

NQG_023: Configuring a PPTP Tunnel Between Two Netopia Routers

This Netopia Quick Guide details configuration of a PPTP tunnel between two Netopia R-Series routers. Please note that PPTP as a router-to-router tunneling protocol is less efficient than ATMP. You may wish to consider using ATMP for router-to-router connections. For instructions on configuring an ATMP tunnel between two routers please see [NQG_017](#). For instructions on how to configure a Netopia R-series router as a PPTP server, please see [NQG_022](#).

Assumptions:

This guide assumes that you are running Netopia router firmware version 4.4 or later, and have read the firmware documentation. To update your router firmware, go to our [firmware update page](#).

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.
- Press Return after entering each setting to save it.

Router Step-by-step Configuration:

The following example configuration is based on two R-series routers with connections to the Internet using NAT (Network Address Translation). It is not necessary for you to have NAT enabled on your Internet connection profile for this to work. The **Local WAN IP** addresses used in the configuration are only an example.

(Note: The **Ethernet IP Addresses** used in this example can be implemented in other similar configurations. However, the **Local WAN IP Addresses** will change per individual configuration. The following router configurations are based on the following example configurations. Please substitute your own IP information when configuring your routers. In any case, both routers must be configured for different Ethernet IP subnets, as the example configuration illustrates.)

Example Configuration:

Router A		Router B	
Ethernet IP Address:	192.168.1.1	Ethernet IP Address:	192.168.2.1
Ethernet Subnet Mask:	255.255.255.0	Ethernet Subnet Mask:	255.255.255.0

Local WAN IP Address:	163.176.56.1	Local WAN IP Address:	163.176.57.1
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Configuration of Router A:

1. From the Main Menu of router console screens, go to **Quick Menus**, and select **Add Connection Profile**.
2. Under **Profile Name**, type **Router B** (or a name of your choice).
3. Change **Data Link Encapsulation** to **PPTP** and select **Data Link Options**.
4. Enter the **PPTP Partner IP Address**. (**Note:** This is the public IP address of **Router B**. Considering our example, the public IP address, or **Local WAN IP Address**, is 163.176.57.1. If the opposite router in your configuration does not have NAT enabled for the Internet connection profile, and **IP Addressing...** in **Easy Setup** is set for an **Unnumbered** connection to the Internet, the **Ethernet IP Address** should be used at the **PPTP Partner IP Address** instead.)
5. Next, set an **Authentication** type for the tunnel. If you wish to use encryption, you must choose **MS-CHAP**. You will have the option to use **MPPE** or **None** as your **Data Encryption** type. **MPPE** provides both compression and a greater level of security through encryption. However, it will slow down data transmission.
6. If you choose either **PAP** or **CHAP** as your authentication type, you may choose to use **Data Compression**. You have a choice of **None** or **Standard LZS**.
7. If **Router A** will be initiating PPTP connections to **Router B**, enter a unique **Send Host Name** and **Send Password** (or **Secret**) and set **Initiate Connections** to **Yes**.
8. If **Router B** will be initiating PPTP connections to **Router A**, enter a unique **Receive Host Name** and **Receive Password** (or **Secret**).
9. If you want **Router A** to initiate a PPTP connections to **Router B** whenever there is a demand for resources on the **Router B** network, as opposed to manually establishing a connection from the router every time, set **On Demand** to **Yes**.
10. **Idle Timeout** is the amount of time **Router A** will maintain the PPTP connection to **Router B** when there is no traffic. It is 300 seconds by default. A value of zero disables the idle timer so the PPTP connection will never time out.
11. Escape once back to the **Add Connection Profile** screen.
12. **IP Enabled** should be set to **Yes**. Next, select **IP Profile Parameters**.
13. 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).
14. Set the **Remote IP Address** to 192.168.2.1 and **Remote IP Mask** to 255.255.255.0. (**Note:** In your case, if **Router B** has a different **Ethernet IP Address** and **Ethernet Subnet Mask** then what is used in this example, please substitute your own Ethernet IP Information for **Router B**.)
15. 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 technote [NIR 052: Netopia Router Firewall Features and Configuration](#).)
16. **Receive RIP** should be set to **Off** unless you have multiple RIP-enabled routers on either the **Router A** or **Router B** network.
17. Escape once to return to the **Add Connection Profile** screen and select **Add Profile Now**.
18. From the **Connection Profiles** screen, escape once back to **Quick Menus**.
19. Select **ATMP/PPTP Default Profile** (Firmware versions below 4.8 select **VPN Default Answer Profile**).
20. Set **Answer ATMP/PPTP Connections:** to **Yes** (Firmware versions below 4.8 set **Answer VPN Connections:** to **Yes**).
21. Under **PPTP Configuration Options**, select the **Receive Authentication** type you are using. This will be the same as the **Authentication** type you selected in **Data Link Options**.
22. Escape once back to **Quick Menus**.
23. Select **WAN Default Profile**.
24. Set **Must Match a Defined Profile** to **Yes**.

Note: The R9100 and the R910 may **not** have a Wan Default Profile. Simply disregard this step.

25. Escape twice out to the Main Menu and go to **Utilities and Diagnostics**.
26. Select **Restart System**. This concludes the setup for **Router A**.

Configuration of Router B:

1. From the Main Menu of router console screens, go to **Quick Menus**, and select **Add Connection Profile**.
2. Under **Profile Name**, type **Router A** (or a name of your choice).
3. Change **Data Link Encapsulation** to **PPTP** and select **Data Link Options**.
4. Enter the **PPTP Partner IP Address**. (**Note:** This is the public IP address of **Router A**. Considering our example, the public IP address, or **Local WAN IP Address**, is 163.176.56.1. If the opposite router in your configuration does not have NAT enabled for the Internet connection profile, and **IP Addressing...** in **Easy Setup** is set for an **Unnumbered** connection to the Internet, the **Ethernet IP Address** should be used at the **PPTP Partner IP Address** instead.)
5. Next, select the same **Authentication** type as you did in **Router A** for the **Router B** profile.
6. Also, select the same **Data Compression** or **Data Encryption** type as you set in **Router A** for the **Router B** profile.
7. If **Router B** will be initiating PPTP connections to **Router A**, enter the same values you configured in **Router A** for **Receive Host Name** and **Receive Password** (or **Secret**) as the **Send Host Name** and **Send Password** (or **Secret**) here, in **Router B**. Set **Initiate Connections** to **Yes**.
8. If **Router A** will be initiating PPTP connections to **Router B**, (**Initiate Connections** must be set to **Yes** in the **Router B** profile of **Router A**), enter the same values you configured in **Router A** for **Send Host Name** and **Send Password** (or **Secret**) as the **Receive Host Name** and **Receive Password** (or **Secret**) here, in **Router B**.
9. If you want **Router B** to initiate a PPTP tunnel to **Router A** whenever there is a demand for resources on the **Router A** network, as opposed to manually establishing a connection from the router every time, set **On Demand** to **Yes**.
10. Again, **Idle Timeout** is the amount of time **Router B** will maintain the PPTP connection to **Router A** when there is no traffic. It is 300 seconds by default. A value of zero disables the idle timer so the PPTP connection will never time out.
11. Escape once back to the **Add Connection Profile** screen.
12. **IP Enabled** should be set to **Yes**. Next, select **IP Profile Parameters**.
13. Set **Address Translation Enabled** to **No**.
14. Set the **Remote IP Address** to 192.168.1.1 and **Remote IP Mask** to 255.255.255.0. (**Note:** In your case, if **Router A** has a different **Ethernet IP Address** and **Ethernet Subnet Mask** then what is used in this example, please substitute your own Ethernet IP Information for **Router A**.)
15. 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 technote [NIR 052: Netopia Router Firewall Features and Configuration](#).)
16. **Receive RIP** should be set to **Off** unless you have multiple RIP-enabled routers on either the **Router B** or **Router A** network.
17. Escape once to return to the **Add Connection Profile** screen and select **Add Profile Now**.
18. From the **Connection Profiles** screen, escape once back to **Quick Menus**.
19. Select **ATMP/PPTP Default Profile** (Firmware versions below 4.8 select **VPN Default Answer Profile**).
20. Set **Answer ATMP/PPTP Connections:** to **Yes** (Firmware versions below 4.8 set **Answer VPN Connections:** to **Yes**).
21. Under **PPTP Configuration Options**, select the **Receive Authentication** type you are using. This will be the same as the **Authentication** type you selected in **Data Link Options**.
22. Escape once back to **Quick Menus**.
23. Select **WAN Default Profile**.
24. Set **Must Match a Defined Profile** to **Yes**.

Note: The R9100 and the R910 may **not** have a Wan Default Profile. Simply disregard this step.

25. Escape twice out to the Main Menu and go to **Utilities and Diagnostics**.
26. Select **Restart System**. This concludes the setup for **Router B**.

Conclusion:

Once both routers are configured, a PPTP connection can be established to allow IP routing through the tunnel between the two LAN's. If you are using Windows Networking, you may wish to read the following guides on facilitating network browsing between your two LAN's:

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

[NIR 028: Windows Peer-to-Peer Networking](#)