**INFT 2031 – Laboratory 5**
**Topic:** Installation of Windows Server 2008 & Review Exercises

| Time | Lesson | Notes |
|---|---|---|
| 10 minutes | Introduction<br>▪ Windows Server 2008 Installation (Slides)<br>▪ Configuring Windows Server 2008 (Slides)<br>▪ MSDN AA access and product keys | Slides – Review: Individual |
| 40 minutes | Installing Windows Server 2008 Enterprise Edition (Parallels Image) | Hands-on, Individual |
| 20 minutes | Exploring and configuring Windows Server 2008 | Hands-on, Individual |
| 20 minutes | Exploring Unix commands | Hands-on, Individual |
| 20 minutes | Exploring Windows Powershell commands | Hands-on, Individual |
| 10 minutes | Contribute to Exploratory Exercise:<br>- How does a firewall work? | Research - Individual |
| Homework | Review Exercises | Research - Individual |

## Part 1: Introduction

In this lab, you'll install and configure Windows Server 2008 Enterprise Edition. Review the slides posted for this lab, before proceeding to install Windows Server 2008.

## Part 2: Install Windows Server 2008 Enterprise Edition (as a Parallels VM)

1. Provide the following configurations, when installing Windows Server 2008 as a Parallels image.

| | |
|---|---|
| **Image name** | INFT2031 - Windows Server 2008 |
| **Hard Drive size** | 64 GB |
| **Memory** | 1 GB |
| **No of Processors** | 1 |
| **Administrator Password** | Password1 |
| **Networking type** | Shared Networking |
| **Optimization options** | Optimize performance for VM |
| **Location of hard drive** | External Drive<br>/Volumes/INFT2031/INFT2031-VMs/ |
| **Sharing with Mac environment** | Do not share |

2. Ensure that you install Windows Server 2008 Enterprise Edition (Full Installation) not just Server Core.

   Note: You may attempt the review exercises while the installation is progressing.

3. Explore whether all device drivers are available using MMC → Device Manager. Install all appropriate Device Drivers by installing Parallel Tools.

4. Activate your copy of Windows Server 2008. Use MDNS AA to download appropriate Product Keys.

5. Turn on "Windows Update" and install the latest Windows Update (this may take a while and you can continue to do other steps while the updates are downloaded in the background).

## Part 3: Configuring and exploring Windows Server 2008 Enterprise Edition

In this section, you'll explore Windows Server 2008 and familiarise yourself with the NOS.

1. Initial Configuration Tasks: Using the *Initial Configuration Tasks* window, complete the following:
    - Time settings: Ensure that the appropriate time zone and time is set

    - Configure networking: Ensure that both IPv4 and IPv6 are enabled. Also provide a static IPv4 address as specified below.

      Click on "Configure networking", right-click on "Local Area Connection Network" and select "Properties". Ensure that IPv4 and IPv6 and enabled. Select "Internet Protocol Version 4 (TCP/IPv4)" and click *Properties*.

      IPv4 Address: 10.211.55.7
      Subnet mask: 255.255.255.0
      Default gateway: 10.211.55.1
      Preferred DNS: 10.211.55.1

    - Computer name and domain information: Ensure that following computer name and workgroup information is set by clicking "Provide computer name and domain"
      Computer Name: INFT2031-SERVER
      Workgroup: INFT2031

    - Updating server: Ensure that the server has *enabled Windows automatic updating and feedback.*

    - Install updates: Download and install all updates. (Note: This may take a while and you can continue to do other steps while the updates are downloaded in the background)

    - Explore roles: Click on *Add roles* and explore the different roles which the Windows Server 2008 NOS can be configured into. The *Description* section provides a short description of each role. Read through the functionality of each role.

      As you'll notice a number this NOS can be configured to a number of different roles. In our next lab within the rest of the course, we'll install and explore Active Directory Domain Services (AD DS) role.

      Click Cancel to move back into *Initial Configuration Tasks* window.

- Explore and Add features: Click on *Add features* and explore the different features than can be installed. The *Description* section provides a short description of each feature. Read through the functionality of each feature.

  You will install some features later on in the tutorial.

- Remote desktop: Do not enable Remote Desktop at present

- Windows Firewall: Ensure that Windows Firewall is turned on.

You can view your configuration by clicking "Print, email or save this information" link.

Once you have completed your initial configuration of your server click on "Do not show this windows at logon" and click *Close*.

If you would like to launch initial configuration again: *Start* → *Run* → *oobe*
(More information at: http://www.windowsreference.com/windows-server-2008/windows-server-2008-initial-configuration-tasks-step-by-step-tutorial/)

2. Computer information: Determining Windows Server 2008 Edition and change name of server
   Click on *Start* → *Computer* and right-click and select *Properties*.

   Fill in the following information about your Windows Server 2008

   Windows OS and Edition:_____

   System type (32-bit or 64-bit): _____

   Close this window.

3. Process information: Record the number of processors that are currently running on your server. You can view the currently running processors by right-clicking on the menu bar and opening *Task Manager*. Click on *Processes* tab to view the currently running processes in Windows Server 2008 server.
   Number of processors executing currently: _____

   Explore Task Manager's other tabs: *Performance*, *Users* etc.

   At the end of this exercise, close Task Manager.

4. Exploring Server Manager: Server Manager is a tool that consolidates administrative functions to make a server easier to manage. You can open Server Manger by clicking Start → Administrative Tools → Server Manager.

   Explore *Server Manger* tool.
   - Click on *Diagnostics* → *Reliability and Performance* to view current resource utilization of the server

5. ServerManagerCmd.exe tool: You can use the *ServerManagerCmd.exe* tool to provide similar functionality using the command line.

   Open a command windows and run *ServerManagerCmd –help* to obtain information about using *ServerManagerCmd* tool. Run *ServerManagerCmd –query* to view the available and installed Roles and Features in the server.

6. Verifying Signed Device Drivers: Device Drivers which are digitally signed are deemed secure. You can check whether they are any un-signed device drivers installed on your server by running *sigverif.exe* on your command prompt.

   Note that the Parallels Drivers installed from the Parallels Tools will be displayed after you run this tool (as they are not digitally signed).

7. OS Configuration Options:
   Virtual Memory Size: Write down the virtual memory size that is currently set in your NOS:

   Virtual Memory Size: _____

   You can view the virtual memory configuration settings by right-clicking *Start* → *Computer* and selecting *Properties*. Next click on *Advanced System Settings* and select *Advanced* tab. Next click *Settings* button and select *Advanced* tab. You can view the paging file size.

   Environment variables: are used to tell the operating system where to find certain programs and how to allocate memory to programs, and to control different programs. There are two types of environment variables: *System* environment variables and *User* environment variables

   - System environment variables: are defined by the operating system and apply to any user logged onto the computer.
   - User environment variables: can be defined on a per-user basis, such as specifying the path where application files are stored

   Write the System environment variable for Windows directory (windir) below:

   _____

   You can view and configure the environment variables by right-clicking *Start* → *Computer* and selecting *Properties*. Next click on *Advanced System Settings* and select *Advanced* tab. Next click *Environment variables* button.

   Startup and Recovery: View the *Startup and Recovery* options. Ensure that there is a "Complete memory dump" in the event of a system failure to the default dump file.

   You can view and configure *Startup and Recovery* options by right-clicking *Start* → *Computer* and selecting *Properties*. Next click on *Advanced System Settings* and select *Advanced* tab. Next click *Settings* button in *Startup and Recovery*.

   Registry: Windows Server 2008 Registry is a very complex database containing all information the operating system needs about the entire server. The Registry is the

coordinating center for a specific server. You can view the registry by typing in *regedit* in the *Run* command. Do not change the registry values at this stage.

## Part 4: Unix commands

You'll explore some Unix commands using the Mac environment in the labs. Open a Terminal window in Mac: Mac HD\Applications\Utilities\Terminal

Unix provides a powerful set of commands that can be utilised to perform actions on Unix. In Unix, GUI is optional. Review the popular Unix commands that are listed on your lecture (slide 83 of your lecture) and explore using the Terminal windows on Mac.

Also, do the following operations using Unix commands:

- Task 1: Create a directory on the desktop called INFT2031
  You can change the directory using **cd** command
  You can view the current working directory **pwd** command
  You can list the folder contents using **ls** command
  You can make a directory using **mkdir** command

- Task 2: Make a file called "INFT2031.doc" in the INFT2031 directory created above
  You can use **mkfile** command to create a file
  Use *man* to find out the options for **mkfile**

- Task 3: Delete the folder created in Task 1 using Unix commands
  You can use **apropos** command to search the manual pages for other commands

## Part 5: Windows Server 2008 PowerShell

In this section, you'll install Windows Powershell and explore Powershell's cmdlets (i.e. commands).

Similar to Unix, Windows PowerShell is a provides a powerful command-line interface or shell – Windows Powershell. A shell is a customized environment for executing commands and scripts.

Task 1: Install Windows Powershell feature.
Open Server Manager → Add features and select *Windows PowerShell* and install

Task 2: Explore Windows Powershell commands
Open Windows Powershell by Start → All Programs → Windows Powershell 1.0
Explore Windows PowerShell commands.View all Powershell commands by executing *get-help* * in the Powershell window.

Complete Tasks 1-3 in Part 4 using PowerShell commands.

## Part 6: Exploratory Exercises

Contribute to the exploratory exercises on Blackboard course site.

## Part 7: Review Exercises

Complete the Review Exercises for chapters posted on Blackboard.

**Notes:**