PAMANTASAN NG LUNGSOD NG PASIG
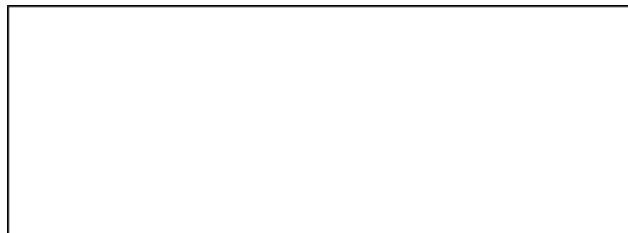**COLLEGE OF COMPUTER STUDIES**
SY 2024-2025, 2ND SEM

IT113 – System Administration and Maintenance

Activity # 3
Active Directory

NAME: Juanzon, Joven Ian V.
Palomaria, Kein Vincent C.
STUDENT ID NUMBER: 22-01253
22-00661

COURSE CODE: IT113
SECTION: BSIT 4A
SCHEDULE: Thursday 2:30PM-5:30PM, 6:00PM - 8:00PM

INSTRUCTOR: Eugene Embalzado Jr

I.   Introduction

In this activity, you'll learn how to manage accounts within a workgroup or Active Directory environment. You'll start by examining the management of local users and groups. Next, you'll explore the structure and function of Active Directory, as well as Active Directory components, including trusts, sites, functional levels, global catalog, UGMC, and FSMOs. Afterward, you'll examine the process used to install Active Directory domain controllers as well as the procedures used to configure Active Directory components. Following this, you'll learn how to create and manage Active Directory objects. Finally, you'll examine the features of RODCs as well as the procedures used to install RODCs within an Active Directory domain.

II.   Program Activity (By Pair)

For the final output of this activity, provide a <u>20-to-30-minute video</u> presenting the procedures of this activity. You can put the screenshots of each procedure to discuss it comprehensively. Please upload the link for both of your submission together with your file in PDF.

Activity 3.1 – Active Directory Installation

In this activity, you install Active Directory Domain Services on your Windows Server 2019 host and configure it as a forest root domain. Following the installation, you examine your DNS configuration and FSMO roles.

1. On your Windows Server 2019 host, log into the system as Administrator using the password **Secret555**. Next, click **Start** and then click **Server Manager**.

2. Within Server Manager, click the **Manage** menu and then click **Add Roles and Features**.

3. At the Select installation type page, click **Next**.

4. At the Select destination server page, click **Next**.

5. At the Select server roles page, select **Active Directory Domain Services** and click **Add Features** when prompted.

6. Click **Next**.

7. At the Select features page, click **Next.**

8. At the Hyper-V page, read the information regarding best practices and click **Next**.

9. At the Active Directory Domain Services page, read the information provided and click **Next**.

10. On the Confirm installation selections page, click **Install** to install the files needed for Active Directory Domain Services.

11. On the Installation progress page, click **Promote this server to a domain controller** to start the Active Directory Domain Services Configuration Wizard.

> a. At the Deployment Configuration page, select **Add a new forest**. In the Root domain name text box, type **domainX.com**, where *X* is a number that is uniquely assigned to you by your instructor, and click **Next**.

> b. At the Domain Controller Options page, select a Forest functional level of **Windows Server 2008**, and then select a Domain functional level of **Windows Server 2008**. Type **Secret555** in the Password and Confirm password text boxes and click **Next**.

> c. At the DNS Options page, click **Next**.

> d. At the Additional Options page, note the NetBIOS name of your domain and click **Next**.

> e. At the Paths page, note the default folders displayed and click **Next**.

> f. At the Review Options page, click **Next**.

> g. At the Prerequisites Check page, click **Install**. Your computer will automatically reboot following installation.

12. After your Windows Server 2019 host has started, log into domainX.com as Administrator using the password **Secret555**. Next, click **Start** and then click **Server Manager**.

13. Within Server Manager, click **Local Server** within the navigation pane, and then click the hyperlink next to your vEthernet (External Virtual Switch) network interface.

> a. In the Network Connections window, right-click **vEthernet (External Virtual Switch)**and click **Properties**.
>
> b. Highlight **Internet Protocol Version 4 (TCP/IPv4)** within the vEthernet (External Virtual Switch) Properties window and click **Properties**. Note that the Preferred DNS server has been set to 127.0.0.1
> to ensure that your domain controller can locate Active Directory services using the locally-installed DNS service.
>
> c. Click **OK**. Click **OK** again to close the vEthernet (External Virtual Switch) Properties window.
>
> d. Close the Network Connections window.

14. Within Server Manager, click the **Tools** menu and then click **DNS**.
> a. In the DNS Manager window, right-click the **SERVERX** object within the navigation pane and click **Properties**.
>
> b. In the SERVER*X* Properties window, highlight the **Forwarders** tab. Note that the DNS service on your computer is set to forward requests it cannot resolve to the DNS servers that were previously used by your vEthernet network interface, and click **OK**.
>
> c. Close the DNS Manager window.

15. Right-click the **Start** menu and choose **Windows PowerShell (Admin)** to open Windows PowerShell.

> a. At the prompt, type netdom query fsmo and press **Enter**. Note that your domain controller holds all FSMO roles.
>
> b. Type *Get-ADForest | select SchemaMaster,DomainNamingMaster* and press Enter to view the forest-wide FSMO roles.
>
> c. Type *Get-ADDomain | select PDCEmulator,RIDMaster,InfrastructureMaster* and press **Enter** to view the domain-wide FSMO roles.

d. Close Windows PowerShell.

Activity 3.2 – Functional Levels

In this activity, you raise your domain and forest functional levels to Windows Server 2016.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory Domains and Trusts**.

2. Highlight **domainX.com** in the navigation pane of the Active Directory Domains and Trusts window, and click **More Actions**, **Raise Domain Functional Level** in the Actions pane.

    a. Note that the current functional level is set to Windows Server 2008 from Activity 3.1.

    b. Select **Windows Server 2016** from the drop-down box and click **Raise**.

    c. Click **OK** to confirm. Click OK again to close the Raise domain functional level window.

3. Highlight **Active Directory Domains and Trusts** in the navigation pane of the Active Directory Domains and Trusts window, and click **More Actions**, **Raise Forest Functional Level** in the Actions pane.

    a. Note that the current functional level is set to Windows Server 2008 from Activity 3.1.

    b. Select **Windows Server 2016** from the drop-down box and click **Raise**.

    c. Click **OK** to confirm. Click **OK** again to close the Raise forest functional level window.

4. Close the Active Directory Domains and Trusts window.

Activity 3.3 – Trusts

In this activity, you will create a forest trust relationship between your forest and a domain outside your organization.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory Domains and Trusts**. Then click **More Actions**, **Properties** from the **Actions pane**.

2. Next, select the **Trusts** tab and click **New Trust** to start the **New Trust Wizard.**

3. At the Welcome screen of the **New Trust Wizard**, supply the name of the target domain or forest. For this activity, put *earth.com* as the target domain.

4. Select **Realm trust** for the **Trust Type**.

5. Choose **Transitive** for the **Transitivity of the Trust.**

6. Select **One-way: incoming** for the **Direction of Trust.**

7. Input the **Trust password** as **Secret555.**

8. Under **Trusts Selection Complete**, review your Trusts configuration, then, click **Next**.

9. Then, click **Finish**. Your Trust is now added in the Trusts tab.

Activity 3.4 – Sites

In this activity, you configure site, subnet, and site link objects.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory Sites and Services**.

2. Under the Sites folder within the navigation pane of Active Directory Sites and Services, right-click **Default-First-Site-Name** and click **Rename**. Type **TorontoSite** and press **Enter**.

3. Expand **TorontoSite**, **Servers** within the navigation pane. Note that SERVER*X* is listed within the TorontoSite.

4. Right-click the **Sites** folder within the navigation pane, and click **New Site**. Type **ChicagoSite** in the Name text box, select **DEFAULTIPSITELINK** and click **OK**. Click **OK** again to close the Active Directory Domain Services information window.

5. Right-click the **Sites** folder within the navigation pane and click **New Site**. Type **ParisSite** in the Name text box, select **DEFAULTIPSITELINK,** and click **OK**.

6. Right-click the **Subnets** folder within the navigation pane and click **New Subnet**. Type the CIDR notation for the IP network that you use on your External Virtual Switch within the Prefix text box. Next, select **TorontoSite** and click **OK**.

7. Right-click the **Subnets** folder within the navigation pane and click **New Subnet**. Type 172.16.0.0/16 within the Prefix text box. Next, select **ChicagoSite** and click **OK**.

8. Right-click the **Subnets** folder within the navigation pane and click **New Subnet**. Type 172.17.0.0/16 within the Prefix text box. Next, select **ParisSite** and click **OK**.

9. Highlight the **Subnets** folder and note that each site is associated with a subnet object.

10. Expand the **Inter-Site Transports** folder and highlight the **IP** folder.

a. Right-click **DEFAULTIPSITELINK** and click **Properties**. Note that all three sites are included within this site link and that replication between sites will only occur at 3 hour (180 minute) intervals.

b. Click **Change Schedule**.

c. At the Schedule for DEFAULTIPSITELINK window, select a range of times from 8:00am Monday to 6:00pm Friday, and click **Replication Not Available**.

d. Click **OK** to close the Schedule for DEFAULTIPSITELINK window.

e. Click **OK** to close the DEFAULTIPSITELINK Properties window.

11. Close the Active Directory Sites and Services window.

Activity 3-5: Global Catalog

In this activity, you view your global catalog configuration as well as configure UGMC for ParisSite.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory Sites and Services**.

2. Under the Sites folder within the navigation pane of Active Directory Sites and Services, expand **TorontoSite**, **Servers**, **SERVER*X***.

3. Under SERVER*X*, right-click **NTDS Settings** and click **Properties**. Note that your server is configured with a copy of the global catalog and click **OK**.

4. Highlight **ParisSite** within the navigation pane. In the right pane, right-click **NTDS Site Settings** and click **Properties**.

> a. At the NTDS Site Settings Properties window, select **Enable Universal Group Membership Caching**.

> b. In the Refresh cache from drop-down box, select **TorontoSite**.

> c. Click **OK** to close the NTDS Site Settings Properties window.

5. Close the Active Directory Sites and Services window.

Activity 3-6: Objects

In this activity, you create and explore OU, user, group, and computer objects within the Active Directory Users and Computers tool.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory Users and Computers**.

2. Expand **domain*X*.com** within the navigation pane of the Active Directory Users and Computers window. Note the default folders and Domain Controllers OU.

3. Right-click **domain*X*.com** and click **New**, **Organizational Unit**. Type **Marketing** in the Name text box and click **OK**.

4. Right-click the **Marketing** OU and click **New**, **Group**. Note that the default options create a global security group. Type **Marketing-G** in the Group name text box and click **OK**.

5. Right-click the **Marketing** OU and click **New**, **Group**. Select **Universal** in the Group scope section. Type **Marketing-U** in the Group name text box and click **OK**.

6. Right-click the **Marketing-U** group within the Marketing OU and click **Properties**.

> a. In the Marketing-U Properties window, highlight the **Members** tab and click **Add**. Note that objects are searched from your domain by default.

> b. Click **Locations** and note that the trust relationship you created in Activity 4-4 allows you to select members from your partner's domain as well as your own. Click **Cancel**.

> c. Type **Marketing-G** in the *Enter the object names to select (examples)* text box and click **Check Names** to validate the name.

> d. Click **OK** to add the Marketing-G group to the membership list of the Marketing-U group.

> e. Click **OK** to close the Marketing-U Properties window.

7. Right-click **domainX.com** and click **New**, **Group**. Select **Domain local** in the Group scope section. Type **Ricoh4916-DL** in the Group name text box and click **OK**.

8. Highlight **domainX.com** within the navigation pane. Next, right-click the **Ricoh4916-DL** group within the right pane and click **Properties**.

    a. In the Ricoh4916-DL Properties window, highlight the **Members** tab and click **Add**.

    b. Type **Marketing-U** in the *Enter the object names to select (examples)* text box and click **Check Names** to validate the name.

    c. Click **OK** to add the Marketing-U group to the membership list of the Ricoh4916-DL group.

    d. Click **Add**.

    e. Type **Administrator** in the *Enter the object names to select (examples)* text box and click **Check Names** to validate the name.

    f. Click **OK** to add the Administrator user to the membership list of the Ricoh4916-DL group.

    g. Click **OK** to close the Ricoh4916-DL Properties window.

9. Right-click the **Marketing** OU and click **New**, **User**.

    a. In the New Object – User window, type the following values within associated text boxes and click **Next**.
        • First name: **Marketing Template**
        • User logon name: **marketing.template**

    b. Type **Secret555** in the Password and Confirm text boxes and click **Next**.

    c. Click **Finish** to create the Marketing Template user account within the Marketing OU.

10. Highlight the **Marketing** OU within the navigation pane. Next, right-click the **Marketing Template** user within the Marketing OU and click **Properties**.

    a. In the Marketing Template Properties window, highlight the **Organization** tab, and type **Domain*X*** in the Company text box.

    b. Highlight the **Member Of** tab. Note that new users are automatically added to the Domain Users group by default.

    c. Click **Add**.

    d. Type **Marketing-G** in the *Enter the object names to select (examples)* text box and click **Check Names** to validate the name.

    e. Click **OK** to add the Marketing Template user to the membership list of the Marketing-G group.

    f. Click **OK** to close the Marketing Template Properties window.

11. Right-click the **Marketing Template** user and click **Copy**.

    a. In the Copy Object – User window, type the following values within associated text boxes and click **Next**.
        i. First name: **Bob**
        ii. Last name: **Burtt**
        iii. User logon name: **b.burtt**

    b. Type **Secret555** in the Password and Confirm text boxes and click **Next**.

    c. Click **Finish** to create the Bob Burtt user account within the Marketing OU.

12. Right-click the **Marketing Template** user and click **Copy**.

    a. In the Copy Object – User window, type the following values within associated text boxes and click **Next**.
        i. First name: **John**
        ii. Last name: **Lavigne**
        iii. User logon name: **j.lavigne**

b. Type **Secret555** in the Password and Confirm text boxes and click **Next**.

c. Click **Finish** to create the John Lavigne user account within the Marketing OU.

13. Right-click the **Marketing Template** user and click **Copy**.

a. In the Copy Object – User window, type the following values within associated text boxes and click **Next**.

 i. First name: **Mary**
 ii. Last name: **Stewart**
 iii. User logon name: **m.stewart**

b. Type **Secret555** in the Password and Confirm text boxes and click **Next**.

c. Click **Finish** to create the Mary Stewart user account within the Marketing OU.

14. Right-click the **Mary Stewart** user and click **Properties**.

a. In the Mary Stewart Properties window, highlight the **Organization** tab, and note that Domain*X* is listed in the Company text box.

b. Highlight the **Member Of** tab. Note that Mary Stewart has been added to the Marketing-G group.

c. Click **Cancel** to close the Mary Stewart Properties window.

15. Right-click the **Mary Stewart** user and note the options available. Click **Reset Password**. Type **Secret555** in the New password and Confirm password text boxes and click **OK**. Click **OK** to close the Active Directory Domain Services information window.

16. Right-click the **Marketing** OU and click **New**, **Computer**. Type **MKTG-PC-01** in the Computer name text box and click **OK**.

17. Right-click the **MKTG-PC-01** computer account and note the options available. Click **Reset Account**. Click **Yes** to confirm the reset, and then click **OK** to close the Active Directory Domain Services information window.

18. Close the Active Directory Users and Computers window.

Activity 3-7: Active Directory Admin Center

In this activity, you enable the Active Directory Recycle Bin, as well as use it to recover a deleted user object.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory**
Administrative Center.

2. Highlight **domainX (local)** within the navigation pane of the Active Directory
Administrative Center window and click **Enable Recycle Bin** within the Tasks pane. Click **OK** when prompted to confirm and then click **OK** again to close the Active Directory Administrative Center information window.

3. Click the **"Refresh domainX (local)"** button in the upper right of the Active Directory Administrative Center window.

4. Under the domainX (local) pane, double-click **Marketing**. Highlight the **John Lavigne** user account and click **Delete** within the Tasks pane. Click **Yes** to confirm the deletion. Note that the John Lavigne user account no longer appears within the Marketing OU.

5. Highlight **domainX (local)** within the navigation pane of the Active Directory
Administrative Center window and double-click **Deleted Objects** within the domain (local) pane. Note that the John Lavigne user account is listed, alongside the time that the user account was deleted.

6. Highlight the **John Lavigne** user account and click **Restore** within the Tasks pane to restore the John Lavigne user account to the Marketing OU.

7. Click **Marketing** under domainX (local) within the navigation pane. Note that the John Lavigne user has been restored successfully.

8. Close the Active Directory Administrative Center window.

Activity 3-8: RODCs

In this activity, you prestage a computer account for a RODC within ParisSite. Next, you allow a user's password to be stored within the Active Directory database on the RODC. Finally, you examine the options available when a RODC computer account is deleted.

1. Within Server Manager, click the **Tools** menu and then click **Active Directory Users and Computers**.

2. Right-click the **Domain Controllers** OU within the navigation pane of the Active Directory Users and Computers window and click **Pre-create Read-only Domain Controller account**.

> a. At the welcome page of the Active Directory Domain Services Installation Wizard, click **Next**.
>
> b. At the Network Credentials page, click **Next**.
>
> c. At the Specify the Computer Name page, type **RODC1** in the Computer name text box and click **Next**.
>
> d. At the Select a Site page, click **ParisSite** and click **Next**.
>
> e. At the Specify the Computer Name page, type **RODC1** in the Computer name text box and click **Next**.
>
> f. At the Additional Domain Controller Options page, deselect **Global catalog** and click
> **Next**. Recall that you configured ParisSite to use UGMC within Activity 3-5 to allow for fast authentication in the absence of a local global catalog.
>
> g. At the Delegation of RODC Installation and Administration page, click **Next**. This requires that a member of the Domain Admins group perform the configuration of Active Directory Domain Services on the RODC.
>
> h. At the Summary page, click **Next**.

i. Click **Finish** to close the Active Directory Domain Services Installation Wizard.

3. Highlight the **Domain Controllers** OU within the navigation pane. Right-click the **RODC1** computer account within the Domain Controllers OU and click **Properties**.

    a. At the RODC1 Properties window, highlight the **Password Replication Policy** tab. Note that members of the Allowed RODC Password Replication Group will have password attributes replicated to the Active Directory database on RODC1.

    b. Click **Cancel** to close the RODC1 Properties window.

4. Highlight the **Users** folder within the navigation pane. Right-click the **Allowed RODC Password Replication Group** domain local security group within the Users folder and then click **Properties**.

    a. At the Allowed RODC Password Replication Group Properties window, highlight the **Members** tab.

    b. Click **Add**.

    c. Type **John** in the *Enter the object names to select (examples)* text box and click **Check Names** to validate the name.

    d. Click **OK** to add the John Lavigne user to the membership list of the Allowed RODC Password Replication Group group.

    e. Click **OK** to close the Allowed RODC Password Replication Group Properties window.

5. Highlight the **Domain Controllers** OU within the navigation pane. Right-click the **RODC1** computer account within the Domain Controllers OU and click **Delete**.

    a. Click **Yes** to confirm the deletion. At the Deleting Domain Controller window, note that passwords for user accounts that were cached on RODC1 will be reset, including John Lavigne, if RODC1 was in operation.

    b. Click **Cancel**.

6. Close the Active Directory Users and Computers window.

III. Question and Answer

      - Is your activities complete?

Yes, complete lahat ng steps at outputs namin

      - Does it conform to the target output?

Yes, sinunod namin lahat ng instructions at requirements.

      - Can we say that your system is functional?

Yes, gumagana nang maayos lahat ng configurations at features.

IV. Conclusion

Natutunan namin kung paano i-setup at i-manage ang Active Directory. Lahat ng steps ay successful at gumana nang maayos ang system.