

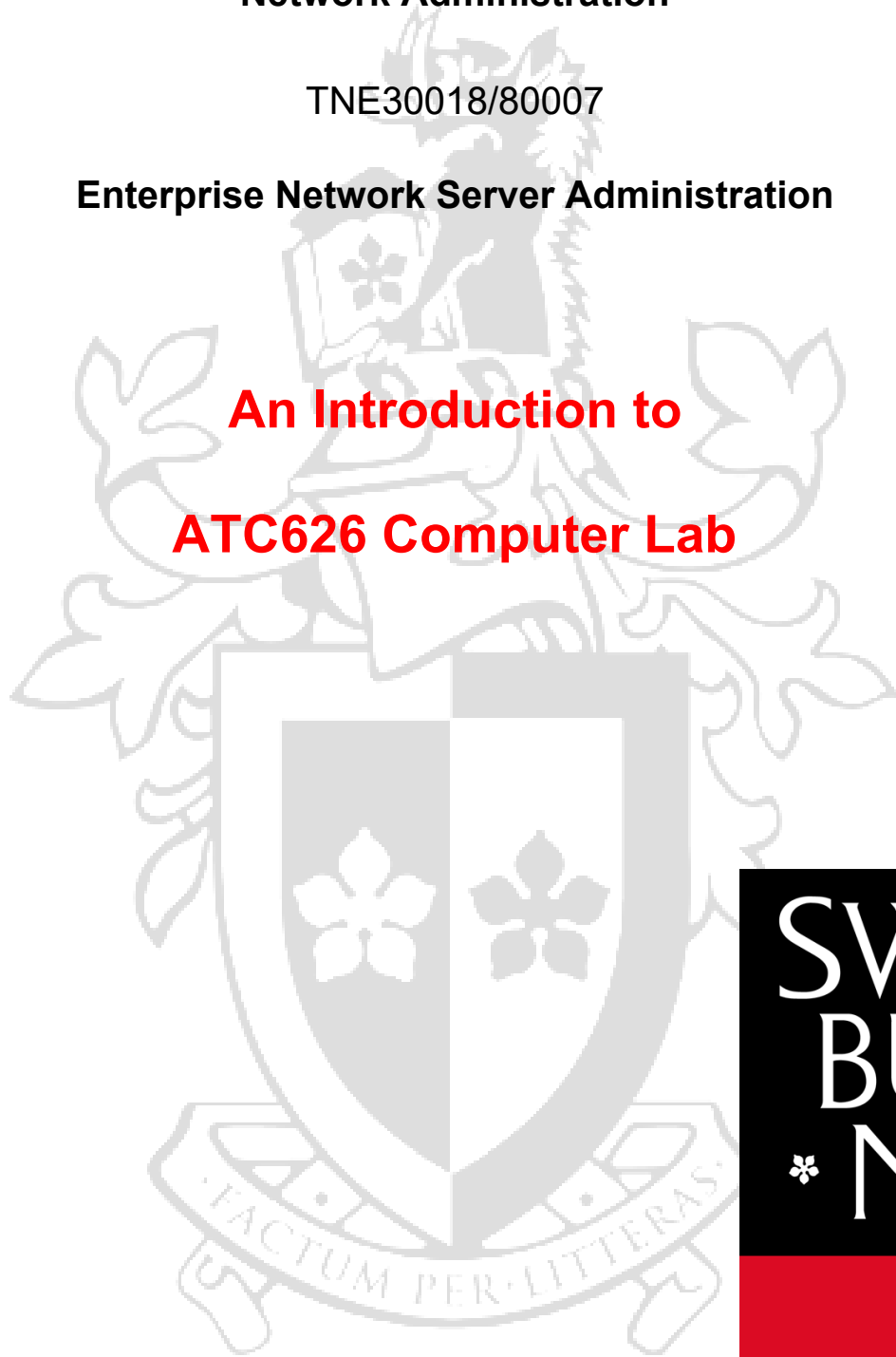
TNE10005/60002

## **Network Administration**

TNE30018/80007

## **Enterprise Network Server Administration**

# **An Introduction to ATC626 Computer Lab**



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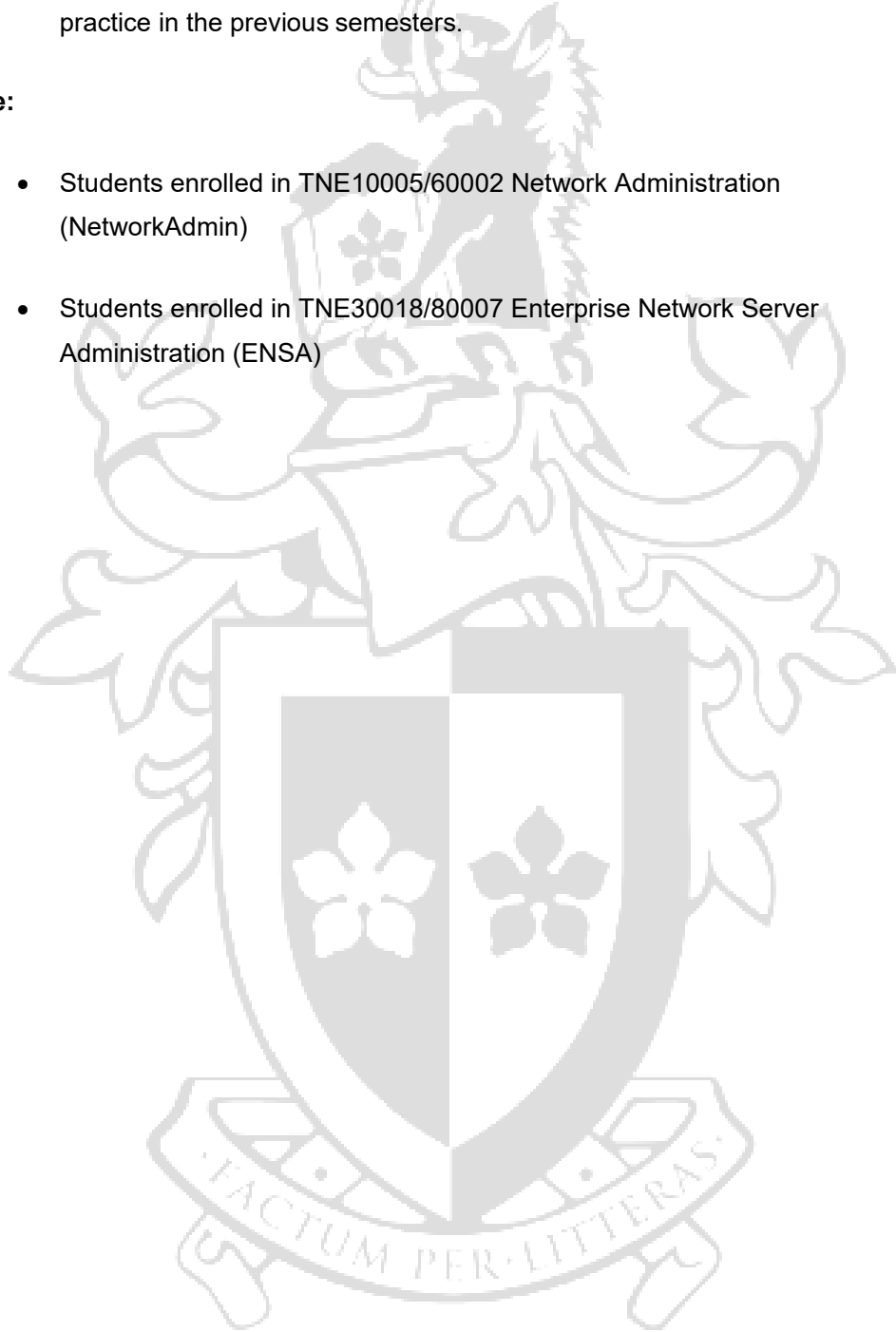
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TECHNOLOGY

**Aim:**

- To provide an introduction of ATC626 computer laboratory (lab)
- To provide some work-arounds for the common problems reported during lab practice in the previous semesters.

**Audience:**

- Students enrolled in TNE10005/60002 Network Administration (NetworkAdmin)
- Students enrolled in TNE30018/80007 Enterprise Network Server Administration (ENSA)



The ATC626 computer laboratory is set up mainly for students enrolled in the **NetworkAdmin** and **ENSA** units to perform lab practice.

There are 30 host machines, labelled as **ATC626-xx (xx = 01 to 30)**. These machines have been recently updated with dual SSDs to speed up the VMs loading and usage. Each host machine is installed with Hyper-V-Manager for hosting the virtual machines used in the Microsoft units, Network Administration and ENSA. There are currently three image sets of virtual machines, the **sWin** set is for NetworkAdmin unit, and for most of the ENSA unit lab weekly sessions; the **20411D** and **20412D** sets are for ENSA optional laboratories.

(Note: Hyper-V-Manager is a native hypervisor, formerly known as Windows Server Virtualization).

Students will need to use their SIMS credentials to log in to a host computer in ATC626. Any problems with SIMS login, i.e. username / password incorrect need to be directed to the ITS staff for resolving.

Since the computer room is used by all students enrolled in both NetworkAdmin and ENSA units, there is high possibility that previous class students leaving behind the VMs that you will need to use, with unwanted settings or errors. It is therefore recommended that students, at the start of each lab, checking for any errors and fixing them before proceeding to the MOC lab exercises.

If you cannot find a workaround in this document for an error found during practising using VMs in the ATC626, please report it to your lab tutor so that we can update this document when necessary.

The following pages detail how to launch the Hyper-V Manager to start using the virtual environment, and work-arounds for some common reported errors encountered in lab practice. Locate and perform the task or the workaround that is applicable to you, from the following options:

- I. **Launching Hyper-V-Manager** - to start using the virtual environment (page 5).
- II. **Re-Importing a set of Virtual Machines** - to download the virtual machines set required for particular labs, when these VMs cannot be found in the Hyper-V virtual machine list (page 6).
- III. **Stopping and Starting the Hyper-V Manager service** - to fix errors when failing to start, to revert, or to apply a check point to a virtual machine (page 8).

- IV. **Reverting a Virtual Machine (VM) to its Starting Image** - to revert the required VM to its starting checkpoint that has the correct preinstalled conditions and settings (page 10).
- V. **Launching and Logging in a VM** - to start and log in into a VM that is required in each weekly scheduled lab (page 11).
- VI. **Performing “slmgr -rearm”** - to dismiss the Windows Activation requirements to prevent the VM running Windows Server operating system from shutting down after one hour usage. This task is only necessary if you need to use the VMs running Windows Server 2012R2 from the 20411D and 20412D image sets (page 12).
- VII. **Checking a VM Network Adapters Settings** - to check if the Network Adapters of a particular VM are unplugged or incorrectly connected (page 15).
- VIII. **Changing password for a user account used in VMs** - do this step only and only if instructed in lab instructions (page 16).
- IX. **Creating an Inbound ICMPV4 Firewall Rule** - to allow incoming ICMPV4 (page 16).
- X. **Fixing the “Domain Trust relationship failed”**– to fix the problem of broken relationships between a domain member server and its domain (page 19)

## I. Launching Hyper-V-Manager.

On the host computer, double-click the icon **Hyper-V Manager** (Figure.1).

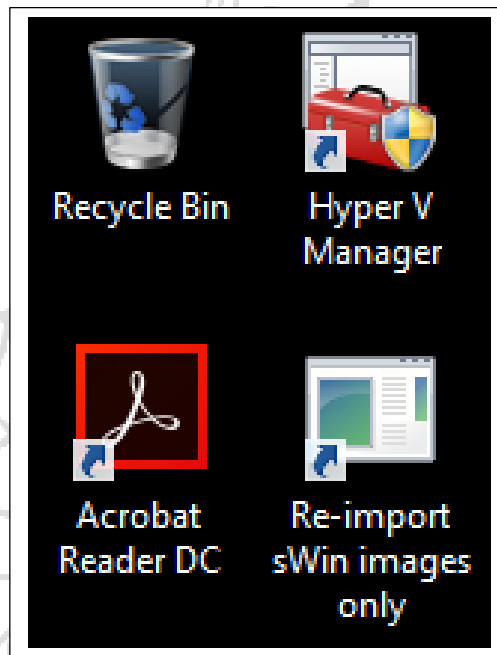


Figure. 1

## II. Re-importing a set of VMs

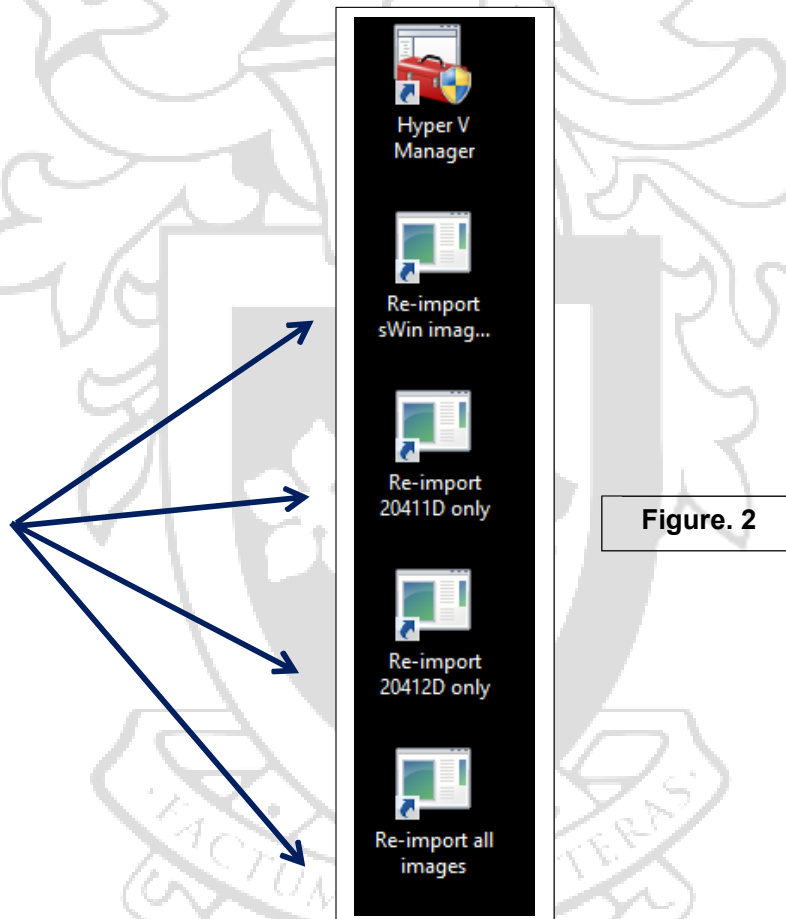
You will only need to perform this step if and only if you cannot find the required VM(s) for your lab.

Re-import the set of VM images required by your lab session, i.e. **Re-import sWin images only**, **Re-import 20411D only** or **Re-import 20412D only**.

Students unlikely need or want to run the **Re-import all Images** since this script will re-download all the 3 set of images and take longer time to complete.

To re-import a set of VM images, do the following steps:

1. On the host computer, double-click the script that you need to run, i.e. **Re-Import sWin images only**.



2. When prompted enter the following password, then click **Yes**:

Password: **Pa55w.rd** (Note: If this password is not working, try **Pa\$\$w0rd**)

There will be a new downloading window (Figure. 3) opened and it will be closed automatically after downloading finishes.

Note: There will be nothing appeared when you are typing in the password for re-importing images. However, if you do not enter the password correctly, downloading will not start.

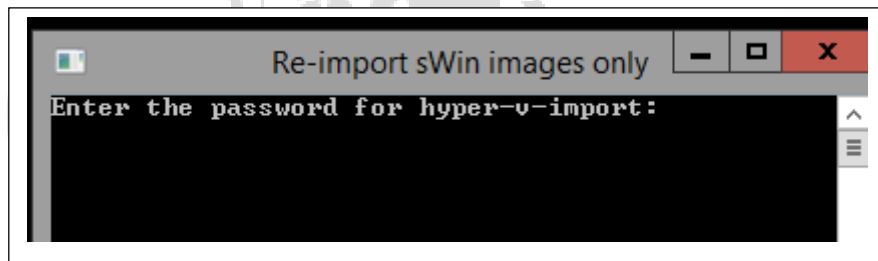


Figure. 3

### III. Stopping and Starting the Hyper-V Manager service.

Students MUST perform this procedure if there are errors occurred when trying to start a VM (Figure. 4), to revert a VM or to apply the checkpoint **Starting Image** to a VM (Figure.5)

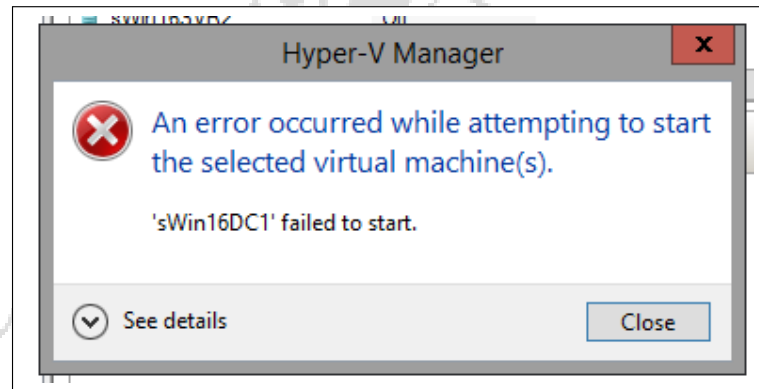


Figure. 4

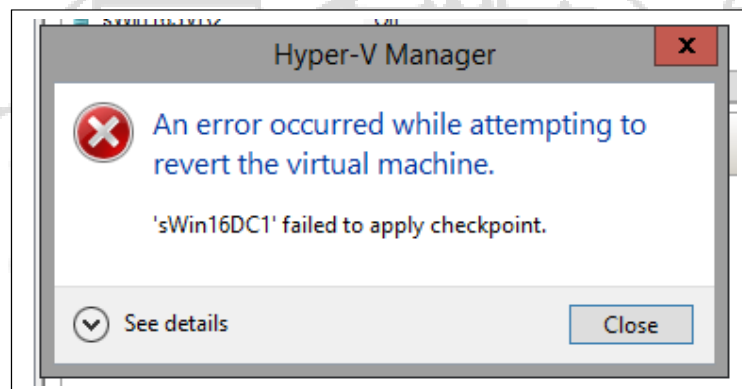


Figure. 5



To stop and start the Hyper-V Manager service, do the following steps:

1. On the Hyper-V Manager, right-click the host machine name, i.e ATC626-xx, then click **Stop Service** (Figure. 6).
2. In the **Stop Virtual Machine Management Service** dialog box, click **Turn Off** (Figure. 7).

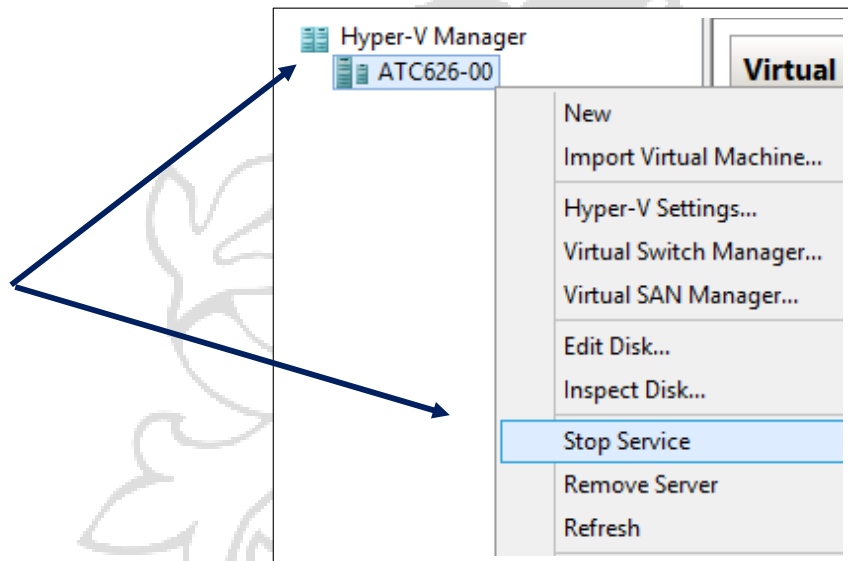


Figure. 6

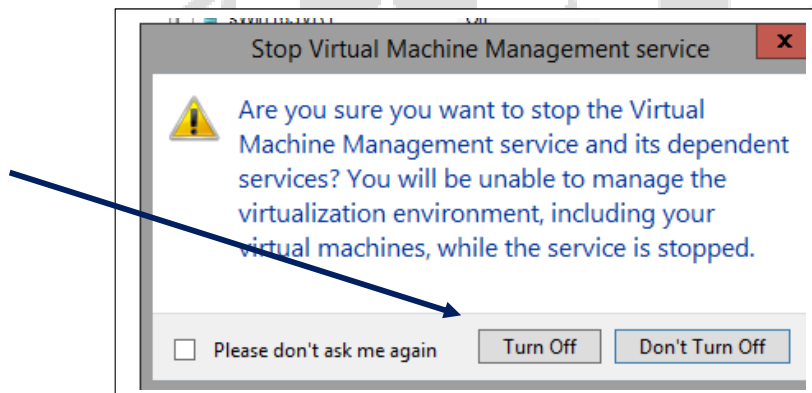


Figure. 7

3. After the service stopped, again, right-click the ATC626-xx, then click **Start Service**.

Notes: After performing the step no. 3, if you still get “An error occurred while attempting to start the selected virtual machine(s)” when starting a VM, it means that you have not properly completed the above three steps, redo steps 1-3.

#### IV. Reverting a VM to its Starting Image.

At the start of each lab, students must revert all required VMs to their **Starting Image**. If time permits, also do this procedure at the end of lab.

To revert a VM to its Starting Image, do the following steps:

1. On the Hyper-V Manager, in the **Virtual Machines** pane, click the VM you need to revert, i.e. sWin16DC1.
2. Then in the **Checkpoints** pane, right-click the **Starting Image** checkpoint (snapshot), and in the **Actions** pane, click **Apply** (Figure. 8).
3. In the **Apply Checkpoint** dialog box, click **Apply**.

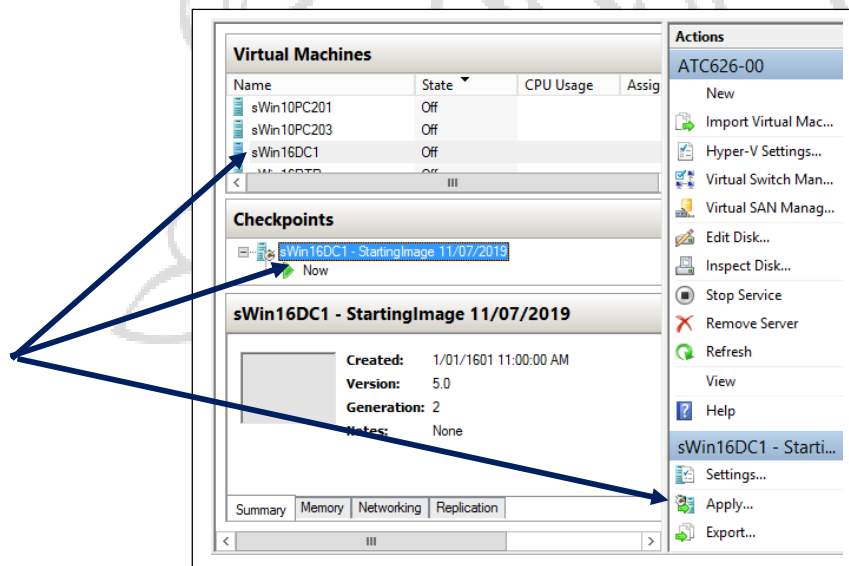


Figure. 8

## V. Launching and Logging in a VM.

Launch and Log in to the VMs required in a particular lab practice, as scheduled in the Unit Outline.

To launch and log in a VM, do the following steps:

1. On the Hyper-V Manager, in the **Virtual Machines** pane, click the VM you need to revert, i.e. **sWin16DC1**, and in the **Actions** pane, click **Start** (Figure. 9).

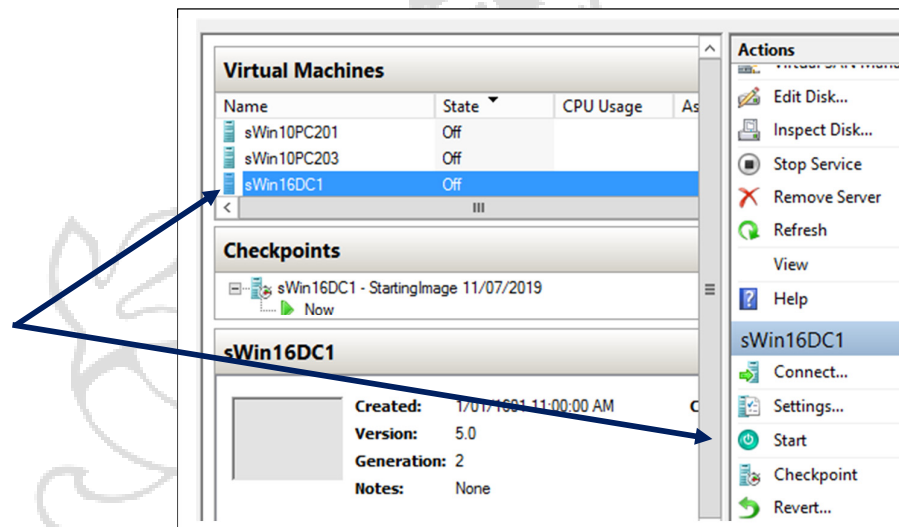


Figure. 9

2. Then in the **Actions pane**, click **Connect** (Figure. 10). Wait until the virtual machine starts.

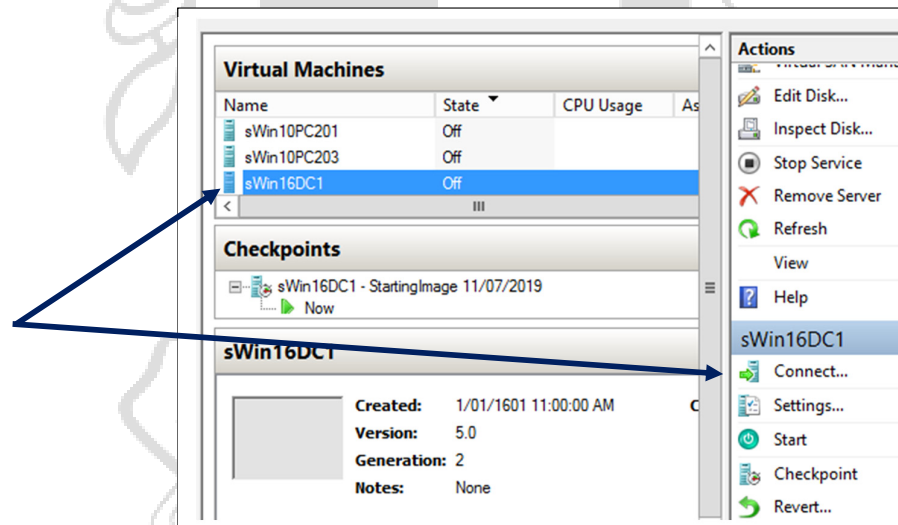


Figure. 10

- To log on, press the a combination of **Alt + Ctrl + End** keys, then enter the following user and password accordingly.

For VMs in the sWin set	For VMs in the MOC 20411-20412 sets
<ul style="list-style-type: none"> <li>User name: <b>sWin\Administrator</b></li> <li>Password: <b>Pa55w.rd</b></li> </ul>	<ul style="list-style-type: none"> <li>User name: <b>Adatum\Administrator</b></li> <li>Password: <b>Pa\$\$w0rd</b></li> </ul>

## VI. Performing “slmgr -rearm”.

The pre-installed VMs have not been activated. Thus the VMs that are running Windows Server 2012R2, often automatically shut down after around one hour usage. A work-around for this shutting down problem is to perform the “slmgr – rearm” prodedure to dismiss the Windows Activation requirements, by doing the following steps:

- On the **TaskBar**, right-click the **Windows PowerShell** icon, then click **Run as Administrator**. (Figure. 11)

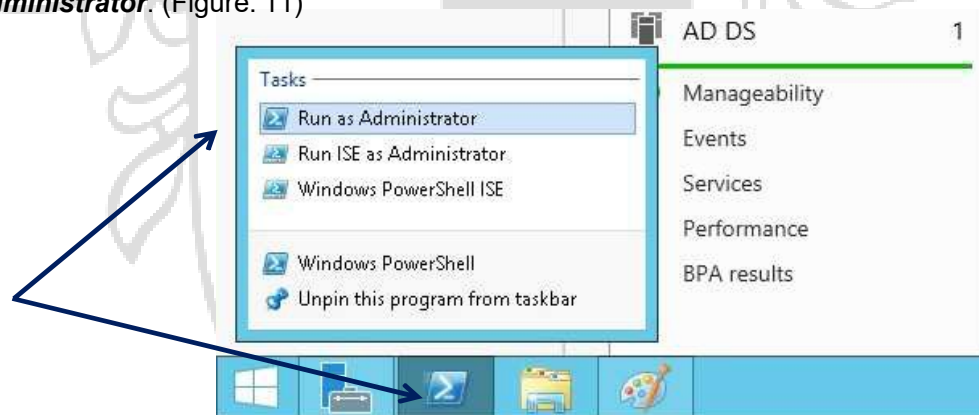


Figure. 11

- On the **PS** prompt (Figure. 12), type the following command and press **Enter**.

**slmgr -rearm**



Figure. 12

3. On the **Windows Script Host** dialog box (Figure. 13), click **OK**. Close the Windows PowerShell windows.

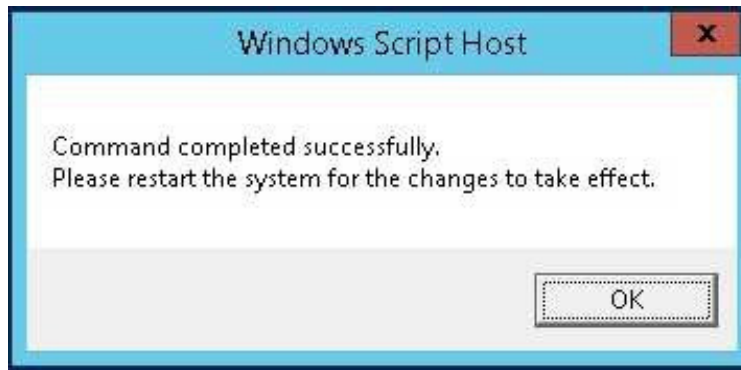


Figure. 13

4. Right-click the Windows icon at the most left bottom corner, click **Shut down or sign out**, then click **Restart** (Figure. 14).

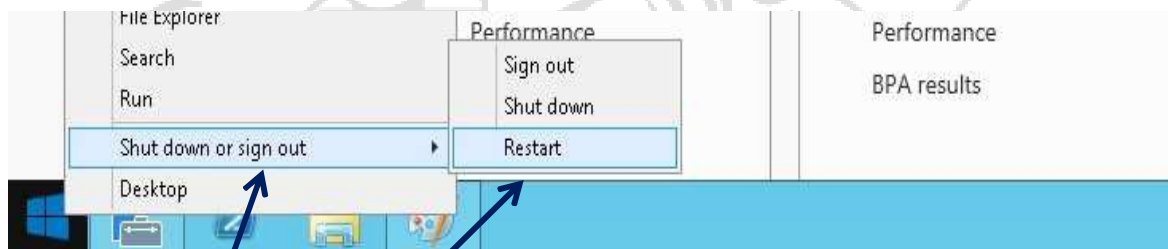


Figure. 14

5. On the **Choose a reason ...** dialog box, click **Continue to restart the VM** (Figure.15).

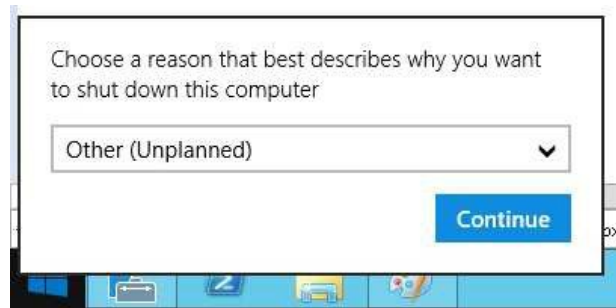
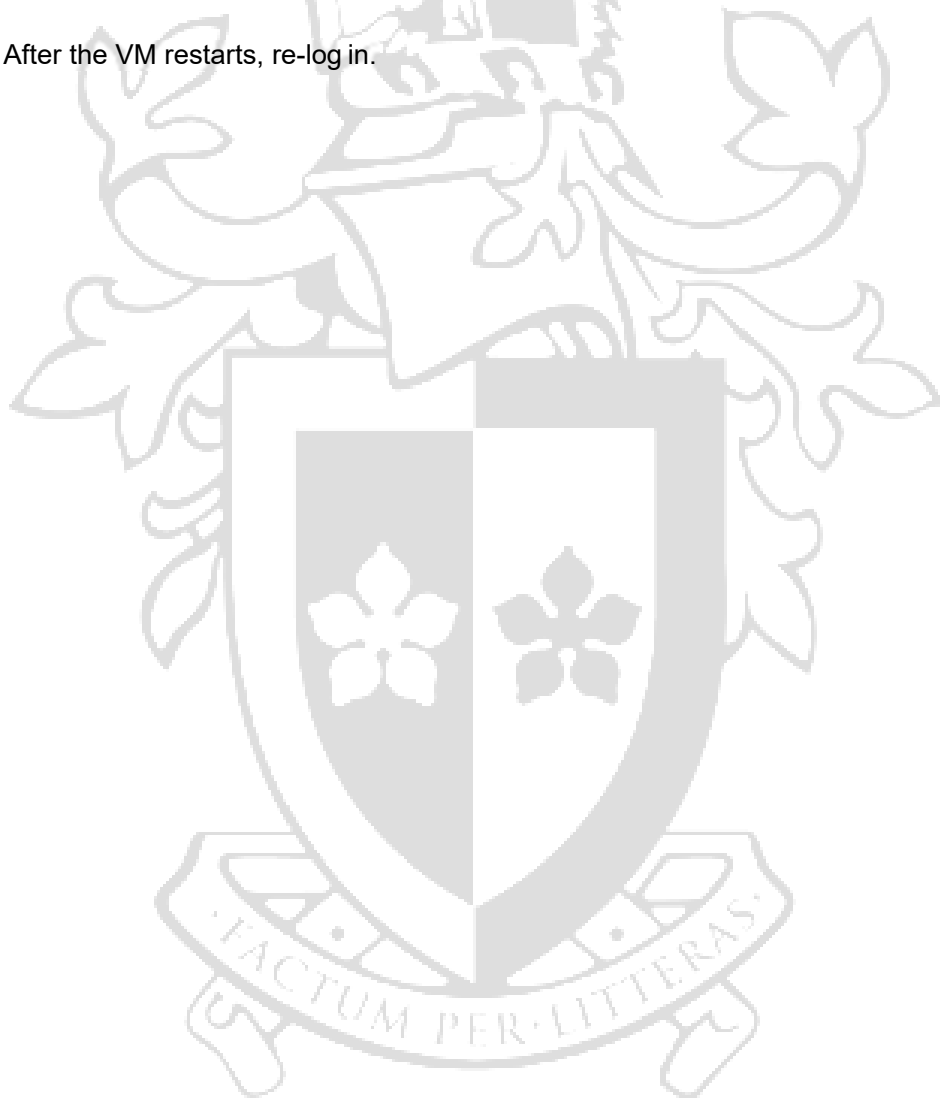


Figure. 15

6. After the VM restarts, re-log in.



## VII. Checking a VM Network Adapters Settings.

Students need to perform this step if suspecting that Network Adapters of a particular VM are unplugged or incorrectly connected.

1. On the Hyper-V Manager, in the **Virtual Machines** pane, click the VM you need to check, i.e. **sWin16DC1**, and in the **Actions** pane, click **Settings** (Figure. 16).

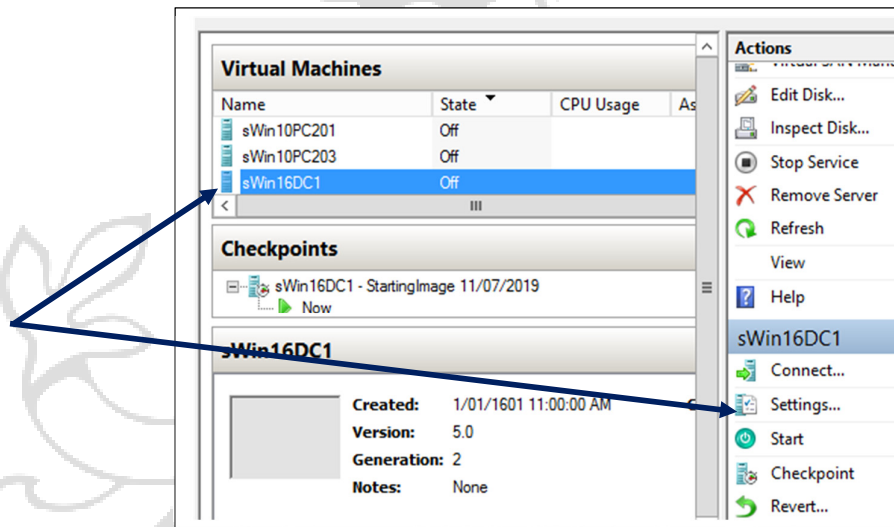


Figure. 16

2. On the **Settings** for the VM dialog box, verify **Network Adapter** connection against the ATC626 Lab-Network Topology, 20411D\_NetworkTopology, or 20412D\_NetworkTopology published on Canvas.

## VIII. Changing password for a user account used in VMs.


In a production network, individual user would have their own unique password.

In contrast, in Microsoft units (Network Administration and ENSA), to simplify and be easy for lab practice, it is usually instructed in lab documents to use the same password, **Pa55w.rd** or **Pa\$\$w0rd**, for all user accounts used to log on to the lab virtual machines. On the other hand, the default password policy set in these VM domains required an enough-complex password to be used. As a result, during lab practice, if you are required to change password, you have to change it to a new password that is compliant to the required complexity, at the same time, may like to maintain the ideas of simplification and ease of password use.

ATC626 lab is shared by both Network Administration and ENSA students, let's make a convention that whenever you need to change the usual password, change it to either **Pa55w.rd** or **Pa\$\$w0rd**. This password responds to the required complexity and is easy to remember 😊

## IX. Creating an Inbound ICMPV4 Firewall Rule.

By default, when Firewall is enabled, pinging is blocked in Windows. In lab practice, we sometimes need to perform pinging to test the connections between VMs before proceeding to further configuration. For this testing, we therefore need to create an inbound ICMPV4 firewall rule to allow IPv4 pinging.

1. On the VM you intend to create the firewall rule, click the **Win**  key to bring up the **Start** screen. **In the Search** box, as you are typing **Windows**, a list of **Best Match** appears, select **Windows Firewall with Advanced Security** (Figure. 17).



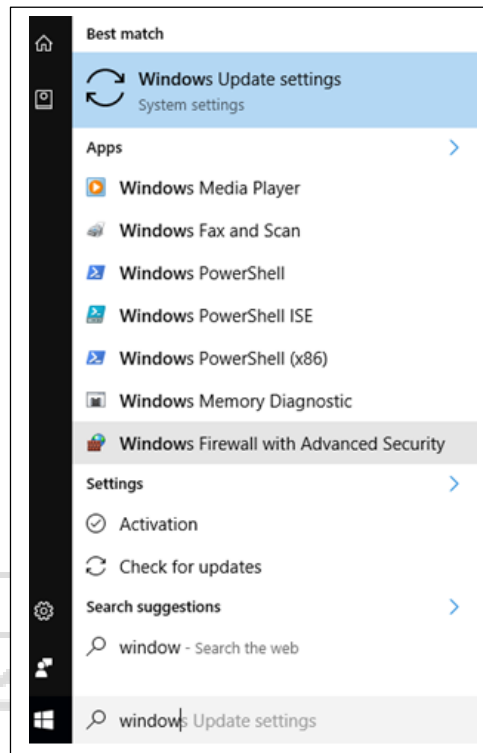


Figure. 17

2. On the **Windows Firewall with Advanced Security** windows, select **Inbound Rules**, and in the **Actions** panel, click on **New Rule...** (Figure. 18).

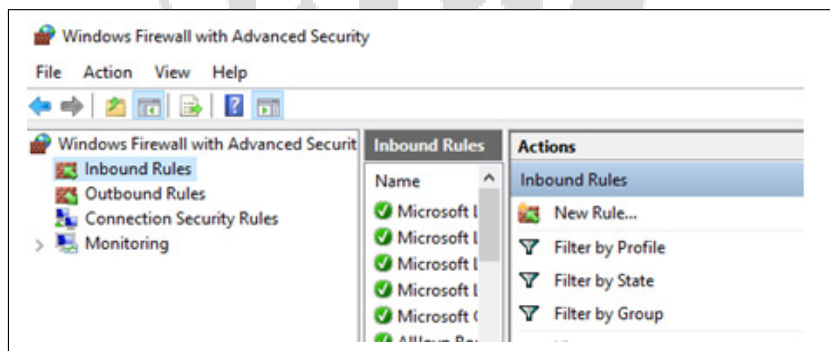


Figure. 18

3. On the **Rule Type** page, select **Custom** to create a custom rule.
4. On the **Program** page, select **All programs**.
5. On the **Protocol and Ports** page, select **ICMPv4** for Protocol type, and click **Next** to accept all other default selection (Figure. 19).

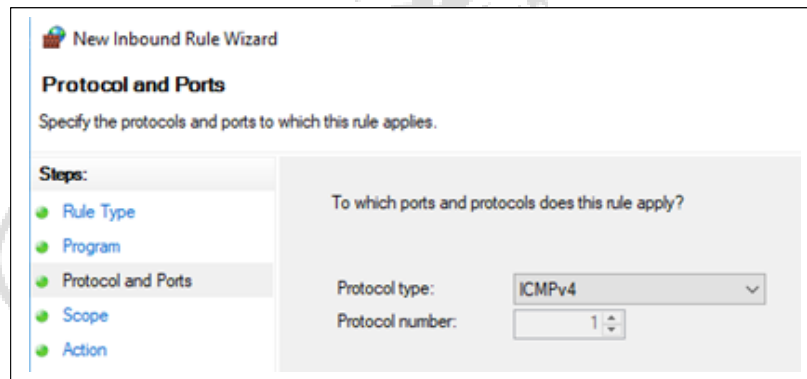


Figure. 10

6. On the **Scope** page, accept the default, and click **Next**.
7. On the **Action** page, verify that **Allow the connection** option is selected, and click **Next**.
8. On the **Profile** page, accept the default selection for all profiles, click **Next** (Figure.20).

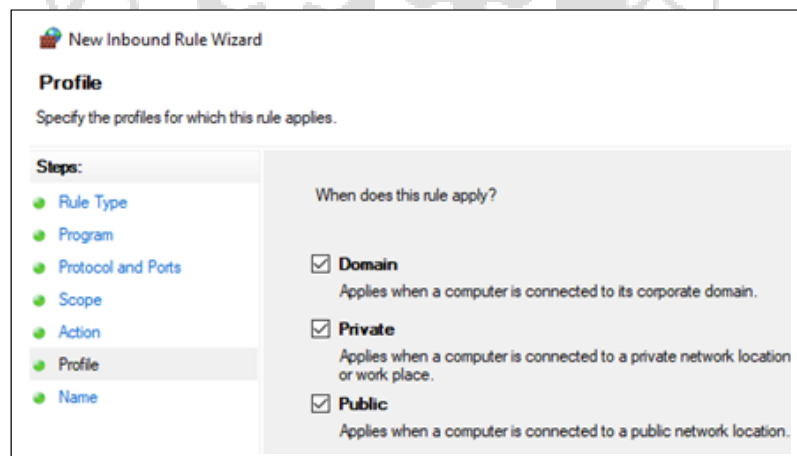
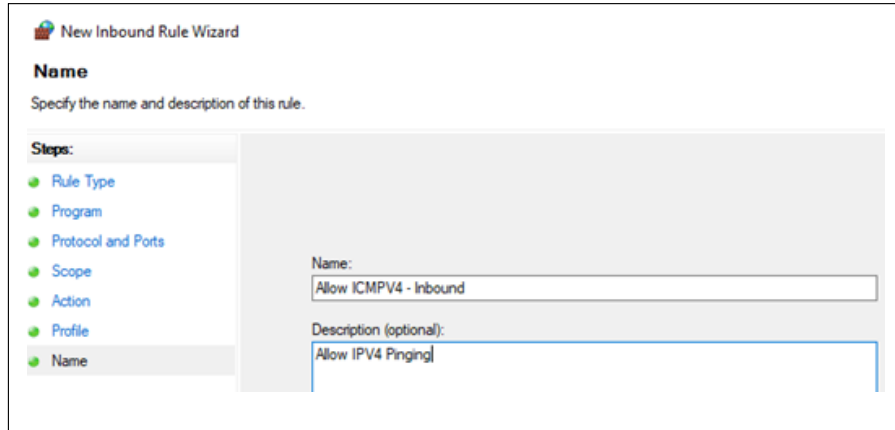


Figure. 20

9. On the **Name** page, fill in the Rule **Name** (i.e. Allow ICMPv4 – Inbound) and **Description** (i.e. Allow IPv4 pinging), then click **Finish** (Figure.21).



The screenshot shows the 'New Inbound Rule Wizard' window, specifically the 'Name' step. The window title is 'New Inbound Rule Wizard'. Below the title, it says 'Name' and 'Specify the name and description of this rule.' On the left, there is a 'Steps:' list with the following items: Rule Type, Program, Protocol and Ports, Scope, Action, Profile, and Name. The 'Name' step is currently selected and highlighted. The main area of the wizard has two text input fields. The first field is labeled 'Name:' and contains the text 'Allow ICMPV4 - Inbound'. The second field is labeled 'Description (optional):' and contains the text 'Allow IPV4 Pinging'.

Figure. 21

#### X. Fixing Domain broken Trust relationships.

Computers that are members of a specific domain need to be authenticated by its domain. If a domain member has its computer account's password out of synchronisation with its account's password stored in its primary domain; the authentication will fail, and we will receive an error message of "Trust relationship failed" (Figure 22).

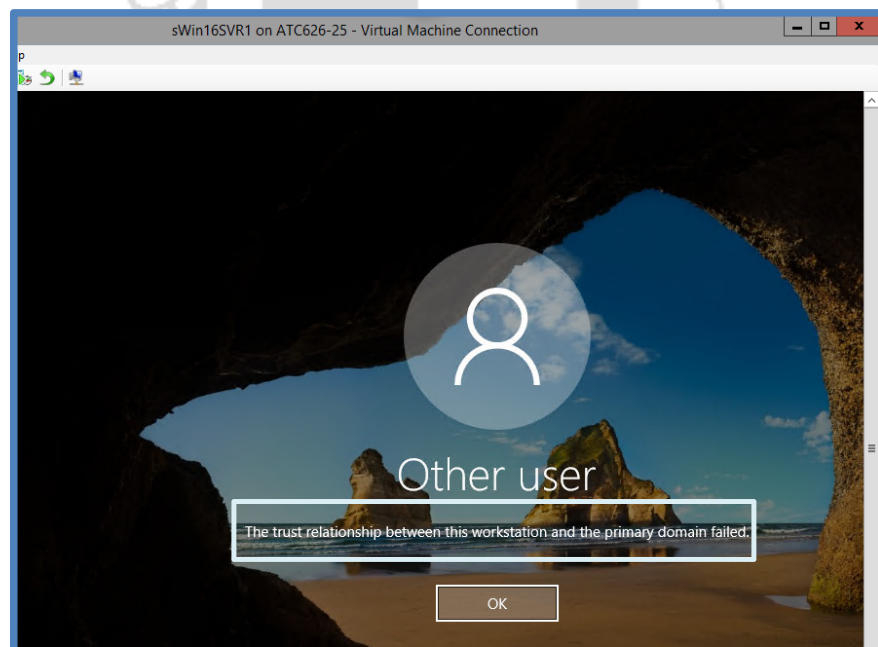


Figure. 22

Hence, to fix the problem, we need to reset the domain computer's password to synchronise it with the domain. Ensure that at least a domain controller of the domain must be available for this process to be successful.

If you received the error message “Trust relationship failed” when attempting to log on as a **sWin.local domain user** at **sWin16SVR1**, perform the following steps to fix.

1. *Sign in* to sWin16SVR1 as *local administrator*: **Administrator** (password is **Pa55w.rd**)
2. In Windows PowerShell, type  
**netdom resetpwd -s:swin16dc1.swin.local -ud:swin.local\Administrator**  
**<Enter>**
3. *Sign out* and *Sign in* again as **sWin\Administrator** (password is **Pa55w.rd**)

*If you encounter a new problem during lab practice,  
but cannot find its work-around here, please report it  
to your lab tutor, or post it to Canvas discussion.*

~~~~~ The End ~~~~~