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**CYSE 280**

**HW2**

2-1)

There are a few steps the committee should be aware of before the server upgrade.

1. Before we start the upgrade I recommend that we take a snapshot of our VM instance to revert back to in the event anything goes wrong. In addition to a full backup of all critical systems.
2. Check system requirements for Windows Server 2016 to ensure our servers have the necessary hardware installed.
3. Gym Masters must determine what business applications will successfully transition to the upgraded version of Window Server. The applications that can not be transitioned will need to be replaced.
4. It is important that we work with unit heads to communicate when and why the upgrade will be taking place. Allowing them time to prepare for expected changes and potential outages.
5. It is critical to identify the number of servers we have, where they are located and what OS/applications are running on them. Some of this information has already been collected. As of now Gym Masters has 40 servers, 22 in Chicago and 18 in Toronto, running Windows Server 2008. We will still need to compile a list of all applications running on these servers.
6. Another consideration that will need to be made is the order which the upgrades will take place. I recommend that first we move customer facing applications and websites over to the new system. Next we will begin moving applications with compatibility problems which will require the most time to prepare.

2-2) Server Functions:

* Providing a website: Microsoft Server 2016 offers the Web Server IIS role, allowing the server to function as a webserver to provide a company website.
* Supporting mobile devices accessing server: Microsoft Server 2016 Active Directory has an extension (Active Directory Rights Management Services Mobile Device Extension) that supports mobile device access.
* File sharing on a large scale: Microsoft’s File and Storage Services supports one or more file servers capable of servicing large scale file sharing.
* Managing active directory functions for domain: Microsoft’s Active Directory Domain Services is built for managing active directory functions for a domain.
* VPN: The Remote Access Role supports VPN capability, as does Generic Routing Encapsulation (GRE)
* Printing: Print and Document Services
* Web-based applications to internal users: Remote Access Service (RAS) provides access to shared resources, web sites, and applications on an internal network
* Managing IP address assignments: IP Address Management (IPAM) Server allows end-to-end IP infrastructure planning, managing, and tracking
* Translating computer names and IP addresses: DNS Server role

2-3) The Microsoft Server Configuration Tool is what the system programmer can use to perform the initial configuration. A few of the initial tasks are change the host name of the server, add the server core to a domain, set up TCP/IP and DNS configuration, configure the firewall and install latest updates.

2-4) Memo on Server 2016 deployment

Windows Deployment Services (WDS) allows for mass deployment of Windows operating systems. A single server must be prepared with WDS and made ready to transmit the server operating system to all requesting servers across the network. The MAC addresses and network adapters of the servers set to receive the operating system are made available to the WDS server. WDS can be used to install Windows 8.1, Windows 10, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016, and Windows Server 2019, to computers over the network.

**Works Cited:**

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