



## TECHNICAL SUPPORT NOTE

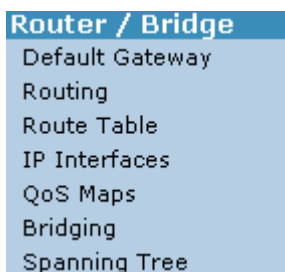
### Introduction to the Router Menu in the Web GUI

### Featuring ADTRAN OS and the Web GUI

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#### Introduction

This Technical Support Note shows the different options available in the Router menu of the ADTRAN OS Web GUI. It also explains the Physical Interfaces section of the System menu since a lot of the screens are shared.



#### WAN Configuration

Some NetVanta series products can be equipped with a Network Interface Module (NIM) to provide WAN connectivity. To configure WAN connectivity, go to the Physical Interfaces page and select the name of the interface to be configured.

##### Basic steps to configure the WAN interface:

- Configure the physical interface
- Select the layer 2 encapsulation protocol
- Configure the layer 2 virtual interface

**System / Physical Interfaces** - Select the WAN physical interface  
From the Router / Physical Interfaces screen, select the T1 physical interface.

The screenshot shows the NetVanta 3200 web interface. The top navigation bar includes the ADTRAN logo, the device name 'NetVanta 3200', and 'Save' and 'Logout' buttons. The left sidebar menu is organized into sections: System, Router / Bridge, Firewall, VPN, and Utilities. The 'Physical Interfaces' section is currently selected, displaying a table of physical interfaces. The table has four columns: Name, Logical Interface, Line Status, and Type. The 't1 1/1' interface is highlighted with a black box, and an arrow points to it with the text 'Select interface'.

Name	Logical Interface	Line Status	Type
<a href="#">eth 0/1</a>	none	Up	Ethernet
<b>t1 1/1</b>	none	Interface Disabled	WAN-T1
<a href="#">t1 1/2</a>	none	Interface Disabled	DSX-1

## Configure the Physical Interface - T1 parameters

The configuration for the T1 interface includes the ability to set the T1 clock source, line framing, line coding, FDL format, DS0 speed, and the number of data DS0's mapped to the router. T1 DS0s not mapped to the router are mapped to the DSX interface when using the T1+DSX-1 NIM, or are unallocated on all other NIMs. The layer 2 encapsulation is also specified on this screen.

**ADIRAN NetVanta 3200** Save Logout

**System**  
 Getting Started  
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**Physical Interfaces**  
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 IP Services  
 DHCP Server  
 Hostname / DNS  
 LLDP  
**Router / Bridge**  
 Default Gateway

**Physical Interfaces**  
 This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
eth 0/1	none	Up	Ethernet
t1 1/1	none	Interface Disabled	WAN-T1
t1 1/2	none	Interface Disabled	DSX-1

Select interface

**Configuration for T1 1/1**  
 Basic configuration for the T1 interface.

Description:  Description label (optional)

Enable:  Enable or disable this interface

Clocking: Line Select the source timing for this interface

Framing: ESF Select the framing that matches the network provider framing format

Coding: B8ZS Select the coding that matches the network provider line coding

FDL: ANSI Select the format for the facility data link channel

Data DS0s: 1 to 6 Select the DS0s to map to the Router

DSX-1 Map: 7-24 DS0s mapped to the DSX-1 port

DS0 Speed: 64Kbps Select the speed for the DS0s in the DS0 Map

Encapsulation:  ppp  Frame Relay Connect this interface to a Frame Relay or PPP circuit

Reset Apply

Enable interface

Set T1 parameters

Select Data DS0s

Specify encapsulation

Click Apply

**Status for T1 1/1**  
 Listed below is a snapshot of the port status and the 24 hour performance statistics. Click on 'Continuous Refresh' to get the latest statistics.

Line Status	Interface Disabled
DS0 Speed	64Kbps
Errored Seconds	10
Bursty Errored Seconds	0
Severely Errored Seconds	0
Severely Errored Frame Seconds	218
Unavailable Seconds	219
Line Errored Seconds	2
Controlled Slip Seconds	0
Path Code Violations	0
Line Code Violations	200
Degraded Minutes	0

Clear Statistics Continuous Refresh

T1 Port statistics

# Encapsulation Frame Relay – Configure Frame Relay Virtual Interface

If Frame Relay is the selected encapsulation choice, you will need to configure parameters for the Frame Relay interface and the Frame Relay sub-interface (PVC). From the Frame Relay Config screen, you can select the Frame Relay LMI and interface type. You can also create sub-interfaces where you will define the DLCI and IP address for each PVC created.

The screenshot shows the NetVanta 3200 configuration interface. The left sidebar contains a navigation menu with categories: System, Router / Bridge, Firewall, VPN, and Utilities. The main content area is titled "Physical Interfaces > t1 1/1 > Frame Relay Config".

**Frame Relay Configuration for "fr 1"**

Basic configuration for the Frame Relay interface.

- Description:  *Description label (optional)*
- Enabled:  *Use this to enable or disable this interface* ← Enable interface
- Link Management Protocol:  *Select the LMI protocol to be used on this interface* ← Select LMI protocol
- Weighted Fair Queuing:  *Use this to enable or disable WFQ on this port*
- Interface Type:  *Use this to set the signaling role of this interface* ← Select interface type
- Qos-policy:  *Outbound [QoS-Policy map](#)* ← Select QoS map

Buttons: Reset, Apply

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**Configured Permanent Virtual Circuits for "fr 1"**

Use this dialog to create a new DLCI or edit an existing one. To edit an existing DLCI, click on the item in the list below this dialog. Use the Detect PVCs button if the T1 is already connected to a switch and receiving LMI messages. **It may take a minute or two to receive a valid LMI message, so it may take more than one attempt to successfully detect any PVCs.**

Add a PVC

Buttons: Add, Detect PVCs ? ← Click Add

Description	DLCI	Status	Usage
There are no configured PVC's			

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**Configuration**

Basic configuration for the Permanent Virtual Circuit (DLCI interface).

- Description:  *Description label (optional)*
- Fragment:  *FRF.12 fragmentation threshold*
- BC:  *Committed Burst size (0..4294967294 in bps)* ← Optional F/R parameters
- BE:  *Excess Burst size (0..4294967294 in bps)*
- DLCI Number:  *DLCI is any number in the range 16-992* ← Define DLCI

**IP Settings**

- Address Type:  ← Select address type
- IP Address:  .  .  .  *Enter the IP address for this numbered interface*
- Subnet Mask:  .  .  .  *Enter the Subnet Mask for this numbered interface* ← Specify IP address

**Secondary IP Settings**

[Add a new Secondary IP Address](#)

Buttons: Reset, Apply ← Click Apply

# Encapsulation PPP – Configure PPP Virtual Interface

If PPP is the selected encapsulation choice, you will need to configure parameters for the PPP virtual interface. From this screen, you can enable the PPP interface, select queuing options, set optional authentication parameters, and assign an IP address to the interface.

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 Route Table  
 IP Interfaces  
 QoS Maps  
 Bridging  
 Spanning Tree  
**Firewall**  
 Firewall Wizard  
 General Firewall  
 Security Zones  
**VPN**  
 VPN Wizard  
 VPN Peers  
 Certificates  
**Utilities**  
 Configuration  
 Firmware  
 Reboot Unit  
 Telnet To Unit

Physical Interfaces > PPP Config

### PPP Configuration for "ppp 1"

Basic configuration for the PPP interface.

Description:  *Description label (optional)*

Enabled:  *Disabling this port causes data flow to stop for this interface only* ← Enable interface

Weighted Fair Queuing:  *Queuing method. If unchecked, FIFO will be used*

MTU:  *Maximum Transmit Unit (Range 64-1520 bytes)*

Qos-policy: None *Outbound [QoS-Policy map](#).* ← Select QoS map

#### Authentication Settings

Sent Authentication Type:  *Authentication type used by the remote peer to authenticate this unit* ← Set optional authentication settings

Sent Username:

Sent Password:

Peer Authentication Type:  *Authentication type used when authenticating remote peers*

Peer Username:

Peer Password:

#### IP Settings

Address Type:  *Set to 'None' if connecting to a Bridge with [IP routing](#) disabled.* ← Select address type

IP Address:  .  .  .  *Enter the IP address for this numbered interface* ← Specify IP address

Subnet Mask:  .  .  .

Dynamic DNS:  *Dynamic DNS is used to register this interface's IP address with a DNS Name.*

#### Secondary IP Settings

IP Address  Mask

[Add a new Secondary IP Address](#)

← Click Apply

### PPP Status for "ppp 1"

Listed below is a snapshot of the link status and statistics. Click on 'Continuous Refresh' to get the latest statistics.

PPP Link State **INITIAL**

Input packets (bytes)	0 ( 0 )
Output packets (bytes)	0 ( 0 )
Input Errors	0
Output Errors	0
Input Discards	0
Output Discards	0

← PPP Port statistics

## DSX T1 1/2 Interface (optional interface)

The T1 Network Interface Module is available with or without the DSX interface. All data DSOS not mapped to the router are mapped to the DSX interface. By default the signaling-mode is set to 'Robbed Bit' for voice, but can be set to 'None' if the DSX interface is connected to a non-voice T1 interface.

**ADIRAN NetVanta 3200** Save Logout

Physical Interfaces > T1 1/2

### Configuration for T1 1/2 (DSX-1 port)

Basic configuration for the DSX interface.

Description: <input type="text"/>	Optional descriptive label for this interface. Up to 80 alphanumeric characters.
Enable: <input type="checkbox"/>	Enable or disable this interface
Signaling-Mode: <input type="text" value="Robbed-Bit"/>	Select the signaling-mode for the DSOs mapped to this DSX-1 port
Framing: <input type="text" value="ESF"/>	Select the framing that matches the network provider framing format
Coding: <input type="text" value="B8ZS"/>	Select the coding that matches the network provider line coding
DSX-1 Map: 1-24	To change the DSOs mapped to this port, you must change the <a href="#">WAN-T1 DSO Map</a>

Reset Apply

### Status for T1 1/2 (DSX-1 port)

Listed below is a snapshot of the port status and the 24 hour performance statistics. Click on 'Continuous Refresh' to get the latest statistics.

<b>Line Status</b>	<b>Interface Disabled</b>
<b>DSO Speed</b>	64Kbps
<b>Errored Seconds</b>	0
<b>Bursty Errored Seconds</b>	0
<b>Severely Errored Seconds</b>	0
<b>Severely Errored Frame Seconds</b>	0
<b>Unavailable Seconds</b>	0
<b>Line Errored Seconds</b>	0
<b>Controlled Slip Seconds</b>	0
<b>Path Code Violations</b>	0
<b>Line Code Violations</b>	0
<b>Degraded Minutes</b>	0

Clear Statistics Continuous Refresh

Annotations:

- Enable interface
- Select signaling-mode
- Select T1 settings
- Click Apply
- T1 Port statistics

## Default Gateway

A default gateway only needs to be set if you are configuring your routers for bridge mode. If you are configuring the routers for bridging you can enter the IP address of your default gateway here.

The screenshot shows the web interface for a NetVanta 3200 device. The header includes the ADIRAN logo and the title "NetVanta 3200". There are "Save" and "Logout" buttons in the top right. A sidebar menu on the left lists various configuration categories: System, Router / Bridge, Firewall, VPN, and Utilities. The "Router / Bridge" section is expanded, showing "Default Gateway" as the selected option. The main content area is titled "Set The Default Gateway" and contains the following text: "Use this form to set the default gateway for the NetVanta unit. This is useful only if IP routing is not enabled on the unit. If IP routing is enabled on the unit, you should use the [Route Table](#) to add a default route." Below this text is a form with the label "Default Gateway:" followed by four input fields containing the IP address "192 . 168 . 1 . 1". To the right of the form is a note: "Enter the IP address for the Default Gateway of the unit. Changing this may disconnect your web session." Below the form are "Reset" and "Modify" buttons. An arrow points from the text "Gateway IP" to the input fields.

# Routing - Enabling Dynamic Routing with RIP

RIP version 1 and 2 can be configured from the Router/Routing screen.

The screenshot shows the NetVanta 3200 web interface with the following sections and annotations:

- IP Routing:** Shows "IP Routing" checked with a "Reset" and "Apply" button. An arrow points to the "IP Routing" checkbox with the text "IP Routing on by default".
- OSPF & BGP:** A message stating "OSPF & BGP Functionality are configurable in this product via the Command Line Interface, but not via the Web Interface."
- RIP Configuration:** Shows "RIP Version" set to "Version 1" in a dropdown menu. An arrow points to the dropdown with the text "Select RIP version". Below are checkboxes for "Redistribute Connected" and "Redistribute Static", both unchecked.
- Add a Network to be Advertised by RIP:** Shows input fields for "IP Network" and "Subnet Mask". An arrow points to these fields with the text "Add networks that will participate in RIP". Below is a table with columns "Network" and "Mask" and the message "There are no networks configured".
- Passive Interfaces:** Shows "Disable RIP on Interface" set to "None" in a dropdown menu. An arrow points to the dropdown with the text "Suppress transmission of RIP updates". Below is a table with columns "Passive Interface" and "IP Address" and the message "There are no interfaces configured".
- Route Table:** Shows a table of routes. An arrow points to the table with the text "View route table".

Destination	Mask	Next Hop	Dist	Type
0.0.0.0	0.0.0.0	10.19.218.254	1	Static
10.19.218.0	255.255.255.0	0.0.0.0	0	Connected



# Routing Configuration

From the NetVanta Web-based GUI, both static routes and dynamic RIP routes can be configured. OSPF must be configured from the ADTRAN OS command line interface.

## Route Table – Adding a Static Route

Static routes are configured from the Router/Route Table screen. Known routes are also displayed on this screen.

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Reboot Unit  
Telnet To Unit

**Add a Static Route to the Route Table**

Static Routes are often required to reach networks that are not learned via a dynamic routing protocol. Enter the appropriate information below to add a static route or click on a route below to use it as a template for a new route.

Destination Address: [ ] . [ ] . [ ] . [ ] *Enter the network to add to the route table.*

Destination Mask: [ ] . [ ] . [ ] . [ ] *Enter the appropriate mask for this network.*

Gateway:  
 Address [ ] . [ ] . [ ] . [ ] *Enter the gateway address to reach this network.*  
 Interface <Select Interface> *Select the interface to be used as the gateway.*

Administrative Distance (optional): [ ] *The Distance metric for this network. (Optional parameter)*

Reset Add

**View/Delete Static Route**  
Click on the name of a route to use it as a template for a new route.

Destination	Mask	Next Hop	Dist	Type	
0.0.0.0	0.0.0.0	10.19.218.254	1	Static	Delete

**Route Table**

This is the running version of your route table. Some of your static routes might not show up in this table due to interface status.

10 rows per page Page 1 of 1

Destination	Mask	Next Hop	Dist	Type
0.0.0.0	0.0.0.0	10.19.218.254	1	Static
10.19.218.0	255.255.255.0	0.0.0.0	0	Connected

10 rows per page Page 1 of 1

Annotations:  
 - Enter destination network (points to Destination Address field)  
 - Enter destination network subnet mask (points to Destination Mask field)  
 - Enter gateway IP address or Select interface (points to Gateway options)  
 - Click Add (points to Add button)  
 - View route table (points to Route Table table)

A default route can be added by using all 'zeros' for the destination address and mask

**Add a Static Route to the Route Table**

Static Routes are often required to reach networks that are not learned via a dynamic routing protocol. Enter the appropriate information below to add a static route or click on a route below to use it as a template for a new route.

Destination Address: [0] . [0] . [0] . [0] *Enter the network to add to the route table.*

Destination Mask: [0] . [0] . [0] . [0] *Enter the appropriate mask for this network.*

Gateway:  
 Address [ ] . [ ] . [ ] . [ ] *Enter the gateway address to reach this network.*  
 Interface fr 1.16 *Select the interface to be used as the gateway.*

Administrative Distance (optional): [ ] *The Distance metric for this network. (Optional parameter)*

Reset Add

# IP Interfaces – Display all IP interfaces

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**Utilities**  
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Reboot Unit  
Telnet To Unit

**IP Interfaces**

This is a list of all of the IP interfaces configured in the NetVanta. View or edit the configuration of an interface by clicking its name.

Name	IP Address	Netmask	Type
<a href="#">eth 0/1</a>	10.19.218.32	255.255.255.0	Ethernet
<a href="#">ppp 1</a>	10.10.10.1	255.255.255.252	PPP

Delete

← Interfaces configured with an IP address will be displayed here

# QoS Maps

The QoS map is a named list with sequenced entries. A sequence number differentiates multiple map entries for the same QoS map. The sequence number is used to assign match order.

Once created, a QoS map must be applied to an interface in order to actively process traffic.

The screenshot shows the NetVanta 3200 web interface. On the left is a navigation menu with categories: System, Router / Bridge, Firewall, VPN, and Utilities. The main content area is titled "Add / Modify / Delete QoS Map".

**Add / Modify / Delete QoS Map**

Configure a QoS Map

**Add New QoS Map**

Map Name:  *QoS map tag. ( maximum of 79 characters)*

Sequence Number:  *Sequence to insert into QoS map entry. Valid values are 0-65535.*

**Modify/Delete a QoS Map**

To view or modify an existing QoS map, click the link in the desired row.

Name	Sequence Number	Map Match Pkts
There are no QoS maps in the database.		

**Assign a QoS-policy to an Interface**

Use this form to assign an interface to an outbound policy. If the interface is attached to an outbound policy, click on the link to view the statistics for that interface.

Interface Name	New QoS-policy
fr 1	<none>
ppp 1	<none>

**Annotations:**

- An arrow points to the "Add New QoS Map" section with the text: "To add a new QoS Map, enter the name and sequence and press add".
- An arrow points to the "Assign a QoS-policy to an Interface" section with the text: "Applies a QoS Map to an interface".

# Adding QoS Maps

The QoS map entry contains a single match reference, and one or more actions (Packet Marking, priority, or both).

The screenshot shows the NetVanta 3200 web interface for configuring a QoS Map named "Test-1". The interface is divided into a left sidebar with navigation menus and a main configuration area. The sidebar includes sections for System, Router / Bridge, Firewall, VPN, and Utilities. The main area is titled "QoS Map Setup for 'Test-1'" and contains three sections: Match Packets, Packet Marking, and Priority Queue. Each section has radio buttons for different options and input fields for values. Annotations with arrows point to specific options in each section, explaining their function.

**Match Packets**

- Disable *Disable packet matching*
- IP RTP  
Start Port:  End Port:  *Match IP RTP packets*
- DSCP  *Match DSCP value (0-63)*
- Precedence  *Match precedence value(0-7)*
- Bridged *Match frames being bridged*
- NetBEUI *Match bridged NetBEUI frames*

**Packet Marking**

- Disable *Disable all marking*
- DSCP  *DSCP field value (0-63)*
- Precedence  *Precedence field value (0-7)*

**Priority Queue**

- Disable *Disable priority queue*
- Bandwidth Limit   *Limit ( 8-1000000 Kbits/sec)  
Burst (0, 32-1000000 bytes)*
- Unlimited bandwidth *Enable unlimited bandwidth*

**Annotations:**

- Defines what packets to match (points to Match Packets section)
- Defines what to mark packets with (points to Packet Marking section)
- What priority to give the matched packets (points to Priority Queue section)

# Bridging

The Bridging section allows you to configure the router to bridge all traffic across the WAN link.

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**Add / Modify / Delete Bridge**  
Create/delete a bridge.

**Add New Bridge**  
Bridge Number:  Valid values are 1-255.  
Add

**Modify/Delete a Bridge**  
To view or modify an existing bridge, click the link in the desired row.

Bridge	Number of Interfaces
There are no bridges in the database.	

**Assign Interfaces to a Bridge**  
Use this form to add an interface to a bridge. Go to the [Spanning Tree](#) page to configure the spanning tree parameters for the interface.

Interface Name	Current Bridge	New Bridge
eth 0/1	<none>	<none>
ppp 1	<none>	<none>

Reset Apply

**MAC Forwarding Entries**  
The following table lists all MAC address forwarding entries for the bridge. Entries can be deleted by clicking the 'Delete' button on that entry's row.

*Before a 'MAC Forwarding Entry' can be set, an interface must be assigned to a bridge. Please use the box above to assign the interface(s).*

MAC Address	Bridge	Interface	Type
There are no entries in the Mac Forwarding table.			

Creates a new bridge group

Assigns a bridge group to an interface

Shows current MAC addresses in the bridge group

# Spanning Tree

Global Spanning Tree parameters are configured in this screen.

The screenshot shows the NetVanta 3200 web interface. On the left is a navigation menu with categories: System, Router / Bridge, Firewall, VPN, and Utilities. The 'Spanning Tree' option is selected under the 'Router / Bridge' category. The main content area is titled 'Spanning Tree' and contains a warning message: 'Customize Spanning Tree properties for the network. (WARNING: Modifying the timer values below from their defaults could adversely affect the stability/performance of your network.)'. Below the warning are several configuration fields: 'Hello Time' (2), 'Max Age' (20), 'Forward Delay' (15), 'Bridge Priority' (32768), and 'Spanning Tree Mode' (Rapid STP (802.1w)). At the bottom of this section are buttons for 'Restore Factory Defaults', 'Reset', and 'Apply'. Below this is a 'Spanning Tree Properties' section with a message: 'To view the properties of the Spanning Tree, click the link in the desired row.' and a table with two columns: 'Spanning Tree Instance' and 'Association'. The table contains one row with the text 'There are no spanning trees.'

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- Spanning Tree**

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- VPN Wizard
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**Utilities**

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**NetVanta 3200** Save Logout

**Spanning Tree**

Customize Spanning Tree properties for the network. **(WARNING:** Modifying the timer values below from their defaults could adversely affect the stability/performance of your network.)

Hello Time:	<input type="text" value="2"/>	1-10 sec (default is 2)
Max Age:	<input type="text" value="20"/>	6-40 sec (default is 20)
Forward Delay:	<input type="text" value="15"/>	4-30 sec (default is 15)
Bridge Priority:	<input type="text" value="32768"/>	0-65535 (default is 32768) ?
Spanning Tree Mode:	<input type="text" value="Rapid STP (802.1w)"/>	

Restore Factory Defaults Reset Apply

**Spanning Tree Properties**

To view the properties of the Spanning Tree, click the link in the desired row.

Spanning Tree Instance	Association
There are no spanning trees.	

Spanning Tree settings that globally apply to switch are configured here.