Group 3 (SAyers Team Lead)

IT 310-41

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Case Project 1-4, 2-1,2-2,2-3

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**Case Project 1-4:**

The limitations of static addressing in Cutting Edge could quickly be rectified by using the Dynamic Host Configuration Protocol (DHCP) service for addressing. Firstly, with the possibility of a wholesale upgrade to Windows Server 2016, the reconfiguration IP addresses for user computers will be done dynamically. This alone will streamline the transition to the new operating system and ease the frustrations of employees/IT personnel. If control over the network was the primary concern for the system administrator by using static addressing, Windows Server 2016 also has the option of leasing addresses for a specified amount of time which can be determined by the administrator.

DHCP also provides long term solutions to the limitations of static addressing. Written instructions will no longer be required along with the need to provide support to assist with incorrect network configuration input. This saves the employee time by not having to make a call to the IT department or submit a ticket for a fix. In turn, the understaffed IT department can focus on other tasks rather than troubleshooting network problems for employees. Overall, the man hours dedicated to addressing issues will be solved and production can go up across the company.

Pros:

More productivity company wide, easier transition to upgrade, some control due to leasing, IT personnel can focus on other duties.

Cons:

Less control of the addresses, less consistency of monitoring

**Case Project 2-1**

To appropriately upgrade Gym masters from windows server 2008 to windows server 2016, the firsts thing that must be done is to find out the specifications of Gym Masters server system. Once that is done the next step is to exceed the minimum requirements of Windows server 2016. This is crucial because I assume that Gym Masters is going to need hosting for company shared files printers and additional hard drive space on its servers. Exceeding the minimum system requirements is also important because Gym Masters is planning on increasing their number of local servers at some point, so doing this with allow for a more scalable server as Gym Masters organization and client base grows. Next would be choosing the most suitable and cost-effective edition of windows Server 2016. I would recommend Windows server 2016 Standard Edition. Standard Edition has unlimited users if there are enough licenses available and processor cores should not be a problem since system requirements were exceeded. Standard editions have more functionality than Essential, and Gym Masters doesn't need all the features of Datacenter edition. After that the next thing would be to compatibility testing to make sure the systems can properly run new versions of windows server after which we will have to partition the hard drive which will make the installation of windows server 2016 go a lot smoother. Partitioning the hard drive twice is also recommended to make good use of the unallocated disk space. We should next plan how many user and device license will need and the order them accordingly. Then the simple steps can be tackled, determining a domain and Identifying the server roles i.e. offering printers and faxes servers to network users. Lastly would be to make the immediate preparations such as: backing up existing files for the migration, ensuring all important hardware are pre-installed, disconnecting media devices so that they do not interfere with the installation, disconnecting communications and finally testing the server software on a disc or USB to ensure that everything is working correctly.

**Case Project 2-2:**

* Providing a website
  + Web Service (IIS) Role
    - Provides an expanding range of web services and turns the windows server into a full-featured web server.
* Supporting mobile devices for accessing the server over the network
  + Remote Access Role
    - Enables you to access the network and any resources from anywhere that you have internet.
* Offering shared files on large scale
  + File and Storage Services Role
    - Enables and user to access and share files through any of the servers, DFS lets multiple devices/computers have folders show as one.

* Managing Active Directory functions for the domain
  + Active Directory Rights Management Services Role
    - Encrypts/Authenticates and uses certificates to help safeguard any company information.
* Offering VPNs
  + Network Controller Role
    - Enables use of a VPN, and virtual machines as well as physical networks and computer clusters.
* Coordinating Printing
  + Print and Document Services Role
    - Adds a service that makes the windows server a print server that can manage printing jobs and printers from one spot. Works with Unix and Linux systems.
* Providing web-based applications to internal users
  + Web server role
    - Described above, lets the user access the web server through the windows server, allowing for application use for internal users.
* Other possible roles that are possibly needed in the company's network.
  + DHCP Server Role
    - Allowing for IP addresses to be given to internal clients
  + DNS Server Role
    - Helps translate domain and computer names into IP’s and vice versa.

**Case Project 2-3**

For the initial installation of Windows Server 2016, you must run Server Manager for a portion of critical configurations. These configurations are as follows:

Establishing the names. Initial assignment of names will be random, so preferred naming conventions are recommended for servers, workgroups, and domain.

Setting up the firewall. The administrator may decide to use Windows Firewall or decide to use other firewall purchased by the organization.

Configuring remote management/desktop, for server console access for administrators.

Configuring the time zone. (Self-explanatory)

Configuring IP addressing information. Keep in mind that it is good practice to set servers to a static address, and dynamic addressing for clients.

Server services and monitoring services.

Installing and management server roles and program features, if known, but may be installed later.

Setting up and configuring Windows Update. This ensures that the latest updates are obtained and installed, providing a basic means of security.

Some of these configurations may be done at a later time, however setting the time-zone, naming servers/domains/workgroups, and assigning dynamic/static addresses should be performed right away.