CY3520: Practical Network Operations
NPS Summer 2014
Lab 2: Intro to Windows Server 2012

The purpose of this lab assignment is to introduce you to working with Windows Server 2012. After completing this assignment you will be familiar with the basics of configuring networking, operating the PowerShell, and generally getting around and performing system administration tasks.

This entire assignment will be completed in your first Windows Server 2012 VM. If you have not done so already, make sure to clone a Windows Server 2012 VM from the template provided in vSphere.

Like last week's lab, as you read the instructions you will find questions littered throughout, each under a particular section heading. Type up your answers to these questions, using the same section labels below, and submit your completed document as a PDF to the *Assignments* section of the course's Sakai page.

Prerequisites

For doing this lab you will need a Windows Server 2012 VM installed and upgraded. You can obtain this VM either by building your own template

or by cloning the template I created for the class[1]. The password for the template provided to the class is ***123!correct!battery!staple***.

What to Turn In

For the remainder of the lab you will encounter a set of instructions. These instructions will guide you through what is required of you for the lab. At times you will be required to do research on your own to figure out what to do exactly, but I encourage you to ask for help at any point if the instructions are not clear or you get stuck. Ask lots of questions.

Along the way you will encounter a set of questions. As a deliverable you are required to submit a PDF of your typed answers to the Assignments section of the course's Sakai page. Please make sure to submit a PDF—no other file format will be accepted. Also, make sure you include the questions above your answers and that your answers are precise and complete.[2] Finally, in your write-up, include the heading title that each question appears under. For example, if three questions appear under the heading title *Heading 1*, then your answers to those questions should appear below the same heading title in your answers document.

What To Do For Lab

Powershell

When we work from the command line in Windows Server 2012, we will primarily use the PowerShell rather than the traditional cmd.exe. PowerShell is a newer edition to Windows systems. First released around six years ago, it was intended to make automating system administration tasks easier than it had been in the past. Remarkably, it does just that and is an excellent tool for anyone serious about learning how to use Windows Server effectively. However, as with any powerful software, learning how to use it takes some time and effort. Thankfully, although different in fundamental ways, PowerShell shares many similarities with the Linux shell, which by now you are familiar with.

The first part of the lab is about getting introduced to the basics of PowerShell. You will not become an expert after completing this lab but you

[1] Remember, after cloning a Windows VM that will eventually be part of a domain, to run Sysprep in the System32 directory, and to install/re-install VMWare Tools. Consult the lab video recording for more details.

[2] You do not need to be verbose, you just need to be correct.

will gain more familiarity and comfort with this software. Below you will find a set of links to resources about learning the PowerShell. You are to read through them and answer the accompanying questions.

Basics

To start out, read the following three (short) articles:

- PowerShell Tutorial 1: Configuring the PowerShell Console
- PowerShell Tutorial 2: PowerShell Commands – Cmdlet
- PowerShell Tutorial 3: PowerShell Aliases

After reading these, answer these questions[3]:

1. What is a cmdlet and what purpose does it serve in the PowerShell?
2. How do you obtain help about a particular command?
3. How do you list all your PowerShell aliases?
4. How do you create a new alias?
5. How can you save your aliases?
6. How can you get your saved aliases to load every time you start PowerShell?

Networking

Now that you have a little bit of PowerShell experience, the next step is to use it to do something useful. The machine you worked in for this lab will be turned into the domain controller for your domain next week, so we need to assign them a static IP address. The IP address you assign must be at .53 in your subnet, e.g., my subnet is 1.1.2.0/24, so my static IP for this machine would be 1.1.2.53.

Making sure that your Workstation VM's NIC's network label is for your personal subnet, do some Googling to find how to set a static IP in PowerShell. Follow the instructions you find and set an IP for your machine.

[3]You might have to read some help pages or Google a little bit to find the answers.

7. What command did you use for this task?[4] Include the full command in your answer, i.e., the exact text you typed to accomplish this task.

Now that you have your Workstation set-up you will use it to make sure that your router works. The way you will do this is by pinging my router's IP address in the Routing subnet, i.e., 1.1.1.2. Before sending out any pings, you will need to modify the Windows firewall[5]. You can do this in two ways: turn the firewall off, or create a firewall rule to explicitly allow pings through. Once again do some Googling to answer the following questions.

8. What PowerShell command can you use to disable the Windows firewall? Do NOT actually disable your firewall. Make sure to include the *full* command for this and the next question.

9. What PowerShell command can you use to enable pings through the firewall? How can you modify the firewall using a GUI? Use this command or the GUI to do just that.

I will test your router and workstation by sending a ping to each of your workstation VMs, so leave the firewall rule in place.

Administrative Tools

For the final part of this lab, you will need to read through this web-site about what to do when first setting up Windows Server 2012. Do not do anything mentioned in that article. Reading it is instead intended to get you acquainted with how to do basic tasks in this OS.

Lastly, you will need to read about Windows Event Viewer and answer the following questions:

10. What types of system events can you learn about using the Event Viewer?

11. What is the purpose of event subscriptions? How would that be useful in a domain?

[4]There are several commands to do this, but I recommend netsh.

[5]This may have changed since I first created this lab. Either way, the questions below still apply.