

## Deploying DSR in a Microsoft Windows Server 2003 or 2008 Environment

<https://campus.barracuda.com/doc/19333318/>

This article refers to the Barracuda Load Balancer ADC and Microsoft® Windows Server® 2003 and 2008.

To prepare servers running Microsoft Windows Server 2003 or Windows Server 2008 for Direct Server Return (DSR), complete the following steps for each server.

### Step 1. Disable the Loopback Adapter

By default, the Windows firewall blocks all connections to the loopback adapter. To enable traffic to the loopback adapter, disable the built-in firewall or manually change the rules to enable traffic to and from the loopback adapter.

### Step 2. Install the Loopback Adapter

#### Windows Server 2003

For instructions on installing the Microsoft Loopback Adapter for Windows Server 2003, see [How to install the Microsoft Loopback Adapter in Microsoft Windows Server 2003](#).

#### Windows Server 2008

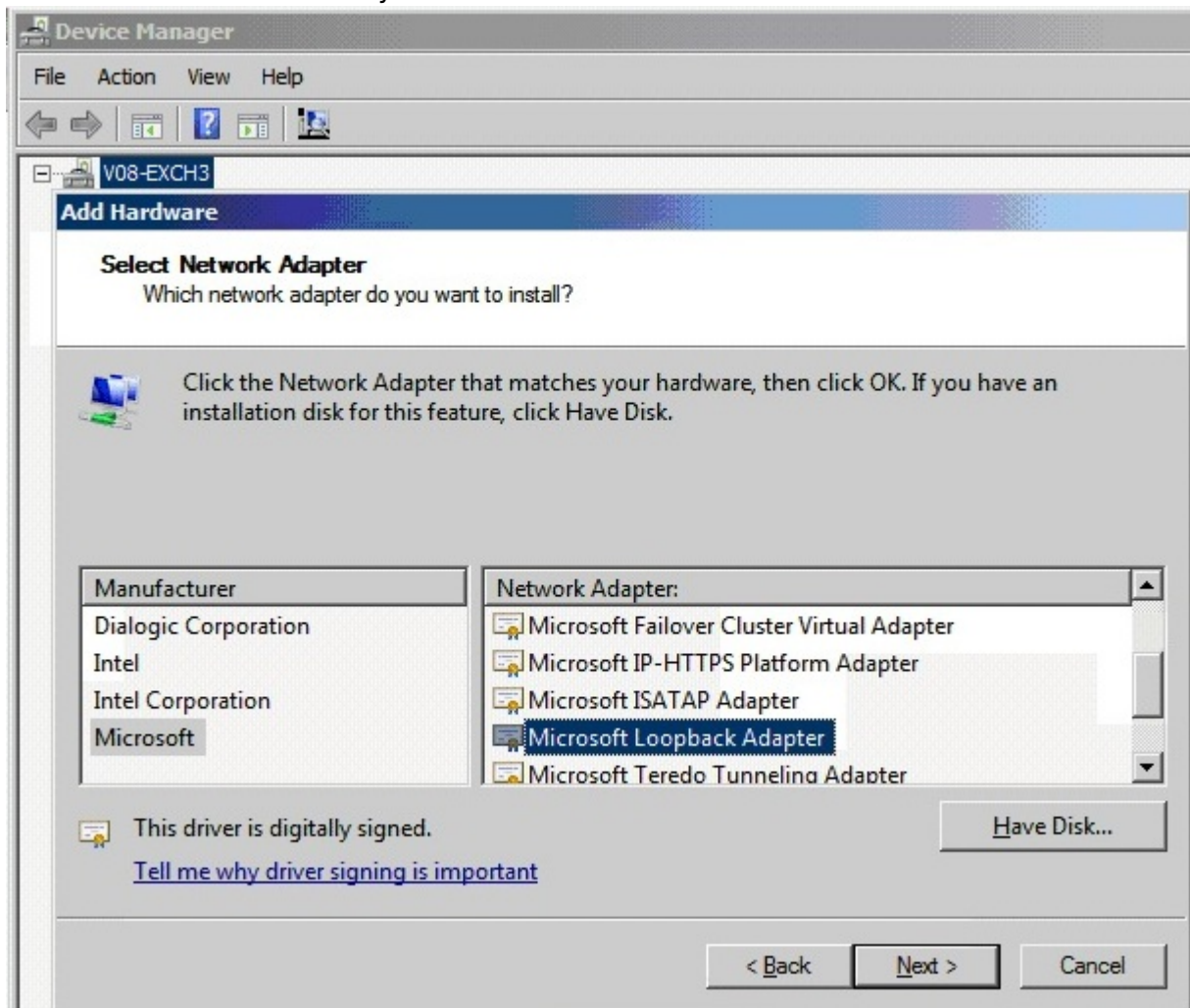
For instructions on installing the Microsoft KM-TEST Loopback Adapter for Windows Server 2003, see [Installing the Microsoft Loopback Adapter in Windows 8 and Windows Server 2012](#).

"Microsoft Loopback Adapter" is renamed as "Microsoft KM-TEST Loopback Adapter" in Windows 2008 and Windows Server 2012.

#### Windows Server 2008 or Windows Server 2008 R2

To install the Microsoft loopback adapter for Windows Server 2008:

1. Open Device Manager. On the Start menu, click Run and type devmgmt\*.msc at the prompt.
2. Right-click the server name and select **Add legacy hardware**.
3. When you are prompted by the wizard, select **Install the hardware that I manually select from a list (Advanced)**.
4. Find **Network Adapter** in the list, and click **Next**.
5. From the list of manufacturers, select **Microsoft** and **Microsoft Loopback Adapter**. A new network interface is added to your server.



### Step 3. (Windows Server 2008 or Windows Server 2008 R2 Only) Implement the Weak Host Model

If you are using Windows Server 2003, you can skip to [Step 4 Add the Loopback Adapter to your Site Bindings](#).

If you are using Windows Server 2008 or Windows Server 2008 R2, implement the Windows networking stack with the weak host model (which is the same model used in Windows Server 2003).

DSR works by modifying the destination MAC address of the incoming traffic to one of the real servers behind your VIP address. In versions of Windows prior to 2008, the Windows networking stack used a weak host model which allowed the host to receive packets on an interface that is not assigned as the destination IP address of the packet being received. With Windows Server 2008, Microsoft implemented a strong host model which breaks the method that DSR uses.

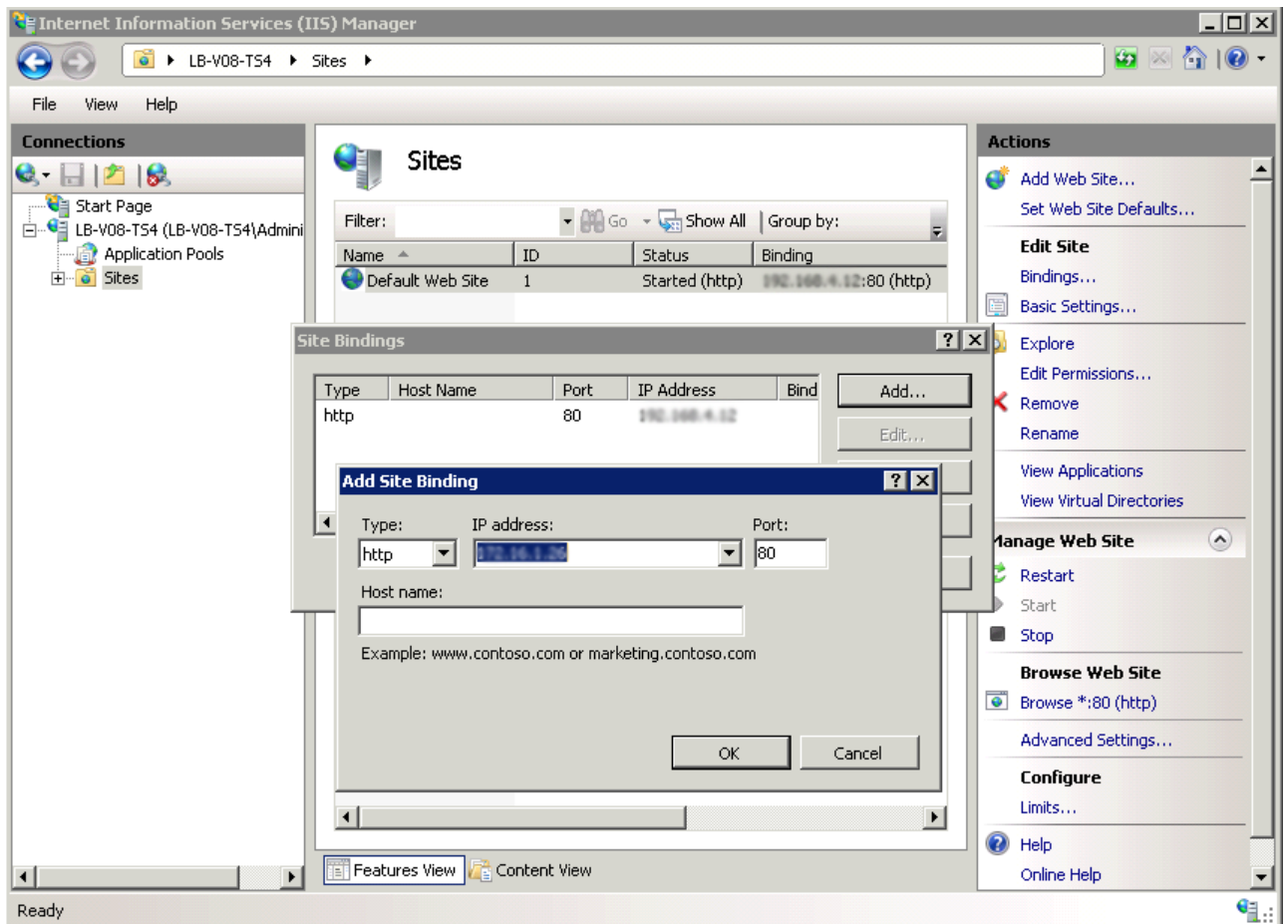
1. Open a command prompt with elevated permissions. To determine the interface ID for both the loopback adapter and the main NIC on the server, type:  
`netsh interface ipv4 show interface`
2. Note the IDX for both the main network interface and the loopback adapter that you created. If you have not changed the interface names for this server then usually the main NIC displays as Local Area Connection, and the loopback adapter is named Local Area Connection 2.
3. An entry appears with the IDX numbers for both your loopback adapter and your Internet facing NIC. For each of these adapters enter the following commands:  
`netsh interface ipv4 set interface <idx> weakhostreceive=enabled netsh interface ipv4 set interface weakhostsendsend=enabled netsh interface ipv4 set interface <idx> weakhostreceive=enabled`  
For example:  
`netsh interface ipv4 set interface 23 weakhostreceive=enabled netsh interface ipv4 set interface 24 weakhostsendsend=enabled netsh interface ipv4 set interface 24 weakhostreceive=enabled`

#### Step 4. Add the Loopback Adapter to your Site Bindings (IIS only)

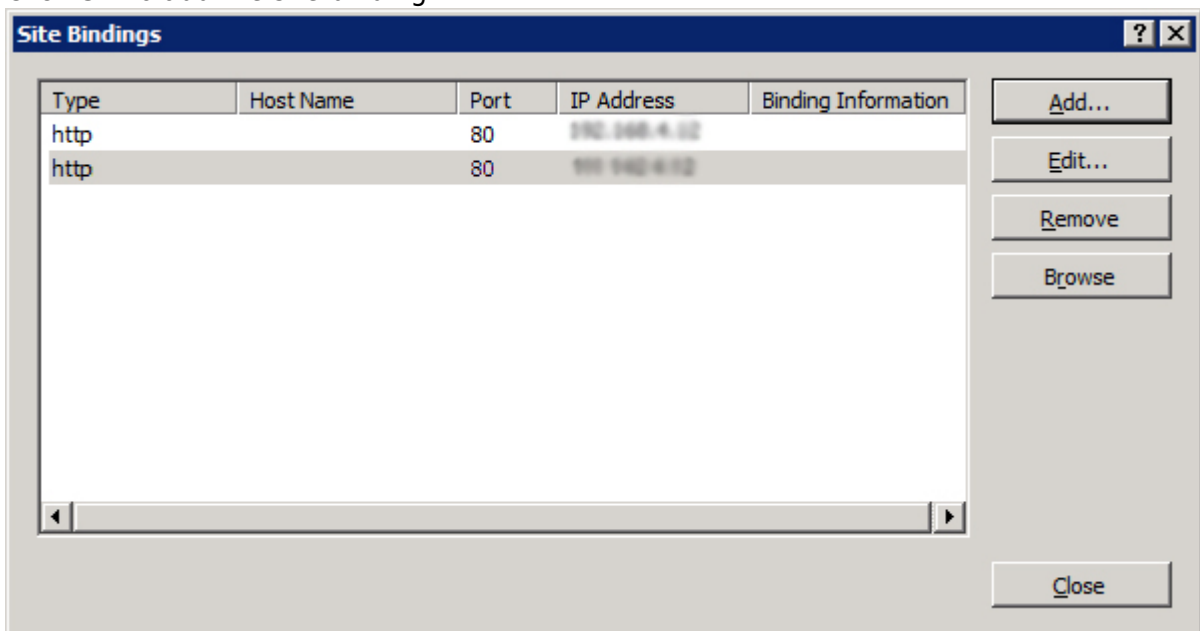
By default, IIS includes all interfaces. However, if a site is bound to an individual IP address, include the IP address for the loopback adapter (your VIP address) in the site bindings in IIS.

To bind the loopback adapter:

1. Open the Internet Information Services (IIS) Manager.
2. In the **Connections** pane, expand the **Sites** node in the tree.
3. Click **Default Web Site** or the name of the site that you are modifying.
4. In the **Actions** pane, click **Bindings**.
5. In the **Site Bindings** window, click **Add**.



6. In the **Add Site Binding** window, select the type of site and then enter the IP address and port of your loopback adapter.
7. Click **OK** to add the site binding.



8. In the **Actions** pane, click **Restart** under **Manage Web Site** to ensure that the new binding takes effect.

## **Step 5. Verify Direct Server Return Deployment**

---

Ping the real servers and the VIP address, and telnet to the real servers. If the ping does not work or the connection is refused, then the loopback adapter has not been configured correctly.

Verify that the loopback adapters are non-ARPing. On either Linux or Windows systems, use the arp -a command. Also, view the systems event logs to check for IP address conflicts.

If the client cannot access the application after the service is set up, then the IIS (Windows) or application has not been associated with the real IP address and the VIP address.

## Figures

1. screenshot01.jpg
2. Screen shot IIS.png
3. site bindings2.jpg

© Barracuda Networks Inc., 2019 The information contained within this document is confidential and proprietary to Barracuda Networks Inc. No portion of this document may be copied, distributed, publicized or used for other than internal documentary purposes without the written consent of an official representative of Barracuda Networks Inc. All specifications are subject to change without notice. Barracuda Networks Inc. assumes no responsibility for any inaccuracies in this document. Barracuda Networks Inc. reserves the right to change, modify, transfer, or otherwise revise this publication without notice.