# SPHOL205: Introduction to Backup & Restore in SharePoint 2013

# Hands-On Lab

## Lab Manual

**Contents**

# Backup and Restore in SharePoint 2013

Estimated time to complete this lab: **45 minutes**

## Lab Objectives

The objective of this HOL is to introduce you to the backup and restore features in SharePoint 2013.

After completing this lab, you will be better able to:

- Use farm-level backup and restore features of SharePoint 2013.
- Use granular backup and content recovery tools in SharePoint 2013.
- Use Windows PowerShell to restore sites and lists in SharePoint 2013.

## Audience

- SharePoint Administrators and SharePoint IT Professionals

## Scenario

SharePoint 2013 offers similar backup and restore functionality to SharePoint 2010. Farm-level backup and restore has been extended to provide more flexibility, and you can now backup individual site collections and export sites or lists from a single, central location. You can now also manage and script all aspects of the backup and restore process by using Windows PowerShell. This lab provides an overview of the functionality in each of these features.

## Getting Started

**Connect to the Lab Environment**

Log on to the SharePoint (SPAF) Virtual Machine (VM) as Administrator with the following credentials:

> Username: **CONTOSO\Administrator**
>
> Password: **pass@word1**

## Exercise 1 – Backup and Restore a SharePoint Farm

SharePoint 2013 includes a sophisticated farm-level backup and restore feature set. The feature set provides fine-grained control over which farm components you want to back up or restore. This flexibility can help you to perform a variety of tasks, from planning for disaster recovery to migrating farm-level configuration or components across server farms. In this exercise, you will explore the backup and restore feature set through the Central Administration user interface.

Estimated time to complete this exercise: **15 minutes**

**Scenario**

In this exercise, you will learn how to backup and restore a SharePoint farm using Central Administration.

**Task 1 – Configure Backup Settings**

In this task, you will create a network share and configure the Central Administration settings for farm-level backups.

1. Open a command window and browse to the C:\ directory.

2. Create a backup folder.  To do this, type the following command, and then press **ENTER**:

   ```
   mkdir SPBackup
   ```

3. Give the SharePoint Timer service account and the Microsoft SQL Server service account Full Control permission on the backup folder.  To do this, type the following command, and then press **ENTER**:

   ```
   Cacls SPBackup /G CONTOSO\Administrator:F
   ```

   *Note*: In this case, the SharePoint timer service and the SQL Server service both run as administrative accounts for each service.

4. At the **Are you sure** prompt, type **y** and then press **ENTER**.

5. Create a file share for the backup folder, and give the CONTOSO\Administrator account Full Control permissions on the file share.  To do this, type the following command, and then press ENTER:

   ```
   Net Share SPBackup=C:\SPBackup /GRANT:CONTOSO\Adminstrator,FULL
   ```

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Log on to the SharePoint (SP) virtual machine ~~(VM)~~ as Administrator with the following credentials:
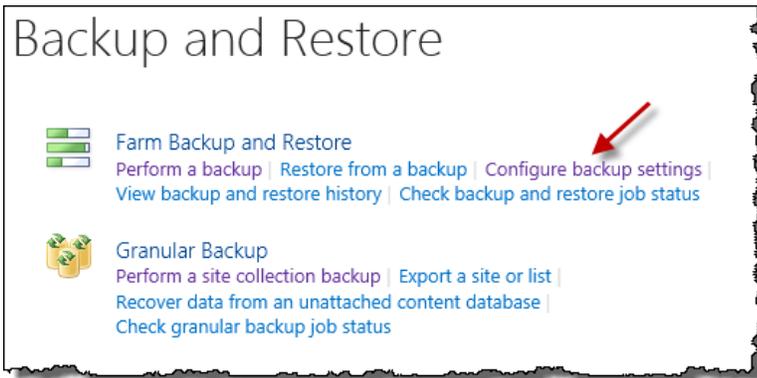
    Username: **CONTOSO\Administrator**

    Password: **pass@word1**

6.1. ~~Close the command window and ILL~~aunch Central Administration Web site. To do this, click **Start**, **All Programs**, **Microsoft SharePoint 2013 Products**, and **SharePoint 2013 Central Administration**.

7.2. On the Central Administration home page, click the **Backup and Restore** heading.

8.3. On the **Backup and Restore** page, under **Farm Backup and Restore**, Click **Configure backup Settings.**
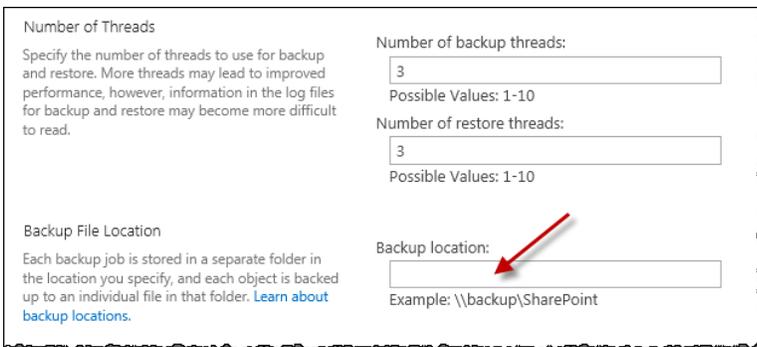


9.4. In the Backup location textbox, type ~~C:\\~~**\\W15-SP-AFCACHE\SPBackup**, and then click **OK**.



**Note**: you can specify the number of threads. Three is the default value. You can increase the number of threads to reduce the time it takes to back up or restore your environment, but this can make the log files less coherent as more operations occur simultaneously.

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**Task 2 – Perform a Farm Backup**

Backing up both the content and configuration settings will take longer than the allotted period for the HOL. In this task, you will back up the Farm Configuration settings only.

In this task, you will use Central Administration to perform a farm configuration backup.

1. On the **Backup and Restore** page, click **Perform a backup.**

   **Note**: you have an extremely granular level of control over which farm components you want to backup, including deployed solutions, individual services, and people.

2. Check the **Farm** check box, and then click **Next**. You will then see the following page.



Take a moment to review the options on this page.

- You can choose whether to perform a full backup or a differential backup. As this is the first time you have backed up this server farm, you must perform a **full** backup.

- You can choose whether to back up content and configuration settings, or only configuration settings. The **Back up only configuration settings** option is useful when you want to replicate your configuration settings to another deployment, such as a test environment.

3. Select **Back up only Configuration settings.  (Note:** Backing up content *and* configuration settings will take longer than the allotted time for this HOL.)

4. Scroll to the bottom of the page and click **Start Backup**

   The **Backup and Restore Job Status** page automatically refreshes periodically to report on the progress of the backup job.

   **Readiness**

   ⚠️ A backup or restore is currently in progress.
   ✅ Timer service is running.
   ✅ Administration service is running.

   📄 Refresh | 🔍 View History

   **Backup**

   | | |
   |---|---|
   | Requested By | CONTOSO\Administrator |
   | Phase | In process |
   | Item (Current/Total) | 24/48 (Farm\SPUserCodeV4\Sandboxed Code Load Balancer Provider using Popularity) |
   | Start Time | 10/25/2012 1:41 PM |
   | Configuration only | Yes |
   | Top Component | Farm |
   | Backup ID | 6096232c-db09-4e32-b587-90e7d11a4d94 |
   | Directory | C:\SPBackup\spbr0000\ |
   | Backup Method | Full |
   | Backup Threads | 3 |
   | Warnings | 0 |
   | Errors | 0 |

5. Use Windows Explorer to open the **C:\SPBackup** folder on the SPAF machine (**\\W15-SP-AFCACHE\SPBackup** if opening from SP machine) and examine its contents.

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   - The **spbr0000** folder contains the actual backup data. Each backup is created in a distinct folder. This folder also contains a log file for the backup and log files for any subsequent restores from this backup.
   - The **spbrtoc.xml** file stores metadata on each backup. The metadata in this file provides the information you see on the Backup and Restore Job Status page. Every new backup creates a new **SPHistoryObject** element in the file. Double click the spbrtoc.xml to open it in Internet Explorer.

```
spbrtoc.xml  ⊞ ✕
    <?xml version="1.0" encoding="utf-8"?>
  ⊟<SPBackupRestoreHistory>
  ⊟    <SPHistoryObject>
            <SPId>6096232c-db09-4e32-b587-90e7d11a4d94</SPId>
            <SPRequestedBy>CONTOSO\Administrator</SPRequestedBy>
            <SPBackupMethod>Full</SPBackupMethod>
            <SPRestoreMethod>None</SPRestoreMethod>
            <SPStartTime>10/25/2012 20:41:29</SPStartTime>
            <SPFinishTime>10/25/2012 20:41:51</SPFinishTime>
            <SPIsBackup>True</SPIsBackup>
            <SPConfigurationOnly>True</SPConfigurationOnly>
            <SPBackupDirectory>C:\SPBackup\spbr0000\</SPBackupDirectory>
            <SPDirectoryName>spbr0000</SPDirectoryName>
            <SPDirectoryNumber>0</SPDirectoryNumber>
            <SPTopComponent>Farm</SPTopComponent>
            <SPTopComponentId>c324b02d-4209-4951-9130-1de91354cacc</SPTopComponentId>
            <SPWarningCount>0</SPWarningCount>
            <SPErrorCount>0</SPErrorCount>
        </SPHistoryObject>
    </SPBackupRestoreHistory>
```

6. Open the **spbr0000** folder.

   *Note*: the files named **spbackup.log** and **spbackup.xml** contain a detailed log of the backup process in text format and xml format respectively.

**Task 3 – Restore from a Backup [do not execute this task]**

Executing this task will take longer than the allotted period for the HOL.  It is not meant to be completed; however, it has been documented because it is important that you understand the procedure involved.

In this task, you will simulate a database failure and restore the content database from a backup.

1. In the Central Administration Web site, on the Backup and Restore page, click **Restore from a backup**

2. Select the backup to restore (there should only be one), and then click **Next**.

3. Under **Select component to restore**, expand **Microsoft SharePoint Foundation Web Application**.

4. Select **Intranet.contoso.com,** and then click **Next**.

5. Under Restore Options, select **Same configuration.**

6. Click **Start Restore.**

7. Close all open windows.

   *Note*: You can view a history of backup and restore operations at any time through the Central Administration Web site. To do this, on the Backup and Restore page, click **View backup and restore history**.

In this exercise, you learned about different options available in a Farm backup and restore.

## Exercise 2 – Migrate Site Collections, Sites, and Lists

Estimated time to complete this exercise: **15 minutes**

**Scenario**

In addition to the farm-level backup and restore feature set, SharePoint 2013 includes tools that you can use to back up, export, or recover individual site collections, sites, and lists. Generally speaking, these tools are targeted more at migration operations, such moving a site or a list between Web applications, rather than at pure disaster recovery scenarios. However, one particularly useful new addition to SharePoint 2013 enables you to browse and recover data from an unattached content database.

In this exercise, you will explore the granular backup and restore features.

- You will back up a site collection (**http://intranet.contoso.com/Sites/NewTeam**), and restore it to **http://it.contoso.com/sites/NewTeam**.

- You will back up a list:(**http://intranet.contoso.com/sites/contoso/lists/announcements**) and restore it to **http://it.contoso.con/sites/NewTeam**.

- You will export a list (**http://intranet.contoso.com/sites/contoso/lists/links**) from an unattached database and restore it to **http://it.contoso.com/sites/newteam**.

**Task 1 – Perform a Site Collection Backup**

In this task, you will use the Central Administration user interface to back up an individual site collection. Note that you will be using the **intranet.contoso.com** Web Application.

8.1. Open a browser window and browse to **http://intranet.contoso.com/Sites/NewTeam**.

Familiarize yourself with the content of the site collection. You will migrate the entire site collection, including images, lists, and custom content, to the Web application on port 80.

10.2.      Close the browser window and launch the Central Administration Web site.

11.3.      On the Central Administration home page, click the **Backup and Restore** heading.

12.4.      On the **Backup and Restore** page, under **Granular Backup**, click **Perform a site collection backup**.

13.5.      On the **Site Collection** dropdown menu, select **Change Site Collection**.

14.6.      On the **Select Site Collection** dialog, ensure that the **Web Application** is set to **http://intranet.contoso.com/**.  To change the Web Application, do the following:

  a.  On the **Web application** dropdown menu, select **Change Web Application**.

  b.  Click **intranet.contoso.com.**

15.7.      On the **Select Site Collection** dialog, select the **/sites/NewTeam** site collection, and then click **OK**.

- If the site collection is not displayed, perform a search by typing /sites/newteam in the search box and press Enter.

16.8.      In the **Filename** textbox, type **\\W15-SP-AFCACHE\SPBackup**C:\SPBackup**\newteam.bak**, and then click **Start Backup.**

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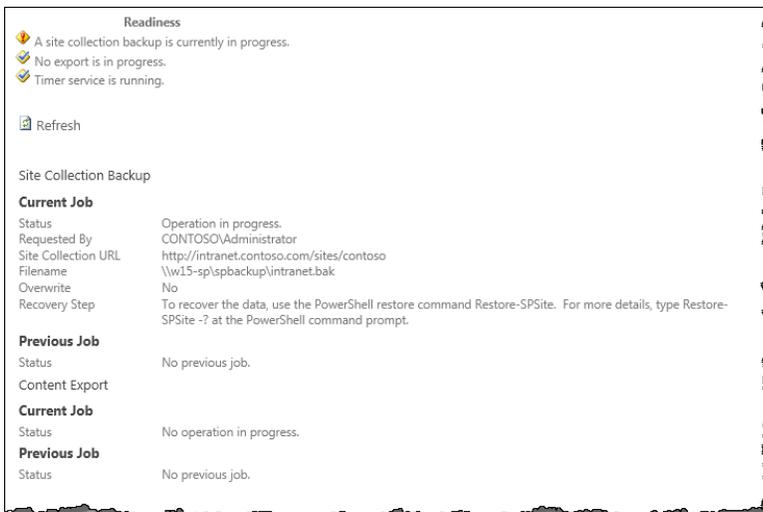
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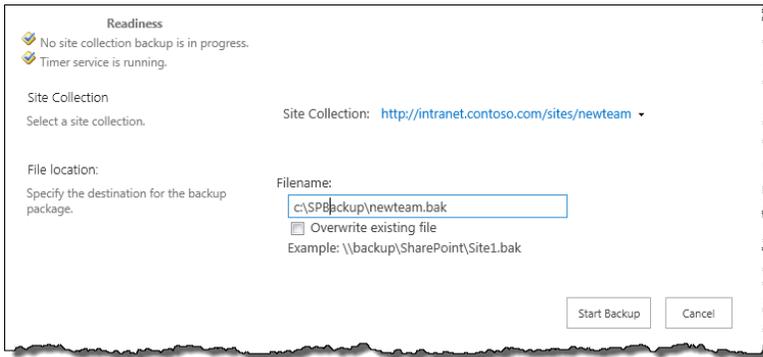
The Granular Backup Job Status page automatically refreshes periodically to report on the progress of the site collection backup.



17.9.      Go back to the **Backup and Restore** page.

*Note*: the Central Administration user interface does not provide any options for restoring a site collection from a backup. You will use the SharePoint 2013 Management Shell to restore the site collection later in this lab.

**Task 2 – Export Sites and Lists**

In addition to creating backups of site collections, you can also export individual sites and lists. Exporting and importing sites and lists are common tasks in many scenarios. For example, these are particularly useful in large Web content management deployments, where you will often maintain separate environments for authoring, staging, and live content. In this task, you will use the Central Administration user interface to export an individual list.

1.  On the Backup and Restore page, under **Granular Backup**, Click **Export a site or list.**

2.  In the **Site Collection** section, ensure **http://intranet.contoso.com/sites/Contoso** is selected. If you need to change it do the following:

    a.  Select **Change site Collection** from the dropdown menu, to get the Select Site Collection dialog.

    b.  Ensure that Web Application is set to **http://intranet.contoso.com**, otherwise, select **Change Web Application** from the dropdown.  On the **Select Web Application dialog**, select the **intranet.contoso.com** web app.

    c.  Returning to the Select Site Collection dialog, select /**sites/Contoso** then press OK.

3.  In the **Site** dropdown menu, ensure **/sites/Contoso** is selected.  If you need to select it, do the following:

    a.  Select **Change Site** from the dropdown.

    b.  Select **/sites/contoso** and click **OK**.

4.  In the **List** dropdown menu, ensure **Announcements** is selected.  If you need to select it, do the following:

    a.  Select **Change List** from the dropdown.

    b.  Select **Announcements** and click **OK**.

5.  In the **Filename** text box, type \\W15-SP-AFCACHE\SPBackupC:\SPBackup\**Announcements.cmp**, and then click **Start Export**.

6.  Go back to the Central Administration home page.

    Just as you cannot use the Central Administration user interface to restore an individual site collection, you cannot import individual sites or lists. Instead, the SharePoint 2013 Management Shell provides tools for tasks of this nature. You will use the SharePoint 2013 Management Shell to import this list later in this lab.

**Task 3 – Recover Data from Unattached Content Databases**

In some scenarios, it can be useful to recover sites and lists from an unattached content database without going through the more laborious process of reattaching the database to a Web application. In this task, you will remove a content database from the server farm and then use the recovery tool to extract a list from this database.

1.  On the Central Administration home page, under **Application Management**, click **Manage content databases.**

2.  In the Web application dropdown menu, ensure **http://intranet.contoso.com/** is selected.

3.  The table contains a two entries you will be using the following content database: **WSS_Content_aefd7f9706154c318b93a0ac46b26256**

4.  Click on the database name.

5.  On the **Manage Content Database Settings** page, select **Remove content database**, and then click **OK**.

    *Note:* This disconnects the database from the SharePoint farm. It does not delete the actual database file.

6.  On the left navigation panel, click **Backup and Restore.**

7.  Under **Granular Backup**, click **Recover data from an unattached content database**.

8.  In the **Database Name** text box, type the database name you noted down in step 3, and then click **Next**.

9.  In the **Site Collection** section, select the following values:

    *   Site Collection:   **http://w15-sp:2013/sites/Contoso**
    *   Site:                    **/sites/Contoso**
    *   List:                    **Links** (If Links does not appear, type **Links** in the search box and press **Enter**).
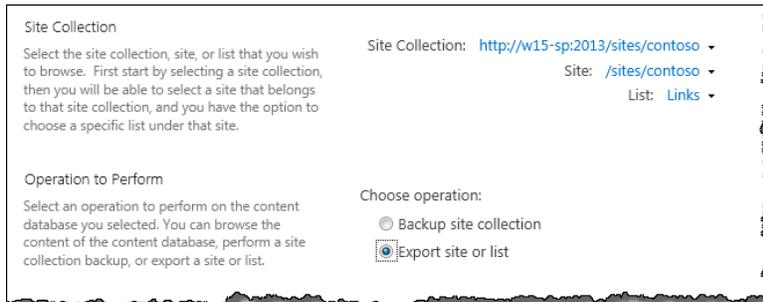
10. In the **Operation to Perform** section, select **Export site or list**, and then click **Next**.

    At this point, you should find yourself on the **Site Or List Export** page that you encountered in the previous task, even though the content database is no longer attached to SharePoint 2013.

11. In the **Filename** text box, type **\\W15-SP-AFCACHE\SPBackup**C:\SPBackup**\Links.cmp**, and then click **Start Export**.


In this exercise you learned about granular backups.  In particular:
- A Site Collection backup
- Exporting a list
- Recovering data from an unattached database

## Exercise 3 – Backup and Restore with Windows PowerShell

Estimated time to complete this exercise: **15 minutes**

**Scenario**

The SharePoint snap-in for the Windows PowerShell scripting language provides access to all the backup and restore functionality that you have seen in the Central Administration user interface and much more. The SharePoint 2013 Management Shell is a Windows PowerShell command window with the SharePoint snap-in preloaded. Through the Management Shell, you can back up and restore an entire server farm, a configuration database, or an individual site collection, and you can import and export sites and lists with granular control over permissions and versioning.

In this exercise, you will focus on the tasks for which you must use Windows PowerShell cmdlets, namely restoring individual site collections and importing sites and lists. You will also explore the backup history of your server farm through the Management Shell.

**Task 1 – Restore Site Collections**

In this task, you will restore a site collection to a different Web application. You will use the site collection backup that you created in Exercise 2 as the source file.

1. Open the SharePoint 2013 Management Shell. To do this, on the **Start** menu, point to **All Programs**, **Microsoft SharePoint 2013 Products**, and then click **SharePoint 2013 Management Shell**.

2. At the **PS >** prompt, type the following command, and then press **ENTER**.

   ```
   Get-Help Restore-SPSite -detailed
   ```

   Take a moment to study the syntax of the **Restore-SPSite** cmdlet. In this lab, you will use the **Identity** parameter to specify where to create the restored site and the **Path** parameter to specify the location of the backup file.

3. At the **PS >** prompt, type the following command, and then press **ENTER**.

   ```
   Restore-SPSite –Identity http://it.contoso.com/sites/newteam -Path \\W15-SP-
   AFCACHE\SPBackupC:\SPBackup\newteam.bak
   ```

4. At the confirmation prompt, type **Y** and then press **ENTER**.

5. When command completes, open a browser window and browse to **http://it.contoso.com/sites/newteam**.
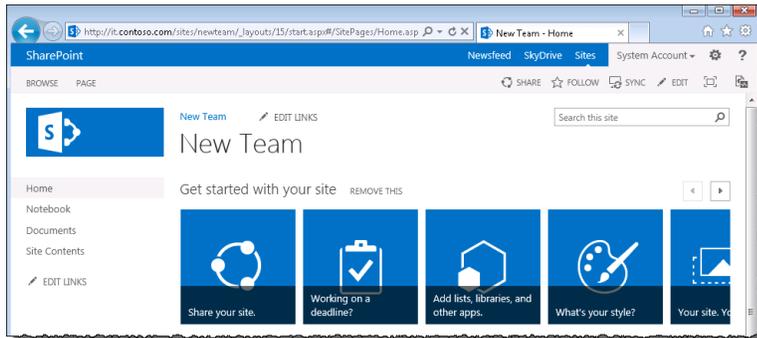
6. Verify that all site content has restored correctly to the new URL.

7. Close the browser window.

**Task 2 – Import Sites and Lists**

In this task, you will import custom lists to an existing site. To do this, you will use the list exports that you created in Exercise 2 as source files.

1. In the SharePoint 2013 Management Shell, at the **PS >** prompt, type the following command, and then press **ENTER**.

   ```
   Get-Help Import-SPWeb -detailed
   ```

   Take a moment to review the syntax of the **Import-SPWeb** cmdlet. Note that you can use this cmdlet to import site collections, lists, and libraries in addition to **SPWeb** objects. You can specify whether you want to import security settings, if these were included in the export, and whether you should overwrite existing versions where applicable.

2. At the **PS >** prompt, type the following command, and then press **ENTER**.

   ```
   Import-SPWeb –Identity http://it.contoso.com/sites/newteam -Path \\W15-SP-AFCACHE\SPBackupC:\SPBackup\Links.cmp
   ```

3. Open a browser window and browse to **http://it.contoso.com/sites/newteam**.

4. Notice that a **Links** link has been added to the Quick Launch in the left navigation panel.

5. Click the **Links** link, and verify that the list contents have been added correctly.
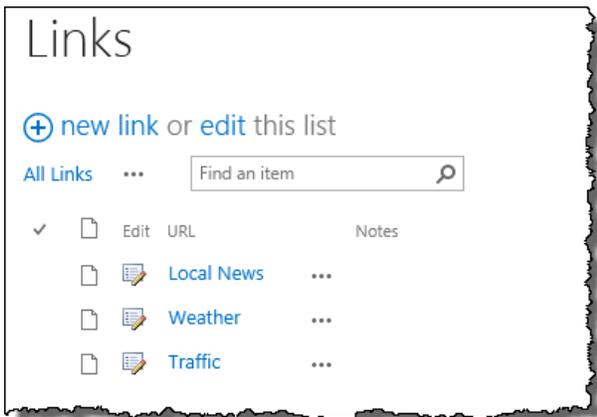
You will now repeat this process for the Announcements list. Remember that whereas you exported the Announcements list from a live site, you extracted the Links list from an unattached content database. It is important to note that you can import the list in exactly the same way.

6. In the SharePoint 2013 Management Shell, at the **PS >** prompt, type the following command, and then press **ENTER**.

```
Import-SPWeb –Identity http://it.contoso.com/sites/newteam -Path \\W15-SP-
AFCACHE\SPBackupC:\SPBackup\Announcements.cmp
```

7. In the browser window, refresh or browse to **http://it.contoso.com/sites/newteam**.

8. Notice that an **Announcements** link has been added to the Quick Launch in the left navigation panel.

9. Click the **Announcements** link, and verify that the list contents have been added correctly.
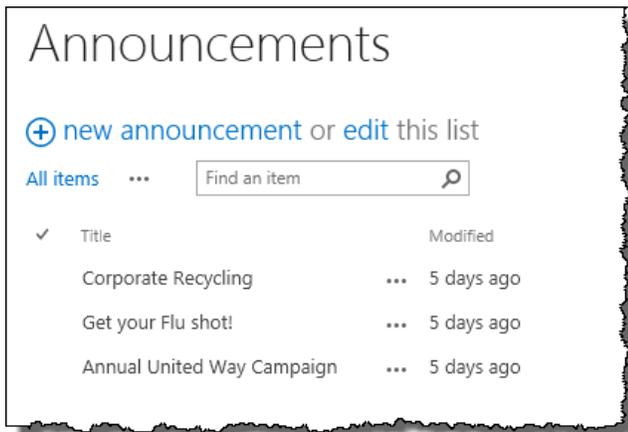
10. Close the browser window.

**Task 3 – View Backup History**

In this task, you will use the Management Console to explore the backup and restore history of your server farm.

1. In the SharePoint 2013 Management Shell, at the **PS** > prompt, type the following command, and then press **ENTER**.

```
Get-Help Get-SPBackupHistory -detailed
```

Take a moment to study the syntax of the Get-SPBackupHistory cmdlet. You can use this cmdlet to view a summary of all your farm-level backup and restore operations at a glance. You can also restrict the results to show only backup operations or only restore operations by using the ShowBackup or ShowRestore switch parameters.

**Note**: The Get-SPBackupHistory cmdlet will only show a history of farm backup and restore operations. Site collection backups and site or list exports are not included.

2. Type the following command, and then press **ENTER**.

```
Get-SPBackupHistory –Directory \\W15-SP-AFCACHE\SPBackupC:\SPBackup
```

3. The cmdlet returns a summary of all backup and restore operations to and from the \\W15-SP-AFCACHE\SPBackupC:\SPBackup network share.

4. Type the following command, and then press **ENTER**.

```
Get-SPBackupHistory –Directory \\W15-SP-AFCACHE\SPBackupC:\SPBackup -ShowBackup
```

5. The cmdlet returns a summary of all backup operations to and from the \\W15-SP-AFCACHE\SPBackup C:\SPBackup network share. Restore operations are excluded.

6. Type the following command, and then press **ENTER**. (Note: A restore was not performed as part of this lab. The command will not return any information.)

```
Get-SPBackupHistory –Directory \\W15-SP-AFCACHEC:\SPBackup -ShowRestore
```

7. The cmdlet returns a summary of all restore operations to and from the \\W15-SP-AFCACHE\SPBackupC:\SPBackup network share. Backup operations are excluded.

In this exercise, you learned about restoring content using PowerShell. In particular:

- Restoring a site collection
- Restoring a list that were backed up using granular backup
- Restoring a list from that was recovered from an unattached database

In addition, you also learn about PowerShell commands that allow you to view backup history information.

## Summary

This lab provided an overview of the backup and restore features in SharePoint 2013. In particular, the lab explored:

- Farm-level backup and restore features for disaster recovery and configuration migration.
- Granular backup and restore tools for content migration and data recovery.
- The role of Windows PowerShell and the SharePoint 2013 Management Shell in backup and restore operations.