Lab: Configuring and Troubleshooting DNS

Scenario

A. Datum is a global engineering and manufacturing company with its head office in London, UK. An IT office and a data center are located in London to support the head office and other locations. A. Datum has recently deployed a Windows Server 2012 server and client infrastructure.

You have been asked to add several new resource records to the DNS service installed on LON-DC1. Records include a new MX record for Exchange Server 2010 and a SRV record for a Microsoft Lync® deployment that is occurring. A. Datum is working with a partner organization, Contoso, Ltd. You have been asked to configure internal name resolution between the two organizations. A small branch office has reported that name resolution performance is poor. The branch office contains a Windows Server 2012 server that performs several roles.

However, there is no plan to implement an additional domain controller. You have been asked to install the DNS server role at the branch office and create a secondary zone of Adatum.com. To maintain security, you have been instructed to configure the branch office server to be on the Notify list for Adatum.com zone transfers. You also should update all branch office clients to use the new name server in the branch office.

You should configure the new DNS server role to perform standard aging and scavenging, as necessary and as specified by corporate policy. After implementing the new server, you need to test and verify the configuration by using standard DNS troubleshooting tools.

Objectives

After completing this lab, you will be able to:

- Configure DNS resource records.
- Configure DNS conditional forwarding.
- Install and configure DNS zones.
- Troubleshoot DNS.

Lab Setup

Estimated Time: 60 minutes

Virtual Machines	20411B-LON-DC1 20411B-LON-SVR1 20411B-LON-CL1

User Name	**Adatum\Administrator**
Password	**Pa$$w0rd**

For this lab, you will use the available virtual machine environment. Before you begin the lab, you must complete the following steps:

1. On the host computer, click **Start**, point to **Administrative Tools**, and then click **Hyper-V Manager**.
2. In Hyper-V® Manager, click **20411B-LON-DC1**, and in the Actions pane, click **Start**.
3. In the Actions pane, click **Connect**. Wait until the virtual machine starts.
   Sign in using the following credentials:
4. o User name: **Administrator**
   o Password: **Pa$$w0rd**
   o Domain: **Adatum**
5. Repeat steps 2 through 4 for **20411B-LON-SVR1** and **20411B-LON-CL1**.

Exercise 1: Configuring DNS Resource Records

Scenario

You have been asked to add several new resource records to the DNS service installed on LON-DC1. Records include a new MX record for Exchange Server 2010, and a SRV record required for a Lync deployment that is taking place currently. You have also been asked to configure a reverse lookup zone for the domain.

The main tasks for this exercise are as follows:

1. Add the required MX record.
2. Add the required Lync server records.
3. Create the reverse lookup zone.

Task 1: Add the required MX record

1. Switch to **LON-DC1**, and sign in as **Adatum\Administrator** with the password **Pa$$w0rd**.
2. Open the **DNS Manager** console.
   Create a new host record with the following properties:
3. o Zone: **Adatum.com**
   o Name: **Mail1**

o IP address: **172.16.0.250**

In the **Adatum.com** zone, add a new record with the following information:

4. o Type: **New Mail Exchanger (MX)**
   o Fully qualified domain name (FQDN) of mail server: **Mail1.Adatum.com**.

Task 2: Add the required Lync server records

Create a new host record with the following properties:

1. o Zone: **Adatum.com**
   o Name: **Lync-svr1**
   o IP address: **172.16.0.251**

In the **Adatum.com** zone, add a new record:

   o Type: **Service Location (SRV)**
2. o Service: **_sipinternaltls**
   o Protocol: **_tcp**
   o Port Number: **5061**
   o Host offering this service: **Lync-svr1.adatum.com**.

Task 3: Create the reverse lookup zone

Create a new reverse lookup zone with the following properties:

   o Zone Type: **Primary zone**
- o Active Directory Zone Replication Scope: Default
  o Reverse Lookup Zone Name: **IPv4 Reverse Lookup Zone**
  o Reverse Lookup Zone Name: **172.16.0**
  o Dynamic Update: Default

Results: After this exercise, you should have configured the required messaging service records and the reverse lookup zone successfully.

Exercise 2: Configuring DNS Conditional Forwarding

Scenario

You have been asked to configure internal name resolution between A. Datum Corporation and its partner organization, Contoso Ltd.

The main task for this exercise is to add the conditional forwarding record for contoso.com.

Task 1: Add the conditional forwarding record for contoso.com

From the **Conditional Forwarders** node, configure conditional forwarding for Contoso.com:

- a. In the **New Conditional Forwarder** dialog box, in the **DNS Domain** box, type **contoso.com.**
  b. Click in the **<Click here to add an IP Address or DNS Name>** box. Type **131.107.1.2**, and then press Enter. Validation will fail since the server cannot be contacted.
  c. Enable **Store this conditional forwarder in Active Directory, and replicate it as follows**.

Results: After this exercise, you should have successfully configured conditional forwarding.

Exercise 3: Installing and Configuring DNS Zones

Scenario

A small branch office has reported that name resolution performance is poor. The branch office contains a Windows Server 2012 Server that performs several roles. However, there is no plan to implement an additional domain controller. You have been asked to install the DNS server role at the branch office, and then create a secondary zone of Adatum.com. To maintain security, you also have been instructed to configure the branch office server to be on the Notify list for Adatum.com zone transfers. You also should update all branch office clients to use the new name server in the branch office, and then configure the new DNS server role to perform standard aging and scavenging, as needed and specified by corporate policy.

The main tasks for this exercise are as follows:

1. Install the DNS server role on LON-SVR1.
2. Create the required secondary zones on LON-SVR1.
3. Enable and configure zone transfers.
4. Configure TTL, aging, and scavenging.
5. Configure clients to use the new name server.

Task 1: Install the DNS server role on LON-SVR1

1. Switch to **LON-SVR1**, and sign in as **Adatum\Administrator** with the password **Pa$$w0rd**.
2. Use Server Manager to install the **DNS Server** role.

Task 2: Create the required secondary zones on LON-SVR1

1. Open a command prompt.

2. Type the following command to create the required secondary zone:

```
Dnscmd.exe /zoneadd Adatum.com /secondary 172.16.0.10
```

3. Open **DNS Manager**, and then verify the presence of the new secondary forward lookup zone *Adatum.com*.

Task 3: Enable and configure zone transfers

1. Switch to **LON-DC1**.
2. Open a command prompt, and then run the following command to configure zone transfers for the Adatum.com zone:

```
Dnscmd.exe /zoneresetsecondaries Adatum.com /notifylist 172.16.0.21
```

3. In DNS Manager, verify the changes to the Zone Transfers settings:

   a. In the navigation pane, click **Adatum.com**, and then on the toolbar, click **Refresh**.
   b. Right-click **Adatum.com**, and then click **Properties**.
   c. In the **Adatum.com Properties** dialog box, click the **Zone Transfers** tab.
   d. Click **Notify**, and verify that the server **172.16.0.21** is listed. Click **Cancel**.
   e. Close the **Adatum.com Properties** dialog box.

Task 4: Configure TTL, aging, and scavenging

1. On LON-DC1, open the **Adatum.com** zone properties.
2. On the **Start of Authority** tab, configure the **Minimum (default) TTL** value to be **2** hours.
3. Right-click **LON-DC1**, and then select the **Set Aging/Scavenging for All Zones** option to configure aging and scavenging options.
4. Enable **Scavenge stale resource records**, and then use the default values.

Task 5: Configure clients to use the new name server

1. Sign in to the **LON-CL1** virtual machine as **Adatum\Administrator** with the password **Pa$$w0rd**.
2. Use Network and Sharing Center to view the properties of **Local Area Connection**.
3. Reconfigure **Internet Protocol Version 4 (TCP/IPv4)** as follows:

   o Modify the Preferred DNS server: **172.16.0.21**.

Results: After this exercise, you should have successfully installed and configured DNS on LON-SVR1.

Exercise 4: Troubleshooting DNS

Scenario

After implementing the new server, you need to test and verify the configuration by using standard DNS troubleshooting tools.

The main tasks for this exercise are as follows:

1. Test simple and recursive queries.
2. Verify start-of-authority (SOA) resource records with Windows PowerShell.

Task 1: Test simple and recursive queries

1. On LON-DC1, in DNS Manager, open the **LON-DC1** properties.
2. On the **Monitoring** tab, perform a simple query against the DNS server. This is successful.
3. Perform simple and recursive queries against this and other DNS servers. The recursive test fails because there are no forwarders configured.
4. Stop the DNS service, and then repeat the previous tests. They fail because no DNS server is available.
5. Restart the **DNS** service, and then repeat the tests. The simple test is successful.
6. Close the LON-DC1 Properties dialog box.

Task 2: Verify start-of-authority (SOA) resource records with Windows PowerShell

1. Open **Windows PowerShell LON-DC1**.
2. Type the following command, and then press Enter:

```
resolve-dnsname –name Adatum.com –type SOA
```

3. View the results, and then close the Windows PowerShell prompt.