

Netvanta 3200/3205: Routing across the WAN



Overview

This application drawing shows how to use NetVanta 3200s or NetVanta 3205s in a scenario where there is a point-to-point T-1 that is used for data. The IP addresses used in the configuration script and configuration steps are just examples and maybe modified to fit your network.

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Configuration steps using the web interface for NetVanta 3200/3205 "Host Router":

1. Choose "Physical Interfaces" from the left hand side menu options.

2. Choose "eth 0/1" from the list of physical interfaces displayed.

Physical Interfaces				
This is a lis connected its name.	t of all the physical inte via a plug-in module. V	erfaces that are either physically iew or edit the configuration of a	tied to the product or an interface by clicking	
Name	Logical Interface	Line Status	Туре	
(eth 0/1)	none	Up	Ethernet	
t1 1/1	none	Interface Disabled	WAN-T1	

3. Under the "IP Settings" section type in the new "IP Address" and "Subnet Mask" you would like to use. In the application drawings example the IP address 192.168.1.254 is used.

IP Settings			
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.		
IP Address: 192 , 168 , 1 , 254	IP address for this numbered interface		
Subnet Mask: 255 , 255 , 255 , 0	Subnet Mask for this numbered interface		
Dynamic DNS: <disabled></disabled>	Used to register this interface's IP address with a DNS Name.		
Secondary IP Settings			
IP Address Mask			
Add a new Secondary IP Address			
Reset			

4. Press the "Apply" button.

IP Settings	
Address Type: Static 💽	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.
IP Address: 192 . 168 . 1 . 254	IP address for this numbered interface
Subnet Mask: 255 , 255 , 255 , 0	Subnet Mask for this numbered interface
Dynamic DNS: disabled>	Used to register this interface's IP address with a DNS Name.
Secondary IP Settings	
IP Address Mask	
Add a new Secondary IP Address	
Reset Apply	

Note: If you choose to change the IP address of Ethernet 0/1, you will need to change the IP address of your workstation to an IP on the same network as Ethernet 0/1 to continue configuring the router.

5. Choose "Physical Interfaces" from the left hand side menu options.



6. Choose "t1 1/1" from the list of physical interfaces displayed.

Physical Interfaces			
		rfaces that are either physically iew or edit the configuration of a	
Name	Logical Interface	Line Status	Туре
eth 0/1	none	Up	Ethernet
t1 1/1	none	Interface Disabled	WAN-T1

7.	Checked	the	box	next to	"Enable"	
<i>.</i> .	Checker		0011	110/110 00	Lindoit	

Configuration for T1 1/1				
Basic configuration	n 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 DS0s:	None 💌 to 💌	Select the DSOs to map to the 🛛 🕜 Router		
DS0 Speed:	64Kbps 💌	Select the speed for the DSOs in the DSO Map		
Encapsulation:	C PPP C Frame Relay C HDLC	Interface connects to a PPP, Frame Relay, or HDLC circuit		
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame ? Relay)		
	Reset	ply		

8.	Next to	"Clocking"	choose	"Internal"	,
ο.	INCAL LO	CIOCKING	CHOOSE	Internal	

Configuration for T1 1/1				
Basic configuration for the T1 interface.				
Description:		Description label (optional)		
Enable:	\checkmark	Enable or disable this interface		
Clocking:	Internal •	Select the source timing for this interface		
Framing:	ESF -	Select the framing that matches the network provider framing of format		
Coding:	B8ZS -	Select the coding that matches the network provider line coding		
FDL:	ANSI -	Select the format for the facility 🕜		
Data DS0s:	None 💌 to 💌	Select the DSOs to map to the 🛛 🕜		
DS0 Speed:	64Kbps 💌	Select the speed for the DSOs in the DSO Map		
Encapsulation:	C PPP C Frame Relay C HDLC	Interface connects to a PPP, Frame Relay, or HDLC circuit		
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame Relay)		
	Reset	ply		

9. Choose "1" in the first drop down next to "Data DS0s" and "24" in the second drop down.

	Configuration for T1 1/1				
Basic configuration	Basic configuration for the T1 interface.				
Description:		Description label (optional)			
Enable:		Enable or disable this interface			
Clocking:	Internal 💌	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 DS0s:	1 • to 24 •	Select the DSOs to map to the 🛛 🕜 Router			
DS0 Speed:	64Kbps 🗸	Select the speed for the DSOs in the DSO Map			
Encapsulation:	C PPP C Frame Relay C HDLC	Interface connects to a PPP, Frame Relay, or HDLC circuit			
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame ? Relay)			
	Reset	pply			

10. Choose "PPP" next to "Encapsulation".

Configuration for T1 1/1				
Basic configuration for the T1 interface.				
Description:		Description label (optional)		
Enable:		Enable or disable this interface		
Clocking:	Internal 💌	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 DS0s:	1 • to 24 •	Select the DSOs to map to the 🛛 🕜 Router		
DS0 Speed:	64Kbps 🔻	Select the speed for the DSOs in the DSO Map		
Encapsulation:	PPP Frame Relay HDLC	Interface connects to a PPP, Frame Relay, or HDLC circuit		
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame 《 Relay)		
	Reset	ply		

11. Press "Apply" and new screen will appear that is titled "PPP Configuration for ppp 1".

Configuration f	or T1 1/1	
Basic configuration	n for the T1 interface.	
Description:		Description label (optional)
Enable:		Enable or disable this interface
Clocking:	Internal 💌	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 24 •	Select the DSOs to map to the 🛛 🕜 Router
DS0 Speed:	64Kbps 💌	Select the speed for the DSOs in the DSO Map
Encapsulation:	 PPP Frame Relay HDLC 	Interface connects to a PPP, Frame Relay, or HDLC circuit
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame (?) Relay)
	Reset	pply

IP Settings	
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.
IP Address: 0 . 0 . 0 . 0	IP address for this numbered interface
Subnet Mask: 0 , 0 , 0 , 0	Subnet Mask for this numbered interface
Dynamic DNS:	

12. Under the "IP Settings" section change "Address Type" to "Static".

13. Fill in the "IP Address" and "Subnet Mask" you would like to use. In the example it would be 10.0.0.1 and 255.255.252

IP Settings	
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.
IP Address: 10 . 0 . 0 . 1	IP address for this numbered interface
Subnet Mask: 255 , 255 , 255 , 252	Subnet Mask for this numbered interface
Dynamic DNS: <disabled></disabled>	Used to register this interface's IP address with a DNS Name.
Secondary IP Settings	
IP Address Mask	
Add a new Secondary IP Address	
Reset	

14. Press "Apply".

IP Settings	
Address Type: Static 💽	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.
IP Address: 10 . 0 . 0 . 1	IP address for this numbered interface
Subnet Mask: 255 , 255 , 255 , 252	Subnet Mask for this numbered interface
Dynamic DNS: <a>disabled	Used to register this interface's IP address with a DNS Name.
Secondary IP Settings	
IP Address Mask	
Add a new Secondary IP Address	
Reset	

15. Choose "Route Table" from the left hand side menu options.

ADRAN
System
Getting Started
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
Router / Bridge
Default Gateway
Routing
Route Table
IP Interfaces
Tunnels
QoS Wizard
QoS Maps
Bridging
Spanning Tree

16. Fill in 192.168.2.0 for the "Destination Address" and 255.255.255.0 for the "Destination Mask".

	Add a Static Ro	ute to the Rou	te Table	
	routing protocol. Er	nter the appropr o use it as a tem	riate information bel	at are not learned via a dynamic ow to add a static route or click te. <u>IP Routing</u> must be enabled in
/	Destination Address:	192 , 168 ,	2.0	Enter the network to add to the route table.
	Destination Mask:	255 . 255 .	255 . 0	Enter the appropriate mask for this network.
	Gateway:			
	Address		· -	Enter the gateway address to reach this network. - OR -
	C Interface	<select interf<="" td=""><td>ace > 🔽</td><td>Select the interface to be used as the gateway.</td></select>	ace > 🔽	Select the interface to be used as the gateway.
	Administrative Distance (optional):			The Distance metric for this network. (Optional parameter)
			Reset Add	

17. Choose "Address" under "Gateway" and type 10.0.0.2

Add a	Static	Route to	the I	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. <u>IP Routing</u> must be enabled in order to add static routes.

Destination Address:	192 . 168 . 2 . 0	Enter the network to add to the route table.
Destination Mask:	255 . 255 . 255 . 0	Enter the appropriate mask for this network.
Gateway:		
Address	10.0.2	Enter the gateway address to reach this network. - OR -
C Interface	<select interface=""> 💌</select>	Select the interface to be used as the gateway.
Administrative Distance (optional):		The Distance metric for this network. (Optional parameter)
	Reset Add	

18. Press "Add".

Add a Static Ro	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. <u>IP Routing</u> must be enabled in order to add static routes.			
Destination Address:	192 . 168 . 2 . 0	Enter the network to add to the route table.	
Destination Mask:	255 . 255 . 255 . 0	Enter the appropriate mask for this network.	
Gateway:			
Address	10 . 0 . 0 . 2	Enter the gateway address to reach this network. - OR -	
C Interface	<select interface=""> 💌</select>	Select the interface to be used as the gateway.	
Administrative Distance (optional):		The Distance metric for this network. (Optional parameter)	
Reset			

19. Configuration is now done and all that left to do is choose "Save" in the upper right hand corner.

Save	Logout

Configuration Script for the NetVanta 3200/3205 "Host Router":

```
۱
!
hostname "HostRouter"
enable password adtran
ip subnet-zero
ip classless
ip routing
event-history on
no logging forwarding
no logging email
logging email priority-level info
!
username "admin" password "adtran"
ip policy-timeout tcp telnet 14400
۱
1
interface eth 0/1
 ip address 192.168.1.254 255.255.255.0
 no shutdown
!
!
١
interface t1 1/1
 clock source internal
 tdm-group 1 timeslots 1-24 speed 64
 no shutdown
١
interface ppp 1
 ip address 10.0.0.1 255.255.255.252
 no shutdown
 cross-connect 1 t1 1/1 1 ppp 1
!
```

```
!
!
!
!
ip route 192.168.2.0 255.255.255.0 10.0.0.2
!
no ip n-form agent
ip http server
no ip http secure-server
no ip snmp agent
no ip ftp agent
!
!
!
!
١
!
!
line con 0
 no login
!
line telnet 0 4
 login
 password adtran
!
end
```

Configuration steps using the web interface for NetVanta 3200/3205 "Remote Router":

1. Choose "Physical Interfaces" from the left hand side menu options.



2. Choose "eth 0/1" from the list of physical interfaces displayed.

Physica	l Interfaces		
This is a lis connected its name.	st of all the physical inte via a plug-in module. V	erfaces that are either physically liew or edit the configuration of a	tied to the product or n interface by clicking
Name	Logical Interface	Line Status	Туре
(eth 0/1)	none	Up	Ethernet
+1 1/1	DODE	Interface Disabled	10(AN-T1

3. Under the "IP Settings" section type in the new "IP Address" and "Subnet Mask" you would like to use. In the application drawings example, the IP address 192.168.2.254 is used.

IP Settings			
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.		
IP Address: 192 , 168 , 2 , 254	IP address for this numbered interface		
Subnet Mask: 255 , 255 , 255 , 0	Subnet Mask for this numbered interface		
Dynamic DNS: <disabled></disabled>	Used to register this interface's IP address with a DNS Name.		
Secondary IP Settings			
IP Address Mask			
Add a new Secondary IP Address			
Reset Apply			

4. Press the "Apply" button.

IP Settings			
Address Type: Static 💽	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.		
IP Address: 192 , 168 , 2 , 254	IP address for this numbered interface		
Subnet Mask: 255 , 255 , 255 , 0	Subnet Mask for this numbered interface		
Dynamic DNS:			

Note: If you choose to change the IP address of Ethernet 0/1, you will need to change the IP address of your workstation to an IP on the same network as Ethernet 0/1 to continue configuring the router.

5. Choose "Physical Interfaces" from the left hand side menu options.



6. Choose "t1 1/1" from the list of physical interfaces displayed.

Physical Interfaces			
This is a list of all the physical interfaces that are either physically t connected via a plug-in module. View or edit the configuration of an its name.			
Name	Logical Interface	Line Status	Туре
<u>eth 0/1</u>	none	Up	Ethernet
		Interface Disabled	WAN-T1

7.	Check the bo	ox next to	"Enable".	to enable	the interface.
<i>'</i> •	Check the be	JA none to	Linuoic,	to endore	the interface.

Configuration for T1 1/1		
Basic configuration	n 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 DS0s:	None 💌 to 🔽	Select the DSOs to map to the 🛛 🕜
DS0 Speed:	64Kbps 💌	Select the speed for the DSOs in the DSO Map
Encapsulation:	 PPP Frame Relay HDLC 	Interface connects to a PPP, Frame Relay, or HDLC circuit
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame ? Relay)
	Reset	ply

Configuration for T1 1/1			
Basic configuration for the T1 interface.			
Description:		Description label (optional)	
Enable:	$\overline{\mathbf{v}}$	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	
Coding:	B8ZS -	Select the coding that matches the network provider line coding	
FDL:	ANSI	Select the format for the facility 🥑	
Data DS0s:	1 • to 24 •	Select the DSOs to map to the 🛛 🕜 Router	
DS0 Speed:	64Kbps 💌	Select the speed for the DSOs in the DSO Map	
Encapsulation:	O PPP O Frame Relay O HDLC	Interface connects to a PPP, Frame Relay, or HDLC circuit	
Multilink:	Π	Enable multilink for the selected encapsulation (PPP or Frame Relay)	
	Reset	yla	

8. Select "1" in the "Data DS0s" drop down list and "24" in the second drop down. Configuration for T1 1/1

9. Choose "PPP" from the "Encapsulation" options.

Configuration f	for T1 1/1	
Basic configuration	n 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 DS0s:	1 • to 24 •	Select the DSOs to map to the 🛛 🕜
DS0 Speed:	64Kbps 🔹	Select the speed for the DSOs in the DSO Map
Encapsulation:	 PPP Frame Relay HDLC 	Interface connects to a PPP, Frame Relay, or HDLC circuit
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame 🛛 🕐 Relay)
	Reset	pply

10. Press "Apply" and a new screen will appear to configure the PPP interface.

Configuration f	or T1 1/1	
Basic configuration	n for the T1 interface.	
Description:		Description label (optional)
Enable:	V	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 DS0s:	1 • to 24 •	Select the DSOs to map to the 🛛 🕜
DS0 Speed:	64Kbps 💌	Select the speed for the DSOs in the DSO Map
Encapsulation:	 PPP Frame Relay HDLC 	Interface connects to a PPP, Frame Relay, or HDLC circuit
Multilink:		Enable multilink for the selected encapsulation (PPP or Frame 🛛 (?) Relay)
	Reset	Apply

IP Settings			
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.		
IP Address: 0 . 0 . 0 . 0	IP address for this numbered interface		
Subnet Mask: 0 , 0 , 0 , 0	Subnet Mask for this numbered interface		
Dynamic DNS: <a>disabled	Used to register this interface's IP address with a DNS Name.		
Secondary IP Settings			
IP Address Mask			
Add a new Secondary IP Address			
Reset			

11. Under the "IP Settings" section change the "Address Type" to "Static".

12. Fill in the "IP Address" and "Subnet Mask" you would like to use. In the application drawings example the IP address and subnet mask would be 10.0.0.2 and 255.255.255.252 respectively.

IP Settings			
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.		
IP Address: 10 . 0 . 0 . 2	IP address for this numbered interface		
Subnet Mask: 255 , 255 , 255 , 252	Subnet Mask for this numbered interface		
Dynamic DNS: <disabled></disabled>	Used to register this interface's IP address with a DNS Name.		
Secondary IP Settings			
IP Address Mask			
Add a new Secondary IP Address			
Reset Apply			

13. Press "Apply", when done.

IP Settings	
Address Type: Static	Set to 'None' if connecting to a <u>Bridge</u> with <u>IP routing</u> disabled.
IP Address: 10 . 0 . 0 . 2	IP address for this numbered interface
Subnet Mask: 255 , 255 , 255 , 252	Subnet Mask for this numbered interface
Dynamic DNS: <a>disabled>	Used to register this interface's IP address with a DNS Name.
Secondary IP Settings	
IP Address Mask	
Add a new Secondary IP Address	
Reset	

14. Choose "Route Table" from the left hand side menu options.

ADIRAN
System
Getting Started
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
Router / Bridge
Default Gateway
Routing
Route Table
IP Interfaces
Tunnels
QoS Wizard
QoS Maps
Bridging
Spanning Tree

15. Using the information for the application drawings example, fill in 0.0.0.0 for the "Destination Address" and 0.0.0 for the "Destination Mask".

	Add a Static Ro	ute 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. <u>IP Routing</u> must be enabled in order to add static routes.		
	Destination Address:	0.0.0	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. - OR -
	C Interface	<select interface=""> 🔽</select>	Select the interface to be used as the gateway.
	Administrative Distance (optional):		The Distance metric for this network. (Optional parameter)
		Reset Add	

16. Choose "Address" under the "Gateway" and type 10.0.0.1

Add a	Static Ro	ute to the	e Route '	Table
Huu u	Static Ko		- Kouce	T G D I C

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. <u>IP Routing</u> must be enabled in order to add static routes.

Destination Address:		Enter the network to add to the route table.
Destination Mask:		Enter the appropriate mask for this network.
Gateway:		
C Address	10 . 0 . 0 . 1	Enter the gateway address to reach this network. - OR - Select the interface to be used
		as the gateway.
Administrative Distance (optional):		The Distance metric for this network. (Optional parameter)
	Reset Add	

17. Press "Add".

Add a Static Ro	ute 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. <u>IP Routing</u> must be enabled in order to add static routes.				
Destination Address:		Enter the network to add to the route table.		
Destination Mask:		Enter the appropriate mask for this network.		
Gateway:				
Address	10 . 0 . 0 . 1	Enter the gateway address to reach this network. - OR -		
C Interface	<select interface=""> 💌</select>	Select the interface to be used as the gateway.		
Administrative Distance (optional):		The Distance metric for this network. (Optional parameter)		
Reset Add				

18. Configuration is now done and all that left to do is choose "Save" in the upper right hand corner.

	1
(save)	Logout

Configuration Script for the NetVanta 3200/3205 "Remote Router":

```
!
!
hostname "RemoteRouter"
enable password adtran
!
ip subnet-zero
ip classless
ip routing
1
event-history on
no logging forwarding
no logging email
logging email priority-level info
!
username "admin" password "adtran"
ip policy-timeout tcp telnet 14400
۱
۱
interface eth 0/1
 ip address 192.168.2.254 255.255.255.0
 no shutdown
۱
!
interface t1 1/1
 tdm-group 1 timeslots 1-24 speed 64
 no shutdown
1
interface ppp 1
 ip address 10.0.0.2 255.255.255.252
 no shutdown
 cross-connect 1 t1 1/1 1 ppp 1
```

```
!
!
!
!
ip route 0.0.0.0 0.0.0.0 10.0.0.1
!
no ip n-form agent
ip http server
no ip http secure-server
no ip snmp agent
no ip ftp agent
!
!
!
!
!
!
!
line con 0
 no login
!
line telnet 0 4
 login
 password adtran
!
end
```