**CSIS 2260 - Lab #8**

20

***Introduction to Windows Server 2019***

Due date: 20:59 March 19, 2021 (Pacific Time)

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**Objectives:** To learn about the installation and basic configuration of Windows Server 2019.

**Insert the required screenshots in the Word file. Do not submit the screenshots separately.**

**You may not use the numeric keypad on your keyboard in the Windows Server 2019 virtual machine, especially when you enter the password. It is turned off by default.**

**Equipment Required:**

1. A Windows 10 PC with Oracle VM VirtualBox Manager installed. Note: You may export and remove the Ubuntu/Windows 10 VMs if there is not enough disk space on your computer. You may check the document *VM import and export* on Blackboard (*Course Content*->*Readings*).
2. You are required to download the ***Windows* *Server* *2019* *Standard*** disk image BEFORE the lab session from Microsoft Azure <https://azureforeducation.microsoft.com/devtools>. Sign in using your Douglas College student account. Under ***Learning resources*** > ***Software***, choose ***Windows Server 2019 Standard*** and click *Generate URL* to obtain the download URL. Open the URL in a web browser to download the disc image file.
3. If you cannot download Windows Server 2019 image file after logging into Azure, you can download it using the following link after logging using your student account

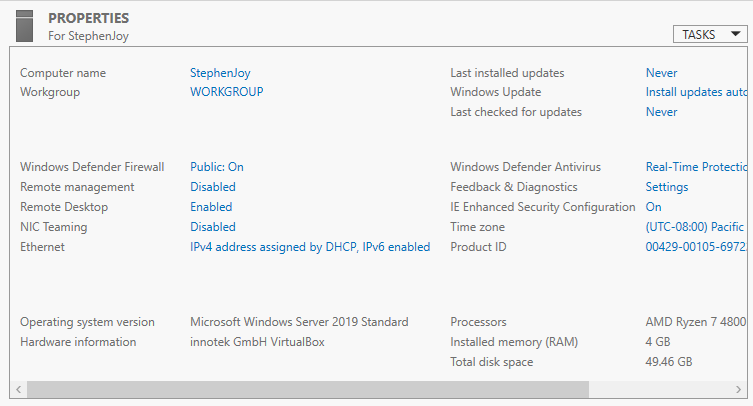
[*https://collegedouglas-my.sharepoint.com/:u:/g/personal/max9\_douglascollege\_ca/EaMAtSorgERKgqXqk1mU-rcBgqBlpOMwo5\_hDwstGE98yA?e=tWGOqL*](https://collegedouglas-my.sharepoint.com/:u:/g/personal/max9_douglascollege_ca/EaMAtSorgERKgqXqk1mU-rcBgqBlpOMwo5_hDwstGE98yA?e=tWGOqL)

1. **Installation of Windows Server 2019 Virtual Machine [\_\_\_\_\_/4]**
2. Open Oracle VM VirtualBox Manager. Click ***New*** to create a new virtual machine.
   1. Use ***Windows*** ***Server*** ***2019*** as the name of the virtual machine and ***Windows 2019 (64-bit)*** as the version.
   2. Take the default settings for the VM (change the memory size to ***4096*** ***MB*** if you have at least 8 GB memory on your computer). Also, take the default options to create a virtual hard disk.
3. Install Windows Server 2019 on your virtual machine.
   1. Start the virtual machine just created.
   2. When prompt to select *start-up disk*, click the folder icon on the right, then click ***Add*** and use the file explorer to select the ***Windows******Server******2019*** disc image file that you have downloaded. Click the ***Windows Server 2019*** file just added and click the ***Choose*** button. Click ***Start*** to begin system installation.
   3. Skip the product key when asked (Click ***I don’t have a product key***).
   4. Select ***Windows Server 2019 Standard (Desktop Experience) x64*** to install. This will provide you with a GUI interface.
   5. Choose ***Custom*** to perform a clean installation. A clean installation is one in which the OS is installed on a new disk partition and is not an upgrade from any previous version of Windows. Wait for installation to finish.
   6. Enter ***Csis2260*** as the password for the administrator account.
   7. To log into the system, you need to use the ***right*** ***Ctrl***+***Del*** instead of ***Ctrl***+***Alt***+***Del***.
4. **Basic System Configurations [\_\_\_\_\_/3]**
5. When the Windows 2019 system starts up, the ***Server******Manager*** will automatically open. Click ***Local******Server*** in the left panel. Note the current system settings in the ***PROPERTIES*** window. You may need to wait a few minutes for the information to show up.
6. Set ***Remote******Desktop*** to allow remote connection to the server.
7. Change ***Computer*** ***name*** (not Computer description) to your name. Put a space between your initials and last name. What is the system’s message? Give five of the characters that are not allowed.

` ~ ! @ #

Replace ***Computer*** ***name*** with your name with no space between your initials and last name.

1. Restart the system to check if ***Remote*** ***Desktop*** has been enabled and ***Computer*** ***name*** has been changed. Take a screenshot of the ***PROPERTIES*** window and insert the screenshot below.



1. If Windows Server 2019 does not display in full in the VirtualBox window, click ***Devices*** at the top of the VirtualBox window and select “***Insert Guess Additions CD image…***”. Open ***This PC*** in Windows Server 2019, double-click the ***CD Drive*,** and double-click the file ***VBoxWindowsAddtions*** to run the installation and follow the steps. When the installation finishes, you need to restart the system.
2. **User Account Creation [\_\_\_\_\_/3]**
3. Close ***Server*** ***Manager*** and open ***Control*** ***Panel***. From ***User*** ***Accounts*** > ***Change account type*** > ***Add a user account***, create two user accounts called *student1* and *student2*. Use *Stud1234* and *Stud2345* as passwords and *you* as hint. Close the ***Control*** ***Panel*** window.
4. Use ***right*** ***Ctrl***+***Del*** to switch to the new users and confirm you can log in to the system. Sign out from the new users and switch back to the Administrator account.
5. Turn on the *Guest* *account* as follows. Select ***Start***> ***Windows******Administrative******Tools*** > ***Computer******Management***, then on the left panel, click ***Local Users and Groups*** and then click ***Users***, and you will see the ***Guest*** account. Double click it and uncheck the option “***Account is disabled***”, and then click ***OK***. Close the ***Computer Management*** window and check if you could sign in as *Guest* by switching user again. (Activating the Guest account is typically not recommended.)
6. Use ***right-Ctrl***+***Del***to sign out from the Guest account and go back to the Administrator account.
7. **File and Share Access [\_\_\_\_\_/4]**

***Server-based*** file shares provide users with a simplified data storage solution that they can use to store their files, share files with other users, and easily locate the files shared by their colleagues. Server-based storage tools can be used to protect everyone’s files, regulate access to sensitive data, and prevent users from abusing their storage privileges.

1. Folder sharing using *File Explorer*
2. Open ***File******Explorer***, under ***C:*** *>* ***Users*** *>* ***Administrator***, create a folder *Test.*
3. Right-click the folder *Test* and share the folder with everyone with ***Read*** permission by selecting ***Give access to*** > ***Specific******people***. From the pop-up window, click the down arrow on right of the box at the center, select ***Everyone*** and click ***Add***. You will see *Everyone* has been added with *Read* as the default permission. Click ***Share*** at the bottom of the pop-up window and click ***Done***.
4. Create a subfolder *test1* under the folder *Test*.
5. Using ***right Ctrl***+***Del***, switch to user *student1*. Open ***File******Explorer***. Can you access the folders *Test* and *test1*? Yes
6. Can you create a folder under *Test* and *test1* **without** the Administrator password? No
7. Sign out from *student1* and switch back to the Administrator account.
8. Install the *Server for NFS* role service
9. Open ***Server******Manager***, and on the top right click ***Manage*** > ***Add Roles and Features***.
10. For the first few steps, take the defaults and click ***Next***.
11. At ***Server******Roles***, click the drop-down arrow of ***File and Storage Services*** > ***File and iSCSI Services***, and then check the option ***Server******for******NFS***. Click ***Add******Features*** when prompted.
12. Take the default options for the rest and click ***Next*;** Click ***Install*** in the last step.
13. Wait for the installation to complete.
14. Open ***File*** ***Explorer*** and create a folder *students* under **C:\**.
15. Create a Folder Share
16. Click ***Server******Manager*** > ***File and Storage Services*** > ***Shares***. Select ***Tasks*** > ***New Share…***
17. From the *New Share Wizard* pop-up window, read the descriptions for ***SMB Share – Quick*** and ***NFS Share - Quick*** by clicking on them. What is the main difference between SMB and NFS share?

SMB Share is typically used to share files between Windows based systems whereas NFS Share is used to share files with UNIX-based systems.

Note that Server Message Blocks (SMB) is the file-sharing protocol used by all versions of Windows.

1. Select ***SMB Share – Quick*** and click ***Next***.
2. Under ***Share******location***, click ***Type a custom path*** and use *C:\students* as the location, and use *students* as the ***Share*** ***name*** in the next step.
3. Select ***Enable access-based enumeration*** and ***Allow caching of share***.
4. Take the default options for the rest and click ***Create***.
5. Close the pop-up window when the folder share is successfully created.
6. **Assigning Permissions [\_\_\_\_\_/6]**
7. Assign Read/Write permission of the folder *students* to user *student1*.
8. From ***Server******Manager*** > ***File******and******Storage******Services*** > ***Shares***, right-click *students* and select ***Properties***.
9. Click ***Permissions*** > ***Customize permissions …*** > ***Add*** > ***Select a principal*** >***Advanced***.
10. Click ***Object Types***, uncheck the options except **Users** and click ***OK***. Click ***Find******Now***, select *student1* and click ***OK***. Click ***OK*** again to close the *Select User or Group* pop-up window and now you are supposed to go back to the *Permission Entry for students* window.

What are the default permissions shown?

Read & execute, List folder contents, Read

1. Click ***Show advanced permissions***. What are the default permissions shown?

Traverse folder / execute, List folder / read data, Read attributes, Read extended attributes, Read permissions

1. Click ***Show basic permissions*** and add ***Write*** permission by checking the box on the left. Click ***Show advanced permissions***. What are the addition permissions shown?

Create files / write data, Create folders / append data, Write attributes, Write extended attributes

Is ***Delete subfolders and files*** allowed? No

1. Close the *Permission Entry for students* pop-up window by clicking ***OK***.
2. Removing Special Access
3. From the *Permissions* tab of *Advanced Security Settings for students* pop-up window, select the entry for ***Users*** with ***Special*** Access. Click ***View*** and click ***Show advanced permissions***. What are the permissions given?

Create files / write data, Create folder / append data

1. Close the Permission pop-up window. Try to remove the entry for ***Users*** with ***Special*** Access. What is the message displayed?

You can’t remove Users (STEPHENJOY\Users) because object is inheriting permissions from its parent.

1. Click ***Disable******inheritance*** and select ***Convert inherited permissions into explicit permissions on this object***. Try to remove the entry for ***Users*** with ***Special*** Access. Is the removal successful? Yes
2. Click ***OK*** to close the *Advanced Security Settings for students* pop-up window and click ***OK*** to close the *students* *Properties* pop-up window.
3. Close ***Server Manager***.
4. Open ***File******explorer*** and create a subfolder *Adminsub1* under the folder *students*. Switch to user *student1*.
5. Open ***File******Explorer***. Can you delete the subfolder *Adminsub1* **without** the Administrator password? No
6. Under folder *students*, create a subfolder *sub1*.
7. Switch to user *student2*. Open ***File******Explorer***. Can you create a subfolder *sub2* under folder *students* without the Administrator password? No
8. Can you delete the subfolder *sub1* without the Administrator password? No
9. Sign out from *student2* and switch back to user *student1*. Can you delete the subfolder *sub1*? Yes
10. **Shutdown the Virtual Machine**
11. Sign out from *student1* and switch back to the Administrator account
12. Shut down the system. You may choose *Other (Planned)* for the reason.
13. Close Oracle VM VirtualBox Manager.

**Submission**

1. Save your lab file as YourFirstname\_yourID\_Lab8.docx.
2. Submit the WORD file through Blackboard before the due (do not send labs by email please. Any lab submitted by email will be ignored). Late submissions will not be marked, and the student will lose the mark of that lab.
3. You may submit your work multiple times, but only the LAST submission before the due will be graded.