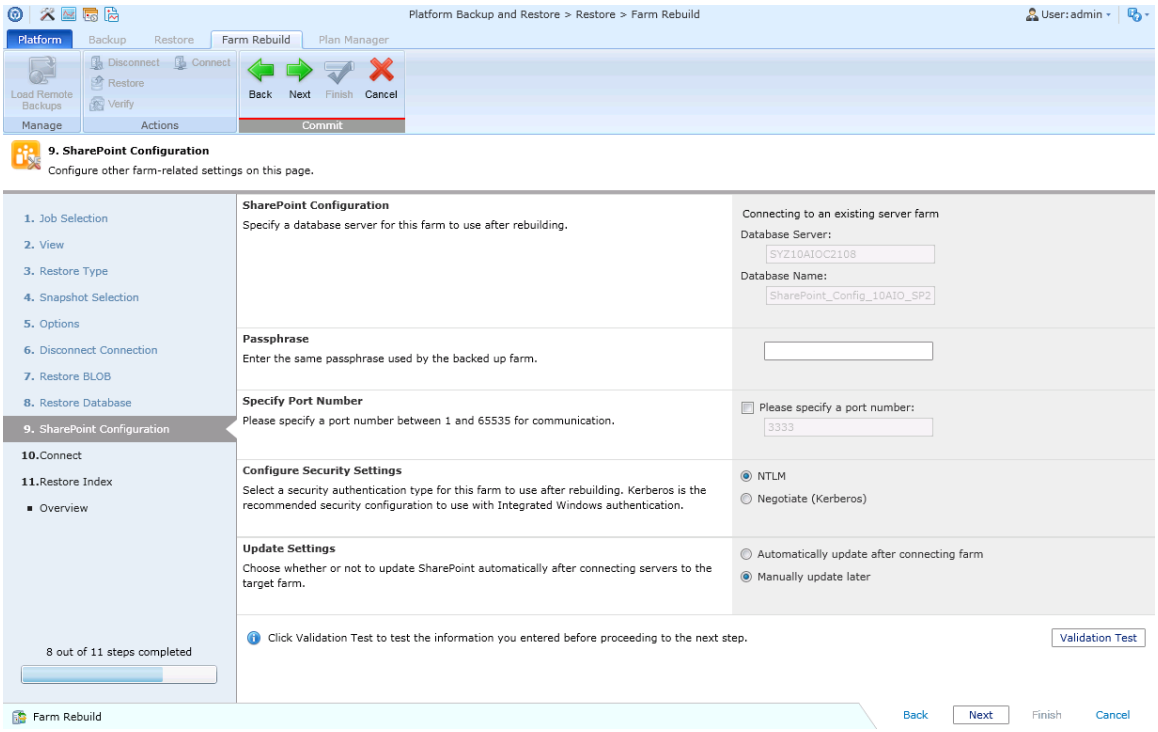

Figure 15: The SharePoint Configuration interface.

***Note:** If you are rebuilding your farm to a later version of SharePoint in the destination, the **Update Settings** filed appears. Choose to update SharePoint automatically after connecting servers to the target farm or to update it later manually.

***Note**: If you plan to restore backed-up SharePoint 2010/SharePoint 2013 Central Administration IIS settings after the farm rebuild, make sure you use the original port number for the SharePoint 2010/SharePoint 2013 Central Administration in this step. SharePoint 2010/SharePoint 2013 Central Administration can be accessed normally after restoring the backed-up IIS settings.

16. Click **Validation Test** to verify the settings you have entered.
17. **Connect** – Connect all of the SharePoint servers back to this farm. All SharePoint servers that have been disconnected from the current farm earlier in this procedure will be displayed here.
    - **Manage columns** (⊕) – Manage which columns are displayed in the list so that only the information you want to see will be shown. Select the manage columns button (⊕), and then check the checkbox next to the column name to have that column shown in the list.
    - **Hide the column** (⊖) – Hover over a column heading and then select the hide the column button (⊖) to hide the column.
18. Click **Connect** to connect all of the displayed SharePoint servers back to this farm.
19. Click **Next**. The **Restore Index** page appears.
20. **Restore Index** – Restores all the index components of the search service applications that were backed up in a full farm backup job. Click **Restore** to restore all of the index components in the

farm. The details about restoring the index components are listed in the table. Once the restore process completes, the restore status of each index component is updated in the **Status** column. You can perform the following actions on the index components table:

- Select a desired number from the **Show rows** drop-down menu to specify the number of index components displayed per page. Select **<** or **>** to turn to the previous or next page.
- If some index components fail to restore successfully**,** click **Restore** to attempt to restore the index components again.

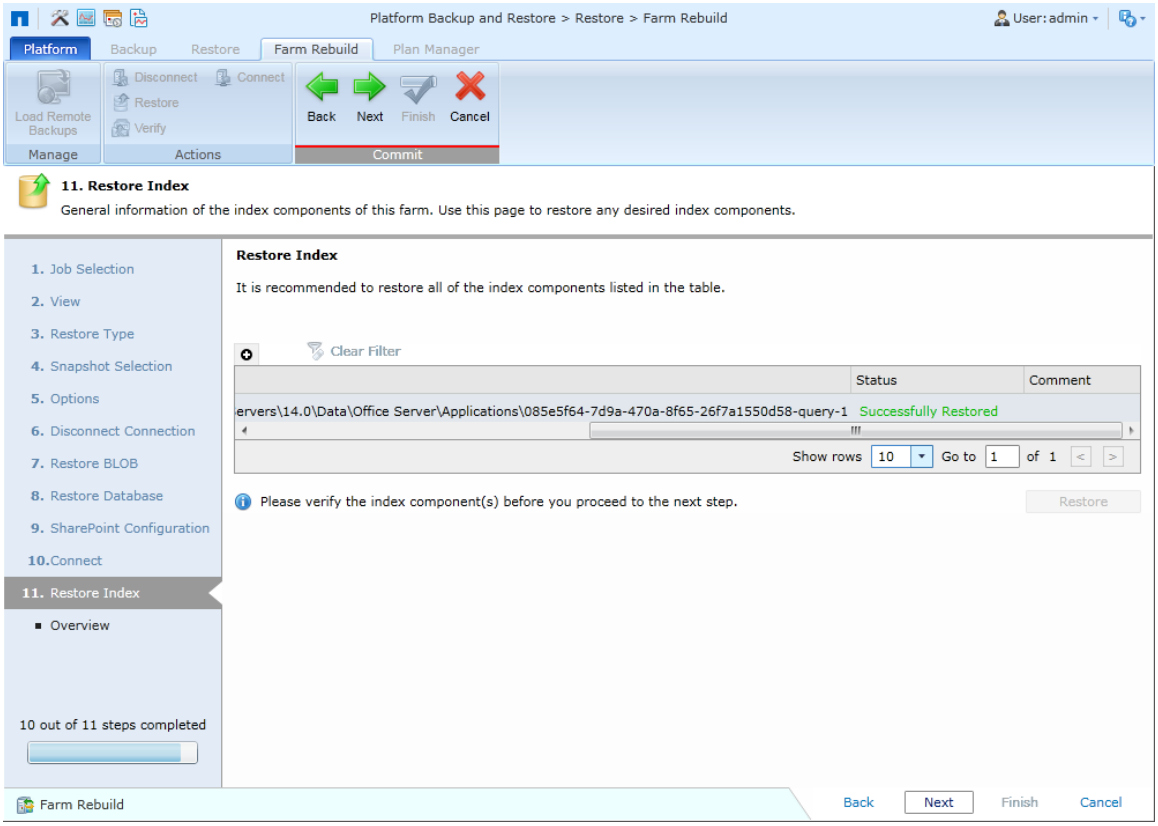

Figure 16: The Restore Index interface.

***Note**: If some of the Search Service Application index components failed to be restored, perform a separate in place restore at database level with **Overwrite** selected as the **Conflict Resolution** to restore the Search Service Application again after the farm rebuild, so that the index components can work well in the SharePoint farm after the restoration.

21. **Overview** – View the current farm settings you have configured.
22. Click **Finish** to finish the farm rebuild.

    ***Note:** After the Farm Rebuild is finished, restart the SMSP Agent Service in order to obtain the most up-to-date information on the target farm.

Full Farm Recovery in SnapMirror Destination

This section describes how to perform a disaster recovery (DR) using SnapMirror backup data (SnapMirror license required on both source and destination storage systems) from the perspective of SharePoint and SnapManager for SharePoint. It does not cover how to recover Active Directory (AD) or any other components not covered by SnapManager for SharePoint.

Prerequisites

Prior to performing this restore, the following requirements must be met:

- SnapManager for SharePoint backups of the SnapManager for SharePoint Control Database, SharePoint databases, indexes, Connector BLOB data, and Storage Manager BLOB data must be available. Typically these are automatically replicated through SnapMirror.

  ***IMPORTANT**: To ensure that Storage Manager and Connector can be used after disaster recovery, you must use the same SnapManager for SharePoint Control Database when re-installing the new SnapManager for SharePoint Manager. Also, make sure that all BLOB data is ready in the DR site and the storage system profiles/physical devices/logical devices are configured using the correct configurations/paths.

- The registry backup of SnapManager for SQL Server must be available, which is **HKEY_LOCAL_MACHINE** > **SOFTWARE** > **Network Appliance** > **SnapManager for SQL Server**. You must manually export the registry to a location that can be accessed from the disaster recovery environment, and then import the exported registry to the disaster recovery environment.
- At the DR site, SharePoint farm topology (including SnapManager for SharePoint topology) should be identical to the production site. The system architecture must also match the platform at the time of backup. For example, an x64-bit architecture should be used if x64 architecture was used at the time of the backup.
- All related software installed on the DR site should be the identical version and the patch level as before. Examples of related software are: SharePoint, SQL Server, SnapManager for Microsoft SQL Server, SnapManager for SharePoint, as well as the .NET Framework.
- The hostname of the source and the destination should be the same.

  For example, if you use IP in the configuration and use IP to configure SharePoint or SnapManager for SharePoint Media service, the IP should be the same. For SQL, except port, the instance name and alias of the source and the destination should be the same. If you install SnapManager for SharePoint in other places, you should use identical hostname or IP for SnapManager for SharePoint Manager. The port can be different.

  There are several ways to achieve this. For example, a separate AD domain for the DR site can be used to keep the same server topology, or if the DR site does not need to

coexist with the production site, disk imaging or virtualization technology can be used to ensure the same topology is used.

- User permissions on both the local server and SQL Server should be set to the same as before.
- If a separate AD domain is used at DR site, that domain should have a trusted relationship with the primary site's AD so that users can still access SharePoint content. This can also be run if the DR site is in the same AD domain as the original location.

Full Farm Rebuild in Secondary Location

After all servers are rebuilt and the preceding prerequisites are met, complete the following steps for disaster recovery:

1. Install all required software components, including SnapDrive, SQL Server, and SnapManager for Microsoft SQL Server. For more information about these installations, refer to *SnapDrive for Windows Installation and Administration Guide* and *SnapManager for Microsoft SQL Server Installation and Administration Guide*. Only connect SQL Server using SnapManager for Microsoft SQL Server after you have already imported the registry backup of SnapManager for Microsoft SQL Server. Follow the steps blow:
    a. Import the SMSQL registry key from the exported file.
    b. Add SQL Server to the SMSQL management list.
    c. Run SMSQL Configuration Wizard.
2. Install SharePoint. If you are only restoring farm components such as Web applications, you can create a new farm in the destination that has the same name and farm topology as the source farm. Otherwise, SharePoint can be left un-configured when performing an entire farm restore.
3. Install SnapManager for SharePoint Manager according to the steps listed in the *SnapManager for SharePoint Installation Guide*.
4. Connect the SnapMirror LUN containing the backup job data, or manually copy this data to a location that the DR site logical device can access. Follow the steps below:
    a. Configure iSCSI Initiator settings so that the server uses the SnapDrive LUN.
    b. Install SnapDrive and SMSQL.

        ***Note**: Do not connect SQL Server using SMSQL at this time.

    c. Connect the following LUNs in destination volumes with SnapDrive. Be sure to keep the drive letter the same as the LUNs in source:
        - Destination SharePoint LUN
        - Destination SQL LUN
        - Destination SMSP LUN

5. Install SnapManager for SharePoint Agents according to the steps listed in the *SnapManager for SharePoint Installation Guide*.
6. Perform the full farm restore as described in **Restoring from an Alternate Storage Location** in the *SnapManager® for Microsoft® SharePoint® Platform Backup and Restore User's Guide*.

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