Assessment 3

Prototype

Student: Ray Parker
Student Number: 10532682

Facilitator: Bazlur Rashid

Contents

Virtual Machine Configuration

The virtual machines to be used throughout this project are listed in the following table.

Server. No.	VM Name	Operating System
1	DC01	Windows Server 2022
2	DC02	Windows Server 2022
Workstation 1	CLIENT01	Windows 11
Workstation 2	CLIENT02	Windows 11
Workstation 3	CLIENT03	Windows 11
Workstation 4	CLIENT04	Windows 11
Workstation 5	CLIENT05	Windows 11

Methodology

To prepare a virtual lab consisting of 2 servers running Microsoft Server 2022 and 5 client machines running Microsoft Windows 11 mentioned in the following table 1. Evaluation ISO images (Windows Server 2022 (Insider Preview) and Windows 11_English) were downloaded from the Microsoft Evaluation download centre. VM Ware Workstation software was provided by ECU University, downloaded and installed on the host machine (Dell 9010 SSF workstation). The first virtual machine which will be the first Domain Controller (DC01) created in VMWare. Installation was performed by an automated .xml file. Once installed this server was promoted as a Domain Controller in the widgetllc Forest with Active Directory services installed. The second Domain Controller (DC02) was then installed in Vmware and promoted to the widgetllc domain with the IP addressing structure used in the below table.

S. No.	VM Name	IP Address	Role
04/04/2022 10.05.00am	DC01	192.168.1.222	Domain Controller of the widgetllc Domain
04/04/2022 13.30.00pm	DC02	192.168.1.223	Domain Controller of the widgetllc Domain
05/04/2022 09.00.00am	CLIENT01	192.168.1.224	Client machine of widgetllc Domain
04/04/2022 10.00.00am	CLIENT02	192.168.1.225	Client machine of widgetllc Domain
04/04/2022 11.00.00.am	CLIENT03	192.168.1.226	Client machine of widgetllc Domain
04/04/2022 12.00.00pm	CLIENT04	192.168.1.227	Client machine of widgetllc Domain
04/04/2022 13.00.00pm	CLIENT05	192.168.1.228	Client machine of widgetllc Domain

The following tasks were performed on the host machine to create a Virtual Lab for testing purposes:

1. Install VM Workstation or Player to the host machine
2. Create a Virtual Machine for DC01
3. Create a Virtual Machine for DC02
4. Create a Virtual Machine for CLIENT01
5. Create a Virtual Machine for CLIENT02
6. Create a Virtual Machine for CLIENT03
7. Create a Virtual Machine for CLIENT04
8. Create a Virtual Machine for CLIENT05.

` **Install VMware Workstation on the Host Machine**

VMware Workstation supplied by Edith Cowan University downloaded and installed on the host machine Dell OptiPlex 9010.

Installing and Configuring the DC01 Virtual Machine

To install and configure the Domain Controller (DC01) virtual machine, you need to perform the following steps:

Make sure that the VMware console is active.

Select File and then select New Virtual Machine.

On the New Virtual Machine Wizard, click Next.

On the Guest Operating System Installation page, select the Installer disc image file (iso): radio button, browse the location of the Server 2022 ISO image file, and then click Next.

Note: If you use the VMware platform that automatically detects the version of the Windows server, you may be asked to set the following settings: Product Key, Operating System Edition, Administrator Password, otherwise, you may skip it this section.

On the Select a Guest Operating System page, select the highest supported version of Windows server (in this case Windows Server 2016 or above but it will still support Windows Server 2022), and then click Next.

On the Name and Virtual Machine page, type DC01 in the Virtual machine name field.

In the Location field, navigate to the location where you want to save the virtual machine, such as C:\Virtual Machines, or select the default location and then click Next.

On the Specify Disk Capacity page, select Store virtual disk as a single file, optionally you can also set the disk size as well, and then click Next.

On the Ready to Create Virtual Machine page, click Customize Hardware.

On the Hardware window, select Network Adapter in the left pane. Select the Host only radio button, and then click Close.

Click Finish (Mark, 2016).

On the VMware console, power on the DC01 virtual machine.

On the Windows Setup page, click Next, and then click Install Now.

On the Activate Windows page type your serial number and click Next, On the Select the operating system you want to install page, select the Windows Server 2022 Desktop Experience, and then click Next.

 On the License terms page, select the "I accept the license terms" check box, and then click Next.

On the Which type of installation do you want page, select the Custom option, and then click Next.

On the Where do you want to install Windows page, click Next.

The Installation process will begin, after 10-15 minutes the Customize settings screen will display.

Set Administrator password as PASSWORD123!

Install VM Ware Tools in this Virtual Machine (Mark, 2016).

Configuring the DC01 Virtual Machine

Sign in to DC1 with the Administrator account.

Open the System Properties (sysdm.cpl) and set the computer name as DC01.

Open the System Properties (sysdm.cpl) and set the computer name as DC01.

Restart and sign in to the system with the Administrator account. After some time, the Server Manager console will display.

Restart and sign in to the system with the Administrator account. After some time, the Server Manager console will display.

Open the Run dialog box, type ncpa.cpl, and then press Enter.

Select and right-click the active network adapter, and then select Properties.

Set the following TCP/IP settings:

IP address: 192.168.1.222.

Subnet mask: 255.255.255.0

Default Gateway: 192.168.1.1

Preferred DNS server: 192.168.1.1.

Close the Network Connections console (Mark, 2016).

Configuring DC01 as a Domain Controller.

Sign in to DC01 with the Administrator account.

On the Server Manager console, click the Add roles and features link.

On the Before you begin page of the Add Roles and Features Wizard, click Next.

On the Select installation type page, click Next

On the Select destination server page, make sure that DC01 is selected, and then click Next.

On the Select server roles page, select the Active Directory Domain Services check box.

On the Add Roles and Features Wizard dialog box, click Add Features, and then click Next.

On the Select features page, click Next.

On the Active Directory Domain Services page, click Next (Mark, 2016).

On the Confirm installation selections page, click Install.

The installation process will start. Click Close, once the installation succeeded.

On the Server Manager console, click the Notifications icon, and then click the Promote this server to a domain controller link, as shown in the following figure.

On the Deployment Configuration page of the Active Directory Domain Services Configuration Wizard, make sure that the Add a new forest radio button is selected.

in the Root Domain name section type widgetllc.internal or the name of your domain, click Next

On the Domain Controller Options page type a DSRM password J388ica* and click Next

On the DNS page click Next, and on the Additional Options, click Next, On the Paths Page click Next, Review Options, click Next, then click Install

The Deployment Configuration page is returned, as shown in the following figure. Review the selected options, and then click Next.

On the Domain Controller Options page, clear the Domain Name System (DNS) server check box.

Under the DSRM password section, type PASSWORD123! in the Password and Confirm password text boxes, and then click Next.

Click Next, until the Prerequisites Check page is displayed (Mark, 2016).

On the Prerequisites Check page, click Install.

The installation process will start and the server will restart automatically.

After DC01 restarts, sign in to DC01 with the WIDGETLLC\Administrator account.

Promoting the DC02 Virtual Machine as a Domain Controller:

To promote the DC01 virtual machine as a domain controller, you need to perform the following steps:

Open the Server Manager console.

Click the Add roles and features link

On the Before you begin page, click Next.

On the Select installation type page, click Next.

On the Select destination server page, click Next.

On the Select server roles page, select the Active Directory Domain Services check box, as shown in the following figure.

Accept the default selections through rest of the wizard and complete the installation process.

Click Close, once the installation succeeds on DC02.

On the Server Manager console, click the Notifications icon.

Click the Promote this server to a domain controller link, as shown in the following figure.

On the Deployment Configuration page, select the Add a domain controller to an existing forest radio button is selected.

In the Root domain name text box, type widgetllc.internal, as shown in the following figure, and then click Next (Mark, 2016).

On the Domain Controller Options page, make sure that the Domain Name System (DNS) server check box is selected, as shown in the following figure.

In the Password and Confirm password text boxes, type the Password123!, and then click Next.

On the DNS Options page and then click Next.

On the Additional Options page, click Next.

On the Paths page, as shown in the following figure, review the default location for the AD DS database file, and then click Next.

On the Review Options page, click Next.

On the Prerequisites Check page, as shown in the following figure, review the prerequisites, and then click Install.

` After some time, the system will restart automatically; sign in to DC01 with the WIDGETLLC\Administrator account (Mark, 2016).

Installing and Configuring the CLIENT01 Virtual Machine

To install and configure the CLIENT01 virtual machine, you can follow the simple steps as you used to install and configure the DC01 virtual machine.

During the installing CLIENT01 virtual machine, make sure that you use the following settings and options: Virtual machine name: CLIENT01. Operating system version: Windows 10 or later 64bit. Memory: 1024 MB Hard disk size: 50 GB Network Adapter: NAT (click Customize Hardware before clicking the Finish button.) Password: J388ica* (Mark, 2016).

Once you installed the CLIENT01 virtual machine with the preceding settings, configure the following TCP/IP settings:

IP address: 192.168.1.224

Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1

Preferred DNS server: not set

Once you configured the preceding TCP/IP settings, open the System Properties dialog box, and click Change.

On the Computer Name/Domain Changes dialog box, in the Computer name text box, type CLIENT01 (Mark, 2016).

Select the Domain radio button in the Member of section, type widgetllc.internal, and then click OK.

On the Windows Security dialog box, provide the credentials of the DC01 server, and restart the CLIENT01 virtual machine.

Sign in to CLIENT01 with the Administrator account password: J388ica*.
Shut down the CLIENT01 virtual machine.
Note: the above procedure can be used to install any other Client machines in the lab
environment with changes made to each IP Address.

Installing a login script to the DC01 domain Controller
A generic login script from Microsoft will be utilised in this Lab testing environment.
The login script is found in the C:\Windows\SYSVOL\widgetllc.internal\scripts folder and
replicated to the C:\Windows\SYSVOL\Domain\scripts folder
Testing continued over several days with more positive results than negative with the
procedure being one of the easiest processes so far in this project (Mark, 2016).

References

Mark, K. G. (2016). *Installing and Configuring Windows Server 2016* https://pdfroom.com/books/installing-and-configuring-windows-server-2016-hands-on-guide-step-by-step-lab-guide/j9ZdYZ1rgV4/download