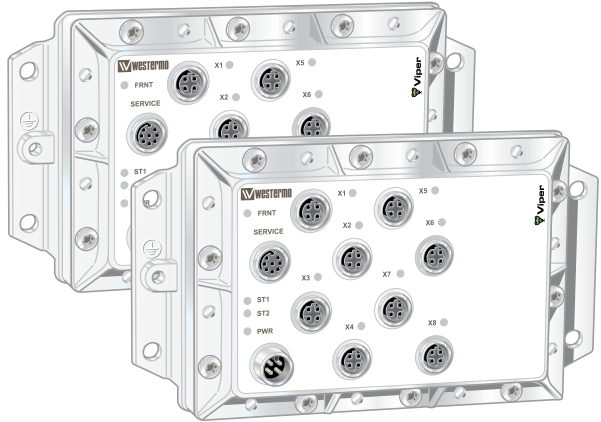


Reference Guide  
6641-3201



# Viper



*Managed 8-port  
Ethernet Switch,*

[www.westermo.com](http://www.westermo.com)

## **Accessing and Using the Web Interface**

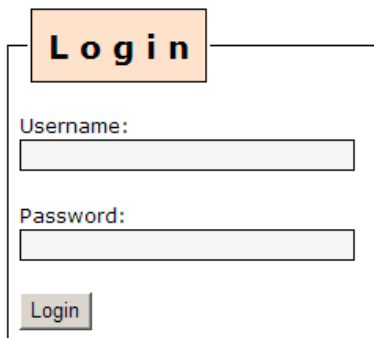
To access to all possible settings, the Viper switch should be configured via the onboard web based configuration tool. This application note describes the web interface on the Viper 108/408 and how to use it. It is important that the unit has the latest firmware, which can be downloaded from Westermo website.

## Accessing the Viper Web Interface

The Viper can easily be configured via the onboard Web based configuration interface or by using the Westermo IP Configuration utility.

From the IP Configuration utility a web browser can automatically be launched onto any desired switch in the same subnet, and a login box similar to figure 3 will be displayed.

Figure 3



The image shows a login form within a rectangular border. At the top left, there is a light orange box containing the word "Login" in bold black text. Below this, the text "Username:" is followed by a horizontal input field. Underneath that, the text "Password:" is followed by another horizontal input field. At the bottom left of the form, there is a button with the text "Login" on it.

Enter the following login details:

- User name: admin
- Password: westermo

**Note!** This is the default login, but once logged in the administrator password can be changed. Default login will not work if the admin password has been changed.

# Viper Web Interface Structure

The administrator start page will be displayed and show a brief summary of the unit. It will be similar to figure 4. The menu bar is divided into a main menu, which is the top row tab, and a sub-menu, which is directly under the main menu, figure 5. The main menu tabs are used to select a group of pages, and the sub-menu is used to select a page within that group. Directly under the menu bar the content of the page will be displayed.

Figure 4

Westermo

Logged in as **admin** Host: Viper ( 192.168.2.200 )

## Viper 408

Home Configuration Administration Stats RESTART LOGOUT

Start

### Welcome admin!

You are currently connected to Viper (192.168.2.200). Below you will find a brief summary of the unit.

Property	Value
Mac address	00:07:7c:80:1f:2e
IP address	192.168.2.200
Netmask	255.255.255.0
Gateway address	192.168.2.1
Firmware Version	3.15
Database Version	default 9
Serial Number	lx003540
Type	Viper 408
Hostname	Viper
Location	Westermo
Redundancy Protocol	None
VLAN	Disabled
IGMP	Disabled
SNMP	Disabled
Alarms	None
Temperature	45

Figure 5

Home Configuration Administration Stats RESTART LOGOUT

Start

Main menu

Sub-menu

# Configuration

## Network (IP)

Western Digital  
Viper 408

Logged in as admin Host: AE-8 ( 192.168.2.201 )

Home Configuration Administration Stats RESTART LOGOUT

NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL IGMP SNMP PORT CONFIG VLAN MACFILTER

### Network (IP) Settings

MAC 00:07:7c:80:1f:2e

IP

Netmask

Gateway

If you wish to enable DHCP, please click the button --->

The Viper switch IP-address can individually be changed via the Web Interface, another option is DHCP. These settings can be configured in the *Network (IP) Settings*.

**MAC** The Viper switch MAC-address (can not be changed)

**IP** If it is desired to change the Viper switch IP address, enter the new IP address and netmask. Once the changes have been applied, the IP address of the Viper switch will change. The unit does not need to reboot after changes to the *Network (IP) Settings*.

**Netmask** The subnet netmask of the network.

**Gateway** The address of the gateway in the network.

**Enable DHCP** Enables DHCP protocol on the Viper switch

Click the "Apply" button to confirm changes made to the *Network (IP) Settings*.

**Note!** If you are not sure about the settings – consult your network administrator.

# Identity



WESTERMO

Logged in as **admin** Host: AE-8 ( 192.168.2.201 )

## Viper 408

Home Configuration Administration Stats RESTART LOGOUT

NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL IGMP SNMP PORT CONFIG VLAN MACFILTER

### Identity Settings

Hostname

Location

The Viper switch identity can be changed via the Web Interface. These settings can be configured in the Identity Settings.

Available options are:

**Hostname** Set desired hostname for the Viper switch. Accepted characters are 0-9, a-z, A-Z, \_ (underscore) and - (minus).

**Location** Set desired location for the Viper switch. Accepted characters are 0-9, a-z, A-Z, \_ (underscore) and - (minus).

Click the "Apply" button to confirm changes made to the *Identity Settings*.

## Redundancy protocol – FRNT

WESTERMO

Logged in as admin Host: AE-8 ( 192.168.2.201 )

### Viper 408

Home Configuration Administration Stats RESTART LOGOUT

NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL IGMP SHMP PORT CONFIG VLAN MACFILTER

#### Redundancy Protocol

**Current protocol: FRNT**

Focalpoint

FRNT port 1

FRNT port 2

If you wish to disable FRNT or enable RSTP, please click the button --->

The Viper switch (Viper 408 only) supports the redundancy protocol FRNT (Fast Re-configuration of Network Topology, FRNT version 0).

*For more information on FRNT, please read the Whitepaper found on the enclosed Viper CD or at the Westermo website.*

Available options are:

**Focal point** If this unit should be the Focal Point, tick the check box.  
If this unit should act as a member in the ring, leave the check box unticked.

**FRNT port 1** Selection of redundant port for FRNT

**FRNT port 2** Selection of redundant port for FRNT

**Disable FRNT** This option disables FRNT.

Click the "Apply" button to confirm changes made to the *Redundancy Protocol* settings. The unit needs to be restarted before changes can take affect.

**Note!** Only one unit in a redundant ring using FRNT can be set as Focal Point.

# Redundancy protocol – RSTP

Logged in as admin Host: AE-8 ( 192.168.2.201 )

## Viper 408

Home Configuration Administration Stats RESTART LOGOUT

NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL IGMP SNMP PORT CONFIG VLAN MACFILTER

### Redundancy Protocol

**Current protocol: RSTP**

Bridge Prio

Number of nodes

Dynamic Trunking

Edge Ports

1	2	3	4	5	6	7	8
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If you wish to disable RSTP or enable FRNT, please click the button --->

The Viper switch (Viper 408 only) support the Rapid Spanning Tree Protocol (RSTP) (Viper 408 only) according to IEEE802.1w with fallback to the Spanning Tree Protocol (STP - IEEE802.1 D). The STP fallback feature means that the Viper switches can be used together with switches that only have support for STP.

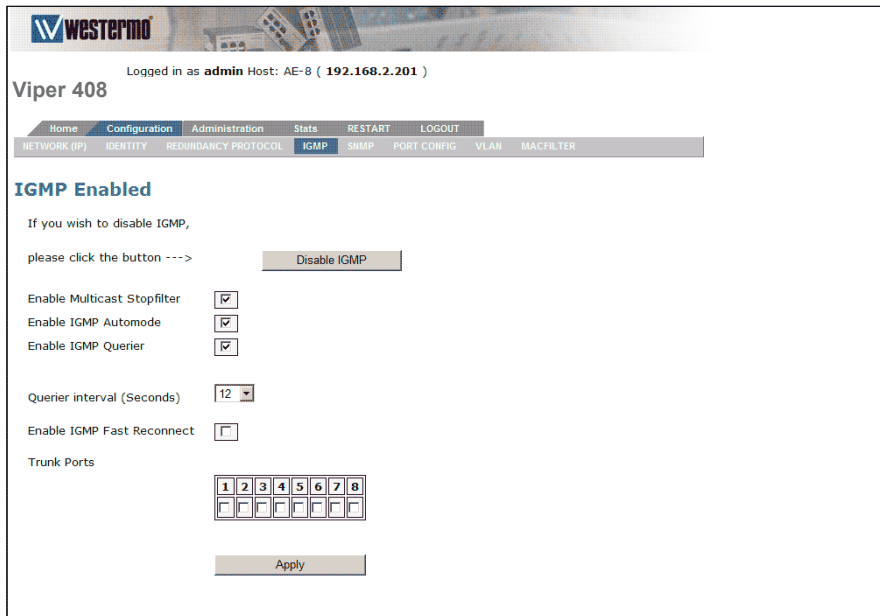
For more information on RSTP, please read the Whitepaper found on the enclosed Viper CD or at the Westermo website.

Available options are:

- Bridge Prio** The switch with the lowest priority will become the root switch.
- Number of nodes** Should be equivalent to total number of units in the ring.
- Dynamic** Dynamic trunking is enabled when RSTP is used in a VLAN to eliminate failure
- Trunking** due to an incorrectly configured VLAN. If every unit in the ring has enabled Dynamic trunking, all VLANs will be granted access on the ring.
- Edge Ports** Selection of edge ports for RSTP.
- Disable RSTP** This option disables RSTP.

Click the "Apply" button to confirm changes made to the Redundancy Protocol settings. The unit needs to be restarted before changes can take affect.

# IGMP (Internet Group Management Protocol)



The Viper switch (Viper 408 only) supports IGMP (Internet Group Management Protocol) snooping based on IGMP v1,IGMPv2 and IGMPv3. To enable IGMP snooping, click *Enable IGMP*.

*For more information on IGMP, please read the Whitepaper found on the enclosed Viper CD or at the Westermo website.*

Available options are:

### Disable/Enable IGMP

This option disables/enables IGMP.

### Enable Multicast Stopfilter

Enable this option if the switch should deny unwanted Multicast broadcasts.

### Enable IGMP Automode

Options according to possible combinations below:

**Enable IGMP Querier**

Auto mode enabled + Querier disabled:

This unit will always act as a member in the ring.

Auto mode disabled + Querier enabled:

This unit will always act as Querier in the ring.  
(IGMP focal point)

Auto mode enabled + Querier enabled:

This unit can act as a Querier in the ring. If more than one unit in the ring is configured with this setting, the unit with the lowest IP-address will automatically be selected as Querier. If that unit should fail, the unit with the second lowest IP-address becomes the Querier, then the third lowest and so on.

**Querier interval (seconds)**

Indicates the interval between two IGMP query packets. Four intervals are possible. 12, 30, 70 or 150 seconds.

**Enable IGMP Fast Reconnect**

The IP multicast filter implementation is integrated with the Fast Re-configuration of Network Topology (FRNT) protocol. This means that the multicast filters will be updated as fast the FRNT implementation handles a topology change, i.e. approx. 20 ms.

**Trunk Ports**

The IGMP Queriers will be forwarded on selected ports.

Click the "Apply" button to confirm changes made to the *IGMP settings*.

The unit needs to be restarted before changes can take affect.

## SNMP (Simple Network Management Protocol)

WESTERMO

Logged in as **admin** Host: AE-8 ( 192.168.2.201 )

### Viper 408

Home Configuration Administration Stats RESTART LOGOUT

NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL IGMP **SNMP** PORT CONFIG VLAN MACFILTER

#### SNMP Enabled

If you wish to disable SNMP,  
please click the button --->

Community:  
Read ->   
Write ->

The Viper has support for SNMP v2c with a range of MIBs, which are listed and explained in the Viper White paper.

The Viper MIB's are divided into groups allowing the SNMP manager to poll the SNMP agents for information.

*For more information on SNMP and MIB's, please read the Whitepaper found on the enclosed Viper CD or at the Westermo web page.*

Available options are:

**Disable/Enable SNMP** This option disables/enables SNMP.

**Read** SNMP password to be able to read SNMP values.

**Write** SNMP password to be able to write SNMP values.

Click the "Apply" button to confirm changes made to the *SNMP* settings. The unit needs to be restarted before changes can take affect.

# Port Configuration

Westermo  
Viper 408  
Logged in as admin Host: Viper ( 192.168.2.200 )

Home Configuration Administration Stats RESTART LOGOUT  
NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL ICMP SNMP PORT CONFIG VLAN MACFILTER

### Port Configuration

Port Nr	Link Status	Current Config	New Config	Special Mode	Ingress Limit	Egress Limit	Portalarm
1	LINK	Auto	Auto	None	0	0	<input type="checkbox"/>
2		Auto	Auto	None	0	0	<input type="checkbox"/>
3		Auto	Auto	None	0	0	<input type="checkbox"/>
4		Auto	Auto	None	0	0	<input type="checkbox"/>
5		Auto	Auto	None	0	0	<input type="checkbox"/>
6		Auto	Auto	None	0	0	<input type="checkbox"/>
7		Auto	Auto	None	0	0	<input type="checkbox"/>
8		Auto	Auto	None	0	0	<input type="checkbox"/>

Apply

All ports can be configured individually in the *Port Configuration*. To confirm changes made to the *Port Configuration* click the *Apply* button. The unit needs to be restarted before changes can take affect.

Parameter	Options	Description
Port Number	N/A	Port number correspond to the port number on the actual switch
Link Status	LINK	Indicates Link status
Current Config	Disabled Auto 10M HDX 10M FDX 100M HDX 100M FDX	Current port settings
New Config		Configuration of new setting
	Disabled	Port disabled
	Auto	Port automatically set to same capacity as receiver
	10M HDX	10 Mbit half duplex
	10M FDX	10 Mbit full duplex
	100M HDX	100 Mbit half duplex
	100M FDX	100 Mbit full duplex
Special Mode	None	Normal mode
	Mirror	A port set to mirror mode will receive data from ports set to sniff mode.
	Sniff	Data sent on a port set to sniff mode can be received from ports set to mirror mode.
Ingress Limit 1)	0-8192	Bandwidth limit into the port
Egress Limit	0-8192	Bandwidth limit out of the port
Port Alarm	ActivatedNot Activated	Port alarm activatedPort alarm deactivated

Note 1. Works only for UDP packets, not TCP/IP

# VLAN

Westermo  
 Logged in as admin Host: AE-8 ( 192.168.2.201 )  
**Viper 408**

Home Configuration Administration Stats RESTART LOGOUT  
 NETWORK (IP) IDENTITY REDUNDANCY PROTOCOL IGMP SNMP PORT CONFIG **VLAN** MACFILTER

### VLAN Configuration

Name	Port Nr								Vlan Id	Pri
	1	2	3	4	5	6	7	8		
WHITE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	7
RED	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	0
BLUE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	3
GREEN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	5
YELLOW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	7
BROWN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	0
PINK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7	0
Default	white	blue	red	blue	blue	green	white	white		
Remove Tag	X	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Apply  
 Restore Default Settings  
 Disable VLAN

The Viper (Viper 408 only) has support for VLAN, and each trunk port can be individually granted different levels of access. In the VLAN Configuration each VLAN ID is named as a different colour. The colour White is static and set as management VLAN with VLAN ID 1, this can not be changed.

All other predefined VLANs are fully manageable, and necessary settings are made in the VLAN Configuration.

For more information on VLAN, please read the Whitepaper found on the enclosed Viper CD or at the Westermo web page.

<b>Parameter</b>	<b>Options</b>	<b>Description</b>
Name	White	White is set as management VLAN.VLAN ID 1
	Red Blue Green Yellow Brown Pink	Red-Pink VLAN are 6 predefined VLAN that can be managed.
Port Nr	1-8	Configure which VLAN colour should be allowed on each port
	Drop down menu	Defines colour (VLAN ID) port Nr should have
	Check box	VLAN allowed on this port
Vlan Id	1-4094	VLAN id for each VLAN
Pri	0-7	Priority for traffic on each VLAN. 0 equals lowest priority. 7 equals highest priority.

# MAC Filter

Logged in as **admin** Host: AE-8 ( 192.168.2.201 )

Viper 408

Home Configuration Administration Stats RESTART LOGOUT

NETWORK (IP) IDENTIFY REDUNDANCY PROTOCOL IGMP SNMP PORT CONFIG VLAN **MACFILTER**

## MACFILTER DISABLED

If you wish to enable Macfilter,

please click the button --->

Add the approved MAC-addresses by using the input-box below. The address need to be in the "standard" format - e.g. **00:07:7C:CD:FF:EE** -  
You can also use a "\*" as a wildcard - i.e. to allow all Westermo OnTime-addresses you would input the string **00:07:7C:\*\*:\*\*** .  
Please note that the maximum number of entries in the list is **50**.  
(If you try to enter an invalid address you will get an error message.)

If you want to add multiple addresses at the same time you can input them as a semi-colon separated list in the text-box below.  
For example : **00:07:7c:00:00:01;00:07:7c:00:00:02;00:07:7c:10:\*\*:\*\***

If the MAC filter is enabled, only approved MAC addresses will be granted access through the switch. To approve MAC addresses, add them according to the methods below.

**Note that this function should be used with care. An incorrect configuration could result in total denied access, and a factory reset of the unit would then be needed.**

MAC addresses can be added to the MAC filter by different methods:

- 1) One by one by adding a single MAC address in the small input-box.  
The MAC address should be typed in the standard format - e.g. 00:07:7c:12:34:56
- 2) As a range of addresses using an asterisk, \*, as a wild card. E.g. 00:07:7c:12:34:\*\*  
This will allow addresses between 00:07:7c:12:34:00 to 00:07:7c:12:34:ff.
- 3) As a sequence of single MAC addresses divided by a semi colon.  
Example: 00:07:7c:00:00:00;00:07:7c:00:01:00;00:07:7c:00:0\*:\*\*;

MAC addresses can be added according to method 1 and method 2 in the sequence.

Available options are:

**Input-box small** Input-box if a MAC address is added according to method 1) or 2)

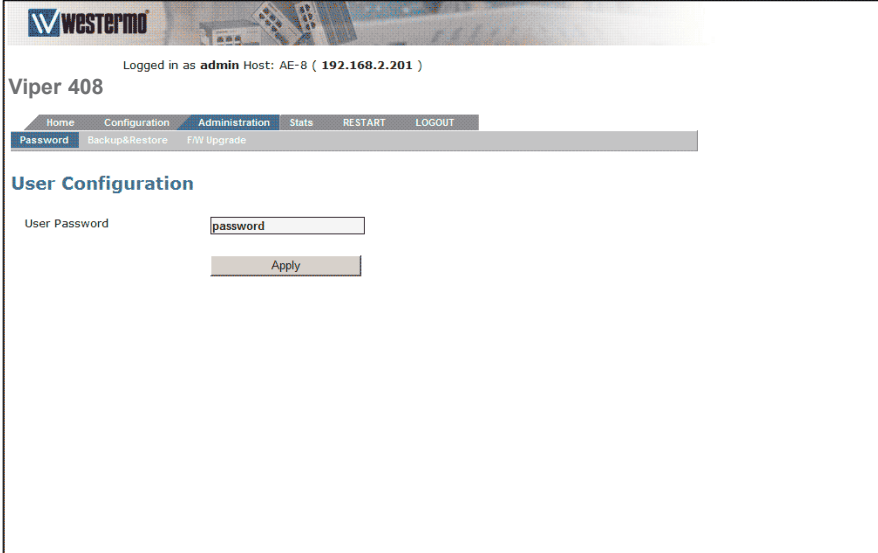
**Input-box large** Input-box if a MAC address is added according to method 3)

Click the "*Apply*" button to confirm changes made to the *MAC filter* settings. The unit needs to be restarted before changes can take affect.

**Note!** Once the MAC filter has been enabled on a unit, the units own MAC address must be added to the MAC filter.

# Administration

## Password



Westermo

Logged in as **admin** Host: AE-8 ( 192.168.2.201 )

### Viper 408

Home Configuration Administration Stats RESTART LOGOUT

Password Backup&Restore FW Upgrade

#### User Configuration

User Password

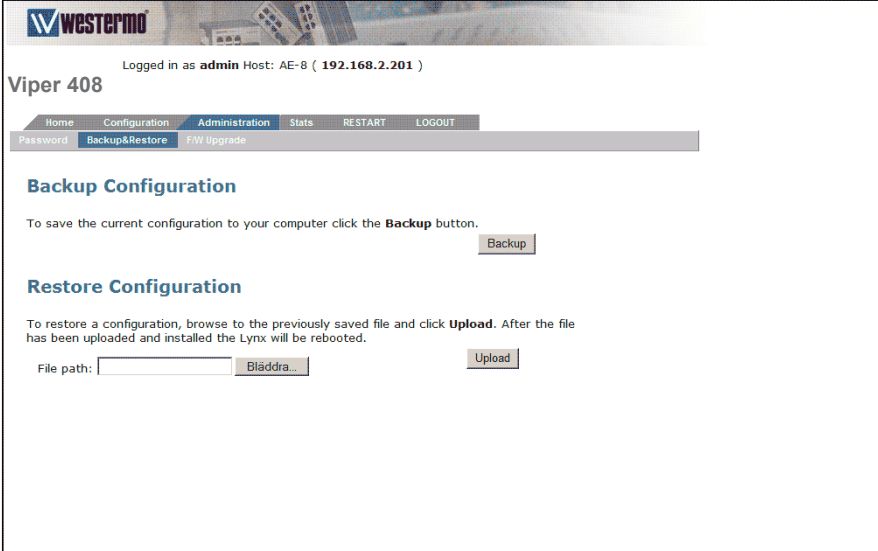
The Viper switch administrator password can be changed via the Web Interface. These settings can be made in the *User Configuration*.

Available options are:

**User Password** Insert new password. Once the changes have been applied, the administrator password of the Viper switch will change.

Click the "Apply" button to confirm changes made to the *User Configuration*.

## Backup & Restore



The screenshot shows the Viper 408 web interface. At the top, it says "Logged in as admin Host: AE-8 ( 192.168.2.201 )". Below that is the "Viper 408" title. A navigation bar includes "Home", "Configuration", "Administration", "Stats", "RESTART", and "LOGOUT". A secondary bar has "Password", "Backup&Restore", and "FW Upgrade". The main content area is titled "Backup Configuration" and contains the text: "To save the current configuration to your computer click the **Backup** button." followed by a "Backup" button. Below that is the "Restore Configuration" section with the text: "To restore a configuration, browse to the previously saved file and click **Upload**. After the file has been uploaded and installed the Lynx will be rebooted." followed by a "File path:" label, an input field, a "Browse..." button, and an "Upload" button.

The configuration of the Viper switch can be saved as a file to a PC. The file can then be used to restore the configuration later on, or used to configure another switch with identical configuration.

Available options are:

Backup

To save current configuration, click Backup and save file to a suitable location.

Upload

To load a saved configuration, insert path and filename into *File path* table or click Browse to browse the location of the saved file. When file path is valid, click *Upload*.

The unit needs to be restarted before loaded settings can take affect.

# Firmware Upgrade

The screenshot shows the Westermo Viper 408 web interface. At the top, it says "Logged in as admin Host: AE-8 ( 192.168.2.201 )". Below this is the "Viper 408" title and a navigation menu with tabs: Home, Configuration, Administration, Stats, RESTART, and LOGOUT. Underneath is a secondary menu with tabs: Password, Backup&Restore, and FW Upgrade. The main heading is "F/W Upgrade". Below the heading is a text instruction: "To upgrade the firmware, enter filename and (T)FTP server IP-address to get file from, then press **Upgrade**." There are three input fields: "Imagename" (empty), "(T)FTP Server" (containing "192.168.2.100"), and "Use TFTP?" (checkbox, unchecked). Below these fields is an "Upgrade" button.

Viper switches firmware can be updated via the Web Interface. To accomplish a firmware update a TFTP or FTP server must be available on the network.

*For more information on updating the Viper switch, please read the release note on upgrading Viper before proceeding.*

*Firmware release note on upgrading the Viper is found at: [www.westermo.com](http://www.westermo.com) Choose download / firmware*

Available options are:

- Imagename**            Insert file name to the new Firmware
- (T)FTP Server**        Insert IP address to the TFTP/FTP
- Use TFTP**              Tick check box if a TFTP server should be used, otherwise leave the check box unmarked.

Click the "Upgrade" button to confirm changes made to the *FW Upgrade*. The unit needs to be restarted before a firmware update can take affect.

# Statistic

## Port statistics

Logged in as **admin** Host: AE-8 ( 192.168.2.201 )

Viper 408

Home Configuration Administration **Stats** RESTART LOGOUT

Port Stats

### Port 1 Statistics

Link Status LINK

<b>Inbound Traffic</b>		<b>Outbound Traffic</b>	
Total Bytes In	29891	Total Bytes Out	164016
Broadcasts In	47	Broadcasts Out	0
Multicasts In	0	Multicasts Out	553
Unicasts In	175	Unicasts Out	223

**Errors**

Collisions	0	Fragments	0
Oversize	0	Undersize	0
Jabber	0	Late	0
Frame Checksum Errors In	0	Frame Checksum Errors Out	0

**Traffic Size Analysis**

64 Octets	681	256 -> 511 Octets	16
65 -> 127 Octets	172	512 -> 1023 Octets	70
128 -> 255 Octets	3	1024 -> 1518 Octets	56

Previous Port Refresh Clear Port Next Port

A overview of the Viper port statistics

Available options are:

- Details**            Get a more detailed specification on a specific port
- Refresh**           Refresh statistics
- Clear all**           Clear all statistics

<b>Parameter</b>	<b>Options</b>	<b>Description</b>
Port Number	N/A	Port number correspond to the port number on the actual switch
Link Status	LINK (White) LINK (Green) LINK (Red)	Indicates established link Indicates established redundant link Indicates failed redundant link
Speed / Duplex	N/A	Current port settings
Total Bytes in	N/A	Total Bytes received on port
Total Bytes out	N/A	Total Bytes sent from port
In Bytes/ s	N/A	Bytes received each second on port
Out Bytes/ s	N/A	Bytes transmitted each second on port
FCS Errors	N/A	Total frames received with a CRC error not counted in InFragments, InJabber or InRxErr.

## Port Statistics – Details

The screenshot shows the WesternPro Viper 408 web interface. At the top, it says "Logged in as admin Host: AE-8 ( 192.168.2.201 )". Below that is a navigation menu with "Home", "Configuration", "Administration", "Stats", "RESTART", and "LOGOUT". The "Stats" menu item is selected, and a sub-menu "Port Stats" is visible. The main content area is titled "Port 1 Statistics" and displays a table of network statistics for Port 1. The table is organized into sections: Link Status, Inbound Traffic, Outbound Traffic, Errors, and Traffic Size Analysis. At the bottom of the statistics table, there are four buttons: "Previous Port", "Refresh", "Clear Port", and "Next Port".

Link Status		LINK	
<b>Inbound Traffic</b>			
Total Bytes In	29891	<b>Outbound Traffic</b>	
Broadcasts In	47	Total Bytes Out	164016
Multicasts In	0	Broadcasts Out	0
Unicasts In	175	Multicasts Out	553
<b>Errors</b>		Unicasts Out	223
Collisions	0	<b>Errors</b>	
Oversize	0	Fragments	0
Jabber	0	Undersize	0
Frame Checksum Errors In	0	Late	0
<b>Traffic Size Analysis</b>		Frame Checksum Errors Out	0
64 Octets	681	<b>Traffic Size Analysis</b>	
65 -> 127 Octets	172	256 -> 511 Octets	16
128 -> 255 Octets	3	512 -> 1023 Octets	70
		1024 -> 1518 Octets	56

Buttons: Previous Port, Refresh, Clear Port, Next Port

A detailed overview of a specific port.

Available options are:

- |               |   |
|---------------|---|
| Previous port | Display detailed specifics of previous port |
| Refresh       | Refresh statistics                          |
| Clear all     | Clear all statistics                        |
| Next port     | Display detailed specifics of next port     |

<b>Parameter</b>	<b>Description</b>		
Link Status	Indicates link status		
<b>Inbound traffic</b>	<b>Description</b>	<b>Outbound traffic</b>	<b>Description</b>
Total bytes In	Total Bytes received on port	Total bytes Out	Total Bytes transmitted on port
Broadcasts In	The number of good framed received that have a Broadcast destination MAC address.	Broadcasts Out	Total Broadcasts received on port
Multicasts In	The number of good framed received that have a Multicast destination MAC address.	Multicasts Out	Total Multicasts received on port
Unicasts In	The number of good framed received that have a Unicast destination MAC address.	Unicasts Out	Total Unicasts received on port

<b>Errors</b>	<b>Description</b>	<b>Errors</b>	<b>Description</b>
Collisions	The number of collision events seen by the MAC not including those counted in Single, Multiple, Excessive or Late. This counter is applicable in half-duplex.	Fragments	Total frames received with a length of less than 64 octets and an invalid FCS
Oversize	Total frames received with a length of more than MaxSize octets but with an invalid FCS.	Undersize	Total frames received with a length of less than 64 octets but with a valid FCS.
Jabber	Total frames received with a length of more than MaxSize octets but with an invalid FCS.	Late	The number of times a collision is detected later than 512 bits-times into the transmission of a frame. This counter is applicable in half-duplex only.
Frame checksum errors	Total frames received with a CRC error not counted in InFragments, InJabber or InRxErr.	Frame checksum errors Out	The number of frames transmitted with an invalid FCS. Whenever a frame is modified during transmission (e.g., to add or remove a tag) the frame's original FCS is inspected before a new FCS is added to a modified frame. If the original FCS is invalid, the new FCS is made invalid too and this counter is incremented.

<b>Traffic Size Analysis</b>	<b>Description</b>	<b>Traffic Size Analysis</b>	<b>Description</b>
64 Octets	Total frames received (and/or transmitted) with a length of exactly 64 octets, including those with errors.	256 -> 511 Octets	Total frames received (and/or transmitted) with a length of between 256 and 511 octets, including those with errors.
65 -> 127 Octets	Total frames received (and/or transmitted) with a length of between 65 and 127 octets, including those with errors.	512 -> 1023 Octets	Total frames received (and/or transmitted) with a length of between 512 and 1023 octets, including those with errors.
128 -> 255 Octets	Total frames received (and/or transmitted) with a length of between 128 and 255 octets, including those with errors.	1024 -> 1518 Octets	Total frames received (and/or transmitted) with a length of between 1024 and 1518 octets, including those with errors.





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