Multiple Servers in the Same Domain

Introduction and/or Background

The goal of this unit is to give you practical hands-on experience preparing two servers for interoperability and fault tolerance. In this lab, you will create one base server that will be cloned and configured as your second server. The two servers will then be promoted to domain controllers in the same domain.

Objectives

In this project/lab the student will:

- Create a base server and clone it
- Promote both servers to domain controllers in the same domain

Equipment/Supplies Needed

- VMWare Workstation Pro
- Windows Server 2019 ISO

Assessment Criteria

Submit a document file identifying each print screen proof to show your instructor that you have successfully configured two servers that are able to successfully communicate with one another.

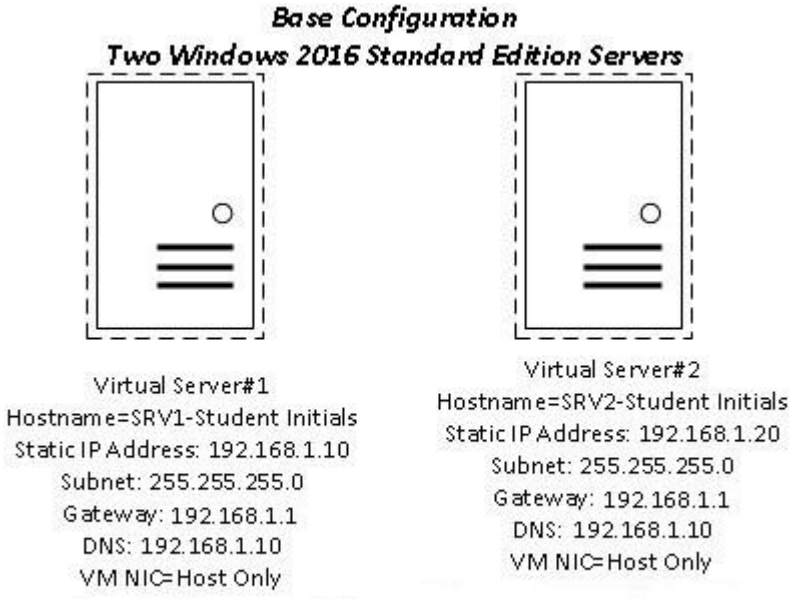
Required Proof:

- Screenshot of the hostname\username and SID for server SRV1 – 10 points
- Screenshot of the hostname\username and SID for server SRV2 – 10 points
- Screenshot showing the servers can ping each other by IP address – 10 points
- Screenshot of two unique users on server SRV1 – 10 points
- Screenshot of two unique users on server SRV2 – 10 points
- Screenshot of the Snapshot created on server SRV1 – 5 points
- Screenshot of the Snapshot created on server SRV1 – 5 points
- Screenshot showing SRV1 is a Domain Controller – 10 points
- Screenshot showing SRV2 is a Domain Controller – 10 points
- Screenshot of user Bob Jones on SRV2 – 10 points

- Reflection – 10 points

Assignment

The company has approved a second server, giving you an opportunity to implement fault tolerance. As a member of the support staff you have been asked to set up a test environment to gain experience supporting a multiple server environment before you make a recommendation to your boss as to what configuration you feel is best for the organization.



Part 1: Install two Windows Server 2019 Servers

1. Install and configure Server 2019 Standard Edition with GUI in a virtual environment using the details in the graphic named Based Configuration. (Refer back to skills learned in the Module 1 Labs).

2. To speed up the process you will clone a second server in preparation for different configuration options.

3. The Server must be powered off to clone (Make sure your SRV1 server is activated before shutting it down).

4. With SRV1 selected in VMWare Workstation, on the menu, select VM, then Manage, then Clone.

5. The wizard starts, click Next.

6. Select The current state of the machine and click Next.

7. Select Create a full clone and click Next.

8. Name the new Virtual Machine SRV2 and click Finish. (The clone process will take a few minutes.)
9. Click Close to close the clone wizard.

10. Power on SRV2 so we can change the SID.

11. Login as Administrator. SRV2 is identical to SRV1, so the password is the same.

12. Open File Explorer and navigate to c:\windows\system32\sysprep.

13. Right-click the sysprep application and select Run as administrator

14. Enter System Out-of-Box Experience (OOBE) and Reboot should be selected, click Generalize and then click OK. (Sysprep runs for a few minutes and the server reboots)

15. The server install process picks up at the keyboard layout screen.

16. Complete the server install process as you would a new server, setting the administrator password to Itnw1354B.

17. Login to SRV2 and make sure it is activated

18. Shut down SRV2.

19. Edit the settings on SRV2.

20. Select the Network Adapter and set it to host-only, then click Advanced.

21. Click Generate to generate a new unique MAC address for this network adapter on SRV2.

22. Click OK and then OK to save those changes.

23. Power on both servers and configure their host names and IP Addresses.

24. Open a Command prompt on server SRV1 and type whoami /all, then scroll up and take a screenshot (PrtScr#1) of the hostname\username and SID for server SRV1.

25. Open a Command prompt on server SRV2 and type whoami /all, then scroll up and take a screenshot (PrtScr#2) of the hostname\username and SID for server SRV2 (The SIDs should be different).

26. Set the password for Administrator on SRV2 to Itnw1354B.

27. Use the Computer Management Tool to create a second local user account named ADMIN with a password of Itnw1354B, whose password never expires.

28. Add this new user to the Local Administrators Group.

29. Power on both servers.

30. Install VMWare Tools on both servers.

31. Verify Communication is working between the two servers. A screenshot will be needed as proof your servers are able to ping by IP address. Open command prompt (CMD.EXE) and use the troubleshooting command you learned earlier in the course. Take a screenshot (PrtScr#3).

32. Create 2 unique users on both SRV1 and SRV2 that do not exist on the other server. You will be able see what happens to the local user accounts when Active Directory and a second server is added. You can use the Computer Management tool to create your users.

33. Take a screenshot of the two users created on SRV1 (PrtScr#4). Take a screenshot of the two users created on SRV2 (PrtScr#5).

34. Snapshot: Create a snapshot before continuing in this module. Suggestion for the name both "PreChanges".

35. On the VMWare menu, select VM, then Snapshot, then Take Snapshot.

36. Name it Pre-changes and click Take Snapshot.

37. Take a screenshot of the snapshot on SRV1 (PrtScr#6). Take a screenshot of the snapshot on SRV2 (PrtScr#7).

Part 2 - Prepare Server for Active Directory Role

1. Install Active Directory on SRV1 for the ABC.COM domain.

2. Create a new user account for yourself using Active Directory Users and Computers (ADUC) on SRV1-Your Initials.

3. Make your new user account a member of the Domain Admins group. (In a production environment, you would also create a regular user account for yourself to use when not doing administrative tasks.)

4. Open Server Manager on SRV2-Your Initials, Manage, Add Roles and Features, Role Based or feature based installation, follow wizard prompts.

5. Server Roles: Select Active Directory Domain Services, accept the default features & tools.

6. Accept defaults provided by wizard including restart if required, and begin Install, close once complete.

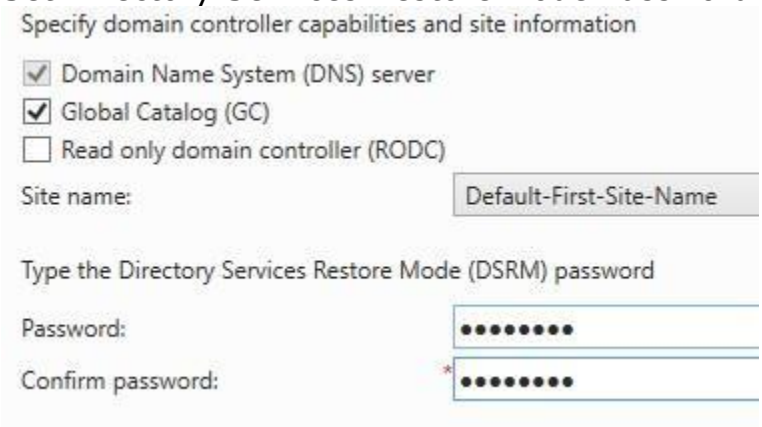
Part 3 - Srv2-Your initials: Install Active Directory Domain Services Role as a writable copy of "ABC.COM" DS (The purpose of having a Read Only Domain Controller (RODC) is for better security at branch locations, where physical security measures might not be as strong as at a central office.)

1. SRV2-Your initials: Server Manager, Post-deployment Configuration, select "Promote this server to a Domain Controller"

2. Deployment Operation: Add a domain controller to an existing domain, domain name=ABC.COM - Credentials: Use the new user account you just created

3. DC Options: Verify DNS and GC are both checked

    a. Set Directory Services Restore Mode Password=Itnw1354, next



4. DNS Options: next (Don't worry about not talking to the authoritative parent zone)

5. Replicate from: Change to your SRV1-your initials.abc.com, next.

6. Accept remaining defaults

7. Prerequisites Checks: Verify all prerequisites checks passed successfully, Install, allow to reboot when completed.

8. Take a screenshot showing SRV1 is a Domain Controller (PrtScr#8).

9. Take a screenshot showing SRV2 is a Domain Controller (PrtScr#9).

10. Create user "Bob Jones" on SRV1. Open Active Directory Users and Computers on SRV2 and verify the new user replicated to SRV2. (This may take a few minutes.) Take a screenshot.

11. Create user "Sally Smith" on SRV2. Open Active Directory Users and Computers on SRV1 and verify the new user replicated to SRV1. (This may take a few minutes.) Take a screenshot.

12. Take a screenshot of user Bob Jones on SRV2 (PrtScr#10).

Troubleshooting Tips:
There are plenty of resources available for troubleshooting technical issues, including the searching of the internet and YouTube videos. Life on the job will involve searching for and solving problems.

- All computers require unique information: a) name, b) IP address, and c) NIC "Hardware / MAC address" -- Double check to ensure both servers have the correct unique configuration details

- Communication – a) recheck VM Network Adapter / NIC Settings. 'Both virtual machines must be to the same virtual switch setting, for this lab they should be set to "Host Only"; b) Windows NIC -Verify both are set to the same "Subnet / Network" and that have unique host portion of the IP address c) Verify both machines are able to successfully communicate by both IP Address and Host Name using the PING commands

- Recheck lab instructions, check out the resources listed with the assignment, post question(s) to module forums, and ask your fellow classmates and/or your instructor.

Reflection

1. What is the purpose of the lab / how could you use this in the future?
2. In your own words, explain what happened to your server after you ran SYSPrep.
3. When and where would you implement a Read Only copy of Active Directory over using a writable copy?

Rubric

Checklist/Single Point Mastery

Concerns Working Towards Proficiency	Criteria Standards for This Competency	Accomplished Evidence of Mastering Competency
	Criteria #1: Screenshot of the hostname\username and SID for server SRV1 (10 points)	
	Criteria #2: Screenshot of the hostname\username and SID for server SRV2 (10 points)	
	Criteria #3: Screenshot showing the servers can ping each other by IP address (10 points)	

	Criteria #4: Screenshot of two unique users on server SRV1 (10 points)	
	Criteria #5: Screenshot of two unique users on server SRV2 (10 points)	
	Criteria #6: Screenshot of the Snapshot created on server SRV1 (5 points)	
	Criteria #7: Screenshot of the Snapshot created on server SRV2 (5 points)	
	Criteria #8: Screenshot showing SRV1 is a Domain Controller (10 points)	
	Criteria #9: Screenshot showing SRV2 is a Domain Controller (10 points)	
	Criteria #10: Screenshot of user Bob Jones on SRV2 (10 points)	
	Criteria #11: Correct answers to reflection questions (10 points)	