



## NetVanta 2000 Series Technical Note

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# Troubleshooting ISP/WAN or Internet Connectivity Issues



*This document is applicable to NetVanta 2600 series, 2700 series, and 2800 series units.*

This comprehensive article is an index to a collection of knowledge base articles related to "Troubleshooting ISP / WAN or Internet connectivity Issues".

## Troubleshooting No Internet Access or Unable to Access Few Websites

### Question/Topic:

Unable to access certain websites, either slow or completely failing.

### Resolution/Workaround:

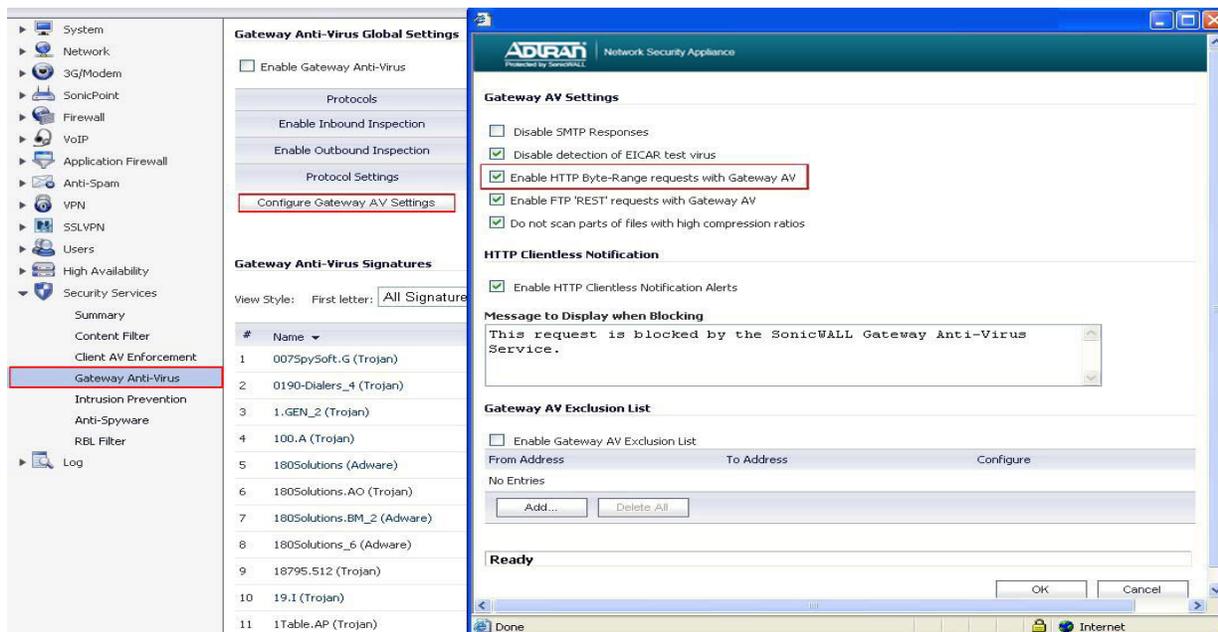
- 1. Check MTU settings on the WAN interface(s).** An incorrect MTU is the most common cause of web browsing issues through NetVanta 2000 Series UTM appliances.
- 2. Determine if CFS is blocking the site in question due to policy.** If CFS is being used, then it may be blocking the traffic to the site you are attempting to reach. Ensure that the Security Services log category is configured for logging on the Log > Categories configuration screen and then check your logs for indications of CFS blocking. After determining that CFS is blocking due to policy, you must modify the categories or create a domain exclusion to allow the traffic.

**3. Determine if CFS is blocking due to lack of host header in the first HTTP packet.** CFS checks the hostname listed in the HTTP Host header to determine the category of the site in question. If the first HTTP packet does not include the complete host header, then CFS will drop the connection without logging. If you are able to access the site without CFS enabled, this may be the cause. In this case, you must toggle the "Enforce Host Tag Search for CFS" setting on the diag.html page of the management GUI. It is recommended that you contact ADTRAN Technical Support for assistance with this operation

The screenshot displays the 'Internal Settings' window with a 'Close' button. The settings are organized into several sections:

- General Settings:**
  - Disable Gateway AV POP3 UIDL Rewriting
  - Enable Client Notification Alerts for Gateway AV (desktop client installation required)
  - Enable Client Notification Alerts for AntiSpyware (desktop client installation required)
  - Minimum HTTP header length (0 to disable):
  - Enable incremental updates to IDP, GAV and SPY signature databases.
  - Enable enforcement of a limit on maximum allowed advertised TCP window with any DPI-based service enabled.
  - Set a limit on maximum allowed advertised TCP window with any DPI-based service enabled (KBytes).
  - Enforce Host Tag Search for CFS** (highlighted with a red box)
  - 
  - 
  -
- High Availability Settings:**
  - Suppress Alarm on HA Transition to Active
  - Always restart HA backup for watchdog task
  - Send gratuitous ARP to DMZ or LAN on transparent mode while HA failover
  - Maximum number of gratuitous ARP of transparent mode per interface while HA failover:
- PPPOE Settings:**
  - Allow LCP requests to PPPOE Server
  - Log LCP Echo Requests and Replies between client and server
  - PPPOE Netmask:

**4. Check whether Enable HTTP Byte-Range requests with Gateway AV.** The NetVanta 2000 Series GAV by default suppresses the use of HTTP Byte-Range requests to prevent the sectional retrieval and reassembly of the potentially malicious content. This is done by terminating the connection and thus preventing the user from receiving the malicious payload. By enabling this option you will override this setting.



### Question/Topic:

The WAN (Ethernet) Connection to the Internet (ISP) Seems Intermittent or Drops Completely

### Resolution/Workaround:

A WAN connection may drop intermittently for a variety of reasons. The task list below will help you troubleshoot this issue.

#### 1. Physical Connectivity:

- Check the physical cable connection on the NetVanta 2000 Series.
- Check the Interfaces (i.e. ports on the NetVanta 2000 Series device) for any physical damage or ports that are not tightly fitted to the socket.
- The Ethernet cable may be damaged (change the Ethernet cable and check).
- Make sure the NetVanta 2000 Series has not over-heated and is placed in a cool environment.

2. Check the ISP link - Connect the ISP link directly to a computer (bypass the upstream device, if any) and check whether or not the Internet connection drops. Check the settings on the upstream router.



*If the upstream router is a Cisco device, check the clocking rate. Clocking rate mismatch is also a possible reason the WAN connection may drop intermittently.*

3. Reboot the Cable/DSL modem. Some Cable/DSL modems must be rebooted whenever the NetVanta 2000 Series is rebooted.

4. If the NetVanta 2000 Series is configured to connect to the ISP using PPPoE, verify your login credentials are correct. Make sure all Ethernet cables and power connections are good. For models with external power supplies, ensure the correct NetVanta 2000 Series power supply is connected.

5. Try to change the MTU value for your WAN connection.

6. Configure the WAN interface to respond to pings. Some ISPs use ping to determine if customer equipment is connected. By default, the NetVanta 2000 Series does not respond to pings.

7. Ensure your ISP is not experiencing an outage or other technical issue. Try connecting with another firewall or directly with a PC.

8. Ask your ISP's technical support team if inactive connections are dropped at specific times. The NetVanta 2000 Series should reconnect without any problems.

9. It is possible the network or a specific computer is infected with a virus. A virus may result in a high rate of concurrent connections on the NetVanta 2000 Series (broadcast). Hence, scan for viruses on the network.

10. If IPS (Intrusion Prevention Service) is configured, temporarily disable it and check whether or not the WAN connection drops. If yes, then check for a specific signature that may be causing the WAN connection to drop.

11. Check the pc for any anti-spyware, firewall or pop-up blocker software that is installed and disable them to see if connectivity is restored.

12. Check the logs on the NetVanta 2000 Series's Management page for any information relating to packet drops.

13. Firmware corruption is another possible cause for the WAN connection to drop frequently. In this case, a firmware upgrade would be needed.

**Follow these steps to configure the NetVanta 2000 Series's WAN interface to respond to ping requests.**

**Standard OS:**

1. Create an Access Rule. From the **Firewall > Access rules** page, click **Add** to launch the Add Rule window.

2. Select **Allow** from the Action menu.
3. Select **Ping** from the Service menu.
4. Select **WAN** from the Source Ethernet menu.
5. If you do not want to specify an IP address range, enter \* in the IP Address Begin field.
6. Select **LAN** from the Destination Ethernet menu.
7. Since the intent is to allow a ping only to the NetVanta 2000 Series, enter the NetVanta 2000 Series LAN IP Address in the Destination Address Range Begin field.
8. Click **OK**.

**Enhanced OS:**

1. Select **Network > Interfaces**.
2. Click on the Notepad icon in the Configure column for the **WAN** or other Interface you want to configure. The Edit Interface window is displayed.
3. To enable Ping on this interface, scroll down to **Management** and select the **Ping** checkbox.
4. Click **OK**.

**Firmware 6.x:**

1. Create an Access Rule. From the **Access > Rules** page, click **Add** to launch the Add Rule window.
2. Select **Allow** from the Action menu.
3. Select **Ping** from the Service menu.
4. Select **WAN** from the Source Ethernet menu.
5. If you do not want to specify an IP address range, enter \* in the IP Address Begin field.
6. Select **LAN** from the Destination Ethernet menu.
7. Since the intent is to allow a ping only to the NetVanta 2000 Series, enter the NetVanta 2000 Series LAN IP Address in the Destination Address Range Begin field.
8. Click **Update**.



*Edit the configuration for each interface on which you want to enable Ping. The Enhanced OS will automatically create the appropriate NAT policies and Access Rules.*

### **Question/Topic:**

When you try to use a Windows Vista-based computer behind a firewall device, network connectivity may fail. When network connectivity fails, you may see the following symptoms:

- Programs may respond slowly.
- Programs may stop responding. For example, any of the following programs may be affected by this problem: • Microsoft Outlook or Windows Mail
- A Web browser, such as Windows Internet Explorer 7
- Remote Desktop Connection (RDC)
- File sharing

When Outlook is affected by this issue you may receive the following message in an RPC dialog box: Outlook is trying to retrieve data from the Microsoft Exchange Server Exchange\_Server\_FQDN.

Or, you may see a "Trying to Connect" message in the status bar

### **Resolution/Workaround:**

The Window Scaling feature in Windows Vista may not work if you enable either of the following features on the **Firewall > TCP Settings** page:

- Strict TCP Enforcement Option
- Enforce strict TCP compliance with RFC 793 and RFC 1122

### **Question/Topic:**

Some Computers Behind the NetVanta 2000 Series Cannot Connect to the Internet

### **Resolution/Workaround:**

If some computers on the NetVanta 2000 Series LAN cannot connect to the Internet while others can, please check the following:

\* Make sure the number of computers (nodes) behind the NetVanta 2000 Series's LAN does not exceed the number of user licenses for the device. For instance, make sure there are not 11 nodes behind a TZ 170 10 user product.

\* Verify that any affected node(s) are set up with an IP address in the same subnet as the NetVanta 2000 Series LAN IP address. For instance, if the NetVanta 2000 Series LAN IP address is 192.168.168.1 the nodes on the LAN must be assigned IP addresses in the 192.168.168.x subnet. Also make sure the subnet mask values match.

\* Check that the affected nodes are using the proper default gateway setting. If the NetVanta 2000 Series is in NAT mode, this is the NetVanta 2000 Series LAN IP address. If the NetVanta 2000 Series is in standard/transparent mode, this is the IP address of the router directly in front of the NetVanta 2000 Series.

\* Verify that you have set up the affected nodes with the proper DNS addresses. Unless you are using your own DNS server, it is typically necessary to obtain these from your ISP. Without correct DNS server addresses, the node will not be able to translate site names into IP addresses. If you are using a DHCP server (the NetVanta 2000 Series built-in DHCP server or otherwise), be sure it is issuing the proper information as outlined above.

## Troubleshooting PPPoE/DSL Connection Issues

### Question/Topic:

PPPoE connection setup is tracked in the log. Check the log (**Log > View** page of the NetVanta 2000 Series's user interface) for messages to assist in determining the problem with PPPoE initialization. There are log messages regarding:

- PPPoE Discovery (Start/Complete)
- No Response from ISP Disconnecting PPPoE
- PAP/CHAP Authentication (Start/Success/Failed)

### Resolution/Workaround:

Attempt the following troubleshooting steps if you cannot establish an initial connection to your ISP:

- Ensure proper power connections. Ensure use of the correct NetVanta 2000 Series power supply if external.
- Check the WAN link light. If there is no link, check the cables to the DSL modem and verify the ports are OK.
- Try rebooting the DSL modem and the NetVanta 2000 Series. (Some modems require reboot whenever the NetVanta 2000 Series reboots).
- Ensure there is no DSL modem or line problem (PPPoE discovery not completing).
- Ensure the username and password is correct (authentication success or failure).
- Verify you get a proper IP lease (**Network > Status** page on the Standard OS; **Network > Settings** on the Enhanced OS; **General > Status** on Firmware 6.x) and can ping the ISP gateway from the NetVanta 2000 Series (**System > Diagnostics** on the Standard OS or **Tools > Diagnostics** on Firmware 6.x). If not, contact your ISP.
- Try connecting directly with another host or PC using the PPPoE client software supplied by your ISP. If this also does not work, contact your ISP for technical support.
- Ask your ISP if they have measures that prevent you from switching equipment. Your ISP may lock IP assignments to MAC addresses. If this is the case, provide your ISP with your NetVanta 2000 Series's MAC (Ethernet hardware) address. In most cases, this is simply your appliance's serial number.

**Question/Topic:**

The maximum transmission unit, here on referred to as MTU, is the maximum amount of bytes that can be encapsulated in an IP packet. The MTU size includes the data payload, any transport headers (such as TCP, UDP, GRE, RTP, or ICMP), and the IP header.

It is generally recommended that the MTU for a WAN interface connected to a PPPoE DSL network be 1492. In fact, with auto MTU discovery, 1492 is discovered to be the maximum allowed MTU. However, having an MTU of 1452 is most optimal.

Item in Frame	Size in bytes
Data Payload	1 - 1452
IP Header	20
TCP Headers	20
PPP and PPOE Headers	8
Ethernet Header	18
ATM Trailer	8 bytes + 0-40 bytes of padding
ATM Cell Header	5 bytes per ATM Cell
ATM cell Payload	48 bytes per Cell (fixed)

The maximum MTU for Ethernet connections on NetVanta 2000 Series devices is 1500 bytes (Ethernet maximum MTU size). Having an MTU of 1500 allows for 1460 bytes of data payload, 20 bytes of TCP header, and 20 bytes of IP header. With PPPoE connections, the PPP and PPPoE header increases the frame size by 8 bytes, so we must lower the MTU to 1492. With the Ethernet header added to this, we get a frame size of 1518 bytes.

$$1492 + 8 + 18 = 1518 \text{ bytes}$$

The network between the DSL multiplexer and the ISP aggregation router is ATM. ATM uses 48 byte fixed length cells.

$$1518 \div 48 = 31 \text{ cells} + 30 \text{ bytes, or } 32 \text{ cells.}$$

ATM adds an 8 byte trailer to the entire 1518 byte frame, and adds a 5 byte header per 48 byte cell.

$$32 \text{ cells} * 5 \text{ byte header} = 160 \text{ bytes}$$

The 32nd cell is only 30 bytes long, and ATM mandates a fixed 48 byte cell. With the 8 byte ATM frame trailer appended to the original 30 byte cell, we get 40 bytes. The ATM network must add an additional 8 bytes of padding to fill the fixed 48 byte cell.

$$1518 + 8 + 160 + 10 = 1696 \text{ bytes}$$

1696 bytes are transmitted for 1452 bytes of actual payload. (1492 bytes minus TCP and IP headers)

$$1696 \div 1452 = 1.168 - 1 * 100\% = 16.80\% \text{ overhead}$$

Lowering the MTU to 1452 removes the necessity for adding 10 bytes of padding.

$$1452 + 8 + 18 = 1478 \text{ bytes}$$

$$1478 \div 48 = 30 \text{ cells} + 38 \text{ bytes, or } 31 \text{ cells}$$

The 8 byte ATM frame trailer is added to the 31st cell to make 46 bytes, requiring only 2 bytes of additional padding to meet the total 48 bytes required per cell. Finally, the 5 byte cell headers are added to the 31 cells.

$$31 \text{ cells} * 5 \text{ byte headers} = 155 \text{ bytes}$$

Add up the entire payload and overhead:

$$1478 + 8 + 155 + 2 = 1643 \text{ bytes}$$

1643 bytes are transmitted for 1412 bytes of actual payload. (1452 bytes minus TCP and IP headers)

$$1643 \div 1412 = 1.163 - 1 * 100\% = 16.36\% \text{ overhead}$$

With the MTU on PPPoE connections set to 1452 the overhead per frame is reduced by 0.44%. This translates into a faster internet connection. On a standard T1 at 1.544 Mbps, this means an increase of about 10 kbps.



*Maximum MTU may differ per provider.*

### Question/Topic:

Configure the NetVanta 2000 Series WAN Interface for Verizon DSL Using a Westel Modem

### Resolution/Workaround:

If Verizon is providing a **dynamic IP address**, the recommended configuration is to set up the Westel in **Bridge/Bridge mode** with the WAN interface on the NetVanta 2000 Series configured to provide the **PPPoE** authentication with your Verizon DSL account **username** and **password**. This permits assignment of the **public IP address** to the NetVanta 2000 Series's WAN.

If Verizon is providing a static IP, then **PPPoE** is not being used. Insure the Westel is again in **Bridge/Bridge mode** and you have the **WAN interface** correctly configured as Static with all of the IP info, gateway, etc. provided by Verizon.

If end user configuration of the **DSL modem** is not possible, configure the WAN interface of the NetVanta 2000 Series using **DHCP** to obtain a private IP address from the modem. This double-NAT configuration may limit your ability to accomplish some tasks such as allowing traffic inbound from the Internet and establishing VPN connectivity.

Contact Verizon for DSL modem configuration assistance and specific account and IP address information.

**Question/Topic:**

NAT with PPPoE Client Defined.

**Resolution/Workaround:**

NAT with PPPoE Client is a NetVanta 2000 Series WAN interface configuration that uses Point to Point Protocol over Ethernet to connect with a remote site using various Remote Access Service products. This protocol is typically found when using a DSL modem with an ISP requiring a user name and password to log into the remote server. The ISP may then allow you to obtain an IP address automatically or give you a specific IP address. Please refer to the appropriate OS Administrator's Guide for configuration information and additional details.

**Question/Topic:**

Troubleshooting a PPPoE Authentication Failure on NetVanta 2000 Series Firewall (UTM) Appliances

**Resolution/Workaround:**

A PPPoE authentication failure error message means that either the username and/or password entered into the WAN interface settings page is incorrect.

In firmware 6.x, this page is found under General > Network.

In the Standard OS, WAN settings are located under Network > Settings.

In the Enhanced OS, select Network > Interfaces, then click the Configure icon for the WAN (AKA X1) interface.

Check the following troubleshooting items:

- Verify the correct username and password are entered.
- Check the entries in the NetVanta 2000 Series against the information supplied by your Internet service provider. If you still have a PPPoE client installed on a PC that was connected directly to the ISP, check its settings to verify the username and password.
- Determine whether you need a domain name as part of the username. Some ISPs require that the username entered includes their domain name (e.g. username@isp-domain.com).
- Remember that the username and password are case-sensitive.

**Troubleshooting Cable Modem Connectivity Issues**

**Question/Topic:**

Troubleshooting a Loss of Internet Connectivity After Connecting a NetVanta 2000 Series to a Comcast Cable Modem

**Resolution/Workaround:**

Some cable Internet providers may capture the Ethernet hardware (MAC) address of your computer for use in assigning an IP address and granting access to the Internet. If this is the case, please see the following ADTRAN Knowledge Base article for instructions to resolve the connectivity issue:

- Clone (Proxy) the Ethernet Hardware (MAC) address of the Management Workstation to the WAN for Cable Modem Provider (ISP) Compatibility

Some providers require a hostname in the DHCP settings. It is not believed that Comcast requires this. If you are having a problem, try the following steps in the exact order listed:

1. Disconnect the Ethernet cable from the NetVanta 2000 Series unit to the modem.
2. With the NetVanta 2000 Series disconnected from the modem, set up the X1 (WAN) interface to use NAT with DHCP Client (Standard OS or Firmware 6.x) or DHCP (Enhanced OS). Leave the hostname blank.
3. Power off the NetVanta 2000 Series.
4. Unplug the cable modem and disconnect the co-ax cable. If the modem includes battery backup, remove the battery.
5. Connect the Ethernet cable from the NetVanta 2000 Series (still powered off) to the modem.
6. Power on the NetVanta 2000 Series.
7. Reconnect the co-ax cable to the modem.
8. Plug in the modem power cord. If the modem includes battery backup, insert the battery.
9. Connect your laptop or PC to the X0 (LAN) interface.

If these troubleshooting steps have been exhausted without success, make sure you are running the latest firmware release and upgrade if you are running an older version. You should now have a successful Internet connection. This procedure is based on user experience and testing, and is provided for guidance purposes only.

### **Question/Topic:**

Issues with Connectivity to a Cable Modem

### **Resolution/Workaround:**

This is only if you're having issues with the NetVanta 2000 Series acquiring an IP or connectivity when using a cable ISP.

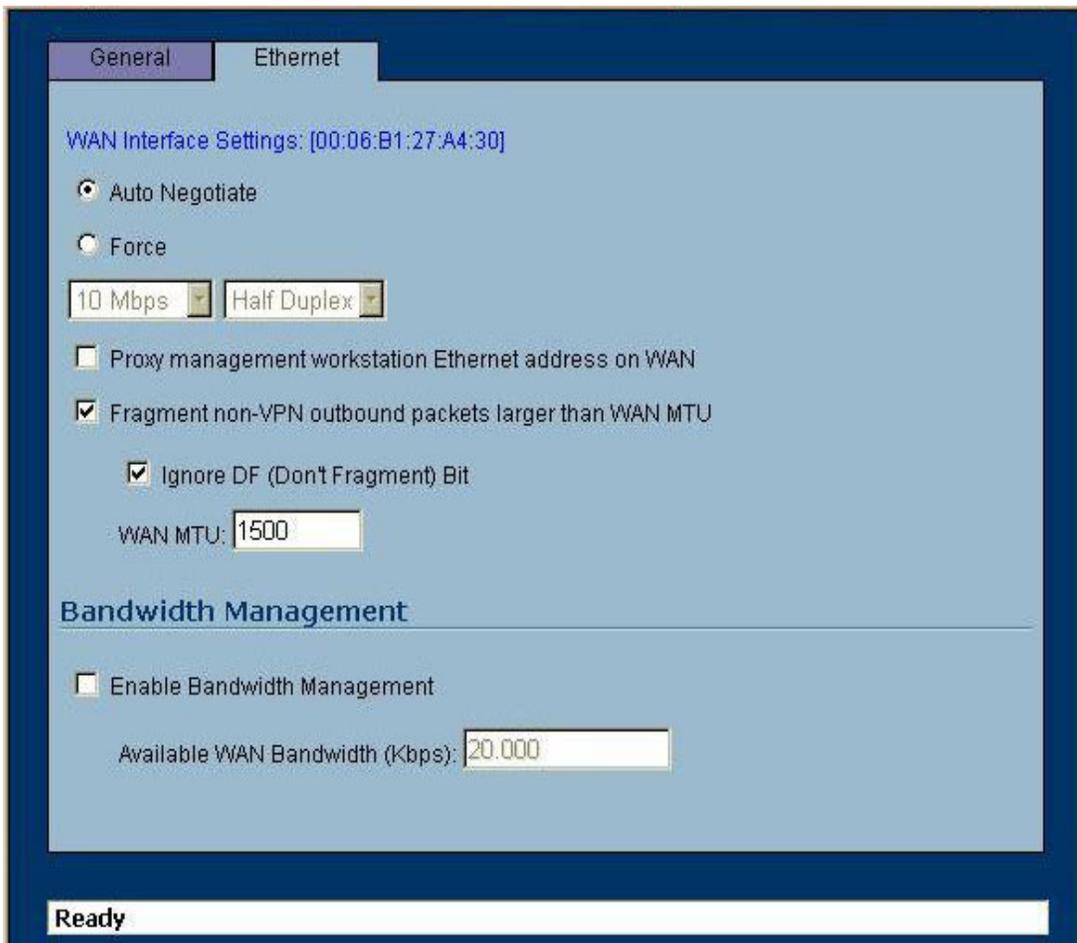
If your ISP is setup for DHCP, plug a computer into the cable modem and pull DHCP. Do an Ipconfig on the laptop and record all the information the laptop pulled. Then unplug the modem, including the coaxial cable and let it sit there for 15 – 30 minutes. While the modem is unplugged configure the NetVanta 2000 Series as a static IP with the information pulled from the laptop. Then once this is done unplug the NetVanta 2000 Series.

Plug the cable modem in, power 1st then coaxial. Once the device is 100% up connect the NetVanta 2000 Series to the modem and turn on. Test connectivity. If you have connectivity, go ahead and change the WAN as DHCP.

If your ISP is setup for static, unplug the cable modem, coaxial and power for 30 minutes (this is to ensure the ARP cache at the cable company’s end is flushed). While this device is down, configure the NetVanta 2000 Series’s WAN IP according to the ISP’s information they provided to you. Once the NetVanta 2000 Series is configured unplug the NetVanta 2000 Series. Once ½ hour has passed plug the cable modem in, power 1st then coaxial. Once the device is 100% up connect the NetVanta 2000 Series to the modem and turn on. Test connectivity.

Lastly you can copy MAC address of the laptop and spoof it on the WAN port.

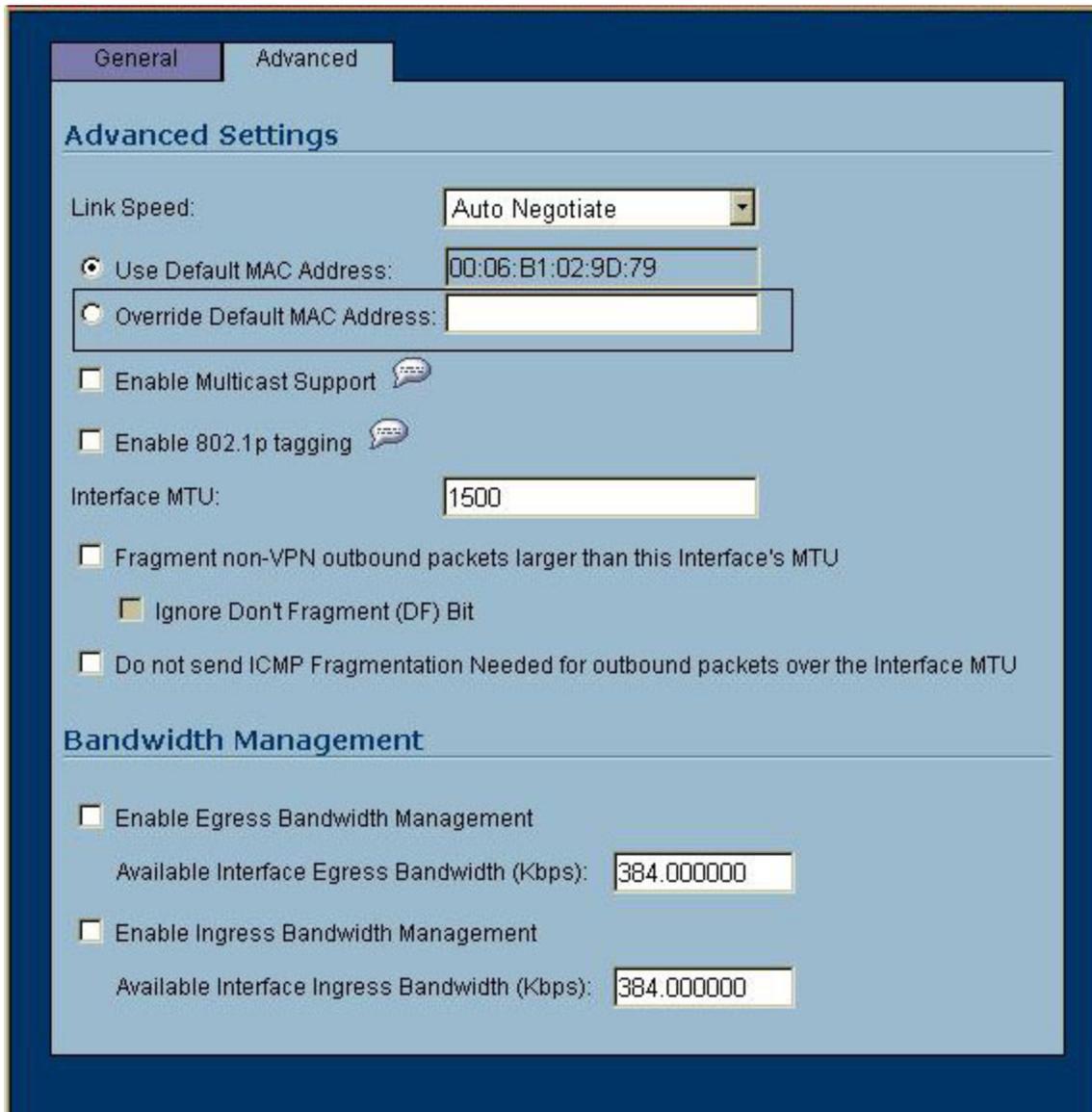
On Standard you would do this by going to **Network > Settings** open the edit screen for the WAN interface and go to the advanced tab. (As seen in fig 1)



**Figure 1. This is the advanced tab of the WAN interface in standard**

Check the Proxy management workstation Ethernet address on the WAN.

For enhanced go to **Network > Interfaces** open the open the edit screen for the WAN (X1) interface and go to the advanced tab. (As seen in fig 2)



**Figure 2. This is the advanced tab of the WAN interface in enhanced.**



*When testing connectivity from the NetVanta 2000 Series go to **System > Diagnostics > Diagnostic tools** pull down to ping. Ping an IP outside of the network and ping google.com this will test DNS versus connectivity issues.*

**Question/Topic:**

Clone (Proxy) the Ethernet Hardware (MAC) address of the Management Workstation to the WAN for Cable Modem Provider (ISP) Compatibility

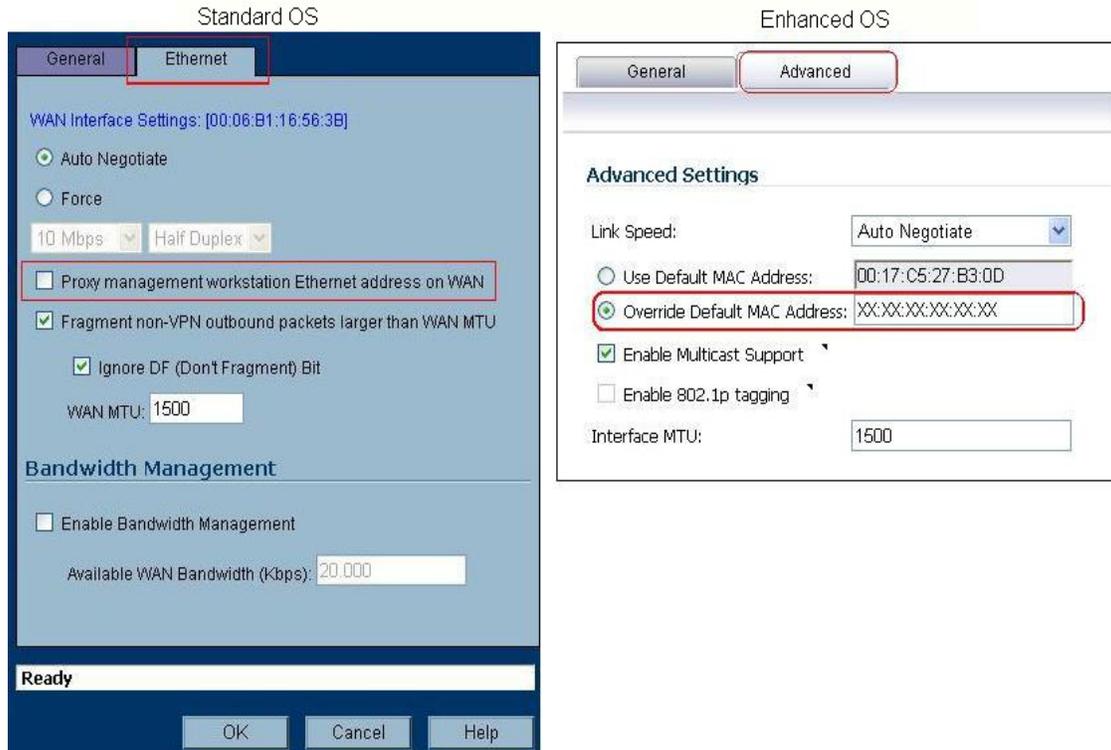
**Resolution/Workaround:**

Some cable Internet providers use the ethernet hardware (MAC) address of the customer's computer in order to assign an IP address and grant access to the Internet. Follow these steps to clone (proxy) the MAC address of the computer previously connected directly to the provider onto the NetVanta 2000 Series's WAN so it may be recognized by the provider:

1. Connect the computer to your cable modem and go online.
2. Disconnect this computer from the modem and plug it into the LAN port of the NetVanta 2000 Series. Make sure no other devices are connected to the NetVanta 2000 Series at this time.
3. Connect the WAN port of the NetVanta 2000 Series to the modem.
4. Log into the NetVanta 2000 Series management interface.
5. Select **Network > Settings** (Standard OS) or **Network > Interfaces** (Enhanced OS).
6. Click the **configure** icon for the WAN interface.
7. Select the **Ethernet** tab(Standard OS) or **Advanced** tab (Enhanced OS).
8. Check the option "**Proxy management workstation Ethernet address on WAN**" for standard firmware and **Override Default MAC address** for enhanced firmware.

 **NOTE**

*For enhanced firmware, find the MAC address / Physical address of the machine that can access internet when connected directly to the modem / router and enter that in the text box for Override Default MAC Address.*



9. Click **OK**.

10. Power off the cable modem, NetVanta 2000 Series and your computer.

11. Power on the Cable modem first. Once it's ready, power on the NetVanta 2000 Series and finally your computer.

12. Try to go online.

You should now find that you are able to access the Internet as expected.

### Question/Topic:

NetVanta 2000 Series running Standard OS not able to get DHCP Lease from the cable provider i.e. Comcast Cable Modem

### Resolution/Workaround:

Please check the following settings on the NetVanta 2000 Series Appliance in order to get the DHCP lease on WAN interface from Comcast Cable Modem.

- Make sure that when you directly connect a laptop to the Cable Modem you get an IP Address as a DHCP lease and can access internet through it.
- Plug an Ethernet cable into the computer and into the NetVanta 2000 Series LAN Port / X0 (marked "X0" on PRO series Appliances).
- Power on the NetVanta 2000 Series, wait for the lights to stop flashing.

- Bring up a browser and go to <http://192.168.168.168> (factory default IP address) and you should have the NetVanta 2000 Series login page and then Login (the default username is "admin" and the password is "password")
  - Go to **Network -> Settings** page.
  - Click the edit icon in the **WAN** entry of the **Interfaces** table.
  - Select **NAT with DHCP Client** from the drop-down menu.
  - Go to **Ethernet** tab,
  - Check on the option "**Proxy management workstation Ethernet address on WAN**" and then Click the **OK** button



*DNS Settings are obtained automatically when the NetVanta 2000 Series security appliance receives its IP address information from the DHCP Server.*

- On the lower left of the page, click the **Logout** button and then **Power Cycle the NetVanta 2000 Series**.
- Unplug the Ethernet cable from the NetVanta 2000 Series and plug into the cable modem and power on the cable modem, wait for the lights to stop flashing.
- Bring up a browser and go to a web site (doesn't matter which, try <http://www.google.com>... you should be able to get the web site. If not, stop here -- the cable connection is not working, contact your ISP technical support.
- Power off the cable modem and disconnect the co-axial cable from the cable modem and also Shutdown and power off the computer
- Unplug the Ethernet cable from the cable modem and plug into the NetVanta 2000 Series LAN Port / X0
- Plug the second Ethernet cable into the NetVanta 2000 Series in the WAN port (on the lower left, under the OPT port and to the right of the Console port).
- Plug the other end of the second Ethernet cable into the cable modem and then power on the NetVanta 2000 Series, wait for the lights to stop flashing, finally reconnect the co-axial cable to the cable modem
- Power on the cable modem, wait for the lights to stop flashing and Boot the computer and login.
- Bring up a browser and go to a web site (doesn't matter which, try <http://www.google.com>... you should be able to get the web site.

## Troubleshooting Issues Related to WWAN

### Question/Topic:

3G Wireless: Sprint Novatel 3G USB cards do not allow access to the Internet.

### Condition or Workaround:

Occurs when attempting to use a Sprint Novatel 3G USB card to register the NetVanta 2000 Series appliance and browse HTTPS websites on the WWAN connection.

**Resolution:**

Upgrading to Enhanced OS 5.3.0.1 release resolves the issue.

**Question/Topic:**

A USB modem fails to autodial the WWAN service after the connection is lost.

**Condition or Workaround:**

Occurs when an active WWAN connection is lost. This was observed when using a Sprint Novatel U760 WWAN card.

**Resolution:**

Upgrading to Enhanced OS 5.5.1.0 release resolves the issue.

**Question/Topic:**

When idle, Sierra Wireless and Novatel 3G devices go into sleep mode.

**Condition or Workaround:**

Occurs when the Connection Model is configured to Ethernet Only. After some time, the Connection Model may disappear from the GUI because the device has gone to sleep.

**Resolution:**

Upgrading to Enhanced OS 5.5.0.0 release resolves the issue.

**Question/Topic:**

Traffic flows through the X1 interface even when the WAN Connection Model is configured as 3G-only.

**Condition or Workaround:**

Occurs when the network cable is connected, but the system is configured to use 3G-only.

**Resolution:**

Upgrading to Enhanced OS 5.5.0.0 release resolves the issue.

**Question/Topic:**

After a firewall is configured from factory defaults and a failover is triggered, the failover to 3G may fail.

**Condition or Workaround:**

Occurs when using the Sierra Wireless 881 and Verizon Aircard 595 WWAN 3G cards.

**Resolution:**

Upgrading to Enhanced OS 5.5.0.0 release resolves the issue.

**Question/Topic:**

User is unable to register and browse HTTPS websites with SPRINT 3G USB Card.

**Condition or Workaround:**

Occurs when user attempts to browse HTTPS websites on a WWAN connection.

**Resolution:**

Upgrading to Enhanced OS 5.5.0.0 release resolves the issue.

**Question/Topic:**

3G is disconnected when the system attempts to fail back to WAN Ethernet although no WAN Ethernet cable is present.

**Condition or Workaround:**

Occurs when the system is set to fail from WAN Ethernet to 3G.

**Resolution:**

Upgrading to Enhanced OS 5.5.0.0 release resolves the issue.

**Question/Topic:**

Channels 12 and 13 for the TZ 210/200/100W (International box) are not usable.

**Condition or Workaround:**

Occurs when using a wireless client to scan the AP on an International box, with the country set to AU and the Channel set to 12 or 13.

**Resolution:**

Upgrading to Enhanced OS 5.5.0.0 release resolves the issue.

**Question/Topic:**

A USB modem fails to autodial the WWAN service after the connection is lost.

**Condition or Workaround:**

Occurs when an active WWAN connection is lost. This was observed when using a Sprint Novatel U760 WWAN card.

**Resolution:**

Upgrading to Enhanced OS 5.5.1.2 release resolves the issue.

## Troubleshooting Other WAN Configuration Issues

**Question/Topic:**

Troubleshooting PPTP ISP Connectivity Issues

**Resolution/Workaround:**

PPTP connection setup is tracked in the log. Check the log (Log > View page) for messages to assist in determining the problem with PPTP initialization. There are log messages regarding:

- PPTP Connection Initiated
- PPTP PPP Negotiation Started
- PPTP PAP/CHAP Authentication Failed/Success

Follow these troubleshooting steps if you cannot establish an initial connection to your ISP:

1. Ensure proper power connections. Make sure the correct NetVanta 2000 Series power supply is being used. The requirements for an external power supply are 5V, 2.4A rating.
2. Check the WAN link light. If there is no link, check the cables to the DSL/Cable modem and verify all ports are OK.
3. Try rebooting the DSL/Cable modem and the NetVanta 2000 Series. Some modems require reboot whenever the NetVanta 2000 Series reboots.
4. Ensure there is no DSL/Cable modem or line problem (no PPTP negotiations).
5. Ensure the username and password is correct (authentication success or failure).
6. Verify you get a proper IP address lease and can ping the ISP gateway from the NetVanta 2000 Series. If not, contact your ISP.
7. Try connecting directly with another host or PC. If this also does not work, contact your ISP.
8. Ask your ISP if they have measures that prevent you from switching equipment. The ISP may lock IP assignments to the specific MAC address of the previously connected firewall, router or PC.

**Question/Topic:**

WAN IP Address Won't Renew

**Resolution/Workaround:**

The NetVanta 2000 Series keeps losing its dynamic IP address

- First, verify your login credentials are correct.
- Check that Ethernet cables and power connections are good.

- For models with external power supplies, ensure the correct NetVanta 2000 Series power supply is connected.
- Power cycle the Cable/DSL Modem and the NetVanta 2000 Series. Power Off the modem and then the NetVanta 2000 Series. Power on the Modem First and then the NetVanta 2000 Series. Once the NetVanta 2000 Series completes its test phase, you should see transmission and reception lights start blinking on the WAN connection.
- Test to see if the NetVanta 2000 Series received an IP address for WAN/DMZ. If it worked, then the Network > Interfaces (General > Network page in Firmware 6.x) page should now have filled in blanks for the WAN or DMZ interfaces (WAN/DMZ settings on Firmware 6.x). You should be able to ping known live addresses (or by resolving IP addresses of URLs).
- Some ISPs use ping to determine if customer equipment is connected. By default, the NetVanta 2000 Series is not configured to respond to pings. To configure the WAN Interface to respond to ping:
  - Firmware 6.x: Enter the LAN IP address in the Public LAN Server box for the ping protocol on the Access>Services page.
  - Standard OS: Use the Public Server Wizard to create the rule for Ping Service to the LAN IP.
  - Enhanced OS: On WAN (X1) Interface General settings tab, enable the check box for Ping management feature.
- Click System > Diagnostics. Choose Ping in the “Diagnostic utility” drop down in the Standard and Enhanced firmware. (In Firmware 6.x, Click Tools > Diagnostics).
- Ping your ISP’s Default Gateway or any IP that is pingable on the Internet (e.g. 4.2.2.2).
- If the Ping is alive, check the Default Gateway for the computers in the LAN. The default Gateway must be the NetVanta 2000 Series LAN IP.
- Click Firewall > Access Rules > Disable any “Deny” rules from LAN to WAN. (Firmware 6.x Click Access - > Rules).
- Ensure your ISP is not having connectivity problems. Try connecting with another firewall or directly with a PC.
- Check your browser settings to make sure the proxy is turned off (if you do not have a proxy in your LAN) and you are connecting to the Internet through a LAN.
- Make sure you don't have any open applications like VPN Client etc. Disable any Software Firewall or the WIN XP firewall.
- Force the WAN Port speed to 10 Mbps Full Duplex. The WAN Port speed can be changed by clicking Network -> configure next to the WAN interface - > click Advanced and change the Link speed in the drop down (in the 6.x firmware Click Advanced -> Ethernet > Check the Force option in the WAN Link settings).
- Click the Firewall > Access rules page, Edit the default LAN to \* rule and check Allow Fragmented Packet (In the 6.x Firmware Access > Rules).