



# Network Administration

## Ch3. Implementing File Services and IIS



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- Understanding File services
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- Configuring DFS
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- Configuring Web service



# Understanding File Services

When you need to control and manage the amount and type of data stored on your servers, Microsoft delivers FSRM to help you do just that.

The File Server Resource Manager (FSRM) is a suite of tools that allows an administrator to place quotas on folders or volumes, filter file types, and create detailed storage reports. These tools allow an administrator to properly plan and implement policies on data as needed.



# FSRM Features

- Configure File Management Tasks
- Configure Quotas
- File Classification Infrastructure
- Configure File Screens
- Configure Reports



# Installing the FSRM Role Service

To install using Server Manager, you go into Add Roles And Features and choose File And Storage Services File Services File Server Resource Manager. To install FSRM using PowerShell, you use the following command:

```
Install-WindowsFeature -Name FS-Resource-Manager -  
IncludeManagementTools
```



# Configure File and Disk Encryption

Hardware and software encryption are some of the most important actions you can take as an administrator. You must make sure that if anyone steals hardware from your company or from your server rooms that the data they are stealing is secured and cannot be used. This is where BitLocker can help.



# Using BitLocker Drive Encryption

To prevent individuals from stealing your computer and viewing personal and sensitive data found on your hard disk, some editions of Windows come with a new feature called BitLocker Drive Encryption.

BitLocker encrypts the entire system drive. New files added to this drive are encrypted automatically, and files moved from this drive to another drive or computers are decrypted automatically.



# Features of BitLocker

- BitLocker Provisioning
- Used Disk Space–Only Encryption
- Standard User PIN and Password Change
- Network Unlock
- Support for Encrypted Hard Drives for Windows



# Install BitLocker via Windows PowerShell utility

To install BitLocker, use the following PowerShell commands:

```
Install-WindowsFeature BitLocker -IncludeAllSubFeature -  
IncludeManagementTools -Restart
```



# Using EFS Drive Encryption

Encrypting File System (EFS) allows a user or administrator to secure files or folders by using encryption. Encryption employs the user's security identification (SID) number to secure the file or folder. Encryption is the strongest protection that Windows provides to help you keep your information secure



# Configuring DFS

- Implementing DFS namespaces
- Implementing DFS replication
- Scenarios for implementing DFS
- Planning for DFS
- Optimizing namespaces and replication
- Demonstration: Configuring DFS namespaces and replication



# Implementing DFS namespaces

DFS namespaces can be configured as:

- Domain-based namespaces
- Stand-alone namespaces

To configure a namespace for publishing content:

1. Create a namespace
2. Create a folder in the namespace
3. Add folder targets
4. Set the ordering method for targets in referrals



# Implementing DFS replication

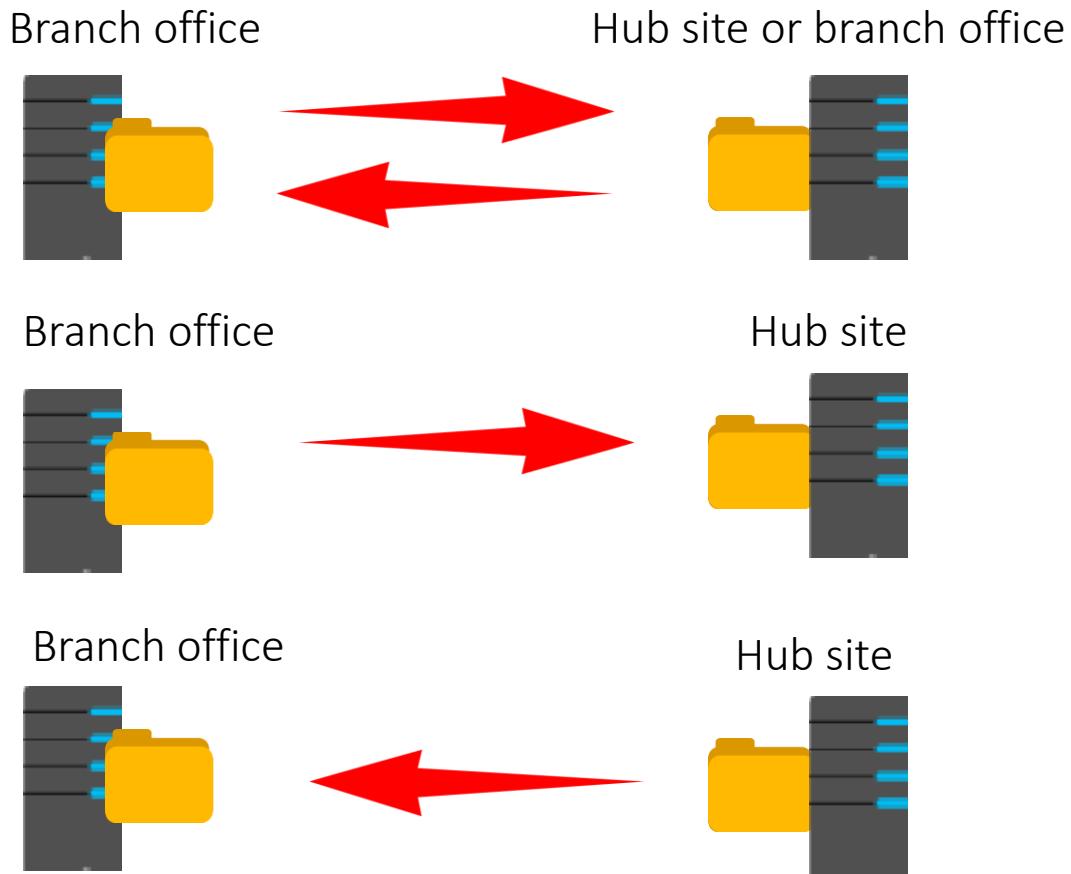
When DFSR is implemented, it:

- Uses remote differential compression
- Uses a staging folder to stage a file before sending or receiving the file
- Detects changes on the volume by monitoring the USN journal
- Uses a vector version exchange protocol
- Recovers from failure

Configure and manage DFSR by using the cmdlets from the DFSR module for Windows PowerShell

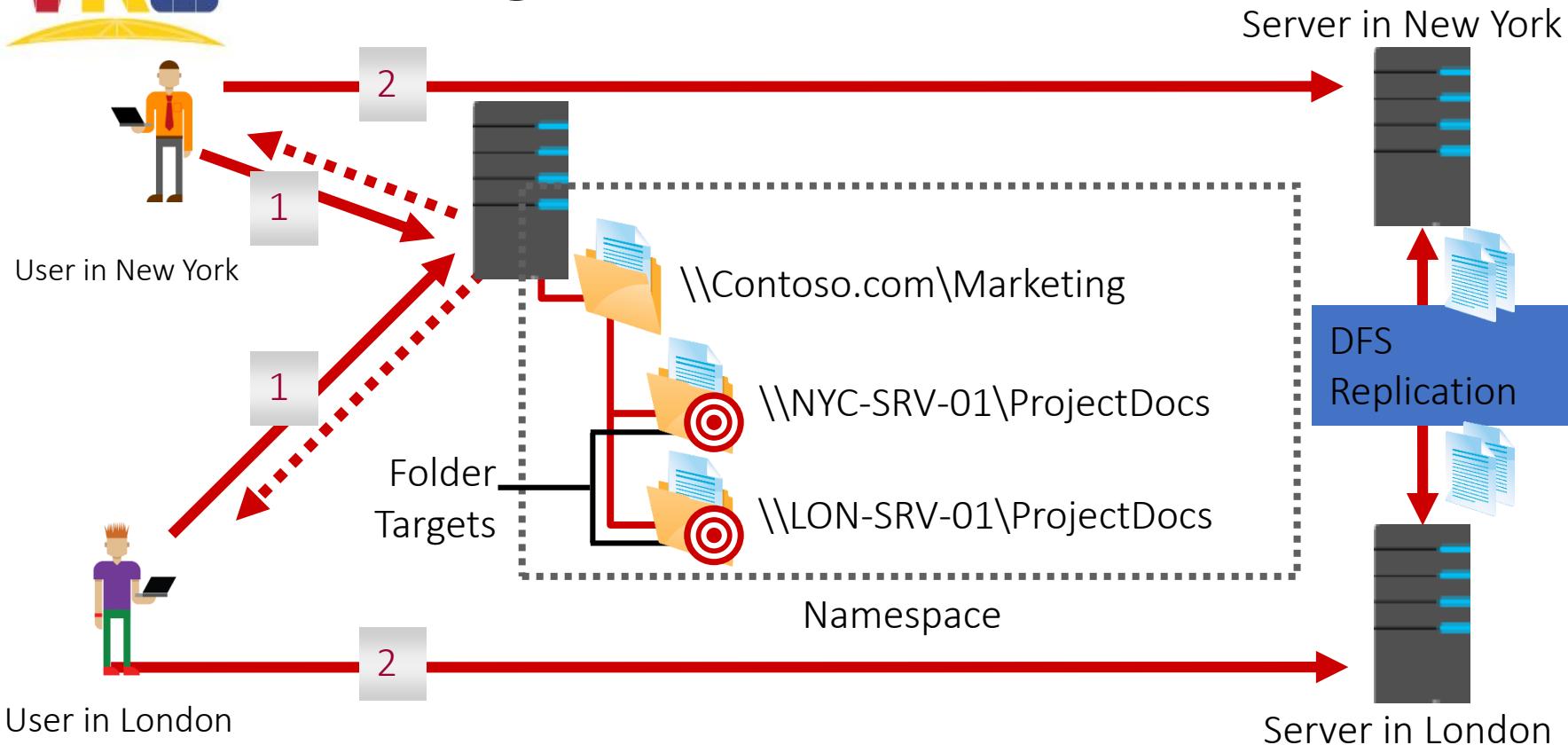
# Scenarios for implementing DFS

- Sharing files across branch offices
- Data collection
- Data distribution





# Planning for DFS



1. User enters: \\contoso.com\marketing  
Client computers contact a namespace server and receive a referral
2. Client computers cache the referral and then contact the first server in the referral



# Optimizing namespaces and replication

You can optimize DFS by:

- Renaming or moving a folder
- Disabling referrals to a folder
- Specifying referral cache duration
- Configuring namespace polling
- Configuring replication groups
- Creating multiple replicated folders
- Modifying replication topology



# Demonstration: Configuring DFS namespaces and replication

In this demonstration, you will see how to:

- Install the DFS Replication role service
- Create a new namespace
- Create a new folder and folder target
- Configure DFSR



# Internet Information Services (IIS)

Internet Information Services (IIS, formerly Internet Information Server) is an extensible web server software created by Microsoft for use with the Windows NT family.

IIS supports HTTP, HTTP/2, HTTPS, FTP, FTPS, SMTP and NNTP. It has been an integral part of the Windows NT family since Windows NT 4.0

IIS 10.0 version 1709 is included in Windows Server 2016 and Windows 10 Fall Creators Update both released 2017-10-17.



# Configuring FTP

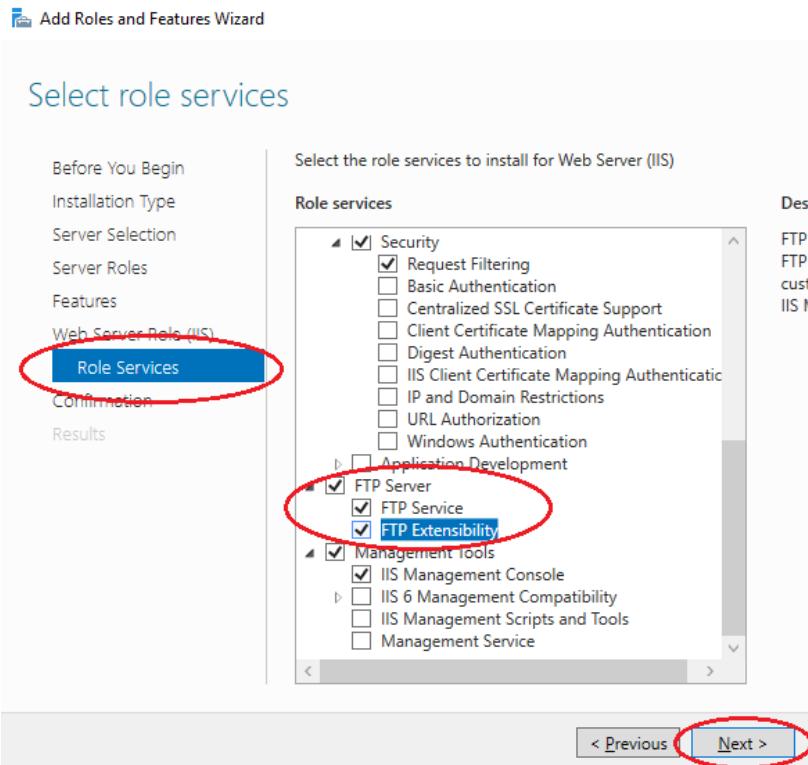
FTP (File Transfer Protocol) is an abbreviation of File Transfer Protocol. As the name implies, FTP is used to transfer files between machines on a network. You can use FTP to share files between a local PC and a remote server and to access online software archives.

Our manual will consider the option of installing an FTP server as an IIS web server role, alternatively, you can use other software, for example, FileZilla Server, Titan FTP Server, Home Ftp Server, Ocean FTP Server.

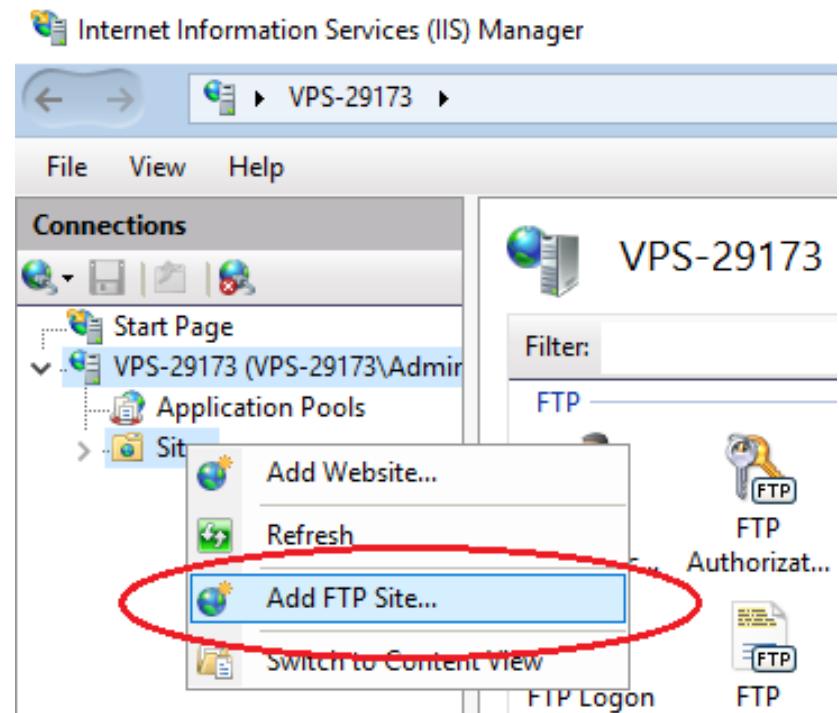


# Install FTP server

## Add roles and features



## Add FTP site in IIS





# Install FTP server

Tree structure of FTP site in Windows web server

The screenshot shows the Internet Information Services (IIS) Manager interface. The title bar reads "Internet Information Services (IIS) Manager". The navigation pane on the left shows the following tree structure:

- Start Page
- VPS-29173 (VPS-29173\Administrators)
  - Application Pools
  - Sites
    - Default Web Site
    - MyFTP

The "MyFTP" site is selected, highlighted with a blue border. The main content area is titled "MyFTP Home". It features a globe icon and the text "MyFTP Home". Below this are several management links and icons:

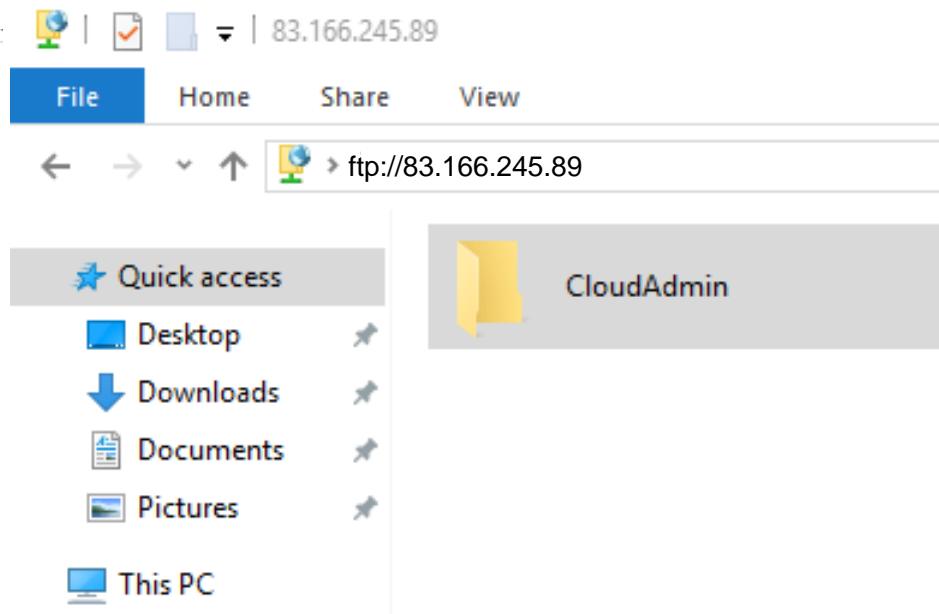
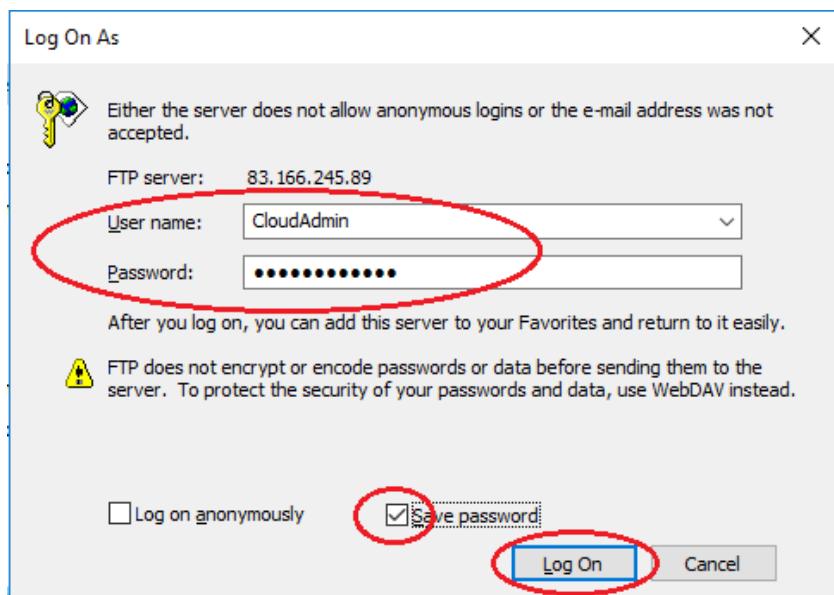
- Filter: Go, Show All, Groups
- FTP
  - FTP Authentication
  - FTP Authorization
  - FTP Current Sessions
  - FTP Directory Browsing
  - FTP Logging
  - FTP Messages
  - FTP Request Filtering
  - FTP SSL Settings



# Connect to an FTP server

You can connect to an FTP server in several ways, for example, through the standard Windows utility - Explorer, or through the Web browser or FileZilla program v...

ftp:// ip address





# Configuring Web service

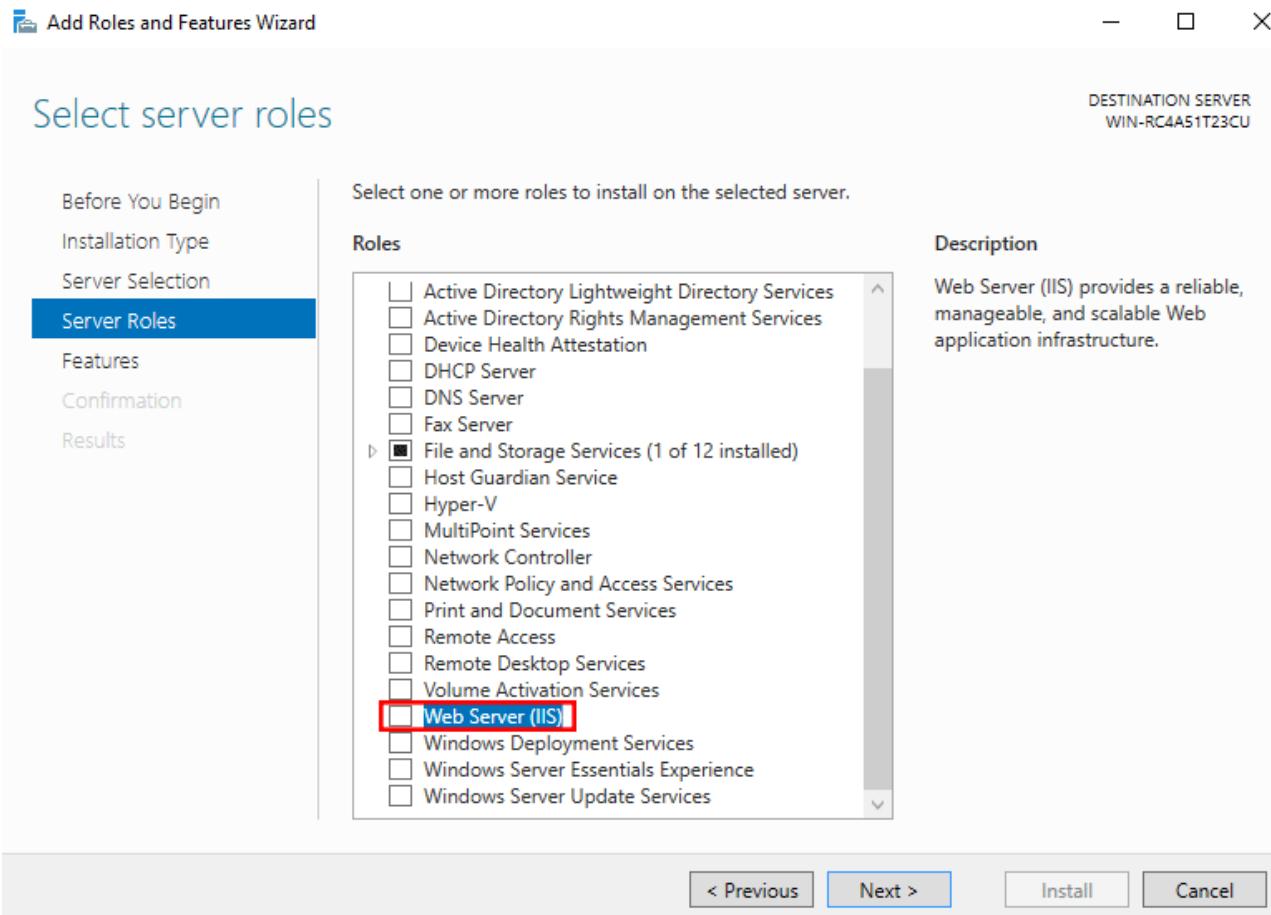
- **Internet Information Services (IIS):**

(IIS) is a flexible, general-purpose web server from Microsoft that runs on Windows systems to serve requested HTML pages or files. An IIS web server accepts requests from remote client computers and returns the appropriate response.



# Install Web Server (IIS)

From the “Select server roles” check the box “Web Server (IIS)”





# Install Web Server (IIS)

Install additional services for IIS on the “Select role services”

Add Roles and Features Wizard

### Select role services

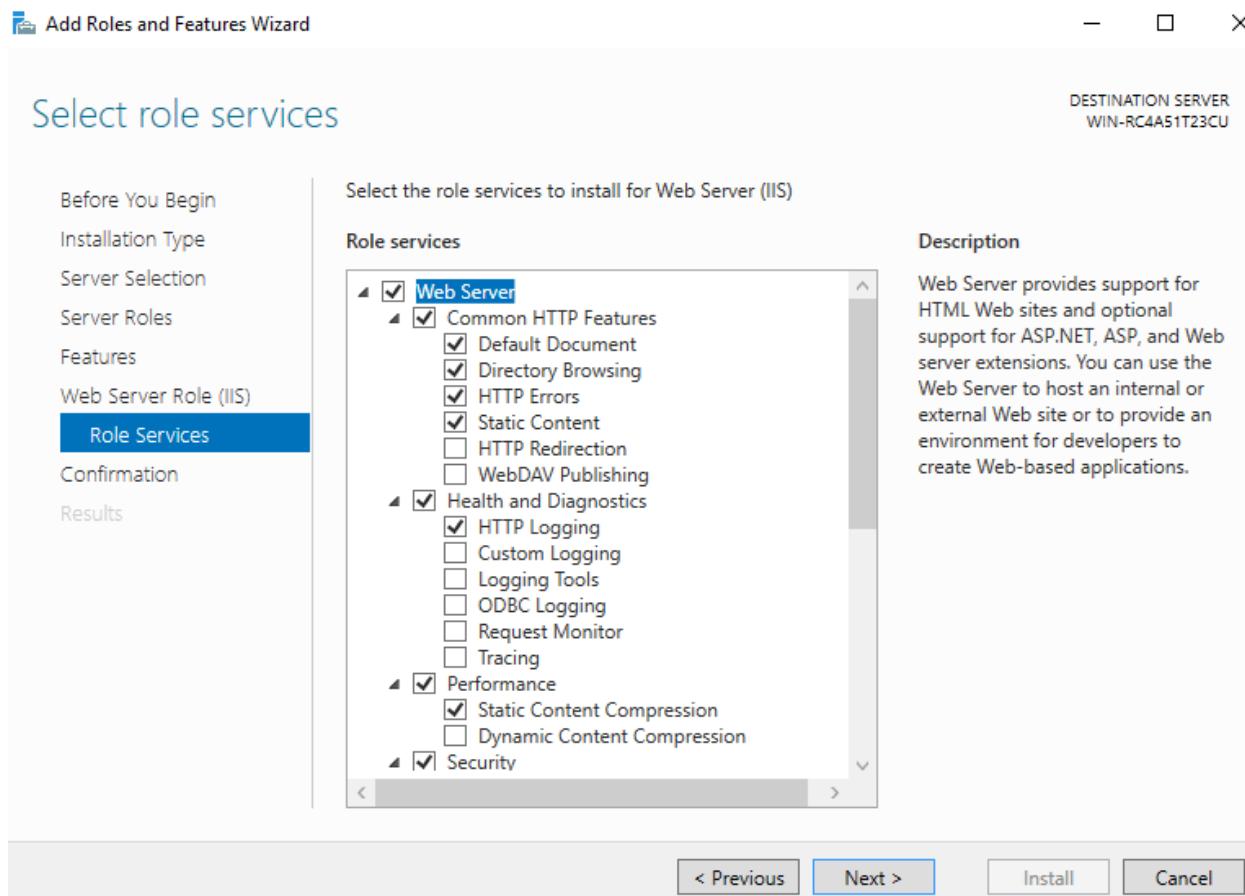
DESTINATION SERVER  
WIN-RC4A51T23CU

Before You Begin  
Installation Type  
Server Selection  
Server Roles  
Features  
Web Server Role (IIS)  
**Role Services**  
Confirmation  
Results

Select the role services to install for Web Server (IIS)

Role services	Description
<input checked="" type="checkbox"/> <b>Web Server</b> <ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Common HTTP Features<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Default Document</li><li><input checked="" type="checkbox"/> Directory Browsing</li><li><input checked="" type="checkbox"/> HTTP Errors</li><li><input checked="" type="checkbox"/> Static Content</li><li><input type="checkbox"/> HTTP Redirection</li><li><input type="checkbox"/> WebDAV Publishing</li></ul></li><li><input checked="" type="checkbox"/> Health and Diagnostics<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> HTTP Logging</li><li><input type="checkbox"/> Custom Logging</li><li><input type="checkbox"/> Logging Tools</li><li><input type="checkbox"/> ODBC Logging</li><li><input type="checkbox"/> Request Monitor</li><li><input type="checkbox"/> Tracing</li></ul></li><li><input checked="" type="checkbox"/> Performance<ul style="list-style-type: none"><li><input checked="" type="checkbox"/> Static Content Compression</li><li><input type="checkbox"/> Dynamic Content Compression</li></ul></li><li><input checked="" type="checkbox"/> Security</li></ul>	Web Server provides support for HTML Web sites and optional support for ASP.NET, ASP, and Web server extensions. You can use the Web Server to host an internal or external Web site or to provide an environment for developers to create Web-based applications.

< Previous Next > Install Cancel





# Install Web Server (IIS)

Create new site on Web server

The screenshot shows the IIS Manager interface. The left pane displays the 'Connections' tree, which includes the Start Page, the server node (WIN-8RPVE9NMCJ0), Application Pools, and the Sites node. Under the Sites node, two sites are listed: 'Default Web Site' and 'mysite.local'. The 'mysite.local' site is selected, indicated by a blue selection bar. The right pane is titled 'mysite.local Home' and contains several configuration links:

- IIS**:
  - Authentic...
  - Compression
  - Default Document
- MIME Types**
- Modules**
- Output Caching**
- Management**:
  - Configurat...
  - IIS Manager
  - Permissions



# Security in IIS

Web servers are very vulnerable to security breaches. IIS has a range of features that can be activated to bolster its defences.

- Installing the necessary security patches.
- Disable any IIS features which are not necessary.
- Use of firewalls to controlling all IP addresses and domains
- Logging to see who has accessed the server and vet these visitors.
- Configure error pages so that only essential information is displayed about the error.



# Q & A