

## How to use the Windows Server 2003 Routing and Remote Access Service or ISA Server 2006 or ISA Server 2004 with a DSL router for Internet access

For a Microsoft Internet Security and Acceleration (ISA) Server 2000 version of this article, see [321516](#) (<http://support.microsoft.com/kb/321516/EN-US/>).

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### On This Page

↓ [SUMMARY](#)

↓ [MORE INFORMATION](#)

↓ [Useful hints](#)

↓ [How to configure a Linksys BEFSR41 four-port cable/DSL router to route PPTP traffic to a Windows Server 2003-based VPN server](#)

↓ [REFERENCES](#)

### SUMMARY

This article describes how to connect a computer that is running either the Microsoft Windows Server 2003 Routing and Remote Access service or Internet Security and Acceleration (ISA) Server 2006 or ISA Server 2004 to a cable/DSL router and to access the Internet for browsing and e-mail for all clients on your local area network (LAN). If you use a DSL router, you do not have to use a Point to Point Protocol over Ethernet (PPPoE) driver on all Windows clients and on the Windows 2003-based server. In this environment, you have to make sure that you are using the correct routing configuration on both the DSL router and the server that is running either Routing and Remote Access or ISA Server. The DSL router has to know about all networks that are behind the Windows 2003-based server to be able to return all answers to the client's LAN.

### MORE INFORMATION

The following configuration is an example of a network and an IP configuration:

```
Internet |--| IP-address_from_ISP - DSL_Router - 192.168.1.1 |--| 192.168.1.2 - Windows_Server_2003 -
192.168.168.249 |--| Hub_or_switch |--| Clients
```

This configuration uses the following settings:

- DSL router

IP address: 192.168.1.1  
Subnet Mask: 255.255.255.0

- Windows 2003-based server

DSL network adapter IP address: 192.168.1.2  
Subnet Mask: 255.255.255.0  
Gateway: 192.168.1.1  
LAN network adapter IP address: 192.168.168.249  
Subnet Mask: 255.255.255.0

The default gateway of the DSL network adapter (external network) points to the IP address of the DSL router.

- Client workstation

LAN network adapter IP address: 192.168.168.10  
Subnet Mask: 255.255.255.0,  
Gateway: 192.168.168.249

To create the scenario that is described in the "Summary" section of this article, set the default gateway of all clients to the IP address of the LAN network adapter of the Windows 2003-based server. Set the DNS server entry on all network adapters to the IP address of the ISP's DNS server or to the IP address of the DSL router if it is configured as a DNS server.

If you experience connectivity issues on clients, check the routing table on the DSL router. You can access most devices by using an HTTP Web page (such as <http://192.168.0.1>). If the route is not present, add a static route to the client's network. To do so, use the following settings:

Active Routes  
Network\_Destination: 192.168.168.0  
Netmask: 255.255.255.0  
Gateway: 192.168.1.2

Interface: 192.168.1.1  
Metric: 1

ISA Server has a built-in routing functionality. For more information about this functionality, see the Microsoft ISA Server Help. For additional information about the correct setting for internal and external network adapters and the Local Address Table (LAT), click the following article number to view the article in the Microsoft Knowledge Base:

[300876](http://support.microsoft.com/kb/300876/) (http://support.microsoft.com/kb/300876/) How to connect your company to the Internet by using ISA Server 2000 with Windows 2000

### Useful hints

- Make sure that you are using the latest firmware updates for your DSL router.
- Most DSL devices have to be restarted after you make a configuration change. After you restart the device, the switching table is rebuilt if the router has a built-in switch technology.
- Review the documentation of your DSL router. If you do not have the manuals, see the manufacturer's Web site. For information about how to contact the manufacturer of your router, click the appropriate article number in the following list to view the article in the Microsoft Knowledge Base:

[65416](http://support.microsoft.com/kb/65416/) (http://support.microsoft.com/kb/65416/) Hardware and Software Third-Party Vendor Contact List, A-K

[60781](http://support.microsoft.com/kb/60781/) (http://support.microsoft.com/kb/60781/) Hardware and Software Third-Party Vendor Contact List, L-P

[60782](http://support.microsoft.com/kb/60782/) (http://support.microsoft.com/kb/60782/) Hardware and Software Third-Party Vendor Contact List, Q-Z

- If you use a virtual private network (VPN), the router must be able to handle two VPN connections at the same time. However, some routers cannot handle two VPN tunnels at the same time.
- A router and firewall must be able to pass TCP port 1723 (Point-to-Point Tunneling Protocol [PPTP]) and Generic Route Encapsulation (GRE) protocol 47 for PPTP traffic to connect correctly. When a cable or DSL router cannot map GRE protocol 47 to the Routing and Remote Access server, you cannot connect to the server from the Internet.

To resolve this issue, set the Routing and Remote Access server to "DMZ host" mode in the DSL router configuration and configure it to pass TCP port 1723 (for PPTP/VPN). Alternatively, you can let the router pass all requests using network address translation (NAT) with IP address translation, but without TCP port translation, and then assign a public address to the external network adapter of the Routing and Remote Access server. For additional information about this issue, click the following article number to view the article in the Microsoft Knowledge Base:

[323441](http://support.microsoft.com/kb/323441/) (http://support.microsoft.com/kb/323441/) How to install and configure a Virtual Private Network Server in Windows Server 2003

- If you use a DSL router that is configured for NAT, you must configure it to pass TCP port 25 traffic to receive e-mail messages from the Internet. TCP port 80 is used for Web browsing.
- If you experience connectivity problems to the Internet on a computer that is running Microsoft Windows XP, make sure that Quality of Service (QoS) Packet Scheduler is running on the Windows XP client.

### How to configure a Linksys BEFSR41 four-port cable/DSL router to route PPTP traffic to a Windows Server 2003-based VPN server

- Open **Advanced Features** for the router, and then open **Port Forwarding**. For more information about how to perform this step, see the user manual for the router.
- Set port 47 and port 1723 to the specified computer's IP address. Make sure that you have the latest firmware version.
- Configure the perimeter network (also known as DMZ, demilitarized zone, and screened subnet) host IP address (that is, the internal IP address of the PPTP server).

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### REFERENCES

For additional information, click the following article numbers to view the articles in the Microsoft Knowledge Base:

[314076](http://support.microsoft.com/kb/314076/) (http://support.microsoft.com/kb/314076/) How to configure a connection to a virtual private network (VPN) in Windows XP

[306802](http://support.microsoft.com/kb/306802/) (http://support.microsoft.com/kb/306802/) How to configure Small Business Server for full time Internet access with two network adapters

[283165](http://support.microsoft.com/kb/283165/) (http://support.microsoft.com/kb/283165/) How to change the PPPoE MTU size in Windows XP

[252416](http://support.microsoft.com/kb/252416/) (http://support.microsoft.com/kb/252416/) Internet printing may not work on a Network Address Translation server

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#### **APPLIES TO**

- Microsoft Internet Security and Acceleration Server 2004 Standard Edition
- Microsoft Internet Security and Acceleration Server 2006 Standard Edition
- Microsoft Internet Security and Acceleration Server 2006 Enterprise Edition
- Microsoft Internet Security and Acceleration Server 2004 Enterprise Edition

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