How to Configure the Dynamic RAS Connector Using TCP/IP

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Overview

This document is intended to guide you through connecting two Microsoft® Exchange Server sites by means of the Dynamic RAS Connector. Guidance is provided in the form of a mock scenario in which two Microsoft Exchange Server sites are connected and configured for directory replication.

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Intended Audience

The target audience for this document has a working knowledge of Microsoft Windows NT® networking, Microsoft Windows NT Remote Access Service (RAS), Microsoft TCP/IP, Microsoft Windows NT domains, and Microsoft Exchange Server.

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Before You Begin

After you install RAS, the latest Windows NT service pack must be installed on the Microsoft Exchange Server computer that will host the Dynamic RAS Connector. If you are running Windows NT 3.51, you must have Service Pack 4 or later; if you are running Windows NT 4.0, you must have Service Pack 3 or later. If the server is a Compaq computer that supports the Compaq Software Support Disk (SSD), install the SSD after you install the Windows NT service pack. Installation of the Compaq SSD has resolved many customer issues.

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Terms and Abbreviations

Client: The RAS client
DHCP: Dynamic Host Configuration Protocol
DRAS: Dynamic RAS
LAN: Local area network
NIC: Network interface card
RAS: Remote Access Service

RPC: Remote procedure call
Server: The RAS server

Concepts and Planning

The following example depicts the methodology used to configure the two sites in this mock scenario. The following tables describe the two servers that you configure:

Server Name	SERVER1
Organization	ORGANIZATION
SITE	SITE1
TCP/IP Address	192.168.10.1
Role	Dial-up client

Server Name	SERVER2
Organization	ORGANIZATION
SITE	SITE2
TCP/IP Address	192.168.20.1
Role	RAS server

In this scenario, you configure the Dynamic RAS Connector on SERVER1 to dial SERVER2. You set the Dynamic RAS Connector on SERVER 2 to be remotely initiated and to do no dialing.

SERVER2 assigns an IP address to the dial-up adapter from a predefined IP address pool. The choice of the remote access server IP address pool is based on your needs for Internet and intranet access for remote dial-up clients that may also be dialing in to this RAS server. When possible, choose a network ID for the RAS server that is not the same as that of the network interface card (NIC). If the RAS clients do not need access to the Internet, choosing one of the address ranges reserved for internal network use by the InterNIC is the best practice. The range of IP addresses reserved for intranet use are listed below:

Class A	10.0.0.0
Class B	172.16.0.0 to 172.31.255.254
Class C	192.168.0.0 to 192.168.255.254

The choice is ultimately yours; however, Microsoft recommends a Class C address because a Class C address pool provides up to 254 addresses, which is sufficient to support most RAS implementations.

The RAS IP address pool on the RAS server (SERVER2) is configured so that each pool represents a different Class C network.

Server	Starting Address	Ending Address
SERVER2	192.168.1.1	192.168.1.2

The HOSTS file on SERVER1 is configured so that it can resolve the NetBIOS name of the RAS server (SERVER2). You do not have to configure the HOSTS file on SERVER2.

| Server	HOSTS File Entry	
SERVER1	SERVER2	192.168.20.1

Creating a Dial-Up Address Book Entry

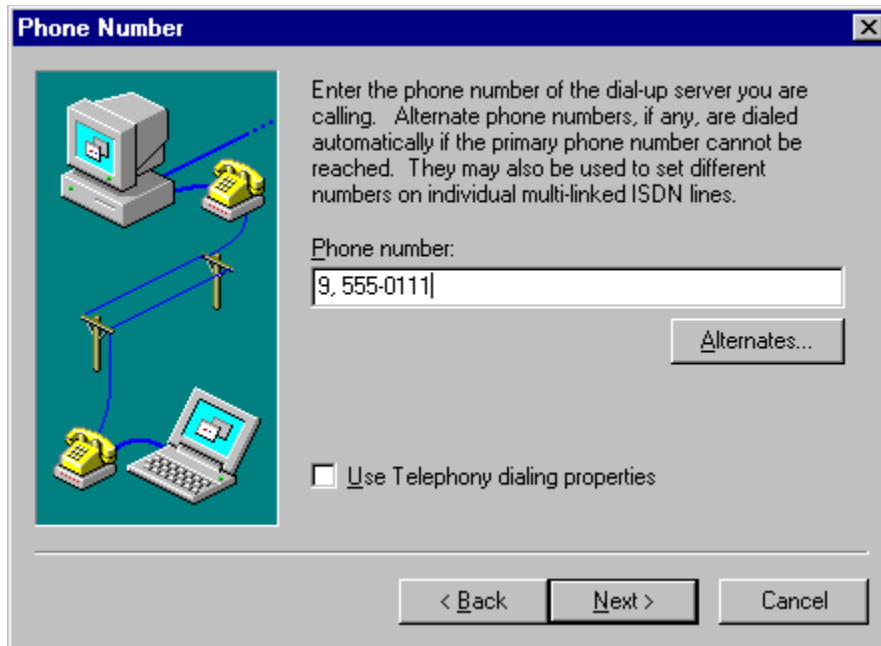Your first step when configuring SERVER1 is to create a Dial-Up address book entry to SERVER2.

1. Click **Start**, point to **Programs**, point to **Accessories**, and click **Dial-Up Networking**. Click **New** to create a new entry. The following dialog box appears. Type a descriptive title, and then click **Next**.

2. When you are prompted with the following dialog box, do not select any of the options. Click **Next**.
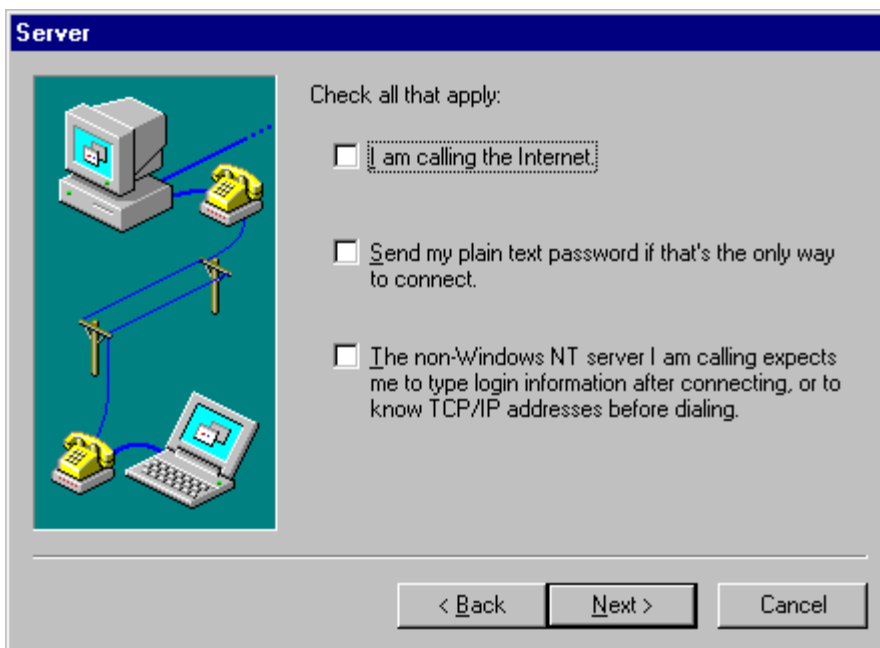
3. When you are prompted with the following dialog box, type the phone number for SERVER2, and then click **Next**.

Phone Number

Enter the phone number of the dial-up server you are calling. Alternate phone numbers, if any, are dialed automatically if the primary phone number cannot be reached. They may also be used to set different numbers on individual multi-linked ISDN lines.

Phone number:

9, 555-0111

Alternates...

☐ Use Telephony dialing properties

< Back   Next >   Cancel

4. When you are prompted with the following dialog box, click **Finish** to complete the Dial-Up address book entry setup.

New Phonebook Entry Wizard

That's it.

Press Finish to save 'DRAS to SERVER2'.

< Back   Finish   Cancel

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Configuring SERVER1

Your next step is to configure the RAS service on SERVER1.

1. In Windows NT Control Panel, double-click **Network**. When the following dialog box appears, click the **Services** tab. Select **Remote Access Service**, and then click **Properties**.
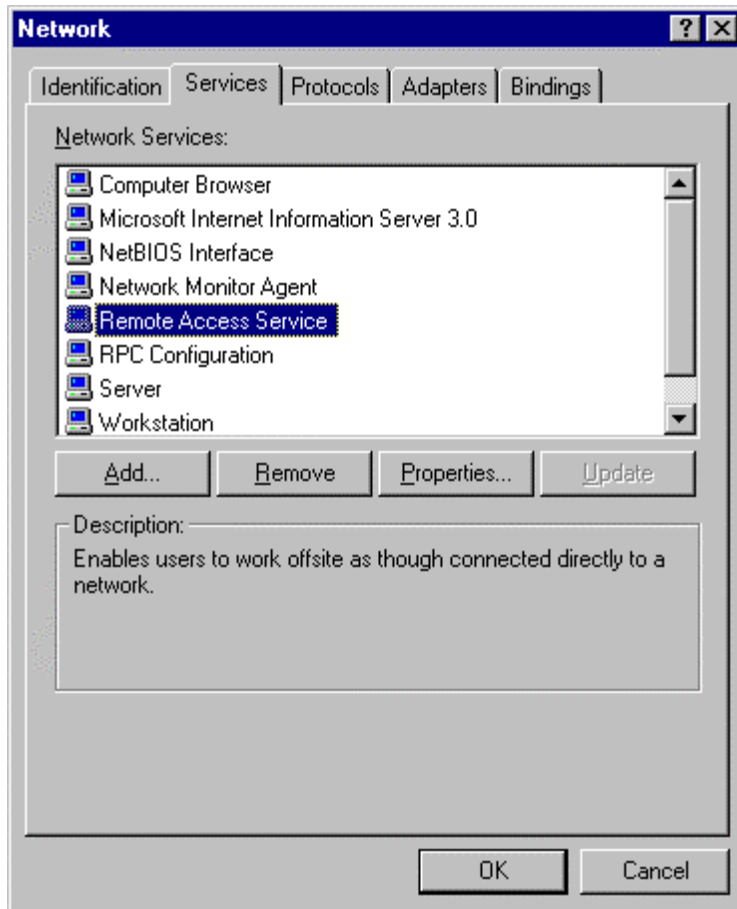
2. When the following dialog box appears, click **Configure**.
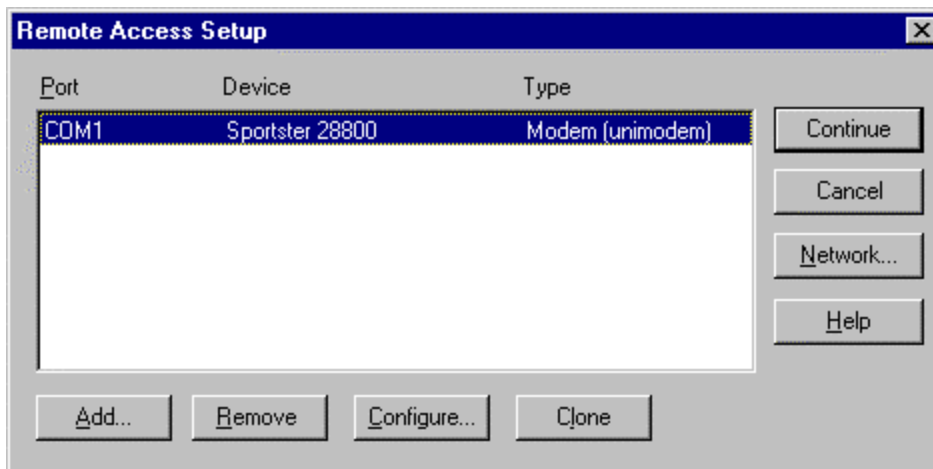
3. When the following dialog box appears, click **Dial out and Receive calls**, and then click **OK**.
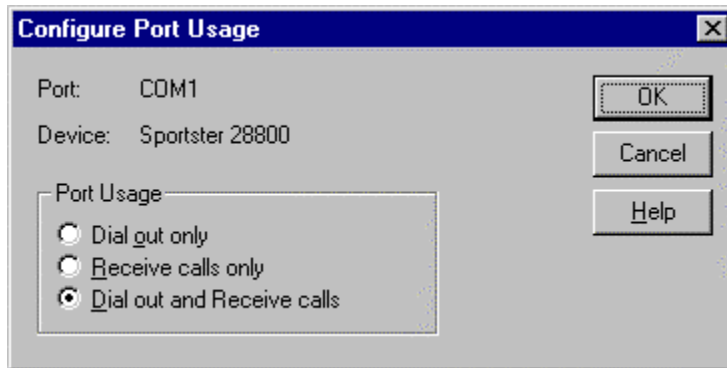
4. When the following dialog box appears, click **Network**.
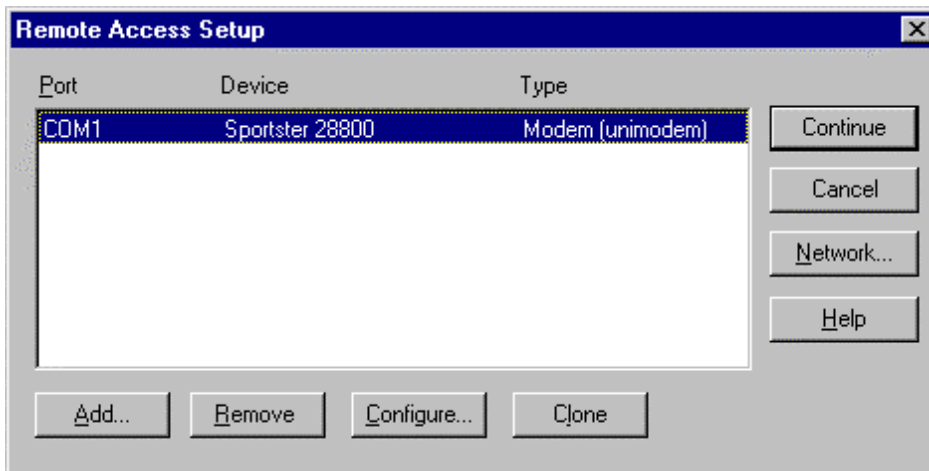
5. When the following dialog box appears, under **Dial out Protocols**, verify that **TCP/IP** is the only check box selected. Click **OK**. Quit the Network application, and restart the server.
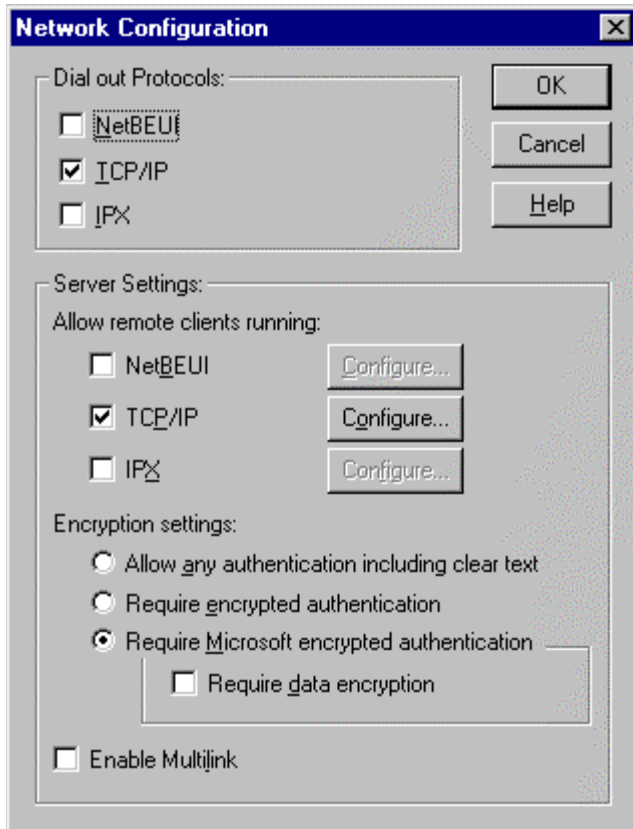
6. After you restart the server you need to adjust your HOSTS file to point to the IP address of the NIC on SERVER2. Open the HOSTS file located at C:\Winnt\ System32\Driver\Etc. Add the following entry to the bottom of the file:

    SERVER2   192.168.20.1

7. Save the file, and verify that it was saved with no extension (that is, HOSTS, instead of HOSTS.txt).

    Note Be sure to make this entry specific to your configuration. Also make sure that you press ENTER after adding the host entry.

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Configuring the Dynamic RAS Connector

Your next step is to configure the Dynamic RAS Connector on SERVER1.

1. Start the Microsoft Exchange Administrator program. On the **File** menu, click **New Other**, and then click **MTA Transport Stack**. When the following dialog box appears, select **RAS MTA Transport Stack**, and then click **OK**.
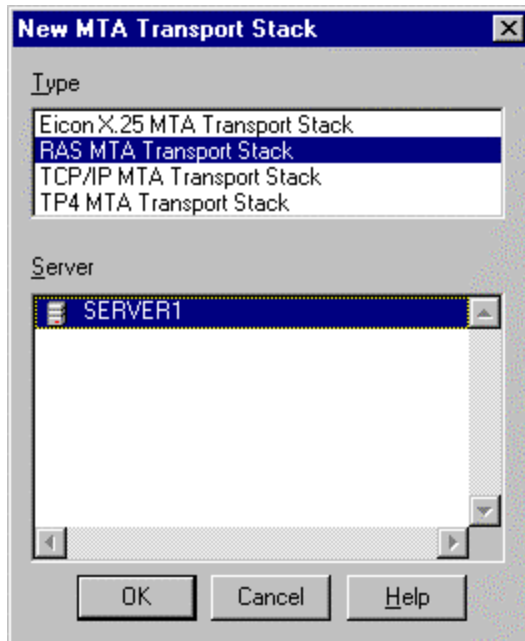
2. When the following dialog box appears, click **OK**.

3. On the **File** menu, click **New Other**, and then click **Dynamic RAS Connector**. When the following dialog box appears:

   a. In the **Display name** box, type a descriptive name.
   b. In the **Directory name** box, type the same descriptive name.
   c. In the **Remote server name** box, type the NetBIOS name of the remote server. Be sure to type this in all capital letters.
   d. In the **Phone book entry** list, select the phone book entry to the remote server.

4. Click the **Schedule** tab. When the following dialog box appears, ensure the schedule is set to **Always**. While you are configuring the Dynamic RAS Connector, leave the schedule set to **Always**. After your Dynamic RAS Connector is configured and functioning properly, you may want to change this option accordingly.

5. Click the **RAS Override** tab. When the following dialog box appears:

   a. In the **Windows NT username** box, type the Exchange service account of the remote server.
   b. In the **Password** box, type the password for the remote service account.
   c. In the **Confirm password** box, retype the password.
   d. In the **Windows NT domain name** box, type the name of the Windows NT domain that the remote server is located in.

6. Click the **MTA Override** tab. When the following dialog box appears, adjust the following settings:

   a. Change **Checkpoint size (K)** to 15.
   b. Change **Window size** to 3.
   c. Change **Max open retries** to 10.
   d. Change **Max transfer retries** to 5.
   e. Change **Open interval (sec)** to 120.
   f. Change **Transfer interval (sec)** to 60.
   g. Change **Lifetime (sec)** to 15.
   h. Change **Disconnect (sec)** to 15.

7. Click the **Connected Sites** tab. When the following dialog box appears, click **New**.

8. When the following dialog box appears, in the **Site** box, type the remote server's site name. Click **OK** to return to the **Connected Sites** tab. Click **OK** to quit the DRAS configuration.

Configuring the Directory Replication Connector

Now that the Dynamic RAS Connector on SERVER1 is configured, you need to configure the directory replication connector.

1. On the **File** menu, click **New Other**, and then click **Directory Replication Connector**. When the following dialog box appears:

   a. In the **Server in remote site** box, type the remote server's NetBIOS name.
   b. Click **No, the remote site is not available on this network**. Click **OK** to continue.

2. When the following dialog box appears, click **OK** to accept the default connector settings.

Configuring SERVER2

Your first step when configuring SERVER2 is to create a Dial-Up address book entry to SERVER1.

1. Even though SERVER2 does not initiate calls, you still need to create the address book entry because it is required when configuring the Dynamic RAS Connector. Follow the instructions in the earlier Creating a Dial-Up Address Book Entry section.

2. Configure the RAS service. In Windows NT Control Panel, double-click **Network**. Click the **Services** tab. When the following dialog box appears, select **Remote Access Service**, and then click **Properties**.
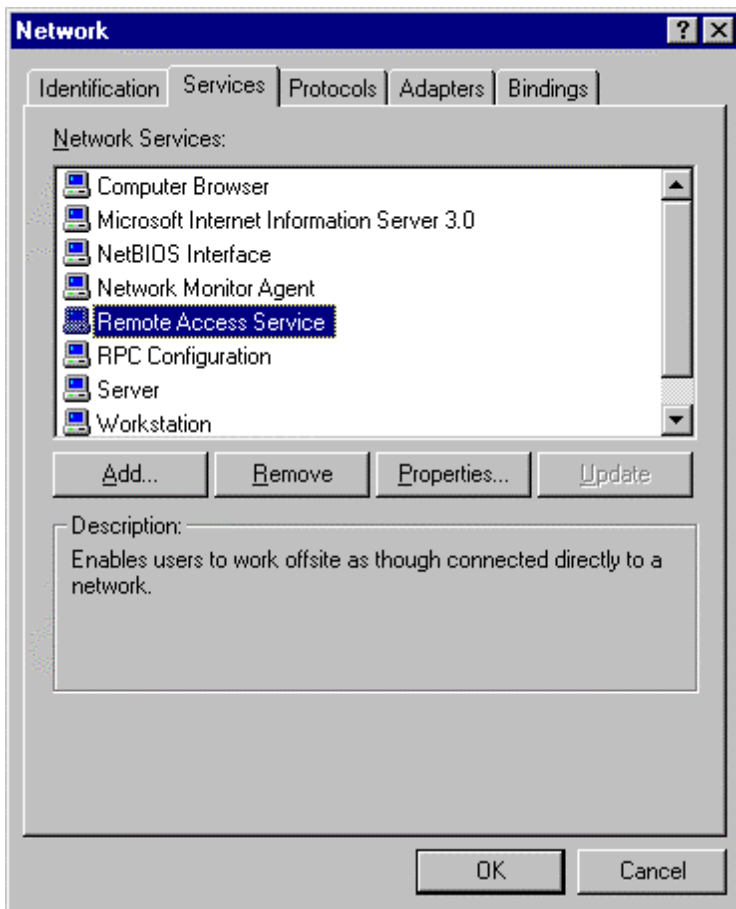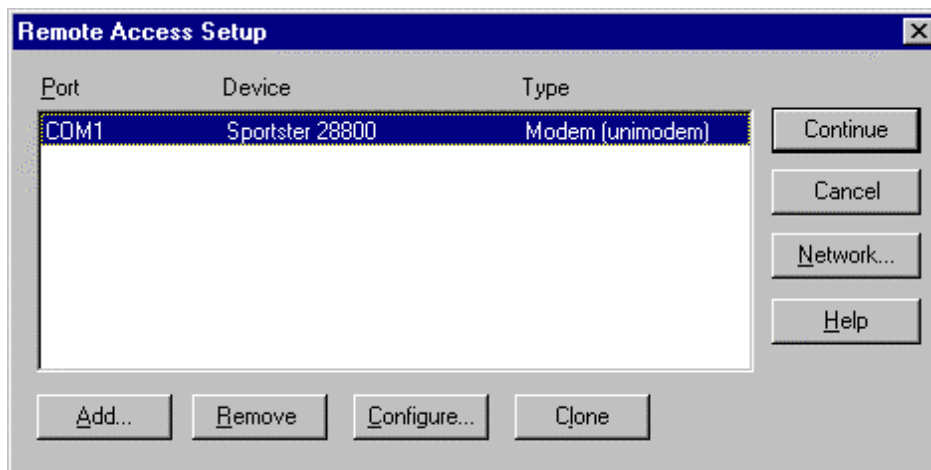
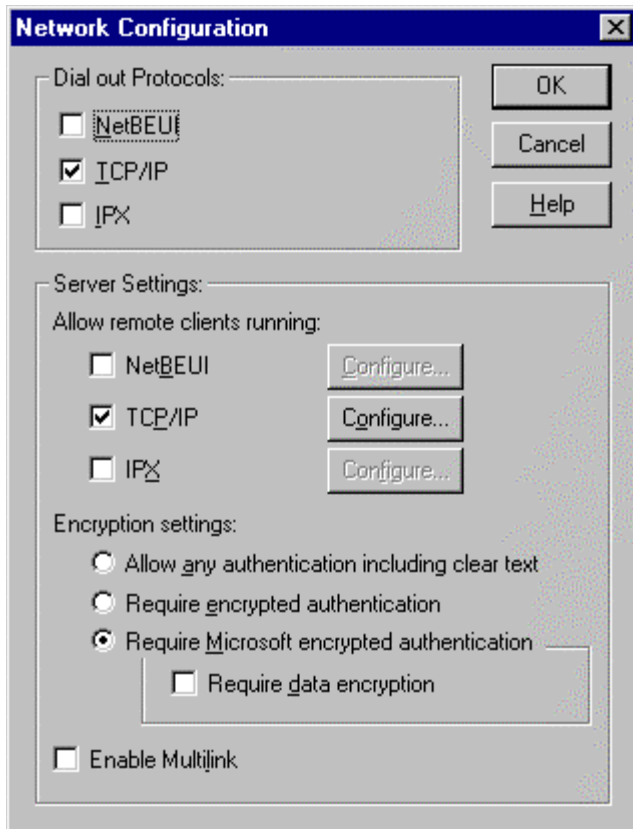3. When the following dialog box appears, click **Configure**.
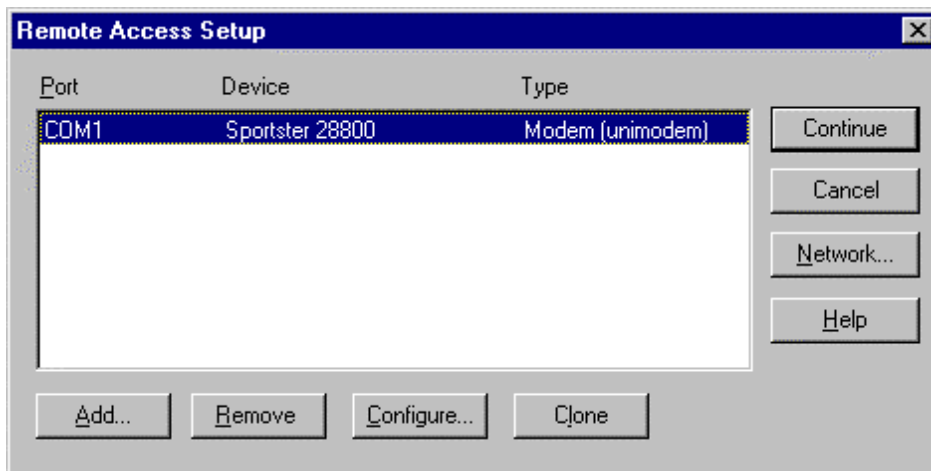
4. When the following dialog box appears, click either **Dial out and Receive calls** or **Receive calls only**, depending on the configuration you want, and then click **OK**.
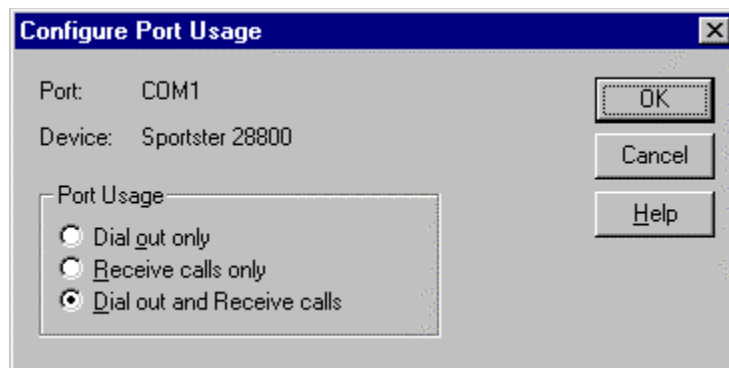

5. When the following dialog box appears, click **Network**.

6. When the following dialog box appears, under **Dial out Protocols**, verify that **TCP/IP** is the only check box selected. Under **Server Settings**, next to the **TCP/IP** check box, click **Configure**.

7. When the following dialog box appears, adjust the following settings:
   a. Click **Use static address pool**.
   b. In the **Begin** box, type the starting address of your pre-selected address pool (192.168.1.1 for this mock scenario; your address pool may vary depending on your configuration).
   c. In the **End** box, type the ending address of your pre-selected address pool (192.168.1.2 for this mock scenario).
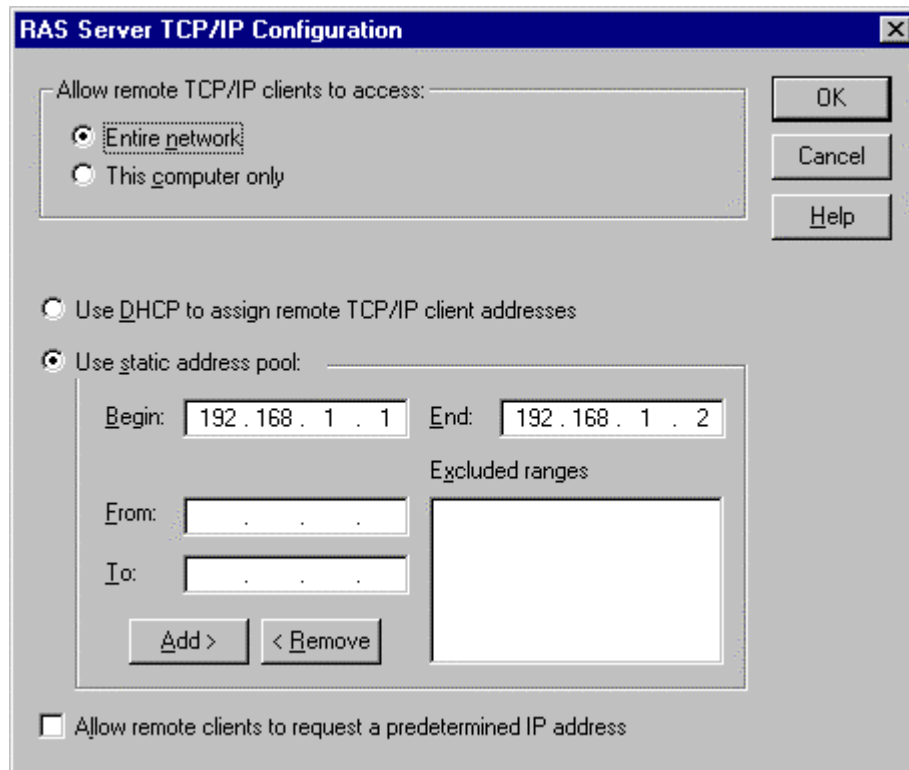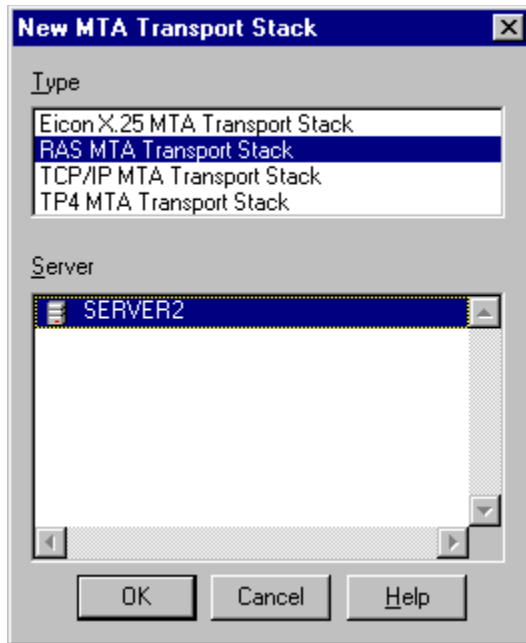

8. Click **OK** to accept the changes. Quit the Network application, and restart the server.
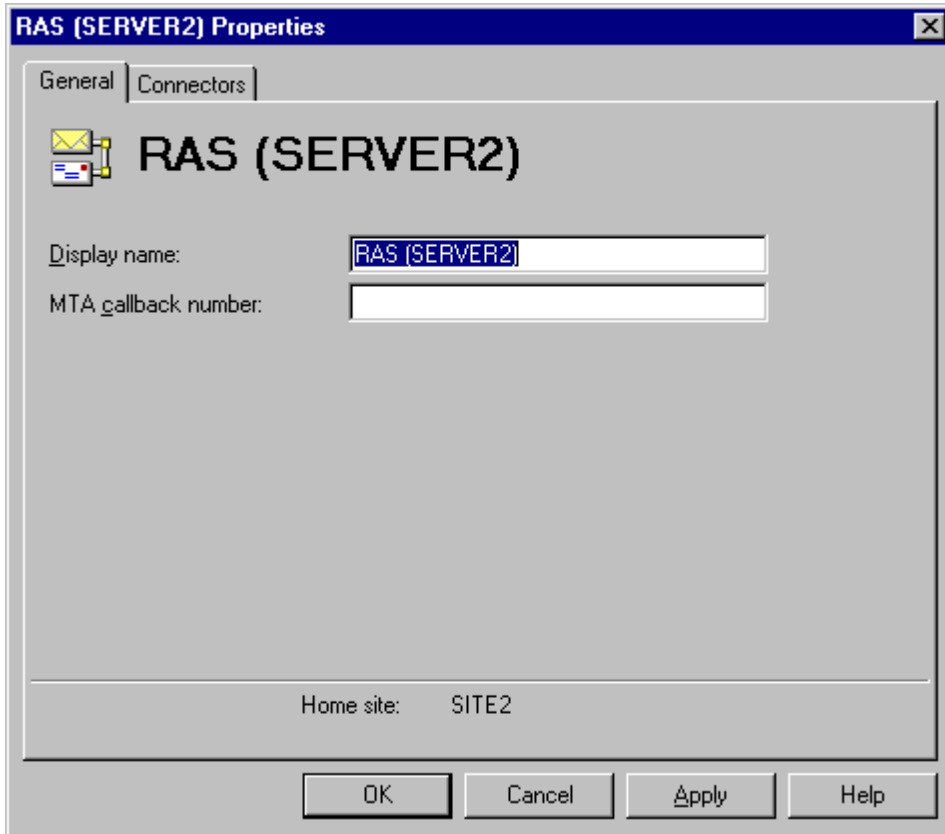
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Configuring the Dynamic RAS Connector

After you restart the server, you need to configure the Dynamic RAS Connector.

1. Start the Microsoft Exchange Administrator program on SERVER2. On the **File** menu, click **New Other**, and then click **MTA Transport Stack**. When the following dialog box appears, select **RAS MTA Transport Stack**, and then click **OK**.
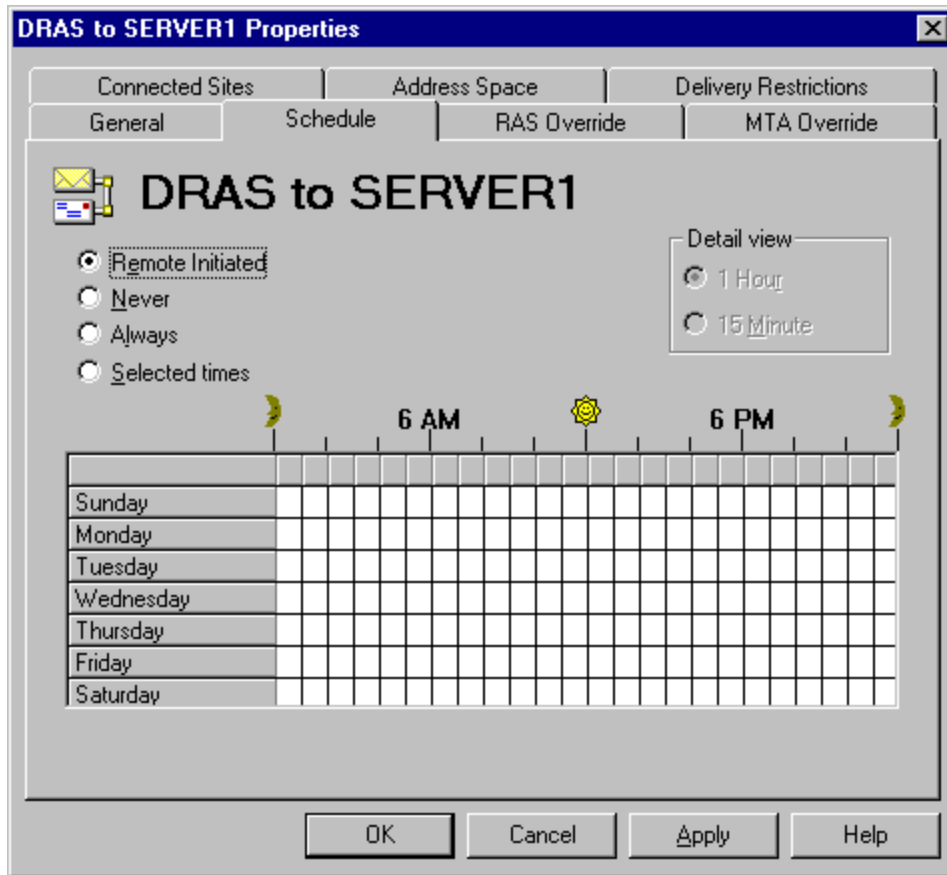
2. When the following dialog box appears, click **OK**.

RAS (SERVER2) Properties

General | Connectors |

RAS (SERVER2)

Display name: RAS (SERVER2)

MTA callback number:

Home site: SITE2

| OK | Cancel | Apply | Help |

3. On the **File** menu, click **New Other**, and then click **Dynamic RAS Connector**. When the following dialog box appears:

    a. In the **Display name** box, type a descriptive name.
    b. In the **Directory name** box, type the same descriptive name.
    c. In the **Remote server name** box, type the NetBIOS name of the remote server. Be sure to type this in all capital letters.
    d. In the **Phone book entry** list, select the phone book entry to the remote server. This address book entry is not used but the list still needs to have a valid entry selected.
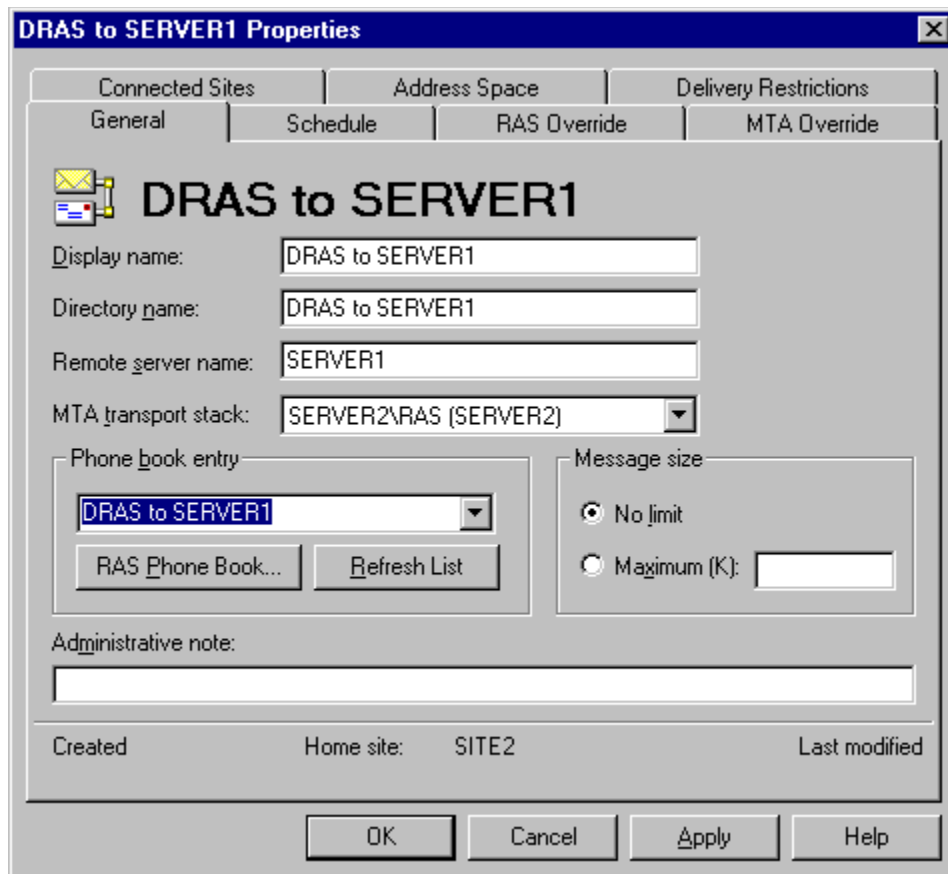
4. Click the **Schedule** tab. When the following dialog box appears, click **Remote Initiated**. Because this server does not dial, you want SERVER1 to initiate the communication.

5. Click the **RAS Override** tab. When the following dialog box appears:

   a. In the **Windows NT username** box, type the Exchange service account of the remote server.
   b. In the **Password** box, type the password for the remote service account.
   c. In the **Confirm password** box, retype the password.
   d. In the **Windows NT domain name** box, type the name of the Windows NT domain that the remote server is located in.

6. Click the **MTA Override** tab. When the following dialog box appears, adjust the following settings:

    a. Change **Checkpoint size (K)** to 15.
    b. Change **Window size** to 3.
    c. Change **Max open retries** to 10.
    d. Change **Max transfer retries** to 5.
    e. Change **Open interval (sec)** to 120.
    f. Change **Transfer interval (sec)** to 60.
    g. Change **Lifetime (sec)** to 15.
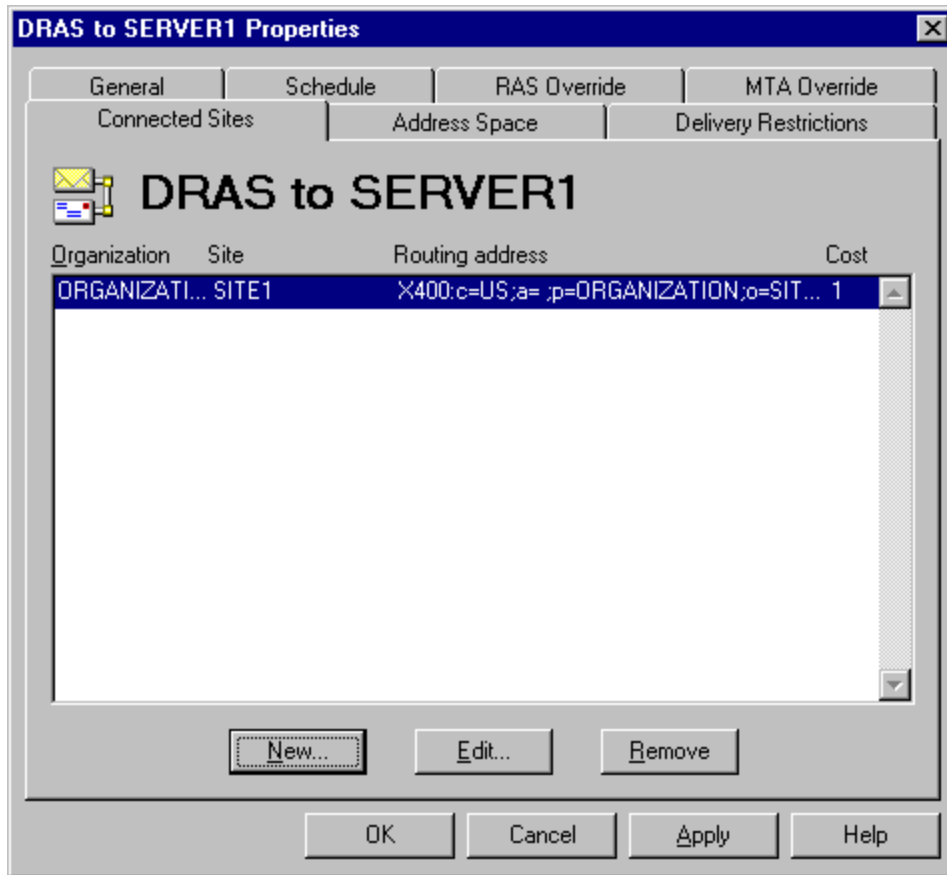   h. Change **Disconnect (sec)** to 15.

7. Click the **Connected Sites** tab. When the following dialog box appears, click **New.**

8. When the following dialog box appears, in the **Site** box, type the remote server's site name. Click **OK** to return to the **Connected Sites** tab.

9. The **Connected Sites** tab displays this newly created entry. Click **OK** to finish the Dynamic RAS Connector configuration.
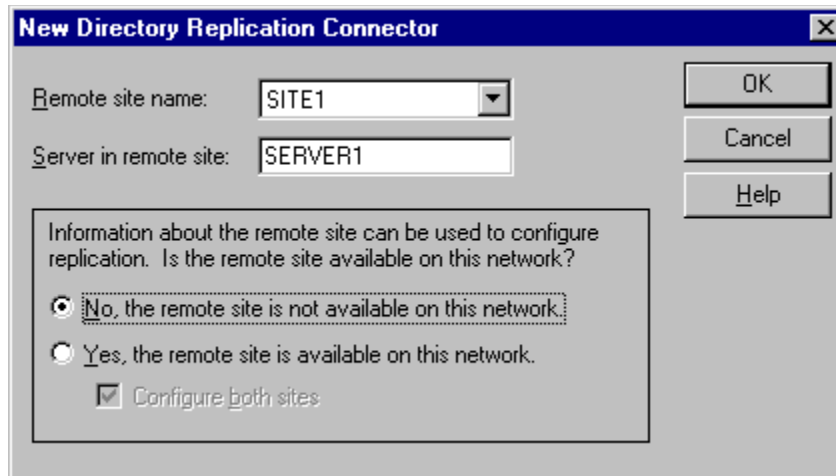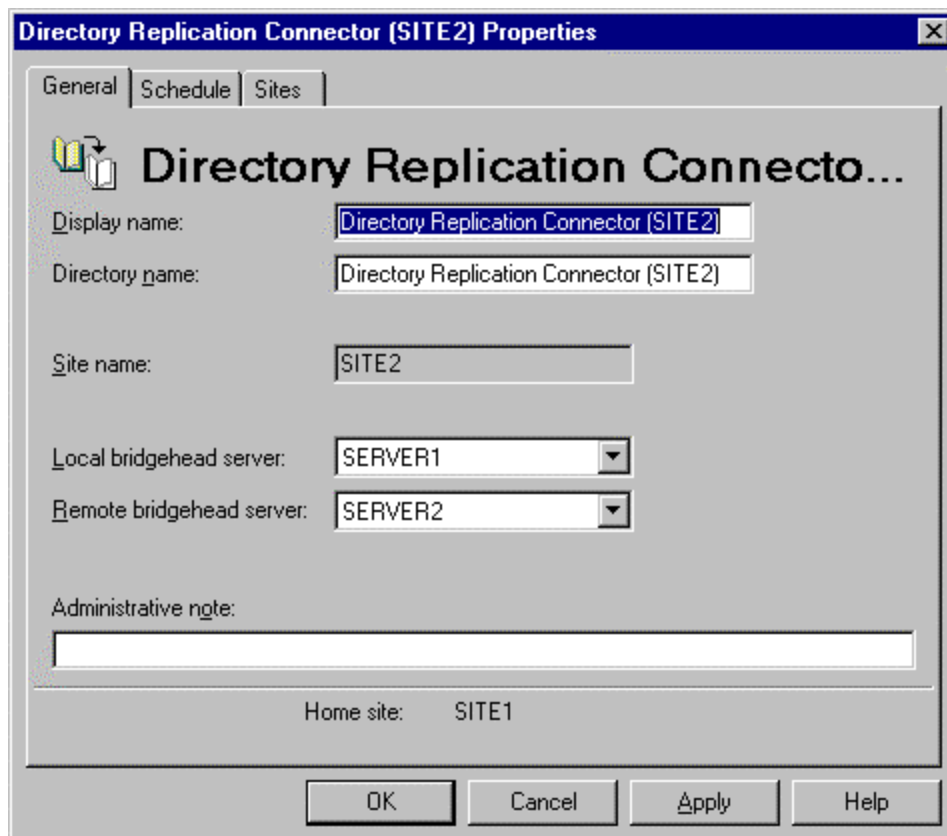
Configuring the Directory Replication Connector

Now that the Dynamic RAS Connector on SERVER2 is configured, you need to configure the directory replication connector.

1. On the **File** menu, click **New Other**, and then click **Directory Replication Connector**. When the following dialog box appears:

   a. In the **Server in remote site** box, type the remote server's NetBIOS name.
   b. Click **No, the remote site is not available on this network**. Click **OK** to continue.

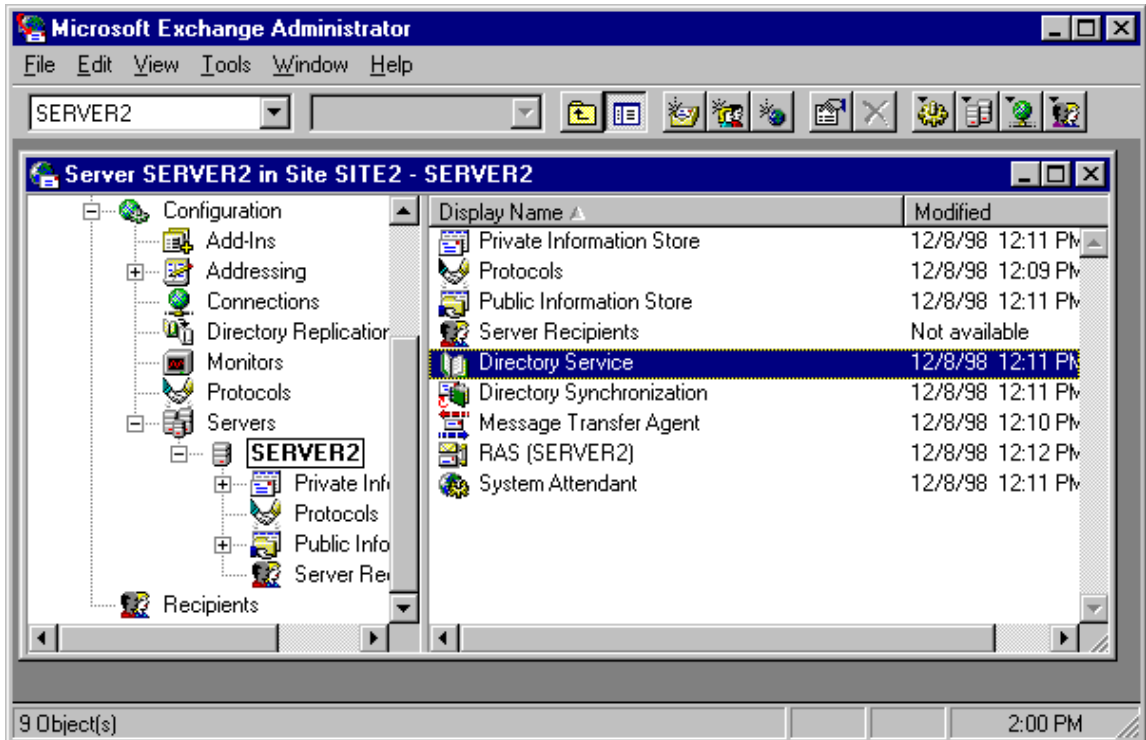2. When the following dialog box appears, click **OK** to accept the default connector settings.

Initiating Directory Replication

Now that the Dynamic RAS Connectors and directory replication connectors are configured on both SERVER1 and SERVER2, you need to initiate directory replication.

1. On SERVER2, start the Microsoft Exchange Administrator program. Click to expand the **Configuration** object, click to expand the **Servers** object, and click **SERVER2**. In the right pane, double-click **Directory Service**.

2. When the following dialog box appears, click **Check Now** to begin a knowledge consistency check. When the check is complete, quit the **Directory Service Properties** page.
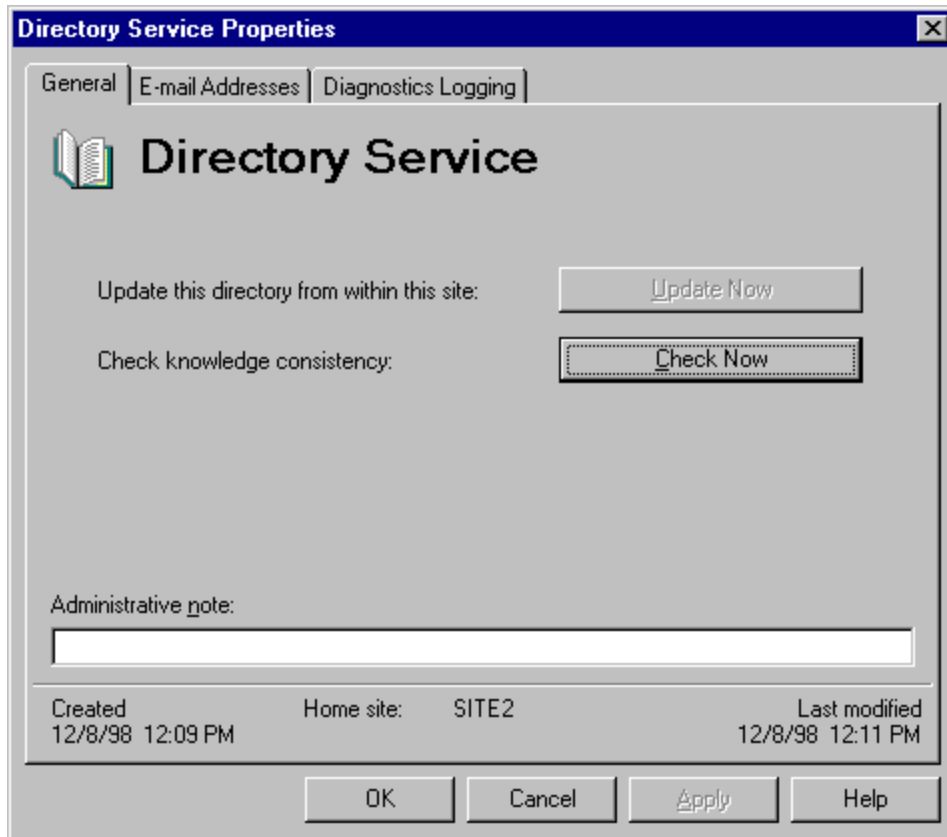
3. In the left pane, under the **Configuration** object, click **Directory Replication**. In the right pane, select the directory replication connector to the other site, and then double-click it.
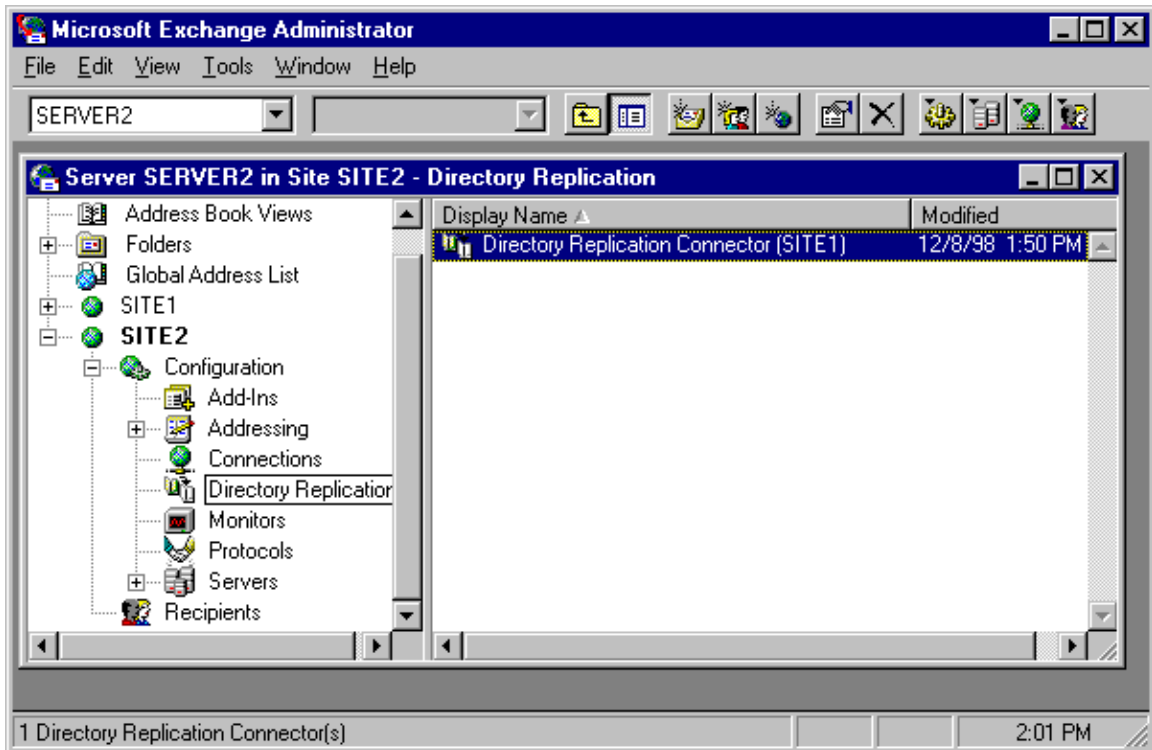
4. Click the **Sites** tab, and then click **Request Now**.

5. When the following dialog box appears, click **Refresh all items in the directory**, and then click **OK**. When replication finishes, close the **Directory Replication Properties** dialog box.
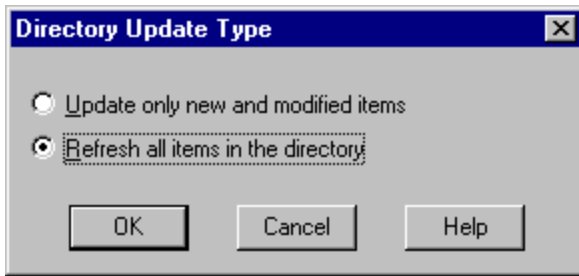
6. Repeat this process and force replication on SERVER1.

When replication is complete, your Microsoft Exchange Administrator program is able to see all containers for both sites.

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