

Hands-On Microsoft Windows Server 2008

Chapter 8 *Managing Windows Server 2008* *Network Services*

Objectives

- Install, configure, and troubleshoot DNS
- Implement Microsoft WINS
- Install, configure, and troubleshoot DHCP
- Install, configure, and troubleshoot Microsoft Internet Information Services

Implementing Microsoft DNS

- Domain Name System (DNS)
 - A TCP/IP application protocol that enables a DNS server to resolve (translate):
 - Domain and computer names to IP addresses
 - IP addresses to domain and computer names
 - Example:

Domain Name	IP Address
ksu.edu.sa	111.222.333.444

Implementing Microsoft DNS

- DNS servers provide the DNS namespace for an enterprise
 - Example of DNS namespace:



- One of the requirements for using Active Directory on a Windows Server 2008 network is to have a DNS server on the network

Installing DNS Services

- DNS is installed as a server role in Windows Server 2008
- The installation steps for DNS are similar to those for DHCP
 - Both are installed as Windows components

DNS Zones

- DNS name resolution is enabled through the use of tables of information
 - That link computer names and IP addresses
- The tables are associated with partitions in a DNS server that are called **zones**
 - Contain resource records
- **Forward lookup zone**
 - It is a kind of zone that links computer names to IP addresses
 - It Holds host name records called address records

DNS Zones (continued)

- When you install DNS on a domain controller (DC) in a domain
 - A forward lookup zone is automatically created for the domain with the DNS server's address record already entered

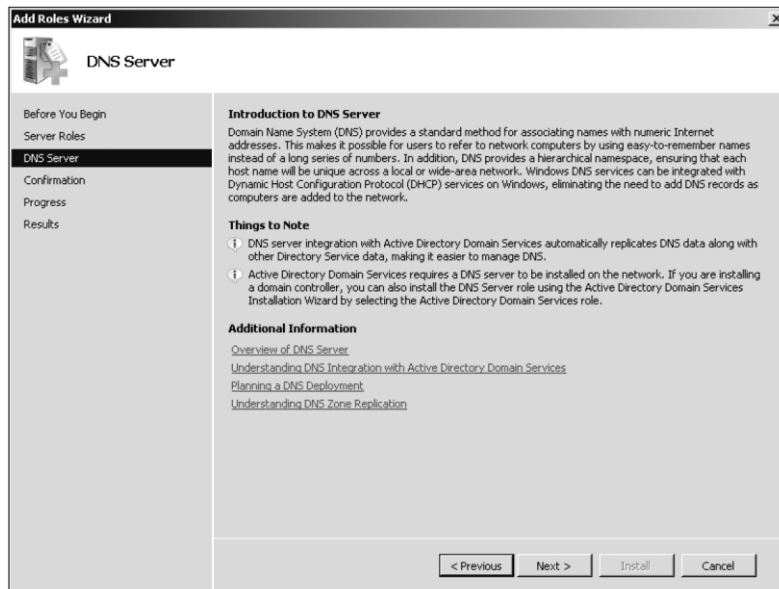


Figure 8-1 DNS Server information window

Using the DNS Dynamic Update Protocol

- Microsoft DNS is also called **Dynamic DNS (DDNS)**
 - A modern form of DNS that enables client computers and DHCP servers to automatically register IP addresses
- **DNS dynamic update protocol**
 - Enables information in a DNS server to be automatically updated in coordination with DHCP

DNS Replication

- **Primary DNS server**
 - The DNS server that is the main administrative server for a zone and thus is also the authoritative server for that zone
- **Secondary DNS server**
 - Contains a copy of the primary DNS server's zone database, but is not used for administration (is not authoritative)

DNS Replication (continued)

- Essential services performed by secondary DNS servers:
 - To make sure that there is a copy of the primary DNS server's data
 - To enable DNS load balancing among a primary DNS server and its secondary servers
 - » Load balancing means that if the DNS primary server is busy performing a name resolution service for a request and then a new request for a name resolution is has arrived, this request can be resolved by secondary DNS server.
 - To reduce congestion in one part of the network

Implementing Microsoft DHCP

- Dynamic Host Configuration Protocol (DHCP)
 - Enables a Windows Server 2008 server with DHCP services to detect the presence of a new client
 - Assign an IP address to that client
- The DHCP server has a pre-assigned range of IP addresses that it can give to a new client
- Microsoft DHCP server can support the following:
 - Dynamic configuration of DNS server forward lookup zone records
 - Up to 1000 scopes
 - A range of contiguous addresses is called the scope
 - Up to 10,000 DHCP clients

Implementing Microsoft DHCP (continued)

- A Windows Server 2008 server can be configured in the role of a DHCP server using Microsoft DHCP services
- The DHCP server automatically updates the DNS server at the time it assigns an IP address

Implementing Microsoft DHCP (continued)

- A Microsoft DHCP server can also:
 - Reserve an IP address for a specific computer
 - Update all computers on a network for a particular change in DHCP settings
 - Provide DHCP services to multiple subnetworks
 - Subnetworks means a portion of a network
 - Skip certain IP addresses from a scope

Configuring a DHCP Server

- **First**, set up one or more scopes of contiguous address ranges and activate each scope
 - Configuring a scope includes the following:
 - Obtain the range of addresses to be used
 - Determine the subnet mask for the range of addresses
 - Decide on a name for the scope,
 - Example: Management group or Security Section...etc
 - Decide how long to lease IP addresses.
 - Example: 30 minute – or leasing the IP on every sign in to the network
 - Determine whether to exclude specific addresses

Configuring a DHCP Server (continued)

- **Second, authorize the DHCP server**
 - The process of authorizing the server is a security process to make sure IP addresses are only assigned by DHCP servers that are managed by server administrators
 - Assigning IP address, means the process of giving a member/client in a network an IP address
- **Third:**
 - Configure the DHCP server and its clients to automatically update DNS records
 - The third step is not required, but it saves time in managing DNS,

Implementing Microsoft Internet Information Services

- Microsoft **Internet Information Services (IIS)**
 - Software included with Windows Server 2008 that enables you to offer a complete Web site
- **Internet Server Application Programming Interface (ISAPI)**
 - A group of files and filters that enable programmers to link programs into IIS and to speed program execution of websites.
- Web Server (IIS) role services
 - World Wide Web
 - File Transfer Protocol (FTP)
 - Simple Mail Transfer Protocol (SMTP)

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Internet Information Services (IIS) Manager

- Through this tool, you can do the following:
 - Connect to a Web server on your computer or remotely connect to a Web server, an application, or site
 - Have connections to multiple Web servers, applications, and sites
 - Manage a Web server
 - Manage ASP.NET
 - Manage authorization for users and for specific Web server roles

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Internet Information Services (IIS) Manager

- Through this tool, you can do the following:
(continued)
 - Manage Web server logging
 - Compress Web server files
 - Manage server certificates
 - Troubleshoot a Web server



Figure 8-18 Using IIS Manager

Creating a Virtual Directory

- **Virtual directory**
 - A physical folder or a redirection to a Uniform Resource Locator (URL) that points to a folder
 - So that it can be accessed over the Internet, an intranet, or VPN
 - It is as a shortcut to the URL of a Web server site.
- The reason for creating a virtual directory is to provide a shortcut path to specific IIS server content
 - It contains the web pages of a specific website.

Creating a Virtual Directory (continued)

- When you set up a virtual directory, you give it an alias
 - A name to identify it to a Web browser
- After a virtual directory is created, you can modify its properties in IIS Manager
- You can set up the virtual directory to be shared
 - So that users who need access to add contents to the directory can do this over the network

Managing and Configuring an IIS Web Server

- The Internet Information Services tool enables you to manage IIS components including the following:
 - Sites
 - SMTP e-mail
 - Certificates
- Sites is a folder used to manage multiple Web sites from one administrative Web server

Managing and Configuring an IIS Web Server (continued)

- The SMTP E-mail Page feature is used to manage Internet e-mail via e-mail programs
 - This allows to configure many email features such as:
 - Reception of e-mail
 - Storage of e-mail messages
- Through the certificates feature, you can configure and monitor certificate security that is used with other Web sites
 - This helps to check the many certification features of websites (Example the expiration of a website certification)