Granular Restore 8.7 for Microsoft SharePoint

Backup and Restore Guide for SharePoint

Acknowledgements: Two encryption methods, DES and TripleDES, include cryptographic software written by Eric Young. The Windows versions of these algorithms also include software written by Tim Hudson. Bruce Schneier designed Blowfish encryption.

The Agent, Agent Console, and Vault applications have the added encryption option of 128/256 bit AES (Advanced Encryption Standard). Advanced Encryption Standard algorithm (named Rijndael, pronounced “Rain Doll”) was developed by cryptographers Dr. Joan Daemen and Dr. Vincent Rijmen. This algorithm was chosen by the National Institute of Standards and Technology (NIST) of the U.S. Department of Commerce to be the new Federal Information Processing Standard (FIPS). See:http://csrc.nist.gov/encryption/aes/round2/r2report.pdf for details.

The Agent and Vault applications have the added security feature of an over the wire encryption method.

Document History

Version	Date	Description
1	September 2018	SharePoint Backup and Restore Guide provided with the Granular Restore 8.70 for Microsoft SharePoint application release.

Contents

1 Introduction to backing up and restoring SharePoint data

This guide describes how to back up and restore Microsoft SharePoint data.

You can back up SharePoint databases using the SQL Server plug-in, and restore content data at a granular level (e.g., site collections, web sites, lists, libraries, folders, list items, or documents) using the Granular Restore for Microsoft SharePoint application. For more information, see Perform a SharePoint granular restore.

Note: The Granular Restore application can only be used with safesets created using the SQL Server Plug-in. The Granular Restore application is not supported with backups created using the Image Plug-in, or with Bare Metal Restore (BMR) backups.

You can also protect Microsoft SharePoint servers and databases using the Windows Agent and SQL Server plug-in, and restore data in a disaster recovery situation. See SharePoint Disaster Recovery (DR) Protection.

2 Perform a SharePoint granular restore

If a SharePoint content database is protected using the SQL Server Plug-in, you can restore items from the backup at a granular level (e.g., site collections, web sites, lists, libraries, folders, list items, or documents). For information about backing up a content database using the SQL Server Plug-in, see the *SQL Server Plug-in Guide*.

After installing the Granular Restore for SharePoint application on the SharePoint server (see Install the Granular Restore for SharePoint application), you can perform a granular restore by doing the following:

1. Share the safeset using Portal or the legacy Windows CentralControl application. See Set up a safeset share for granular restore.
2. Use the Granular Restore for Microsoft SharePoint application to restore individual sites, individual files, or documents. Using the SharePoint Granular Restore Application, you can browse the SQL safeset and making multiple restore selection(s). Restores can be to the original or an alternate location. See Restore items with the SharePoint Granular Restore Application.

Note: The Granular Restore application can only be used with safesets created using the SQL Server Plug-in. The Granular Restore application is not supported with SQL Server database backups created using the Image Plug-in, or with Bare Metal Restore (BMR) backups.

2.1 Limitations for granular restores

You can restore files up to 2 GB in size. This is a Microsoft limit: SharePoint files cannot be larger than 2 GB.

A SharePoint backup can only be restored to the same version of SharePoint that was used to create the backup safeset. You cannot attach a SharePoint 2010 database on a SharePoint 2013 system, and you cannot attach a SharePoint 2013 database on a SharePoint 2010 system. This includes any service packs applied to the SharePoint system. Restore from a SharePoint database without a Service Pack to the same version of a SharePoint system with a Service Pack, or vice versa, is not supported due to a Microsoft limitation.

A restore to an environment that has an older SQL Server version than was used during the creation of the backup safeset is not supported. A restore to an environment that has the same or newer SQL Server version as that of the backup is supported.

Cross-farm databases are not supported.

Unique permissions for files cannot be restored.

Note: If you select a Transaction Log only backup safeset when running a restore using the “Granular Restore of SharePoint” option, the share created will contain the last full backup (.mdf, .ldf, and .ndf) and transaction (.bak) log files. The .bak files are not processed or read when using the Granular Restore for SharePoint application.

Note: Should you incur an error when mounting a database with the message "An error occurred during an operation. Please check the log files for details, and try the operation again." The log file can be located in: C:\ProgramData\GranularRecoveryTool\logs.

2.2 Install the Granular Restore for SharePoint application

The SharePoint Granular Restore application can only be installed on a SharePoint server. You can install the Granular Restore application without SharePoint installed, but it will not run, even for alternate location restores.

To install the Granular Restore for SharePoint application

1. Start the Granular Restore for SharePoint installation kit.
2. If your system does not have the required .NET 4.0, you will be prompted to install it. If .NET 4.0 is already installed, you will not see this prompt.
3. Click **Install**.

   The Granular Restore for SharePoint Welcome screen appears.
4. Click **Next** to continue.
5. Click **I Accept** to accept the license agreement. Click **Next** to continue.

   The installation destination screen appears.
6. Click **Next** to continue or click **Change** to select an alternate location.
7. Click **Install**.
8. Click **Finish** when the installation completes. You may also check the Launch Granular Restore for SharePoint checkbox if you wish to run the application immediately.

2.3 Set up a safeset share for granular restore

Before you can perform a SharePoint granular restore, you must share a content database safeset created using the SQL Server Plug-in. See Set up a safeset share using Portal or Set up a safeset share using Windows CentralControl.

2.3.1 Set up a safeset share using Portal

To set up a safeset share using Portal:

1. On the navigation bar, click **Computers**.

   A grid lists available computers.
2. Find the computer with the safeset with the SharePoint data that you want to restore, and expand its view by clicking the computer row.
3. Click the **Jobs** tab.
4. Find the job with the SharePoint data that you want to restore, and click **Restore** in the **Select Action** menu for the job.

   The **Choose how to restore** dialog box appears.
5. Select Restore items to a SharePoint or SQL Server database, and click Continue.

   The **SQL Server Restore** dialog box shows the most recent safeset for the job.

6. To restore data from an older safeset, click the calendar button.  In the calendar that appears, click the date of the safeset from which you want to restore. To the right of the calendar, click the specific safeset that you want to use.
7. In the **Encryption Password** box, enter the data encryption password. To view the password hint, click the **Hint** button. 
8. In the **Idle Time** box, enter the number of minutes of inactivity after which the share should automatically stop. The value can range from 2 to 180 minutes.
9. Select or clear the **Use all available bandwidth** option.
10. Click **Share**.

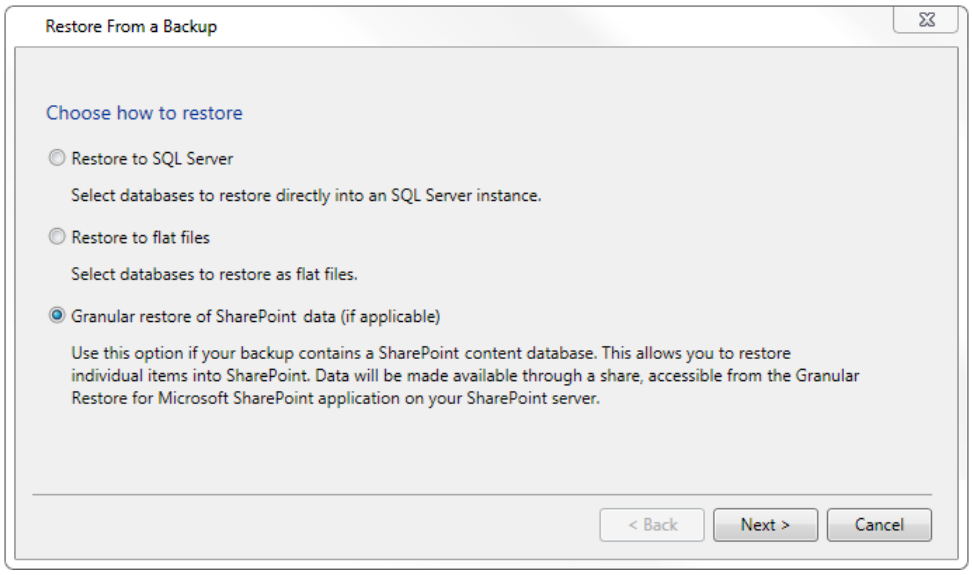
    The **Process Details** dialog box shows the status of the share process. When the share is available, the share path appears at the right side of the dialog box.
11. Click the Copy Path to Clipboard button.  The path is now available for you to paste into the Granular Restore application.
12. Launch the Granular Restore for Microsoft SharePoint application on a SharePoint system.
13. Paste the path for the SQL safeset share into the Granular Restore application.
14. Select and restore your data. See Restore items with the SharePoint Granular Restore Application.
15. When you no longer need to share the safeset, click **Stop**.

    When you click **Stop** or the share idle time is reached, the **Process Details** dialog box indicates that the share is no longer available.

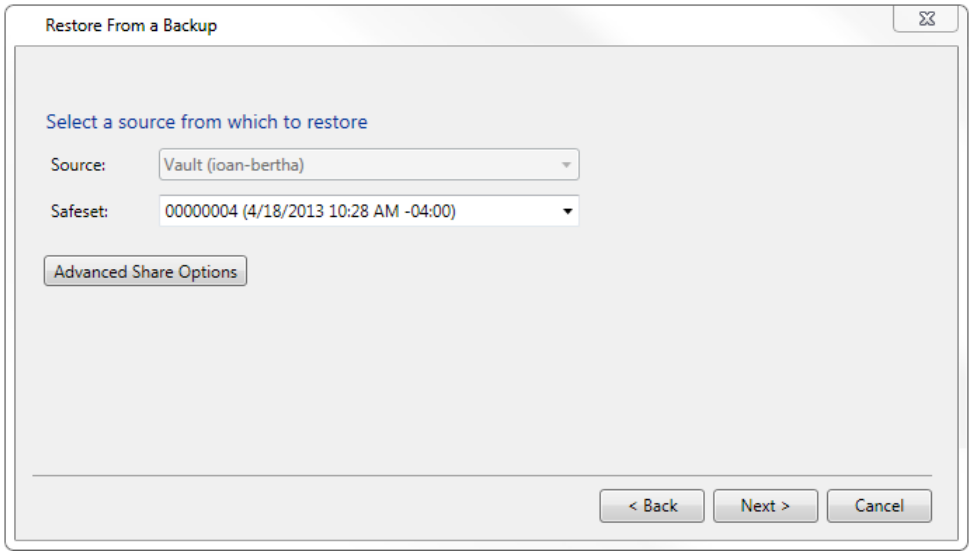
2.3.2 Set up a safeset share using Windows CentralControl

To set up a safeset share using Windows CentralControl:

1. Select the Agent and Job you wish to restore from.
2. Right-Click and select **Restore**. This will launch the Restore Wizard. Here you are asked to “Choose how to restore”.

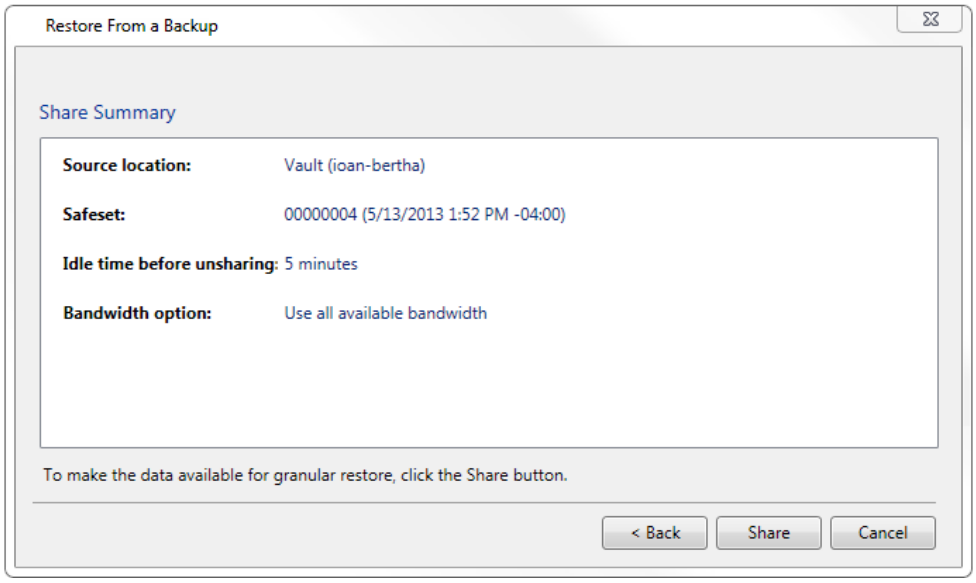


3. Select **Granular restore of SharePoint data (if applicable)**. Click **Next**.



4. Select a source from which to restore: The source safeset location will be displayed (by default) from the safeset backup (usually from a vault). You can select a different safeset to restore. If the backup was encrypted, you must enter and confirm the password.
5. Advanced Share Options will allow you to provide sharing options for the data source. To access the advanced share options, click the **Advanced Share Options** button.
   - **Idle time:** Enter the number of minutes that the share can be idle before it is automatically unshared (value can be from 2 to 180 minutes). The default idle time is five minutes.
   - **Bandwidth Option:** Use all available bandwidth is checked by default.
6. Click **OK** when your selection is complete.

   The Share Summary page is displayed for your review.



7. Click **Share** to create the share and display the share path. Copy the share path so that you can paste it into the Granular Restore application. To copy the share path, click once to highlight the path, then right-click and select copy to copy the path to your clipboard.

2.4 Restore items using the SharePoint Granular Restore application

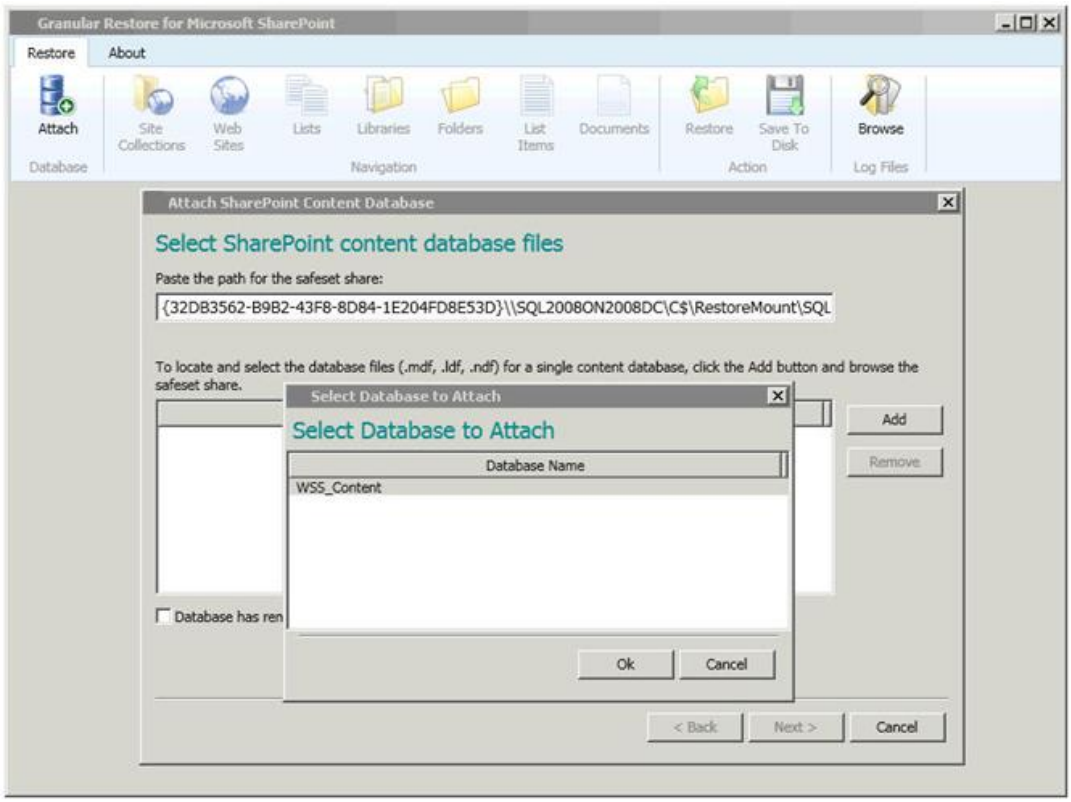
Permissions Required

For Restore:
- Local Administrator to the SharePoint Server
- An account added to the SQL Security Logins with Public and SYSAdmin server roles
- Local Administrator on the SQL server

2.4.1 Attach the SharePoint Content Database

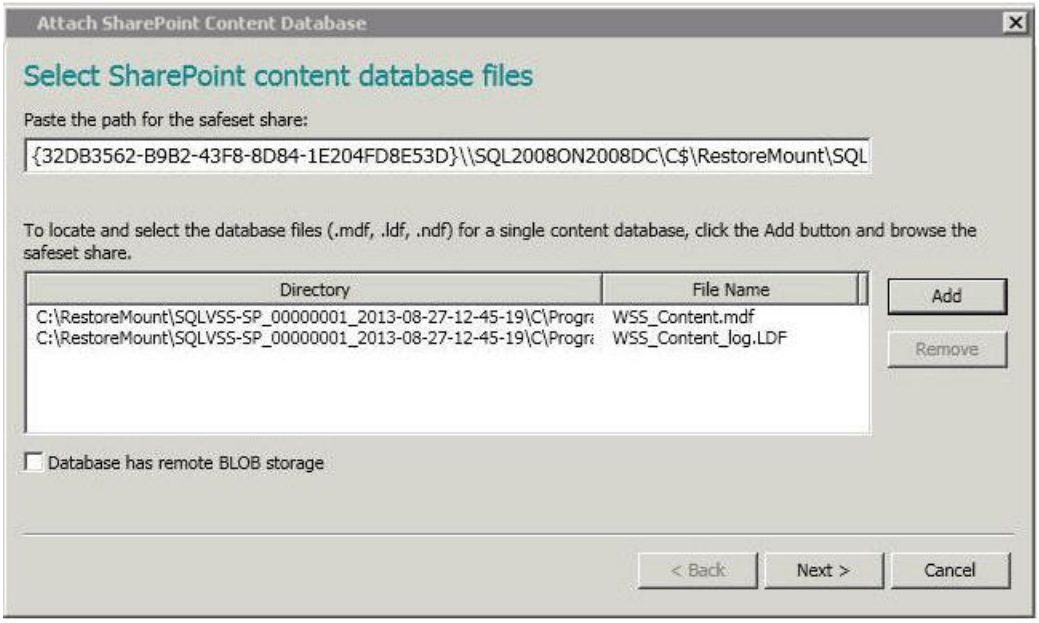
After you set up a safeset share, as described in Set up a safeset share for granular restore, the Granular Restore application must connect to a SharePoint content database.

When you launch the SharePoint Granular Restore application, it automatically launches the Attach SharePoint Content Database wizard.



You are prompted to paste the share path for the safeset share that contains the content database. This is the path that you pasted to your clipboard when creating the share with Portal or the legacy Windows Agent Console.

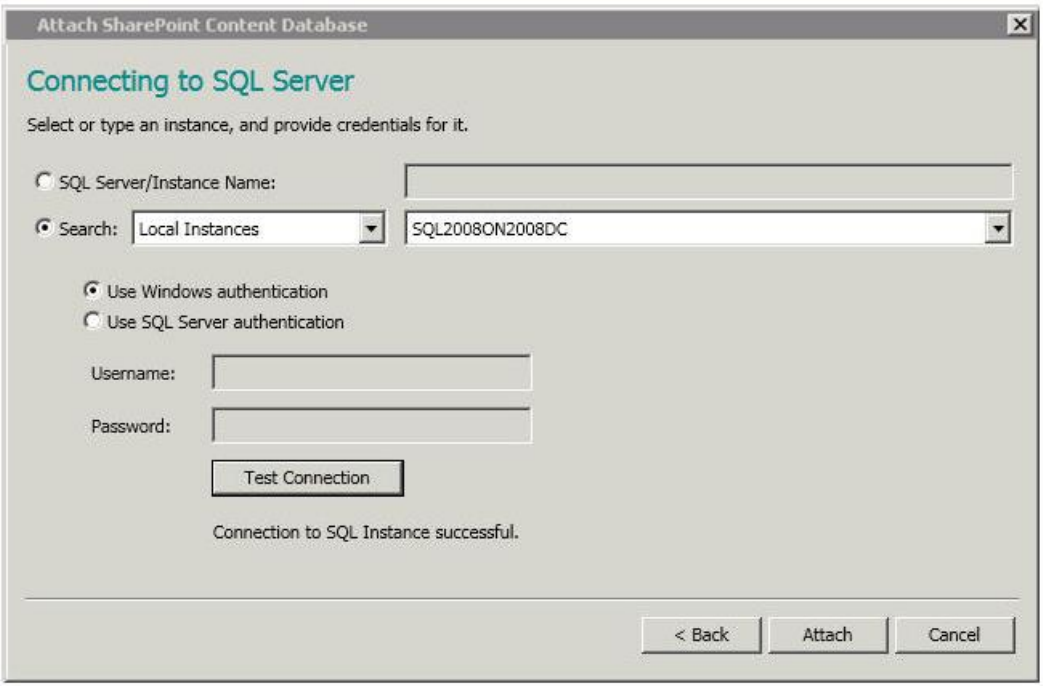
1. Paste the share path and click Add.
2. Select the database files, and confirm your selection.



3. Click Next to proceed.

   Note: If your SharePoint database has BLOB storage enabled, please refer to section 2.4.2 for detailed instructions for restore from BLOB storage.

   The Connecting to SQL Server page is displayed. The Connecting to SQL Server page prompts you to select an SQL Server instance and authenticate your access credentials.

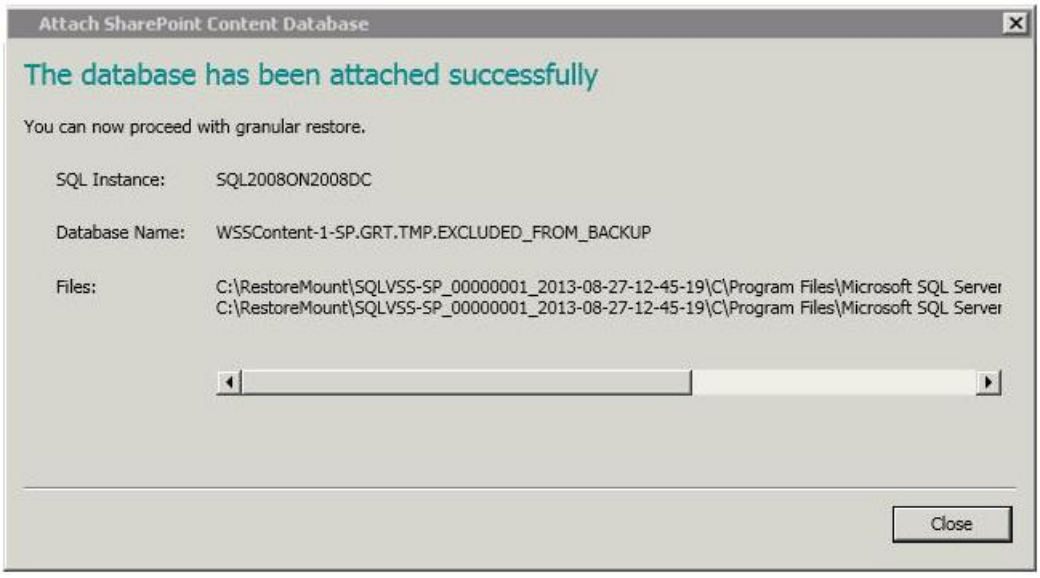


4. Click the Search radio button if you wish to search for the SQL Server instance name. You can search for Local Instances or Network Instances. If you click the Search radio button, a list of the available SQL Instances will be generated.

You may use the default Windows authentication or use SQL Server authentication. For SQL Server authentication, you must enter the appropriate Username and Password.

5. When you have selected the SQL instance you wish to use, test the connection by clicking on the Test Connection button. If the connection is verified, you will see the message “Connection to SQL Instance successful”.
6. Click Attach to attach the content database.

   The content database will now be attached and the items will be loaded for use with Granular Restore application. This process may take a few minutes, depending on the size of the database.
7. A summary page provides information about the attachment of the content database. Click Close to close this page and proceed with the granular restore of your SharePoint content.



2.4.2 Steps to restore from a SharePoint database with BLOB storage enabled

There are two scenarios for restoring from a SharePoint database with BLOB storage enabled.

The first scenario is when you want to restore from the SharePoint database, not the BLOB store, even though BLOB storage was enabled during the creation of the safeset backup. The limitation of this restore is that you cannot restore documents greater than the size threshold that was set when the BLOB store was enabled. The default value for this threshold is 60KB. Items greater than this threshold are stored in the BLOB store and cannot be restored with this method. Items less than this threshold can be restored from the SharePoint database.

The second scenario is if you want to restore from the BLOB store. The second scenario will allow you to restore documents greater than the size threshold that was set when your BLOB store was enabled. This method requires you to copy the Blob Storage folder from the mounted location to the local disk on SQL server and restore from that copy.

Restore from a SharePoint database with a mounted BLOB store

1. Attach the SharePoint Content Database by clicking the Add button and browsing to the safest share.
2. Click Open when you have made your selection.
3. Check the “Database has remote BLOB storage” checkbox.
4. Locate the BLOB storage “filestream.hdr” file and copy it to your clipboard. This file is located within your RestoreMount folder.
5. Create a new folder such as “BLOB hdr file copy” (you can use any name) and paste the “filestream.hdr” file into that folder.
6. Add all permissions or “Users” to the new folder.
7. Copy the new folder path to your clipboard and paste that path into the “Path to copy of BLOB store or filestream.hdr” field.
8. Click Next

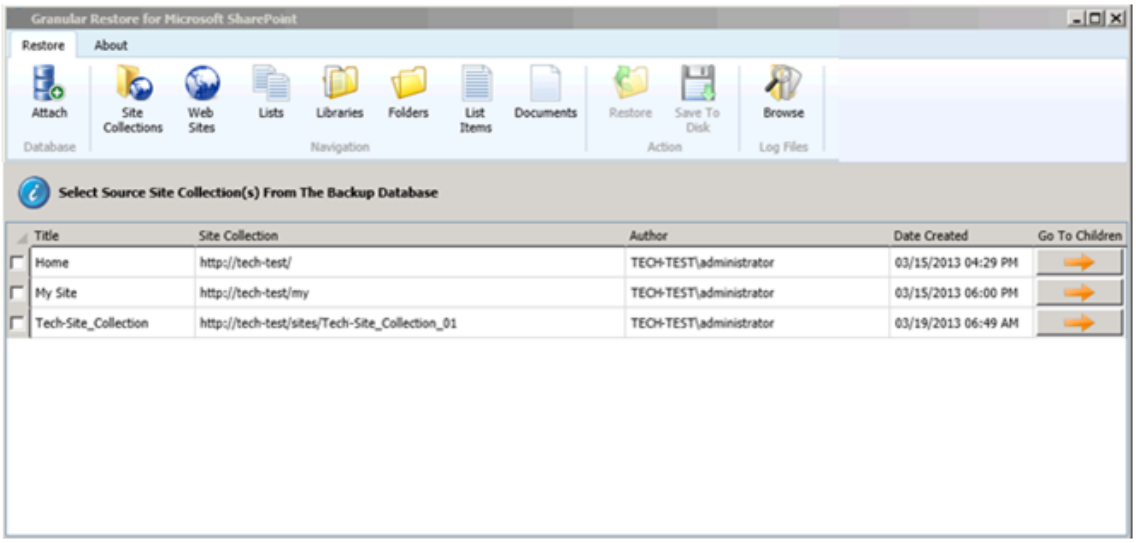
Restore from a copy of the mounted BLOB store

1. Attach the SharePoint Content Database by clicking the Add button and browsing to the safest share.
2. Click Open when you have made your selection.
3. Check the “Database has remote BLOB storage” checkbox.
4. Locate the BLOB storage. This file is located within your RestoreMount folder.
5. Create a new folder such as “BLOB copy” (you can use any name) and copy the BLOB storage into that folder.
6. Add all permissions or “Users” to the new folder.
7. Copy the new folder path to your clipboard and paste that path into the “Path to copy of BLOB store or filestream.hdr” field.
8. Click Next

Note: Only filestream BLOBs are supported.

2.4.3 Browse to your restore selections

Once you have attached a content database, you can browse the Site Collections and make your restore selections.



You can browse the hierarchy of the content database either with the navigation buttons or with the Go To Children (sub directory) arrow on the right hand side of the window (if available and not grayed out).

Clicking one of the navigation buttons will take you directly to that specific level of items. Navigation buttons include:

- Site Collections
- Web Sites
- Lists
- Libraries
- Folders
- List Items
- Documents

If you have used the Go To Children arrow(s) to navigate into the content database, a breadcrumb trail shows your navigation path. You can click on the breadcrumb links to navigate directly back to a previous level.

Note: The default number of items to load is 100 at a time. You can continue to load more items by clicking the Load Next … button. You can also enter the number of items you would like to Load Next in the field provided.

2.4.4 Search within your loaded items

The search functions can help locate the items you wish to restore. This can be especially useful when you have a large number of items loaded. You can find specific items or narrow the number of items displayed.

When items are loaded, you can search the following:

Site Collections by:

- Title

- Site Collection
- Author
- Date Modified

Web Sites by:

- Site Collection
- Title
- URL
- Author
- Created Date

Lists by:

- Web Site
- List
- Author
- Created Date

Libraries by:

- Web Site
- Library
- Author
- Created Date

Folders by:

- Web Site
- List
- Folder/List Item/Document

List Items by:

- Web Site
- List
- List Item

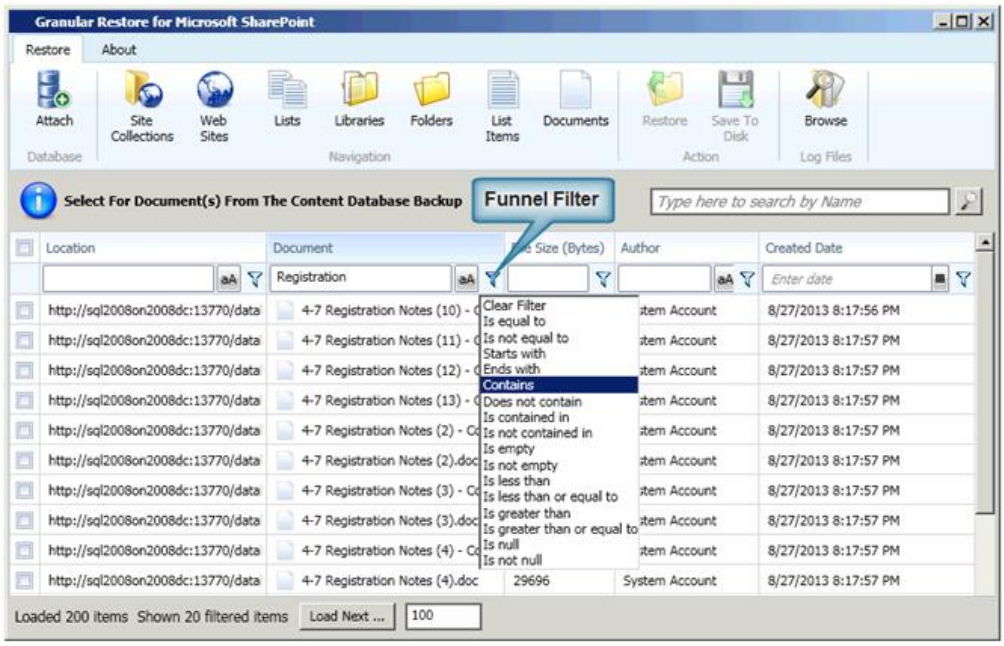
Documents by:

- Location
- Document
- File Size (Bytes)
- Author
- Created Date

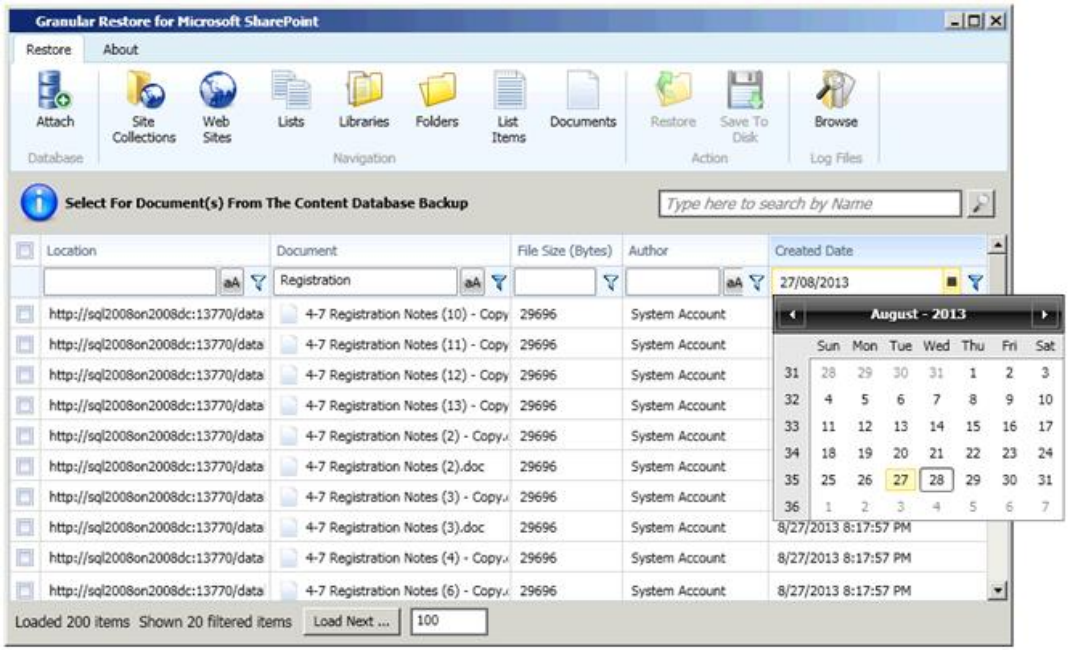
Note: You can search within all the documents by pressing the Documents button on the ribbon.

Search using filters

You can refine and narrow your search by using the funnel filters. Click on the funnel you wish to use and select from the available filter options.

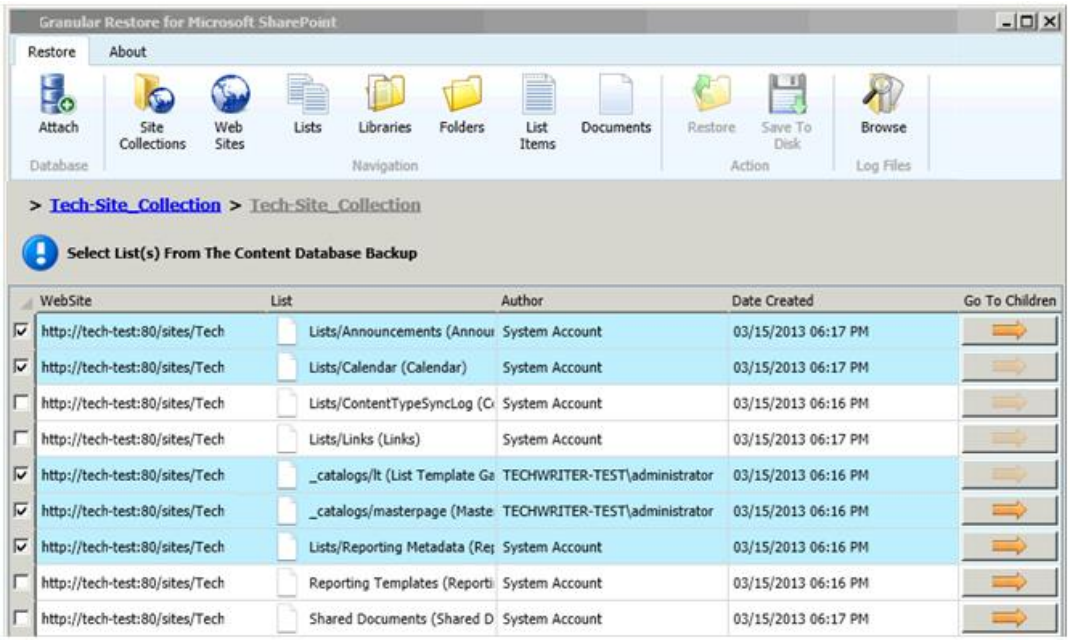


You can filter by date by clicking on the calendar icon and making your date selection.



2.4.5 Make your restore selections

Once you have located what you want to restore, you can select an item by clicking on it or you can select multiple items by selecting the checkboxes to the left of each item.



You can select all of the items displayed by clicking the small triangle to the left of the WebSite heading (above the selection checkboxes). You can also select a range of items by clicking one item and then clicking another item while holding shift. You can select individual items by holding Ctrl while making your selections.

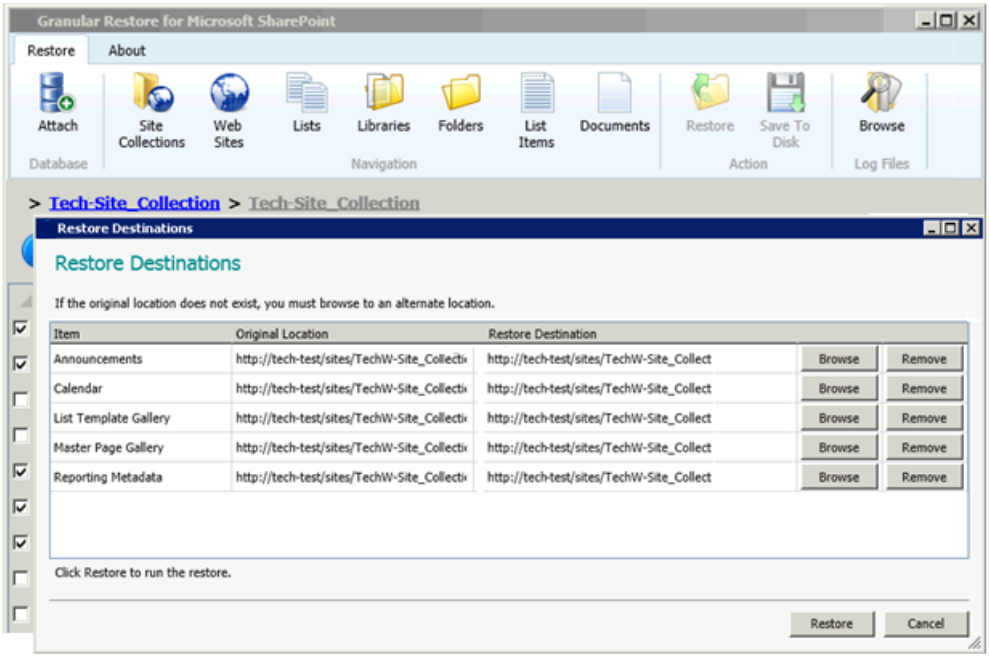
Note: When you make a selection that has sub directories (Children), all items contained within the sub directory are automatically selected for restore as well (recursively).

Note: You cannot restore a root website from the Web Site view. The Restore button will be disabled (grayed out). You must use the Site Collections view to run a root level website restore.

2.4.6 Restore SharePoint content to the SharePoint server

1. After selecting data to restore, click the **Restore** button.

   The Restore Destinations dialog box appears

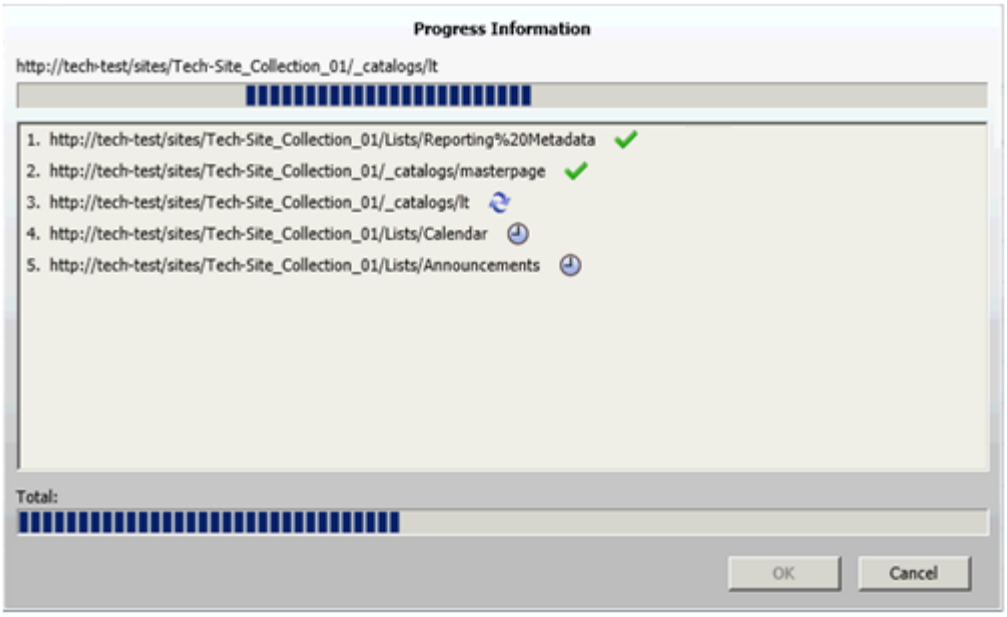


   Here you can review your restore selections as well as their restore destinations. The default restore destination is to restore to the original location. You can restore to an alternate location within the SharePoint server farm by clicking the Browse button and selecting a location from the list of available locations displayed. Available alternate restore locations will be to the same level within the SharePoint Server. I.e. List items can be restored to an alternate site at the List level.

2. Click the Restore button to run the restore.

3. If the same file exists in the restore location, you will be prompted with the message “Some data will be overwritten. Do you want to proceed?” Click Yes to start the restore.

   The Restore Progress Information will be displayed. Here you can monitor the restore process as it restores the individual items.

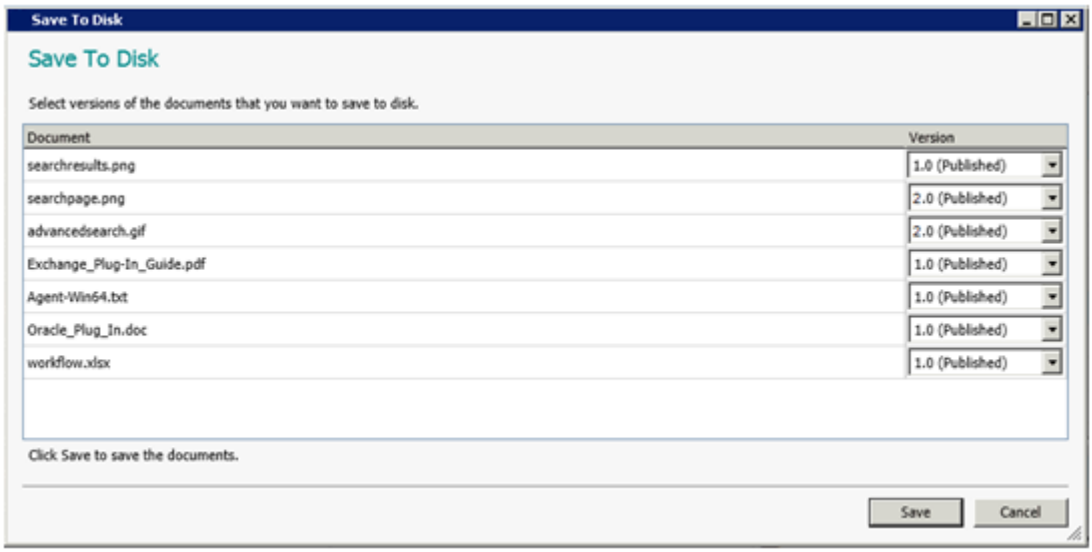


Note: If you click the Cancel button during a restore, the item that is currently being restored will be completely restored (this may take some time depending on the size of the item). Subsequent items in the list will be cancelled and will not be restored.

2.4.7 Restore SharePoint content – Save to disk

The Save to Disk option is available at the documents level only. Note that this level does include file extensions which can be restored other than documents.

1. If you wish to save to disk (rather than to the SharePoint Server), select your items for restore and click Save to Disk. Here you can select which version of a document is to be restored.

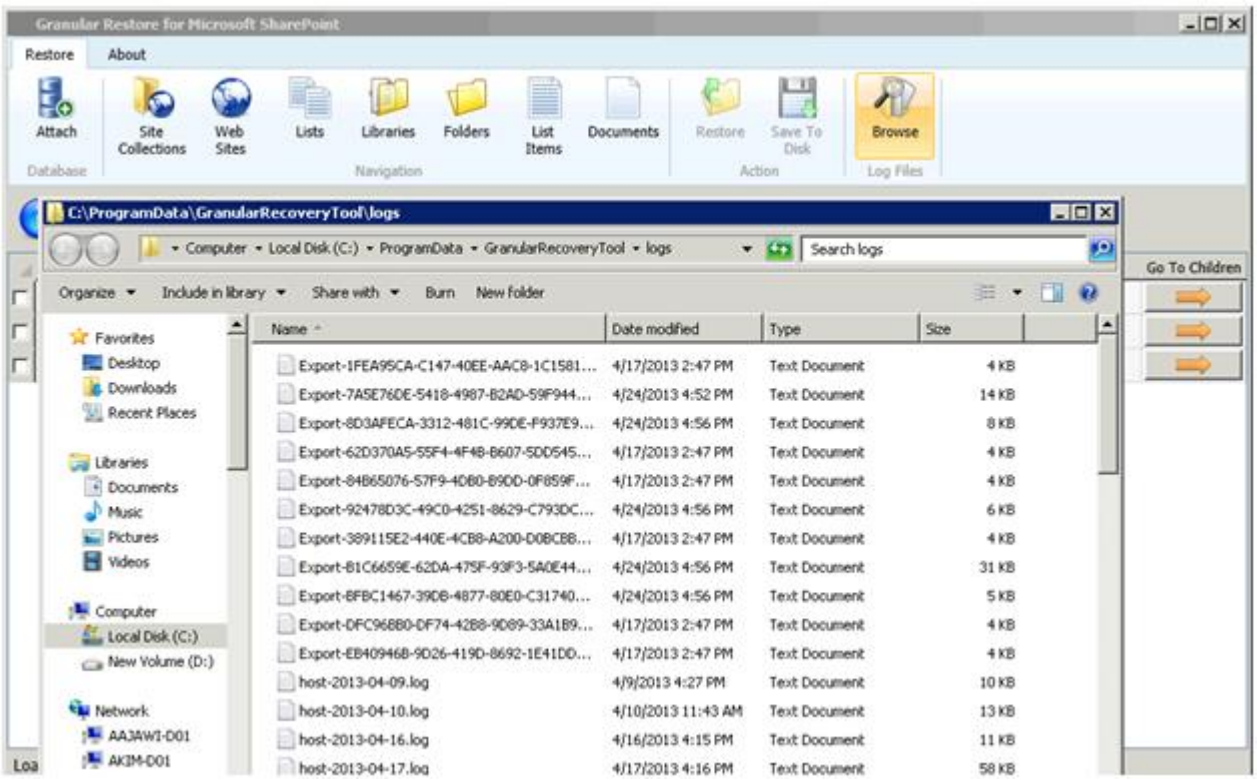


2. When your version selection is complete, click the Save button.

3. Browse to the folder location where you want to save the document or click Make New Folder to create a folder for your restore destination.
4. Click OK when you have made your selection.
5. Click Restore to run the restore.

2.4.8 Browse log files

It can be useful to review log files if you have encountered an error or failure. To view Log files, click the Browse button on the Restore ribbon.



2.4.9 Site Collection Restore Managed Path - Detected Conflicts

If you are restoring a Site Collection and the path no longer exists or there is a conflict, you must resolve the conflict. A screen will appear: “The required managed path is missing on the target web application. Please choose the Site Collection Prefix and enter the New Site Collection Name (if applicable).”

Select the Site Collection Prefix from the dropdown list and then enter a new valid site collection name in the field provided. Click Ok when completed.

3 SharePoint Disaster Recovery (DR) Protection

3.1 Overview - SharePoint DR for a single server farm

For disaster recovery (DR) of a single server farm, the simplest method of protecting your SharePoint server is to create a Bare Metal Restore (BMR) backup and then restore with the System Restore application. The BMR backup captures your entire system, including the operating system, applications, system state, and data.

Note: You cannot use the Granular Restore for Microsoft SharePoint application restore data from a BMR safeset.

There are two scenarios for SQL Server/SharePoint DR for a single server farm, outlined below:

- The first scenario will back up your entire SQL Server/SharePoint with a single BMR job. That one job is the only job that is required for restore.
- The second scenario can be used if you are already backing up your SQL Server database SharePoint content with the SQL Server Plug-in (for use with the Granular Restore for Microsoft SharePoint application). In this case, you can reduce your backup size and costs by excluding the SQL database files from your BMR backup. For a DR restore, you will first need to restore the system using your BMR job, and then restore the SQL Server/SharePoint with the SQL Server Plug-in job.

3.2 Preliminary steps for backing up SharePoint

You might need to follow preliminary steps to ensure that a SharePoint backup is application-consistent. For more information, see information from Microsoft.

For example, to make sure that SharePoint-related VSS writers are registered and available on a SharePoint 2013 or 2010 system and to ensure that you can run searches, you might have to run the following commands:

```
stsadm-o registerwsswriter
stsadm-o osearch-action start
```

For SharePoint 2010, you might have to run the following command:

```
stsadm-o spsearch-action start –farmserviceaccount<DOMAIN\name> -
farmservicepassword <password>
```

Make sure that the startup type of the following services is set to automatic and that the services are started:

- For SharePoint 2010 and 2013: SQL Server VSS Writer and Application Host Helper Service
- For SharePoint 2010: SharePoint 2010 VSS Writer, SharePoint Server Search 14 and SharePoint Foundation Search V4
- For SharePoint 2013: SharePoint VSS Writer, SharePoint Server Search 15 and SharePoint Foundation 2013 Administration service

Note for backing up SharePoint 2013 single server farm with SQL 2012 on Windows 2012: A Microsoft hotfix is required to be installed for proper backup operations. A reboot is required after installation. The hotfix can

be obtained from Microsoft at: http://support.microsoft.com/kb/2807849. To download the hotfix, an email address must be provided.

3.3 Back up a single server farm - SQL Server/SharePoint (one job)

1. Prepare for the backup by completing the preliminary steps outlined in section 3.2.
2. Using Portal or the legacy Windows CentralControl, select the Agent on the SQL machine that contains the SharePoint server.
3. Create and run a Bare Metal Restore (BMR) backup Job for the entire SharePoint server.

3.4 Restore a single server farm - SQL Server/SharePoint together (one job)

1. Prepare a clean machine with no operating system installed.
2. Start the machine, booting from the System Restore application, and select the BMR Job with the SharePoint server backup.
3. Drag and drop all of the appropriate volumes to the new environment.
4. Verify the System Restore Plan steps and start the restore.
5. Repair any drivers or devices via the repair wizard (if necessary). Make sure they are all showing green status.
6. Reboot the machine.

Note: If your applications (SQL/SharePoint) are installed in different volumes, it is recommended to restore to the same number of volumes.

3.5 Back up a single server farm - SQL Server/SharePoint separately (two jobs)

1. Prepare for the backup by completing the preliminary steps outlined in section 3.2.
2. Using Portal or the legacy Windows CentralControl, select the Agent on the SQL machine with the SharePoint server.
3. Create a Bare Metal Restore (BMR) backup Job, backing up the entire SharePoint server, excluding the SQL database files.

   Note: If you exclude the Data folder (that contains database files) from your BMR job and create a SQL job, make sure to run the jobs at the same time or as close to the same time as possible.

   Note: You cannot exclude the database files named *AppMng_Service_DB_<GUID>* (SharePoint 2010) or *Application_Registry_Service_DB_<GUID>* (SharePoint 2013) from your BMR Job.
4. Run the BMR backup.

5. If a SQL job has not already been created, create a backup job of the SQL database using the SQL Server Plug-in. For more information, see the *SQL Server Plug-in Guide*. If you would like to have SharePoint granular restore ability, create a SQL job for the content databases for the sites.
   Microsoft Tip: Run "Get-SPContentDatabase -site http://contoso.com" to locate all content databases for a SharePoint site.
6. Run the SQL backup.

Note: It is strongly recommended that you back up the system databases (master, model and msdb) in one SQL job. Then back up any other (user) databases in one or more other jobs.

3.6 Restoring the single server farm - SQL Server/SharePoint separately (two jobs)

1. Prepare a clean machine with no operating system installed.
2. Start the machine, booting from the System Restore application, and select the BMR Job with the SharePoint backup.
3. Drag and drop all of the appropriate volumes to the new environment.
4. Verify the System Restore Plan steps and start the restore.
5. Repair any drivers or devices via the repair wizard (if necessary). Make sure they are all showing green status.
6. Reboot the machine.
7. Restore the SQL database using the SQL Server Plug-in.

Note: For a disaster recovery scenario, you must restore the Master Database first, by itself. Then you can restore the other system databases.

Note: If your applications (SQL Server/SharePoint) are installed in different volumes, it is recommended to restore to the same number of volumes.

3.7 SharePoint disaster recovery for a single server standalone system

For disaster recovery (DR) of a SharePoint single server standalone system, you can create a BMR type backup and then restore with the System Restore application.

Note: SharePoint single server standalone by default uses Microsoft SQL Server Express which is not supported for use with the Granular Restore for Microsoft SharePoint application.

3.7.1 Back up the system - SQL Server Express/SharePoint

1. Prepare for the backup by completing the preliminary steps outlined in section 3.2.
2. Using Portal or the legacy Windows CentralControl, select the Agent on the SQL machine that contains the SharePoint Server.
3. Create and run a Bare Metal Restore (BMR) backup job for the entire SharePoint server.

3.7.2 Restore the system - SQL Server Express/SharePoint

1. Prepare a clean machine with no operating system installed.
2. Start the machine, booting from the System Restore application, and select the BMR Job for the SharePoint DR backup.
3. Drag and drop all of the appropriate volumes to the new environment.
4. Verify the System Restore Plan steps and start the restore.
5. Repair any drivers or devices via the repair wizard (if necessary). Make sure they are all showing green status.
6. Reboot the machine.

Note: If your applications (SQL/SharePoint) are installed in different volumes, it is recommended to restore to the same number of volumes.