



DEPLOYMENT GUIDE:

Configuring FatPipe v 9.1.2 for Use
With Zscaler Internet Access

Revision 2.2
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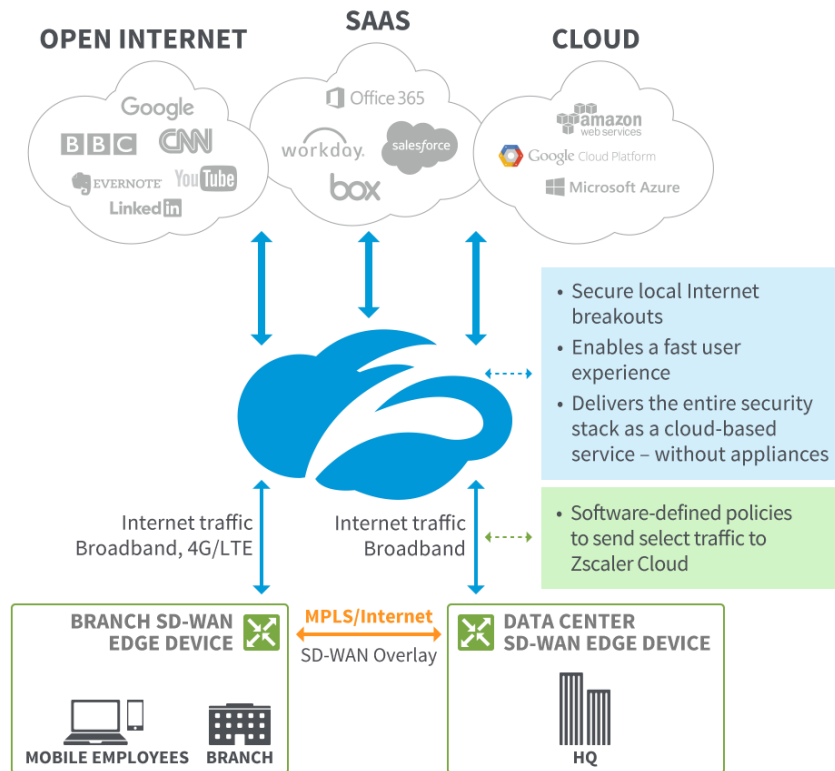
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TABLE OF CONTENTS

About Zscaler Internet Access	1
Before You Begin	2
Prerequisites	2
Planning Your FatPipe – Zscaler Integration	2
Connecting to ZIA via GRE (Preferred Method)	3
Create Outbound Policy	3
Create GRE Tunnel to ZIA	5
Connecting to ZIA via IPSec (Required for Dynamic IP Addresses)	7
Create Outbound Policy	7
Create IPSec Tunnel to ZIA	10
Validate Configuration	13
Route Test	13

ABOUT ZSCALER INTERNET ACCESS

Zscaler secures direct-to-internet connections and delivers a fast user experience — without backhauling and without the cost and complexity of duplicating the appliance security stack at each location. With Zscaler in combination with your FatPipe SD-WAN can reduce MPLS costs and provide a fast and secure user experience.



BEFORE YOU BEGIN

PREREQUISITES

The following items are required for configuring FatPipe and Zscaler Internet Access integration:

- FatPipe MPVPN, FatPipe IPVPN, or FatPipe SD-WAN appliance running v9.1.2 or later
 - Optional – FatPipe Orchestrator v9.1.2 or later
 - Note: If you have a FatPipe WARP, please contact your FatPipe customer care specialist to upgrade to FatPipe MPVPN.
- Active Zscaler Internet Access Instance
 - Administrator login credentials for this instance

PLANNING YOUR FATPIPE – ZSCALER INTEGRATION

FatPipe supports tunneling traffic to Zscaler Internet Access (ZIA) via two methods.

- **GRE: This is the preferred method.** This requires a static IPv4 address
- **IPSec:** For locations with dynamic IPv4 addressing, IPSec must be used.

Prior to configuring the FatPipe you should decide whether GRE or IPSec tunneling to ZIA is appropriate for the location you are deploying. FatPipe routes traffic to ZIA via an outbound policy for all traffic (0.0.0.0 or *). The ZIA policy should be the last policy on your outbound policy list. FatPipe will route ALL traffic not matching a higher policy in the list to ZIA for further firewalling.

- **NOTE: ANY OUTBOUND POLICY BELOW THE ZIA (0.0.0.0 or *) POLICY WILL NOT BE FOLLOWED**

Before configuring FatPipe to integrate with Zscaler, verify the following:

1. Ensure access to an active Zscaler subscription for Zscaler Internet Access.
2. Choose a root FQDN for the Zscaler subscription account that will be used for credentials for each site or Service Center (ex: @mycompanydomain.com). If this FQDN is not yet registered and authorized in the Zscaler account, open a ticket with Zscaler and request that FQDN be added to the account:
 - a. <https://help.zscaler.com/submit-ticket>
3. Create a comprehensive list of all the Zscaler Enforcement Nodes (ZEN) VPN Host names you wish to be used by all sites and/or Service Centers.
4. The full list of available hostnames can be obtained for each Zscaler environment by using the corresponding URL:
 - a. <https://ips.zscaler.net/cenr>
 - b. <https://ips.zscalerone.net/cenr>
 - c. <https://ips.zscalertwo.net/cenr>
 - d. <https://ips.zscalerthree.net/cenr/>
 - e. <https://ips.zscalerbeta.net/cenr>

CONNECTING TO ZIA VIA GRE (PREFERRED METHOD)

To route traffic to ZIA via GRE, you will need to create an outbound policy for to determine what traffic to route to ZIA and build the GRE tunnel to ZIA.

CREATE OUTBOUND POLICY

1. Select "Outbound Policy" from the "Routing" section, then select "Add"
 - a. NOTE – "Advanced Menu" must be checked to have "Routing" section visible.

Name	Rule	Protocol	Source IP/Mask	Source Port	Dest IP/Mask	Dest Port	Traffic Mode	Interface(s)	Qos	DSCP
http	Allow	TCP	*	*	*	80	Interface Specific	WAN1, WAN2, WAN3, WAN4		0
https	Allow	TCP	*	*	*	443	Interface Priority	WAN2		0

2. Fill in traffic identification parameters in the new Outbound Policy
 - a. Name the Outbound Policy
 - b. Select Protocol = "All"
 - c. Source select "IP", and fill in the wildcard "*" for all source IPs
 - d. Destination select "IP/DomainName", and fill in the wildcard "*" for all source IPs

Add Outbound Policy Routing Rule

Name: ZSCALER

Protocol: All

DSCP: None selected

Source: IP

Destination: IP/DomainName

Action: Allow

QoS: None

Application Profiles: None

WebFilter Profiles: None

Best Path: Follow Best Path, Auto

Parameters: Packet Loss, Bandwidth, Latency, Jitter

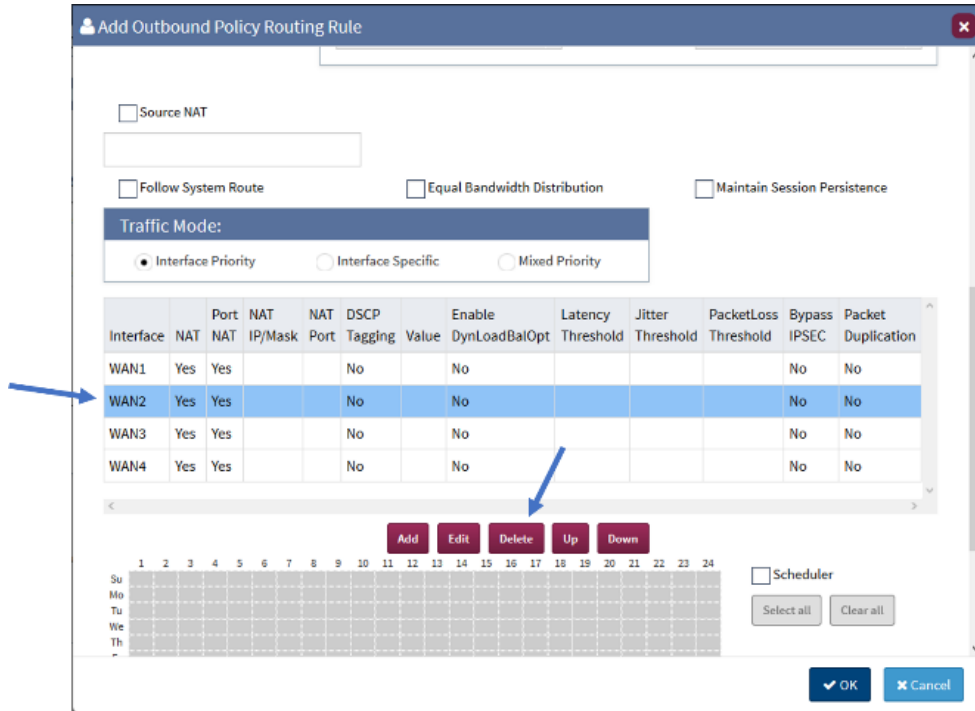
Selected: [Empty]

Source NAT

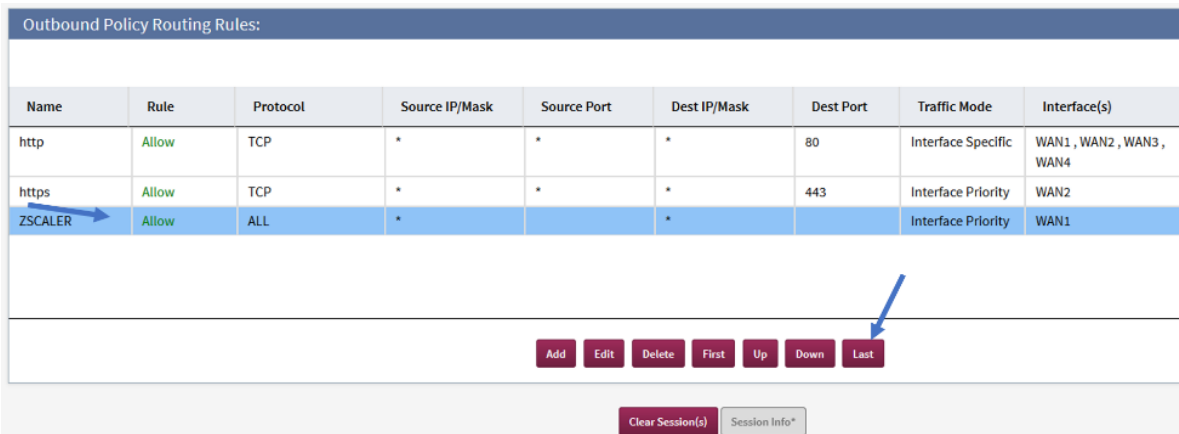
Follow System Route, Equal Bandwidth Distribution, Maintain Session Persistence

OK Cancel

3. Remove Outbound Interfaces that will not be used to forward traffic to ZIA
 - a. Select WAN Interface(s) to remove one at a time
 - b. Select "Delete"
 - c. NOTE: This will remove the WAN Interface from this rule only.



4. Select "OK" to save the Outbound Policy
5. This Outbound Policy should **ALWAYS** be the last policy in the Outbound Policy Routing Rules list. If it is not move it to the bottom of the list
 - a. Select the Policy
 - b. Select "Last"



6. Remember to save you changes.

CREATE GRE TUNNEL TO ZIA

1. Select "VPN" from the "Routing" section, then select "Add"
2. Configure VPN.
 - a. Since we are using GRE remote host should be a non-routable IP address

Add/Edit VPN Policy Rule

Template
 Encapsulate traffic before encryption**

Tunnel Name: Internet

Remote End: Network User

Encryption: Null

Authentication: SHA1

NAT-T: Auto Forced
 Custom Ports
IKE Port: 500
Encapsulated UDP Port: 4500

Other: TCPMSS: 1372, DPD Delay: 30, DPD Timeout: 120, PFS

Local Info: Local LAN Networks
Network IP Address/Mask: 10.0.0.0/24
Encapsulating IP:
External IP: 67.107.195.156
Add Edit Delete

Remote Info: Remote LAN Networks
Network IP Address/Mask: 0.0.0.0/0
Encapsulating IP:
External IP: 11|0.0.1
Add Edit Delete

NOTE: If you have more than 20 subnets, please create a Network

OK Cancel

Key Management

Pre-Shared Secret RSA Signature RSA Certificates

Pre-Shared Key: Test4444

Remote ID: 11.0.0.1

IKE Lifetime: 1 hour 0 minute

Key Lifetime: 1 hour 0 minute

3. Create MPsec paths to ZIA.
 - a. Select "MPsec" within the "Routing" section, then "Add"
 - i. Name the MPsec Rule (Remote Network name)
 - ii. Input Remote VPN IP Address
 1. 11.0.0.1 (Matches fake peer in VPN policy)
 - iii. Confirm Session Load Balancing in selected
 - iv. Select OK

4. Add Paths to the ZIA

- a. Select "Add", next to the first window
 - i. Input "Remote FatPipe IP"
 1. This is the Assign IP address from Zscaler of your Primary GRE Tunnel
 - ii. Remote WAN Interface No = 1(This will not be used)
 - iii. Check "GRE"
 1. Select Usage = Primary
 2. Second path for backup Internet select backup and none for encryption.
- b. Select "Add", next to the second window
 - i. Input "Remote FatPipe IP"
 1. This is the Assign IP address from Zscaler of your Backup GRE Tunnel
 - ii. Remote WAN Interface No = 2(This will not be used)
 - iii. Check "GRE" for first path and none for second.
 - iv. Select Usage = Backup for both paths.
- c. Select "OK" at the bottom of the "Add Path" window
- d. Select "Save" at the bottom of the configuration interface.

Remote VPN Name: Zscaler
 Remote VPN IP: 11.0.0.1
 Load Balancing Option: Session
 Load Balancing Type: Static

Remote FatPipe IP: 199.168.148.131
 Remote WAN Interface No: 1
 Skip Dynamic IP Update

Connect using	Compression	Weight	Usage	Encryption Type	LatencyThreshold	JitterThreshold	PacketLossThreshold
<input checked="" type="checkbox"/> WAN1	<input type="checkbox"/>	1	Primary	GRE	0	0	0
<input checked="" type="checkbox"/> WAN2	<input type="checkbox"/>	1	Backup	None	0	0	0
<input type="checkbox"/> WAN3	<input type="checkbox"/>	0	Primary	IPSEC	0	0	0

Remote FatPipe IP: 104.129.194.38
 Remote WAN Interface No: 2
 Skip Dynamic IP Update

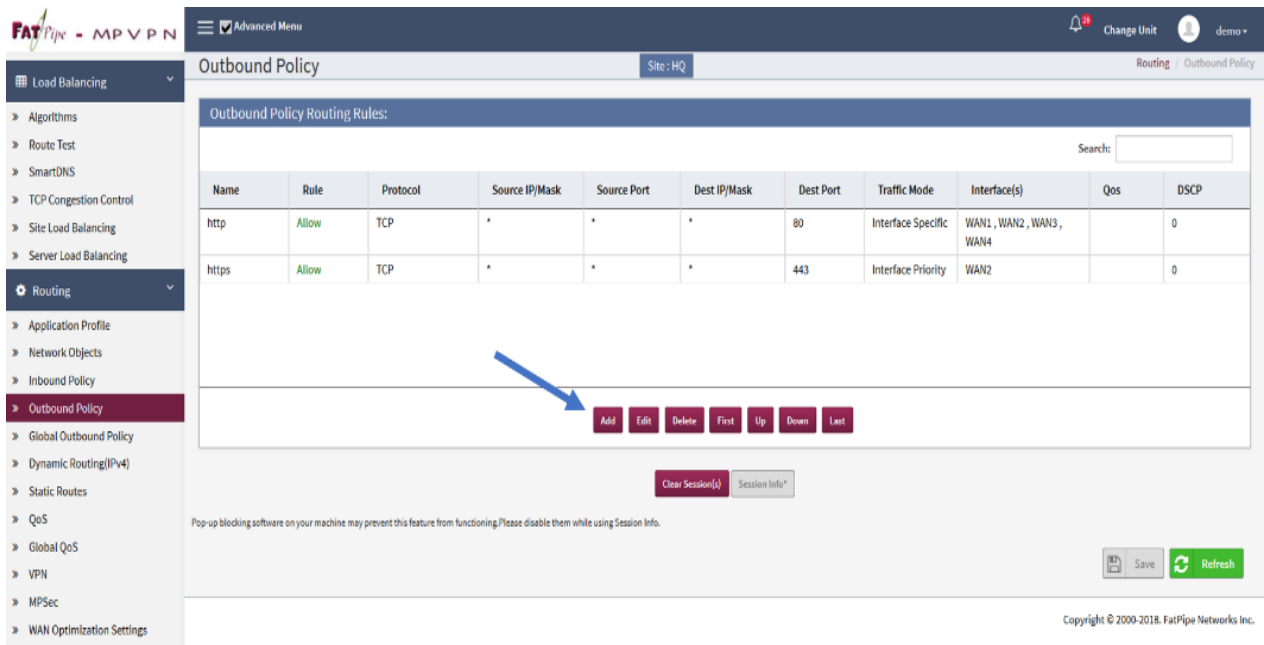
Connect using	Compression	Weight	Usage	Encryption Type	LatencyThreshold	JitterThreshold	PacketLossThreshold
<input checked="" type="checkbox"/> WAN1	<input type="checkbox"/>	1	Backup	GRE	0	0	0
<input checked="" type="checkbox"/> WAN2	<input type="checkbox"/>	1	Backup	None	0	0	0
<input type="checkbox"/> WAN3	<input type="checkbox"/>	0	Primary	IPSEC	0	0	0

CONNECTING TO ZIA VIA IPSEC (REQUIRED FOR DYNAMIC IP ADDRESSES)

To route traffic to ZIA via IPSec, you will need to create an outbound policy for to determine what traffic to route to ZIA and build the IPSec tunnel to ZIA.

CREATE OUTBOUND POLICY

1. Select “Outbound Policy” from the “Routing” section, then select “Add”
 - a. NOTE – “Advanced Menu” must be checked to have “Routing” section visible.



The screenshot shows the FatPipe MPVPN web interface. The left sidebar is expanded to the 'Routing' section, with 'Outbound Policy' selected. The main content area is titled 'Outbound Policy Routing Rules' and contains a table with the following data:

Name	Rule	Protocol	Source IP/Mask	Source Port	Dest IP/Mask	Dest Port	Traffic Mode	Interface(s)	Qos	DSCP
http	Allow	TCP	*	*	*	80	Interface Specific	WAN1, WAN2, WAN3, WAN4		0
https	Allow	TCP	*	*	*	443	Interface Priority	WAN2		0

Below the table, there are several buttons: 'Add', 'Edit', 'Delete', 'First', 'Up', 'Down', and 'Last'. A blue arrow points to the 'Add' button. At the bottom right, there are 'Save' and 'Refresh' buttons. The footer of the page reads 'Copyright © 2000-2018, FatPipe Networks Inc.'

2. Fill in traffic identification parameters in the new Outbound Policy
 - a. Name the Outbound Policy
 - b. Select Protocol = "All"
 - c. Source select "IP", and fill in the wildcard "*" for all source IPs
 - d. Destination select "IP/DomainName", and fill in the wildcard "*" for all source IPs

Add Outbound Policy Routing Rule

Name: ZSCALER

Protocol: All

DSCP: None selected

Source: IP

Source: Port

Destination: IP/DomainName

Destination: Port

Action: Allow

QoS: None

Application Profiles: None

WebFilter Profiles: None

Application Rules

Best Path

Follow Best Path

Auto Custom

Parameters: Packet Loss, Bandwidth, Latency, Jitter

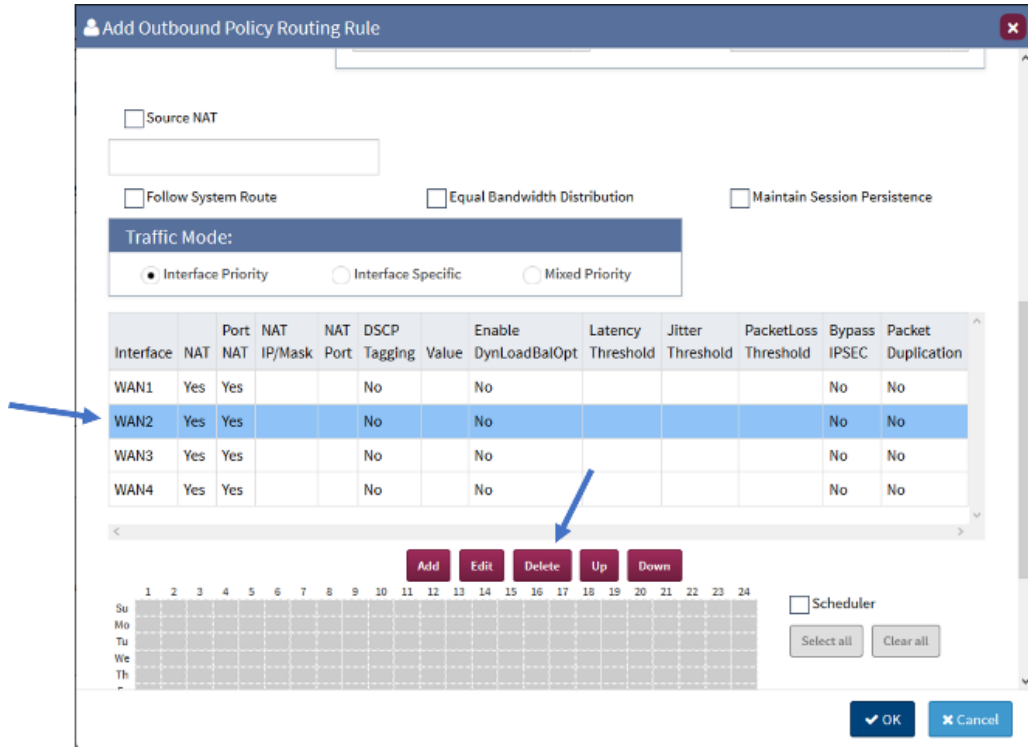
Selected:

Source NAT

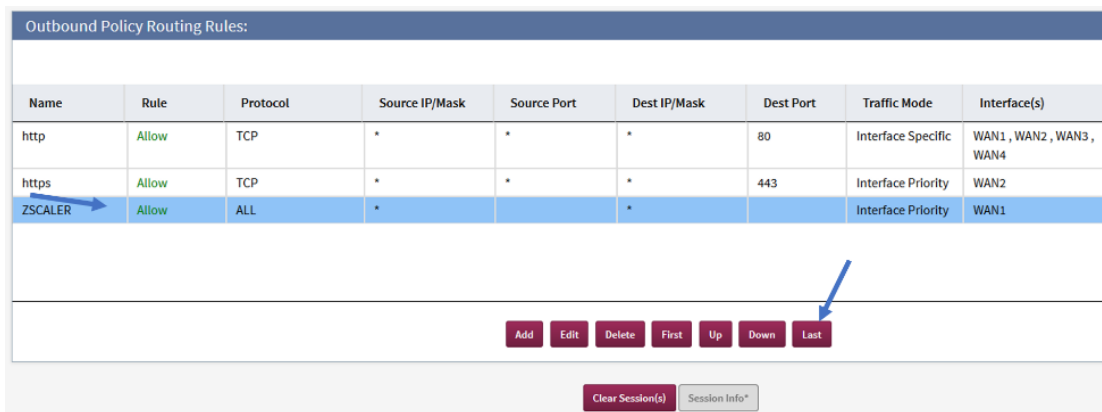
Follow System Route Equal Bandwidth Distribution Maintain Session Persistence

OK Cancel

3. Remove Outbound Interfaces that will not be used to forward traffic to ZIA
 - a. Select WAN Interface(s) to remove one at a time
 - b. Select "Delete"
 - c. NOTE: This will remove the WAN Interface from this rule only.



4. Select "OK" to save the Outbound Policy
5. This Outbound Policy should **ALWAYS** be the last policy in the Outbound Policy Routing Rules list. If it is not move it to the bottom of the list
 - a. Select the Policy
 - b. Select "Last"



6. Remember to save your changes Create IPsec Tunnel to ZIA

CREATE IPSEC TUNNEL TO ZIA

1. Select "VPN" from the "Routing" section, then select "Add"
2. Configure VPN.
 - a. Since we are using VPN remote host should be the Zscaler VPN IP address

Add/Edit VPN Policy Rule

Template
 Encapsulate traffic before encryption**

Tunnel Name: Internet

Remote End: Network User

Encryption: Null

Authentication: SHA1

NAT-T: Auto Forced
 Custom Ports
IKE Port: 500
Encapsulated UDP Port: 4500

Other: TCPMSS: 1372, DPD Delay: 30, DPD Timeout: 120, PFS

Local Info: Local LAN Networks
Network IP Address/Mask: 10.0.0.0/24
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External IP: 67.107.195.156
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Remote Info: Remote LAN Networks
Network IP Address/Mask: 0.0.0.0/0
Encapsulating IP:
External IP: 11.0.0.1
Add Edit Delete

NOTE: If you have more than 20 subnets, please create a Network

OK Cancel

Key Management

Pre-Shared Secret RSA Signature RSA Certificates

Pre-Shared Key: Test4444

Remote ID: 11.0.0.1

IKE Lifetime: 1 hour, 0 minute

Key Lifetime: 1 hour, 0 minute

3. Create MPsec paths to ZIA.
 - a. Select "MPsec" within the "Routing" section, then "Add"
 - i. Name the MPsec Rule (Remote Network name)
 - ii. Input Remote VPN IP Address
 1. (Matches peer in VPN policy)
 - iii. Confirm Session Load Balancing in selected
 - iv. Select OK

MPsec

Local VPN Name

Local VPN IP

Polling Interval (ms)

Remote Location

Index	Remote VPN Name	Remote VPN IP	Load Balancing Option	Load
1	Zscaler	11.0.0.1	Session	Static

4. Add Paths to the ZIA

- a. Select "Add", next to the first window
 - i. Input "Remote FatPipe IP"
 1. This is the Assign IP address from Zscaler of your Primary VPN Tunnel
 - ii. Remote WAN Interface No = 1(This will not be used)
 - iii. Check "IPSec"
 1. Select Usage = Primary
 2. Second path for backup Internet select backup and none for encryption.
- b. Select "Add", next to the second window
 - i. Input "Remote FatPipe IP"
 1. This is the Assign IP address from Zscaler of your Backup VPN Tunnel
 - ii. Remote WAN Interface No = 2(This will not be used)
 - iii. Check "IPSec" for first path and none for second.
 - iv. Select Usage = Backup for both paths.
- c. Select "OK" at the bottom of the "Add Path" window
- d. Select "Save" at the bottom of the configuration interface.

Remote VPN Name: Zscaler
 Remote VPN IP: 11.0.0.1
 Load Balancing Option: Session
 Load Balancing Type: Static

Remote FatPipe IP: 199.168.148.131
 Remote WAN Interface No: 1
 Skip Dynamic IP Update

Connect using	Compression	Weight	Usage	Encryption Type	LatencyThreshold	JitterThreshold	PacketLossThreshold
<input checked="" type="checkbox"/> WAN1	<input type="checkbox"/>	1	Primary	GRE	0	0	0
<input checked="" type="checkbox"/> WAN2	<input type="checkbox"/>	1	Backup	None	0	0	0
<input type="checkbox"/> WAN3	<input type="checkbox"/>	0	Primary	IPSEC	0	0	0

Remote FatPipe IP: 104.129.194.38
 Remote WAN Interface No: 2
 Skip Dynamic IP Update

Connect using	Compression	Weight	Usage	Encryption Type	LatencyThreshold	JitterThreshold	PacketLossThreshold
<input checked="" type="checkbox"/> WAN1	<input type="checkbox"/>	1	Backup	GRE	0	0	0
<input checked="" type="checkbox"/> WAN2	<input type="checkbox"/>	1	Backup	None	0	0	0
<input type="checkbox"/> WAN3	<input type="checkbox"/>	0	Primary	IPSEC	0	0	0

VALIDATE CONFIGURATION

ROUTE TEST

1. Select “Route Test” under “Load Balancing” tab
2. Select WAN1 and click “Edit”
3. Enter the URL as show in the screenshot below
4. Configure the same for all the required WAN interfaces
5. Click “Save”

The screenshot shows the FatPipe MPVPN configuration interface. The main content area is titled "Route Test" and contains a table for "Route Test Sites". The table has columns for "Interface", "Site 1", "Site 2", and "Site 3". The "Interface" column lists WAN 1, WAN 2, and WAN 3. The "Site 1" column contains the URL "http://gateway.<zscaler_cloud>.net/vptest" for all three interfaces. The "Site 2" and "Site 3" columns are empty. Below the table is an "Edit" button. At the bottom of the page, there is a "WAN Metrics Host" field with the value "8.8.8.8". The interface also includes a sidebar with navigation options like Home, Interfaces, LAN, WAN 1, WAN 2, WAN 3, System, General, Users, Active Directory Services, and Unit Failover. The top right corner shows "Change Unit" and "Administrator" options.

Interface	Site 1	Site 2	Site 3
WAN 1	http://gateway.<zscaler_cloud>.net/vptest		
WAN 2	http://gateway.<zscaler_cloud>.net/vptest		
WAN 3	http://gateway.<zscaler_cloud>.net/vptest		

Note: <zscaler_cloud> IP to be confirmed by Zscaler

Once you have configured FatPipe to direct traffic to ZIA, you can confirm the traffic is actually traversing Zscaler.

1. Open a browser and navigate to:

<https://ip.zscaler.com>

2. This screen will confirm your session is actually traversing Zscaler.