



MPVPN[®]

Quick Installation Guide

Version 9.1.2

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HOME PAGE

Provides Information and Features in FatPipe

The screenshot shows the FatPipe Home page. On the left is a navigation menu with items: Home, Interfaces, System, Load Balancing, Routing, Tools, Orchestration, and EnterpriseView. The main content area is titled 'Home' and contains sections for Product, License, and Pages. The Product section shows Version 9.1.2r50 and Serial Number fwrs2001103770. The License section shows Throughput 1000Mbps and Add-ons including CM, EV, IPSec, MPsecCompression, QoS, SatBooster, ServerLoadBalancing, SiteLoadBalancing, VPNSiteFailover, WANCACHE, WebFilter, SmartDNS, and UnitFailover. The Pages section lists various configuration and monitoring options under Interfaces, System, LoadBalance, Routing, and Tools.

Tells the version FatPipe is running on.

Unique Serial Number given to each FatPipe Unit.

Add-on features on FatPipe.

LAN and WAN IP addresses can be configured under Interface tab.

Systems tab has all the features like general user settings, save a configuration file backup, and establish unit failover.

Balancing option, Route Test configuration and SmartDNS.

Setup and schedule Inbound and Outbound Policies, Static Routes, Quality of Service (QoS) Rules

Used to monitor the performance of your network. You can check the status of routers and Internet connections using Diagnostic Tools and view the speed of connections using the Speed Chart.

Configure and manage all you FatPipe devices from one central location.



HOME PAGE

Provides Information and Features in FatPipe

This screenshot is similar to the first one but shows a dropdown menu open over the 'Change Unit' button. The dropdown has two sections: 'Group' with a dropdown menu set to 'All' and 'Device' with a dropdown menu set to 'fatpipe'. A 'Sign out' button is also visible in the top right corner of the interface.

List of all the FatPipes in the group to change from one unit to the other.

Used to logout from the FatPipe Unit.



LOCAL AREA NETWORK INTERFACE

Used to configure or change the IPv4 LAN interface parameters

The screenshot shows the LAN configuration page with several sections: 'Ethernet' (MAC, Link Speed / Duplex Mode, Auto Negotiation), 'DHCP Relay' (Enable DHCP Relay, Reporting IP Address), and 'LAN Aliases' (table with columns: IP Address, Subnet Mask, VLAN tag, DHCP Server IP). A modal window 'Add LAN Alias' is open, showing fields for IP Address, Subnet Mask, VLAN Tag, and DHCP Server IP. Arrows point from text annotations to various elements: 'Enable Proxy ARP' checkbox, 'Add' button in LAN Aliases, 'Link Speed / Duplex Mode' dropdown, 'VLAN Tag' field in the modal, 'Enable DHCP Relay' checkbox, 'Reporting IP Address' field, 'Save' button in the modal, 'IP Address' field in the modal, 'Subnet Mask' field in the modal, 'Refresh' button in the modal, and 'OK' button in the modal.

Enable to have the LAN interface respond to ARP request for WAN-side IPs (makes the MPVPN transparent).(more Info...)

Select to configure Ethernet link speed and the duplex mode. (more Info...)

VLAN ID Configuration (more Info...)

Enable to relay DHCP packets between LAN & WAN.(more Info...)

Used to configure the DHCP Server IP address for DHCP

Used to configure IP address and Subnet Mask.

Used to refresh the page for changes.

Used to commit changes.

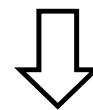


LOCAL AREA NETWORK INTERFACE

Used to configure or change the IPv4 LAN interface parameters

The screenshot is identical to the one above, showing the LAN configuration page and the 'Add LAN Alias' modal window. An arrow points from the 'Enable Proxy ARP' checkbox to a text box on the right.

Enable to have the LAN interface respond to ARP request for WAN-side IPs (makes the MPVPN transparent).



The address resolution protocol (ARP) is a protocol used by IPv4, to map IP network addresses to the hardware addresses used by a data link protocol. It is in enable state by default. If this option is disabled, you will not be able to communicate with devices directly connected to the WAN that are in the same subnet as where you are coming from. Proxy ARP is disabled only when devices on the LAN side have IPs from any of the WAN subnets.



LOCAL AREA NETWORK INTERFACE

Used to configure or change the IPv4 LAN interface parameters

The screenshot shows the LAN configuration page with the 'Ethernet' section selected. The 'Link Speed / Duplex Mode' is set to 'Auto Negotiation'. An 'Add LAN Alias' dialog box is open, showing fields for IP Address, Subnet Mask, VLAN Tag, and DHCP Server IP. The 'LAN Aliases' table shows one entry with IP Address 192.168.0.1, Subnet Mask 255.255.255.0, and VLAN tag 0.

Select to configure Ethernet link speed and the duplex mode.

Link Speed is the connection speed between the router and FatPipe and Duplex Mode refers to the transmission of data in two way direction. The default value is set to "Auto-negotiation."



LOCAL AREA NETWORK INTERFACE

Used to configure or change the IPv4 LAN interface parameters

The screenshot shows the LAN configuration page with the 'DHCP Relay' section selected. The 'Enable DHCP Relay' checkbox is checked. An 'Add LAN Alias' dialog box is open, showing fields for IP Address, Subnet Mask, VLAN Tag, and DHCP Server IP. The 'LAN Aliases' table shows one entry with IP Address 192.168.0.1, Subnet Mask 255.255.255.0, and VLAN tag 0.

Enable to relay DHCP packets between LAN & WAN.

Dynamic Host Configuration Protocol is a network protocol that enables a server to automatically assign an IP address to a computer from a defined range of numbers. This option allows you to relay DHCP requests from a LAN segment to a DHCP server on the WAN side.



LOCAL AREA NETWORK INTERFACE

Used to configure or change the IPv4 LAN interface parameters

The screenshot shows the LAN configuration page with the IPv4 tab selected. The 'LAN Aliases' table is visible, and the 'Add' button is highlighted. An 'Add LAN Alias' dialog box is open, showing fields for IP Address, Subnet Mask, VLAN Tag, and DHCP Server IP. A red arrow points from the 'VLAN Tag' field in the dialog to the 'VLAN Tag' column in the table above.

IP Address	Subnet Mask	VLAN Tag	DHCP Server IP
192.168.0.1	255.255.255.0	0	

Used to enter the VLAN ID

VLANs separate network traffic by grouping hosts that communicate most frequently with each other. To enable participation with VLAN', click on the Active checkbox and enter a Valid VLAN ID Range 0 to 4096.



LOCAL AREA NETWORK INTERFACE

Used to configure or change IPv6 LAN interface parameters

The screenshot shows the LAN configuration page with the IPv6 tab selected. The 'LAN Aliases' table is visible, and the 'Add' button is highlighted. An 'Add LAN Alias' dialog box is open, showing fields for Scope, IP Address, and Prefix Length. A red arrow points from the 'Scope' field in the dialog to the 'Scope' column in the table above.

IP Address	Prefix Length	Scope
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Specify the scope.

Specify the IP and prefix length.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

Annotations for the WAN 3 configuration interface:

- Interface usability status will read UP or DOWN, indicating the status of the WAN link.
- IP Addressing configuration methodologies
- Select option to perform the route test. (more Info...)
- Link name identification
- External ability to accept SmartDNS queries
- Enable bridging for this interface with the LAN (more Info...)
- External ability to ping to this interface. (more Info...)
- External ability to access to GUI.
- Enable to calculate WAN Metrics for this interface like Jitter, Latency and Packet Loss
- External ability to allow Secure Shell.
- External ability to SNMP access to this WAN Interface.
- The maximum upload and download bandwidth of this link. (more Info...)
- Select the role of the link.
- Spillover Load balancing assigns different priorities to WAN lines. (more Info...)
- Used with Weighted Load balancing algorithm. (more Info...)
- External ability to use Site Load Balancing on this link

WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

Annotation for the WAN 3 configuration interface:

- Select option to perform the route test.

When Usage for an interface is set to "Backup," you can select when to perform the route test for that interface. It is set to "Always" by default. FatPipe will always check the line for Internet connectivity, even if the line is not actively being used for outbound sessions. Link Stabilizing Factor is the number of consecutive Route Test failures or successes that must occur before Line Status is changed.

WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

The screenshot shows the configuration page for WAN 3. The 'WAN IP Settings' section has 'Obtain an IP address automatically using DHCP' selected. The 'Type' section shows 'Weight' set to 1, 'Usage' set to 'Primary', and 'Spillover Priority' set to 1. The 'Services' section has 'Ping', 'Remote Management', 'SSH', and 'WAN Metrics*' checked.

This setting is for use with the Weighted Load balancing algorithm. Values configured here will be assigned as the Weight for that WAN interface.



Used with Weighted Load balancing algorithm.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

The screenshot shows the configuration page for WAN 3. The 'WAN IP Settings' section has 'Obtain an IP address automatically using DHCP' selected. The 'Type' section shows 'Weight' set to 1, 'Usage' set to 'Primary', and 'Spillover Priority' set to 1. The 'Services' section has 'Ping', 'Remote Management', 'SSH', and 'WAN Metrics*' checked.

'1' has the highest priority and decreases as the numeric value increases, depending on the number of WAN interfaces. Traffic is sent over the lower priority lines only after at least 90% throughput of higher priority lines is reached. You have the option of marking a line as 'backup'. Traffic will be sent out of a 'backup' link only if all the other "primary" links are down.

This approach provides a solution for users that are charged for line usage that is proportionate to the traffic they generate. This feature can be used as backup when the network carries a high load by assigning low priority to such a link to minimize the cost.



Spillover Load balancing assigns different priorities to WAN lines.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

Line Status: UP

ISP Name: ABCDE | ISP Notes: Title

WAN IP Settings

Obtain an IP address automatically using DHCP
 Connect using PPPoE
 Connect using 3G / 4G device
 Specify an IP address

IPV4 | IPv6

IP Address: 10.0.5.51 | Subnet Mask: 255.255.255.0 | Default Gateway: 10.0.5.254

Bandwidth (Kbps)

Upload: 50000 | Download: 50000

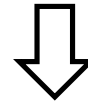
Services

Ping Remote Management DNS IPSEC
 SNMP Site Load Balancing SSH WAN Metrics*

*A public IP is pinged to identify Latency, Jitter & PacketLoss on that link.
**You will need to clear ARP on connected devices when enabling/disabling bridge mode.

Save Refresh

Services



FatPipe is a secure system with most services disabled except those needed to be provided ad-hoc (I.E. Remote Management, SSH, DNS, SNMP and Site Load Balancing). One can enable or disable these features as needed for these services.

Ping requests for the WAN interface IP can be blocked. These options do not affect traffic routed through MPVPN.

Watch Parameters, when enabled, FatPipe monitors the link conditions like latency, jitter and packet loss and allows redirecting traffic to alternate links if a pre-defined threshold is crossed even if the link is UP. This is achieved by configuring the thresholds using Outbound Policy Routing Rules.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

Line Status: UP

ISP Name: ABCDE | ISP Notes: Title

WAN IP Settings

Obtain an IP address automatically using DHCP
 Connect using PPPoE
 Connect using 3G / 4G device
 Specify an IP address

IPV4 | IPv6

IP Address: 10.0.5.51 | Subnet Mask: 255.255.255.0 | Default Gateway: 10.0.5.254

Bandwidth (Kbps)

Upload: 50000 | Download: 50000

Services

Ping Remote Management DNS IPSEC
 SNMP Site Load Balancing SSH WAN Metrics*

*A public IP is pinged to identify Latency, Jitter & PacketLoss on that link.
**You will need to clear ARP on connected devices when enabling/disabling bridge mode.

Save Refresh

This setting is for use with Quality of Service (QoS). You should specify the maximum bandwidth available outbound in upload or inbound in download for your WAN line in Kbps (Kilobits per second).

For example, if you have 1.5Mbps of bandwidth inbound, you would enter 1536.



The maximum upload and download bandwidth of this line.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by using DHCP

The screenshot shows the configuration page for WAN 3. The 'WAN IP Settings' section has 'Obtain an IP address automatically using DHCP' selected. The 'IP Address' field is populated with '10.0.5.51', 'Subnet Mask' with '255.255.255.0', and 'Default Gateway' with '10.0.5.254'. The 'Ethernet' section shows 'Link Speed / Duplex Mode' set to 'Auto Negotiation'. The 'VLAN' section has 'Enable Bridging with LAN**' checked. The 'Route Test' section has 'Perform' set to 'Always'. The 'Type' section has 'Usage' set to 'Primary' and 'Spillover Priority' set to '1'. The 'Services' section has 'Ping', 'Remote Management', 'SSH', and 'WAN Metrics*' checked.

Enable bridging for this interface with the LAN



In situations where we cannot split a network to create a separate small subnet, this option enables you to bridge the LAN with the WAN interface of that network.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by Dynamic PPPoE

The screenshot shows the configuration page for WAN 3. The 'WAN IP Settings' section has 'Connect using PPPoE' selected. The 'Dynamic PPPoE Login' section has 'Admin' as the username and '11.11.11.20' as the Remote IP. The 'Ethernet' section has 'Link Speed / Duplex Mode' set to 'Auto Negotiation'. The 'VLAN' section has 'Enable Bridging with LAN**' checked. The 'Route Test' section has 'Perform' set to 'Always'. The 'Type' section has 'Usage' set to 'Primary' and 'Spillover Priority' set to '1'. The 'Services' section has 'Ping', 'Remote Management', 'SSH', and 'WAN Metrics*' checked.

Option to connect to your ISP using Dynamic PPPoE (more Info...)

Used to configure username and password for PPPoE connection

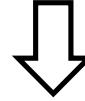


WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by Dynamic PPPoE

The screenshot shows the configuration page for WAN 3. The 'WAN IP Settings' section has 'Obtain an IP address automatically using DHCP' selected. Under 'Dynamic PPPoE Login', the 'Admin' checkbox is checked. The 'Remote IP' field is set to 11.11.11.1. The 'Line Status' is 'UP'. Other sections include 'Route Test', 'Ethernet', 'VLAN', 'Bandwidth (Kbps)', and 'Services'.

Option to connect to your ISP using Dynamic PPPoE



PPPoE is a specification for connecting multiple computer users on an Ethernet local area network to a remote site through common customer premises equipment.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN interface by Static PPPoE

The screenshot shows the configuration page for WAN 3. The 'WAN IP Settings' section has 'Connect using PPPoE' selected. Under 'Static PPPoE Login', the 'Local IP' checkbox is checked. The 'Remote IP' field is set to 11.11.11.1. The 'Line Status' is 'UP'. Other sections include 'Route Test', 'Ethernet', 'VLAN', 'Bandwidth (Kbps)', and 'Services'.

Used to configure IPs provided for PPPoE connection



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for the WAN interface by 3G/4G Dongle

Enable to connect using a 3G/4G cellular modem (more Info...)

Used to select a device model from the Detected 3G/4G modem from the drop-down list (more Info...)



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for the WAN interface by 3G/4G Dongle

Enable to connect using a 3G/4G cellular modem

To connect a 3G/4G line, plug a 3G/4G cellular modem to any of the USB interfaces on the MPVPN device. The USB Modem will be automatically detected. Select "Connect using 3G/4G device".



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for the WAN interface by 3G/4G Dongle

Line Status: UP

ISP Name: ABCDE, ISP Notes: Title

WAN IP Settings: Obtain an IP address automatically using DHCP, Connect using PPPoE, Connect using 3G / 4G device, Specify an IP address

IP Address: 11.11.11.20, Subnet Mask: 255.255.255.0, Default Gateway: 11.11.11.1

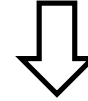
Bandwidth (Kbps): Upload: 50000, Download: 50000

Services: Ping, Remote Management, DNS, IPSEC, SNMP, Site Load Balancing, SSH, WAN Metrics*

3G info: Detected 3G/4G USB Modem: NONE, IMEI/ESN: 0000000000000003, Model Name: NONE, Device Name: ttyDUM3, APN: Enter the APN, Phone: Enter the Phone

Type: Weight: 1, Usage: Primary, Spillover Priority: 1

Used to select a device model from the Detected 3G/4G modem from the drop-down list



IMEI/ESN and Model Name of the USB Modem will be displayed. This information cannot be modified. The APN and Phone Number will also be displayed. This information can be modified based on carrier recommendation. Click SAVE to make the changes permanent.



WIDE AREA NETWORK INTERFACE

Used to configure or change IP information for WAN Interface

Line Status: UP

ISP Name: ABCDE, ISP Notes: Title

WAN IP Settings: Obtain an IP address automatically using DHCP, Connect using PPPoE, Connect using 3G / 4G device, Specify an IP address

IP Address: 11.11.11.20, Subnet Mask: 255.255.255.0, Default Gateway: 11.11.11.1

Bandwidth (Kbps): Upload: 50000, Download: 50000

Services: Ping, Remote Management, DNS, IPSEC, SNMP, Site Load Balancing, SSH, WAN Metrics*

Ethernet: MAC: [30:85:a9:a7:56:92], Link Speed / Duplex Mode: Auto Negotiat, Current Negotiation: 1000baseTX-FD

Type: Weight: 1, Usage: Primary, Spillover Priority: 1

IP Address, Subnet Mask, Default Gateway for the WAN Interface. The Default Gateway is the IP address of the WAN router you use



WIDE AREA NETWORK INTERFACE

Used to configure or change IPv6 information for WAN Interface

The screenshot shows the WAN 3 configuration page. An 'Add WAN IP' dialog box is open, allowing configuration of a new IPv6 address. The dialog includes a 'Scope' dropdown menu, and input fields for 'IP Address', 'Prefix Length', and 'Default Gateway'. Arrows from the labels on the right point to these specific fields in the dialog.



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

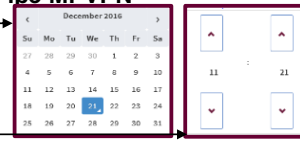
The screenshot displays the 'System / General' configuration page. A 'Date / Time Properties' dialog box is open, showing fields for 'Date' (12/21/2016), 'Time' (11:18), and 'Time Zone' (GMT-07:00 Mountain Time (US & Canada)). Arrows from the labels on the right point to these fields and other elements in the dialog and the main configuration page, such as the 'Session Timeout' settings and the 'Backup and Restore' section.



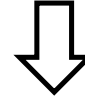
SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

The screenshot shows the 'General' configuration page for FatPipe MPVPN. The left sidebar contains navigation options: Home, Interfaces, System, General (selected), Users, Active Directory Services, Unit Failover, SNMP, DHCP Server, Syslog, NetFlow, HostName, Static ARP, Auto Configuration, Maintenance, Load Balancing, Routing, and Tools. The main content area is divided into several sections: 'Host Name' (host) and 'Domain Name' (domain); 'Session Timeout' with 'TCP Timeout (min)' set to 120 and 'UDP Timeout (min)' set to 3; a 'Login Banner' text area; 'Date / Time Properties' with 'Date' set to 12/21/2016, 'Time' set to 11:18, an unchecked 'Use NTP' checkbox, and 'Time Zone' set to '(GMT-07:00) Mountain Time (US & Canada)'; 'Backup and Restore' with buttons for 'Backup Settings*', 'Restore Settings*', and 'Restore Defaults'; and 'ARP' with buttons for 'View ARP Table', 'Clear ARP Table', and 'Send Gratuitous ARP'. At the bottom right, there are 'Save' and 'Refresh' buttons. A copyright notice 'Copyright © 2000-2016, FatPipe Networks Inc.' is visible at the bottom.



Set the System Date / Time and Time zone information.



You can set date and time using the NTP. Check the Use NTP checkbox and click the Set button to synchronize with external time servers.



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

This screenshot is identical to the one above, showing the 'General' configuration page for FatPipe MPVPN. The 'TCP Timeout (min)' is set to 120 and the 'UDP Timeout (min)' is set to 3. The 'Date / Time Properties' section shows 'Date' as 12/21/2016, 'Time' as 11:18, 'Use NTP' is unchecked, and 'Time Zone' is '(GMT-07:00) Mountain Time (US & Canada)'. The 'Backup and Restore' and 'ARP' sections are also visible.

Specify idle session timeouts for TCP & UDP before idle sessions are expired.



The defaults are 120 minutes (for TCP and 3 minutes for UDP). It is not recommended that you change these settings, except under rare circumstances.



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

The screenshot shows the 'General' configuration page. On the left is a navigation menu with categories like Home, Interfaces, System, Users, and Routing. The main content area has several sections: 'Host Name' (host) and 'Domain Name' (domain); 'Session Timeout' (120) and 'TCP Timeout (min)' (120); 'UDP Timeout (min)' (3); a 'Login Banner' text area; 'Date / Time Properties' with Date (12/21/2016), Time (11:18), and Time Zone (GMT-07:00 Mountain Time (US & Canada)); 'Backup and Restore' with buttons for 'Backup Settings*', 'Restore Settings*', and 'Restore Defaults'; and 'ARP' with buttons for 'View ARP Table', 'Clear ARP Table', and 'Send Gratuitous ARP'. At the bottom right, there are 'Save' and 'Refresh' buttons. A red arrow points from the 'Save' button to a text box on the right.

If you click on the Backup Settings button you will be prompted to save a backup configuration file in a new popup window. All the modifications done on GUI will be saved as a point in time copy to the workstation you're making the backup from.



Backup the settings to a file on your local computer.



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

This screenshot is identical to the one above, showing the 'General' configuration page. In this version, a red arrow points from the 'Restore Settings*' button in the 'Backup and Restore' section to a text box on the right.

If you click on the Restore Settings button, in a new popup window you will be prompted to import a previously saved backup configuration file.



Restore the settings from a backup file on your local computer.



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

Restore FatPipe to default settings.



If you click on the Restore Defaults button, you will be prompted to restore the system back to factory defaults. This will erase all the changes that are made and takes to the default values.



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

ARP is used for mapping an IPv4 address to a physical address like a MAC address. IP Address, Hardware type and address, Flags, Mask and Interface table are displayed in the arp table view.



Click to Clear ARP table of the unit or to Send Gratuitous ARP

Click to view the ARP table of the unit



SYSTEM CONFIGURATION

Used to configure or change system configuration of FatPipe MPVPN

The screenshot displays the 'System / General' configuration page. The 'General' tab is active, showing fields for Host Name (host), Domain Name (domain), Session Timeout (120), TCP Timeout (min) (120), UDP Timeout (min) (3), and a Login Banner field. A 'Date / Time Properties' dialog box is open, showing Date (12/21/2016) and Time (11:18). A 'Set NTP Time Server' dialog box is also open, with the 'Use Custom Time Server' checkbox checked and an 'Add NTP Server' field containing 'ntpserver.com'. The dialog includes 'Add', 'UP', 'Down', and 'Delete NTP Server' buttons, and 'OK' and 'Cancel' buttons at the bottom. Annotations with arrows point to the 'Use NTP' checkbox, the 'Time' field, the 'NTP Server' field, and the 'OK' button.

Check this box to synchronize with an external time server.

Uncheck this box to use the default time servers.

Input the time server hostname or IP.

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USER CONFIGURATION

Used to configure various Administrative tasks

The screenshot displays the 'System / Users' configuration page. The 'Users' tab is active, showing a table with columns 'User Name' and 'Privilege', containing one entry: Administrator | ADMINISTRATOR. Below the table are 'Add', 'Edit', and 'Delete' buttons. The 'Advanced Settings' dialog box is open, showing fields for Max. GUI Connections (1-128) (7), Concurrent Connections (3), Account Lockout Threshold (0-99) (3), Failed Attempts (3), Account Lockout Duration (0-60) (5) Minutes, Min. User Name length (1-14) (8) Characters, Min. Password length (0-14) (8) Characters, and a checked 'Require Mixed Password' checkbox. The 'LDAP Authentication' section has 'Server' (pdc.domain.com) and 'Port' (389) fields. The 'Login' section has 'Enable Central Manager' (unchecked) and 'Audit Logging' (unchecked) checkboxes. The 'Save' and 'Refresh' buttons are visible at the bottom. Annotations with arrows point to the 'Add' button, the 'Max. GUI Connections' field, the 'Account Lockout Threshold' field, the 'Require Mixed Password' checkbox, the 'Server' field, the 'Port' field, the 'Save' button, and the 'Enable Central Manager' checkbox.

Manage User accounts and access privileges (more Info...)

Account policy settings (more Info...)

Specify username and password(more Info...)

Permits to give a mixed password(more Info...)

Enter the LDAP server's IP address and port information (more Info...)

This provides access to the Central Manager Software (more Info...)

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USER CONFIGURATION

Used to configure various Administrative tasks

Manage User accounts and access privileges

Specify username and password

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USER CONFIGURATION

Used to configure various Administrative tasks

Account policy settings

Maximum GUI Connections, sets the limit on the number of concurrent connections that are allowed to the remote management interface.

Account Lockout Threshold specifies the number of failed login attempts allowed before locking out the user.

Account Lockout Duration specifies the number of minutes before a user can attempt to login again after being locked out.

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USER CONFIGURATION

Used to configure various Administrative tasks

User Name	Privilege
Administrator	ADMINISTRATOR

Advanced Settings

Max. GUI Connections (1-128): 7
Concurrent Connections: []
Account Lockout Threshold (0-99): 3
Failed Attempts: []
Account Lockout Duration (0-60): 5 Minutes
Min. User Name length (1-14): 8 Characters
Min. Password length (0-14): 8 Characters
 Require Mixed Password

LDAP Authentication

Server: pdc.domain.com
Port: 389

Enable Central Manager Login
Secret Code: []
 Audit Logging

Will enable complex password checking. Passwords for new user accounts must contain a mix of letters, numbers, and special characters when this is enabled.



Permits to give a mixed password



USER CONFIGURATION

Used to configure various Administrative tasks

User Name	Privilege
Administrator	ADMINISTRATOR

Advanced Settings

Max. GUI Connections (1-128): 7
Concurrent Connections: []
Account Lockout Threshold (0-99): 3
Failed Attempts: []
Account Lockout Duration (0-60): 5 Minutes
Min. User Name length (1-14): 8 Characters
Min. Password length (0-14): 8 Characters
 Require Mixed Password

LDAP Authentication

Server: pdc.domain.com
Port: 389

Enable Central Manager Login
Secret Code: []
 Audit Logging

The FatPipe Central Manager Platform is a adjunct used separately to manage multiple FatPipes enterprise wide via one interface.



This provides access to the Central Manager Software



USER CONFIGURATION

Used to configure various Administrative tasks

The screenshot shows the 'Users' configuration page in the FatPipe interface. It includes a table for user management, advanced settings for security and LDAP, and a sidebar with navigation options like 'General', 'Active Directory Services', and 'Load Balancing'.

FatPipe uses Transport Layer Security technology to ensure confidential data exchange between the LDAP server and the FatPipe in order to protect sensitive information, including the usernames, passwords and privileges.

FatPipe offers two secure protocols: TLS and SSLv3. TLS is an upgraded version of SSLv3. TLS is used by default. The SSLv3 is only used when TLS is not functional on the server.



Enter the LDAP server's IP address and port information



Active Directory Services

Used to create profiles for Users

The screenshot shows the 'Active Directory Services' configuration page. It features a table for managing ADS servers, a 'Download FatPipe LDAP Agent' button, and an 'Add ADS Server' dialog box for configuring new servers with various parameters like IP, port, and group strings.

.exe file to download into computer for having user name and passwords assigned to users.

To add, edit or delete ADS server information

Specify information about ADS server

FatPipe Active Directories works to define who are the users that can access FatPipe UI and can login using their existing credentials instead of creating new user name and password for each and every user.



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

- Select this to enable unit failover. (more Info...)
- Specify the failover group the unit belongs to. (more Info...)
- Provide Email to get alerts. (more Info...)
- Specify the Access IP for heartbeat / config syncing between peers. (more Info...)
- Specify the preferred role of the unit, which only applies when both units are powered ON at the same time. (more Info...)
- Forces a Switch of Activity between the 2 peered boxes in HA for maintenance purposes.
- Enable Stateful Failover to seamlessly failover sessions from Active unit to Standby unit (more Info...)
- Choose Ethernet or Serial Interface to exchange heartbeat packets (more Info...)
- Displays which unit is backup (more Info...)



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

→ Select this to enable unit failover.



The physical setup consists of making each network segment on the Fatpipe common between the 2 boxes from an electrical ethernet perspective using separate switches/VLAN's (I.E. LAN would have its own switch/VLAN with at least 3 ports having membership, WAN1 would have its own switch/VLAN with 3 ports, etc.)



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

Specify the failover group the unit belongs to.



The Group ID uniquely identifies the failover group. Both of your failover units must use the same Group ID.

Valid range is 1-255.



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

Specify the Access IP for heartbeat / config syncing between peers.



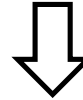
Access IP/Mask uniquely identifies each unit in a private subnet common to both units and will be used to access the unit when in Standby mode.



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

Provide Email to get alerts.



Email Alert Settings allows you to specify email information so an email can be sent whenever failover occurs. This email will be sent from the box assuming the active role.



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

Specify the preferred role of the unit, which only applies when both units are powered ON at the same time.



One unit will be set as Primary and the other as Backup. The role only applies when both units are powered on at the same time. The unit marked as Primary will go to the Active state and the unit marked as Backup will go to the Standby state.



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

The screenshot shows the 'Unit Failover' configuration page. On the left is a navigation menu with 'Unit Failover' selected. The main content area includes sections for 'Local Unit', 'Peer Unit', 'Heartbeat', 'Role', and 'State'. The 'Enable Unit Failover' checkbox is checked, and the 'Stateful Failover' checkbox is unchecked. The 'Email Alert Settings' section contains fields for 'Sender e-mail', 'Receiver e-mail', 'SMTP Server', and 'Port'. The 'Peer Units' table is empty. A red arrow points from the 'Stateful Failover' checkbox to a text box on the right. Another red arrow points from the 'Force to Standby' button to a text box below it.

Enable Stateful Failover to ensure all sessions from the Active units are failed over transparently to the Standby unit in case of failure of Active unit.



Enable Stateful Failover to seamlessly failover sessions from Active unit to Standby unit



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

This screenshot is identical to the one above, but with a different annotation. A red arrow points from the 'Heartbeat' section, specifically the 'Ethernet' radio button and the 'Interface' dropdown, to a text box on the right.

This option indicates the physical interface that heartbeats traverse. Choose Ethernet to exchange the heartbeat packets over the Ethernet interface. Choose Serial to exchange the heartbeat packets over the Serial interface.



Choose Ethernet or Serial Interface to exchange heartbeat packets



UNIT FAILOVER CONFIGURATION

Used to configure Unit Failover

Unit Failover configuration page showing settings for Local Unit, Peer Unit, Email Alert Settings, and Peer Units.

The Peer Unit shows details about the inactive box.

The IP address of the backup unit is the Access IP. Serial Number is the Serial Number of the Peer Unit. The State could be displayed as "Up," "Backup," or "Down." If it is marked as Down, it means the unit is no longer detected.



Displays which unit is backup



SNMP TOOL

Used to setup and manage SNMP

SNMP configuration page showing settings for System Name, System Location, Contact EMail, Community List, and Trap.

Specify a system name.

Specify a Location.

Specify an e-mail address.

Specify a community name and one or more IP addresses that will receive the trap. (more Info...)

Specify a list of community names that will be used to access FatPipe SNMP information. (more Info...)

Click on this button to download our custom FatPipe MIB. (more Info...)



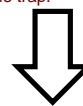
SNMP TOOL

Used to setup and manage SNMP

Community Name	Access
public	Read

Trap	
Enable Trap	<input checked="" type="checkbox"/>
Trap Community Name	public
Destination IP Address	192.168.0.161

Specify a community name and one or more IP addresses that will receive the trap.



The Fatpipe will send an SNMP trap to alert you when there is a off normal condition. Community name and one or more IP addresses of a network management platform that will receive the trap must be specified



SNMP TOOL

Used to setup and manage SNMP

The community List has a default community name, "public," with read only access available. To add community names, click on the Add button and Edit, Delete to perform respective tasks.



Specify a list of community names that will be used to access FatPipe SNMP information.



SNMP TOOL

Used to setup and manage SNMP

System / SNMP

Enabled

System Name: fatpipe

System Location: unknown

Contact EMail: support@fatpipeinc.com

Community Name	Access
public	Read

Trap

Enable Trap

Trap Community Name: public

Destination IP Address: 192.168.0.161

FatPipe MIB*

*Pop-up blocking software on your machine may prevent this feature from functioning. Please disable them while viewing the FatPipe MIB.

Save Refresh

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This MIB can be imported into your local SNMP based network management platform, where you can configure how your platform interoperates with the Fatpipe.



Click on this button to download our custom FatPipe MIB.



DHCP SERVER

Used to setup and manage DHCP server

System / DHCP Server

Global Options:

Subnet:

Network	Mask	Range Start	Range End	Lease Time	Broadcast	Router	Domain Name	Domain Name Servers	Options
---------	------	-------------	-----------	------------	-----------	--------	-------------	---------------------	---------

View Leases

Save Refresh

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FatPipe DHCP server allows you to configure the built-in DHCP Server to assign IP addresses to devices on your local area network (LAN).

To add a DHCP subnet



DHCP SERVER

Add and manage DHCP server

The screenshot shows the 'Add/Edit DHCP Subnet' dialog box with the following fields and annotations:

- Network:** 192.168.0.0 (Network address of subnet that DHCP will assign from)
- Mask:** 255.255.255.0 (Subnet mask of the this network)
- Default Gateway IP:** 192.168.0.254 (Gateway IP address to be assigned)
- Broadcast:** 192.168.0.255 (Broadcast IP of this subnet)
- Lease Time (Seconds):** 10000 (The amount of time a DHCP client may have an IP address before it is required to renew the lease.)
- Domain Name:** corp.example.com (Domain name given.)
- Range (Start:End):** 192.168.0.1-192.168.0.49 (The starting IP address for the DHCP range to be assigned and The last IP for the DHCP range to be assigned.)
- Domain Name Servers:** 8.8.8.8, 4.2.2.2 (IP address of the preferred DNS servers in hierarchical order.)
- Extra Option:** (Empty field)

Buttons: Add, Edit, Delete (for Range and Domain Name Servers); Add, Edit, Delete (for Extra Option); OK, Cancel.



DHCP SERVER

Used to view Leases

The screenshot shows the 'View Leases' dialog box with the following table and buttons:

Hostname	IP Address	Expires	MAC Address	Remaining Time
* Remaining Lease Time depends on the System Time.If the system time was changed after a lease was handed out then the correct value will be displayed only after the next renewal.				

Buttons: Revoke, Close, Refresh

The Revoke button is used to cancel the lease for a specific LAN device, and releases the entry from the lease table (more Info...)

Click Refresh button to update the View Lease table



DHCP SERVER

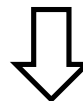
Used to view Leases

Hostname	IP Address	Expires	MAC Address	Remaining Time
----------	------------	---------	-------------	----------------

* Remaining Lease Time depends on the System Time. If the system time was changed after a lease was handed out then the correct value will be displayed only after the next renewal.

Revoke Close Refresh

The Revoke button is used to cancel the lease for a specific LAN device, and releases the entry from the lease table



Use the Revoke button for maintenance purposes or if the device no longer needs the leased IP address.



SYSLOG

Used to Configure Syslog Server

Remote Syslog

Server IP: 10.2.0.111

Server Port: 514

Event Triggers

Authentication Blocked Packets

CPU Usage: 95 %

Memory Threshold: 95 %

Disk Space Threshold: 95 %

Common Log Level: emerg

Save Refresh

The IP of the host that the Fatpipe will send Syslog flows to (more Info...)

The remote syslog server port number (more Info...)

If this is enabled, a log message will be sent to syslog server giving information about the login and logout time of a user to a particular IP

If this is enabled, a log message will be sent to syslog server giving the information about the packets source, destination and type that are being dropped by the FatPipe via policies

Syslog is a standard for forwarding log messages in an IP network. In order to take advantage of this feature, a running syslog server on a host reachable from the FatPipe is necessary.



SYSLOG

Used to Configure Syslog Server

Home

Interfaces

System

General

Users

Active Directory Services

Unit Failover

SNMP

DHCP Server

Syslog

NetFlow

HostName

Static ARP

Auto Configuration

Maintenance

Load Balancing

Routing

Tools

Syslog

Remote Syslog

Server IP: 10.2.0.111

Server Port: 514

Event Triggers

Authentication

Blocked Packets

CPU Usage: 95 %

Memory Threshold: 95 %

Disk Space Threshold: 95 %

Common Log Level: emerg

Save Refresh

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The IP of the host that the Fatpipe will send Syslog flows to



SYSLOG

Used to Configure Syslog Server

Home

Interfaces

System

General

Users

Active Directory Services

Unit Failover

SNMP

DHCP Server

Syslog

NetFlow

HostName

Static ARP

Auto Configuration

Maintenance

Load Balancing

Routing

Tools

Syslog

Remote Syslog

Server IP: 10.2.0.111

Server Port: 514

Event Triggers

Authentication

Blocked Packets

CPU Usage: 95 %

Memory Threshold: 95 %

Disk Space Threshold: 95 %

Common Log Level: emerg

Save Refresh

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The remote syslog server port number



NETFLOW

Used to Configure NetFlow

FatPipe NetFlow allows you to export traffic statistics using Netflow protocol.

Enable Remote Netflow Reporting

Version 5
 Version 9

FatPipe Source IP: 172.17.127.180

Remote Netflow Server IP: 172.17.127.20

Remote Netflow Server Port: 2055

Save Refresh

Enable NetFlow

FatPipe Source IP

NetFlow Flow collector IP

Remote NetFlow server port number



HOSTNAME

Used to Configure Hostnames with IP addresses

Enter Hostnames in your LAN and their IP addresses. These Hostnames will be displayed in addition to the IP addresses in 'Traffic Logging Info'

Search:

Hostname	Address
No data available in table	
Kevin Mitnick	10.33.0.13
Gary McKinnon	10.33.0.14
Jonathan James	10.33.0.11

Add Edit Delete

Save Refresh

.exe file to download into computer for having user name and passwords assigned to users.



AUTO CONFIGURATION

Used to configure policies between two locations

The screenshot shows the 'Auto Configuration' page in a web browser. The left sidebar contains a navigation menu with 'Auto Configuration' selected. The main content area is divided into two panels: 'Management Configuration' and 'Auto Configuration'. The 'Management Configuration' panel includes fields for 'Device Type' (set to 'BRANCH'), 'Device Name', and a table for 'Server Name', 'Server IP Address', and 'Server Keys'. Below this table are 'Add', 'Edit', and 'Delete' buttons. A note states: '*Each IP should be in separate line.' and another note says: '*Note: CM Secret Key needs to be configured for this feature to work.' The 'Auto Configuration' panel has checkboxes for 'Policy Routing Rule', 'MPSec', 'VPN', and 'Web Filter', a 'Polling Interval (Secs)' field set to '10', and an 'Enable Central Manager Login' section with a 'Secret Code' field. At the bottom of the 'Auto Configuration' panel are 'Save' and 'Refresh' buttons. A modal window titled 'Add Multiple Server Configuration' is open, showing fields for 'Server Name', 'Server IP Address', a 'General' checkbox, and 'Keys'. Annotations with arrows point to various elements: 'Select devices from the added list' points to the server table; 'Add FatPipe device from other location.' points to the 'Add' button; 'To have the features configured automatically.' points to the checkboxes; 'DR site FatPipe credentials' points to the 'Secret Code' field; 'Enable Central Manager login with Secrete Code.' points to the 'Enable Central Manager Login' checkbox. A text box on the right states: 'Used to automatically configure Policy Routing Rules, MPSec, VPN, Web Filter between two FatPipe devices. By giving DR site FatPipe information and select what needs to be configured, we can avoid configuring policies manually at each and every location.'



REBOOT / SHUTDOWN

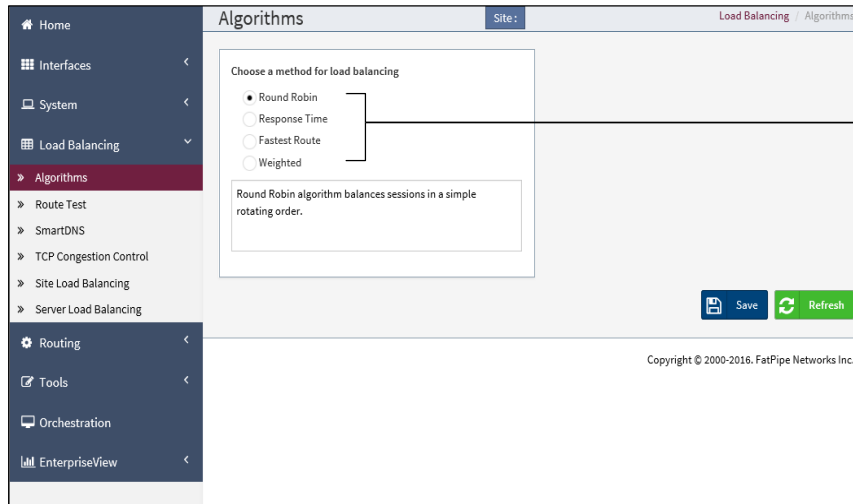
Used to reboot or shutdown the system

The screenshot shows the 'Maintenance' page in a web browser. The left sidebar contains a navigation menu with 'Maintenance' selected. The main content area has two buttons: 'Shutdown' and 'Reboot'. A copyright notice 'Copyright © 2000-2016, FatPipe Networks Inc.' is visible at the bottom of the page. An annotation with an arrow points to the 'Shutdown' and 'Reboot' buttons, stating: 'Select to do an immediate reboot or shutdown'.



LOAD BALANCING CONFIGURATION

Used to specify a method for Load Balancing



Four methods of Load Balancing:

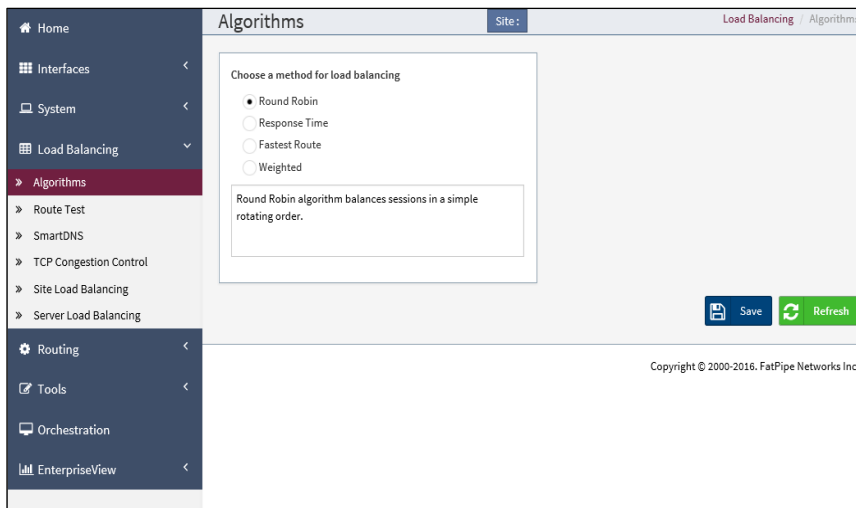
- Round Robin
- Response Time
- Fastest Route
- Weighted

Click on each method for more Info...



LOAD BALANCING CONFIGURATION

Used to specify a method for Load Balancing



Round Robin



Round Robin configures FatPipe MPVPN to send sessions down links in rotating order. This method is recommended for similar speed connections to the Internet, even if the connections are not of the same ISP (e.g. two similar speed fractional T1s and a DSL line).



LOAD BALANCING CONFIGURATION

Used to specify a method for Load Balancing

Algorithms

Choose a method for load balancing

- Round Robin
- Response Time
- Fastest Route
- Weighted

Round Robin algorithm balances sessions in a simple rotating order.

Save Refresh

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Response Time



Response Time will balance traffic based on each link's average response time for Internet requests. This method is recommended for unequal speed connections. The link with the smallest syn/syn-ack time delta will be used more often with Response Time.



FATPipe

LOAD BALANCING CONFIGURATION

Used to specify a method for Load Balancing

Algorithms

Choose a method for load balancing

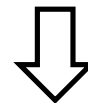
- Round Robin
- Response Time
- Fastest Route
- Weighted

Round Robin algorithm balances sessions in a simple rotating order.

Save Refresh

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Fastest Route



Fastest Route will balance traffic on a per-destination host basis.

Syn packets get sent out of all interfaces, which ever interface's syn-ack "wins the race back" will get used here.

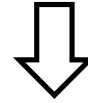


FATPipe

LOAD BALANCING CONFIGURATION

Used to specify a method for Load Balancing

Weighted



Weighted will balance traffic on a arbitrary percentage rise basis in comparison from 1 interface to another (opposite of costing)

If you were wanting to weight based on available bandwidth & had a 1.5mb T1; a 7mb DSL link; and a 50mb cable link you could weight 1, 7, and 50 accordingly.



ROUTE TEST CONFIGURATION

Used to test the availability of the Internet (WAN) connections

Add the details about the interface to all Sites

FatPipe MPVPN tests connections to the router, to the Internet Service Provider, and to a maximum of three user-specified sites on the Internet. Each site can be specified using a domain name or an IP address.



SMARTDNS CONFIGURATION

SmartDNS with master zone information

SmartDNS is a patented technology that provides inbound load balancing and inbound redundancy to public facing servers in the LAN.

The screenshot shows the SmartDNS configuration interface. On the left is a navigation menu with options like Home, Interfaces, System, Load Balancing, Algorithms, Route Test, SmartDNS, TCP Congestion Control, Site Load Balancing, Server Load Balancing, Routing, Tools, Orchestration, and EnterpriseView. The main area displays the 'Zone Information' form with fields for Zone Name, Type, Domain Name, Records File, Master Server, Email Address, Refresh, Expire, Retry, and TTL. Below this is a 'Create a zone' dialog box with a 'Select a Zone Type' section where 'Master' is selected. The dialog also has 'Back', 'Next >', and 'Cancel' buttons. Arrows point from text labels to specific UI elements: 'Click to Import zone files to SmartDNS' points to the 'Import' button; 'Click to export DNS zone files locally' points to the 'Export' button; 'Select the option Master' points to the 'Master' radio button; 'To create a master zone' points to the 'Next >' button; 'View the record of SmartDNS statistics for all the zones' points to the 'Statistics' button; and 'Click to configure advanced settings' points to the 'Advanced' button. A text box at the top right explains SmartDNS technology. At the bottom, there are navigation arrows and the FAT Pipe logo.

SMARTDNS CONFIGURATION

Domain Name, Master Server, Email Address information for master zone

This screenshot provides a detailed view of the 'Create a zone' dialog box. It contains the following fields and annotations:

- Domain Name:** example.com. (Annotated: Zone name)
- Master Server:** ns1.example.com. (Annotated: Primary Name Server)
- Records File:** db.example.com.
- Email Address:** adm.example.com. (Annotated: Administrative Contact)
- Zone Parameter (in Seconds):**
 - Refresh:** 28800. (Annotated: Interval for slave servers to refresh the data.)
 - Expire:** 604800. (Annotated: Interval for slave servers to retry refresh failure.)
 - Retry:** 7200. (Annotated: Time before slave servers expire data after refresh and retry failure.)
 - TTL:** 10. (Annotated: Time-To-Live (cache time))

 At the bottom of the dialog are '< Back', 'Next >', and 'Cancel' buttons. A text box on the right explains that SOA values are rarely changed. At the bottom, there are navigation arrows and the FAT Pipe logo.

SMARTDNS CONFIGURATION

Create record information for master zone

Click on any one of these buttons, to configure different types of records for master zone

Add/Edit or delete record information

To show SmartDNS configuration with master zone record information



SMARTDNS CONFIGURATION

Create record information for master zone

Enter the host name

Priority determines in what order the client should use which server if there is more than one SRV record for a given service

Port determines the number, the service is run through on the machine providing it
If 2 SRV records exist for the same service at the same priority, traffic will be directed to them in proportion to the weight

Target host this traffic should go to



SMARTDNS CONFIGURATION

Using DNSSEC to secure master zone

To Enable DNSSEC functionality, click this checkbox (more Info...)

Click on each box for more Info...



SMARTDNS CONFIGURATION

Using DNSSEC to secure master zone

To Enable DNSSEC functionality, click this checkbox

The Domain Name System Security Extensions (DNSSEC) deals with cache poisoning and a set of other DNS vulnerabilities such as "Man in the Middle" attacks and data modification in authoritative servers. Its major objective is to provide the ability to validate the authenticity and integrity of DNS messages in such a way that tampering with the DNS information anywhere in the DNS system can be detected.

Enter the KSK rollover duration in years (by default it is 1 year). Enter ZSK rollover duration in days - usually it is 90 days.



SMARTDNS CONFIGURATION

Using DNSSEC to secure master zone

Enter a valid email address to notify the System Administrator about the rollover and then Save to generate the Key, the Signing Key and the Zone signing key.



SMARTDNS CONFIGURATION

Using DNSSEC to secure master zone

The Signing Key and the Zone signing Key are generated once the email settings are saved. Click on Get Key button to get the KSK for the zone that was generated.

After the KSK duration is expired, a new KSK is generated and the zone needs to be resigned.



SMARTDNS CONFIGURATION

Using DNSSEC to secure master zone

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To sign the zone, select the date and time and click the Sign Zone button. The zone signing will happen at the date and time specified



SMARTDNS CONFIGURATION

SmartDNS with slave zone information

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Primary Name Server

Select the option Slave

To create a slave zone



SMARTDNS CONFIGURATION

Domain Name, Master Server IP address and Records File information for slave zone

Domain Name: slave.com.

Master Server

Master Server
11.22.33.2

Records File: db.slave.com.

Buttons: < Back, Next >, Cancel, Add, Delete

Annotations:

- Domain name for the zone
- Master Server IP address
- Records file information
- To show SmartDNS configuration with slave zone record information



SMARTDNS CONFIGURATION

Zone transfers information

SmartDNS Site: Load Balancing SmartDNS

Advanced

Zone Transfer

Allow Zone Transfers

FROM: Any IP Specify IPs

Interface-To-Network Mapping

Site Name	Interface	Network Address/Mask	Role	Weight
-----------	-----------	----------------------	------	--------

Buttons: Add, Edit, Delete, View*, Clear, Save, Refresh

Annotations:

- If you have slave servers that will initiate zone transfers, then enable "Allow Zone Transfers".
- If you want to allow zone transfers from any IP in the internet, choose "Any IP"



SMARTDNS CONFIGURATION

Zone transfers information

Create an ACL for only specific IP's to be able to perform zone transfers

Add/Edit/Delete IPs from which zone transfer should be allowed



SMARTDNS CONFIGURATION

Interface-To-Network Mappings

The mappings are used as a filtering table, so when a WAN link takes a hit, effected addresses can be filtered off before we advertise them

Used to assign a role to this particular mapping; Backup links only get used when all of the primary links have gone down

Select the particular Site Name

Used to correlate a physical interface to a subnet

Weight affects balancing & how often IPs from this link are handed out in DNS requests

Add/Edit IP Address/Mask



SMARTDNS CONFIGURATION

Used to view SMARTDNS Statistics

Clear the SmartDNS statistics for all the zones

DOMAIN NAME	IP ADDRESS	RESOLVED TIMES
ns1.first.com	207.140.140.2	299
ns2.first.com	207.150.150.2	299
ns3.first.com	207.160.160.2	299
www.first.com	207.140.140.100	100
	207.150.150.100	99
	207.160.160.100	100



TCP CONGESTION CONTROL

Used to configure TCP Congestion Control

Specify the congestion control algorithms

Latency Range (ms)	TCP Congestion Control Algorithm
40 -- 55	cubic
55 -- 80	cubic
81 -- 90	cubic
500 -- 1000	hybla
91 -- 400	hybla
100 -- 200	cubic

With FatPipe's TCP Congestion Control feature, you can select the Congestion Avoidance Algorithm for different network latency ranges. Use the FatPipe defined Congestion Control Algorithms listed. By default, the latency ranges and Congestion Control Algorithms mapped to those is defined by FatPipe.



SITE LOAD BALANCING

Used to configure Site Load Balancing

Using site load balancing, SmartDNS gains a replication facility for DNS zones, changes, and a location abstraction for balancing

Site Load Balancing allows for Site Failover between servers located in geographically separate locations that have a shared/replicated storage substrate

Site Load Balancing can provide distributed balancing utilizing all links available at each site.

- Select to enable Site load balancing
- Enter the local site name
- Displays the link status of all interface in both site
- Select the remote site name



SITE LOAD BALANCING

Used to configure Site Load Balancing

Specifies the time to wait for a heartbeat a peer before determining that the connection to the peer is lost

Time interval between two heartbeats sent from this unit to other peers.

Time interval after a line has failed during which connectivity problems will be ignored.

The port number used for communication between peers.

The Secret Key used for securing the communication between peers.

The heartbeat is a small network packet sent periodically between peers. It keeps each peer updated with the status of other peers.



SERVER LOAD BALANCING

Used to configure Server Load Balancing

The screenshot shows the 'Server Load Balancing' configuration page. At the top, there's a navigation menu with options like Home, Interfaces, System, Load Balancing, Algorithms, Route Test, SmartDNS, TCP Congestion Control, Site Load Balancing, Server Load Balancing (selected), Routing, Tools, Orchestration, and EnterpriseView. The main content area is titled 'Server Load Balancing' and has a 'Site:' dropdown set to 'Load Balancing'. Below this, there are two tabs: 'Server Group' and 'Servers'. The 'Servers' tab is active, displaying a table with columns: Name, IP Address, Port Number, Balancing Method, Balancing Mode, and Servers. The table contains one entry: SSH, 11.11.11.22, 8022, Source, TCP, null. Below the table are 'Add', 'Edit', and 'Delete' buttons. An 'Add Server Group' dialog box is open, showing fields for Name (SSH), IP Address (11.11.11.22), Port Number (8022), Balance Method (Source), and Balance Mode (TCP). The dialog also has sections for HTTP Options, HTTP Redistribution, Cookie Options, Group Timeouts (Sec), Standard Options, and Protocol Tests.

To create and manage Server groups
To create and manage Servers

Server Load Balancing provides a scalable model for any number of servers, server groups and inbound connections. It allows to seamlessly integrating servers into your architecture without any downtime.



SERVER LOAD BALANCING

Used to configure Server Load Balancing

This is a detailed view of the 'Add Server Group' dialog box. It contains the following fields and sections:

- Name:** SSH
- IP Address:** 11.11.11.22
- Port Number:** 8022
- Balance Method:** Source
- Balance Mode:** TCP
- HTTP Options:** Force HTTP Close, Add X-Forwarded-for, Check Cache.
- HTTP Redistribution:** Redispach, Persist.
- Cookie Options:** Cookie Name, Rewrite, Insert, Prefix, Indirect, No Cache, Post Only.
- Group Timeouts (Sec):** Connection (50), Queue (50), Client (50), Server (50), HTTP Request (50), Tarpit (50).
- Standard Options:** All Backups, Original Source IP, Servers (No matches found).
- Protocol Tests:** SSL Check, SMTP Check, HTTP Check, HTTP URL, Disable on 404, Ignore on 404.

Specify the name for the server group
Specify the IP address of the server group
Specify the Port # used for this application
Select the Balance Method
Select the Balance Mode
Enabling this flag ensures that the HTTP connection is closed after each response.
Add 'X-Forwarded-For' header to the requests sent to servers
Enable deep inspection of all server responses for strict compliance with HTTP specification in terms of cache ability.
Ensures session redistribution in case of connection failure.
Ensures forced persistence on servers that are down.
Cookie configuration
Server sanity validation



APPLICATION PROFILE

Used to define line conditions for Policy Routing Rules

Application Name	Latency Low (ms)	Latency High (ms)	Jitter Low (ms)	Jitter High (ms)	Packet Loss Low (%)	Packet High Low (%)	Bandwidth Low
Postgres							
MySQL							
TDS							
MSSQL							
Oracle							
DirectDownload							
YFTP							
AFP							

Application Profile feature on FatPipe can be used to define several line conditions with separate template name and can be used where ever required in Policy Routing Rules

- Name to be given for any specific template
- Line conditions
- Used to define an Application name
- To add a new template name



NETWORK OBJECTS

Used to replace IP addresses without re-entering the whole data

Network Object Name	Networks	Template
cheese	garganzola	NO
test09	testing	YES

Network Objects makes it easy to replace existing private IP addresses with new private IP addresses

- Name to be given for a Network Object
- To add, edit or delete a Network Object.
- To add a new network to the list of networks existing.



NETWORK OBJECTS

Used to replace IP addresses without re-entering the whole data

The screenshot shows the 'Network Objects' configuration page with the 'Service/Application' tab selected. A dialog box titled 'Add/Edit Service or Application' is open, displaying a table of predefined services. The table has columns for Name, Port, and Protocol. The following table represents the data shown in the dialog:

Name	Port	Protocol
IC2 Server Management	3001	TCP
IC2 Server Management	3001	UDP
2000e CSS	3428	TCP
2000e CSS	3428	UDP
2000e RPC	3479	TCP
2000e RPC	3479	UDP

Annotations on the right side of the image:

- Service or Application in Network Objects is used to identify using port number used or protocol
- Details about the service
- To add, edit or delete a Network Object.
- To add or remove pre-existing applications
- Select a pre-existing application with port number and protocol
- Used to add Service Name manually, select protocol and enter port number



NETWORK OBJECTS

Used to replace IP addresses without re-entering the whole data

The screenshot shows the 'Network Objects' configuration page with the 'SNMP Servers' tab selected. A dialog box titled 'Add SNMP Server' is open, displaying input fields for Name, IP Address, Port, Version, Community, and Password. Annotations on the right side of the image:

- Used to gather information about routes from other SNMP devices in the network. All the SNMP servers can be added here.
- Details about the service
- To add, edit or delete an SNMP server details
- To add SNMP server details on FatPipe



INBOUND POLICY CONFIGURATION

Used to direct inbound traffic based on specific criteria

- Inbound Policies are used to:
- Allow traffic from the WAN to the LAN
 - Build inbound NAT's from one subnet to another
 - Build inbound ACL's
 - Route traffic from 1 WAN to another

The screenshot shows the 'Inbound Policy Routing Rules' table with the following data:

Name	Rule	Protocol	Source IP/Mask	Source Port	Dest IP/Mask	Dest Port	Traffic Mode	NAT IP	NAT Port	Qos
Web	Allow	TCP	*	*	20.20.2.200/32	80				

Below the table are buttons for 'Add', 'Edit', 'Delete', 'First', 'Up', 'Down', and 'Last'. At the bottom, there are 'Clear Session(s)' and 'Session Info' buttons.

Policies get processed top down, these buttons are used to modify policy order

To add a new inbound policy routing rule

View all sessions that match the selected inbound policy rule



INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

The configuration dialog includes the following fields and options:

- Name:** Web
- Protocol:** TCP
- Source:** IP, Port
- Destination:** IP (20.20.2.200/32), Port (80)
- Action:** Allow
- QoS:** None
- Enable NAT:** Checked
- Enable Source NAT:** Checked
- Scheduler:** Checked
- Calendar:** A 24-hour grid for scheduling.
- Buttons:** Select all, Clear all, OK, Cancel.

Give each rule a unique name. (more Info...)

Choose an IP protocol from the list (more Info...)

Specify a source IP and mask (more Info...)

Specify a port number or range (more Info...)

Specify a destination IP and mask (more Info...)

Choose "Allow" or "Deny" (more Info...)

Choose a pre-defined QoS rule (more Info...)

Check this box if you want to NAT traffic that matches this rule

Specify a source IP and mask (more Info...)

Select the day of week & time of day the policy is to be implemented (more Info...)

Specify the port number the traffic will be mapped to (more Info...)



INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name: Web

Protocol: TCP

Source: IP

Destination: Port

Source: *

Destination: 20.20.2.200/32

Action: Allow

QoS: None

Priority over IPSEC:

Enable NAT:

Enable Source NAT:

NAT IP: *

NAT Port: *

Source NAT IP: *

Source NAT Port: *

Scheduler:

Select all Clear all

Comments:

OK Cancel

Give each rule a unique name.



Use this to identify the purpose of the rule.



INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name: Web

Protocol: TCP

Source: IP

Destination: Port

Source: *

Destination: 20.20.2.200/32

Action: Allow

QoS: None

Priority over IPSEC:

Enable NAT:

Enable Source NAT:

NAT IP: *

NAT Port: *

Source NAT IP: *

Source NAT Port: *

Scheduler:

Select all Clear all

Comments:

OK Cancel

Choose an IP protocol from the list



Choose from ALL, TCP, UDP, ICMP, GRE, ESP, AH. ALL will match all protocols. Port numbers only apply when using TCP or UDP.



INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Web

TCP

Source: IP

Source: Port

Destination: IP

Destination: Port

20.20.2.200/32

80

Allow

None

Priority over IPSEC

Enable NAT

Enable Source NAT

Scheduler

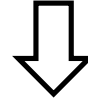
Select all Clear all

Comments:

OK Cancel

Specify a source IP and mask

Specify a destination IP and mask



If you want to match a single IP, use a /32 mask. If you want to match an entire subnet, use the network number with the network mask. If you want to match any IP, use an asterisk (*). MPVPN will display asterisk (*) as 0.0.0.0/0 meaning all IP's.



FAT Pipe

INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Web

TCP

Source: IP

Source: Port

Destination: IP

Destination: Port

20.20.2.200/32

80

Allow

None

Priority over IPSEC

Enable NAT

Enable Source NAT

Scheduler

Select all Clear all

Comments:

OK Cancel

Specify a port number or a port range



Port range should be separated by a hyphen (e.g., 1-1023). If you want to match any port number, use an asterisk (*).



FAT Pipe

INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name: Web
Protocol: TCP

Source: IP, Port
Destination: IP, Port
20.20.2.200/32, 80

Action: Allow

QoS: None

Priority over IPSEC

Enable NAT
NAT IP: *
NAT Port: *

Enable Source NAT
Source NAT IP: *
Source NAT Port: *

Scheduler: Scheduler

Select all Clear all

Comments:

OK Cancel

Choose "Allow" or "Deny"



"Allow" to allow traffic that matches the rule and "Deny" to deny traffic that matches the rule.



FAT Pipe

INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name: Web
Protocol: TCP

Source: IP, Port
Destination: IP, Port
20.20.2.200/32, 80

Action: Allow

QoS: None

Priority over IPSEC

Enable NAT
NAT IP: *
NAT Port: *

Enable Source NAT
Source NAT IP: *
Source NAT Port: *

Scheduler: Scheduler

Select all Clear all

Comments:

OK Cancel

Choose a pre-defined QoS rule



QoS rule will apply to the traffic matched by this policy route rule. QoS is a feature add-on. The default is "None."



FAT Pipe

INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name: Web

Protocol: TCP

Source: IP

Source Port: *

Destination: IP

Destination Port: 20.20.2.200/32

Action: Allow

QoS: None

Priority over IPSEC

Enable NAT

NAT IP: *

NAT Port: *

Enable Source NAT

Source NAT IP: *

Source NAT Port: *

Scheduler:

Select all Clear all

Comments:

OK Cancel

Specify destination IP



INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name: Web

Protocol: TCP

Source: IP

Source Port: *

Destination: IP

Destination Port: 20.20.2.200/32

Action: Allow

QoS: None

Priority over IPSEC

Enable NAT

NAT IP: *

NAT Port: *

Enable Source NAT

Source NAT IP: *

Source NAT Port: *

Scheduler:

Select all Clear all

Comments:

OK Cancel

If you want to map all ports, use an asterisk (*). If NAT is not selected, then the rule will default to Pass Through, which means that MPVPN simply forwards traffic matching the rule.



Specify the port number the traffic will be mapped to



INBOUND POLICY CONFIGURATION

Add Inbound Policy rule based on specific criteria

Add/Edit Inbound Policy Routing Rule

Name:

Protocol: TCP

Source: IP Port

Destination: IP Port

Source: * Port: *

Destination: 20.20.2.200/32 Port: 80

Action: Allow

QoS: None

Priority over IPSEC

Enable NAT

NAT IP:

NAT Port:

Enable Source NAT

Source NAT IP:

Source NAT Port:

Scheduler:

Comments:

If you want a particular rule to be followed, including QoS rules, during a specific period, then it can be scheduled using the scheduler.



Select the day of week & time of day the policy is to be implemented



INBOUND POLICY CONFIGURATION

WAN-WAN Routing

Add/Edit Inbound Policy Routing Rule

Name:

Protocol: TCP

Source: IP Port

Destination: IP Port

Source: * Port: *

Destination: 20.20.2.200/32 Port: 80

Action: WAN-WAN

QoS: None

Priority over IPSEC

Traffic Mode: Interface Priority Interface Specific

Interface	NAT	Port NAT	NAT IP/Mask	NAT Port
WAN1	Yes	Yes		
WAN2	Yes	Yes		
WAN3	Yes	Yes		
WAN4	Yes	Yes		
WAN5	Yes	Yes		

Scheduler:

Comments:

The rule has to be configured in Outbound Policy Routing fashion, but the source subnet should be that of remote network, whose traffic would reach FatPipe through a WAN interface

WAN-WAN action serves as an outbound policy route for the traffic matching the inbound rule

This traffic is routed to destinations using other WAN interfaces. The destination subnet will be * in case the traffic is routed to the Internet or another network in CIDR notation.



OUTBOUND POLICY CONFIGURATION

Used to direct Outbound traffic based on specific criteria

By default, all internet bound traffic from the LAN gets balanced & NAT'd to the IP of the interface its destined to leave on. Outbound policies get used when you have certain traffic constraints you either:

- Don't want to balance
- Don't want to NAT
- Want to get creative with balancing and/or NATing

The screenshot shows the 'Outbound Policy Routing Rules' table with the following data:

Name	Rule	Protocol	Source IP/Mask	Source Port	Dest IP/Mask	Dest Port	Traffic Mode	Interface(s)	QoS	DSCP
Test	Allow	TCP	*	*	*	80	Interface Priority	WAN1, WAN2, WAN3		

Below the table are control buttons: Add, Edit, Delete, First, Up, Down, Last. At the bottom are 'Clear Session(s)' and 'Session Info*' buttons.

Use these buttons to change the order of the rules

To add a new outbound policy routing rule

View all sessions that match the selected inbound policy rule



OUTBOUND POLICY CONFIGURATION

Add Outbound Policy rule based on specific criteria

The screenshot shows the configuration form for a new rule. Key fields include:

- Name: Test
- Protocol: TCP
- DSCP: 80
- Source: IP
- Destination: IP
- Action: Allow
- Traffic Mode: Interface Priority
- Interface: WAN1, WAN2, WAN3

Additional options include 'Source NAT', 'Follow System Route', 'Equal Bandwidth Distribution', and 'Maintain Session Persistence'. A table at the bottom shows interface details for WAN1, WAN2, and WAN3.

Give each rule a unique name to identify the purpose of the rule

Choose protocol from the dropdown

Specify the DSCP tag that is being delivered to the FatPipe from the LAN segment (more Info...)

Choose Allow to allow traffic that matches the rule

Select these for HTTPs Acceleration, WAN Optimization and UDP Aggregation (more Info...)

Interface Priority directs traffic out the first listed link, using the WAN interface order you specify. Interface Specific Mode load balances the traffic based on the Load Balancing Algorithm between the line(s) chosen in the WAN list.

In the event that this traffic pattern is governed by a static route, this option takes precedence over default Load balancing behavior



OUTBOUND POLICY CONFIGURATION

Add Outbound Policy rule based on specific criteria

Interface	NAT	Port NAT	NAT IP/Mask	NAT Port	DSCP Tagging	Value	Enable DynLoadBalOpt	Latency Threshold	Jitter Threshold	PacketLoss Threshold	Bypass IPSEC
WAN1	Yes	Yes			No	No	No				No
WAN2	Yes	Yes			No	No	No				No
WAN3	Yes	Yes			No	No	No				No

Specify the DSCP tag that is being delivered to the FatPipe from the LAN segment (more Info...)



FatPipe will check the DSCP value in the outgoing packets with the DSCP value that is configured in the outbound policy routing rule. If it matches, then it will follow the actions specified in the policy routing rule. The default value is 0 for untagged packets.



OUTBOUND POLICY CONFIGURATION

Add Outbound Policy rule based on specific criteria

Interface	NAT	Port NAT	NAT IP/Mask	NAT Port	DSCP Tagging	Value	Enable DynLoadBalOpt	Latency Threshold	Jitter Threshold	PacketLoss Threshold	Bypass IPSEC
WAN1	Yes	Yes			No	No	No				No
WAN2	Yes	Yes			No	No	No				No
WAN3	Yes	Yes			No	No	No				No

Select these for HTTP's Acceleration, WAN Optimization and UDP Aggregation (more Info...)

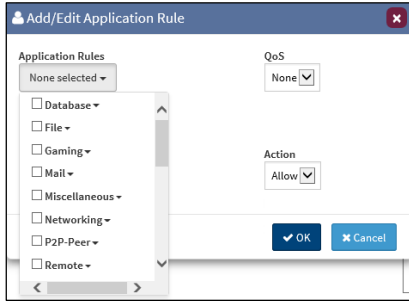


- UDP aggregates smaller UDP packets into a bigger UDP packets thereby reducing bandwidth consumption.
- HTTP's Acceleration ensures optimization of SSL based traffic matching this rule.
- WAN Optimization enables WAN DeDup for traffic we can cache.

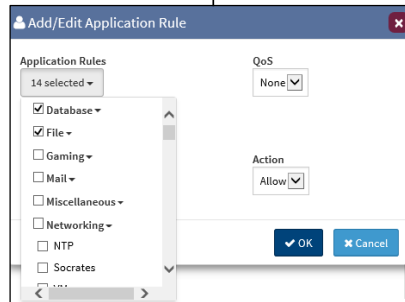


OUTBOUND POLICY CONFIGURATION

Add and Edit Layer 7 Application for an outbound policy



Browse through the list of Layer 7 applications listed under different categories. There are 180+ pre-defined applications.

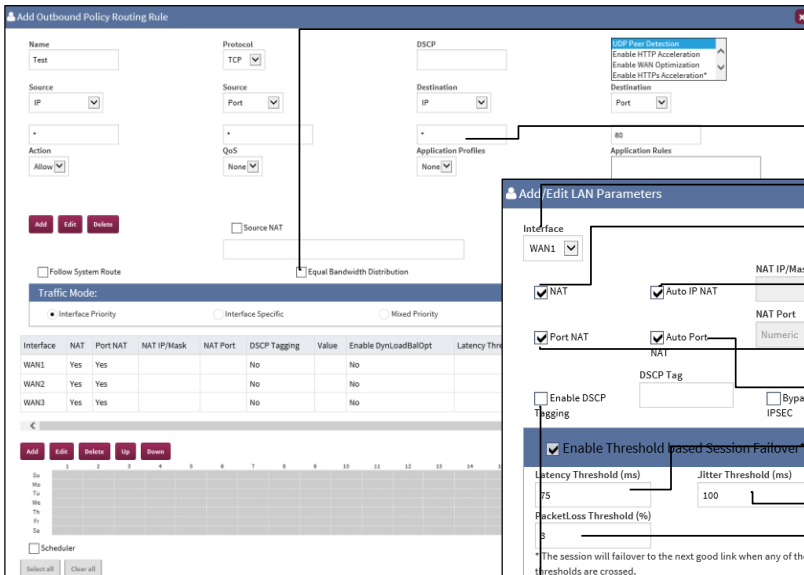


Select one or more Applications from different categories.



OUTBOUND POLICY CONFIGURATION

Add and Edit outbound policy rule WAN Parameters



Enable to ensure all matching sessions are provided with equal bandwidth within the selected QoS bandwidth

Type the domain name of destination or the IP address in CIDR notation

Choose a WAN interface
Check this box to NAT traffic for this traffic pattern on this interface

Uncheck to specify an IP other than the IP of the WAN interface

Enable to Port NAT outbound traffic
Disable to configure a customized port

Configure Latency Threshold value for the WAN interface

Configure Jitter Threshold value for the WAN interface

Configure Packet Loss Threshold value for the WAN interface.

DSCP NATING



GLOBAL OUTBOUND POLICY CONFIGURATION

This is similar to the Outbound Policy tab except the rules are created and maintained from the Central Manager Console. This rule is used to when a single policy needs to be applied to one or all FatPipe devices across your network.

- Add / Edit global outbound policy template name
- Use these buttons to change the order of the rules for the selected template
- Click to delete a template
- Clears sessions matching the selected rule



GLOBAL OUTBOUND POLICY CONFIGURATION

Used to Apply rules for Branch and HQ site FatPipe

Select the units and click on the Proceed button. This will open another pop-up window displaying the “successful” or “unsuccessful” message if the FatPipe is not able to communicate.

- Apply the Outbound policy rule from the selected template to all the selected units.



DYNAMIC ROUTING IPv4 CONFIGURATION

Enable OSPF routing

Time in seconds between two scans of the network interface list

Time in seconds between two consecutive scans of the FatPipe routing table

Add an OSPF instance



STATIC ROUTES CONFIGURATION

Used to statically route subnets to a user-defined gateway

Static Routes are used to route additional subnets that are not directly connected. They are not part of one of the Interface subnets.

Gateway is typically your firewall or an internal router

Metric, the number of hops to the gateway is typically set to 2



IPv6in4 TUNNEL CONFIGURATION

Add IPv6in4 tunnel

This feature is to encapsulate IPv6 packets within IPv4. This allows the IPv6 packet to be carried across IPv4 routing infrastructures.

The screenshot shows the 'IPv6 Tunnel' configuration page. A table lists the existing tunnel: 'Chicago2Denver' with local IP '192.168.1.2' and remote IP '44.33.22.11'. An 'Add IP' dialog is open, showing the same tunnel name and IP addresses being entered into the respective fields.

Enter the tunnel name

Select the local IP from the dropdown menu. The list includes all the IPs of the LAN and WAN Interfaces

Enter the remote IP



IPv6 STATIC ROUTES CONFIGURATION

Add IPv6 Static Routes

The screenshot shows the 'IPv6 Static Routes' configuration page. A table lists the existing static route: 'ToHeadOffice' with source network ':::/0', destination network '4501::1/128', tunnel device 'none', gateway '2001:2001::1', and metric '2'. An 'Add IPv6 Static Route' dialog is open, showing the same route details being entered into the respective fields.

Select the IPv6 tunnel name from the dropdown menu if the traffic is to be routed using the IPv4 node

The source of the IPv6 traffic - the source can be a host address, subnet address, or network address

A destination for the IPv6 traffic - the destination can be a host address, subnet address, or network address

The Gateway is enabled only when a tunnel device is not selected ("None"). The Gateway should belong to one of the local subnets and should be reachable

Specifies the number of hops to the gateway. It is usually 2 hops when using MPVPN



ADVANCED OPTIONS CONFIGURATION

Used to configure advanced options for a specific scenario

Advanced Option

- Enable LAN Redirect
- EIGRP Multicast Forwarding
- Direct Route LAN
- Direct Route WAN
- Send ESP as GRE
- GRE Inspect
- Hop based MPsec Load Balancing

* User should not change any settings here unless instructed by FatPipe support.

Save Refresh

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Enable LAN Redirect when a LAN client wants to access a server in the LAN using its public IP

Enable EIGRP Multicast forwarding when the FatPipe needs to be transparent between two EIGRP end points

Enable Direct Route LAN to route packets directly from LAN to WAN

Enable Direct Route WAN to route packets directly from the LAN to the WAN

Enable Send ESP as GRE to send ESP packets as GRE

Enable GRE inspection to have policies be able to take action on GRE packet payload

Enable Hop-based MPsec Load balancing to load balance MPsec traffic based on hops



SPEED CHART TOOL

Used to monitor the speed of your WAN connections

Speed Chart

Interfaces: ALL INTERFACES TOGETHER

Speed Chart: Total Rates Per Interface

Y-axis: Kbps (0 to 38.1)

X-axis: time (mins) (0 to 5)

Legend: Total Upload Rate (Red), Total Download Rate (Yellow), Total Rate (Blue)

Gauges: Upload (8.00 Kbps), Download (0 Kbps), Total (8.00 Kbps)

Monitor the upload and download or combined speeds of each of the WAN lines independently or in combination by viewing the Speed Chart.

Select the interface that you want to view. WAN1, WAN2, WAN3 or All Interfaces.

Plots real-time bandwidth usage graphically

Displays real-time bandwidth usage numerically



DIAGNOSTIC TOOL

Used to help diagnose and troubleshoot

The screenshot shows the 'Diagnostics' section of the FatPipe interface. On the left is a navigation menu with options like Home, Interfaces, System, Load Balancing, Routing, Tools, Speed Chart, Diagnostics (selected), Generate Certificate Request, Session Details, Protocol Statistics, MPsec Path Info, Orchestration, and EnterpriseView. The main content area has several tabs: System Statistics, Traffic Logging Info, View Route Info, and Route Test Display. The 'Route Test Display' tab is active, showing a 'Results' section with statistics for LAN1 and WAN1, and a 'Copy to Clipboard' button. Below this is a network diagram with nodes representing routers and servers, connected by red lines. A legend at the bottom indicates 'Connected' (green), 'Not Connected' (red), and 'Unknown' (blue). On the right side, there are input fields for 'Host' and 'Interface' (set to 'LAN'), and buttons for 'Ping It', 'Trace It', and 'Cancel'. A 'Session Information' section is also visible with checkboxes for 'Enable Packet Log' and 'Enable Session Monitor'.

- View information about system uptime and interface statistics
- Select interface to use for ping or trace route
- Traceroute on a interface by interface basis
- Ping on a interface by interface basis
- View all the sessions currently running on the unit
- View a real-time graphical display of link connectivity validation



GENERATE CERTIFICATE REQUEST

Used to generate certificate for IPSec

The screenshot shows the 'Generate Certificate Request' form. It includes fields for Country (C), State (ST), Locality (L), Organization (O), Organization Unit (OU), and Common Name (CN). There is a dropdown for 'Key Size (Bits)' set to 1024, a checkbox for 'Self Sign', and a 'Valid till days' field. At the bottom, there are buttons for 'Reset', 'Generate Certificate', 'Export', 'Copy to Clipboard', 'Import CSR file', and 'Sign it'. A grey box on the right contains the text: 'Generate Certificate Request will provide a separate certificate for every user instead of having a single generated IPSec key'. Arrows point from the 'Generate Certificate' button to the text 'Provide all the credentials to generate Certificate', from the 'Export' button to 'To get the certificate', from the 'Copy to Clipboard' button to 'Get CSR info from server and upload on FatPipe', and from the 'Import CSR file' button to 'Save the generated certificate to Computer'.

Generate Certificate Request will provide a separate certificate for every user instead of having a single generated IPSec key

- Provide all the credentials to generate Certificate
- To get the certificate
- Get CSR info from server and upload on FatPipe
- Save the generated certificate to Computer



QUALITY OF SERVICE CONFIGURATION

Used to prioritize your WAN traffic

QoS allows you to prioritize your WAN traffic.

The screenshot displays the QoS configuration interface. On the left is a navigation menu with options like Home, Interfaces, System, Load Balancing, Routing, Application Profile, Network Objects, Inbound Policy, Outbound Policy, Global Outbound Policy, Dynamic Routing(IPv4), Static Routes, QoS, Global QoS, VPN, MPsec, WAN Optimization Settings, IPv6in4 Tunnel, IPv6 Static Routes, Advanced Options, Tools, and Orchestration. The main area shows a 'QoS Rules' table and a 'Add / Edit Quality of Service Rule' dialog box.

Name	Qos for MPsec	WAN1 (50000/50000 kbps)		WAN2 (50000/50000 kbps)		WAN3 (50000/50000 kbps)		WAN4 (50000/50000 kbps)		WAN5 (50000/50000 kbps)	
		Priority	OUT	Priority	OUT	Priority	OUT	Priority	OUT	Priority	OUT
QosRuleA	No	0	256 512	1	240 500	2	360 450	4	300 420	5	330 480
Total			256 512		240 500		360 450		300 420		330 480

The 'Add / Edit Quality of Service Rule' dialog box shows the following configuration:

- Name: QosRuleA
- Apply Qos rule for mpsec paths:
- Interface (Upload/Download): WAN1 (45000 / 45000), WAN2 (45000 / 45000), WAN3 (45000 / 45000), WAN4 (45000 / 45000), WAN5 (45000 / 45000)
- Policed Rate: 256, 240, 360, 300, 330
- Committed Rate: 512, 500, 450, 420, 480
- Burst Rate: 1000, 900, 750, 800, 850
- Priority: 0 - Highest Priority, 1, 2, 4, 5

This column displays the total amount of bandwidth available on a given interface

The Policed Rate defines what we will try to carve out for incoming bandwidth purposes

Committed rate is the bare minimum amount of bandwidth carved out for a given rule

Specify the priority (precedence level) for this rule

The Burst Rate defines the outbound bandwidth ceiling for this rule

Enable to apply QoS rule to all the MPsec paths automatically



SESSION DETAILS

Used to view Session details

Provides a report on the sessions that flow through the device. You can view all the sessions that flowed through the FatPipe at a given period of time.

The screenshot displays the 'Session Details' configuration interface. It includes a 'Prepare Database' button, a 'Last Updated Time' field (2017:01:04 15:06:10), and a 'Reports' section with a 'Preset' dropdown (set to 'Custom') and a 'Sessions' table.

From	To	Interface
1/4/2017 12:01 AM	1/4/2017 11:59 PM	All

Below the table are fields for 'Source IP', 'Source Port', 'Destination IP', 'Destination Port', and 'Protocol'. Navigation buttons include '< Prev', 'SHOW', 'Next >', and 'Export'. There are also 'Save' and 'Refresh' buttons at the bottom right.

Choose a preconfigured report from the drop down

Enter a date/time range

Specify an interface

Enter Source IP address

Enter Destination IP address

Enter Source port and Destination port



SESSION REPORTS

Used to view Session reports

Select a preconfigured report

Enter date / time range

Click to view the different types of Session Reports available.



VPN CONFIGURATION

Used to configure VPN tunnels with standard IPSec VPN peer

Specify a unique name for the policy.

To add a new VPN policy rule

FatPipe VPN allows you to create and configure IPSec tunnels between two or more remote networks (site-to-site VPNs) and with remote users using mobile VPN clients.

The Client VPN user feature provides connectivity for mobile VPN clients. It allows individual users to connect to hosts on the LAN behind FatPipe by using a VPN client.



VPN CONFIGURATION

Used to configure VPN tunnels with standard IPsec VPN peer

Add/Edit VPN Policy Rule

Template: Tunnel Name: Chicago2Denver Remote End: Network User

Encryption: AES128

Authentication: SHA1

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

Local Info: Local LAN Networks: 172.17.1.27/0/24 External IP: 20.20.1.2

Remote Info: Remote LAN Networks: 10.0.5.0/24 External IP: 40.40.1.2

Key Management: Pre-Shared Secret (selected) Pre-Shared Key: #09Fahjert3#5@85432Secure Remote ID: 40.40.1.2 IKE Lifetime: 1 hour 0 minute Key Lifetime: 1 hour 0 minute

VPN Site Failover: Group Name: Priority: 1 Fallover after: 0 failed MPsec polls

* Note : For PPPoE, use 169.254.x.2 where x is the WAN interface number

OK Cancel

Enter the name of the tunnel

Select the encryption type you want to use for the policy

Choosing "Auto" mode leaves the VPN devices to negotiate NAT-Traversal

The MSS value helps set the maximum segment size. The size range is from 566 - 1460

By enabling PFS, if someone breaks a key, PFS ensures that the attacker is not able to derive any other key

Choose Remote End as 'Network' to create VPN tunnels between two sites

Select the authentication method you want to use for the policy

Configure key'ing



VPN CONFIGURATION

Used to configure VPN tunnels with standard IPSec VPN peer

Template

Tunnel Name: Chicago2Denver

Remote End: Network

Encryption: AES128

Authentication: SHA1

NAT-T: Auto, Custom Ports (checked), IKE Port: 500, Encapsulated UDP Port: 4500

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

Local Info: Local LAN Networks: 172.17.127.0/24, External IP: 20.20.1.2

Remote Info: Remote LAN Networks: 10.0.5.50/24, External IP: 40.40.1.2

Key Management: Pre-Shared Secret, Pre-Shared Key: #09Fahjjer13#5@55432Secure, Remote ID: 40.40.1.2, IKE Lifetime: 1 hour, Key Lifetime: 1 hour

VPN Site Failover: Group Name, Priority: 1, Failover after: 0 failed MPsec polls

* Note : For PPPoE, use 169.254.x.2 where x is the WAN interface number

OK Cancel

NAT-T "Forced" mode will force the VPN devices to encapsulate IPSec packets into UDP packets to solve traversal problems that may occur with intermediate NATing

To configure Forced mode option, select the Forced option, The normal ports for NAT-Traversal are UDP 500 for Key negotiation and UDP 4500 for data exchange. You can change these values by checking the 'Custom Ports' check box which allows you change these values to any valid UDP Port number.



VPN CONFIGURATION

Used to configure VPN tunnels with standard IPSec VPN peer

- Home
- Interfaces
- System
- Load Balancing
- Routing
 - Application Profile
 - Network Objects
 - Inbound Policy
 - Outbound Policy
 - Global Outbound Policy
 - Dynamic Routing(IPv4)
 - Static Routes
 - QoS
 - Global QoS
 - VPN**
 - MPSec
 - WAN Optimization Settings
 - IPv6in4 Tunnel
 - IPv6 Static Routes
 - Advanced Options
- Tools

VPN Policy List:

#	Tunnel Name	Status	Remote SubnetMask	Remote External IP	Local SubnetMask	Local External IP
No data available in table						

Key Management

Pre-Shared Secret RSA Signature RSA Certificates

Local RSA ID: @chicago.example.com Remote RSA ID: @denver.example.com

Remote Public Key: 0*LDJlk349-khiki5475120xfghndrgfjnh;pol1sAdihfUL1356812?7254257gfdh'lkhpokth

Local Key: View Re-Create

IKE Lifetime: 1 hour 0 minute Key Lifetime: 1 hour 0 minute

VPN Site Failover

Group Name: Priority: 1 Failover after: 0 failed MPsec polls

Note: For PPPoE, use 169.254.x.2 where x is the WAN interface number

OK Cancel

- Select Key management as 'RSA Signature'
- Enter RSA ID as a Fully Qualified Domain Name preceded by an @ sign
- Click to generate a public key



VPN CONFIGURATION

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VPN Policy List:

#	Tunnel Name	Status	Remote SubnetMask	Remote External IP	Local SubnetMask	Local External IP
No data available in table						

Add/Edit VPN Policy Rule

Local Name: Chicago/Denver Remote End: User

Encryption: AES128 Authentication: SHA1

NAT-T: Auto Forced Other: TCPMSS: 1372 BFD Delay: 30 BFD Timeout: 120 PFS:

Local Info: Tunnel LAN Network IP Address/Mask: 192.168.1.1/24 External IP: 20.20.1.2 Remote Info: Remote LAN Network IP Address/Mask: External IP:

Key Management: Pre-Shared Secret Certificates

Pre-Shared Key: Mgh0USAj2247547g80554432329452342316

IKE Lifetime: 1 hour 0 minute Key Lifetime: 1 hour 0 minute

OK Cancel

- Choose Remote End as 'User' to create VPN tunnels with any remote host
- Select Key management as 'pre-shared secret'
- Enter pre-shared secret key and this should match the key management type and key used on the VPN peer also



VPN CONFIGURATION

Used to configure VPN tunnels with standard IPSec VPN peer

Enter the "Local ID"

Click the "OK" button to save the VPN entry

The local certificate installed on the FatPipe is created with the Local ID, the Remote ID, and Remote Certificate password. When the certificate is created, it is signed internally by the Fatpipe's local certificate.



MPSEC CONFIGURATION

Used to configure about MPsec

Provides security, redundancy & diversity of data transmission over several links. MPsec creates multiple, independent data pathways between two or more locations.

Specify how often MPsec paths are tested for Up / Down status

Click to view the advanced settings for MPsec paths

Click 'Add' to enter the remote location name

Select a remote site

Click 'Configure' to modify/add/change path connectivity

Click 'Status' to visually show connection status for the selected Site Name

Click to clear the FatPipe WAN Optimization local cache store



MPSEC CONFIGURATION

Used to enter information about Remote Network and view MPsec status

The screenshot shows the 'Add Entry' configuration window for MPsec. It includes fields for 'Remote VPN name' (Chicago) and 'Remote VPN IP' (20.10.0.0/24). A 'Load Balancing' section offers 'Session' and 'Packet' options. Below are several checked options: 'Dynamic Mpsec Load Balancing', 'Enable Bandwidth Detction (Kbps)', 'Use Available Bandwidth', 'Use Packet Loss', 'Use Latency', and 'Jitter'. Each option has associated input fields for thresholds and weight factors. 'OK' and 'Cancel' buttons are at the bottom.

- Name of the remote site
- Select the load balancing option for MPsec traffic
- Enter the remote network subnet in CIDR notation
- Click to enable Dynamic MPsec Load Balancing using various WAN parameters of the link
- Enable to detect bandwidth between two units for all the configured MPsec paths.
- Enable to modify the Weight Reducing Factor, up to 10 from 1 (by default) for Available Bandwidth
- Enable to modify the Weight Reducing Factor and Threshold value for Latency
- Enable to modify the Weight Reducing Factor and Threshold value for Packet Loss. Packet Loss is calculated from each MPsec ping interval
- Enable to modify the Weight Reducing Factor and Threshold value for Jitter



WAN OPTIMIZATION CONFIGURATION

To configure WAN Optimization for the listed protocols and applications

The screenshot shows the 'WAN Optimization Settings' page. It features a sidebar with navigation options like 'Home', 'Interfaces', 'System', 'Load Balancing', and 'Routing'. The main content area has a 'Select All' button and an 'Auto Deploy' checkbox. Below are several categories of applications with checkboxes for 'Compress' and 'Cache': Mail Applications (POP3, IMAP, SMTP, MS Exchange, Lotus Notes), Thin Client (RDP, Citrix ICA, SunRay), Database Application (MYSQL, MSSQL, SYBASE, ORACLE), Web (HTTP, *HTTPs), Messaging (Yahoo Messenger, MSN), Business Application (Share Point, SAP, ORACLE ERP), and Other (Undefined App). A 'Save' and 'Refresh' button are at the bottom.

- Click to Enable WAN Optimization
- Select the protocols to be optimized and then select whether to use Compression only or Caching only or both Compression and Caching to get maximum optimization.



ORCHESTRATION

Used to Manage FatPipes located at different locations

→ Add Information about FatPipe locations

→ Add information about key at location

→ To Configure local or remote Database

→ Information about virtual VPN if any exists

→ Information about the location

→ Add description for a specific location

Allows a user to manage all the FatPipe appliances in their network from a single console without the burden of logging into each unit individually. The units can be organized into groups and configured with a secret key for inter unit communication.



ORCHESTRATION

Used to Manage FatPipes located at different locations

Name: NewYork

Serial Number: fwrps200110377

Description:

Group: HQ

Virtual VPN IP:

External VPN IP:

IP Addresses:

- 11.1.1.2
- 12.1.1.2
- 13.1.1.2

Device Location:

Address: Sample Address

City: NewYork

State: NY

Country: USA

Zip Code: 10038

Enter a Name for the device, FatPipe Serial Number of the device (Serial Number is case sensitive therefore ensure that the serial number is correct). Enter a relevant description of the device select the group name where it belongs.

To access the GUI of the device WAN IP address are needed. Enter the WAN IP address of the remote device which you want to access. To add an IP address click the Add button under the IP address section. Add all the wan IP address one by one.

