

Features on Demand

A copy of the binary files for all features and roles that are installed during Windows Setup is stored in a directory called the *side-by-side store*, located in Windows\WinSxS. Keeping a copy of the feature files available on disk in this way enables you to add a role or enable a feature after Windows Server installation without needing to access Windows Server media. In previous versions of Windows Server, these features files remained on disk for the life of the operating system. The disadvantage of this approach was that these files took up space on the disk even if you never wanted to install the associated feature or role. In addition, you weren't able to reduce the size of the installation image, which you might want to do when creating custom installation media for your organization.

In Windows Server 2012, you can minimize the footprint of your installation by deleting the files for features you're not using from the side-by-side store. This ability to delete feature files is called Features on Demand. To later reinstall a role or feature for which files have been deleted, you need access to the Windows Server 2012 source files.

To completely remove all files for a role or feature from disk, use the Uninstall-WindowsFeature cmdlet of Windows PowerShell and specify the name of the feature by using the `-Remove` option. For example, to delete the DHCP server binaries from server storage, run the following Windows PowerShell command

```
Uninstall-WindowsFeature DHCP -Remove
```

Figure 1-1 shows the result after you run the Get-WindowsFeature cmdlet. The DHCP Server install state is described as Removed.

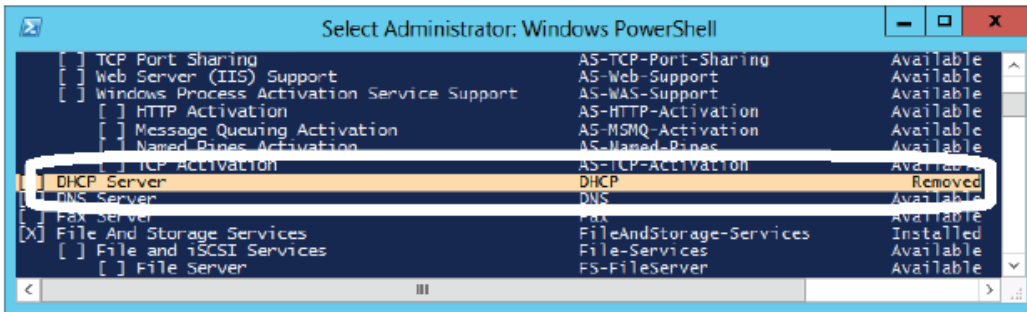


FIGURE 1-1 Removing feature files.

You can reinstall these feature files at any point. To install a role or feature for which the binaries have been deleted, you can use the Install-WindowsFeature cmdlet in Windows PowerShell with the –Source option to specify any of the following:

- A path to a local Windows Imaging (WIM) file (for example, the product DVD)
The path for a WIM file should be in the following format: *WIM:[drive letter]:\sources\install.wim:[image index]*, for example, *WIM:e:\sources\install.wim:4*.
- A Universal Naming Convention (UNC) path to a WIM file on a network share, using the WIM: prefix before the path
- A UNC path to a network share that contains the WinSxS folder for the appropriate version of Windows Server 2012

If you do not specify a –Source option, Windows will attempt to access the files by performing the following tasks in order:

1. Searching in a location that has been specified by users of the Add Roles And Features Wizard or Deployment Image Servicing and Management (DISM) installation commands.
2. Evaluating the configuration of the Group Policy setting, Computer Configuration\Administrative Templates\System\Specify settings for optional component installation and component repair.
3. Searching Windows Update. (Note that this can be a lengthy process for some features.)

Alternatively, you can reinstall the feature by using Server Manager. When you get to the final page of the Add Roles And Features Wizard, choose the option to specify an alternate source path, as shown in Figure 1-2. Then provide a path to source files when prompted.

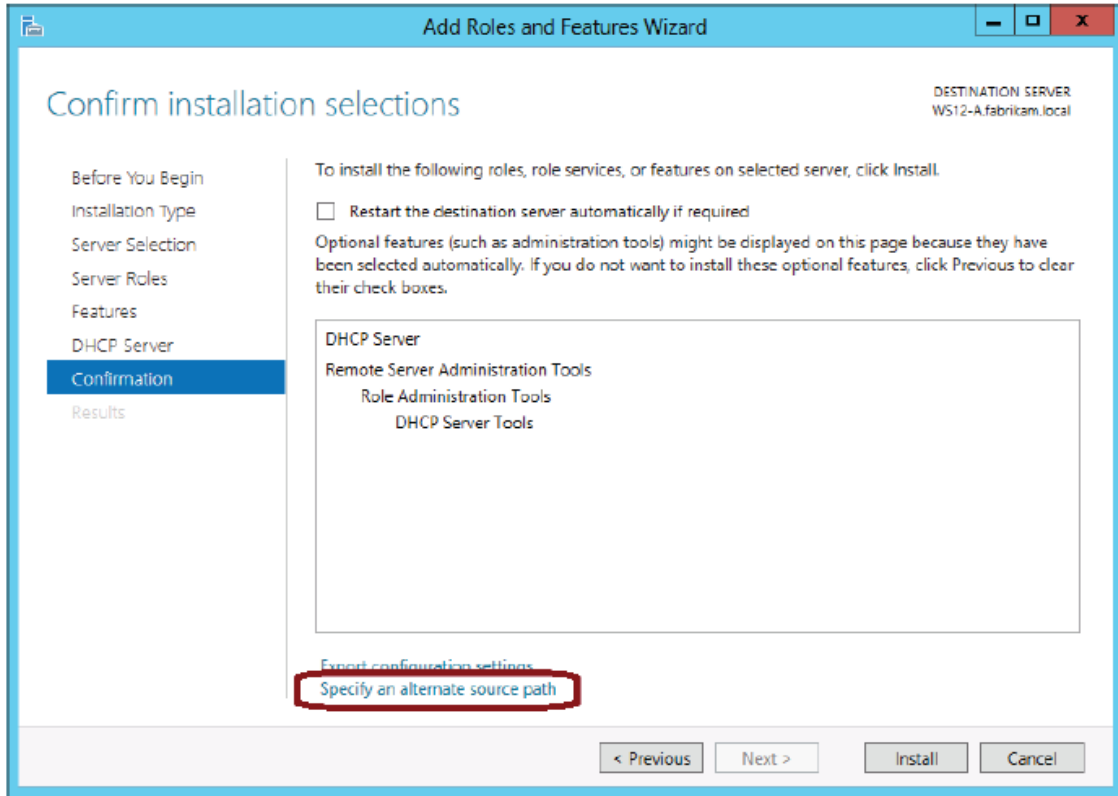


FIGURE 1-2 Reinstalling feature files that have been removed.

The source path or file share must grant Read permissions either to the Everyone group (not recommended for security reasons) or to the computer account of the destination server; granting user account access is not sufficient.