

## NQG\_027: Configuring a PPTP Tunnel Between a Netopia Router and a Windows NT or Windows 2000 Server

This Netopia Quick Guide details configuration of a Netopia R-Series router as a PPTP client, or PPTP Access Concentrator (PAC), to a Windows NT or Windows 2000 PPTP Network Server (PNS). For instructions on how to configure your router as a PNS instead, please see Netopia Technote [NQG\\_022: Installing and Configuring a VPN for a Windows PPTP Client to an R-series Router](#).

**Assumptions:** (This guide assumes the following.)

- Firmware version 4.4 or later is running on your router. If not, you will first need to [update your router's firmware](#). In order to use strong data encryption, or Microsoft's 128-bit encryption, you will need firmware version 4.6 or later.
- You are running Windows NT Server 4.0 with the 40-bit encryption version of Service Pack 5 or Windows 2000 Server with Service Pack 1 and the 128-bit encryption upgrade.
- Your router and your NT/2000 Server have an Internet connection with a fixed IP Address.

*Note:* PPTP supports IP routing only. IPX, AppleTalk or any protocol other than IP will not be routed across a PPTP tunnel.

### Before you start:

- **PLEASE READ** our [Notice on Configuring VPN Tunnels with Netopia Routers](#).
- Establish a serial connection to the Netopia router's console using a communications program such as HyperTerminal or Z-Term. The settings should be 9600 Baud, 8 Data Bits, and 1 Stop Bit. Disable flow control.
- Alternatively, you can use Telnet over your LAN to get to the console screens. For detailed instructions on using Hyperterminal, Z-Term, or Telnet, please see Netopia Quick Guide [NQG\\_21](#).

### Tips:

- Do not change any settings other than the ones referred to below.
- Pressing Return takes you into a page; pressing Escape takes you out.
- Pressing the tab key acts as a toggle on router settings.
- Press Return after entering each setting to save it.

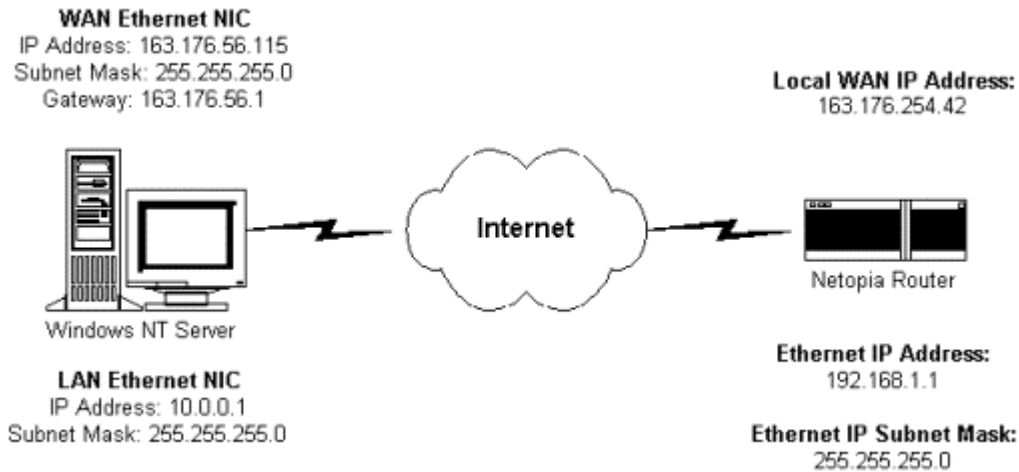
### Notice:

Netopia Technical Support provides this document to you as an added service. Although the configurations described below have proven successful in many instances for doing Microsoft Networking across a WAN or VPN connection, we cannot guarantee success in all circumstances due to the many variables and unpredictable behavior common to Windows OS. If the following suggestions do not provide the results you desire, please contact your MIS Department, or Microsoft Technical Support directly as Netopia cannot further support the features of Windows OS.

### Network Configuration:

The following network configuration is the configuration that is referenced in this technote.

Please note the IP addresses used below are examples only. Your own IP addresses will be different. Please substitute your own information for the values used below.



Your NT/2000 Server does not necessarily have to match this scenario. Your NT/2000 Server may also have a Dial Up Networking connection to the Internet or it could have a single NIC and be behind a router either with a legal, routable address or with a private address behind Network Address Translation (NAT). If your NT/2000 Server is behind a router or firewall, make sure incoming IP traffic using TCP port 1723 and protocol type 47 (GRE) are allowed.

## Configuration Method A

### Netopia Router Configuration connecting to a NT/2000 Server with RAS (Remote Access) enabled:

1. From the Main Menu of router console screens, go to **Quick Menus**, and select **Add Connection Profile**.
2. Under **Profile Name**, type a name of your choice.
3. Change **Data Link Encapsulation** to PPTP and select **Data Link Options**. The **Add Connection Profile** screen should appear as follows once configured:

```

Change Connection Profile

Profile Name:                               Example
Profile Enabled:                            Yes

Data Link Encapsulation...                   PPTP
Data Link Options...

IP Enabled:                                  Yes
IP Profile Parameters...

COMMIT                                       CANCEL

Return accepts * ESC cancels * Left/Right moves insertion point * Del deletes.
Modify Connection Profile here. Finished? COMMIT or CANCEL to exit.

```

4. Enter the **PPTP Partner IP Address**. (Note: This is the public IP address of your NT/2000

Server. In our example, this is the **WAN Ethernet NIC.**)

5. Next, select **MS-CHAP** for **Authentication**. If you set the NT/2000 Server to **Require data encryption**, select **MPPE** for **Data Encryption**.
6. For **Send Host Name**, enter the user name you entered for the **Dial-In Credentials** on the NT/2000 Server and enter the **password** as the **Send Secret**.

*Note:* If you have multiple trusted domains on your NT/2000 Server, you will need to specify the domain with which you are authenticating. This is accomplished by adding the domain name in front of the **Send Host Name**, separated by a forward slash (e.g., domain name\username).

7. Set **Initiate Connections** to **Yes**.
8. If you want the Netopia to initiate a PPTP connection to the NT/2000 Server whenever there is a demand for resources on the NT/2000 network, as opposed to manually establishing a connection from the router every time, set **On Demand** to **Yes**.
9. **Idle Timeout** is the amount of time the router will maintain the PPTP connection to the NT/2000 Server when there is no traffic. It is 300 seconds or 5 minutes by default. A value of zero disables the idle timer so the PPTP connection will never time out. The **PPTP Tunnel Options** screen should appear as follows once configured:

```

PPTP Tunnel Options

PPTP Partner IP Address:      163.176.56.115

Authentication...           MS-CHAP
Data Encryption...          MPPE

Send Host Name:              sample_
Send Secret:                 *****
Receive Host Name:
Receive Secret:

Initiate Connections:        Yes
On Demand:                   Yes

Optional Windows NT Domain Name:

Idle Timeout (seconds):      300

Return accepts * ESC cancels * Left/Right moves insertion point * Del deletes.
In this Screen you will configure the GRE/PPTP specific connection params.

```

10. Escape once back to the **Add Connection Profile** screen.
11. **IP Enabled** should be set to **Yes**. Next, select **IP Profile Parameters**.
12. Set **Address Translation Enabled** to **Yes**. (*Note:* Use the tab key to toggle this option between Yes and No. Hit enter to save your changes).
13. Set the **Remote IP Address** to 10.0.0.1 and the **Remote IP Mask** to **255.255.255.0**. (*Note:* In your case, if the NT/2000 Server has different TCP/IP settings then what is used in this example, please substitute your own information.)
14. DO NOT select a **Filter Set**. If one is active, hit enter on **Remove Filter Set** to deactivate it. (*Note:* You can filter over a PPTP connection, however, none of the pre-set filters are suitable for this purpose. If you wish to filter traffic on your PPTP tunnel, please read Netopia Technote NIR\_052: Netopia Firewall Features and Configuration.
15. Choose **Rip Profile Options** and set **Receive RIP** to **Off** unless you have multiple RIP-enabled routers on either network.
16. Escape once to **IP Profile Parameters**. The **IP Profile Parameters** screen should appear as follows once configured:

```

IP Profile Parameters

Address Translation Enabled:      Yes

NAT Map List...                  Easy-PAT List
NAT Server List...              Easy-Servers

Local WAN IP Address:           0.0.0.0

Remote IP Address:              10.0.0.1
Remote IP Mask:                 255.255.255.0

Filter Set...                   Remove Filter Set

RIP Profile Options...

Enter an IP address in decimal and dot form (xxx.xxx.xxx.xxx).
Configure IP requirements for a remote network connection here.

```

17. Escape once to return to the **Add Connection Profile** screen and select **Add Profile Now** or **Commit** (depending on firmware version).
18. Escape twice out to the Main Menu and go to **Utilities and Diagnostics**.
19. Select **Restart System**. This concludes the setup for your Netopia router.

Please be aware that connecting the Netopia to the NT/2000 Server with RAS will *only* allow traffic to flow from the Netopia to the network behind the NT/2000 Server. Workstations behind the NT/2000 Server will *not* be able to reach workstations behind the Netopia with this particular configuration.

## Configuration Method B

### Netopia Router Configuration connecting to a NT/2000 Server with RRAS (Routing and Remote Access Service, where the computer is enabled as a Router):

Use the same configuration as above with the exception of number 12 above

12. Set **Address Translation Enabled** to **No**. (**Note:** Use the tab key to toggle this option between Yes and No. Hit enter to save your changes):

```

IP Profile Parameters

Address Translation Enabled:      No

Remote IP Address:              10.0.0.1
Remote IP Mask:                 255.255.255.0

Filter Set...                   Remove Filter Set

RIP Profile Options...

Enter an IP address in decimal and dot form (xxx.xxx.xxx.xxx).
Configure IP requirements for a remote network connection here.

```

## Conclusion:

You should have now successfully configured your Netopia router as a PPTP client. You are now ready to initiate a VPN connection between your Netopia router and your NT/2000 Server. If you are using Windows Networking, you may wish to read the following technotes on facilitating network browsing:

[NIR 030: Windows to NT Networking](#)

[NIR\\_028: Windows Peer-to-Peer Networking](#)

**Note:** Since NAT is enabled in your Netopia router's **Connection Profile** to the NT/2000 Server, the limitations of NAT apply when trying to forward TCP and UDP applications (service ports) into your private network. This limited access applies to Windows Networking as well, since NetBIOS is a UDP protocol used to facilitate Windows browsing. Once you configure your Netopia router to forward UDP ports 137, 138, and 139 to a private host on your private network, that private host will be able to facilitate Windows Networking. For instructions on how to configure TCP and UDP port forwarding to a private host on your Netopia router's network, please see the following technote:

[NQG\\_025: Configuring a Server List on a Netopia R-Series router](#)