**Practice Setup Instructions**

This section contains abbreviated instructions for setting up the domain controller (DC), SQL-A, SQL-B, SQL-C, SQL-D, and SQL-Core computers used in the practice exercises in all chapters of this training kit. To perform these exercises, first install Windows Server 2008 R2 Enterprise edition with Service Pack 1 using the default configuration, setting the administrator password to **Pa$$w0rd**. For server SQL-Core, install Windows Server 2008 R2 Enterprise Edition with Service Pack 1 in the default server core configuration, setting the administrator password to **Pa$$w0rd**.

**Prepare a Computer to Function as a Windows Server 2008 R2 Domain Controller**

1. Log on to the first computer on which you have installed Windows Server 2008 R2 with Service Pack 1, using the Administrator account and the password Pa$$w0rd. 2. Open an elevated command prompt and issue the following commands:

***Netsh interface ipv4 set address “Local Area Connection” static 10.10.10.10***

3. Enter the following command:

***netdom renamecomputer %computername% /newname:DC***

4. Restart the computer and log on again, using the Administrator account. 5. Click Start. In the Search Programs And Files text box, type the following:

***Dcpromo.***

6. When the Active Directory Domain Services Installation Wizard starts, click Next twice.

7. On the Choose A Deployment Configuration page, choose Create A New Domain In A New Forest and then click Next.

8. On the Name The Forest Root Domain page, enter Contso.com, and then click Next.

9. On the Forest Functional Level page, set the forest functional level to Windows Server 2008 R2 and then click Next.

10. On the Set Domain Functional Level page, ensure that Windows Server 2008 R2 is set and then click Next

11. On the Additional Domain Controller Options page, ensure that the DNS Server option is selected and then click Next. When presented with the warning that the delegation for the DNS server cannot be created, click Yes when asked whether you want to continue.

12. Accept the default settings for the Database, Log Files, and SYSVOL locations and click Next. 13. In the Directory Services Restore Mode Administrator Password dialog box, enter the password Pa$$w0rd twice, and then click Next. 14. On the Summary page, click Next to begin the installation of Active Directory Domain Services (AD DS) on computer DC. When the wizard completes, click Finish. When prompted, click Restart Now to reboot computer DC

**Prepare AD DS**

1. Log on to server DC, using the Administrator account.

2. Using Active Directory Users And Computers, create a user account named Kim\_Akers in the Users container and assign the account the password **Pa$$w0rd**. Configure the password to never expire. Add this user account to the Enterprise Admins, Domain Admins, and Schema Admins groups.

3. Open the DNS console and create a primary reverse lookup zone for the subnet 10.10.10.x. Ensure that the zone is stored within AD DS and is replicated to all DNS servers running on domain controllers in the forest

**Prepare a Member Server and Join It to the Domain**

1. Ensure that computer DC is turned on and connected to the network or virtual network to which the second computer is connected.

2. Log on to the second computer on which you have installed Windows Server 2008 R2 with Service Pack 1, using the Administrator account and the password **Pa$$w0rd**.

3. Open an elevated command prompt and issue the following commands:

**Netsh interface ipv4 set address “Local Area Connection” static 10.10.10.20**

**Netsh interface ipv4 set dnsservers “Local Area Connection” static 10.10.10.10 primary**

4. Enter the following command to change computer name:

**netdom renamecomputer %computername% /newname:SQL-A**

5. Restart the computer and then log on again, using the Administrator account

6. From an elevated command prompt, issue the following command:

**netdom join SQL-A /domain:contso.com**

7. Restart the computer. When the computer restarts, log on as contso\Administrator and then turn off the computer.

**Prepare a Second Member Server and Join It to the Domain**

1. Ensure that computer DC is turned on and connected to the network or virtual network to which the second computer is connected.

2. Log on to the third computer on which you have installed Windows Server 2008 R2 with Service Pack 1, using the Administrator account and the password Pa$$w0rd.

3. Open an elevated command prompt and issue the following commands:

***Netsh interface ipv4 set address “Local Area Connection” static 10.10.10.30***

***Netsh interface ipv4 set dnsservers “Local Area Connection” static 10.10.10.10 primary***

4. Enter the following command:

***netdom renamecomputer %computername% /newname:SQL-B***

5. Restart the computer and then log on again, using the Administrator account. 6. From an elevated command prompt, issue the following command:

***netdom join SQL-B /domain:contso.com***

7. Restart the computer. When the computer restarts, log on as contso\Administrator. Turn off the computer

**Prepare a Third Member Server and Join It to the Domain**

1. Ensure that computer DC is turned on and connected to the network or virtual network to which the second computer is connected.

2. Log on to the third computer that you have installed Windows Server 2008 R2 with Service Pack 1 on using the Administrator account and the password **Pa$$w0rd**.

3. Open an elevated command prompt and issue the following commands:

***Netsh interface ipv4 set address “Local Area Connection” static 10.10.10.40***

***Netsh interface ipv4 set dnsservers “Local Area Connection” static 10.10.10.10 primary***

4. Enter the following command:

***netdom renamecomputer %computername% /newname:SQL-C***

5. Restart the computer and then log on again using the Administrator account. 6. From an elevated command prompt, issue the following command:

***netdom join SQL-C /domain:contoso.com***

7. Restart the computer. When the computer restarts, log on as contso\Administrator. Turn off the computer.

**Prepare a Fourth Member Server and Join It to the Domain**

1. Ensure that computer DC is turned on and connected to the network or virtual network to which the second computer is connected.

2. Log on to the third computer on which you have installed Windows Server 2008 R2 with Service Pack 1, using the Administrator account and the password **Pa$$w0rd**.

3. Open an elevated command prompt and issue the following commands:

***Netsh interface ipv4 set address “Local Area Connection” static 10.10.10.50***

***Netsh interface ipv4 set dnsservers “Local Area Connection” static 10.10.10.10 primary***

4. Enter the following command:

***netdom renamecomputer %computername% /newname:SQL-D***

5. Restart the computer and then log on again, using the Administrator account. 6. From an elevated command prompt, issue the following command:

***netdom join SQL-D /domain:contoso.com***

7. Restart the computer. When the computer restarts, log on as contso\Administrator. Turn off the computer.

**Prepare a Computer Running the Server Core Installation Option and Join It to the Domain**

1. Ensure that computer DC is turned on and connected to the network or virtual network to which the second computer is connected.

2. Using the Administrator account and the password **Pa$$w0rd**, log on to the computer on which you have installed Windows Server 2008 R2 with Service Pack 1 in the Server Core configuration.

3. From the Administrator command prompt, enter the following commands:

***Netsh interface ipv4 set address “Local Area Connection” static 10.10.10.40***

***Netsh interface ipv4 set dnsservers “Local Area Connection” static 10.10.10.10 primary***

4. Enter the following command to configure the computer’s name:

***netdom renamecomputer %computername% /newname:SQL-CORE***

5. Enter the following command to restart the computer:

***Shutdown /r /t 5***

6. Restart the computer and log back on, using the Administrator account. 7. Enter the following command to join the computer to the domain:

***netdom join SQL-CORE /domain:contso.com***

8. Enter the following command to restart the computer:

***Shutdown /r /t 5***

9. Restart the computer. When the computer restarts, log on as contso\Administrator. Turn off the computer, using the following command:

***Shutdown /s /t 5***

**CHAPTER 1 Planning and Installing SQL Server 201.**

**Lesson 1: Planning Your Installation**

*Planning Scale Up versus Scale Out Basics*

**Scalability** determines how well an application uses increased resources to increase capacity. For example, an application that comfortably handles the workload of 10 concurrent users on a dual-processor system might be able to handle the workload of more than 100 concurrent

■ Scaling Up Involves increasing the system resources on the current server. For example, you might add additional and faster processors and more RAM as a method of improving capacity. As an alternative, you might migrate the existing database to a newer, more powerful server.

■ Scaling Out Enables you to increase capacity by using multiple SQL servers. There are several ways in which you can scale out, including configuring peer-to-peer replication and AlwaysOn with readable secondaries