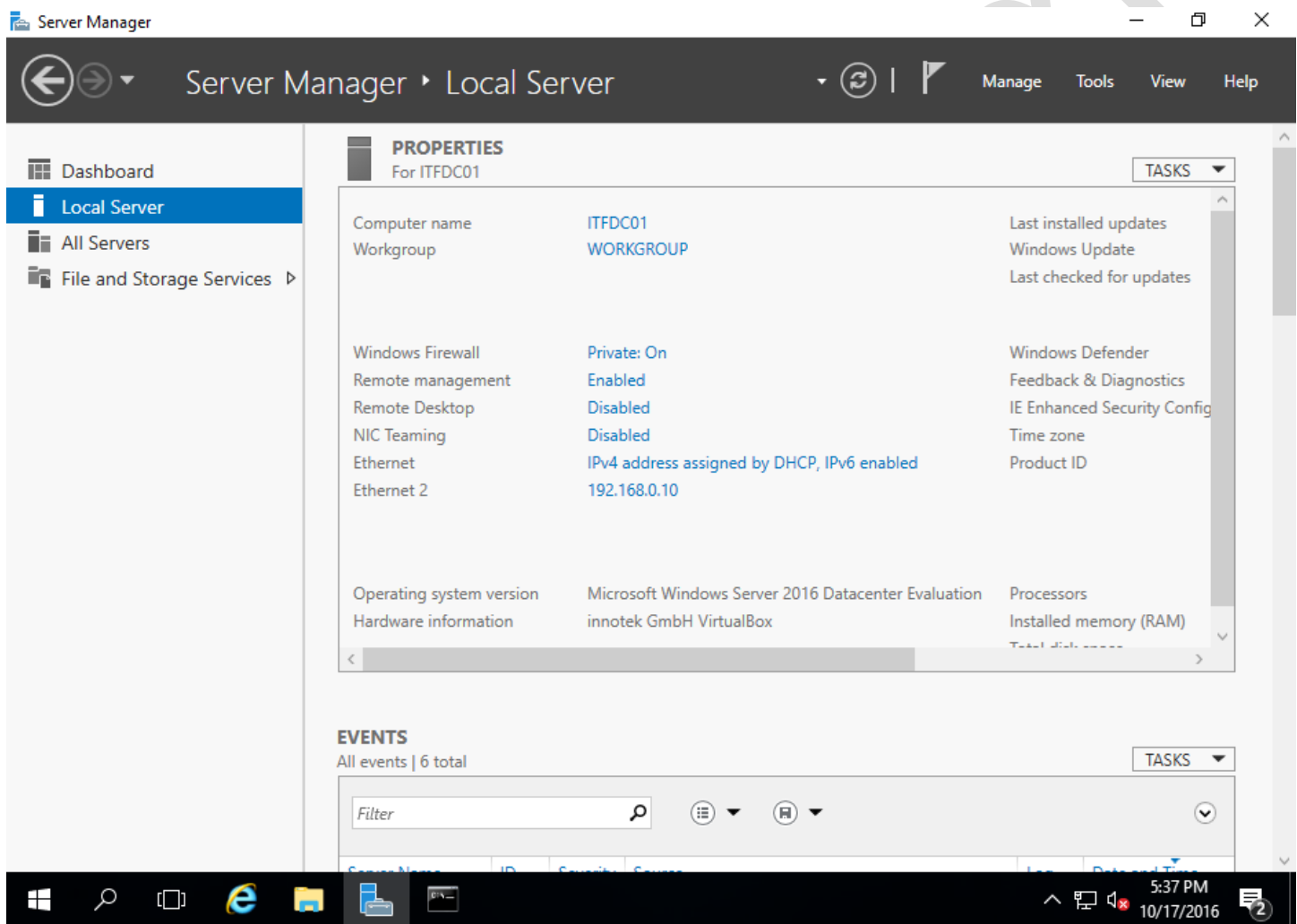




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The goal of this lecture is to help you understand how you are supposed to use Windows Server 2016. We are going to cover various key components that are commonly used by System Administrators who manage Windows Server 2016 servers.

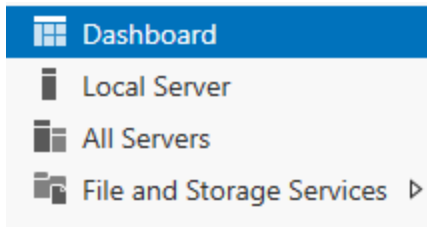
The primary way you manage your server is with a program that is included with all versions of Windows Server called “Server Manager”. By default, Server manager will launch when the operating system starts, but if it doesn’t you can start it by clicking the Windows button and selecting “Server Manager”.



Server manager allows you to manage your local server as well as other servers on your local network. From here you can manage the computer name, IP address, firewall settings, Windows updates, view Events, Services, and much, much more. On the left pane you will see Dashboard, Local Server, All Servers, and File and Storage Services. The first three items relate to the server or remote servers. The fourth is a server role called “File and Storage Services” (note that this is installed by default). Whenever you install new server roles they will appear in this pane.



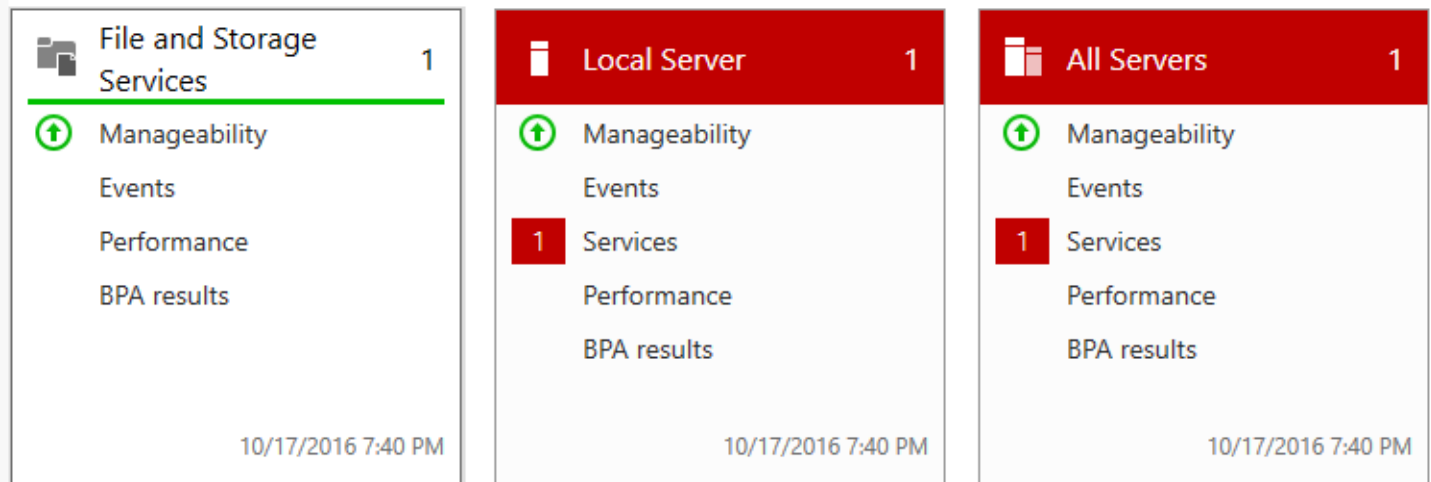
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The dashboard gives a quick overview of your server and allows you to configure the server quickly. If there are any issues with the local server or remote servers (such as a service that failed to start) you will see them on this screen. To see errors with remote servers you need to first add them as a remotely managed server. Errors with remote servers will be shown under the “All Servers” section.

ROLES AND SERVER GROUPS

Roles: 1 | Server groups: 1 | Servers total: 1



The local server tab will give you detailed information about the server you are currently logged into. If you need to change anything from the computer name, domain membership, firewall, network settings etc, this is the place to do it. You will also have all of your events and services listed here. There is much more to the local server tab, but this is the most important parts of it. The all servers tab allows you to view the same information on the local server and for remote servers, but you cannot change the server properties (computer name, domain, firewall settings, etc).

The last tab is File and Storage Services. This server role includes technologies that help you set up and manage one or more file servers, which are servers that provide central locations on your network where you can store files and share them with users.

Let's talk about two key terms that you must know in order to successfully work with Windows Server 2016; Roles and Features.

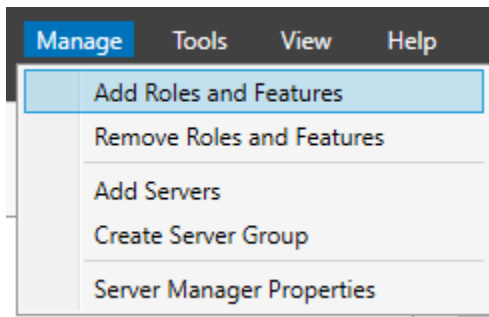
Roles

A server role is a set of software programs that allow a server to provide a specific service to its network. An example of a role would be adding the DHCP role to our server. This will allow the server to act as a DHCP server

Features

Features are individual software programs that are sometimes required to be installed by roles, although they can be independently installed without roles as well.

You can add or remove roles and features by selected the Manage button at the top right hand corner of the Server Manager window and selecting either “Add” or “Remove Roles and Features”



The windows for adding and removing roles are nearly identical. One allowing you to check checkboxes for roles and the other allowing you to uncheck role checkboxes. If you open the “Add Roles and Features” window you will be presented with the “Before You Begin” tab. This tab has no functionality and is simply informational so I recommend that you check the “Skip this page by default” checkbox and click next.

Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).

☒ **Role-based or feature-based installation**

Configure a single server by adding roles, role services, and features.

☐ **Remote Desktop Services installation**

Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.

The Installation Type tab gives you two options. The first option is the most common and is for installing roles and features on a single server. The second option is for installing roles onto a virtual machine (not related to VirtualBox). Choose the first option and click next.



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☒ Select a server from the server pool
☐ Select a virtual hard disk

Server Pool

Filter:

Name	IP Address	Operating System
ITFDC01	10.0.2.15, 192.1...	Microsoft Windows Server 2016 Datacenter Evaluation

1 Computer(s) found

If you have added remote servers to manage then they will be listed here. You can also choose to install the roles on a virtual hard disk. Unless you are using Hyper-V (we are using VirtualBox), you likely won't use this second option. Click next.

Installation Type

Server Selection

Server Roles

Features

Confirmation

Results

Roles

☐ Active Directory Certificate Services

☐ Active Directory Domain Services

☐ Active Directory Federation Services

☐ Active Directory Lightweight Directory Services

☐ Active Directory Rights Management Services

☐ Device Health Attestation

☐ DHCP Server

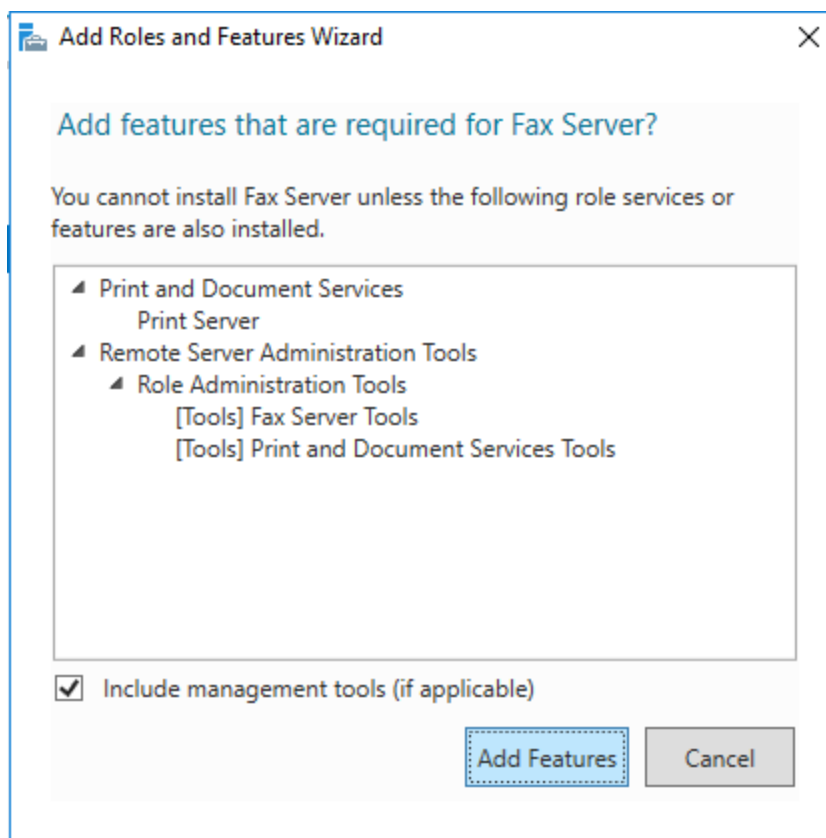
☐ DNS Server

☐ Fax Server

Description

Active Directory Certificate Services (AD CS) is used to create certification authorities and related role services that allow you to issue and manage certificates used in a variety of applications.

On the Server Roles tab, you can choose any of the roles you would like to add to the server. If you only want to install features, you do not have to check any of these checkboxes. For this lecture, we are going to install and uninstall roles and features so you understand how it works. Choose the "Fax Server" check box. You will get a popup stating that you need to add required features in order to install this role. Click "Add Features", and then click Next.



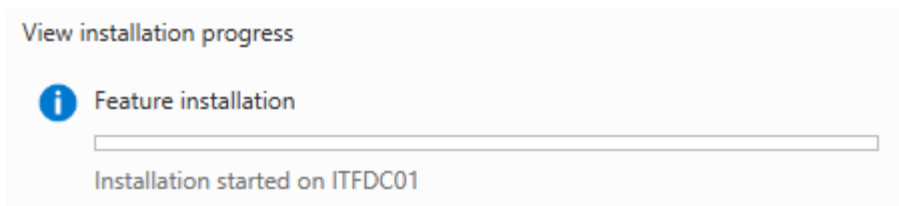
The Features tab looks very similar to Server Roles tab. If we had not selected any roles to install, we would not be able to progress past this screen. It is important for you to know that you do not have to install roles, but you must at least install features in order to complete this wizard. The features required by the Fax Server role are already checked for installation, so simply click next to continue.

The next screen will prompt us about the new Fax Server role we are installing. Generally when you add a new server role, you will have some type of informational tabs added to the wizard. Click Next through the prompts. When you are brought to the Role Services tab, you can check additional services if you would like them. Since this role is temporary and just an example, I am not going to include any of these optional role services. Click Next.

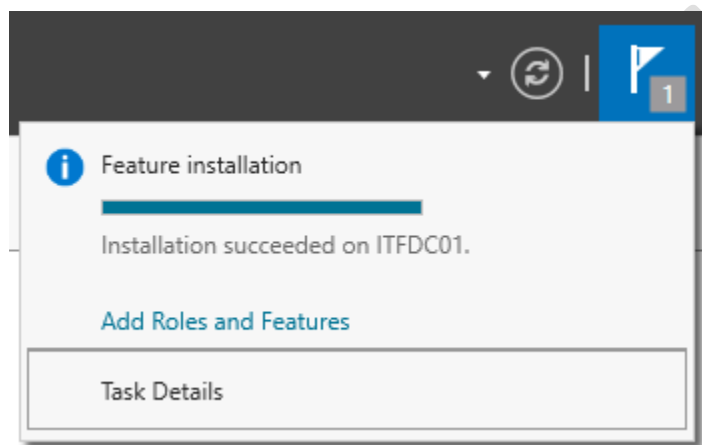
Now we are brought to the Confirmation tab. If you would like you can check the “restart the destination server...” checkbox but I am going to leave it unchecked since I plan to uninstall the role immediately. As a general rule, it is a good idea to check this checkbox.


☐ Restart the destination server automatically if required

Click Install and you will be brought to the results window.

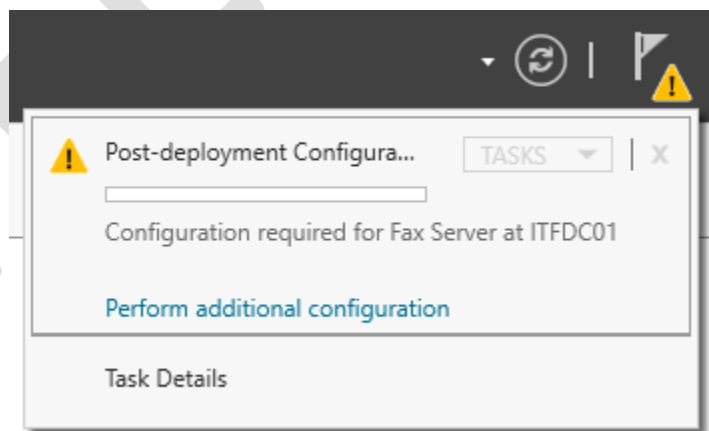


Note that you may close this wizard at any time, and the installation will still continue. Once the window is closed, you may view the progress by clicking on the flag icon on the top right-hand corner of Server Manager.



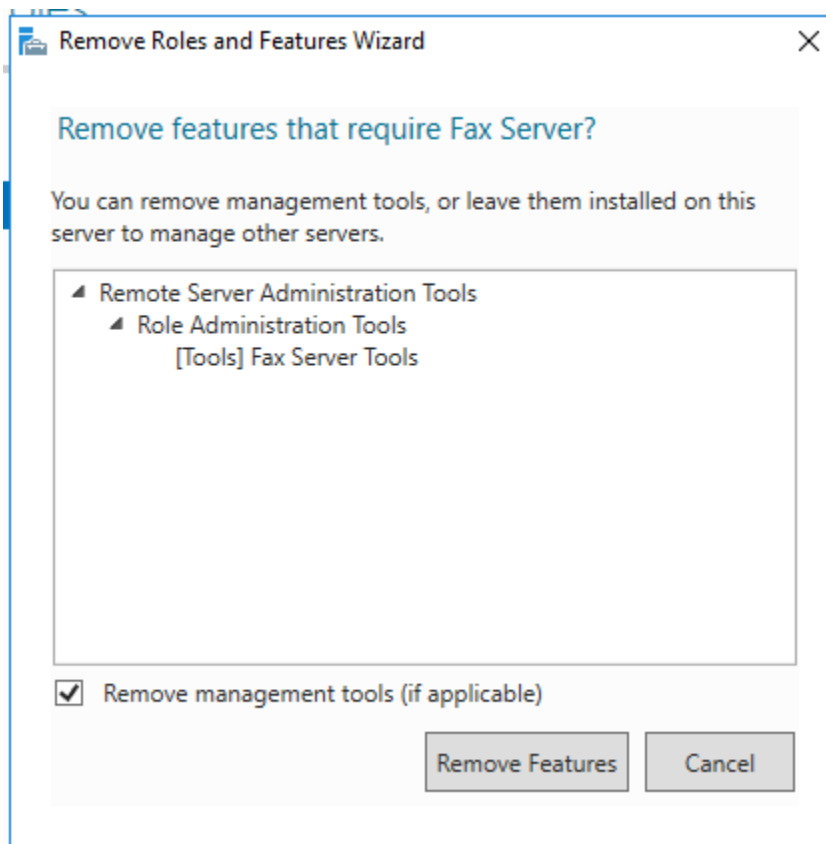
Once the installation is complete, refresh Server Manager by either pressing F5 or by pressing the refresh button next to the notifications button. 

On the notifications button you will see new notification stating that you must complete the post-deployment configurations.



Just about every role you install will require some type of post-deployment configuration – since we are about to uninstall this role, we do not need to complete this. Now, let's uninstall the newly installed Server Role. Click Manage >

“Remove Server Roles and Features.” Click next through the prompts, choosing the same settings we did when adding the Server Role. When you get to the Server Roles tab, uncheck the “Fax Server” checkbox.



You will get the popup stating that you can remove the features that were required by the server role. Notice that this list is not exactly the same as the features we were required to install. This is because we will need to uninstall additional roles as well. Click the Remove Features button and uncheck the “Print and Document Services” checkbox. Again, you will be prompted to remove features that require the role. Click the Remove Features button.

Click Next until you reach the confirmation Window. This time, check the “Restart the Destination Server Automatically if required” checkbox. Select Yes when you receive the warning message about the reboot. Click the Remove button and wait for the uninstall to finish and the Server to reboot.