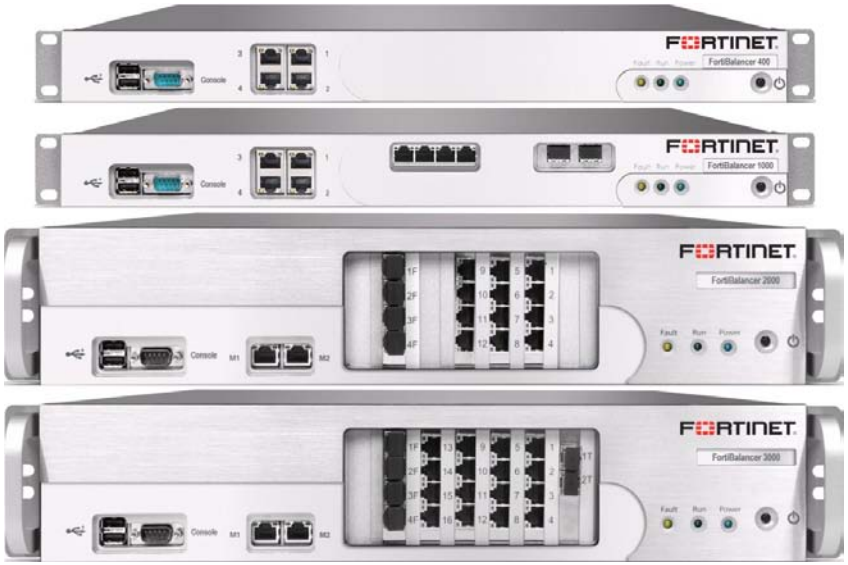

FBLOS FortiBalancer 8.2

WebUI Handbook

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Declaration of Conformity

We, Fortinet, Inc., 1090 Kifer Road Sunnyvale, CA 94086, 1-866-992-7729; declare under our sole responsibility that the product(s) Fortinet, Inc., FortiBalancer Appliance complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: This is a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. In a residential area, operation of this equipment is likely to cause harmful interference in which case the user may be required to take adequate measures or product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Foreword

Related Documents

FBLOS FortiBalancer 8.2 CLI Handbook

FBLOS FortiBalancer 8.2 User Guide

Contacting Fortinet

Please use the following information to contact us at Fortinet:

Website: Please go to http://www.fortinet.com/

Telephone: Please go to https://support.fortinet.com/

Address: 1090 Kifer Road Sunnyvale, CA 94086, USA

Conventions

The CLI commands mentioned in this handbook will adhere to these general conventions:

Style	Convention
Bold typeface	The body of a CLI command is in Boldface.
Italic	CLI parameters are in Italic.
< >	Parameters in angle brackets < > are required.
[ ]	Parameters in square brackets [ ] are optional. Subcommand such as "**no**", "**show**" and "**clear**".
{ x | y | … }	Alternative items are grouped in braces and separated by vertical bars. One should be selected.
[x | y | …]	Optional alternative items are grouped in square brackets and separated by vertical bars. One or none is selected.

This handbook will introduce the WebUI operations with the WebUI screenshots and lower-case letter symbols combined, as follows:

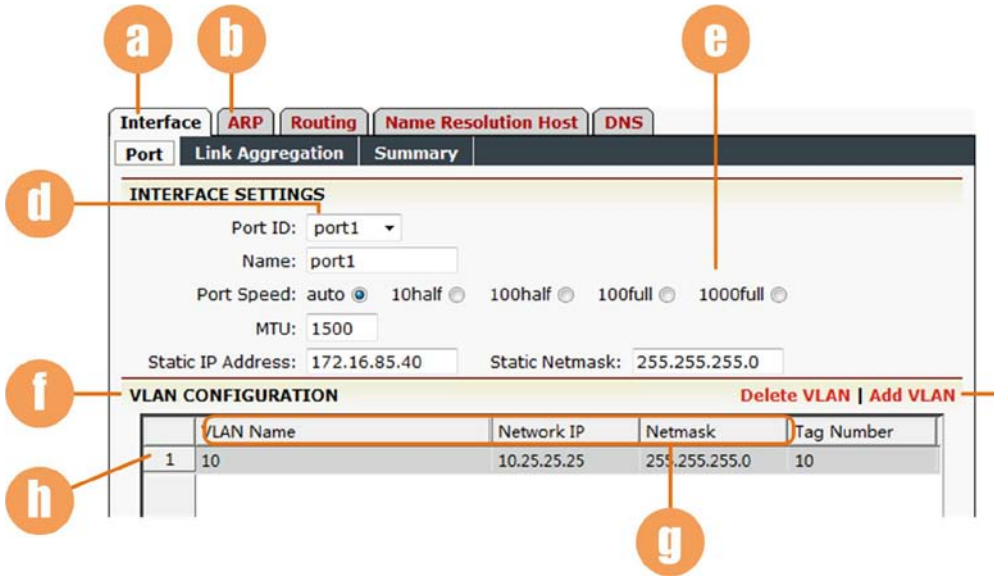


Table of Contents

Web User Interface Introduction

The FortiBalancer Web User Interface (WebUI) is designed to maximize the functionality and performance of the FortiBalancer appliance by allowing administrators to configure and control key functions of the FortiBalancer appliance. This WebUI Guide covers the functional elements of the graphical interface as well as basic setup steps.

This WebUI Guide is one of the three documentation resources available to administrators from Fortinet, Inc. The other two are the CLI Handbook and User Guide. The CLI Handbook is a resource tool that instructs administrators on detailed CLI operations of the FortiBalancer appliance. The User Guide is a more in-depth configuration strategy resource for complex FortiBalancer appliance deployments.

The three documents as well as current release notes and installation guides are available on the Documentation CD that accompanies the FortiBalancer appliance or from Fortinet, Inc. directly.

Enabling the WebUI Function

Connecting to the FortiBalancer Appliance

To use the WebUI function, first we should connect the client PC to the FortiBalancer appliance.

Put the FortiBalancer appliance onto the rack properly. Attach the power cord to the power supply, and turn on the power by pressing the power button.

Connect one end of the Console cable to the serial port of the client PC, and the other end to the serial port of the FortiBalancer appliance. Then, run the terminal software on the client PC to access the FBLOS via the Console connection.

Enabling the WebUI Function via CLI

To access the FBLOS via the terminal software, please first make certain that your terminal software is set as follows:

Setting	Value
Emulation	VT 100
Baud	9600
Number of Bits	8
Parity	No
Stop Bits	1
Flow Control	No

Enabling the WebUI Function via CLI (Continue)

After the above settings are finished, you can access the FBLOS CLI interface via the terminal software.

In the CLI interface, you will be first prompted for the user name and password (default to admin and admin). Once you log in successfully, the FBLOS will show the prompt "FBL>". Enter the command "**enable**" to go to "Enable" mode, and the FBLOS will show "FBL#". Continue to enter the command "**configure terminal**" to go to "Config" mode, and the FBLOS will show "FBL(config)#".

Then, execute the following commands to complete necessary network settings and enable the WebUI function:

Command	Operation
ip address *{system_ifname|mnet_ifname|vlan_ifname|bond_ifname}* <*ip_address*> <*netmask*>	This command is used to set the IP address and netmask of the system interface, MNET interface, VLAN interface or bond interface.
webui ip <*ip_address*>	This command is used to set the WebUI IP address.
ip route default <*gateway_ip*>	This command is used to set the default gateway IP address.
webui {on|off}	This command is used to enable or disable the WebUI function.

Example:

FBL>**enable**

FBL#**config terminal**

FBL(config)#**ip address outside 10.3.70.100 255.255.255.0**

FBL(config)#**webui ip 10.3.70.100**

FBL(config)#**ip route default 10.10.0.1**

FBL(config)#**webui on**

FBL(config)#**exit**

Using the WebUI Function

Supported Browsers

The FortiBalancer appliance WebUI supports the following browsers:

Microsoft Internet Explorer (Recommended)

Mozilla Firefox

Google Chrome

Opera

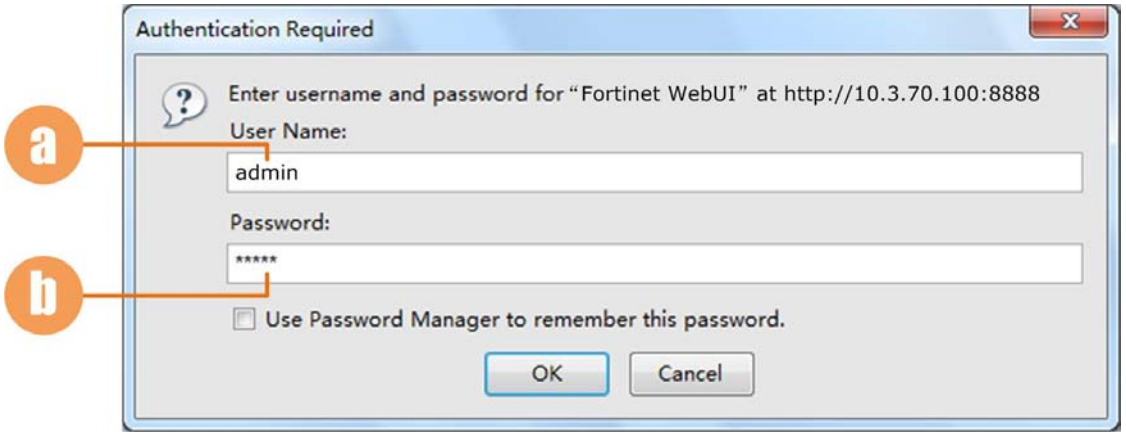
Note: It is highly recommended to use the Microsoft Internet Explorer (IE) browser for accessing the FortiBalancer WebUI. This handbook will introduce the WebUI operations in the IE browser.

Accessing the WebUI

To access the FortiBalancer appliance, enter the configured WebUI IP address into the browser. Please note that this is a secure connection and therefore should be entered as an **HTTPS** address.

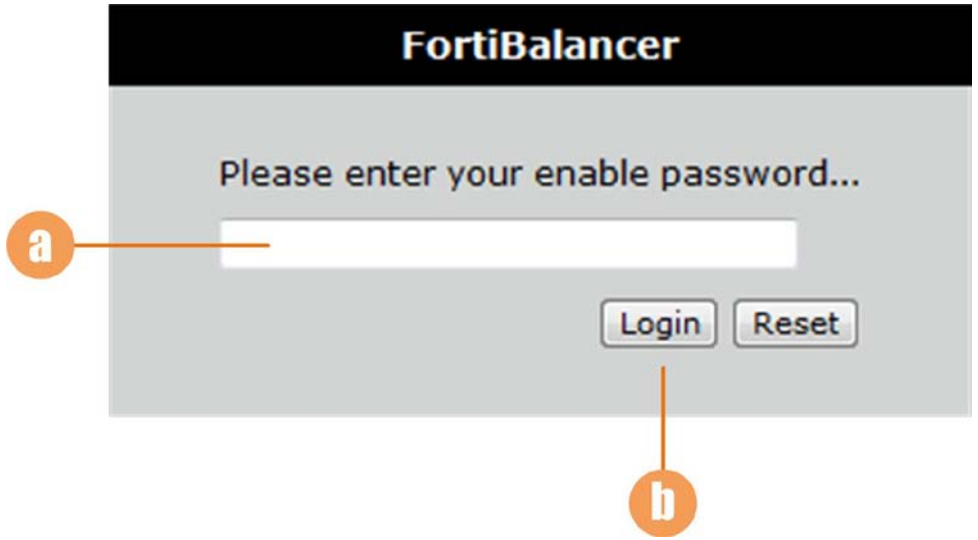
Example:

If the FortiBalancer appliance is correctly configured and the WebUI is turned on (see the example on the previous page), you will be prompted for the user name **[a]** and password **[b]**. Input the user name and password correctly. By default, the user name is admin and the password is admin. Click on "OK" when finished.



Logging in the FortiBalancer WebUI

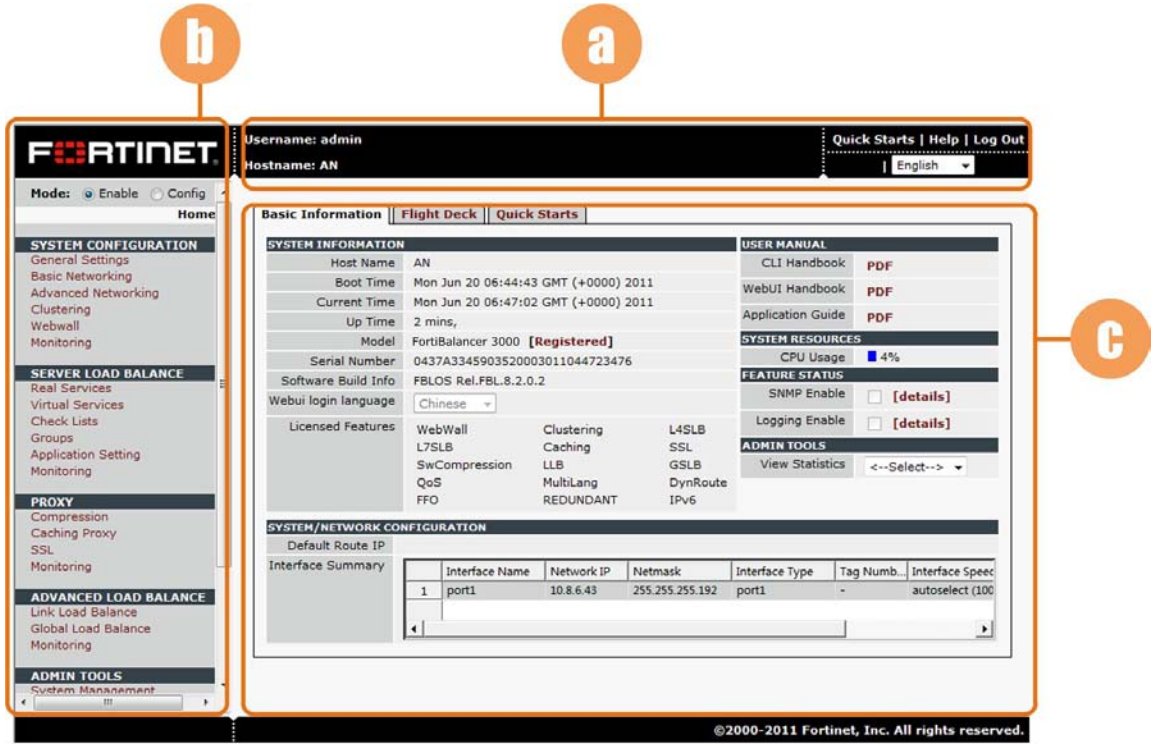
After the step of user registration, the FortiBalancer appliance will prompt you for an Enable level password. Enter the enable password correctly in the text field **[a]** (default to **null**), and click on the "Login" button **[b]**. Then, you will be taken to the FortiBalancer WebUI.



Understanding the FortiBalancer WebUI

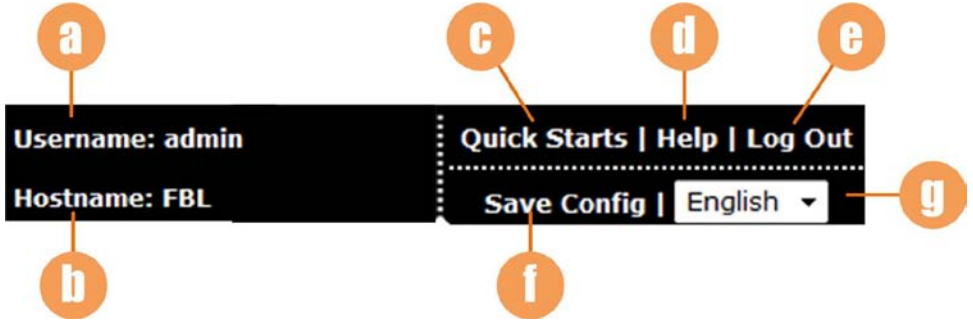
The FortiBalancer WebUI turns an ordinary browser window into an extraordinary configuration and management tool for the FortiBalancer appliance.

Illustration separates and labels the FortiBalancer WebUI's three active portions of the interface: top bar **[a]**, sidebar **[b]**, and configuration window **[c]**.



Top Bar

The top bar displays basic static information such as user's name **[a]**, FortiBalancer appliance host name **[b]** and four basic hyperlinks: Quick Starts **[c]**, Help **[d]**, Log Out **[e]** and Save Config **[f]**. Users can also set the WebUI display language via the selector **[g]**.

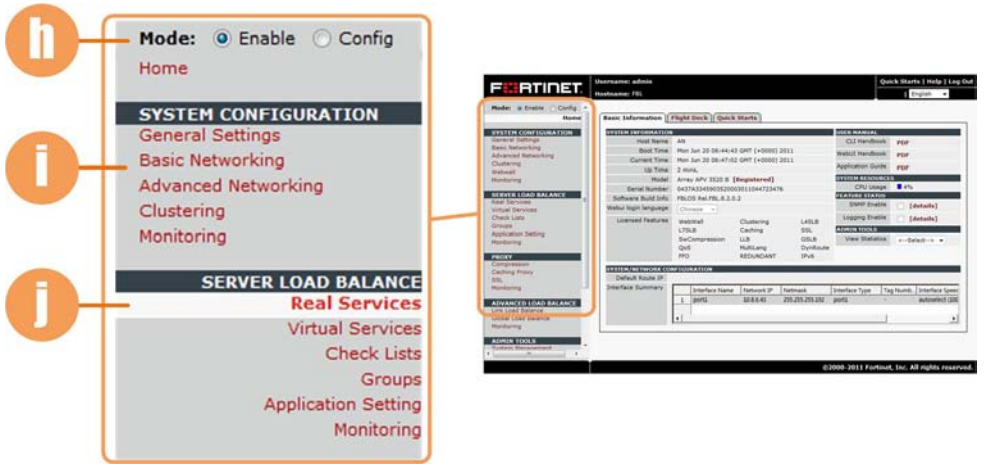


Side Bar

The side bar serves as the principal navigational tool for the Web interface. With this sidebar, administrators can perform desired configuration management and general setup about the FortiBalancer appliance.

Administrators can switch between the Enable and Config modes via the radio buttons **[h]**. Features are presented in groups **[i]**, depending on site and user specifics as well as licensed features.

To configure a specific feature, click on the link, A white strip **[j]** will indicate your location within each feature group.



Configuration Window

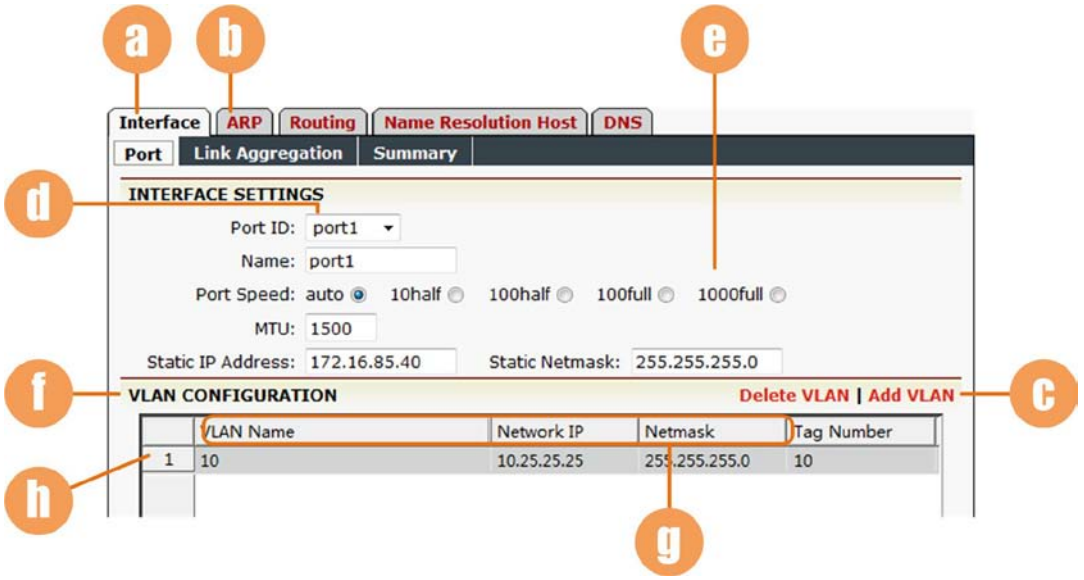
Though individual features will have slightly differing elements for specific configuration windows and tasks, these basic elements remain universal for the WebUI.

There are foreground tabs **[a]** and background tabs **[b]** for configuration navigation. Current tabs will be displayed with white backgrounds **[a]**. During configuration you may go through multiple pages under a given tab; to return to the top level, click on the tab **[a]** again for the desired feature or function.

Some configuration pages may have action links **[c]** for adding, deleting, saving, canceling or otherwise applying key configuration data. The text of the links will outline the actions to be taken.

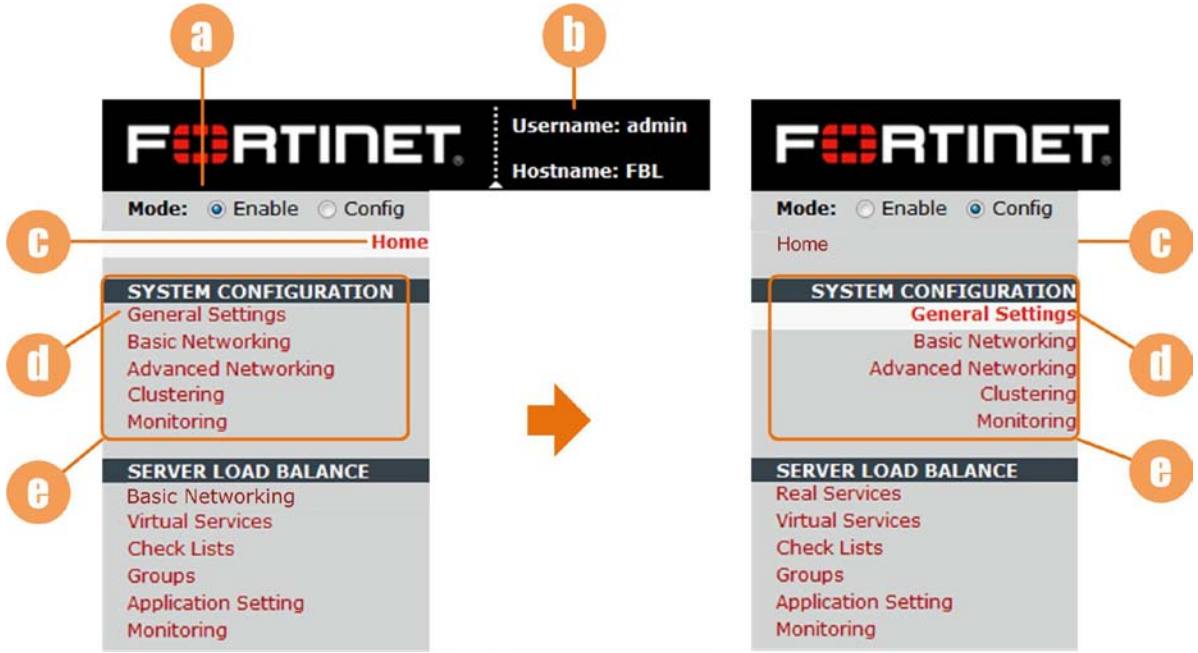
Most configured information will be entered through labeled data entry fields **[d]** or assigned via radio buttons **[e]**.

You will find active tables **[f]** with sort options **[g]** available for displaying critical information. Some tables are sort-ready **[h]**.



Using the FortiBalancer WebUI

When you log into the WebUI, please note that you are first in the **Enable** mode **[a]**. Also note the default username “admin” and default FortiBalancer appliance hostname “FBL” are displayed **[b]** within the top bar. Finally, notice that the feature link **Home** **[c]** is right justified and framed with a white bar. Whenever a feature link like **General Settings** **[d]** is selected, all related features in the feature group **[e]** will become right justified with the selected feature singled out with the white bar **[d]** and the previously selected feature link **[c]** returns to the left side of the sidebar.



Configuring with the WebUI

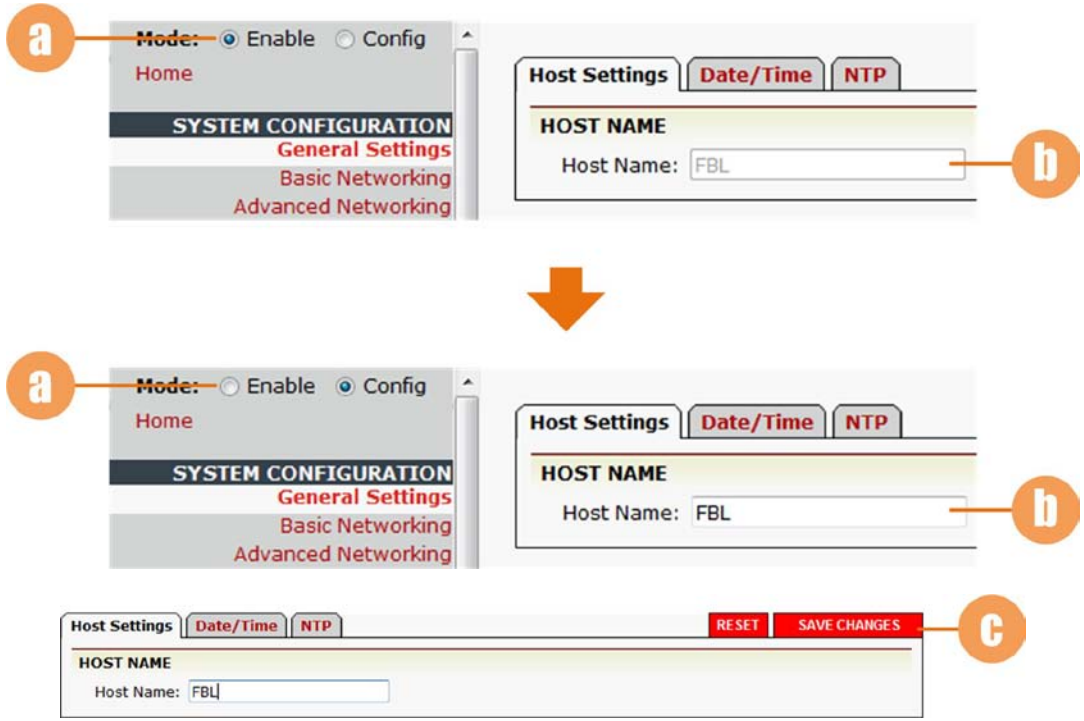
The FortiBalancer appliance offers two levels or modes for the configuration and access to the FBLOS.

The first level is **Enable** mode. Users in this mode have access to a majority of view only operations, such as some statistics pages.

The second level is **Config** mode. It is at this level that the user can make changes to any part of the FortiBalancer appliance configuration. The configuration mode can be accessed by only one user at one time.

To switch between the **Enable** to the **Config** mode, simply click on the radio button **[a]**. Once in **Config** mode all data fields will be available for configuration **[b]** for all licensed features.

When changes are made to the existing configuration, "RESET" and "SAVE CHANGES" buttons **[c]** will appear within the configuration window. You can click on either of them as desired.



Home Page

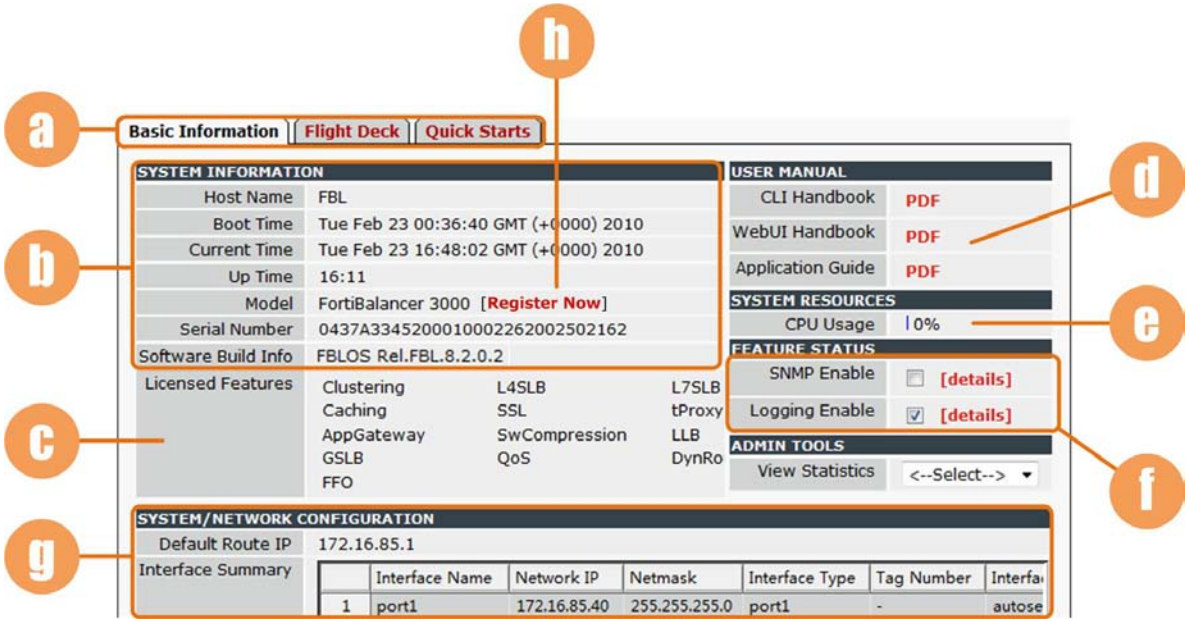
When you log into the WebUI, the FortiBalancer appliance will display a general status **Home** page. This home page will vary based on appliance model and licensed features.

Basic Information

The home page will have tabs **[a]**: **Basic Information**, **Flight Deck** and **Quick Starts**.

The **Basic Information** will present several pieces of useful information including current system information **[b]**, a list of licensed features **[c]**, available user manuals **[d]**, current resource allocation **[e]**, feature status (enabled/disabled) **[f]** and general network configuration data **[g]**.

On this page, Fortinet will invite you to register your product. By clicking on the "Register Now" button **[h],** you will be directed to the Fortinet official website to complete the registration. After you finish registration, the button will be displayed as "Registered".



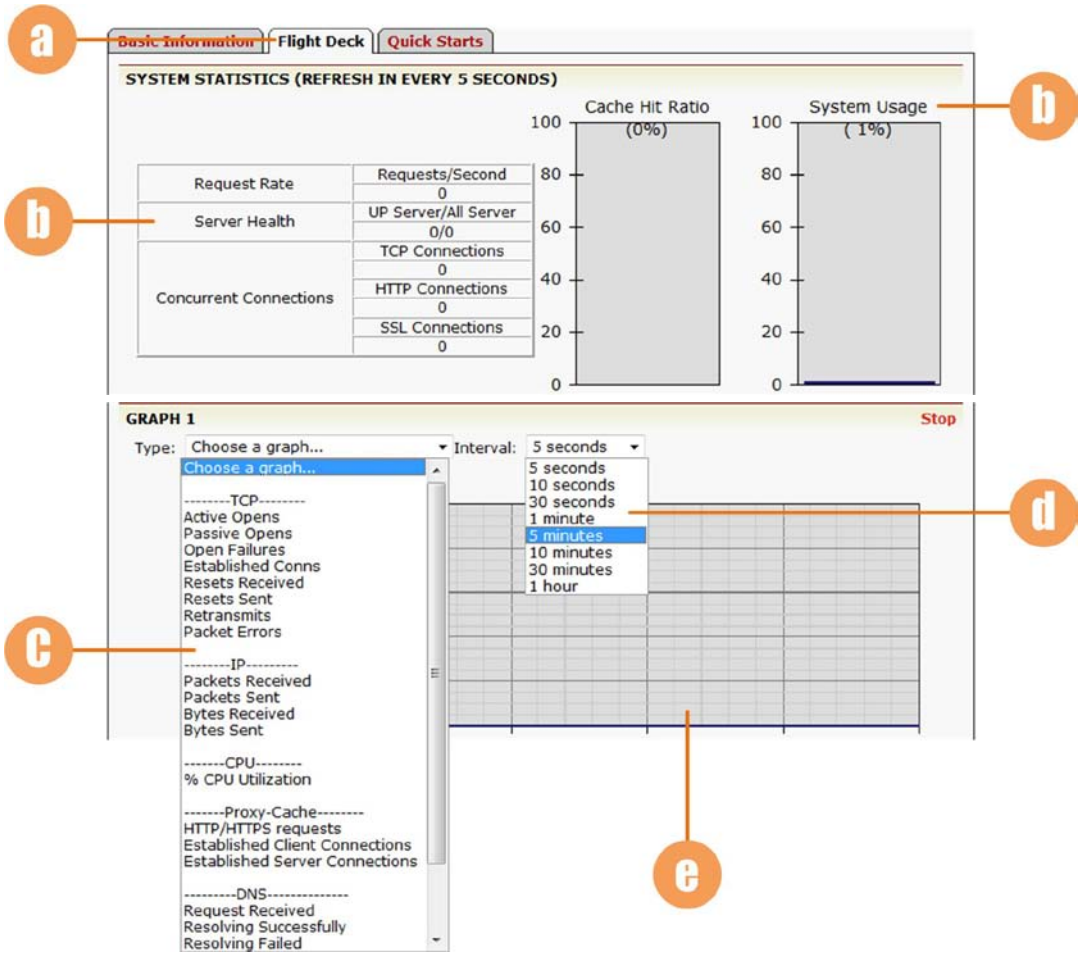
Flight Deck

The **Flight Deck** allows you to supervise system statistics and watch parameter tendency by dynamic graphs.

Make certain that you are in Config mode, and have clicked on the feature link "**Home**" from the sidebar. Click on the "**Flight Deck**" tab, the configuration window will display a panel where there are system statistics and graphs **[a]**.

You can check the Request Rate, Server Health, Concurrent Connections, Cache Hit Ratio and System Usage from System Statistics panel **[b]**.

To view dynamic system parameters by graphs, you can select parameter type **[c]** and set update interval **[d]**. The tendency graph will be instantaneously updated **[e]**.



Quick Starts

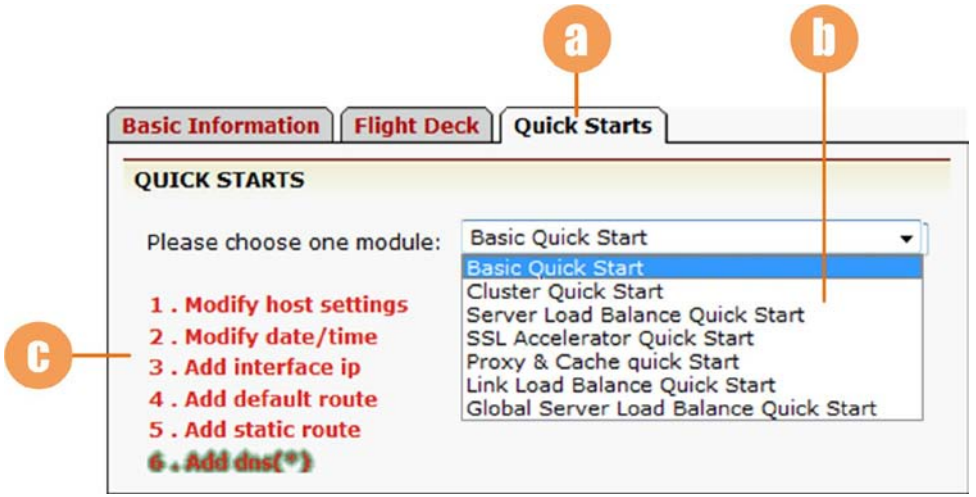
In order to make the total configuration easier and more convenient for FortiBalancer appliance users, we set up “Quick Starts” to guide users to directly complete desired configurations.

To perform quick start configuration, **make certain that you are in Config mode** and have selected the tab “**Quick Starts**” **[a]**.

Select the “Basic Quick Start” module from the selector **[b]**, and the configuration window will present 6 steps to carry out basic configurations **[c]**.

You may notice the action links are in two colors in the configuration page. The red ones represent the steps that have already been finished, while the green ones indicate you have not configured them yet. Click on the action links according to the numbers of collective steps.

Next, we will take **Basic Quick Start** as an example to illustrate the operation steps of quick starts.



Quick Starts (Continue)

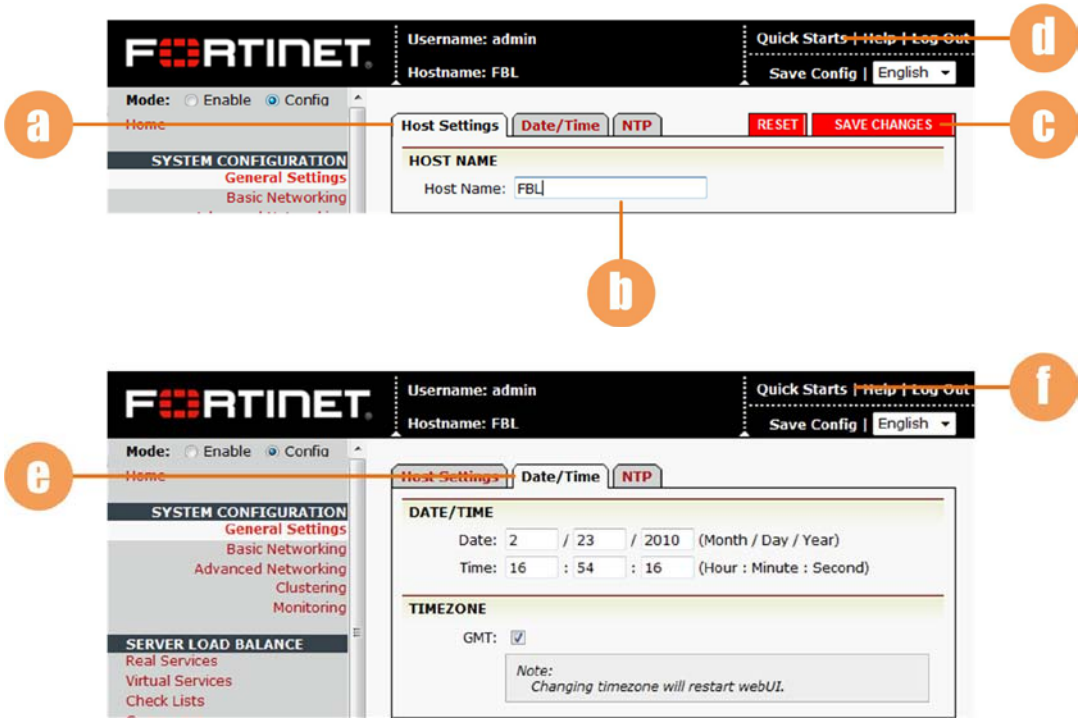
Basic Quick Start:

Click on the action link "1. Modify host settings", WebUI will guide you to the **Host Settings** configuration page **[a]**. Fill in the blank with host name **[b]**, click on the button "Save Changes" **[c]**, and then click on the action link "**Quick Starts**" on the upper right side **[d]**, the configuration window will return to the **Quick Starts** panel (see the former page).

Click on the action link "2. Modify date/time". For details about configuring this page **[e]**, please refer to the "**General Settings**" section in the "**System Configuration**" chapter.

After configuring the Date/Time, click on "Quick Starts" **[f]** to go back to the Quick Starts main panel in order to perform further tasks.

"3. Add interface ip", "4. Add default route", "5. Add static route" and "6. Add dns" action links are all from System Configuration/Basic Networking. Remember to click on the action link "Quick Starts" if you have finished one step and want to move on to another.



Quick Starts (Continue)

You can follow the similar operation steps to Basic Quick Start to complete the following configurations.

Cluster Quick Start [a]:

Please refer to **System Configuration>Clustering** to know more about how to "1. Add cluster" and "2. Enable cluster".

Server Load Balance Quick Start [b]:

Please refer to **Service Load Balance>Virtual Services** in this handbook.

SSL Accelerator Quick Start [c]:

Please refer to **Proxy>SSL** in this handbook.

Proxy & Cache Quick Start [d]:

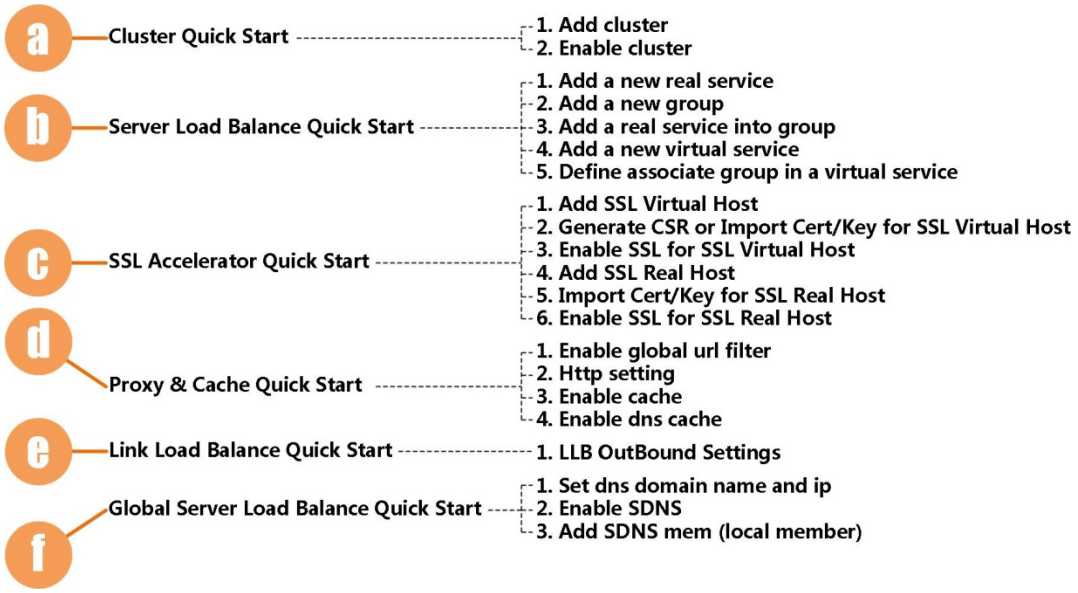
Please refer to **Proxy>Caching Proxy** in this handbook.

Link Load Balance Quick Start [e]:

Please refer to the "**Link Load Balance**" section in the "**Advanced Load Balance**" chapter in this handbook.

Global Server Load Balance Quick Start [f]:

Please refer to **Advanced Load Balance>Global Load Balance** in this handbook.



System Configuration

General Settings

Host Settings

Make certain you are in Config mode, click "**General Settings**" **[a]**.

On the "Host Settings" page **[b]**, enter the host name for the FortiBalancer appliance **[c]**, and click on the "SAVE CHANGES" button **[d]** to save your settings.

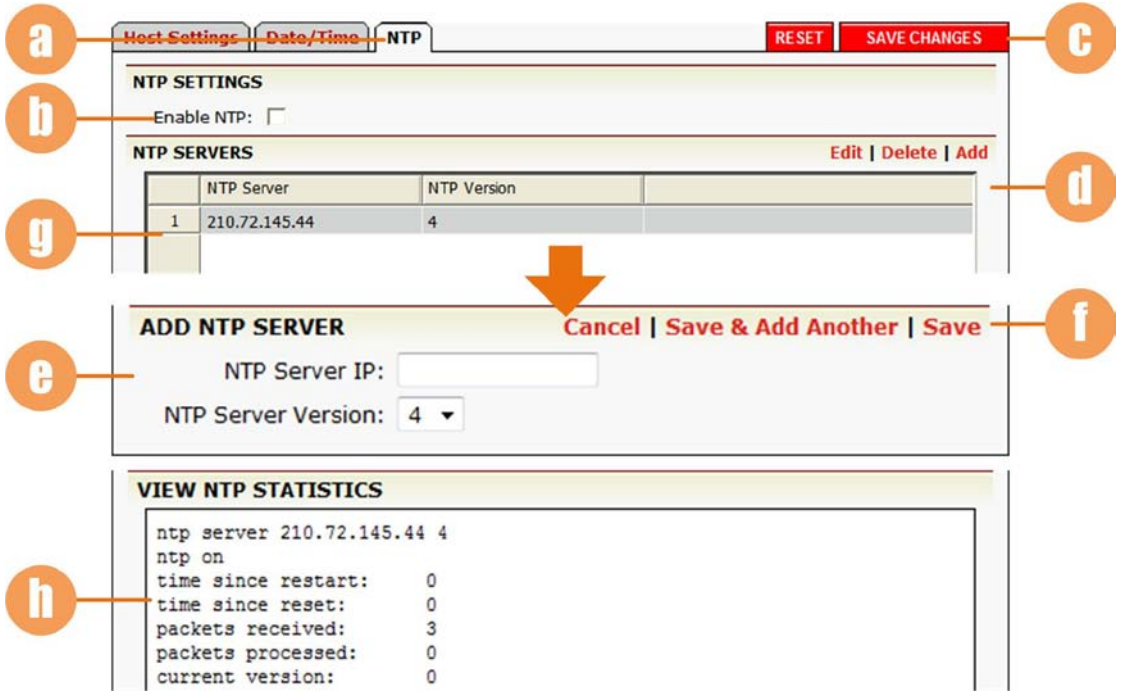
Date/Time

Click on the "**Date/Time**" tab **[e]**. Enter the date and time as desired **[f]**, and click on "SAVE CHANGES" **[g]**. The FortiBalancer appliance has the default time zone set to GMT **[h]**. To change this time zone, un-select the time zone box, and configure the time zone properly via the three selectors **[i]**. Then, remember to click on the "SAVE CHANGES" button **[g]**.

NTP

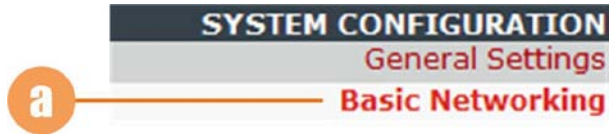
Click on the "**NTP**" tab **[a]**. You can enable NTP by selecting the check box **[b]**. (Remember to save your setting **[c]**.) Before you enable NTP, you need to first add an NTP Server. Click on the action link "Add" **[d]**, supply the IP address and version number of the NTP server **[e]**. Click on the action link "Save" **[f]**. The newly added server will be displayed in the sort ready table **[g]**.

With the NTP function enabled, you can view the NTP statistics in the box **[h]**.



Basic Networking

Make certain you are in Config mode and click "**Basic Networking**" **[a]**.



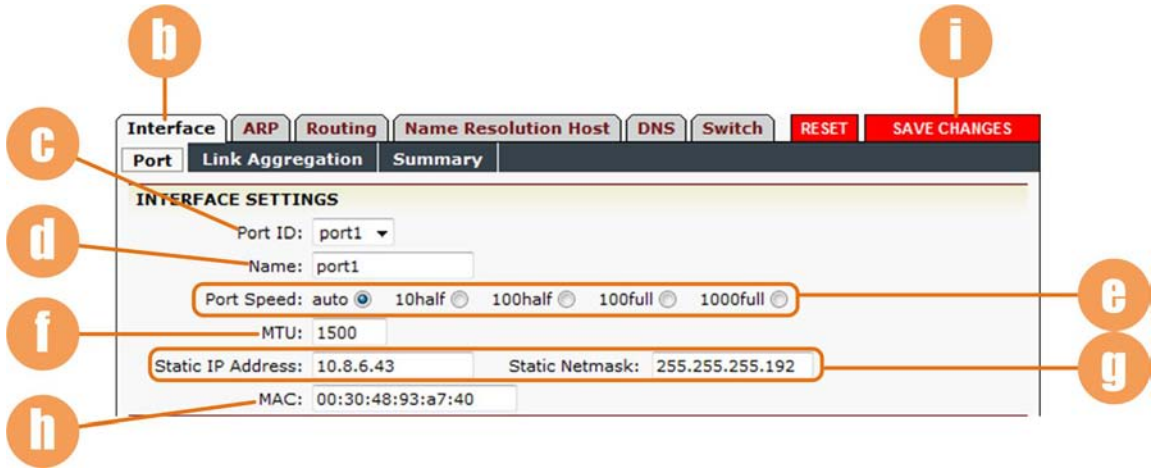
Interface

To complete the interface settings, select the tab "Interface" and its sub tab "**Port**" **[b]**.

Port

To perform interface settings, select port ID via the selector **[c]**, supply its name **[d]**, set the port speed via the radio buttons **[e]**, supply the MTU value **[f]** and supply the static IP address and static netmask **[g]**. Besides, you can change the MAC address of the system interface **[h]**.

After confirming the input information, click on the "SAVE CHANGES" button **[i]** to save your settings.

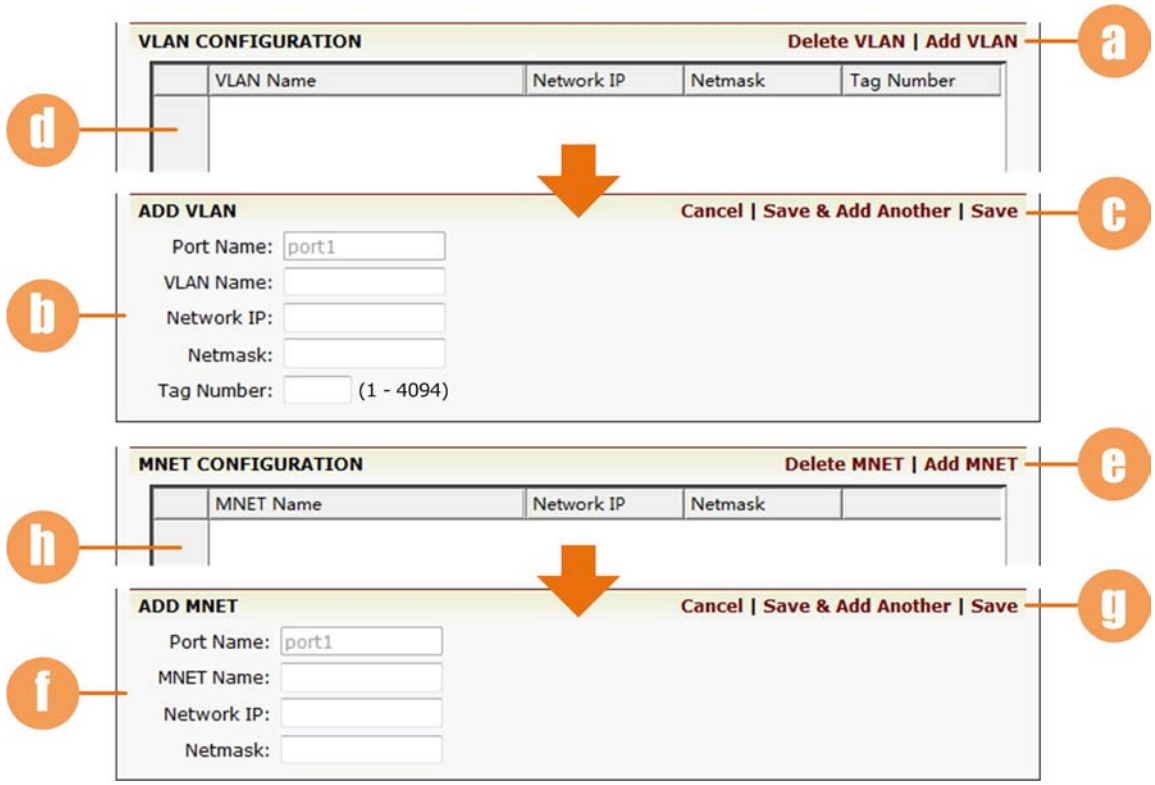


Interface (Continue)

Port (Continue)

To add VLAN, click on the action link “Add VLAN” **[a]**. In the new configuration window, supply the VLAN name, IP address and netmask, and VLAN ID **[b]**, and click on the action link “Save” **[c]**. The new VLAN will appear in the sort ready table **[d]**.

To add MNET, click on the action link “Add MNET” **[e]**. In the new configuration window, supply the MNET name, IP address and netmask **[f]**, and click on the action link “Save” **[g]**. The new MNET will appear in the sort ready table **[h]**.



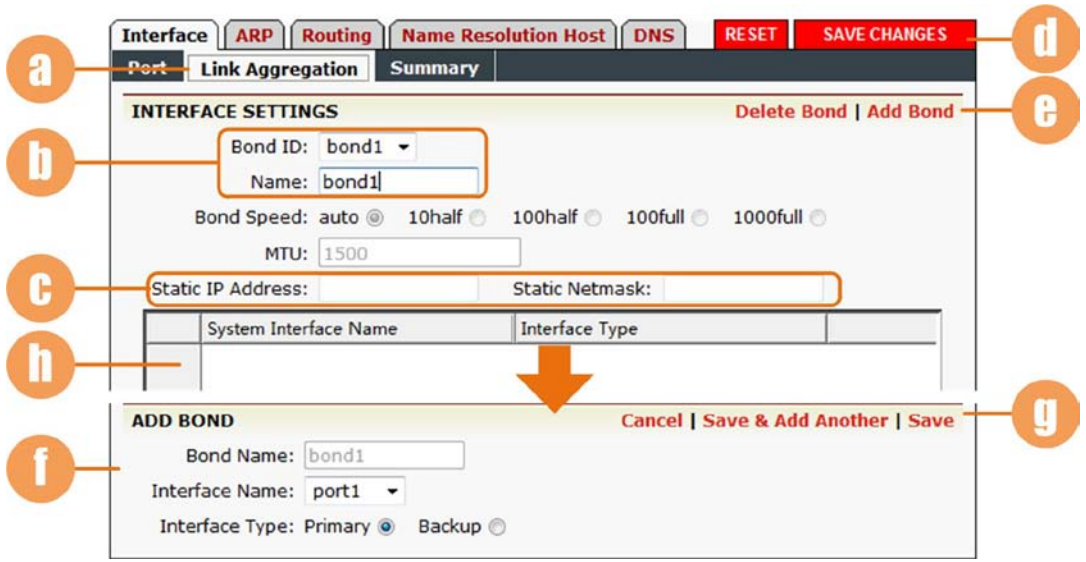
Interface (Continue)

Link Aggregation

Select the "**Link Aggregation**" sub tab **[a]**.

First select the Bond ID via the selector, and supply the name of the bond interface **[b]**. Then, supply the IP address and netmask of the bond interface **[c]**. Click on the "SAVE CHANGES" button to save your settings **[d]**.

To add a system interface into the bond interface, click on the action link "Add Bond" **[e]**. In the new window, select a desired system interface, set it as the primary or backup interface of the bond **[f]**, and click on "Save" **[g]**. The configuration will be displayed in the sort ready table **[h]**.



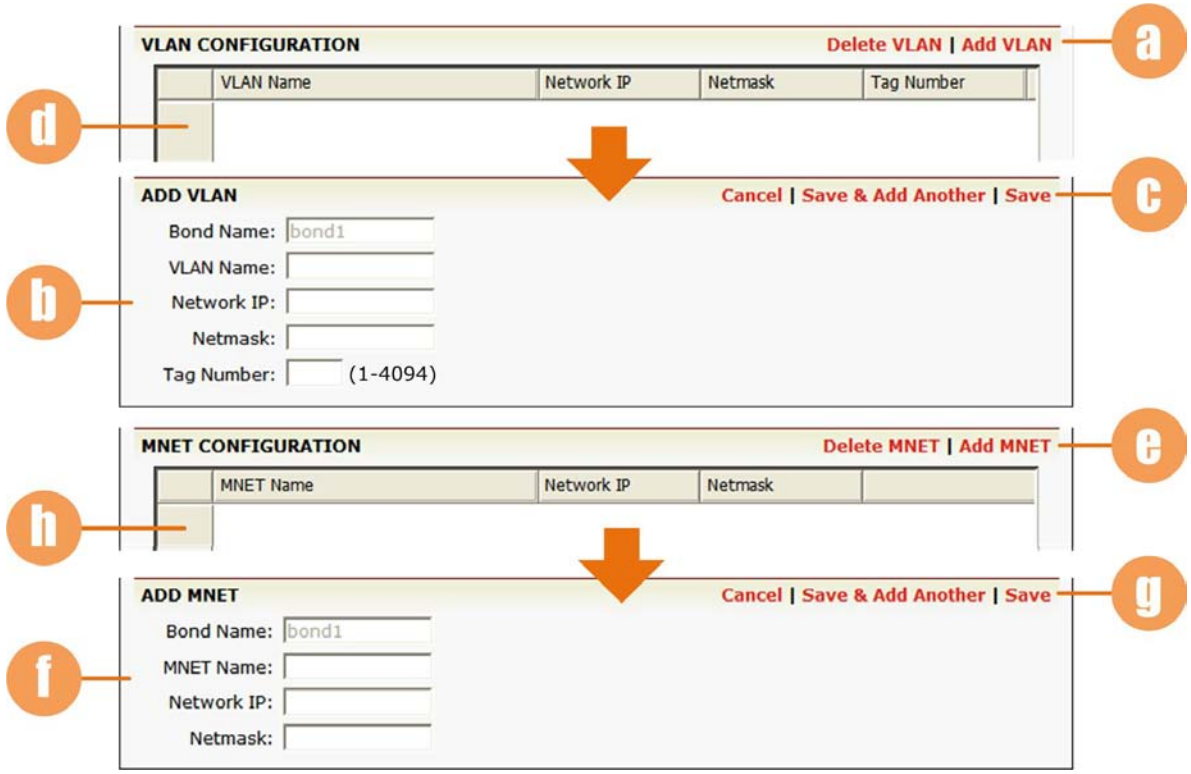
Interface (Continue)

Link Aggregation (Continue)

The FortiBalancer appliance supports configuring MNET or VLAN on bond interface. The bond interface configuration must be performed before configuring MNET/VLAN on it.

To add VLAN, click on the action link “Add VLAN” **[a]**. In the new window, supply the VLAN name, IP address and netmask, and VLAN ID **[b]**, and click on “Save” **[c]**. The new VLAN will appear in the sort ready table **[d]**.

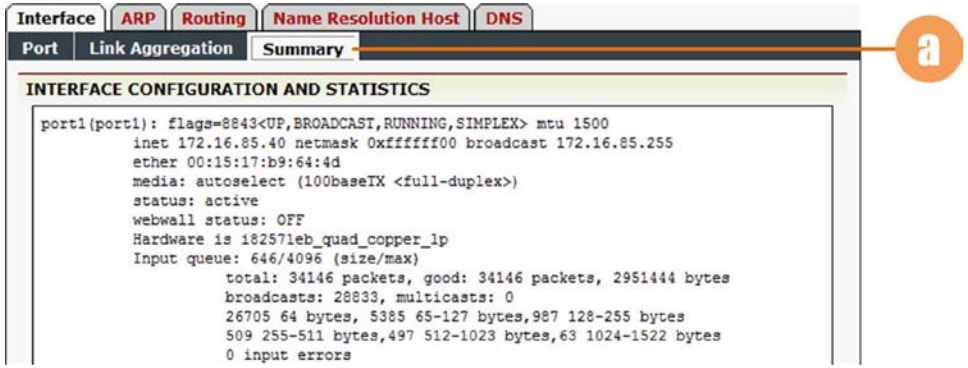
To add MNET, click on the action link “Add MNET” **[e]**. In the new window, supply the MNET name, IP address and netmask **[f]**, and click on “Save” **[g]**. The new MNET will appear in the sort ready table **[h]**.



Interface (Continue)

Summary

To view current setup and statistics, click on the sub tab "**Summary**" **[a]**.



ARP

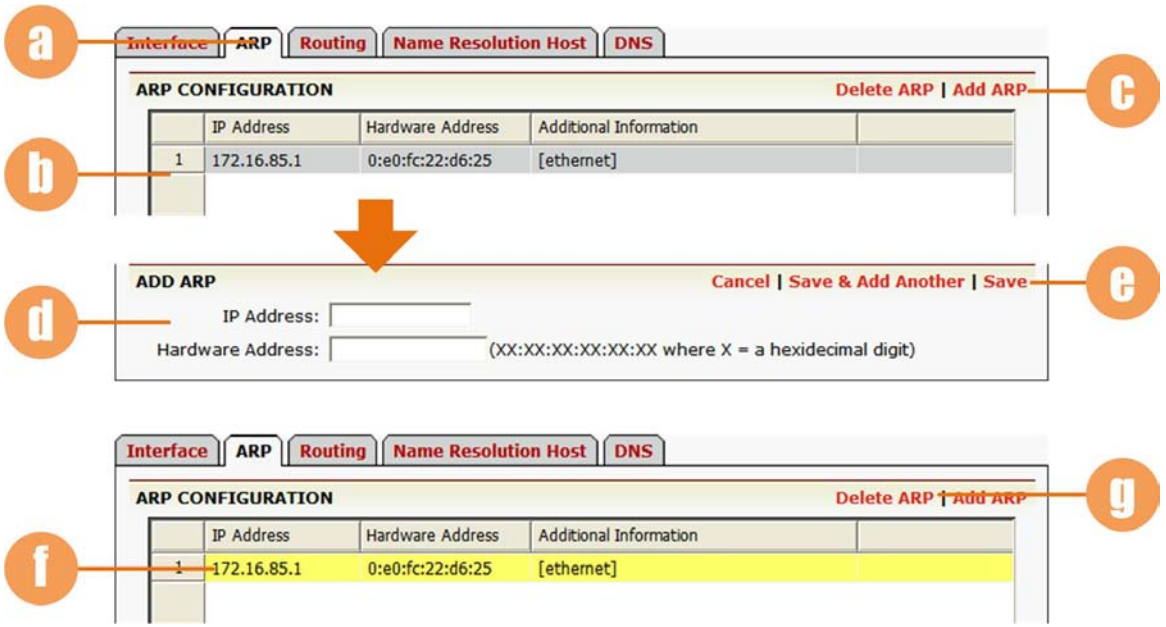
Extreme care should be taken when altering the ARP table. Administrators should not clear ARP entries for IP addresses that are already assigned to establish.

Click on the "**ARP**" tab **[a]** and the main window will display an ARP table.

The table contains sort-ready columns **[b]**. To add an ARP table entry, click on the "Add ARP" action link **[c]**. A new configuration window will appear.

Enter appropriate IP and hardware address in the data fields **[d]**. Click on the desired action link **[e]**.

To remove an ARP entry, select the desired entry form the displayed list **[f]** and click on "Delete ARP" action link **[g]**. A new window will appear, click "OK" to delete ARP entry, click "cancel" to keep the ARP entry.



Routing

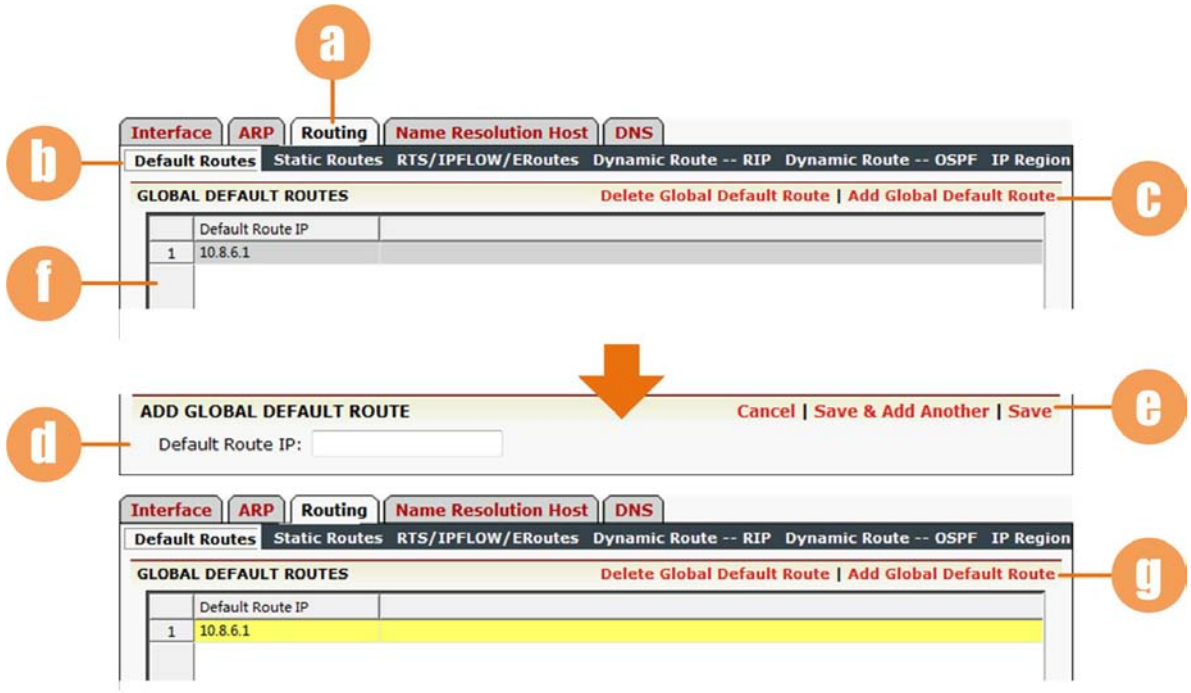
Make certain you are in Config mode and have selected the "**Routing**" tab **[a]**. Six sub tabs are displayed **[b]**.

Default Routes

Verify and/or change the default route. To add a global default route, click on the action link **[c]** and the configuration window will present configuration field for the route.

Supply the destination IP in the field **[d]**. Click on the desired action link **[e]** to continue. Configured routes are displayed in the table **[f]**.

To remove a global default route, simply select the destination from the displayed list and click on the "Delete Global Default Route" action link **[g]**. A new window will appear, click "OK" to delete ARP entry, click "cancel" to keep the ARP entry.



Routing (Continue)

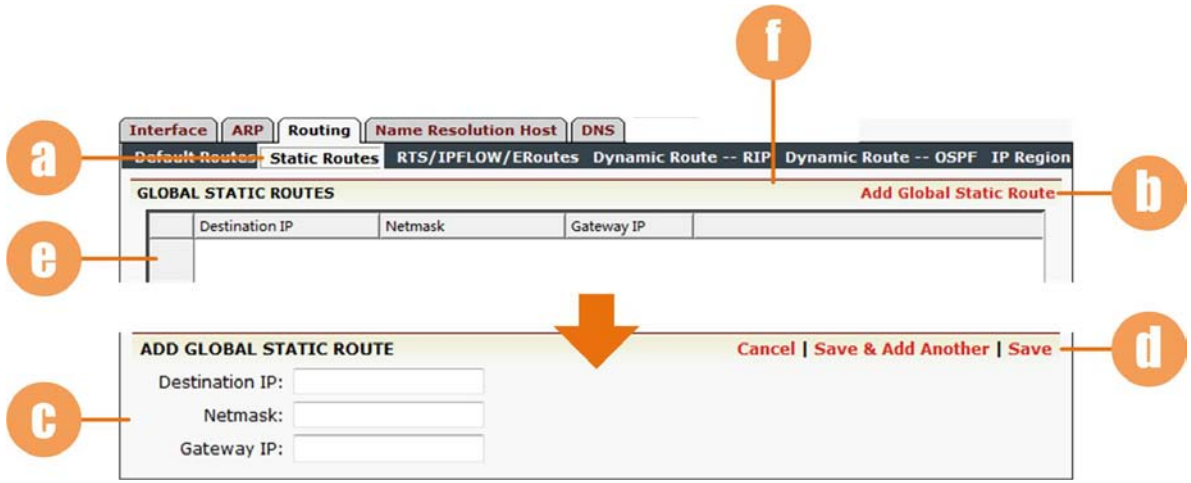
Static Routes

Select the "**Static Routes**" sub tab to add a static route **[a]**.

Click on the action link "Add Global Static Route" **[b]**, and the configuration window will present data fields for adding a static route.

Supply the destination IP, netmask and gateway IP **[c]**, and click on the desired action link to continue **[d]**. Configured routes will be displayed in a sort ready table **[e]**.

To remove a global static route, click on the action link "Delete Global Static Route" **[f]**. A new window will appear, click "OK" to delete ARP entry, click "cancel" to keep the ARP entry.



Routing (Continue)

RTS/IPFLOW/ERoute

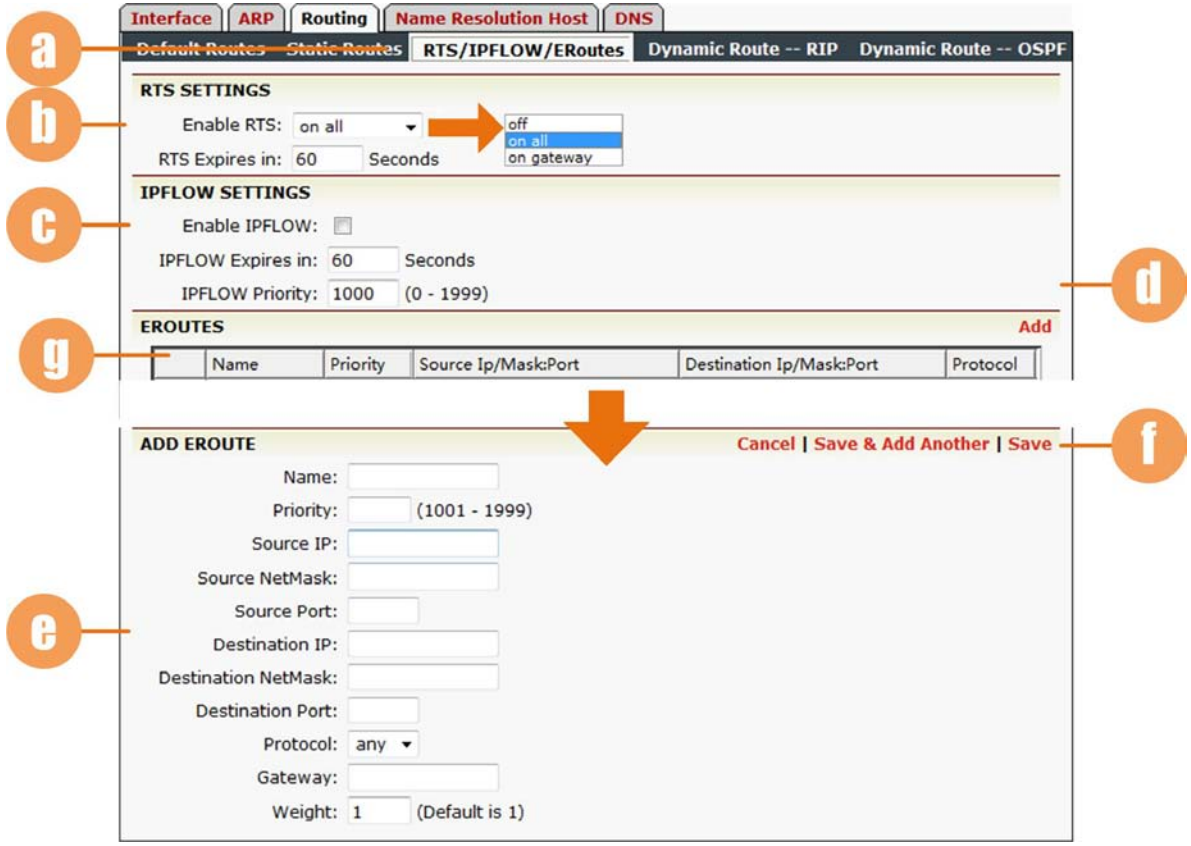
Make certain that you select the "**RTS/IPFLOW/ERoutes**" sub tab **[a]**.

Enable RTS functionality via the selector, and supply the desired expiration time **[b]**. To turn on the RTS function, the option "on all" means RTS records all external senders that send packets to the unit, and all the packets will be sent back along the route which they came from. "on gateway" means RTS records external senders as configured gateways, and only the packets coming from these gateways will be sent back along the route which they came from.

Select the check box to enable IPFLOW, and supply the expiration time and priority **[c]**.

To add an eroute, click on the action link "Add" **[d]**, and then the configuration window will display text fields for adding an eroute **[e]**.

Fill in these fields, and click on the desired action link to continue **[f]**. If the eroute is added successfully, it will be displayed in the table **[g]**.



Routing (Continue)

RTS/IPFLOW/Eroutes (Continue)

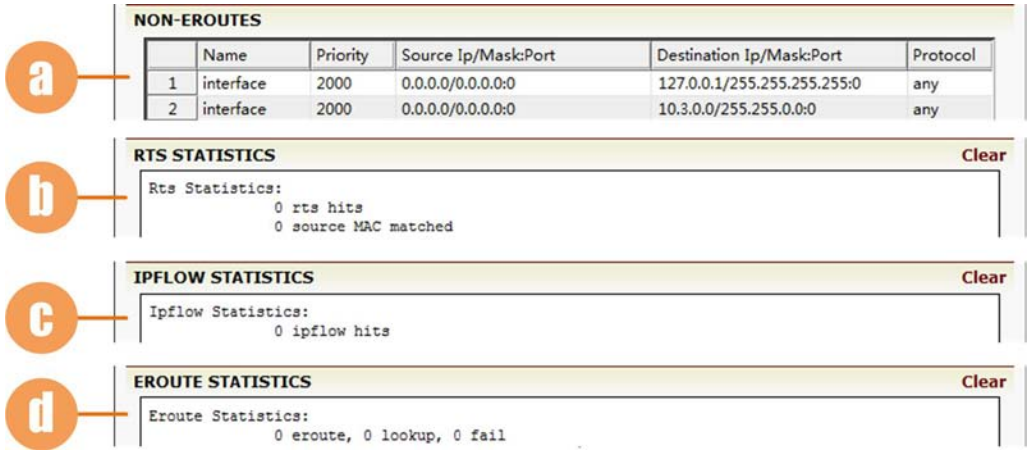
You can also check the following items:

NON-Eroutes **[a]**.

RTS Statistics **[b]**.

IPFLOW Statistics **[c]**.

Eroute Statistics **[d]**.



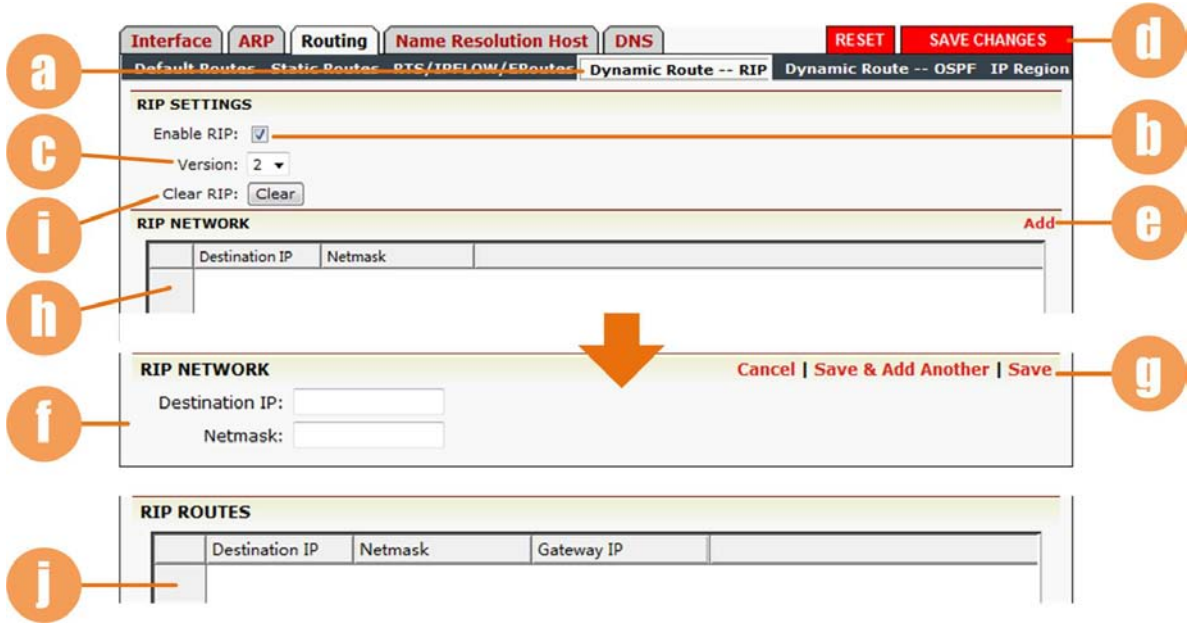
Routing (Continue)

Dynamic Route--RIP

Select the "**Dynamic Route--RIP**" sub tab **[a]**. You can enable RIP by selecting the check box **[b]**. If you enable the RIP, you need to further specify the version of RIP via the selector **[c]**. Then, click on "SAVE CHANGES" button **[d]** when it appears.

Click on the action link "Add" **[e]** and a new configuration page will be presented. Supply the destination IP address and netmask **[f]** properly and click on the "Save" action link **[g]**. Then, the added information will be displayed in the table **[h]**. You can clear RIP settings by clicking on the "Clear" button **[i]**.

After you set the RIP network properly, the information of the routes dynamically detected will be displayed in the table **[j]**.



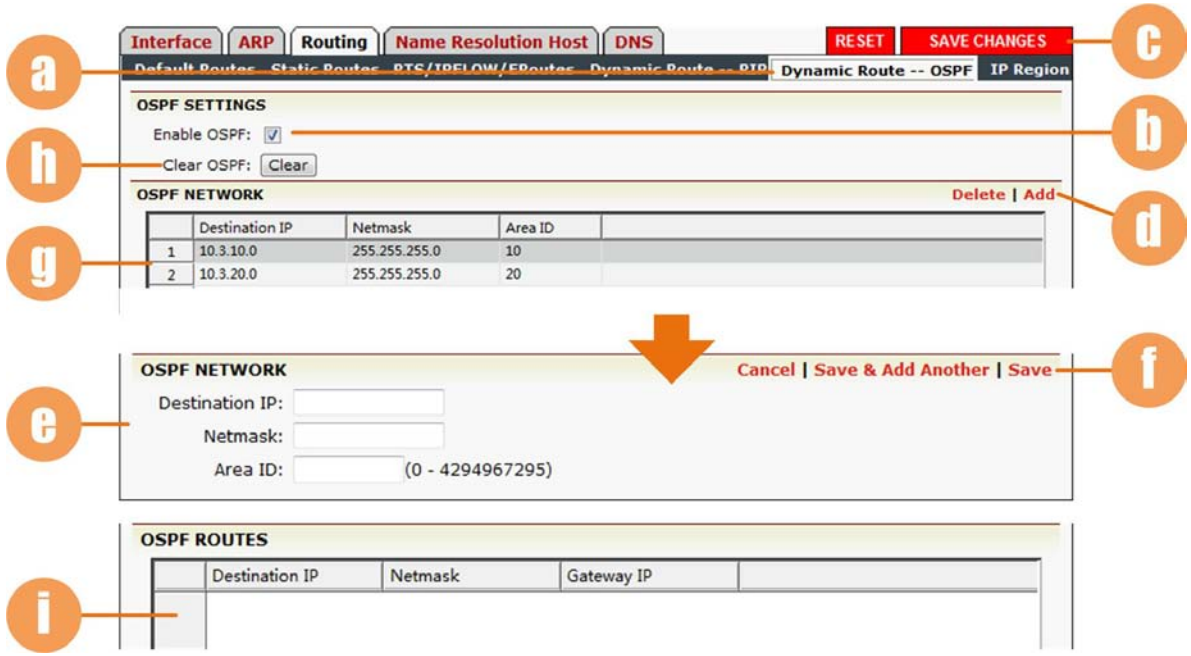
Routing (Continue)

Dynamic Route--OSPF

Select the "**Dynamic Route--OSPF**" sub tab **[a]**. You can enable OSPF by selecting the check box **[b]**. Then, click on "SAVE CHANGES" button **[c]** when it appears.

Click on the action link "Add" **[d]** and a new configuration page will be presented. Supply the destination IP address, netmask and area ID **[e]** properly and click on the "Save" action link **[f]**. Then, the added information will be displayed in the table **[g]**. You can clear OSPF settings by clicking on the "Clear" button **[h]**.

After you set the OSPF network properly, the information of the routes dynamically detected will be displayed in the table **[i]**.

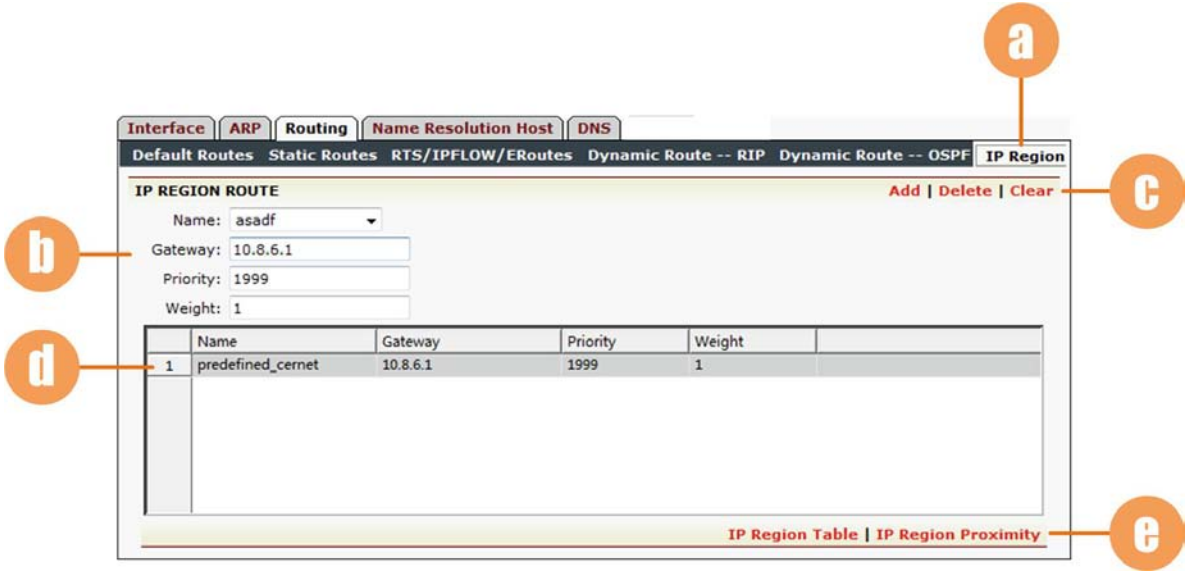


Routing (Continue)

IP Region

Select the "**IP Region**" sub tab **[a]**. To set the route for IP region, select the desired IP region file name via the selector, and supply the gateway IP, priority and weight **[b]** properly and click on the "Add" action link **[c]**. Then, the added information will be displayed in the table **[d]**. You can clear IP region route settings by clicking on the "Clear" button **[c]**.

Clicking on the action link "IP Region Table" and "IP Region Proximity" **[e]** will direct you to the related configuration pages.



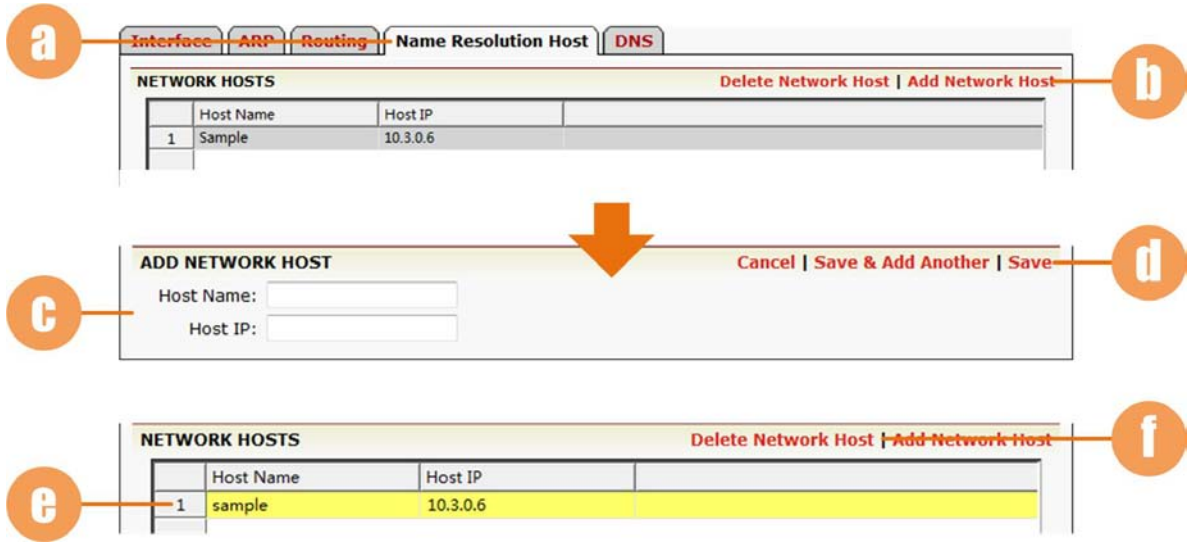
Name Resolution Host

Make certain you are in Config mode and have selected the "**Name Resolution Host**" tab **[a]**. To add a new host, click on the action link "Add Network Host" **[b]**.

Within the supplied configuration window, supply the host name and the host IP address in the text fields **[c]**. Once completed, click the next desired action link **[d]**.

All added hosts will be displayed in a sort enabled table **[e]** for editing.

To delete a host, select the host name from the table **[e]** and click on the desired action link **[f]**. A new window will appear, click "OK" to delete ARP entry, click "cancel" to keep the ARP entry.



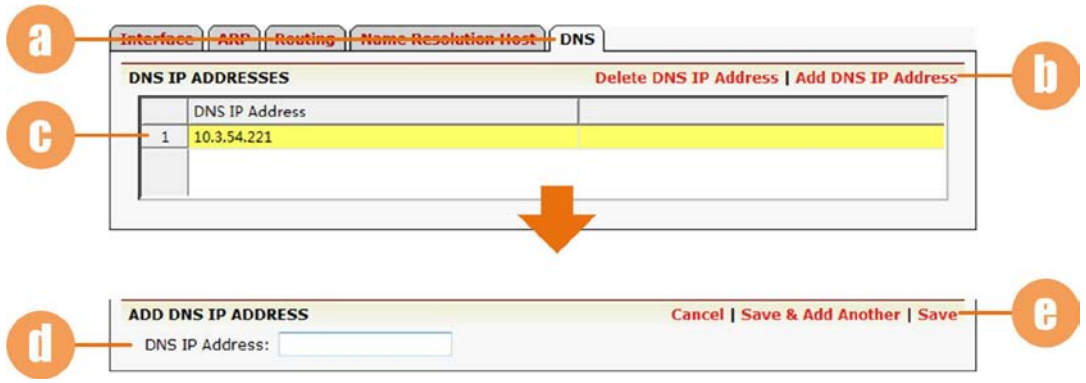
DNS

Make certain you are in Config mode and have selected the "**DNS**" tab **[a]**.

From this configuration page, you may edit or assign DNS IP addresses by clicking on the action links **[b]**.

Enter DNS IP address in dotted IP format **[d]** and click on the desired action link **[e]**.

To delete a DNS, select the DNS address from the table **[c]** and click on the desired action link **[b]**. A new window will appear, click "OK" to delete ARP entry, click "cancel" to keep the ARP entry.



Advanced Networking

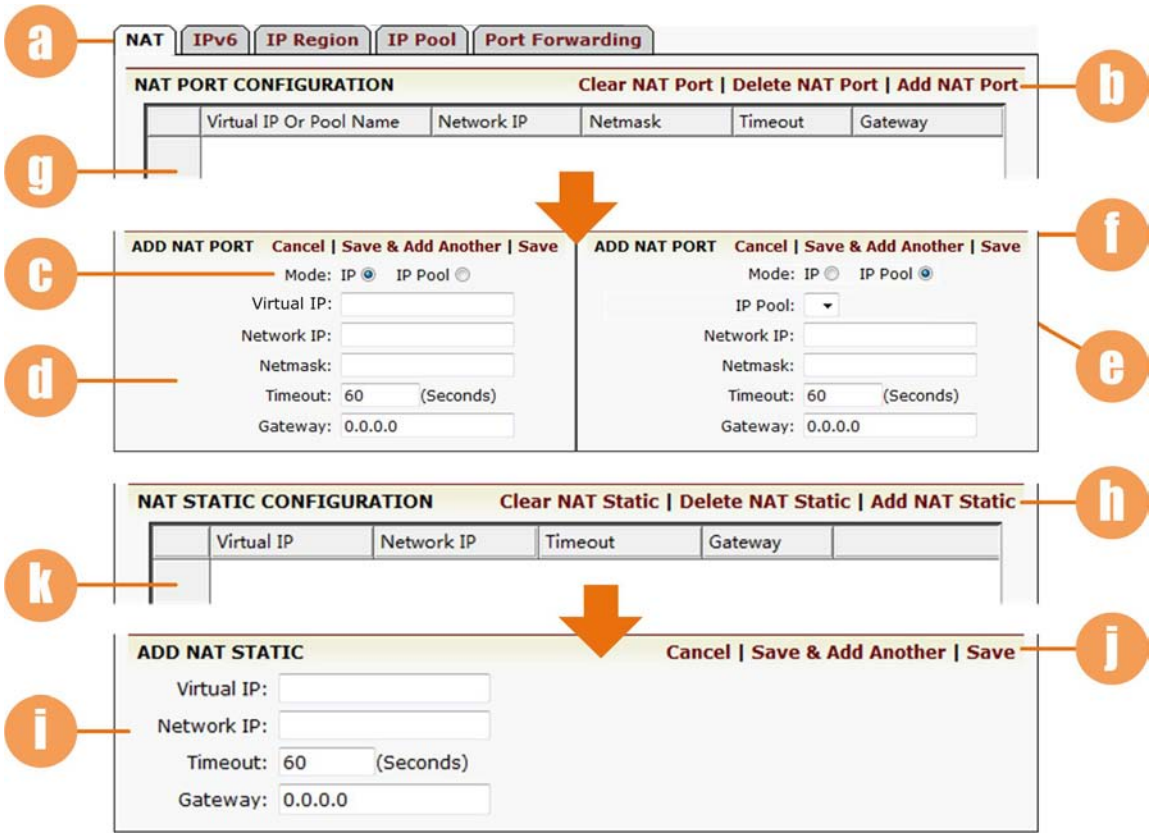
NAT

NAT converts the address behind the FortiBalancer appliance into one IP address for the Internet and vice versa. NAT also keeps individual IP addresses hidden from the Internet.

Make certain you are in Config mode, and have selected the "Advanced Networking" feature link from the sidebar, and further selected the "**NAT**" tab **[a]**. The configuration window displays the sort enabled table of previously setup NATs.

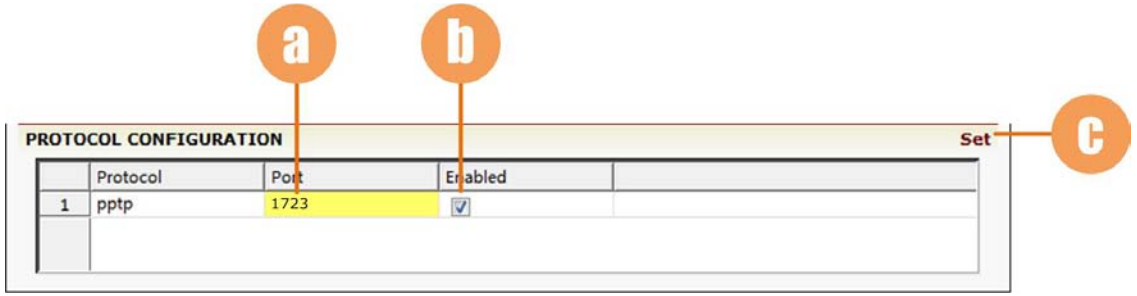
To create an NAT port configuration, click on the "Add NAT Port" action link **[b]**. The configuration window will present some new fields. First, select the "IP" or "IP Pool" mode via the radio buttons **[c]**, and then supply the required virtual IP/IP pool name, network IP, netmask, timeout length (defaults to 60 seconds) and gateway IP **[d]**. If "IP Pool" mode is selected, you should first select desired IP pool name via the selector **[e]**. Then, click on "Save" **[f]**, and the created NAT port configuration will be displayed in the table **[g]**. You can double click on an item in the table to edit the timeout value.

To create static NAT, click on "Add NAT Static" action link **[h]**. The window will present four text fields **[i]**, where you can supply the virtual IP, network IP, timeout length (defaults to 60 seconds) and gateway IP. Then, click on "Save" **[j]**, and the created static NAT configuration will be displayed in the table **[k]**. You can double click on an item in the table to edit the timeout value.



NAT (Continue)

To enable the PPTP protocol or change its port number, you can double click on the Port column to change the PPTP port **[a]**, and click the “Enable” check box to enable the PPTP protocol **[b]**. At last, click on the “Set” button to save your changes **[c]**。



IPv6

Fortinet IPv6 implementation includes two parts currently: IPv6 routing and NAT-PT (Network Address Translation-Protocol Translation).

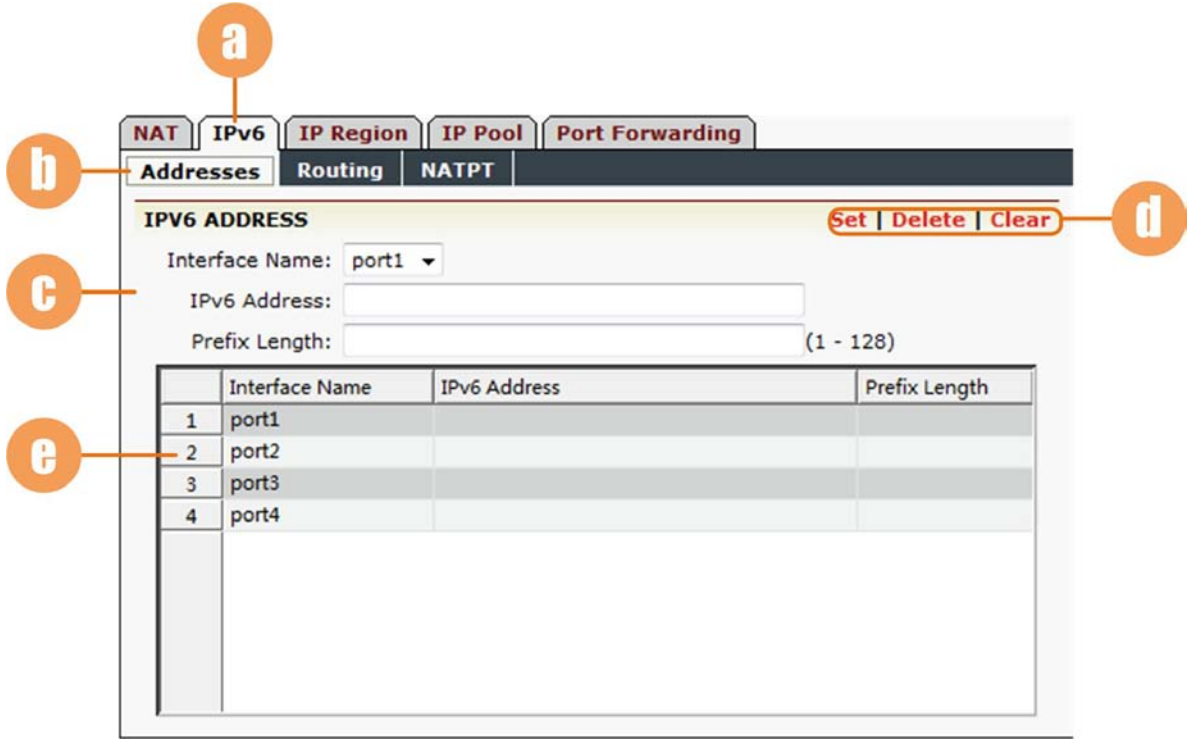
Select the "**IPv6**" tab **[a]**, and the window displays the "Addresses" sub tab by default **[b]**.

Addresses

This page allows you to set the IPv6 addresses for system interfaces. First, specify the interface name via the selector, and further input the desired IPv6 address and prefix length in the text fields **[c]**.

Then, click on the "Set" action link **[d]**. The configuration will be displayed in the sort ready table **[e]**. **Note:** Only one address can be configured on each interface.

You can also click on the "Delete" action link to delete a configuration item in the table or "Clear" to delete all the configurations **[d]**.



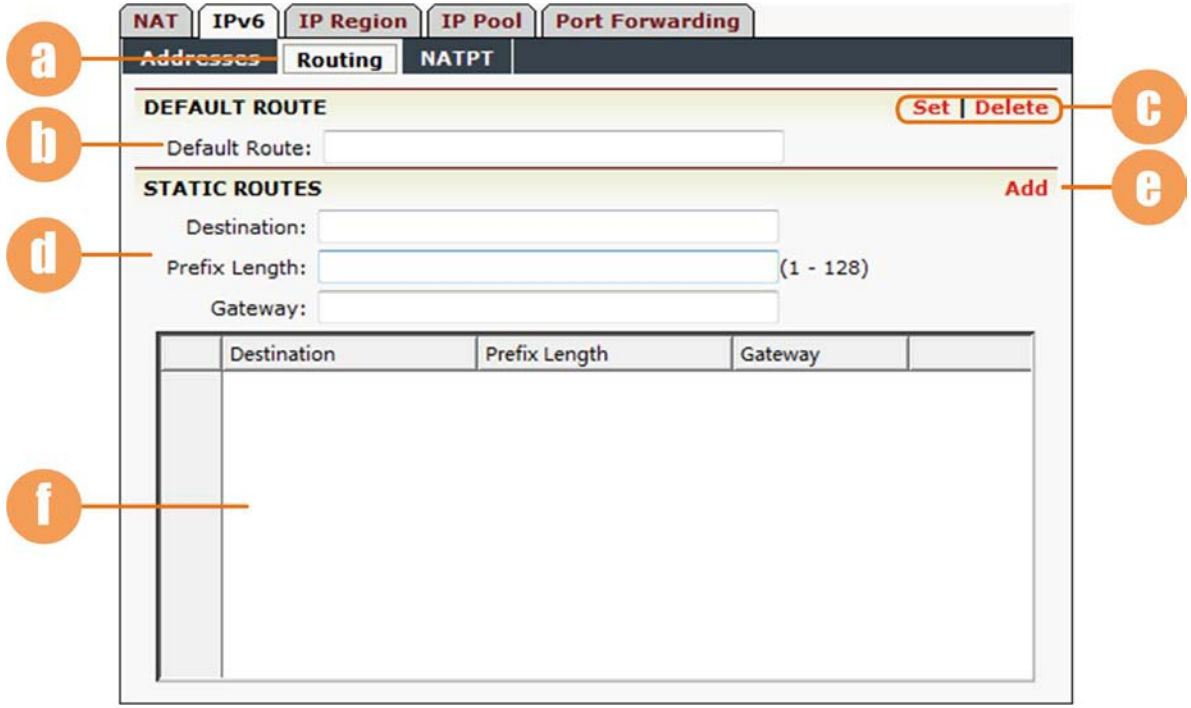
IPv6 (Continue)

Routing

Select the "**Routing**" tab **[a]**.

First, you can configure the default IPv6 gateway. Input the default gateway address in the text field (should be a global unicast IPv6 address) **[b]**, and click on the "Set" action link to save your configuration **[c]**.

Then, you can set the IPv6 static route. Input the destination address, prefix length and gateway IP address (the destination address and gateway address should be global unicast IPv6 addresses) in the text fields **[d]** and click on the "Add" action link **[e]**. The configuration will be displayed in the sort ready table **[f]**.



IPv6 (Continue)

NATPT

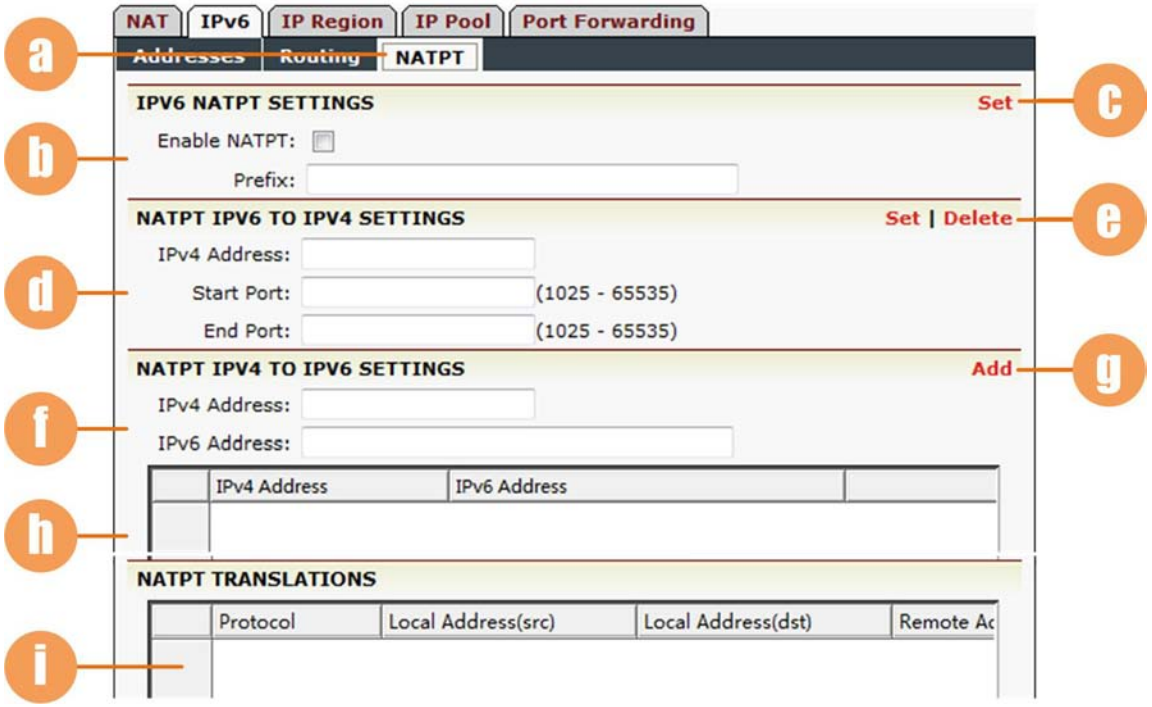
Select the "**NATPT**" tab **[a]**.

First, you can activate the NATPT translation by selecting the "Enable NATPT" check box and setting the IPv6 prefix **[b]**, and then click on the "Set" action link **[c]** to save your configuration.

To set a dynamic IPv6-to-IPv4 translation rule, you can input the IPv4 address, start port and end port in the text fields **[d]**, and click on the "Set" action link **[e]** to save your configuration.

To set a static IPv4-to-IPv6 translation rule, you can input the IPv4 addresses and IPv6 address in the text fields **[f]**, and click on the "Add" action link **[g]**. The configuration will be displayed in the sort ready table **[h]**.

The window also displays the NAT-PT translation table **[i]**.



IP Region

Make certain you are in Config mode and have selected the "**IP Region**" tab **[a]**.

To import an existing IP region table via a local file, you can select the radio button "Local File" **[b]**, and specify the location of the local file **[c]**.

To import an existing IP region table via FTP, you can select the radio button "FTP" **[e]**, and specify the server address **[f]**.

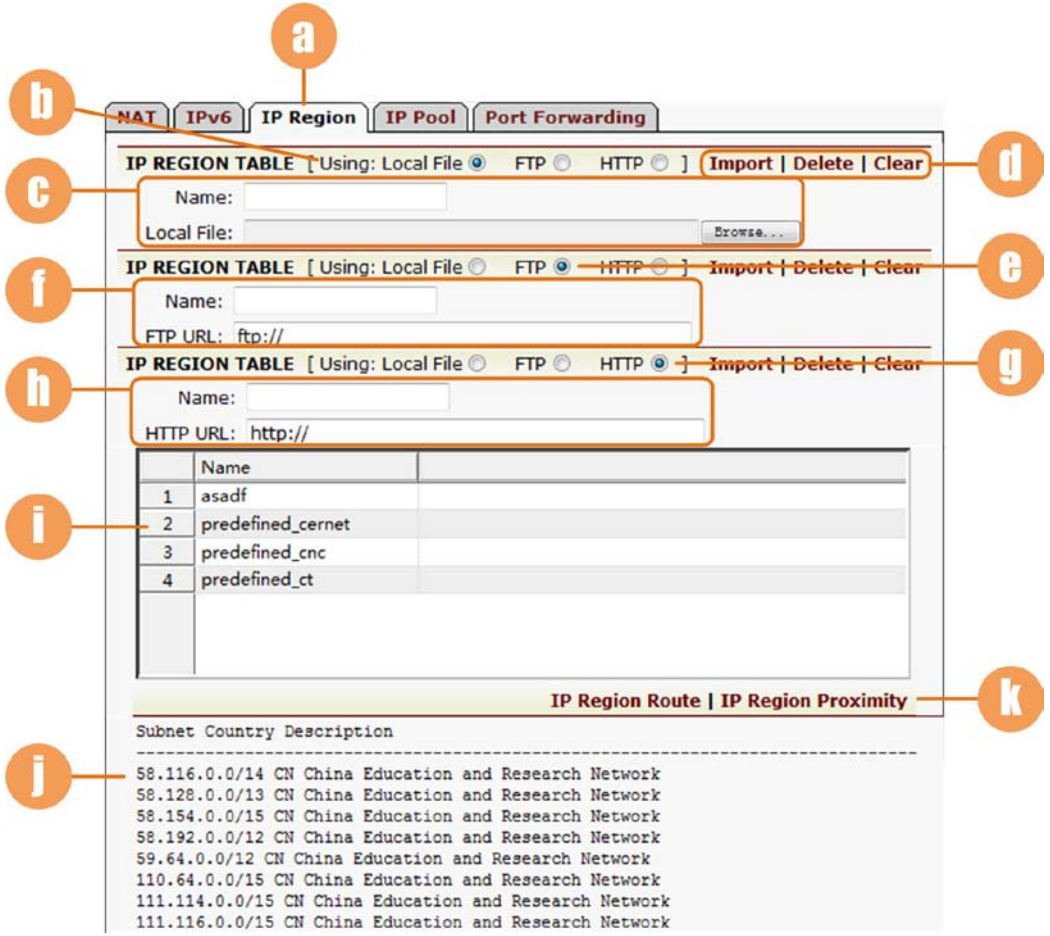
To import an existing IP region table via HTTP, you can select the radio button "HTTP" **[g]**, and specify the server address **[h]**.

After confirming the supplied information, click on the action link "Import" to import the IP region table **[d]**. The name of the IP region table files imported successfully will be displayed in the table **[i]**.

To remove an IP region table file, simply select the desired file name from the displayed list and click on the "Delete" action link **[d]**. A new window will appear, click "OK" to delete the file, or click "cancel" to cancel the deletion.

Double click on an IP region table file in the table, and the contents of the files will be displayed **[j]**.

Clicking on the action link "IP Region Route" and "IP Region Proximity" **[k]** will direct you to the related configuration pages..

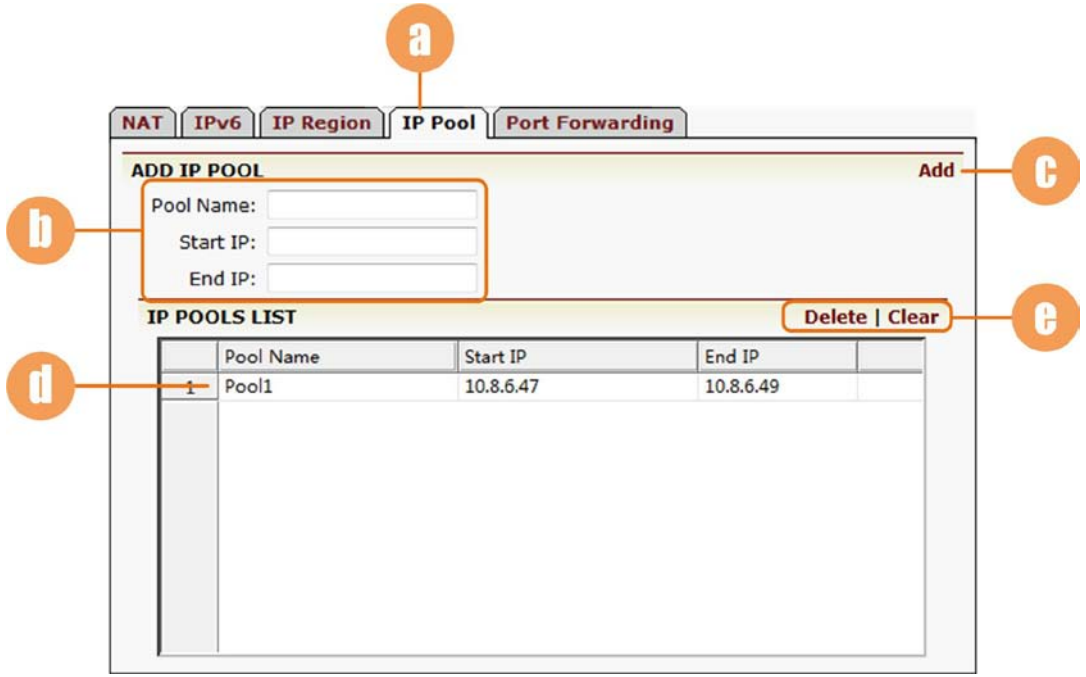


IP Pool

Make certain you are in Config mode and have selected the "**IP Pool**" tab **[a]**.

To set an IP pool, you can input the pool name, start IP and end IP of the IP segment to be added into the IP pool in the text fields **[b]**, and click on the "Add" action link **[c]** to save your configuration..

The configuration will be displayed in the IP pool list table **[d]**. You can also click on the "Delete" action link to delete a configuration item in the table or "Clear" to delete all the configurations **[e]**.



Port Forwarding

Port Forwarding allows the FortiBalancer appliance to transparently forward traffic destined for one IP and port to another port on the network. All related network servers should point to the appliance for their gateway routes to take full advantage of port forwarding.

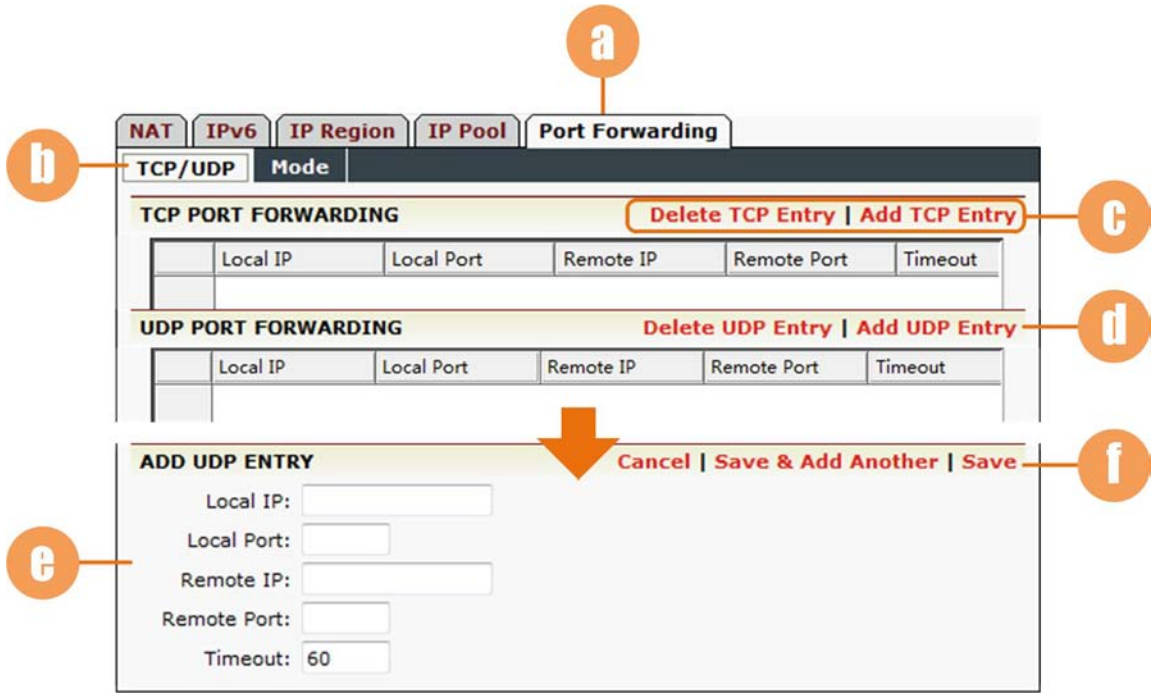
Make certain you are in Config mode, and have selected Advanced Networking from the sidebar, and further selected the "**Port Forwarding**" tab **[a]**.

TCP/UDP

Select the sub tab "TCP/UDP" **[b]**. The configuration window displays two sort enabled tables of previously setup TCP and UDP port forwarding schemes.

To set up port forwarding, click on "Add TCP Entry" for TCP **[c]** or "Add UDP Entry" for UDP **[d]**. The configuration window will present several text fields **[e]**, where you can supply the local IP address and port, the remote IP and port as well as the timeout length in seconds (the configuration fields are the same for UDP and TCP; only TCP configuration is pictured here.). Choose the appropriate action link **[f]**.

To delete schemes, simply select the configuration from the table and click on "Delete TCP Entry/Delete UDP Entry" **[c]/[d]** respectively. You can double click on a configuration in the table to go to the timeout value edit page.



Port Forwarding (Continue)

Mode

You may set the FortiBalancer appliance for transparent (default) or You may set the FortiBalancer appliance for transparent (default) or non-transparent port forwarding.

Select the sub tab "**Mode**" **[a]**. The configuration window displays two radio buttons to set the transparent mode or non- transparent mode **[b]** for port forwarding. This will affect TCP/UDP Port Forwarding.

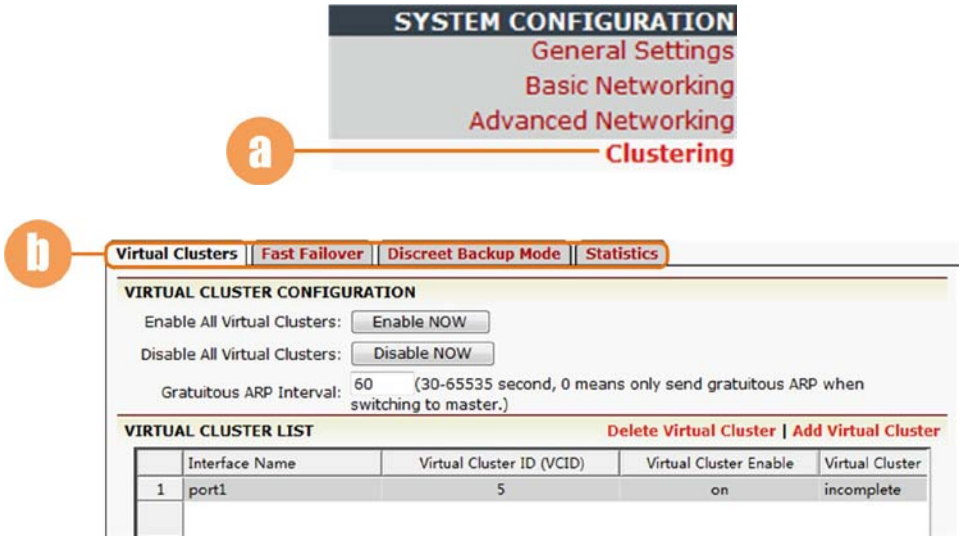
Select the desired mode and click the "SAVE CHANGES" button **[c]** to save the settings.

Clustering

The Fortinet Clustering Technology allows you to maintain high availability within local sites. Virtual Clustering provides high availability to SLB VIPs for the outside interface and for redundant gateways via the inside interface.

Make certain you are in Config mode and have selected " **Clustering** " from the sidebar **[a]**.

You can see four tabs in the configuration window: Virtual Clusters, Fast Failover, Discreet Backup Mode, and Statistics **[b]**. Note that to use the Fast Failover (FFO) function you have to first get the FFO license. Otherwise, the Fast Failover and Discreet Backup Mode tabs will not be displayed on the WebUI.



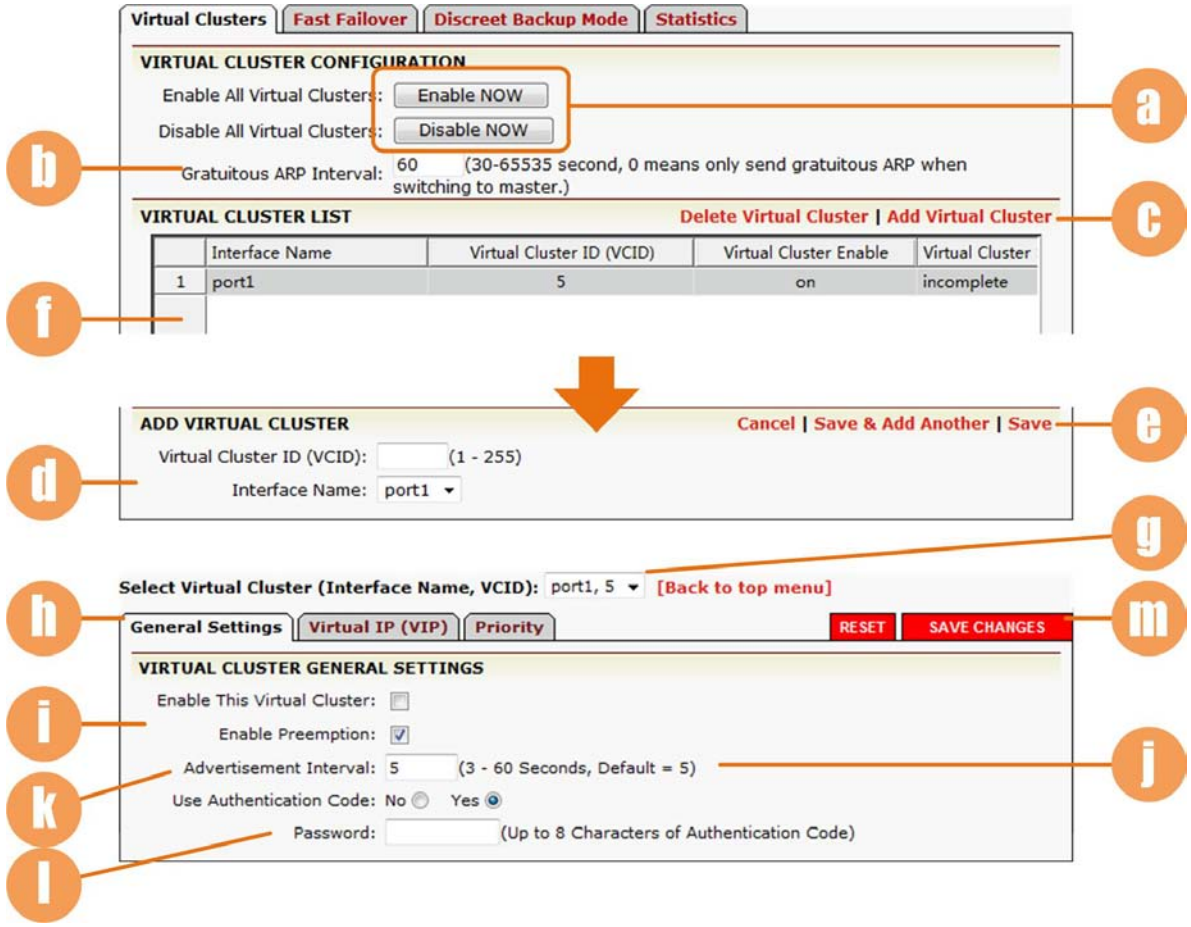
Virtual Clusters

Click on the buttons **[a]** to enable or disable virtual clusters. Set the interval of sending gratuitous ARP packets in the text box **[b]**.

Select "Add Virtual Cluster" **[c]** and a new page will appear. Give the virtual cluster an ID (1-255), and assign the cluster to an interface via the selector **[d]**. Then, select "Save" **[e]**. The information will be displayed in the table **[f]**. Double click on an entry in the table, the clustering configuration window for the entry will appear. You may also select from the created virtual clusters via the selector **[g]**.

General Settings

Select "General Settings" sub tab **[h]**. Enable the individual cluster and/or preemption via the check boxes **[i]**. Set advertisement interval in the text field **[j]**. Use the radio buttons **[k]** to configure whether to use an authentication code or not. If "Yes" is selected, you need to further input the password **[l]**. Click on the button **[m]** to save changes.



Virtual Clusters (Continue)

Virtual IP (VIP)

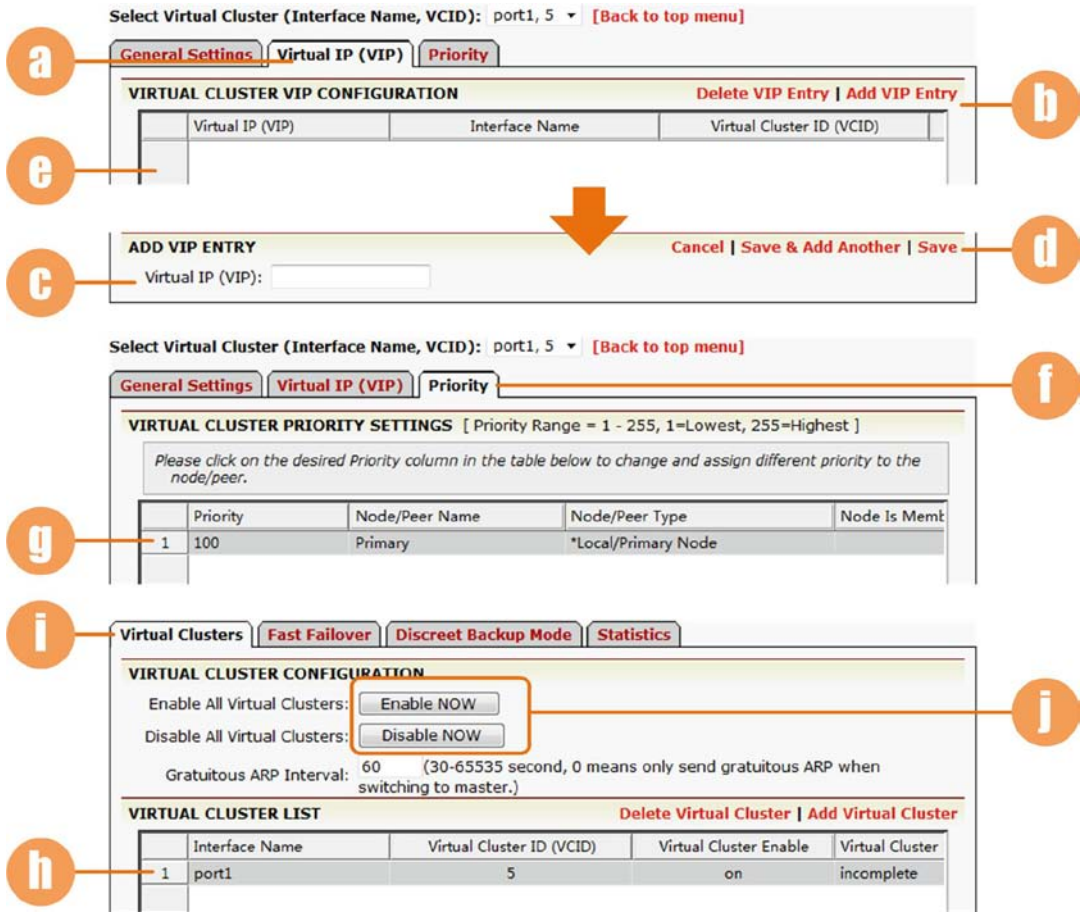
Make certain you select the "**Virtual IP (VIP)**" tab **[a]**. Select the action link "Add VIP Entry" **[b]**. The configuration window will present a new screen.

Supply the VIP in dotted format in the text field **[c]**. Next, click on the desired action link **[d]**. The configured VIP will be displayed in the table **[e]**.

Priority

Select the "**Priority**" sub tab **[f]**. To set priority, firstly you should add a node from "Config Management" (Please refer to the "Config Management" chapter for further information). Then, navigate back to the "Priority" sub tab and directly double click on the Priority column **[g]** to modify the value.

Once you've added a virtual cluster, it will be displayed in the table **[h]** under the "Virtual Clusters" tab **[i]**. You can use either of the two buttons **[j]** to universally enable or disable the clusters.



Fast Failover

Select the "**Fast Failover**" tab **[a]**.

You can enable fast failover by checking the box **[b]**, and set FFO interface carrier loss timeout in the text field **[c]**. Then, click on the "SAVE CHANGES" button **[d]** to save the settings you made.

Discreet Backup Mode

Select the "**Discreet Backup Mode**" tab **[e]**.

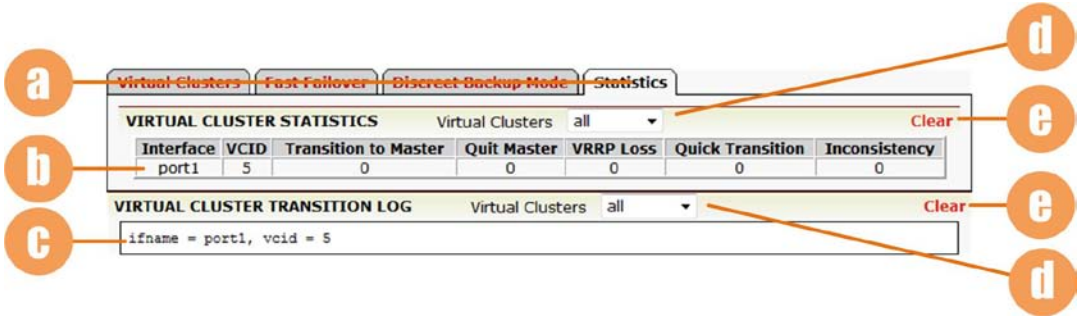
You can enable the cluster discreet backup mode by checking the box **[f]**. Note that to have the discreet backup mode work, you have to first enable FFO. You can do this by selecting the check box **[b]** under the "Fast Failover" tab.

At last, remember to click on the "SAVE CHANGES" button **[g]** to save the changes.

Statistics

Select the "**Statistics**" tab **[a]**. The statistics information about all configured clusters **[b]** and transition logs of virtual clusters **[c]** are displayed here.

To clear cluster statistics or transition logs, users can select a desired cluster or all clusters (all) from the selector **[d]** and click on the "Clear" action link **[f]**.



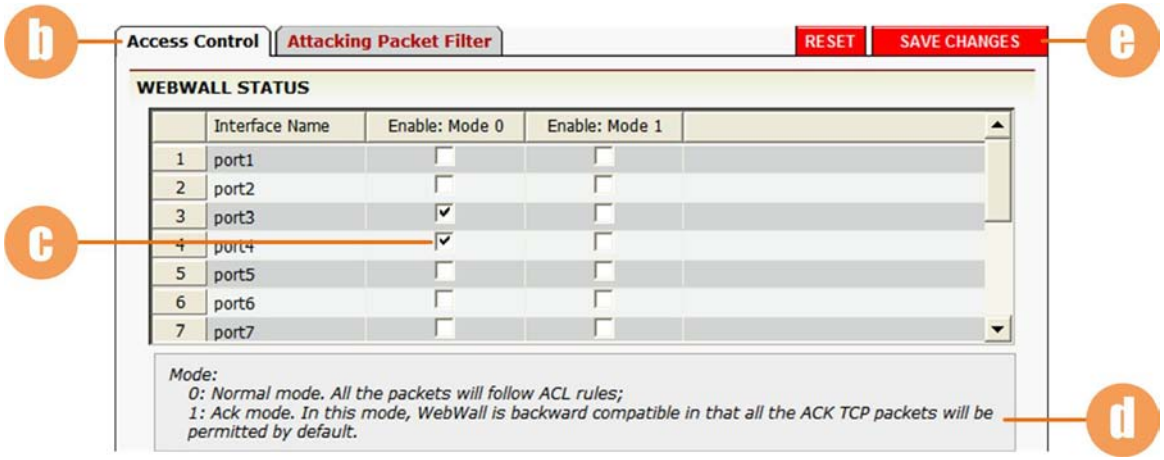
WebWall

The Webwall function of the FortiBalancer appliance allows you to filter TCP, UDP and ICMP packets from the network by creating permit/deny rules. You can enable the Webwall function on desired interfaces, define various permit/deny access control rules and further bind these rules to desired interfaces within the network.

Make certain you are in Config mode and have selected the feature link " **Webwall** " from the sidebar **[a]**.

Access Control

Select the "**Access Control**" tab **[b]**. You can enable the Webwall function on desired interfaces via the check boxes **[c]**. There are two modes: 0 and 1. Refer to section **[d]** for descriptions of the two modes. Confirm the interfaces and modes to enable and click on "SAVE CHANGES" **[e]** to make your settings take effect.

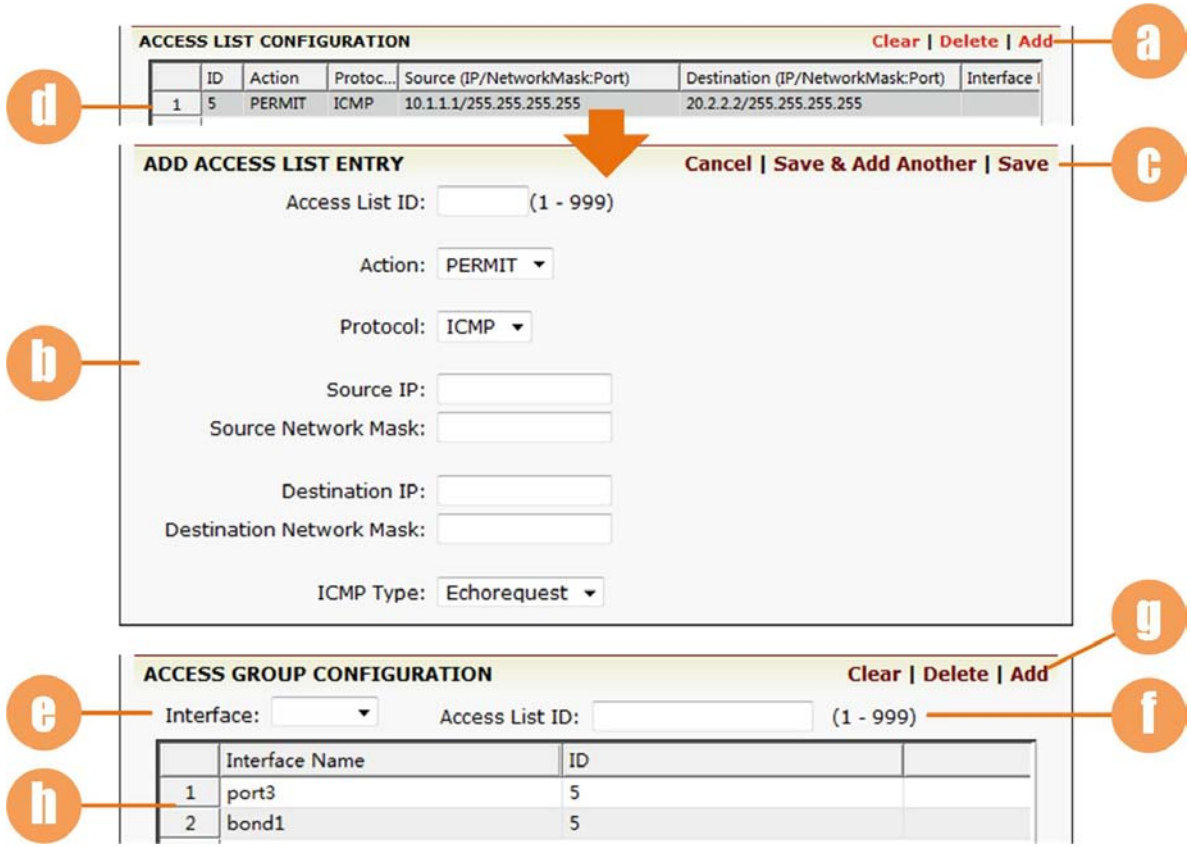


Access control (Continue)

To define the access control rules, select the action link “Add” **[a]**. Some new parameters will appear **[b]**: supply the Access list ID, permission setting (permit or deny), protocol (ICMP, TCP or UDP), source IP with netmask, destination IP with netmask (if TCP or UDP protocol is selected, you need to further input the source port and destination port), and select an ICMP type via the selector. Then, click on the “Save” action link **[c]**. The access rule will be displayed in the sort-ready table of access list **[d]**.

After creating an access control list, you can bind the rules in the list with desired interfaces.

First, select an interface via the selector **[e]**, and input the ID (1-999) of the access control rule to bind with the interface in the text box **[f]**. Then, click on the action link “Add” **[g]**. The configuration will be displayed in the sort ready table **[h]**.

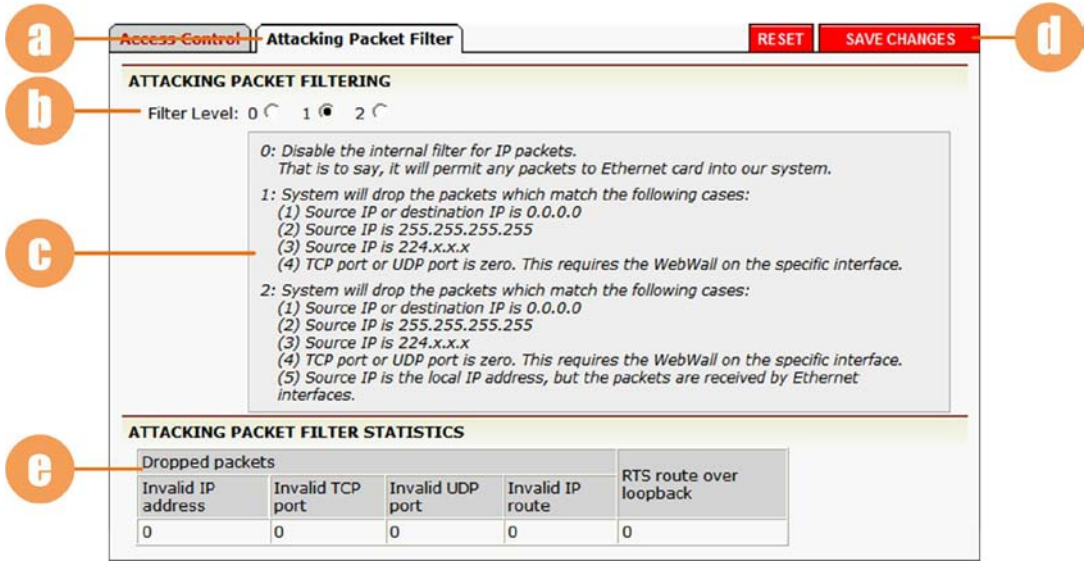


Attacking Packet Filter

Select the "**Attacking Packet Filter**" tab **[a]**.

You can set the level to filter invalid packages via the radio buttons **[b]**. Three levels (0, 1 and 2) are available. Refer to section **[c]** for descriptions of the three levels. After setting the level properly, click on the "SAVE CHANGES" button **[d]** when it appears to save your configuration.

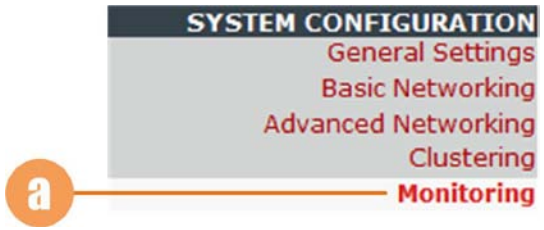
You can also view the filtering statistics of attacking packets in details in the table **[e]**.



Monitoring

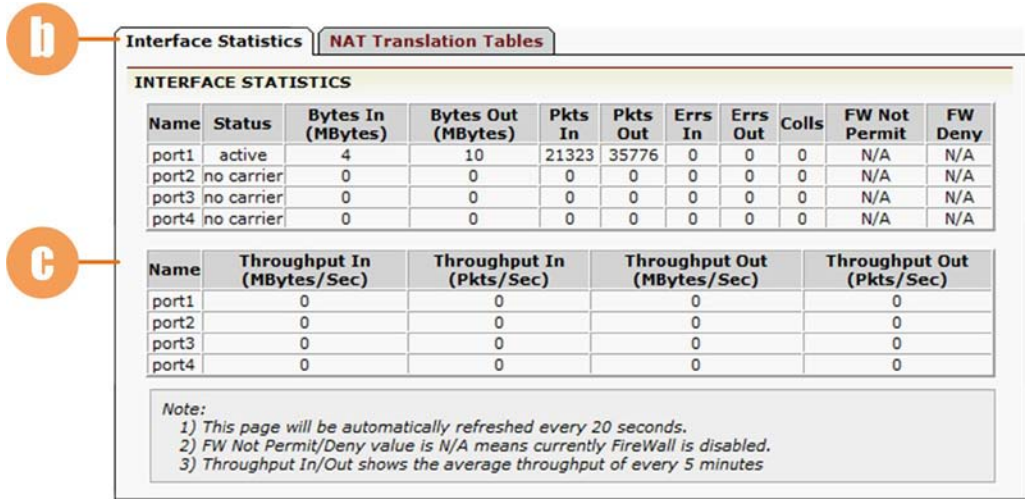
The FortiBalancer appliance allows you to monitor the interface running status and further shows you the realtime interface statistics.

Make certain you are in Enable mode and select the feature link "**Monitoring**" from the sidebar **[a]**.



Interface Statistics

Select the "**Interface Statistics**" tab **[b]** and the window will display detailed information about the realtime interface and VLAN (if configured) statistics in the box **[c]**. The page is automatically refreshed every twenty seconds.

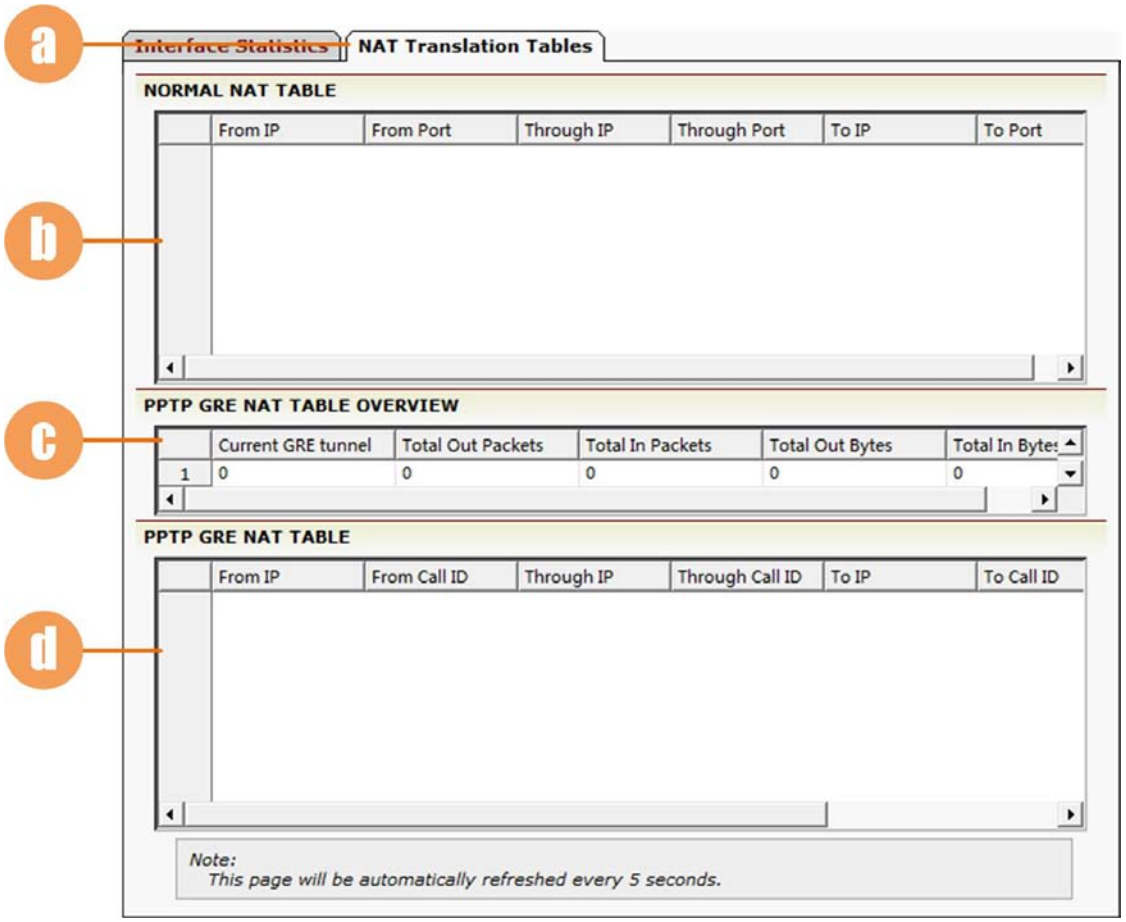


Name	Status	Bytes In (MBytes)	Bytes Out (MBytes)	Pkts In	Pkts Out	Errs In	Errs Out	Colls	FW Not Permit	FW Deny
port1	active	4	10	21323	35776	0	0	0	N/A	N/A
port2	no carrier	0	0	0	0	0	0	0	N/A	N/A
port3	no carrier	0	0	0	0	0	0	0	N/A	N/A
port4	no carrier	0	0	0	0	0	0	0	N/A	N/A

Name	Throughput In (MBytes/Sec)	Throughput In (Pkts/Sec)	Throughput Out (MBytes/Sec)	Throughput Out (Pkts/Sec)
port1	0	0	0	0
port2	0	0	0	0
port3	0	0	0	0
port4	0	0	0	0

NAT Translation Tables

Select the "**NAT Translation Tables**" tab **[a]** and the window will display detailed information about the normal NAT translation **[b]**, PPTP GRE NAT table overview **[c]** and the PPTP GRE NAT table **[d]**. The page is automatically refreshed every five seconds.



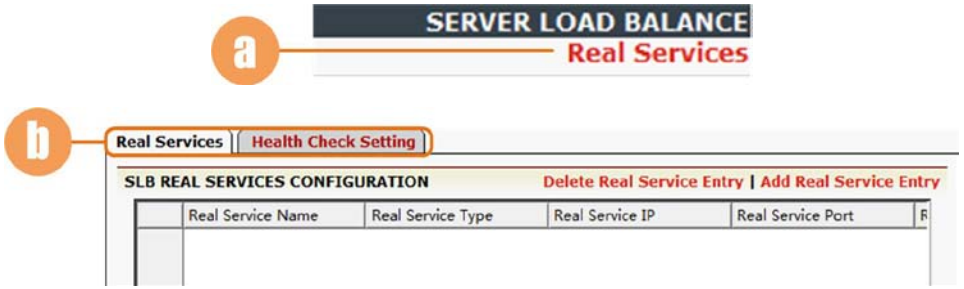
Server Load Balance

Server Load Balancing (SLB) allows you to distribute load and traffic to specific groups of servers or to a specific server. The FortiBalancer appliance supports server load balancing through layer 2 to 7 of the OSI network model. The L4 SLB is mostly concerned with port based load balancing, and the L7 SLB is used when you want to perform load balancing based on URLs, HTTP headers or cookies.

Real Services

The first step in setting up your network architecture with the FortiBalancer appliance to perform SLB tasks is to create and configure your real services.

Make certain you are in Config mode and have selected the feature link "**Real Services**" from the sidebar **[a]**. The configuration window will display two tabs **[b]**. The default page is "**Real Services**".



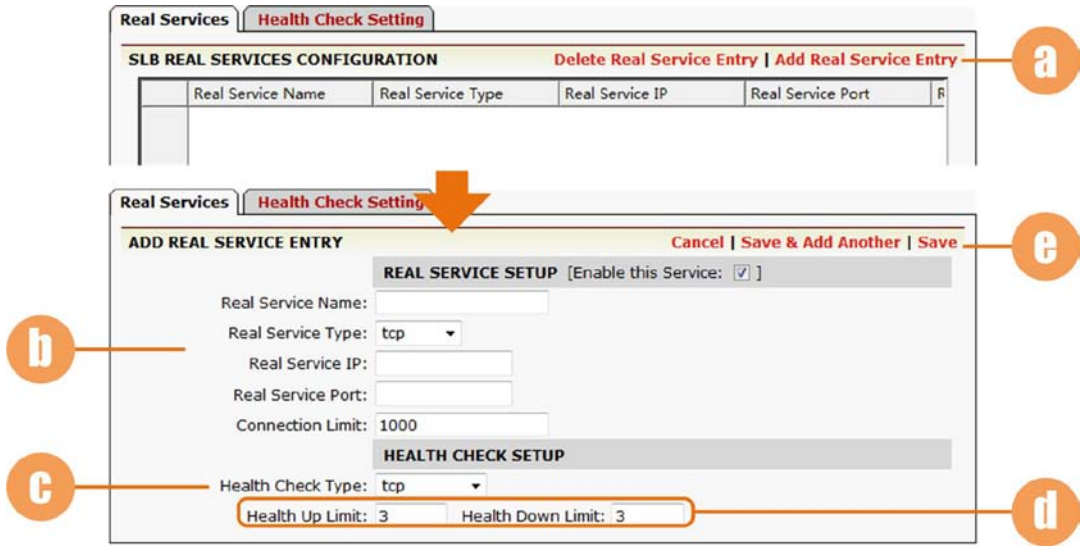
Real Services

Select the action link "**Add Real Service Entry**" **[a]**. The configuration window will present a new screen.

The new screen is for you to configure real servers. Depending on which type of real service is specified, certain parameter fields will appear, change or disappear **[b]**.

Then set the health check type for the real service via the selector (FTPS and RDP types are supported in 8.2) **[c]**, and configure the related parameters of health check **[d]**. The parameter fields may vary with different health check types. Note: For the TCP real services, LDAP health check can be set up. For the UDP and SIP-UDP real services, the Radius health check can be configured.

Finish the configuration of the real service and its health check by clicking on the desired action link **[e]**.



Real Services (Continue)

Once you've added a real service, it will be displayed in the sort ready table **[a]**. The status of the service is also displayed:

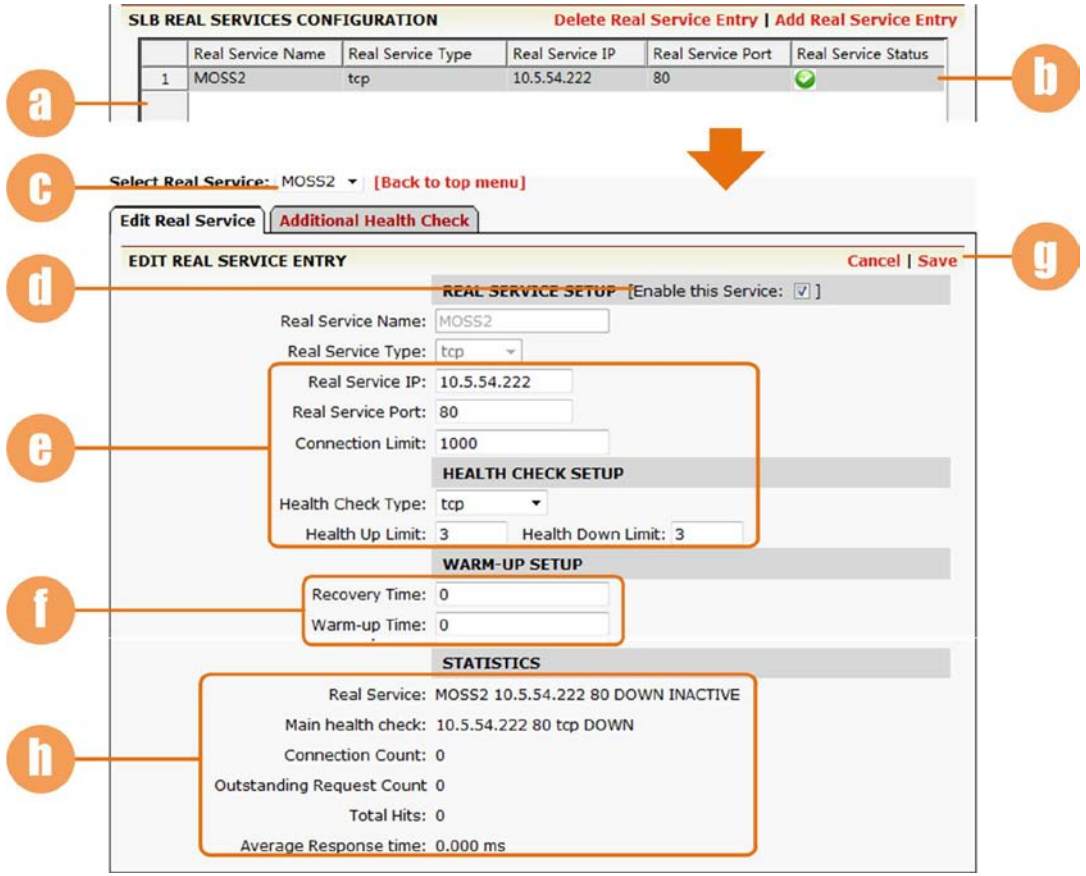
- Enabled and Up (healthy);
- Enabled but Down (unhealthy);
- Disabled.

Select a created real service from the table **[b]** and double click on it. The configuration window will present a new window to complete more real services configurations.

Edit Real Service

Select a desired real service from the selector **[c]**. Use the check box to enable the real service **[d]**. You may change the real service settings and health check settings **[e]**, and finish the system warm-up configuration **[f]**. Then, remember to click on the "Save" action link **[g]** to save your settings.

This page also displays the current running statistics concerning the selected real service **[h]**.



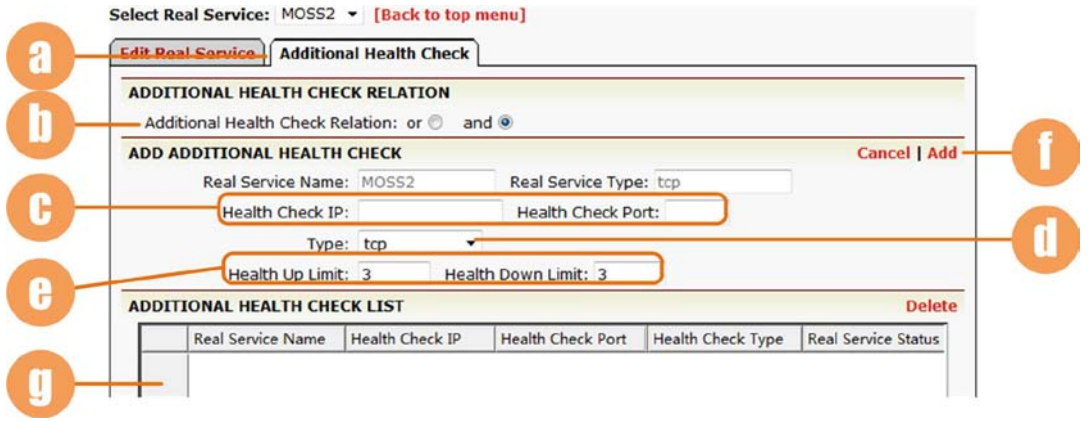
Real Services (Continue)

Additional Health Check

Click on the "**Additional Health Check**" tab **[a]**. This page allows you to set additional health check for the specified real service.

Set the relation between additional health checks via the radio buttons **[b]**. Set the health check name and select health check type **[c]**. Enter health check IP address and port **[d]**. Depending on which additional health check type is specified, certain parameter fields will appear, change and disappear **[e]**. The Radius health check and LDAP health check are both supported with different parameter fields.

After completing the operation, click the action link "Add" **[f]**. The added additional health check will be displayed in the table below **[g]**.



Health Check Setting

Make certain you select the "**Health Check Setting**" tab **[a]**. Use the check box to enable the health check **[b]**. Set the health check interval and server timeout in seconds **[c]**. Use the check box to enable failover function **[d]**. Configure the times of retries before failover **[e]**.

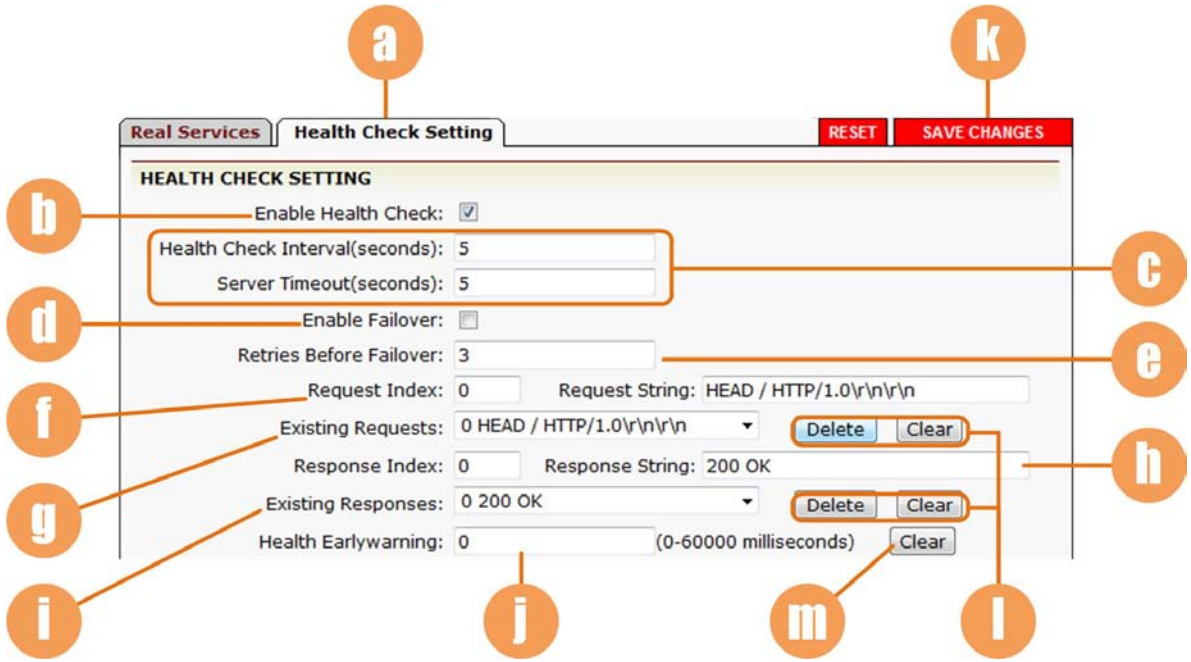
Set the request index and string in the text fields **[f]**. You may overwrite the existing request string of any index from 0 to 999. The new request string will be listed in the Existing Requests list **[g]**.

Set the response index and string in the text fields **[h]**. You may also overwrite the response string of any index from 0 to 999. The new response string will also be listed in the Existing Responses list **[i]**.

Set the health early warning threshold in the text field **[j]**, which ranges from 0 to 60000 milliseconds.

Remember to click on the "SAVE CHANGES" button after completing the settings **[k]**.

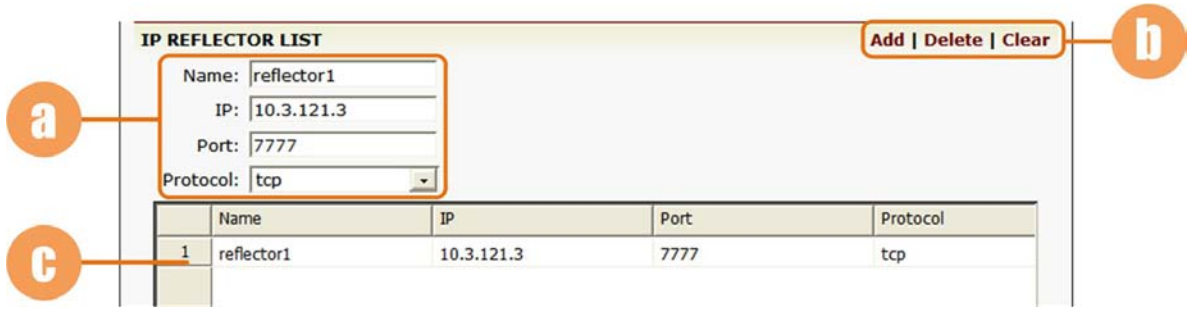
You can click on the "Delete" buttons respectively to delete specified existing request or response, or click on the "Clear" button to clear all existing requests or responses **[l]**. You can also click on the "Clear" button to clear the health early warning setting **[m]**.



Health Check Setting (Continue)

To configure a reflector for L2 SLB TCP health check, input the name, IP address, port of the reflector in the text fields and set the protocol via the drop-down list **[a]**. Then click on the action link "Add" **[b]** and the new reflector will be listed in the sort ready table **[c]**.

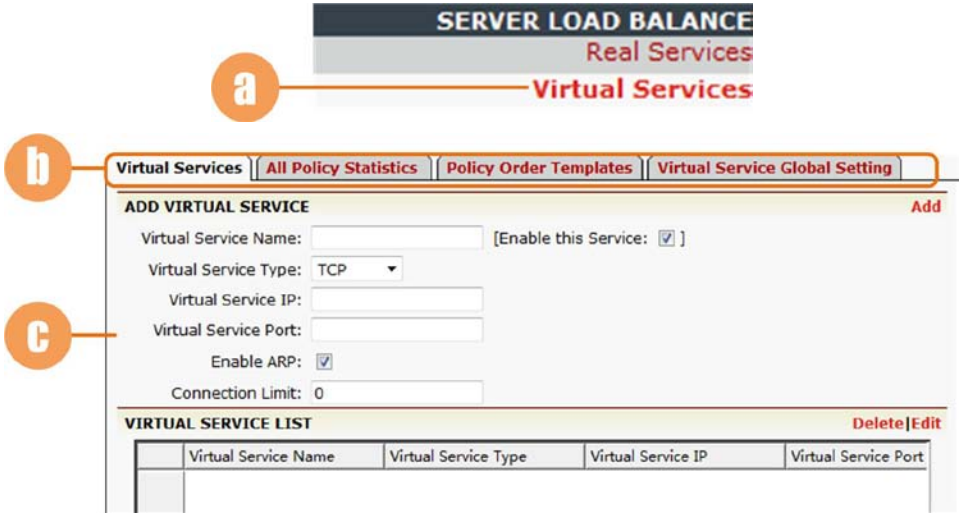
You can select a specific reflector and delete it or clear all the reflectors by clicking on the desired action link **[b]**.



Virtual Services

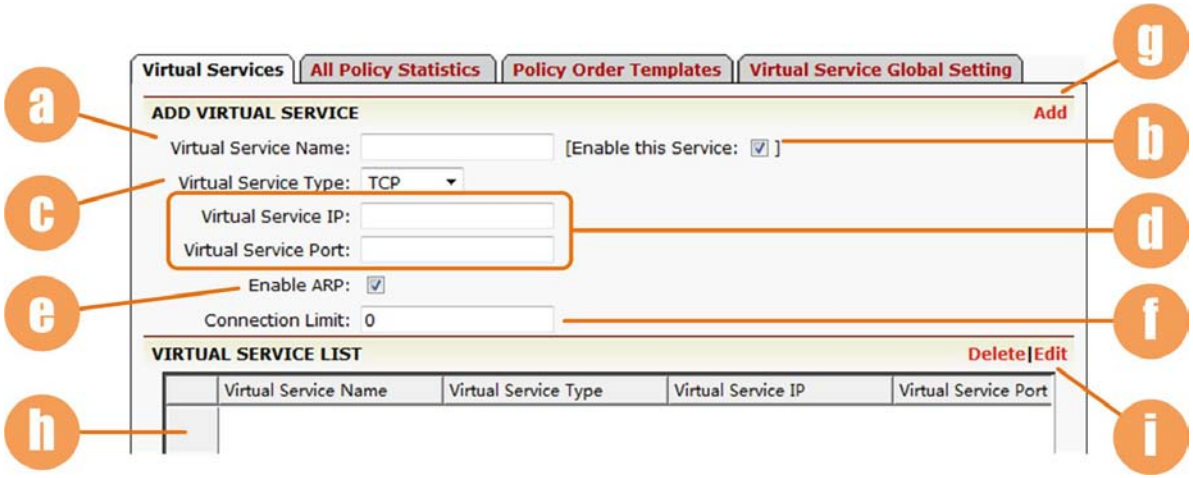
A Virtual IP is an IP address that you define and that will service requests for the content which a group is designed for. For example, if group1 is a set of image servers, we could define a VIP of 10.10.0.10 that is tied to group1. Any requests made to this Virtual IP will be passed to either the Cache or SLB subsystem depending on your cache and SLB settings. In essence you are hiding your internal architecture by only exposing one IP and not many.

Make certain you are in the Config mode and have selected the feature link "Virtual Services" from the sidebar **[a]**. The configuration window will display four tabs **[b]**. The "**Virtual Services"** page is displayed by default **[c]**.



Virtual Services

Set the virtual service's name **[a]**. Use the check box to enable the virtual service **[b]**. Select the virtual service type from the selector (RDP type is supported in 8.2) **[c]**. Set the virtual service IP and port **[d]**. Use the check box to enable ARP **[e]**. Set the maximum number of open connections per virtual service **[f]**. Depending on which type of virtual service is specified, certain parameter fields will appear, change or disappear. Click on the desired action link **[g]** to add a virtual service. Once a virtual service is added, it will be displayed within the table **[h]**. Select a virtual service in the table and double click on it or click on the action link "Edit" **[i]**. A new configuration window will present a new series of tabs for completing virtual services configuration.



Virtual Services (Continue)

Vlink Setting

Select a vlink in “Vlink List” **[a]**, double click it or click the “Edit” actional link **[b]**, and a new window will display.

In the “Vlink Setting” window, you can set the regex case mode for the vlink via the radio button **[c]**. Then, click on the “Save Changes” button **[d]**.

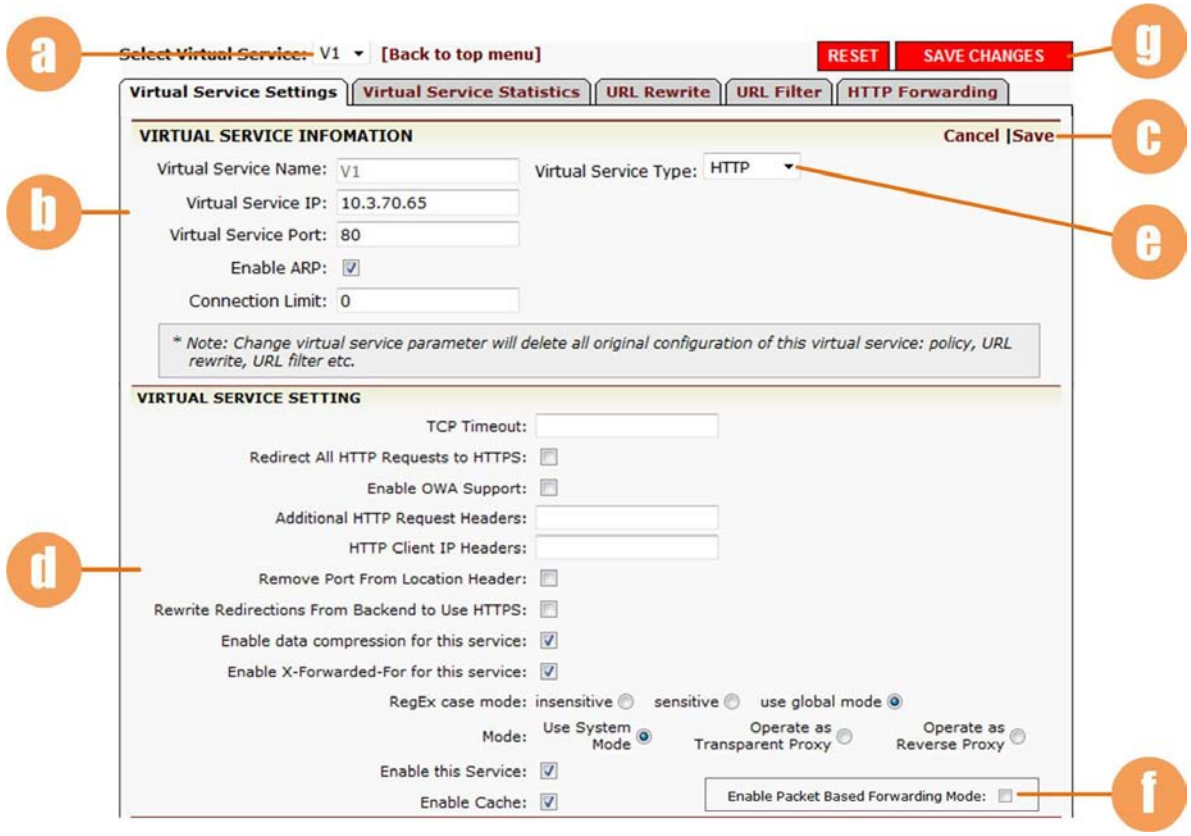
Virtual Services (Continue)

Virtual Services Settings

You may select from created virtual services via the selector **[a]**, and modify configurations about the virtual service in the area **[b]**. Then, click on “Save” **[c]**.

More parameter fields **[d]** are available for completing settings of the selected virtual service. Depending on the different types of the created virtual services **[e]**, certain parameter fields will appear, change or disappear. For the virtual services of TCP, UDP or IP type, the Triangle Proxy mode is available for configuration; for the HTTP type, redirecting all HTTP requests to HTTPS requests is supported; for the UDP type, the packet based forwarding mode can be enabled via the check box **[f]**.

Then, click on the “Save Changes” button **[g]** to save your settings.



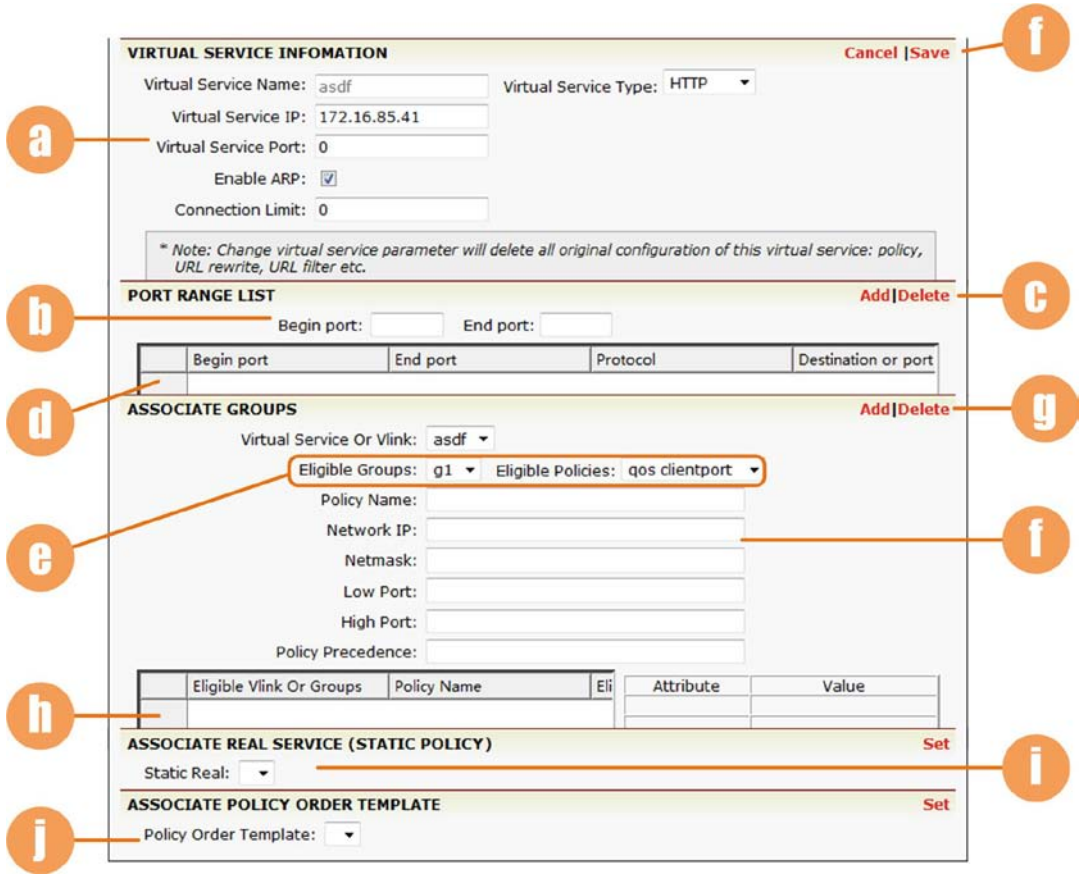
Virtual Services (Continue)

Virtual Services Settings (Continue)

And also on this configuration page, if the virtual service's port is set to be 0, the "Port Range List" will be displayed here **[a]**. Administrators need to configure "Begin port" and "End port" **[b]** and then click on the action link "Add" **[c]**, and then the port range will be added to the table [**d]**. For a virtual service, you can configure three port ranges at most.

Also on this configuration page, you may assign the virtual service to the established groups as set up earlier in the configuration process. Use the scroll down menu to select the desired group and the necessary policy **[e]**. Depending on different virtual service types, certain parameter fields will change, appear or disappear **[f]**. Click on the desired action link "Add" **[g]**. The group and the policy will be displayed in the sort ready table **[h]**.

Use the scroll down menu to assign the configured real services **[i]** to the virtual service. Then choose a policy order template by the selector **[j]** for the virtual service.



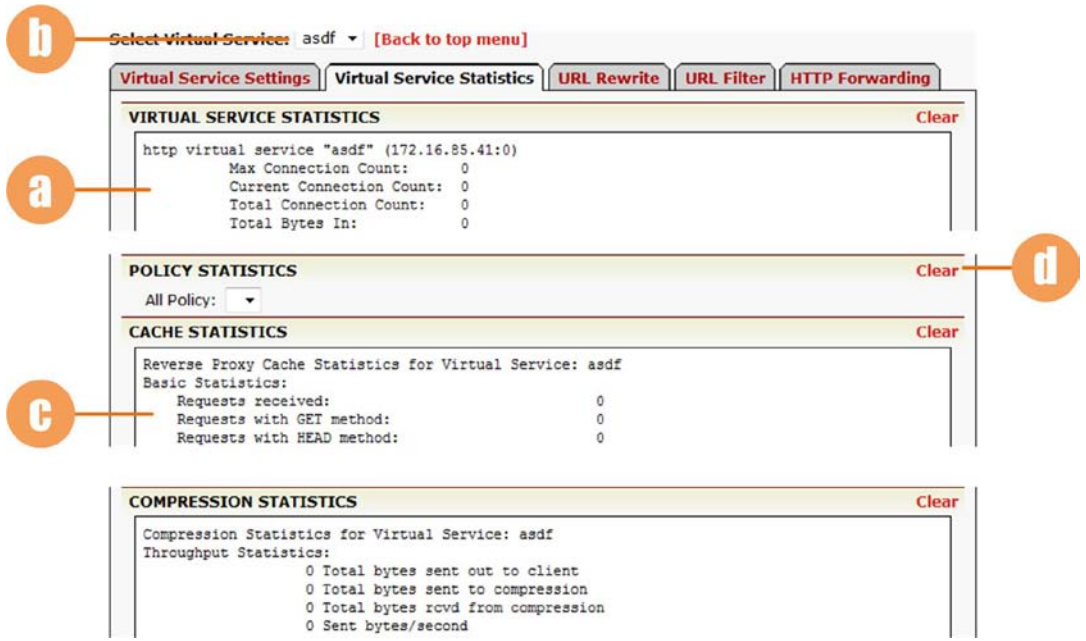
Virtual Services (Continue)

Virtual Services Statistics

Select the "**Virtual Service Statistics**" sub tab **[a]**.

To view statistics of a desired virtual service, select the service from the drop-down list **[b]** and the window will display related running statistics for the virtual service, including virtual service statistics, policy statistics, cache statistics and compression statistics **[c]**.

You can clear desired statistics information by clicking on the action link "Clear" **[d]**.

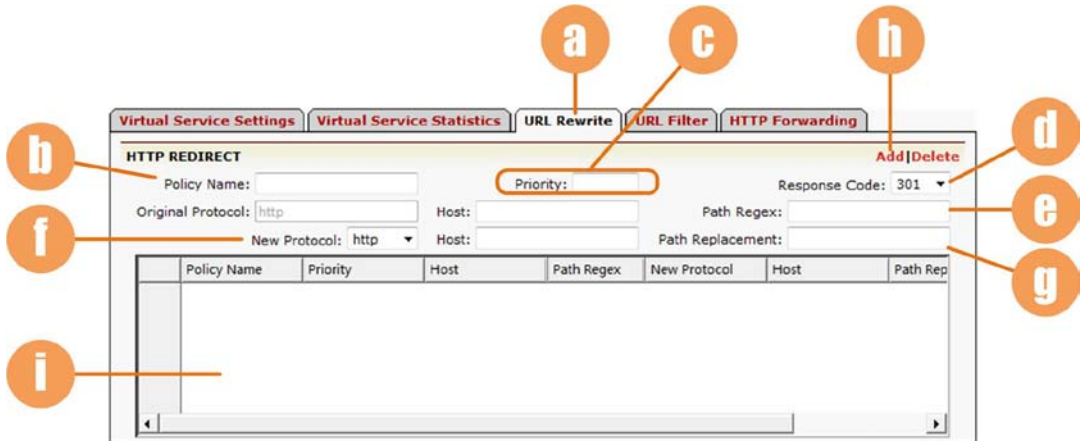


Virtual Services (Continue)

URL Rewrite

Select the "**URL Rewrite**" sub tab **[a]**, and a configuration screen will appear. The contents in this configuration page are available only if you have selected the HTTP or HTTPS type of virtual service.

HTTP Redirect: Assign a name to the HTTP redirect policy **[b]**. Set the priority of the rule **[c]**, the larger the higher. Set the HTTP status code to send back response by selecting from the selector **[d]**. Set an exact string of host header and regular expression to match the path of the request **[e]**. Select a new protocol of redirected response, either HTTP or HTTPS **[f]**. Then assign a new name to the redirected response and Set a new string to replace the part matching Path Regex **[g]**. Click on the desired action link "Add" **[h]**. The configurations will be displayed in the table below **[i]**.

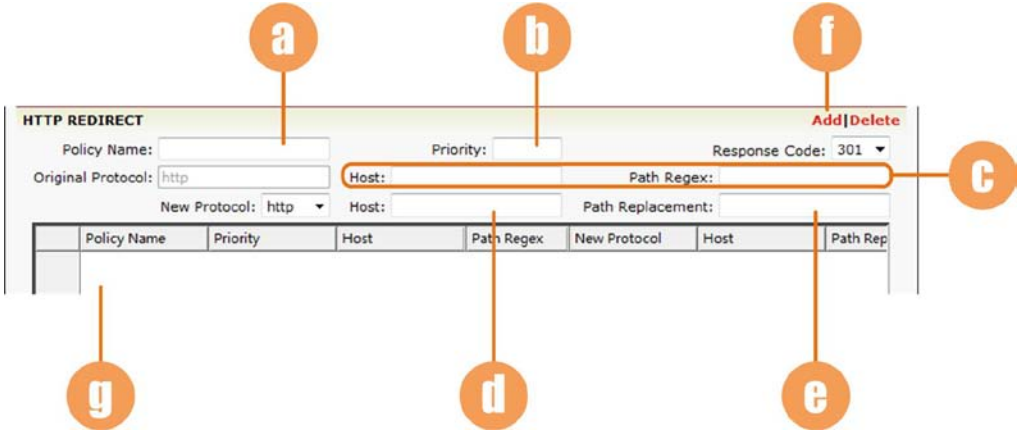


Virtual Services (Continue)

URL Rewrite (Continue)

HTTP Rewrite Request URL: Assign a name to the HTTP rewrite policy **[a]**. Set the priority of the rule **[b]**, the larger the higher. Set the exact string of host header and regular expression [c] to match the path of the request. Then assign a new name to the rewritten request **[d]**. Set a new string to replace the part matching Path Regex **[e]**.

Click on the desired action link “Add” [f]. The configurations will be displayed in the table below **[g]**.

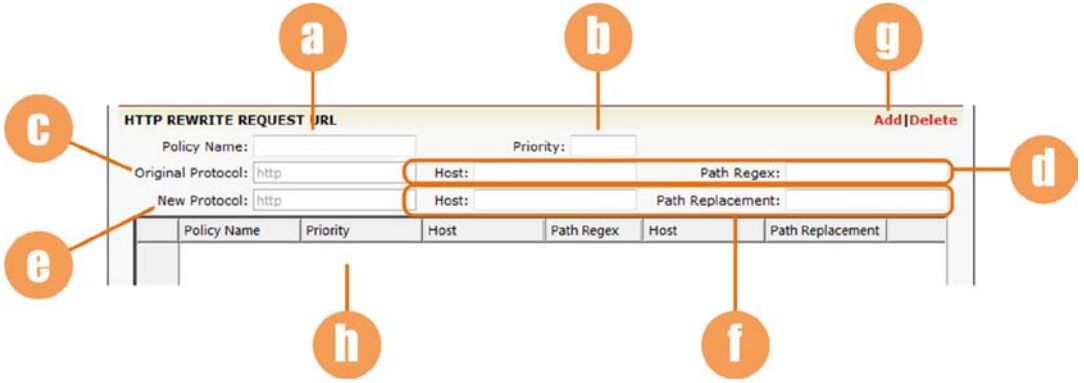


Virtual Services (Continue)

URL Rewrite (Continue)

HTTP Rewrite Response URL: Assign a name to the HTTP rewrite policy **[a]**. Set the priority of the rule **[b]**, the larger the higher. Use the scroll down menu to select an original protocol, HTTP, HTTPS or both **[c]**. Set the exact host string in the response "Location:" header and regular expression to match the path in the response "Location:" header **[d]**. Use the scroll down menu to select a new protocol **[e]**. Then assign a new host name to the rewritten request and configure a string to replace the part matching Path Regex **[f]**.

Click on the desired action link "Add" **[g]**. The configurations will be displayed in the table below **[h]**.

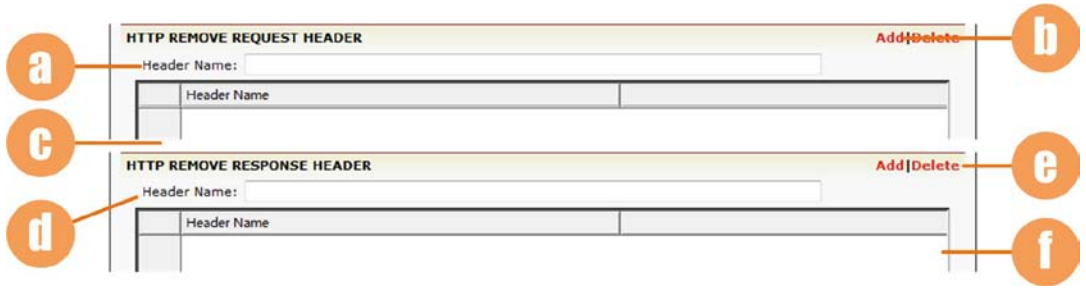


Virtual Services (Continue)

URL Rewrite (Continue)

HTTP Remove Request Header: Input the name of the HTTP header to be removed from all client requests for this virtual service in the text box **[a]** and click on the action link **[b]**. Then, the header name will be displayed in the table **[c]**. To delete a header name from the table, select it in the table and click on the action link "Delete" **[b]**.

HTTP Remove Response Header: Input the name of the HTTP header to be removed from all server responses for this virtual service in the text box **[d]** and click on the action link **[e]**. Then, the header name will be displayed in the table **[f]**. To delete a header name from the table, select it in the table and click on the action link "Delete" **[e]**.



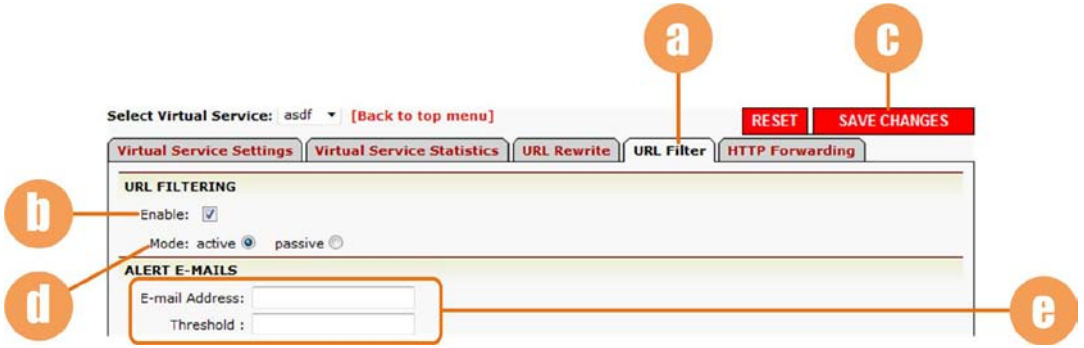
Virtual Services (Continue)

URL Filter

Make certain you are in Config mode and Select the **"URL Filter**" sub tab **[a]**, and a configuration screen will appear. URL filtering includes VIP URL filtering and global URL filtering. (Here, only VIP URL filtering configuration is described. Please refer to the "Caching Proxy" chapter for global URL filtering configuration.) The contents in this configuration page are available only if you have selected the HTTP or HTTPS type of virtual service.

URL Filtering: Enable the VIP URL filtering feature **[b]**, and save the change by clicking on "SAVE CHANGES" button **[c]**. After saving, more configurations appear.

Alert E-mails: Set the behavior mode for filtering as active or passive **[d]**. Configure the destination email address for filter related alerts and the threshold for the number of dropped requests before issuing the alert **[e]**.



Virtual Services (Continue)

URL Filter (Continue)

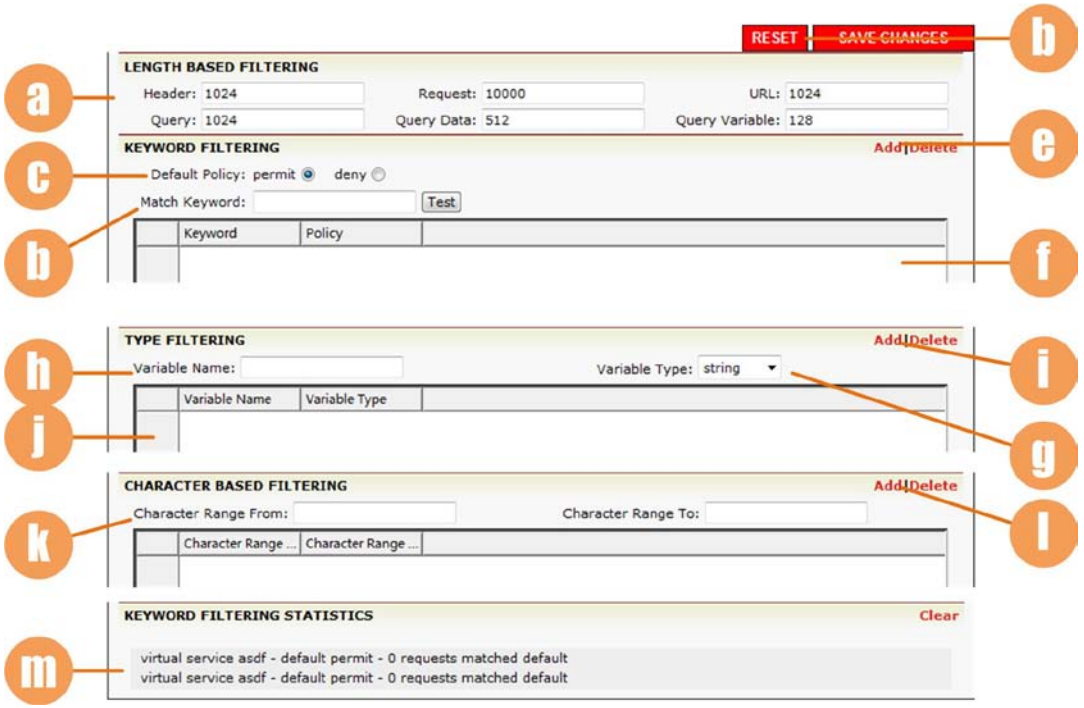
Length Based Filtering: Configure the filter length parameters for requests coming into the network **[a]**. You may reset by clicking on the action link **[b]**.

Keyword Filtering: Assign the default filtering policy as permit or deny **[c]** and supply the Match Keyword text field **[b]**. Then, click the action link "Add" **[e].** The restrictions will be displayed in the sort ready table **[f]**. Note that if you want to change the default global filtering policy, you must firstly delete all configured restriction entries displayed in the table **[f]**.

Type Filtering: Set the variable type (integer or string) **[g]**, and supply the variable name **[h]**. Click the desired action link "Add" **[i]**. Then, the restrictions will be displayed in the sort ready table **[j]**. To remove an existing restriction, select the desired entry in table **[j]** and click on the action link "Delete" **[i]**.

Character Based Filtering: Configure the filter character parameters for requests coming into the network. To deny specific requests based on URL character ranges (ASCII values); enter the starting and ending values of the character range **[k]**. Click on the action link "Add" **[l]**.

Keyword Filtering Statistics: Display the statistics of default policy, deny policy and permit policy of URL keyword filtering **[m]**.



Virtual Services (Continue)

HTTP Forwarding

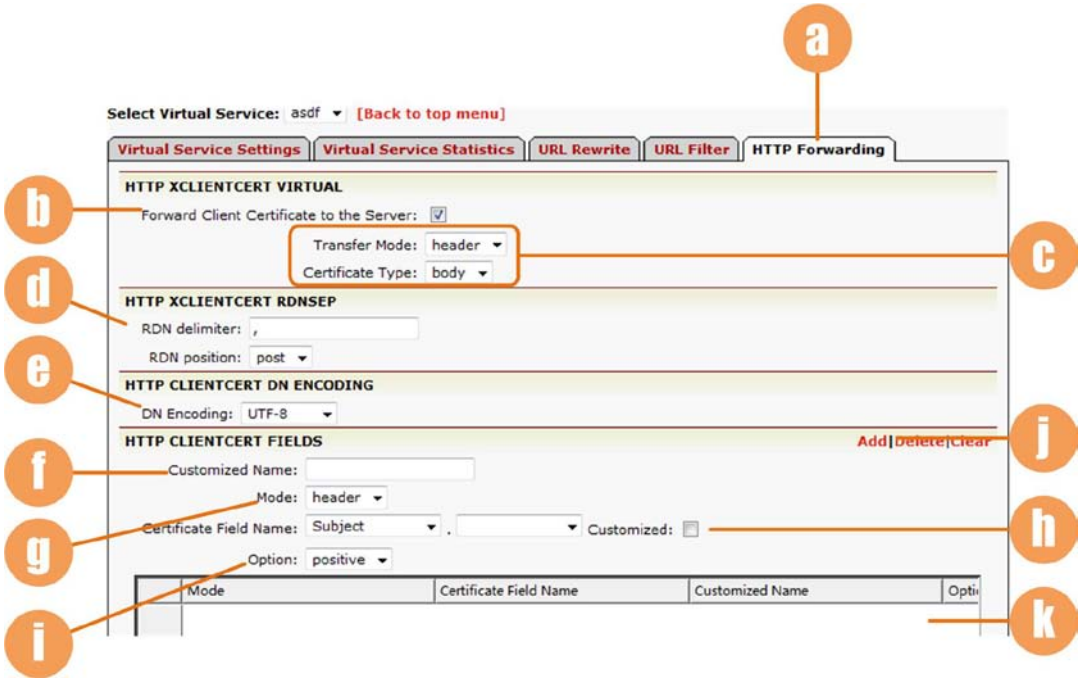
Select the "**HTTP Forwarding**" sub tab **[a]**. The contents in this configuration page are available only if you have selected the HTTP or HTTPS virtual service. Note: The configuration pages of the HTTP and HTTPS are different. Here, we take the HTTPS page as an example.

HTTP XClientCert Virtual: Turn on forwarding client certificate to the server by selecting the check box **[b]**, and specify the transfer mode and certificate type **[c]**.

HTTP XClientCert RDNSEP: You can customize RDN field separator (defaults to ",") and specify the position ("pre" or "post") to put the separator **[d]**.

HTTP ClientCert DN Encoding: You can specify the DN encoding format via the selector **[e]**. It defaults to UTF-8.

HTTP ClientCert Fields: Input a customized name for the HTTP certificate field **[f]**. Specify the transfer mode **[g]**, the certificate field name **[h]** which can be customized, and the DN sequence via the selector **[i]**. Then, click on the action link "Add" **[j]**, then all the configurations will be presented in the table **[k]**.

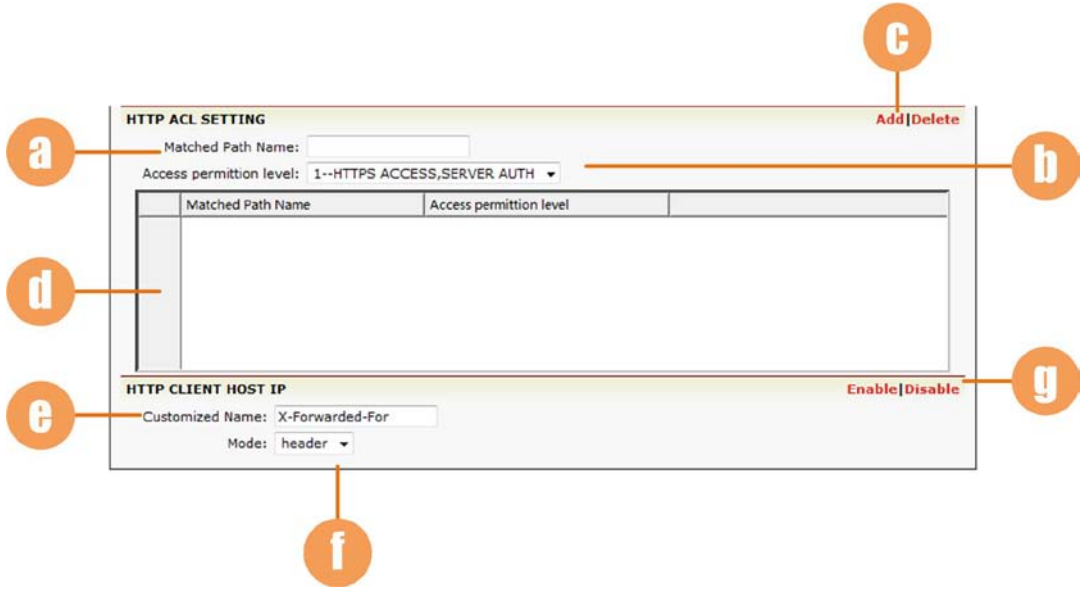


Virtual Services (Continue)

HTTP Forwarding (Continue)

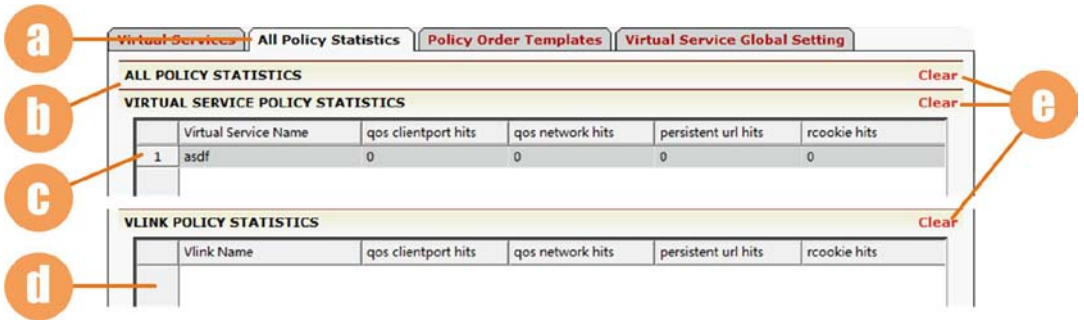
HTTP ACL Setting: Set the matched URL **[a]** by which the network resource defined needs to be protected through access level. Select the access permission level through the pull down menu **[b]**. Click on the "Add" action link **[c]**, and the added ACL rule will be presented in the table **[d]**.

HTTP Client Host IP: Specify a customized name for the IP address **[e]**. Select the forwarding mode via the pull down menu **[f]**. Finally, click on the action link "Enable" **[g]** to forward the IP address to the backend server.



All Policy Statistics

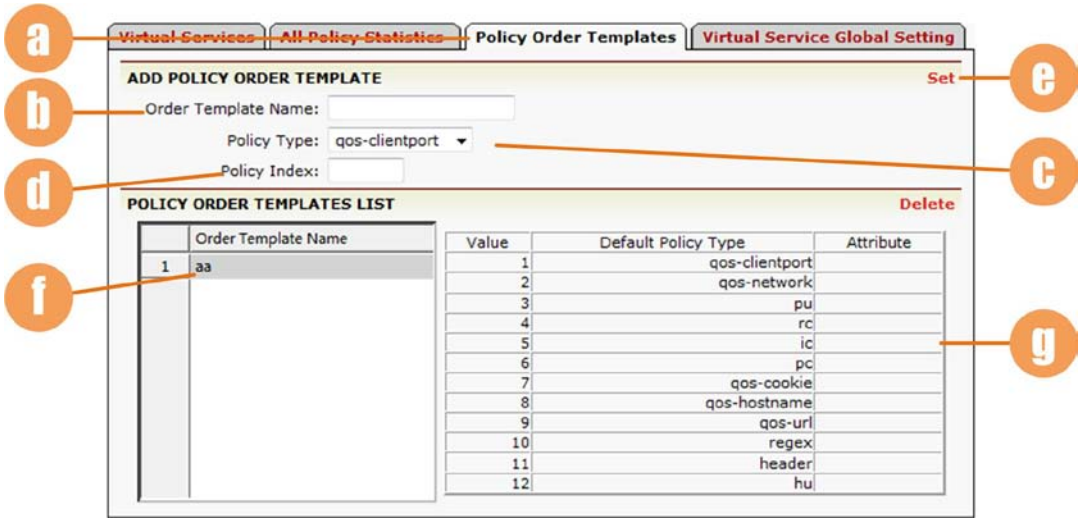
Select the tab "**All Policy Statistics**" **[a]**. This page shows how many times that all policies have been matched **[b]**, as well as statistics of virtual service policy **[c]** and vlink policy **[d]**.You can clear desired statistics information by clicking on the action link "Clear" **[e]**.



Policy Order Templates

Make certain you are in Config mode and have selected the "**Policy Order Templates**" tab **[a]**.

Assign a name for the new order template **[b]**. Specify the policy type via the scroll down menu **[c]**. Supply the desired index [d] for the specified policy. Then, click on the action link "Set" **[e]**, and the created order template will be listed in the table below. If you click on the template name in the table **[f]**, the new policy orders will be displayed in the column "Attribute" on the right **[g]**.



Virtual Service Global Setting

Click on the "**Virtual Service Global Setting**" tab **[a]**. A new configuration window will be displayed.

Specify the proxy mode for the system via the radio buttons **[b]**. In addition to the "reverse" and "transparent" modes, the system also supports the "triangle" mode.

Enable global x-forwarded-for function by selecting the check box **[c]**.

Set the client certificate header name **[d]**. The default name is X-Client-Cert.

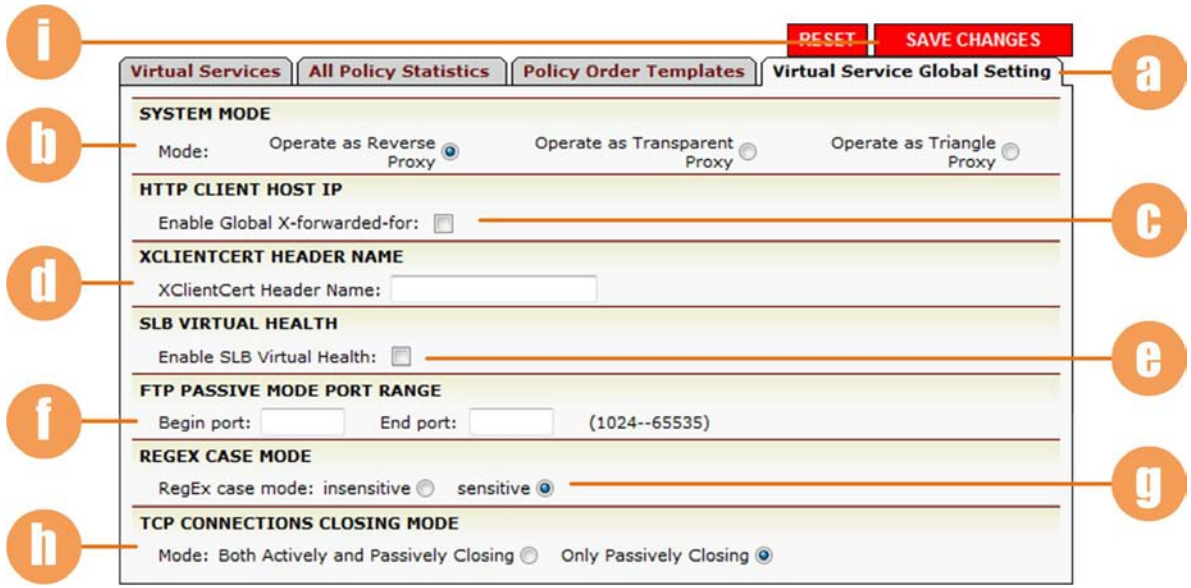
Enable SLB virtual service health check via the check box **[e]**.

Set the port range for data connection in passive FTP/FTPS in the text fields **[f]**. Users can add 20 to 1000 ports to a port range. The port range is global. It can be used for all FTP/FTPS virtual services.

Enable or disable the global SLB regexcase mode via the radio button **[g]**.

Enable TCP connections soft close feature via the radio button **[h]**.

Once any change is made, the "RESET" and "SAVE CHANGES" buttons **[i]** will appear. Click on the desired button to reset or save the change.



Check Lists

A health checker is defined as one transaction of health check. It consists of sending one message and receiving one response. A list of health checkers can compose a health checker list, which is identified by the health checker list name.

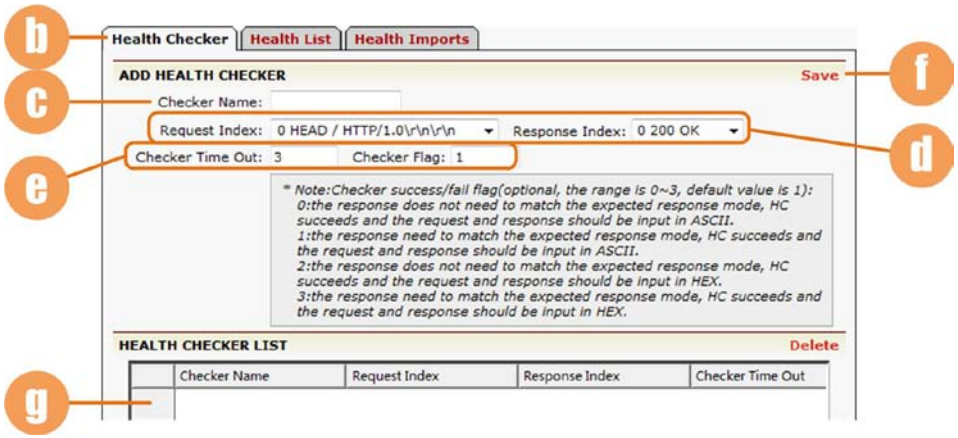
Note that the health checker list will work while doing health check only when the hc_type is set as “script_tcp” or “script_udp”.

Make certain you are in Config mode and have selected “**Check Lists**” from the sidebar **[a]**. The configuration window will display three tabs **[b]**. The “Health Checker” page is displayed by default.

Health Checker

Supply a checker name **[c]**. Set the request index and response index by selecting from the scroll down menu **[d]**. Set checker timeout and checker flag **[e]**. Click on the “Save” action link **[f]**. The created health checker will be saved and displayed in the table below **[g]**.

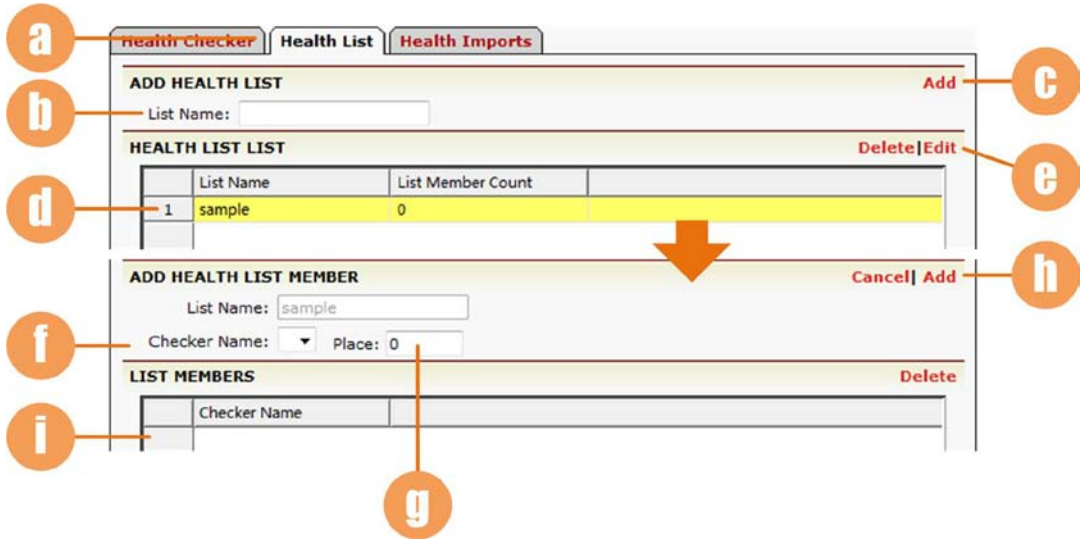
To edit a health checker, you can select it in the table **[g]** and then make desired changes. At last, remember to click on “Save” **[f]** to make the changes take effect.



Health List

Click on the "**Health List**" tab **[a]**. Assign a health list name **[b]**. Click on the action link "Add" **[c]**. A new health checker list is created and will be displayed in the sort ready table below **[d]**. Select a desired health list and double click on it or click on the action link "Edit" **[e]**. A new configuration page will be displayed.

This page is used to add members to the specified health list. Use the scroll down menu **[f]** to select the created checkers. Set the place index for the selected checker **[g]**. Click on the desired action link "Add" **[h]**. The selected checker is added in the specified health list, and will be displayed in the table below **[i]**.



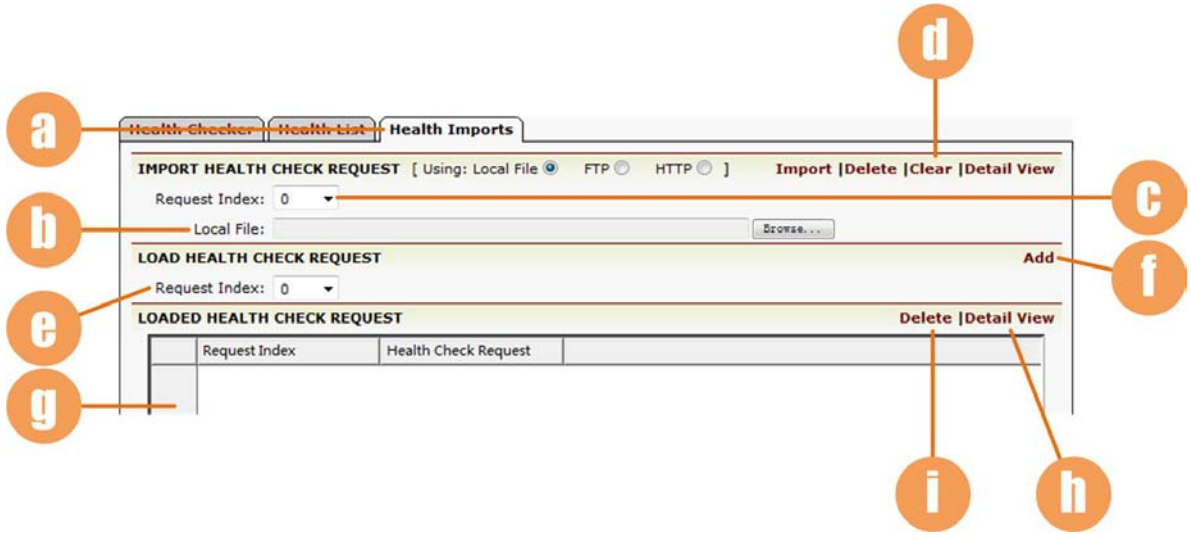
Health Imports

Click on the "**Health Imports**" tab **[a]**. You can import a health request/response file from a remote URL, and further load imported files into memory.

Input the URL which the request file should be imported from **[b]**, and select the index of the file from the selector **[c]**. Then, click on the action link "Import" **[d]**. After the file is imported, you can select the index of the imported file from the selector **[e]** and click on the action link "Add" **[f]**. The newly imported request file will be displayed in the table below **[g]**. Note that only after you have imported a request file can you load it into the memory. You can view detailed information of a request file by double clicking it in the table **[g]** or clicking on the action link "Detail View" **[h]**.

To delete a loaded request file, you must first select the file from the list **[g]** and click on the action link "Delete" **[i]**, and then select the index of the file from the selector **[c]** and click on the action link "Delete" **[d]**.

To delete a file which has been imported but not loaded into memory yet, you only need to select an index from the selector **[c]** and click on the action link "Delete" **[d]**. You can also clear all imported request files by clicking on "Clear" action link [d], or view details of desired imported request file by clicking on the action link "Detail View" **[d]**.



Health Imports (Continue)

To import a health response file from a remote URL, and further load the imported file into memory, you need to first input the URL which the response file should be imported from **[a]**, and select the index of the file from the selector **[b]**. Click on the action link "Import" **[c].** After the file is imported successfully, you can select the index of the imported file from the selector **[d]** and click on the action link "Add" **[e]**. The newly imported response file will be displayed in the table below **[f]**. Note that only after you have imported a response file can you load it into the memory. You can view detailed information of a response file by double clicking it in the table [f] or clicking on the action link "Detail View" **[g]**.

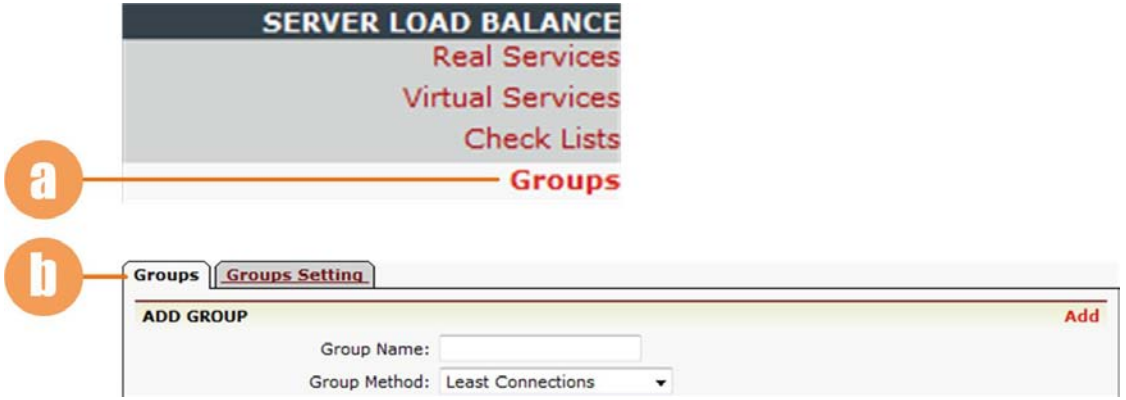
To delete a loaded response file, you must first select the file from the list **[f]** and click on the action link "Delete" **[h]**. And then select the index of the file from the selector **[b]** and click on the action link "Delete" **[c]**.

To delete a file which has been imported but not loaded into memory yet, you only need to select the index of the file from the selector **[b]** and click on the action link "Delete" **[c]**. You can also clear all imported response files by clicking on "Clear" action link **[c]**, or view details of desired imported response file by clicking on the action link "Detail View" **[c]**.

Groups

It is time to assign the previously defined real services to groups. A group is first defined by using the slb group command. This command will define a group to which you may add real servers.

Make certain you are in Config mode and have selected the feature link "**Groups**" from the sidebar **[a]**. The configuration window will display two tabs. Click on the "Groups" tab **[b]**.

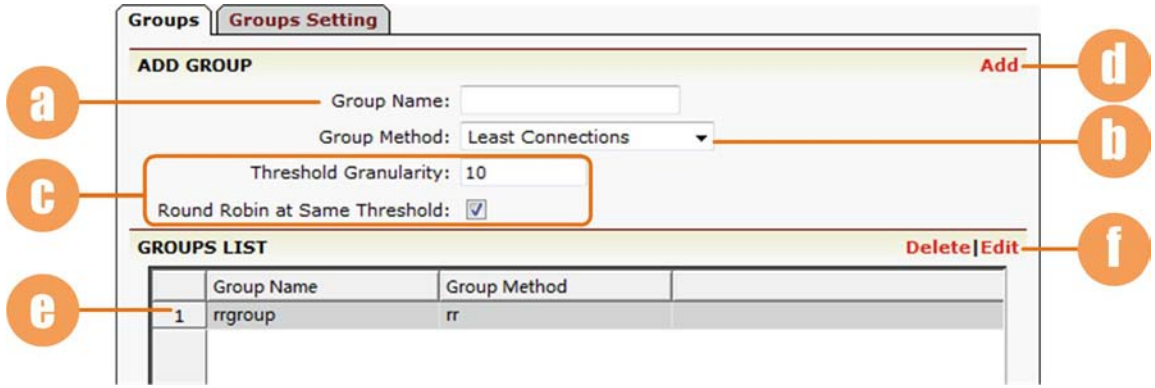


Groups

Supply the group name **[a]**. Select a group method from the pull down menu **[b]**. Depending on the group method selected, different parameter fields will appear for configuration **[c]**.

After making configurations on those parameter fields, click on the action link “Add” **[d]**. Then the newly created group will be displayed in the sort ready table below **[e]**.

Choose a group in the table and double click on it or click on the action link “Edit” **[f]**. A new configuration page will be displayed.

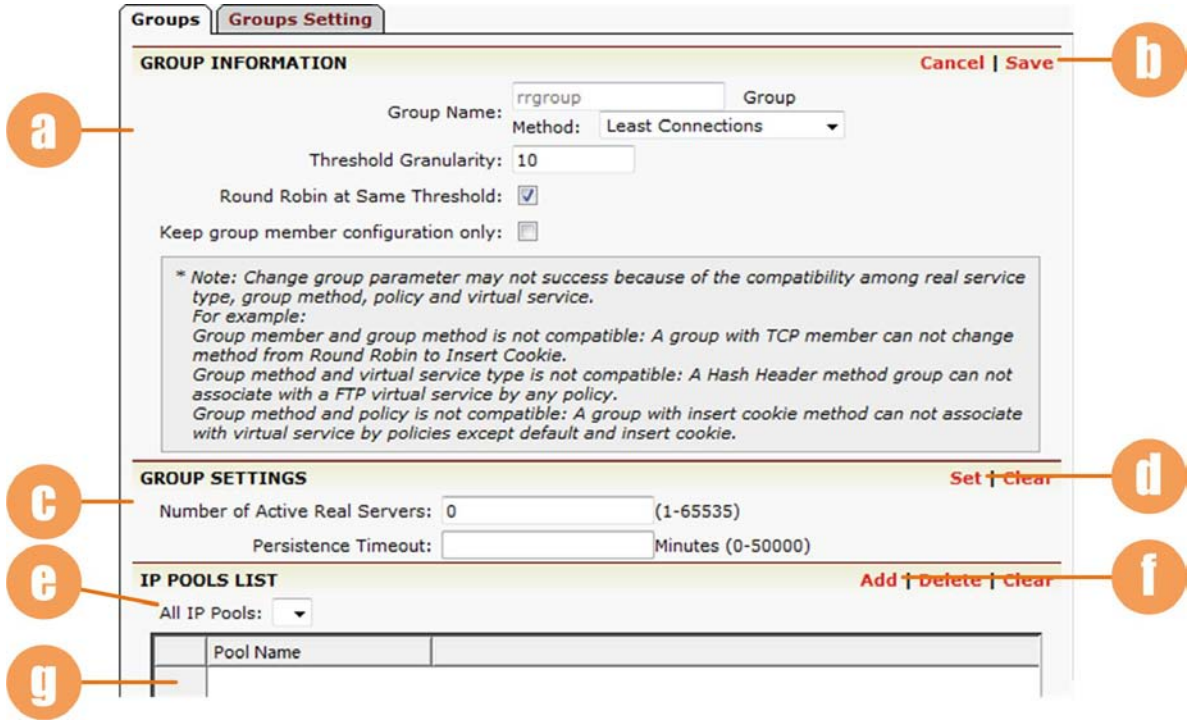


Groups (Continue)

You can modify the group method and make relevant configurations in the area **[a]**, and click on “Save” **[b]** to save your changes. Depending on the group method selected, different parameter fields will appear for configuration.

Input the number (1-65535) of real servers to activate in the text field **[c]**; for pi group, you can also set persistence timeout for it. Then, click on “Set” **[d]** to save your setting.

To assign an IP Pool to this group, you should select a pool name via the pull down menu **[e]**, and click on the “Add” action link **[f]**, the created IP pool will displayed in the following table **[g]**.



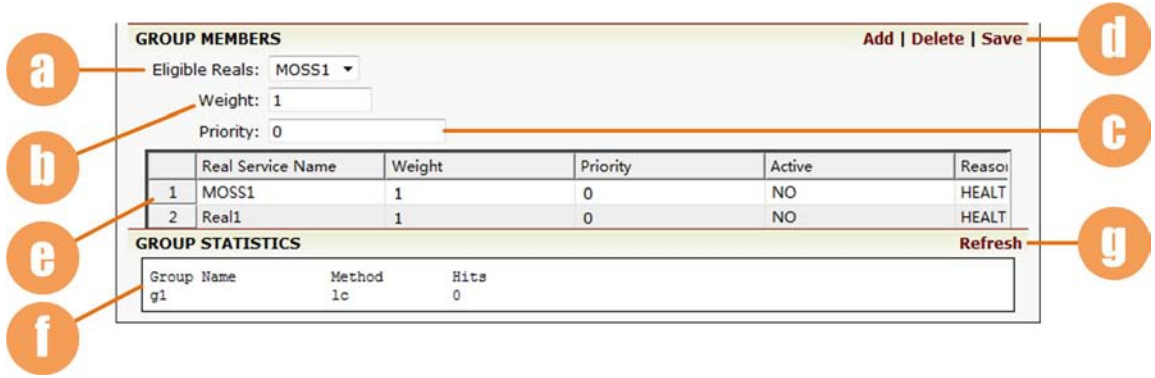
Groups (Continue)

To assign a configured real service to a newly created group, you can select an eligible real service via the pull down menu **[a]**, configure required parameter **[b]**, and set the priority of the group member **[c]**.

For the parameter **[b]**, set the Weight value for the method lc, rr, ph, pi, ic, rc, hc, hh or sslsid; set the Cookie value for pc; set the URL value for pu; for other methods, no parameter will be required for configuration.

Then, click on the "Add" action link **[d]** and the assigned real service will appear in the table **[e]**. You can change the configured parameters in the table directly, and click on "Save" **[d]** to save your changes.

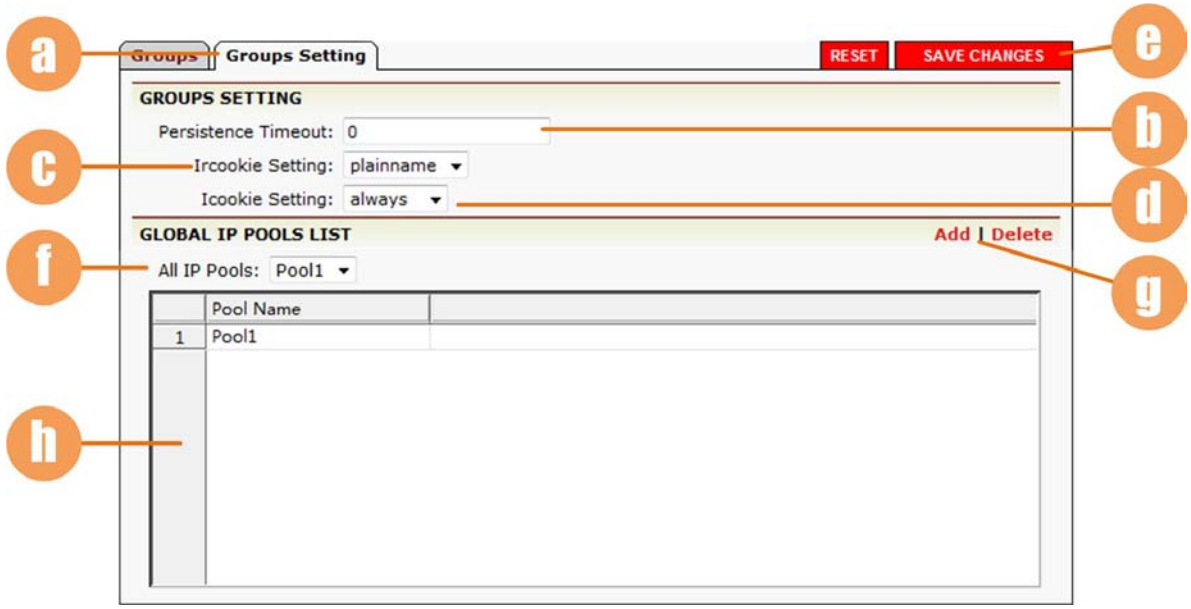
At this page, you can view real-time group statistics **[f]**. To view the latest statistics, you can click on "Refresh" **[g]**.



Groups Setting

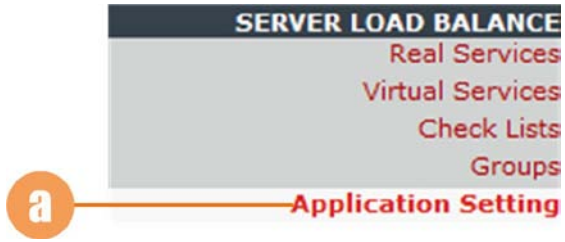
Click on the "**Groups Setting**" tab **[a]**, and a new configuration window will be displayed. Set "pi" group method timeout value for SLB **[b]**. Use the pull down menu to set the SLB insert/rewrite cookie mode **[c]**. Use the pull down menu to finish the insert cookie setting **[d]**. Remember to click on the "SAVE CHANGES" button to save the settings **[e]**.

To assign an IP pool as a global IP pool, select an IP pool via the pull down menu **[f]**, and click on the "Add" action link **[g]**, the created IP pool will be displayed in the following table **[h]**.



Application Setting

Make certain you are in Config mode and have selected the feature link "**Application Setting**" from the sidebar **[a]**. The configuration presents two tabs. The SIP NAT configuration page is displayed by default.



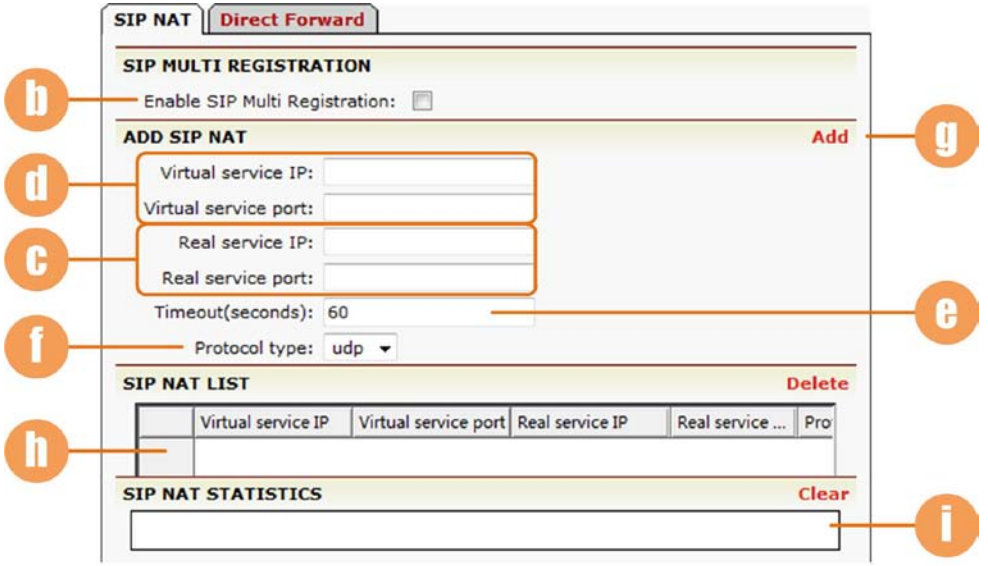
SIP NAT

Users may set the SIP NAT rules for the defined SIP real services on this configuration page.

Turn on the multi-register function via the check box **[b]**, if the backend servers don't share the same database.

Set the source IP address and port of a SIP real service **[c]**. And set the source IP address and port of the virtual service **[d]** which the packets from the SIP real service will be translated into. Configure the timeout value (in seconds) **[e]**. Specify the protocol of the packets to be translated through the pull down menu **[f]**. Click on the action link "Add" **[g]** to add the SIP NAT rule. Then, the rule will be displayed in the sort ready table **[h]**.

Users can view the statistics of all the SIP NAT rules **[i]**.



Direct Forward

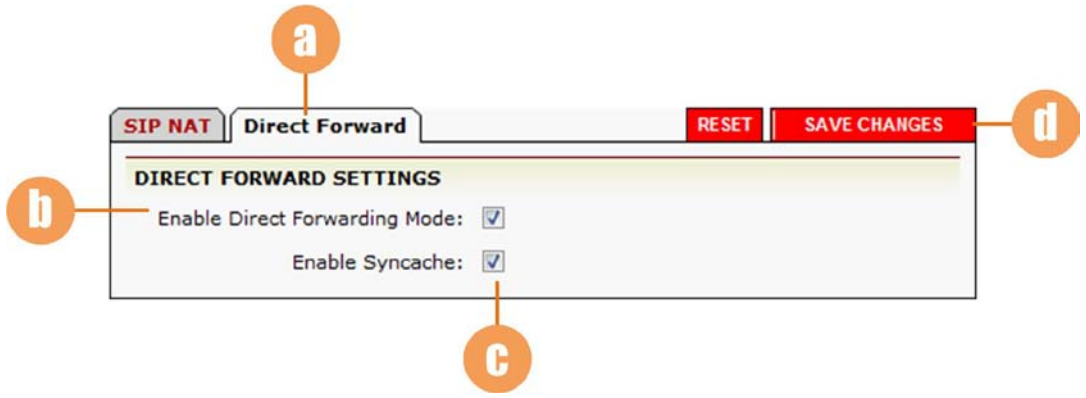
Direct Forward is a new L4 SLB module by utilizing a multi-thread and non-lock architecture based on a multi-core system. This new architecture has maximized the advantage of the multi-core system. Compared with the traditional L4 SLB, the Direct Forward module provides remarkably better L4 SLB performance.

Click on the "**Groups Setting**" tab **[a]**.

To enable the Direct Forward function, you can select the check box **[b]**.

You can also enable the Direct Forward module's syncache function via the check box **[c]**. This function can avoid synflood attacking effectively.

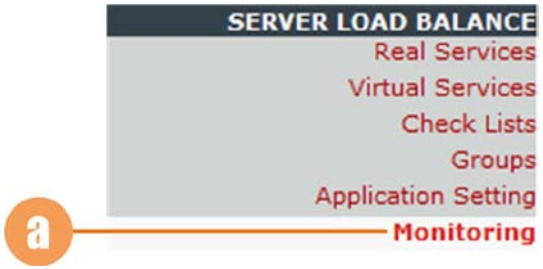
Remember to click on the "SAVE CHANGES" button to save the settings **[d]**.



Monitoring

This feature allows you to monitor the general status of the related groups and real services of a specified virtual service, and further view their statistic information.

Make certain you are in Enable mode and select "**Monitoring**" from the sidebar **[a]**. The configuration presents four tabs. The "**Status page**" **[b]** is displayed by default.



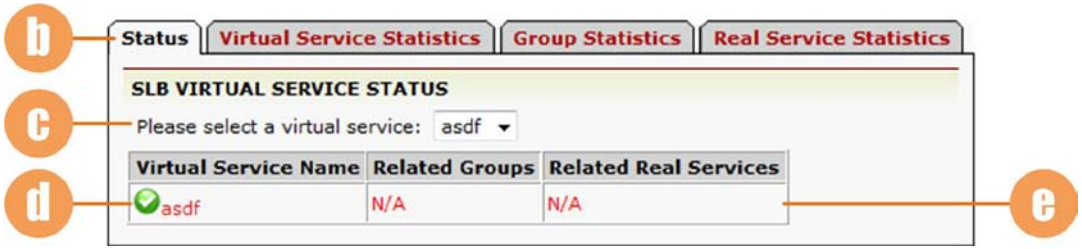
Status

Select a desired virtual service via the selector **[c]**, and the general status information of its related groups and real services will be displayed in the table **[d]**:

- : Enabled and Up (healthy);
- : Enabled but Down (unhealthy);
- : Disabled.

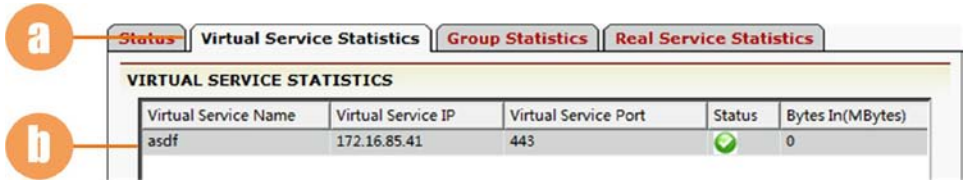
Note: The icon descriptions also apply to the "Virtual Service Statistics" and "Real Service Statistics" pages.

You can view the statistics of a virtual service, a group or a real service by clicking on it in the table [e].



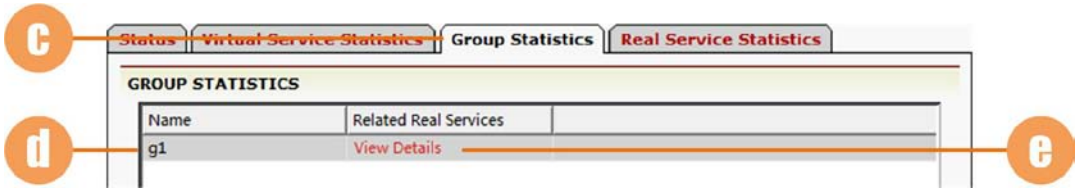
Virtual Service Statistics

Select the "**Virtual Service Statistics**" tab **[a]**, and the new configuration page will display the statistics of all virtual services in details in the table **[b]**. The page is refreshed automatically every twenty seconds.



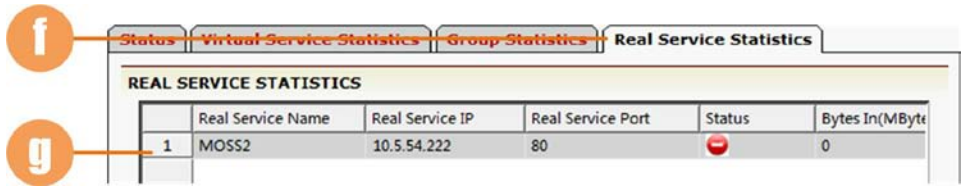
Group Statistics

Select the "**Group Statistics**" tab **[c]**, and the new page will display the name of all groups in the table **[d]**. You can click on the "View Details" link **[e]** of a group, and then you will be presented with the real service details of the group on the Real Service Statistics page. This page is refreshed automatically every twenty seconds.



Real Service Statistics

Select the "**Real Services Statistics**" tab **[f]**, and the new page will display the statistics of all real services in details in the table **[g]**. The page is refreshed automatically every twenty seconds.



Proxy

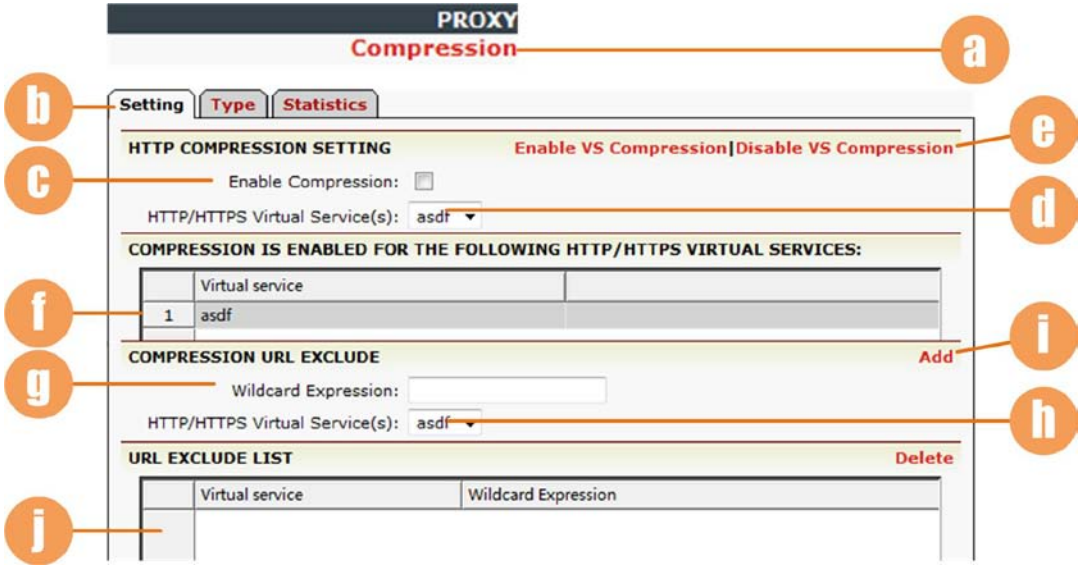
Compression

Setting

Make certain that you are in the Config mode and have selected "**Compression**" **[a]**. The configuration window will present three tabs. The "**Setting**" page is displayed by default **[b]**.

Enable or disable the HTTP data compression via the check box **[c]**. The selector **[d]** lists all configured HTTP/HTTPS virtual services. You can choose one and click on the "Enable VS Compression" action link **[e]**. The HTTP/HTTPS virtual service for which compression feature is enabled will be displayed in the sort ready table **[f]**. To disable the compression of a virtual service, you can select the service in the table **[f]** and click on the "Disable VS Compression" action link **[e]**.

You can add a url-exclude policy for a virtual service to disable the compression function. Input the wildcard expression **[g]**, and select a desired HTTP/HTTPS virtual service from the selector **[h]**. Click on the action link "Add" **[i]**, and the new configuration will be displayed in the sort ready table below **[j]**.

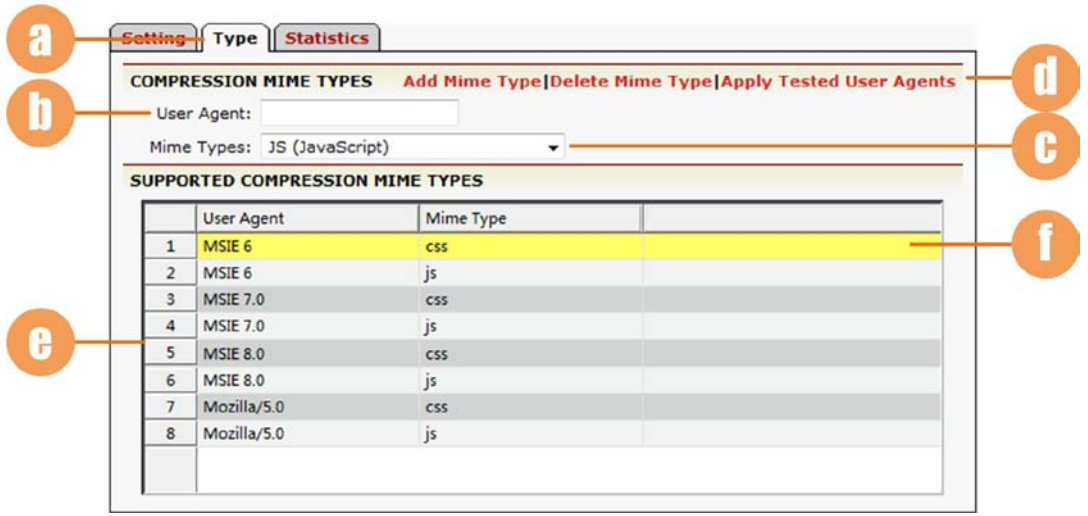


Type

Click on the "**Type**" tab **[a]**. Enter a particular browser name in the field **[b]**. Select one compression MIME type from the "Mime Type" select box [c]. Click on the "Add Mime Type" action link **[d]**. The added user agent and mime type will be displayed in the table below **[e]**.

To remove the added user agent and mime type, select a desired entry or multi entries from the displayed list **[f]** and click on the "Delete Mime Type" action link **[d]**.

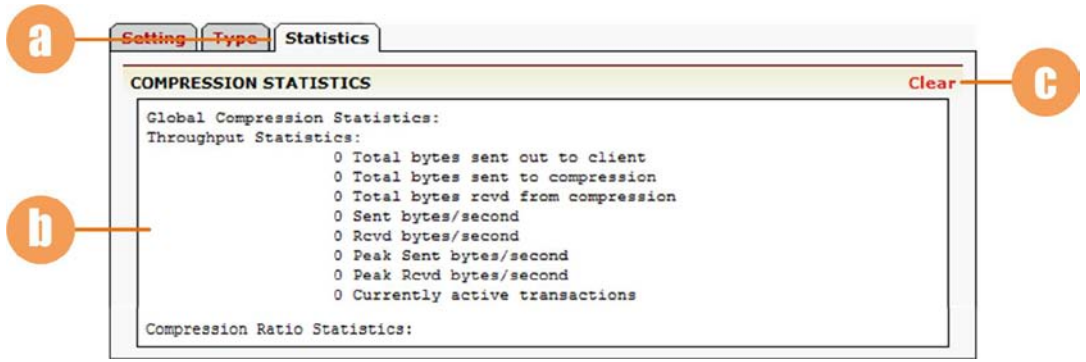
Click on "Apply Tested User Agents" **[d]**, and the default user agents and mime types will be displayed in the table **[e]**.



Statistics

Click on the "**Statistics**" tab **[a]**.

The main window displays global compression statistics and content statistics information **[b]**. Click on "Clear" action link **[c]**, and the statistics will default to 0.



Caching Proxy

The reverse proxy cache better enhances the overall speed and performance of your Web servers. Using the cache will improve website performance and throughput, and will reduce server load by moving heavily requested data closer to the end user and away from the backend servers. You may set up limitations on queries made to your network based on header length, request length, URL and query length as well as ASCII character ranges and keyword matches.

Global URL Filter

Make certain you are in Config mode and have selected the feature link "**Caching Proxy**" **[a]**. The configuration window will display four tabs, and the default page is "**Global URL Filter**" **[b]**.

On the Global URL Filter page, you can enable the global URL filtering feature by selecting the "Enable" check box **[c]**. Save the change by clicking on the "SAVE CHANGES" button **[d]**. After saving, more configurations appear.

You can set the behavior mode for filtering as active or passive **[e]**, and enable or disable the control characters filtering feature of URL filter via the check box **[f]**. Configure the destination email address for filter related alerts and the threshold for the number of dropped requests before issuing the alert **[g]**.

Click on the "SAVE CHANGES" button to save the changes **[d]**.

Global URL Filter (Continue)

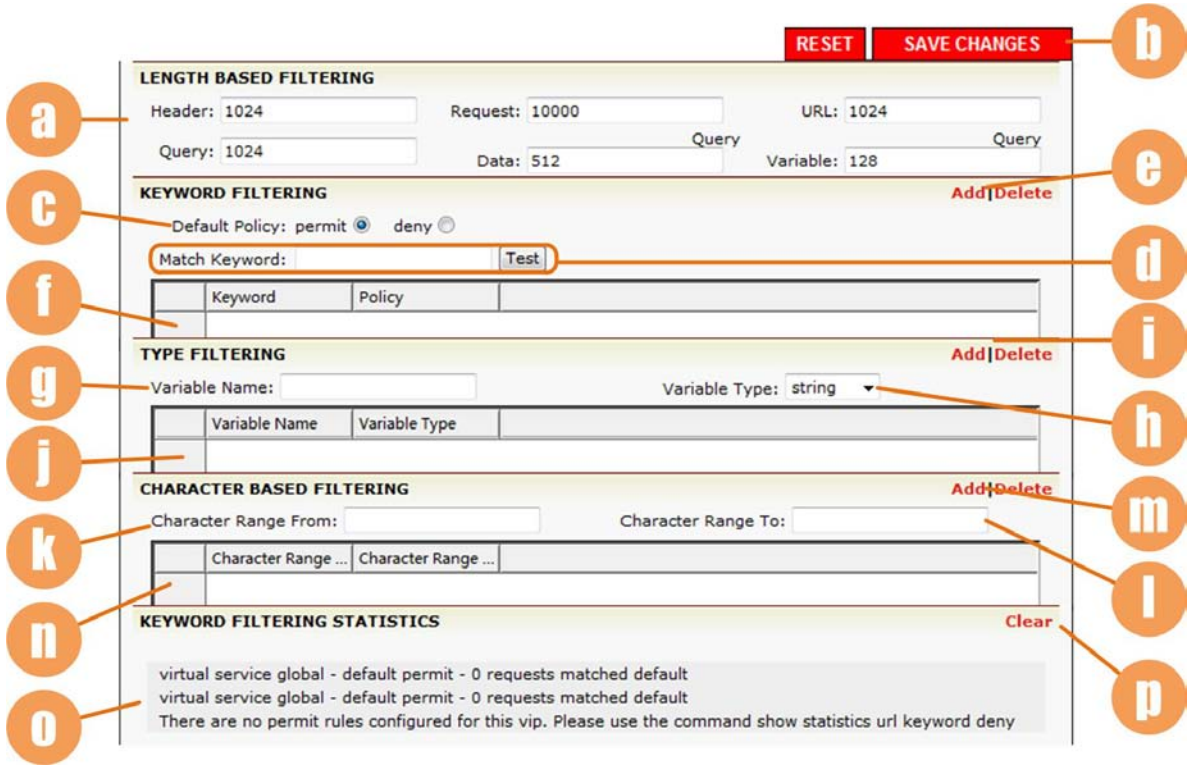
Configure length-based filtering rules for requests coming into the network **[a]**. Then click on the action link “SAVE CHANGES” to save your settings **[b]**.

Assign the default filtering policy as permit or deny **[c]**. Supply the match keyword and click on the “Test” button to check whether the inputted keyword matches one of configured regular expressions for URL filter rules **[d]**. Confirm your settings, and click the action link “Add” **[e]**. The restrictions will be displayed in the table **[f]**. Note: If you want to change the default global filtering policy, you must first delete all configured restriction entries displayed in the table here.

Name the variable in the text field **[g]**, and set the variable type (integer or string) **[h]**. Click the desired action link “Add” **[i]**. The new restriction will be displayed in the table **[j]**.

Configure character-based filter rules for requests coming into the network. To deny specific requests based on URL character ranges (ASCII values), enter the starting **[k]** and ending **[l]** values of the character range respectively and click on the action link “Add” **[m]**. The new restriction will be displayed in the table **[n]**.

This page also displays statistics about the filter URL keyword default policy, deny policy and permit policy **[o]**. You can click on “Clear” **[p]** to clear all statistics.



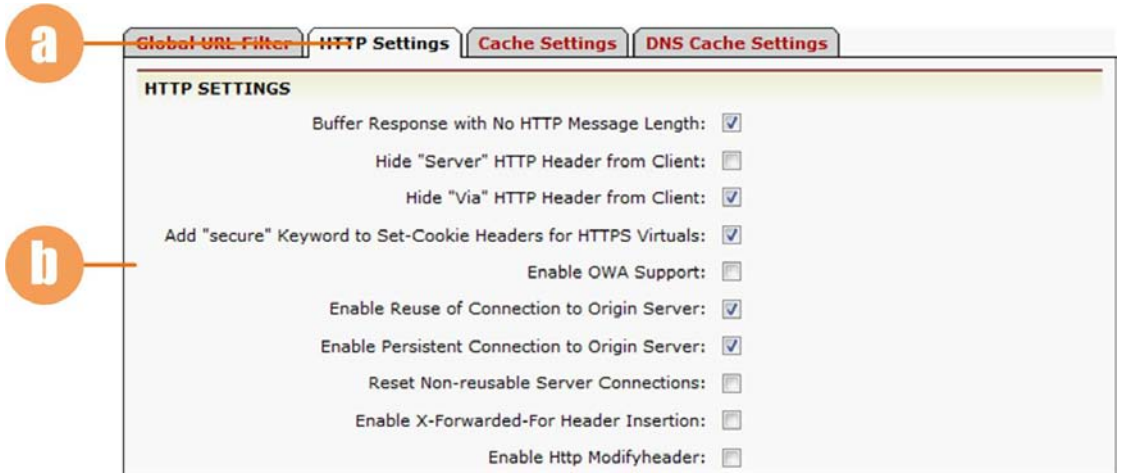
HTTP Settings

This page allows you to set/enable various parameters for your network caching strategy. For specific HTTP settings based on individual virtual sites, please refer to the "Virtual Services" section in the "Server Load Balancing" chapter.

Select the "**HTTP Settings**" tab **[a]**.

HTTP Setting: You may enable the following functions **[b]**:

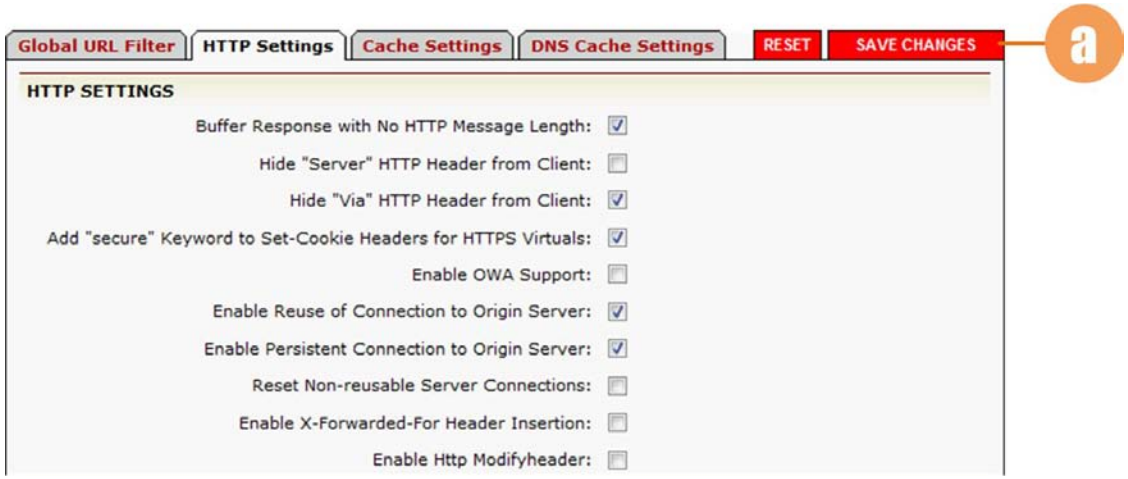
- Buffer response with no HTTP message length: When enabled, responses that don't process an "end of response" HTTP message length indicator within the headers will still be buffered before returning the information to the client.
- Hide "Server" HTTP header from client: Removes Server header from the response that is forwarded to the client.
- Hide "Via" HTTP header from client: Does not insert Via header into the response that is forwarded to the client.
- Add "secure" keyword to Set-Cookie headers for HTTPS Virtuals: Inserts secure keyword into the Set-Cookie header in the responses that are sent to HTTP clients.
- OWA support: Enables or disables the subsystem, which inserts OWA (Outlook Web Access) specific header FRONT-END-HTTPS: on in the requests forwarded to backend servers.



HTTP Settings (Continue)

- Reuse of connection to origin server: If disabled, each connection will be used only for a single transaction after which the connection is terminated. If enabled, each server connection will be used by multiple transactions.
- Persistent connection to origin server: When connection reuse is enabled, enabling connection persistence ensures that all transactions from the same client connection are forwarded to the same backend server. If connection reuse is enabled but connection persistence is disabled, then transactions from the same client connection may be forwarded to different backend servers. Note that the connection persistence option is only applicable when real server persistence methods such as hash IP or persistent cookie are disabled.
- Reset non-reusable server connections.
- X-Forwarded-For header insertion: Turns on/off inserting the X-Forwarded-For header in the request forwarded to the backend server. The client IP address is set as the value of this header. This header is currently inserted even if the client request already has an X-Forwarded-For header.
- HTTP Modifyheader: Enables or disables HTTP modify header.

Confirm your settings and click on “SAVE CHANGES” [a] to make them take effect.



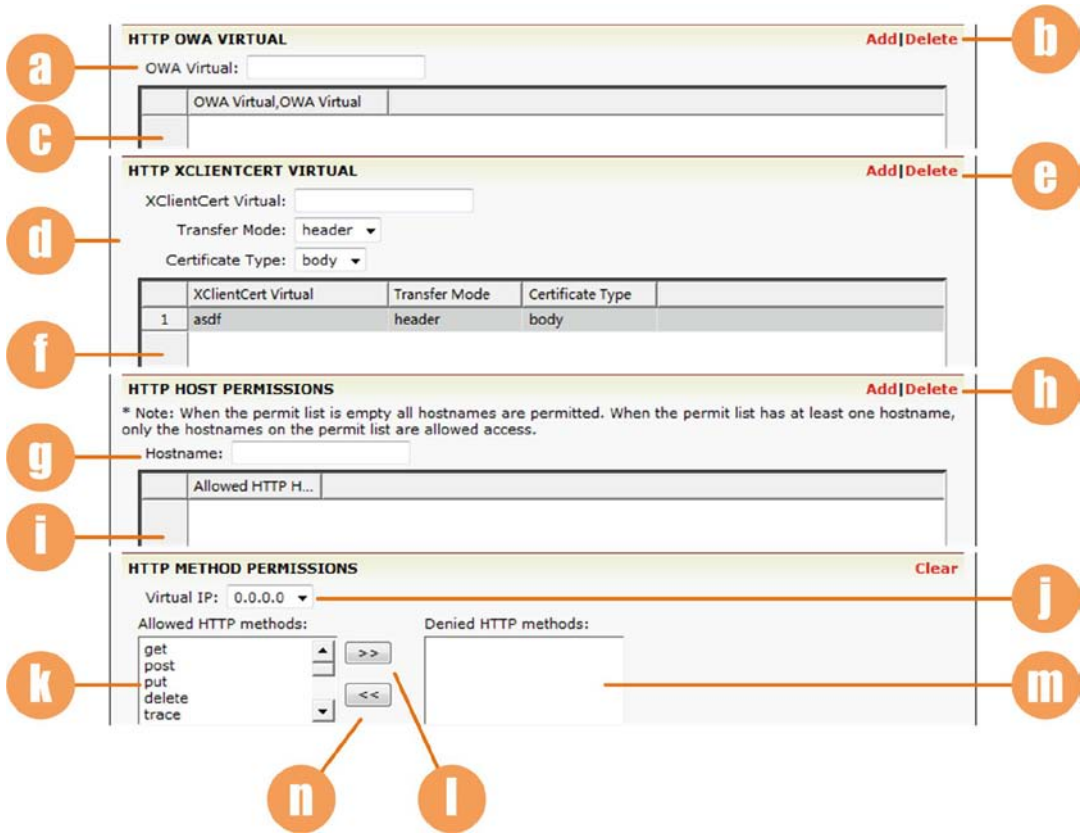
HTTP Settings (Continue)

HTTP OWA Virtual: Set an OWA virtual service in the text field **[a]**. Click on the desired action link "Add" **[b]**, and the OWA virtual service name will be displayed in the table **[c]**. To delete an entry, select the desired entry and click on the desired action link "Delete" **[b]**.

HTTP XClientCert Virtual: Set an Xclientcert virtual service in the text filed, and select the transfer mode and certificate type via the selectors **[d]**. Click on the desired link "Add" **[e]**, and then the Xclientcert virtual service name will be displayed in the table **[f]**. To delete an entry, select the desired entry and click on the desire link "Delete" **[e]**.

HTTP Host Permissions: Set the host name for HTTP Host Permissions **[g]**. Click on the desired action link "Add" **[h]**, and then the host will be displayed in the sort ready table **[i]**. To delete an entry, select the desired entry and click on the desire link "Delete" **[h]**.

HTTP Method Permissions: Use the selector **[j]** to set the virtual IP. Select the desired HTTP method in the field **[k]** and click on the button **[l]** to add it into the text field **[m]**. You can also select one method in the field [m] and click on the button **[n]** to move the method to the "Allowed HTTP method" list.



HTTP Settings (Continue)

HTTP Error Pages: Supply the HTTP error code **[a]**. Configure the desired destination that generated the error in the “Hostname” text field **[b]**. Set the location of the customized error page in the text field “URL” **[c]**. The supported HTTP error codes for importing customized error pages include:

400: Bad request

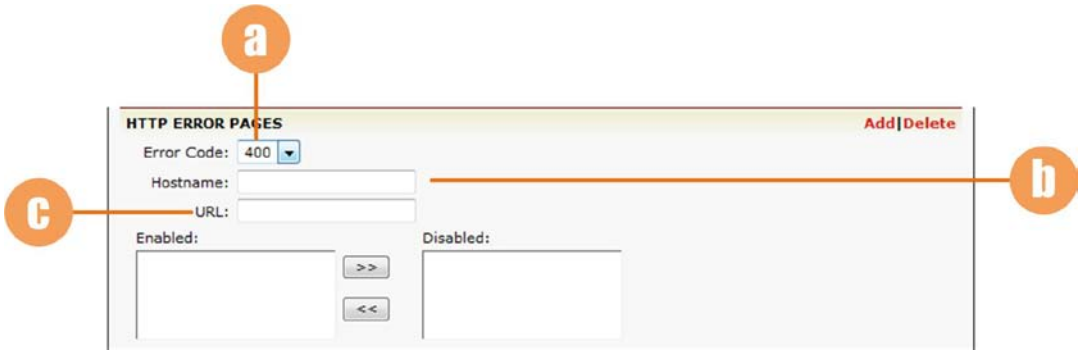
403: Forbidden

412: Precondition failed

416: Requested range not certifiable

502: Bad gateway

503: Service unavailable



Cache Settings

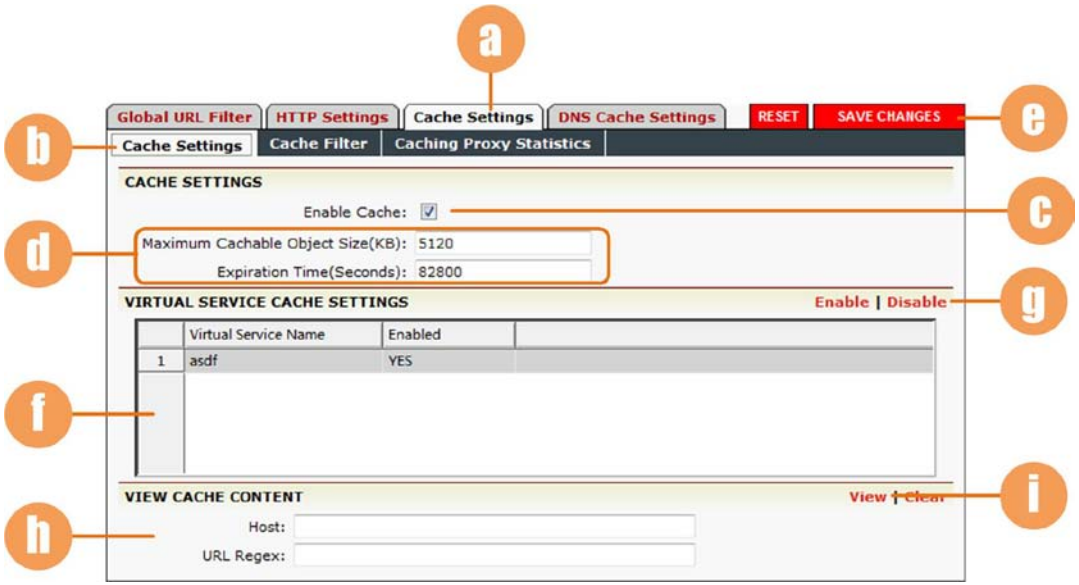
Select the "**Cache Settings**" tab **[a]**. You will be presented with three sub-tabs. The default page is "Cache Settings" **[b]**.

Cache Settings

You can enable the cache function via the check box **[c]**. If enabled, you need to further set the maximum size of cacheable objects (defaults to 5120KB) and the expiration time of the cached objects (defaults to 82800 seconds) in the text fields **[d]**. Then, click on "SAVE CHANGES" button to save your settings **[e]**.

This page also displays the cache settings of existing virtual services **[f]**. Here, you can enable or disable the cache setting for a virtual service. To do this, simply select a desired virtual service in the table and click on the "Enable" or "Disable" action link **[g]**.

To view specific cache contents, just supply the host name and URL regular expression **[h]** and click on the action link "View" **[i]**.



Cache Settings (Continue)

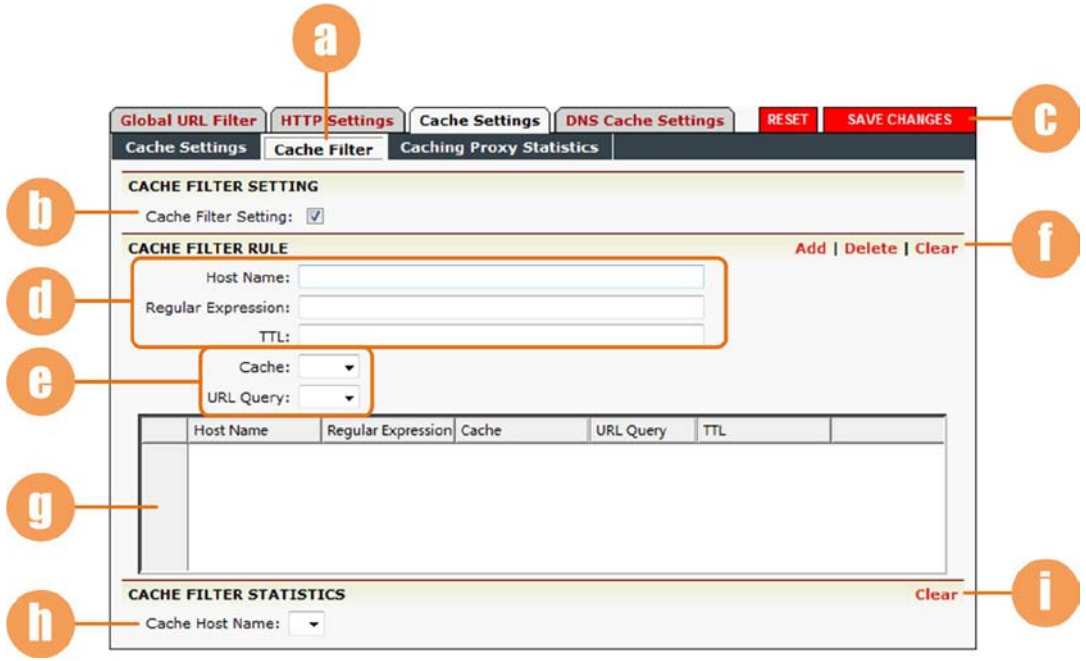
Cache Filter

Select the sub-tab "**Cache Filter**" **[a]**.

You can enable the cache filter function via the check box **[b]**. Remember to click on the "SAVE CHANGES" button **[c]** to save your change.

To add a cache filter rule, supply the host name, regular expression and TTL in the text fields **[d]** and choose to enable (yes) or disable (no) the Cache or URL query function for the host via the selectors **[e]**. Then, click on the action link "Add" **[f]**, and the rule will be displayed in the table **[g]**.

The "Cache Host Name" selector lists all hosts configured with cache filter rules. You can choose one from the selector **[h]** to view related cache filter statistics. To clear the statistics, simply click on the action link "Clear" **[i]**.



Cache Settings (Continue)

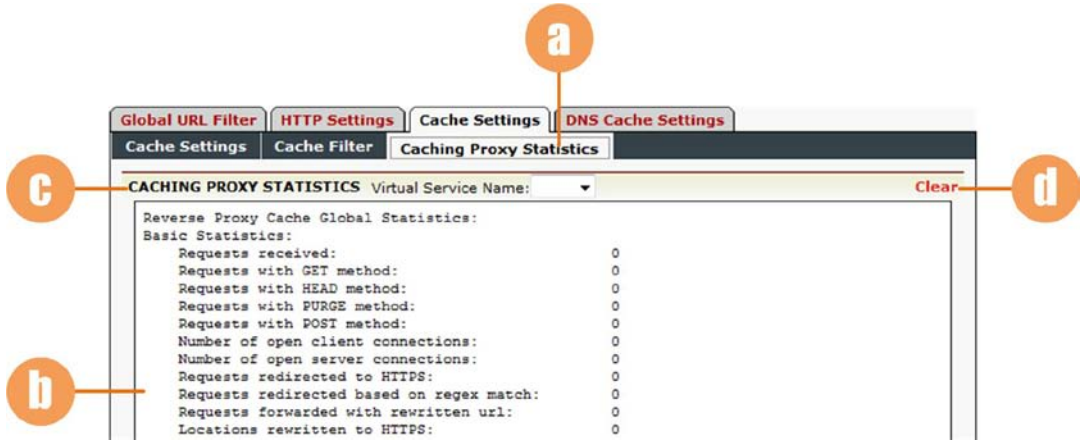
Caching Proxy Statistics

Click on the "**Caching Proxy Statistics**" sub-tab **[a]**.

The window displays the statistics information about reverse proxy cache **[b]**, including basic statistics and advanced statistics.

You can select a desired virtual service from the selector **[c]** to view its cache proxy statistics.

To clear the statistics, simply click on the action link "Clear" **[d]**.



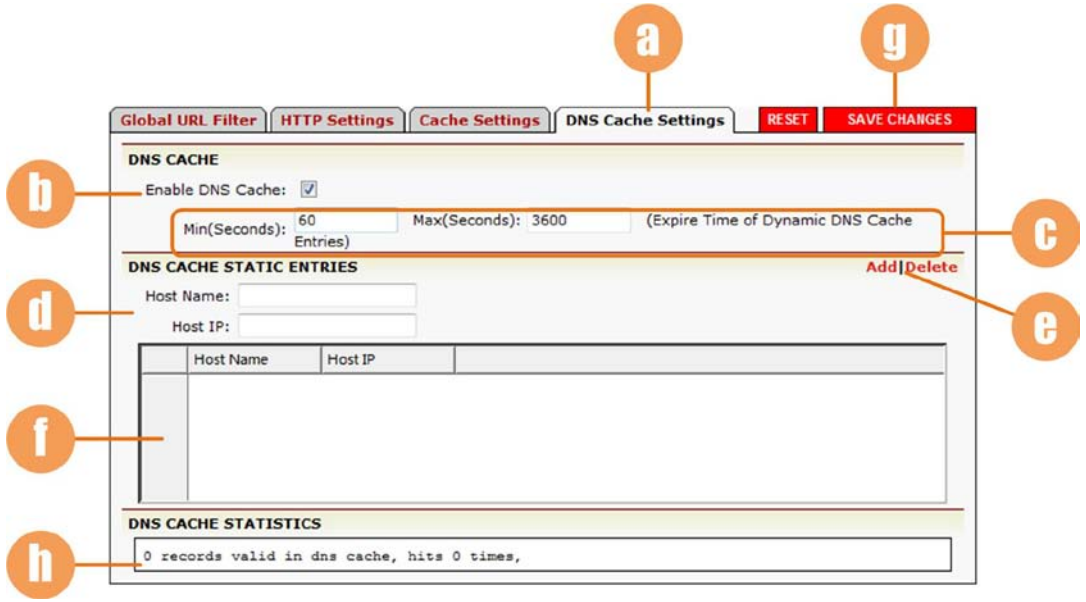
DNS Cache Settings

DNS Cache Settings

Click on the "**DNS Cache Settings**" tab **[a]**. Enable the DNS cache via the check box **[b]**. Set the time to live for the cache entry in the text field **[c]**.

In "DNS CACHE STATIC ENTRIES", enter the desired host name and IP in the text fields **[d]** and click on the action link "Add" **[e]**. Then the added host will be displayed in the table **[f]**. Remember to click on the "SAVE CHANGES" button **[g]** after changing the DNS Cache settings. You can reset the configuration by clicking on the "RESET" button **[g]**.

In "DNS CACHE STATISTICS", all DNS cache statistics information is displayed **[h]**.



SSL

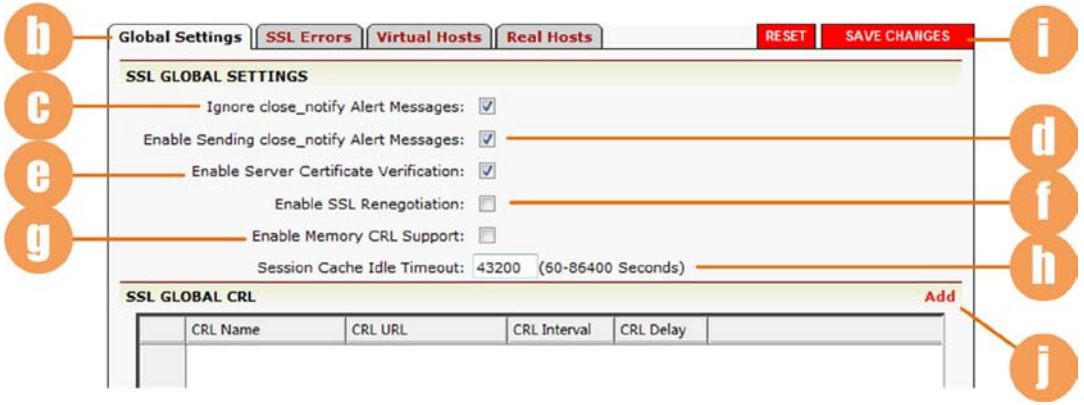
To do SSL configurations, **make certain you are in Config mode** and select the "**SSL**" feature link **[a]**. The configuration window will display four tabs: Global Settings, SSL Errors, Virtual Hosts and Real Hosts. The Global Settings page is displayed by default **[b]**.

Global Settings

On this page, you can complete the following SSL global settings: specify whether to ignore the close_notify alert messages **[c]**, specify whether to enable sending the close_notify alert messages **[d]**, enable the certificate verification function **[e]**, enable the SSL renegotiation function **[f]**, enable the CRL (Certification Revocation List) memory support function **[g]**, and set the session cache idle timeout (in seconds) **[h]**.

Then, confirm your settings and click on "SAVE CHANGES" **[i]** to make them take effect.

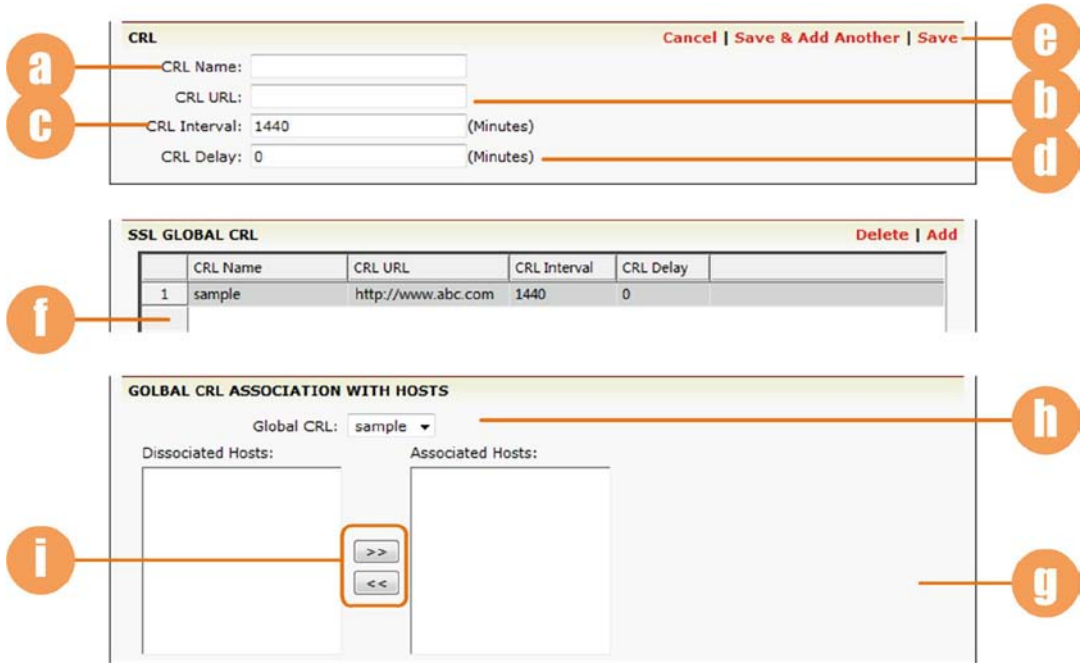
To add a global CRL, click on the action link "Add" **[j]**, and a new configuration window will appear.



Global Settings (Continue)

In the new window, assign a name to the CRL in the text field **[a]**. Specify the URL where the CRL is downloaded **[b]**, the time interval between two downloads **[c]** and the delay time **[d]**. At last, click the desired button to save the configurations **[e]**. The new added global CRL is displayed in the sort ready table **[f]**.

A new session appears after adding the global CRL **[g]**. Select the desired global CRL via the pull down menu **[h]**, and then associate the global CRL with the specified virtual host or disassociate the global CRL from the specified virtual host via the buttons **[i]**.



Global Settings (Continue)

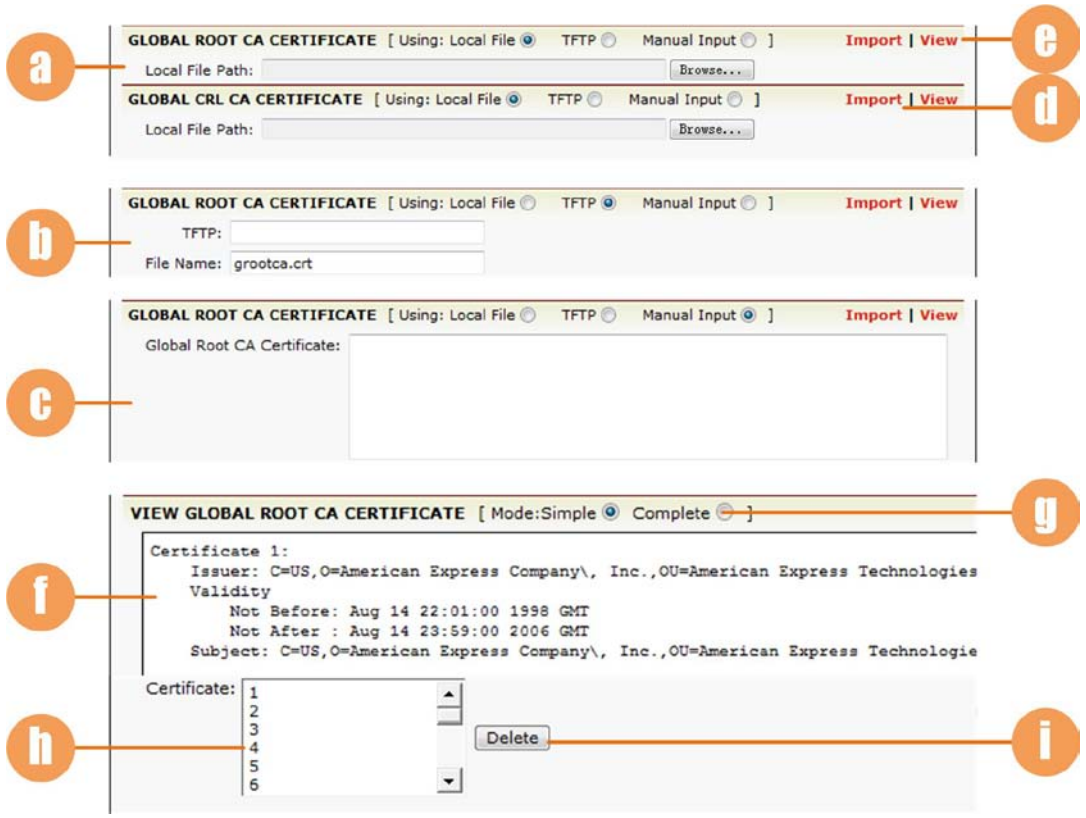
You can import a trusted CA certificate via selecting a local file, using TFTP or manually inputting the certificate.

To import from a local file, specify the file path in the text field **[a]**; to import via TFTP, select the radio button "TFTP" and supply the server address **[b]**; to import via manual input, select the radio button "Manual Input" and supply the global certificate in the text field **[c]**. After confirming the supplied information, click on the action link "Import" to import the CA certificate **[d]**.

To view the global CA certificate information, click on the "View" action link **[e]**. Then a new window displays all global CA certificates in numeric order **[f]**. You can view the simple or complete mode of certificates via the radio buttons **[g]**.

You can also delete an undesired certificate. Select the sequence number of the certificate from the list **[h]** and click on the "Delete" button **[i]** to start deleting.

You can further import or view CRL CA certificate by following the steps of importing or viewing global CA certificate.

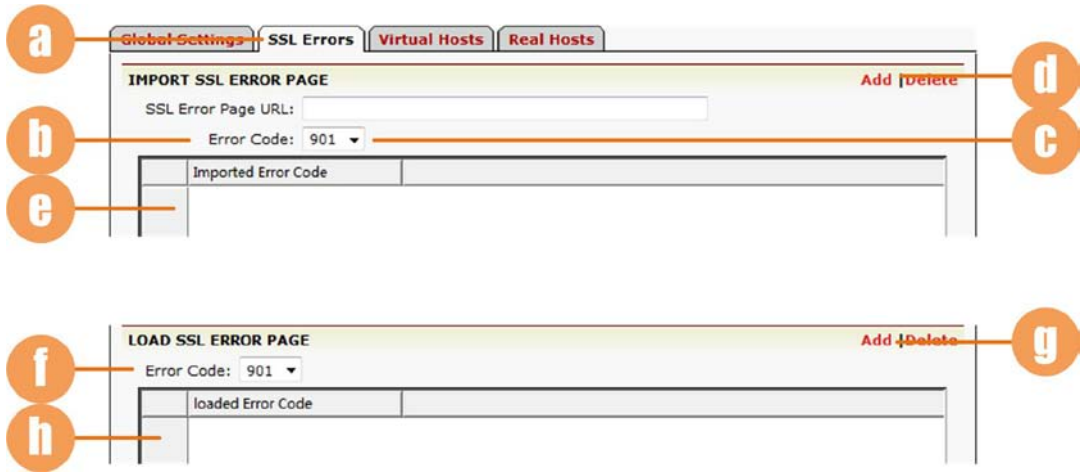


SSL Errors

Click on the "**SSL Errors**" tab **[a]**.

First, import a customized static error page from the administrator's remote host. You need to input the URL address of the remote host in the text box **[b]**, from which you can obtain the static error page. Select the code for the customized error page from the selector **[c]**, where error codes 901 to 906 are available. Click "Add" on the upper right side **[d]**, and then the imported error code will be displayed in the display window **[e]**.

Next, load the imported SSL customized error page into the FortiBalancer appliance system memory. Thus, when client authentication fails, this error page will be displayed at the SSL client. Select the error code for the customized error page from the selector **[f]**, and click "Add" on the upper right side **[g]**. Then, the loaded error code for the error page will be displayed in the display window **[h]**.

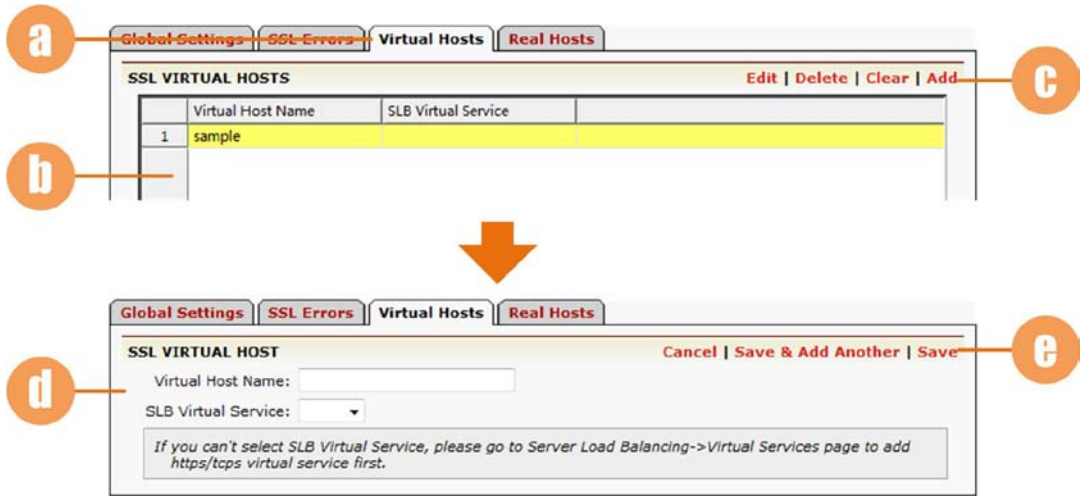


Virtual Hosts

Make certain that you have already created virtual hosts via the Virtual Services configuration.

Select the "**Virtual Hosts**" tab **[a]**. A list of SSL virtual hosts will be displayed in the sort ready table **[b]**.

To add a virtual host, click on the action link "Add" **[c]**, and supply the virtual host name and select an SLB virtual service **[d]**, and then click on the desired action link **[e]**. Then, the newly added host names will be displayed in the table **[b]**.



Virtual Hosts (Continue)

Double click on a host in the table, and the configuration window displays two tabs: "**Virtual Host CSR/Cert/Key**" and "**Virtual Host Settings**". The "**CSR/Key**" sub tab under the "**Virtual Host CSR/Cert/Key**" tab is displayed by default **[a]**.

You can select a virtual host from the selector **[b]** to complete configurations about it.

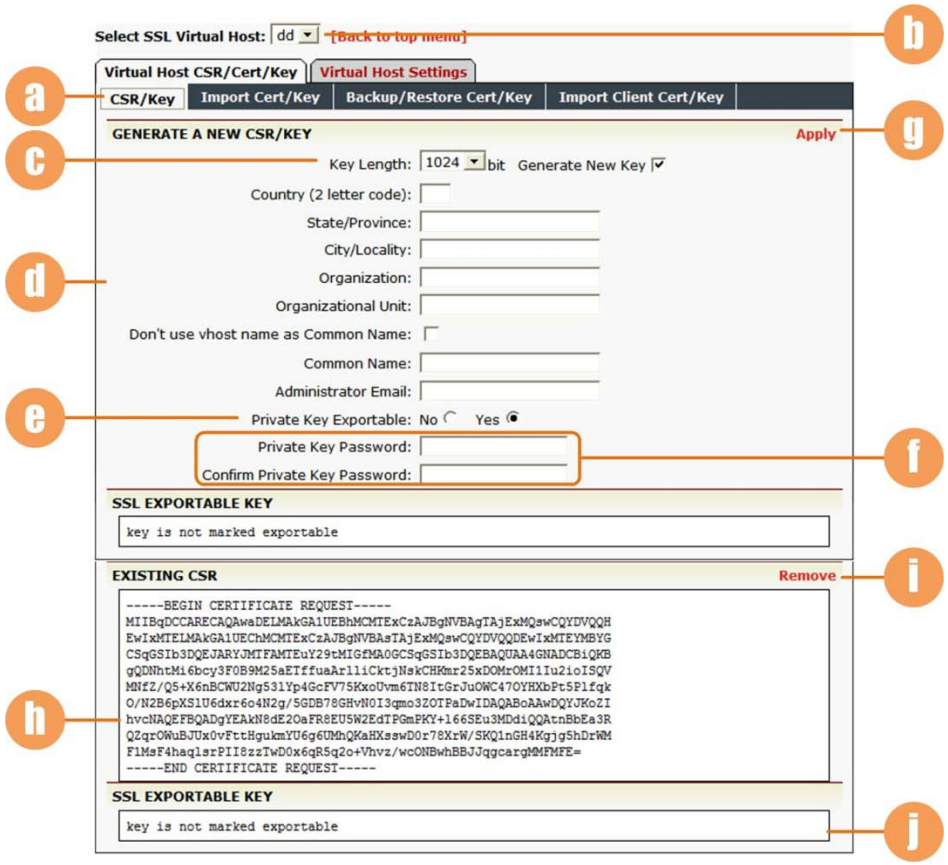
Virtual Host CSR/Cert/Key

CSR/Key

To create a new CSR/Key, supply the country code for the CSR **[c]**, and supply the parameter fields properly **[d]**. Then, you can set the private key to be exportable or not (Yes/No) **[e]**. If you select "Yes", you need to further set the private key password in the text boxes **[f]**.

Then, click on the action link "Apply" **[g]** to create a new CSR/Key **[h]**. To delete the generated CSR, you can click on the action link "Remove" **[i]**.

You can also view the SSL exportable key in the area **[j]**.



Virtual Hosts (Continue)

Import Cert/Key

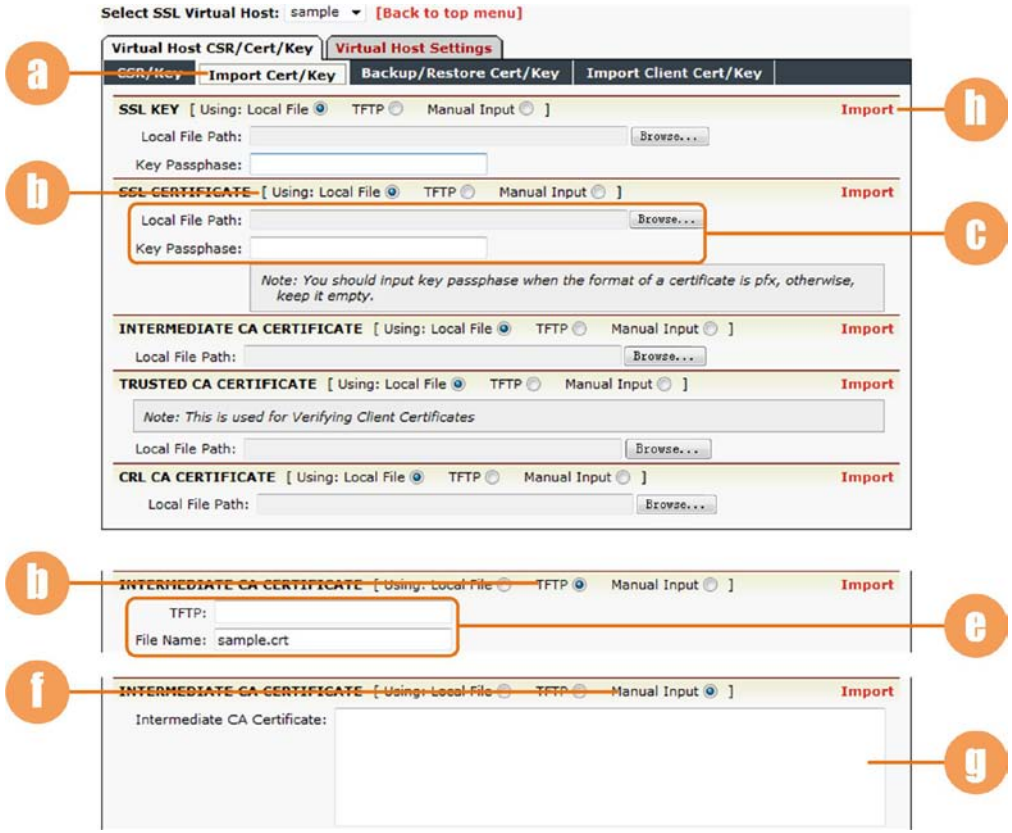
Select the "**Import Cert/Key**" tab **[a]**. You can import an existing Cert/Key pair via local file, TFTP or manual input method.

To import an existing Cert/Key pair via a local file, you can select the radio button "Local File" **[b]**, and specify the local file path and input the password **[c]**.

To import a Cert/Key pair via TFTP, select the radio button "TFTP" **[d]**, and supply the server address, file name and key password **[e]**.

To manually input a Cert/Key pair, select the radio button "Manual Input" **[f]**, paste your existing certificate and key into the text fields, and supply the key password **[g]**.

After confirming the supplied information, click on the action link "Import" to import the Cert/Key pair **[h]**.



Virtual Hosts (Continue)

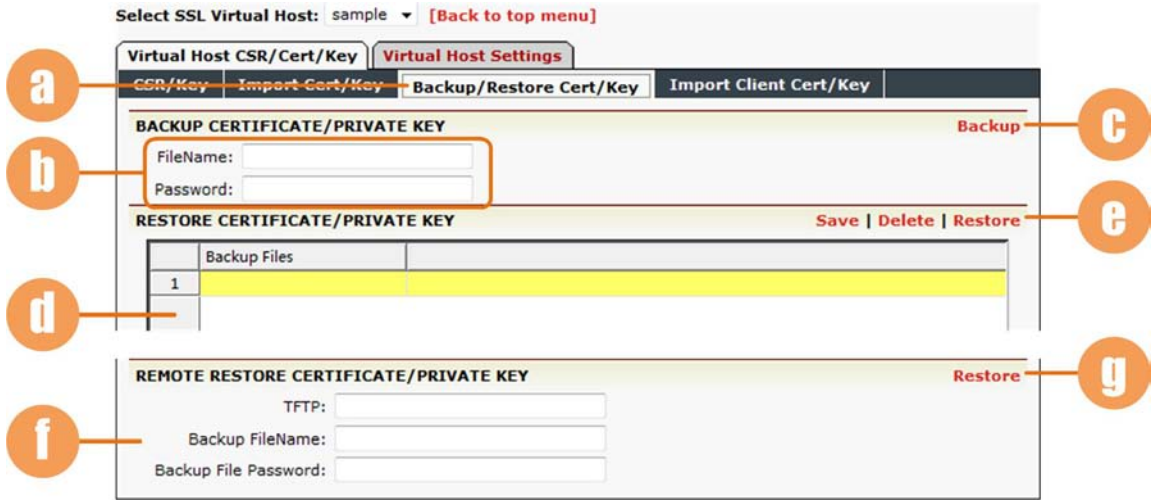
Backup/Restore Cert/Key

To backup or restore an existing Cert/Key, select the "**Backup/Restore Cert/Key**" sub tab **[a]**.

To backup an existing Cert/Key, supply the file name and password in the text fields **[b]**, and click on the action link "Backup" to save a backup file **[c]**. Then the saved file will be displayed in the "Backup Files" list **[d]**.

To restore a Cert/Key from the server, select a backup file from the list **[d]** and click on the desired action link **[e]**.

To restore a Cert/Key from a local station, supply the TFTP server address, file name and password in the text fields **[f]**, and click on the action link "Restore" **[g]**.



Virtual Hosts (Continue)

Import Client Cert/Key

Select the "**Import Client Cert/Key**" sub tab **[a]**. You can import a client Cert/Key pair via local file, TFTP, HTTP or manual input method.

To import via a local file, you can select the radio button "Local File" **[b]**, specify the file path and input the password **[c]**.

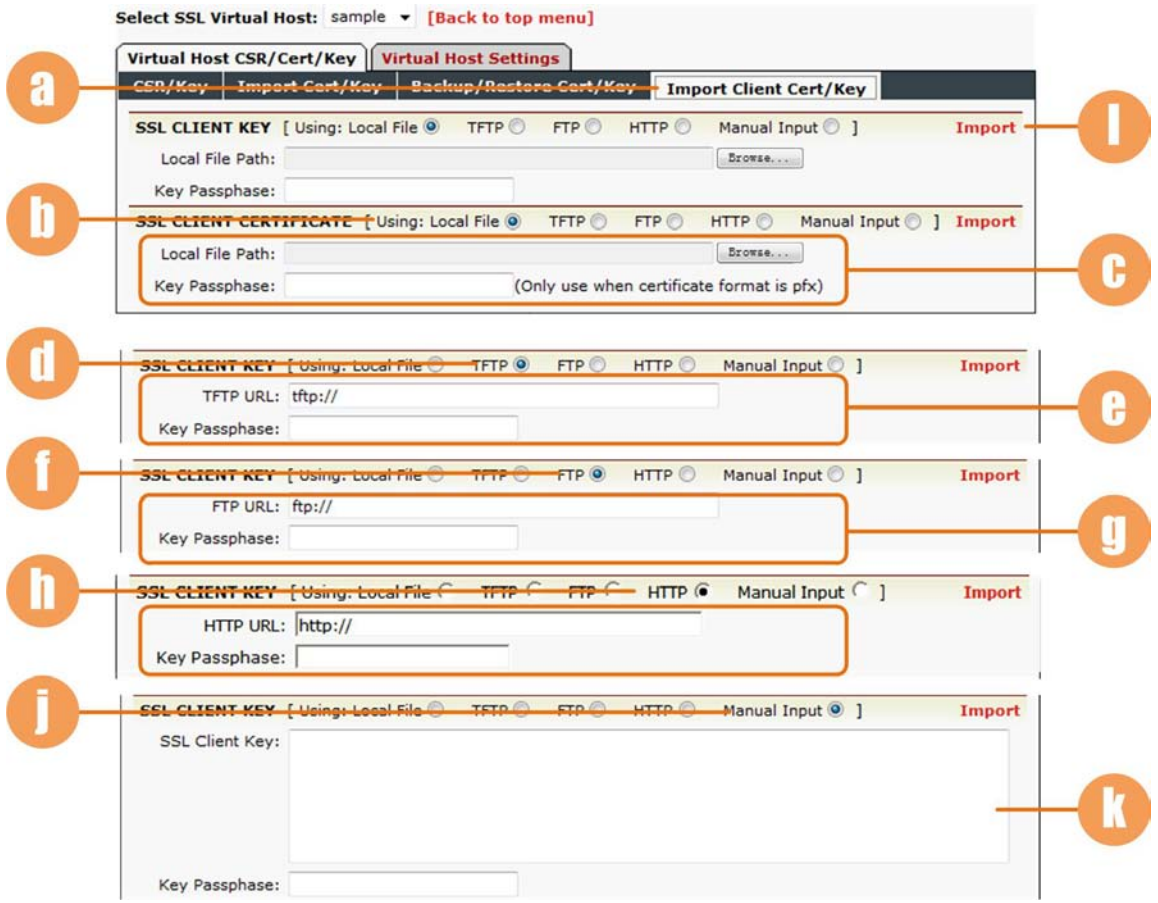
To import a client Cert/Key pair via TFTP, select the radio button "TFTP" **[d]**, and supply the TFTP address and password **[e]**.

To import a client Cert/Key pair via FTP, select the radio button "TFTP" **[f]**, and supply the FTP address and password **[g]**.

To import a client Cert/Key pair via HTTP, select the radio button "HTTP" **[h]**, and supply the HTTP address and password **[i]**.

To manually input a client Cert/Key pair, select the radio button "Manual Input" **[j]**, paste your existing certificate and key into the text fields, and supply the key password **[k]**.

After confirming the supplied information, click on the action link "Import" to import the client Cert/Key pair **[l]**.



Virtual Hosts (Continue)

Virtual Host Settings

To execute virtual host settings, make sure that you have already generated a CSR or imported a certificate and key. Select the "**Virtual Host Settings**" tab **[a]**, and the configuration window will display two sub tabs "**Basic Settings**" **[b]** and "**Advanced Settings**" **[c]**.

Basic Settings

On this configuration page, you can enable SSL on this virtual host by selecting the check box "Enable SSL" **[d]**.

You can view certificate information in the configuration window **[e]**. Select the display mode via the radio buttons **[f]**. If you choose the "Complete" mode, complete certificate information will be displayed.

Virtual Hosts (Continue)

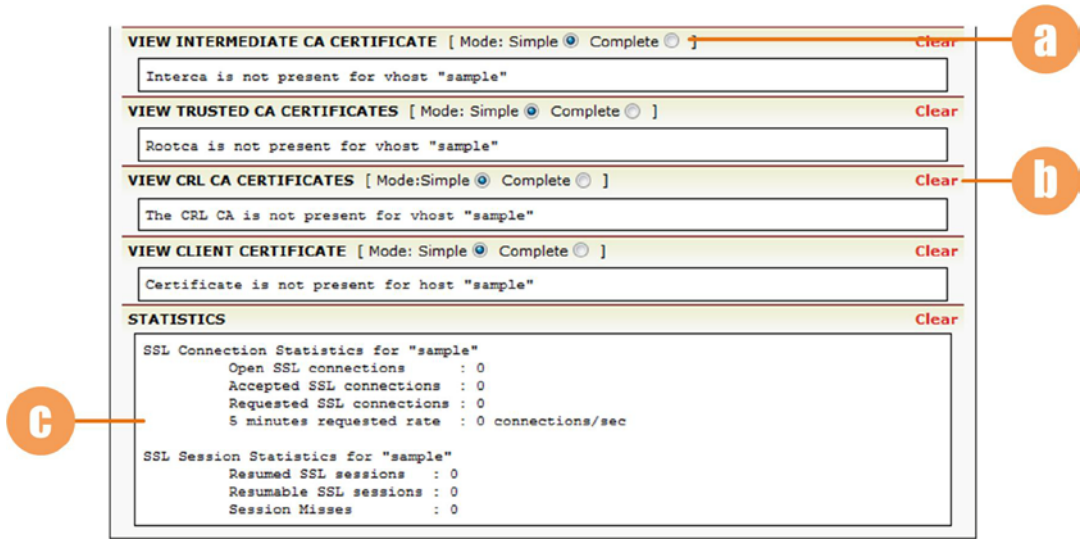
Basic Settings (Continue)

On this configuration page, you can also view intermediate CA certificate, trusted CA certificate, CRL CA certificate and client certificate information.

Select the display mode of certificate information (simple or complete) via the radio buttons **[a]**.

You can click on the “Clear” action link **[b]** to remove the certificate.

You can also view SSL statistics information on this page **[c]**.



Virtual Hosts (Continue)

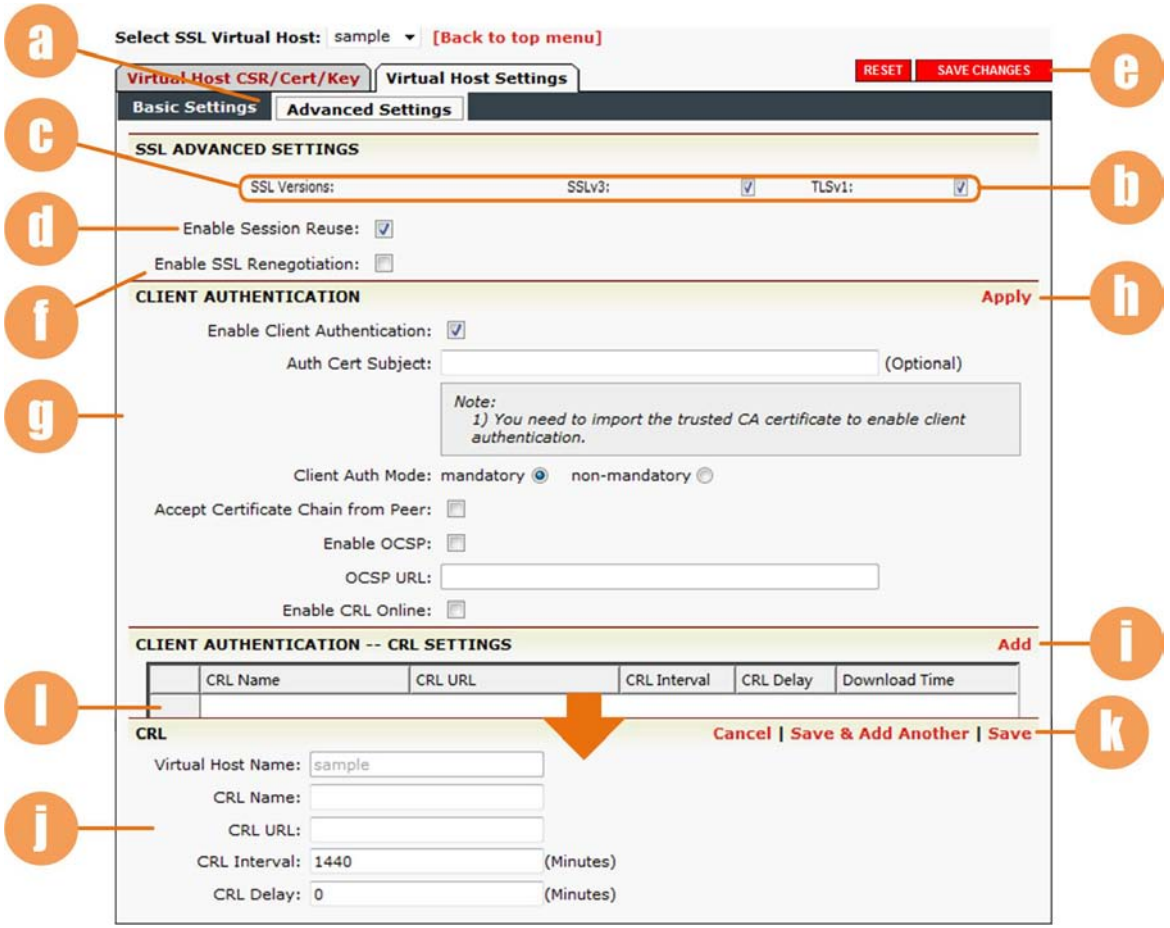
Advanced Settings

Click on the sub tab "**Advanced Settings**" **[a]**.

SSL Advanced Settings: You can select proper SSL version (SSLv3 or TLSv1) **[b]**, enable session reuse **[c]** or enable SSL renegotiation [d]. Then, click on the "SAVE CHANGES" button **[e]** to make your settings take effect.

Client Authentication: To enable client authentication, you can select the check box **[f]**, and click on the "SAVE CHANGES" button **[e]**. Then, some new configuration items will appear **[g]** where you can: input authentication certificate subject (optional), select client authentication mode (mandatory or non-mandatory), set whether to accept certificate chain from peer, enable OCSP and input OCSP URL address, and enable CRL online check. After completing the configurations, click on "Apply" **[h]** to make them take effect. (**Note:** If OCSP is enabled, CRL online check will be disabled, and you cannot make CRL settings.)

Client Authentication-CRL Settings: After enabling client authentication, CRL settings can be configured. Click on "Add" **[i]** and a new window will appear. Supply the CRL name, the URL where to download the CRL, the interval between two downloads (in minutes) and the delay time (in minutes) **[j]**. Then click on "Save" **[k]**, and the added settings will be displayed in the table **[l]**.



Virtual Hosts (Continue)

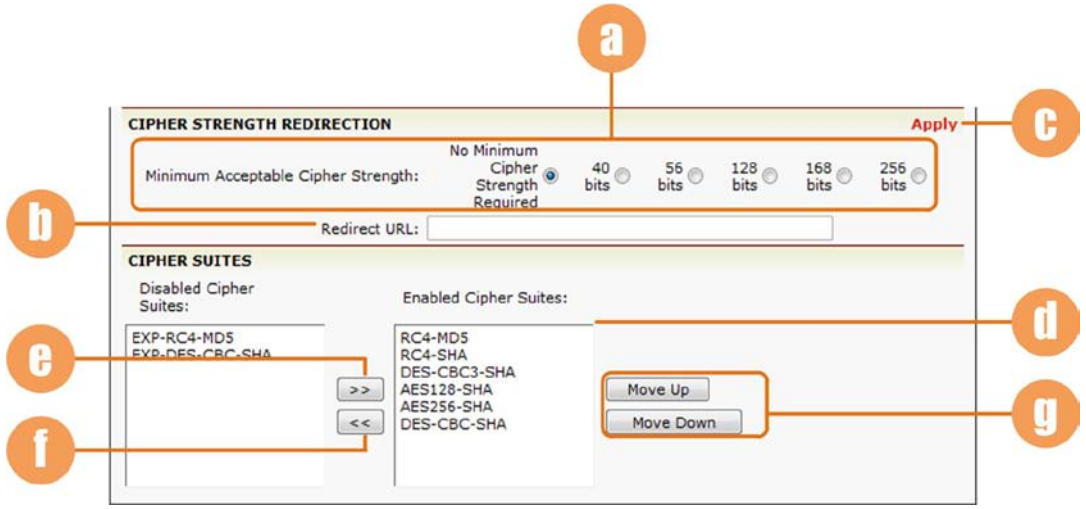
Advanced Settings (Continue)

Cipher Strength Redirection: Specify the minimum cipher strength via the radio buttons **[a]**, and fill in the text field with redirect URL **[b]**. Then click on “Apply” **[c]** to save the changes.

Cipher Suites: In order to determine whether to enable a cipher suite or not, select the desired cipher suite from the list **[d]**, and then click on the button to either enable it **[e]** or disable it **[f]**.

You can also change the position of the cipher suites in the list by clicking on the “Move Up” or “Move Down” button **[g]**.

Note: To modify the configurations of a virtual host, you have to make sure that the virtual host is in inactive status (unselect the “Enable SSL” check box on the Basic Settings page). That is because the WebUI will execute "stop host" first before the modification operation and "start host" after the modification operation without asking for your confirmation. This may cause unexpected risks.



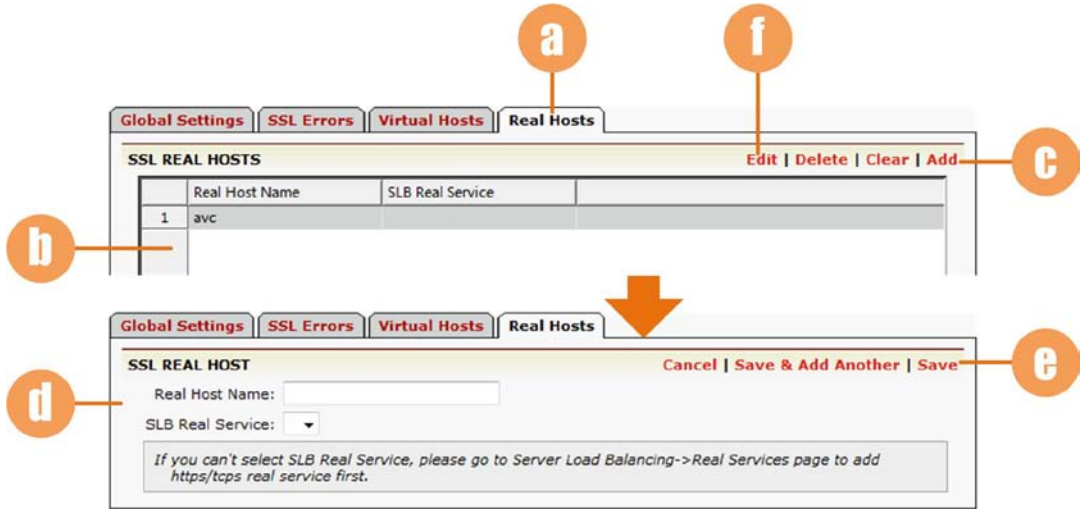
Real Hosts

To perform real host configuration, first make certain that you have already created real services via the Server Load Balance.

Select the tab "**Real Hosts**" **[a]** to enter the "SSL Real Hosts" configuration window, where the previously created SSL real hosts are displayed in the sort ready table **[b]**.

To add an SSL real host, click on the action link "Add" **[c],** and a new configuration widow will appear. Supply the real host name and specify the SLB real service **[d]**, and then click on the "Save" action link **[e]**.

After a real host is added successfully, it will be displayed in the table **[b]**. You can edit a real host by double clicking on it or click a real host in the table and select the action link "Edit" **[f]**. Then, a new configuration window will appear.



Real Hosts (Continue)

Double click on the real host name in the list box, and the configuration window will display two tabs "**Real Host Cert/Key**" and "**Real Host Settings**". By default, the sub tab "**Import Cert/Key**" under the "**Real Host Cert/Key**" tab is displayed **[a]**.

You can switch among the created real hosts by selecting from the selector **[b]**.

Import Cert/Key

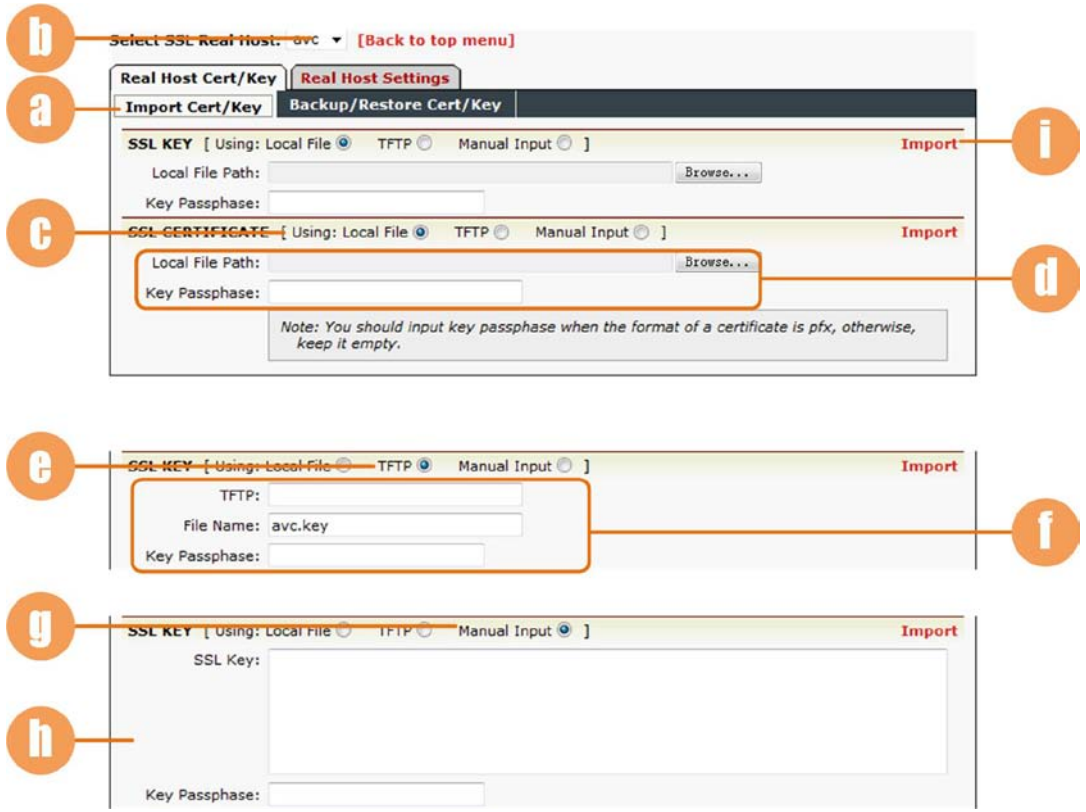
You can import a Cert/Key pair via local file, TFTP or manual input method.

To import a Cert/Key pair via a local file, select the radio button "Local File" **[c]**, and supply the file path and password **[d]**.

To import via TFTP, select the radio button "TFTP" [e], and supply the server address and password in the text fields **[f]**.

To manually input a Cert/Key pair, select the radio button "Manual Input" **[g]**, and paste your SSL key and CA certificate into the blanks and supply the key password **[h]**.

After confirming the information input, click on the action link "Import" **[i]**.



Real Hosts (Continue)

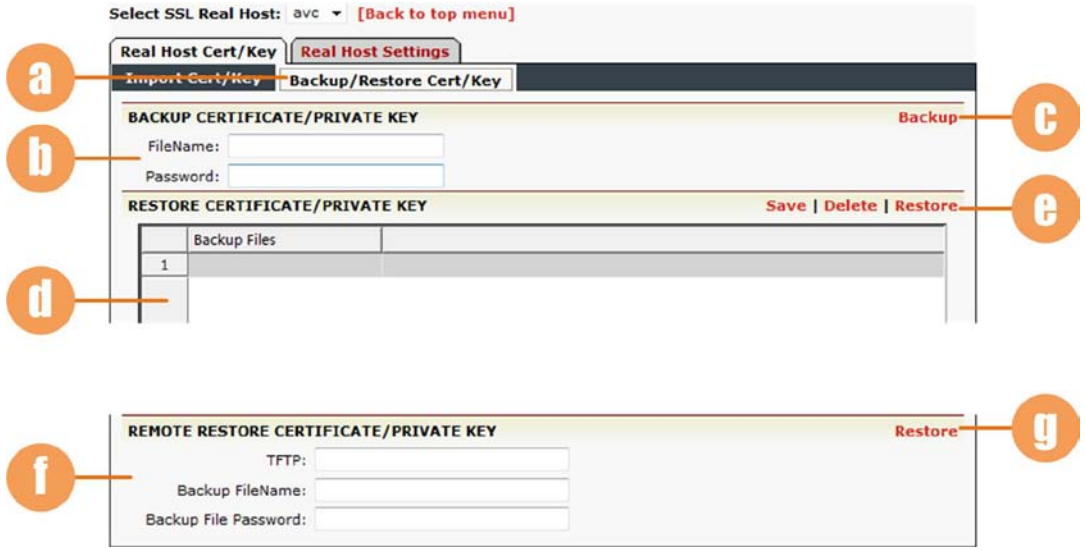
Backup/Restore Cert/Key

To backup or restore an existing Cert/Key pair, select the sub tab "**Backup/Restore Cert/Key**" **[a]**.

To backup an existing certificate or private key, supply the file name and password **[b]**, and then click on the action link "Backup" **[c]**. The saved files will be displayed in the "Backup Files" list **[d]**.

To restore from local backup files, select an entry from the backup files list **[d]**, and click on the desired action link **[e]**.

To restore via remote server, supply the TFTP server address, backup filename and password **[f]**, and click on the action link "Restore" **[g]**.



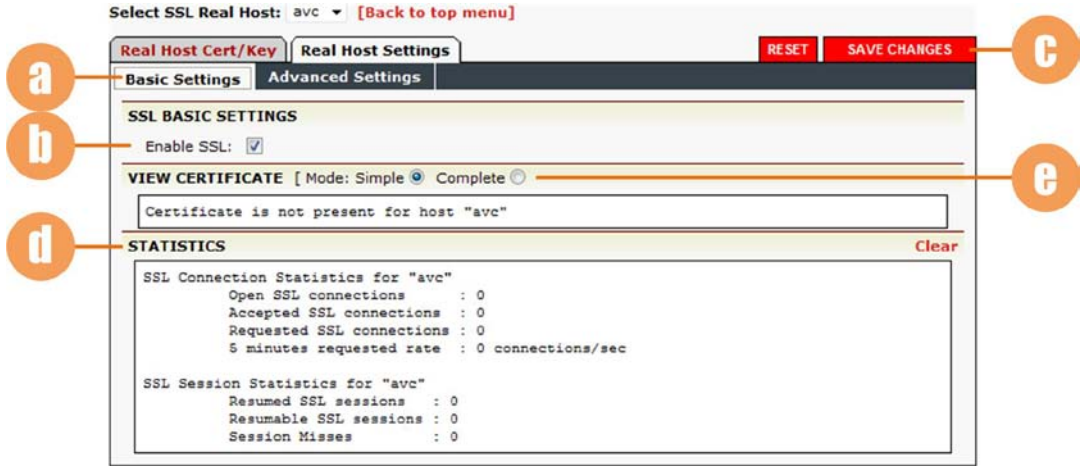
Real Hosts (Continue)

Basic Settings:

Make certain you have selected the "**Real Host Settings**" tab, and the "**Basic Settings**" page is displayed by default **[a]**.

Select the check box to enable SSL on this real host **[b]**. Then, click on the "SAVE CHANGES" button when it appears to save the configuration **[c]**.

You can also view the certificate and statistics **[d]**. Select the display mode via the radio buttons **[e]**. If the display mode is set to "Complete", all the certificate information will be displayed on the page.



Real Hosts (Continue)

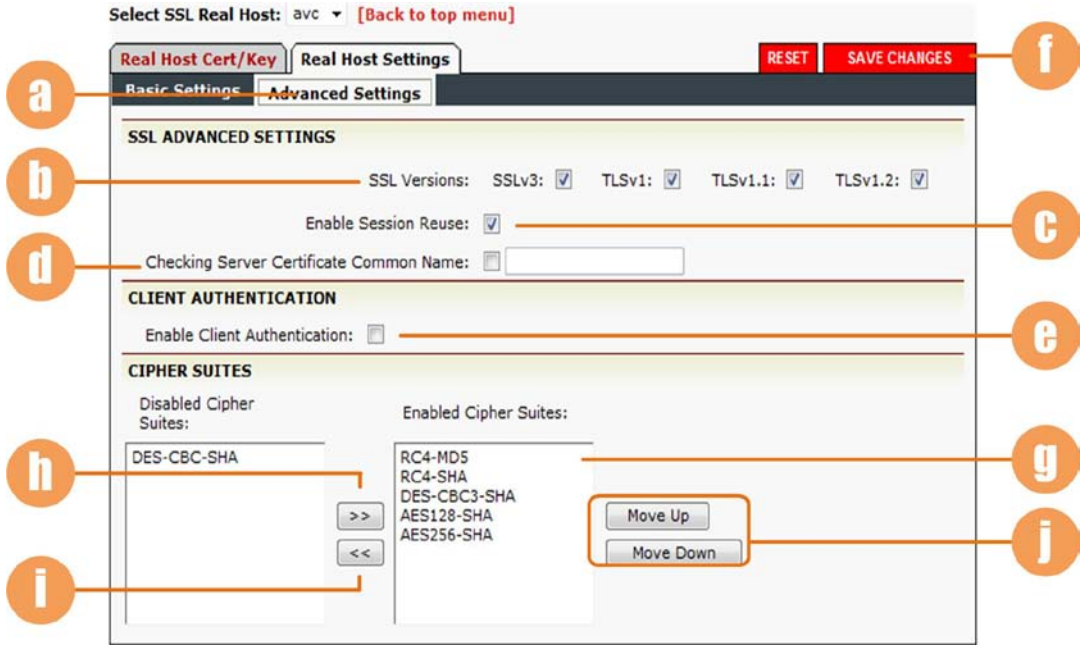
Advanced Settings

Select the sub tab "**Advanced Settings**" **[a]**. Specify the SSL version (SSLv3 or TLSv1) via the check boxes **[b]**. Enable SSL session reuse via the check box **[c]**. To enable the function of checking server certificate common name, you can first check the box **[d]** and then input the common name in the text box thereafter. You can also enable the client authentication feature by selecting the check box **[e]**.

After finishing these settings, you can click on the "SAVE CHANGES" button to save your configuration **[f]**.

In order to determine whether to enable a cipher suite or not, select the desired cipher suite from the list **[g]**, and click on the button to either enable it **[h]** or disable it **[i]**.

You can also change the position of the cipher suites by clicking on the "Move Up" or "Move Down" button **[j]**.

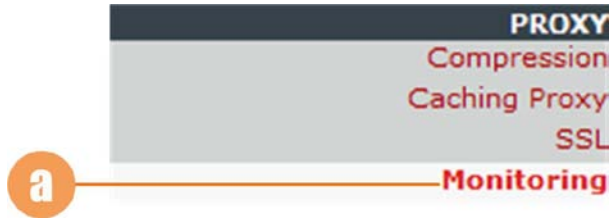


Note: To modify the configurations of a real host, you have to make sure that the real host is in inactive status (unselect the "Enable SSL" check box on the Basic Settings page). That is because the WebUI will execute "stop host" first before the modification operation and "start host" after the modification operation without asking for your confirmation. This may cause unexpected risks.

Monitoring

The FortiBalancer appliance allows you to monitor the cache hits ratio in real time.

Make certain you are in the Config Mode and select the feature link "**Monitoring**" from the sidebar **[a]**.



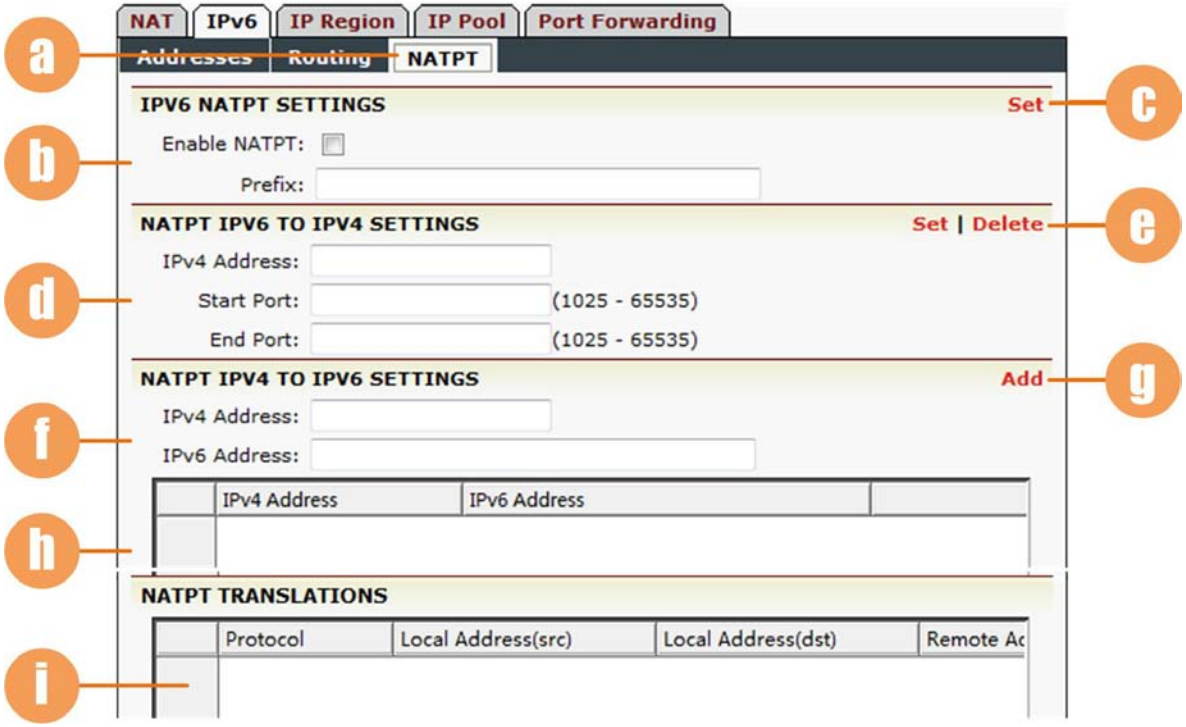
Cache

Select the "**Cache**" tab **[b]** and the window will display the realtime hit ratio in the box **[c]**. The page is automatically refreshed every twenty seconds.

Advanced Load Balance

Link Load Balancing (LLB) allows TCP/IP network traffic to be balanced through up to 128 upstream Internet Service Providers (ISPs). Load balancing can be performed on egress to the Internet (outbound LLB) or on ingress from the Internet (inbound LLB).

Make certain you are in Config mode, and select the **Link Load Balance** feature link from the sidebar **[a]**. The window will present you four tabs **[b]**.

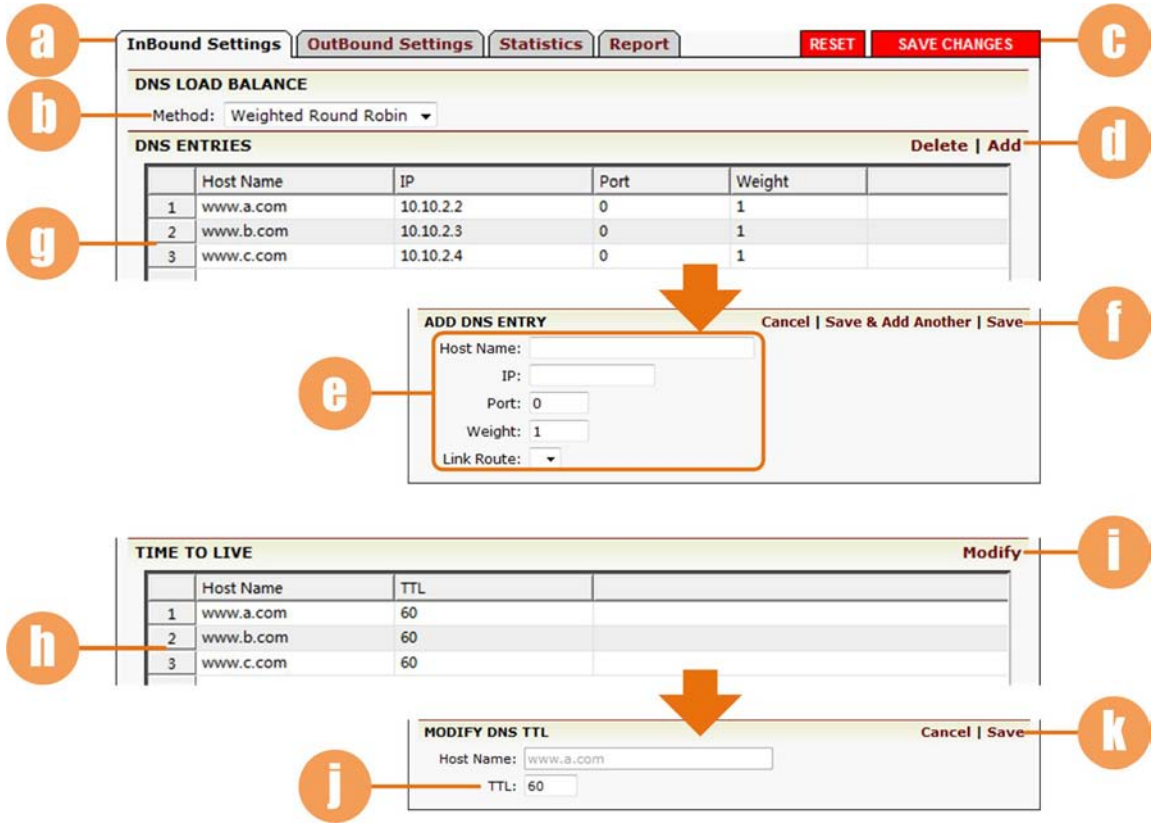


InBound Settings

Select the "**InBound Settings**" tab **[a]**. First, set the DNS load balance method via the selector **[b]**. Click on the "SAVE CHANGES" button **[c]** when it appears to save your setting.

To create a DNS entry, click on the "Add" action link **[d]** and then supply the host name, host IP, port number, weight value and link route in the text fields **[e]** and click on the "Save" action link **[f]**. The newly created DNS entry will be displayed in the sort ready table **[g]**.

To change the DNS TTL value, select a desired host in the table **[h]** and click on "Modify" **[i]**. Input the new TTL value in the new configuration page **[j]**, and click on "Save" **[k]** to make your change take effect.



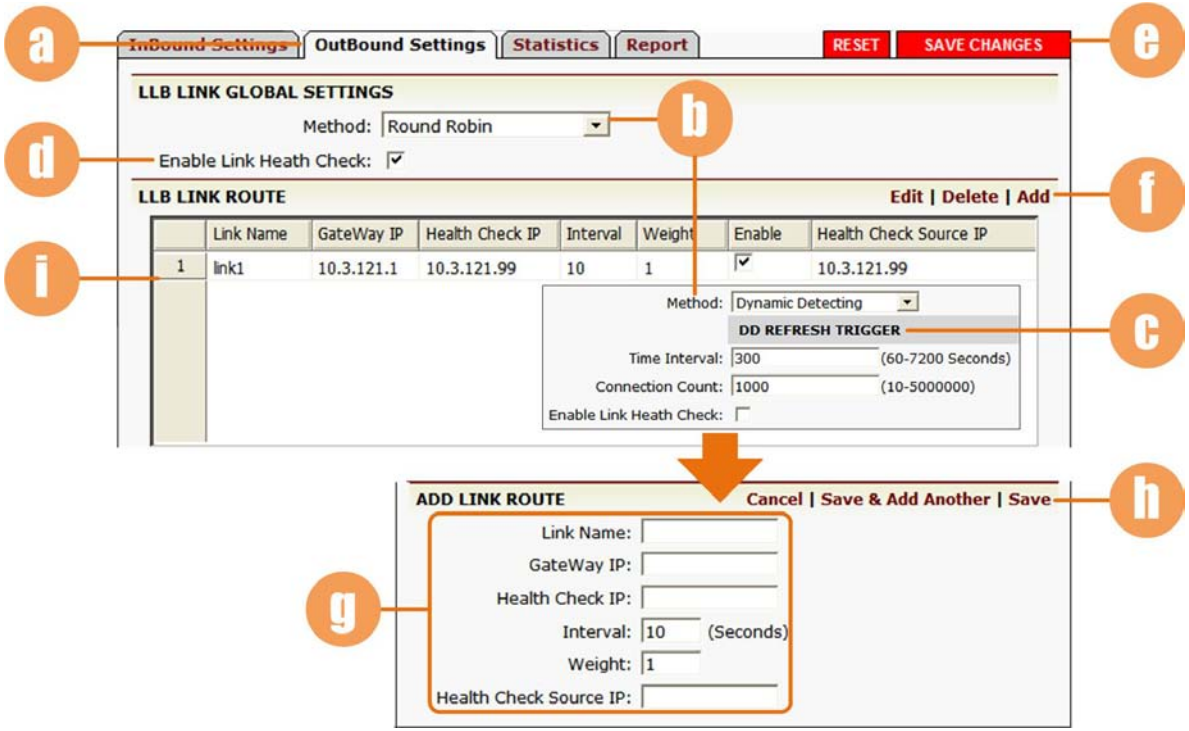
OutBound Settings

Click on the tab "**OutBound Settings**" **[a]**. The configuration window presents a new configuration page.

Set the Link Load Balance method via the selector **[b]**. If "Dynamic Detecting" method is selected, you need to set time interval and connection count for triggering DD refresh **[c]**. Use the check box **[d]** to enable the LLB health check. Once any change is made, the "RESET" and "SAVE CHANGES" buttons will appear. Remember to save any change made by clicking on the "SAVE CHANGES" button **[e]**.

Select the action link "Add" **[f]**. A new configuration page is displayed.

Specify the link name, gateway IP, weight value for the link, set the health check source IP and bandwidth threshold **[g]**. At last, remember to click on the action link "Save" **[h]** to complete the configuration. The newly added LLB link route will be displayed in the table **[i]**.



OutBound Settings (Continue)

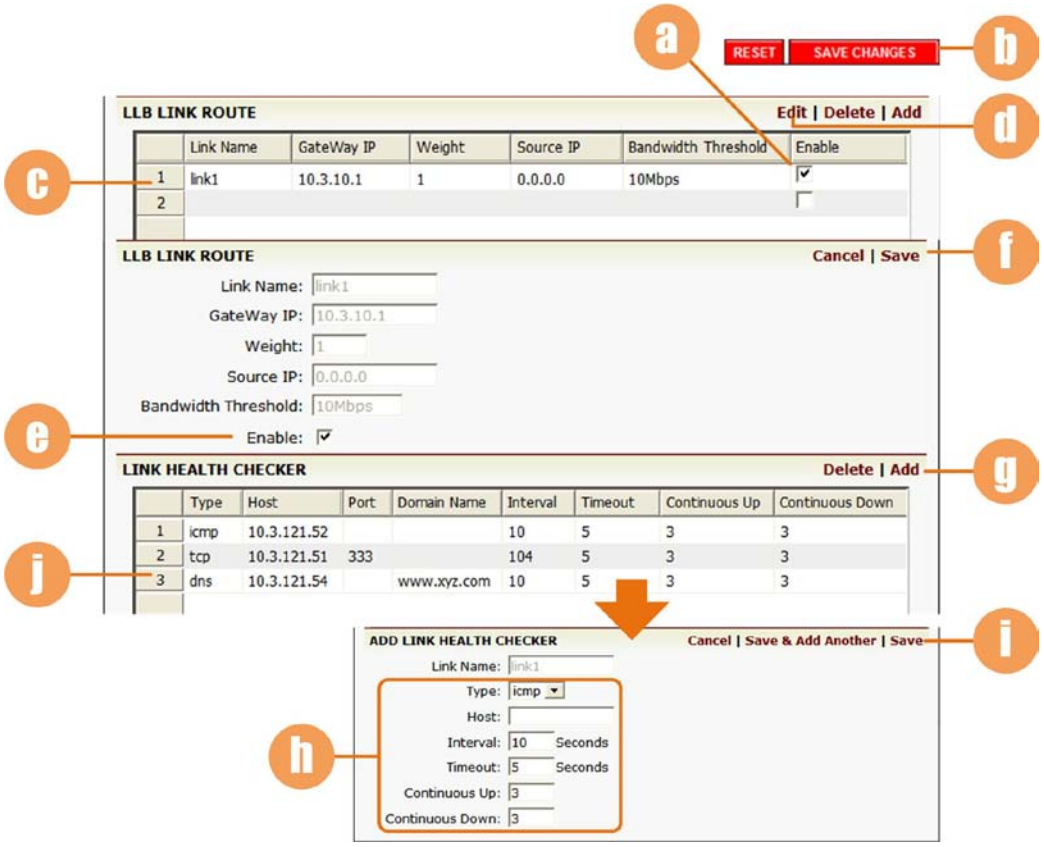
In the LLB link list, you can enable a link via the check box **[a]**. Then, remember to click on “SAVE CHANGES” **[b]** to save your configuration.

To modify the settings of a link, double click on it in the table **[c]**, or select it and click on the action link “Edit” **[d]**. A new configuration page will be displayed.

Enable or disable the link via the check box **[e]**. Then, click on “Save” **[f]** to make your setting take effect.

To add an LLB link health checker, click on the action link “Add” **[g]**. A new configuration page will appear.

Select the health check type, and supply the required information **[h]**. The parameter fields may vary with different health check types. After finishing the configuration, click on the action link “Save” **[i]**, and information about the health checker will be displayed in the sort ready table **[j]**.

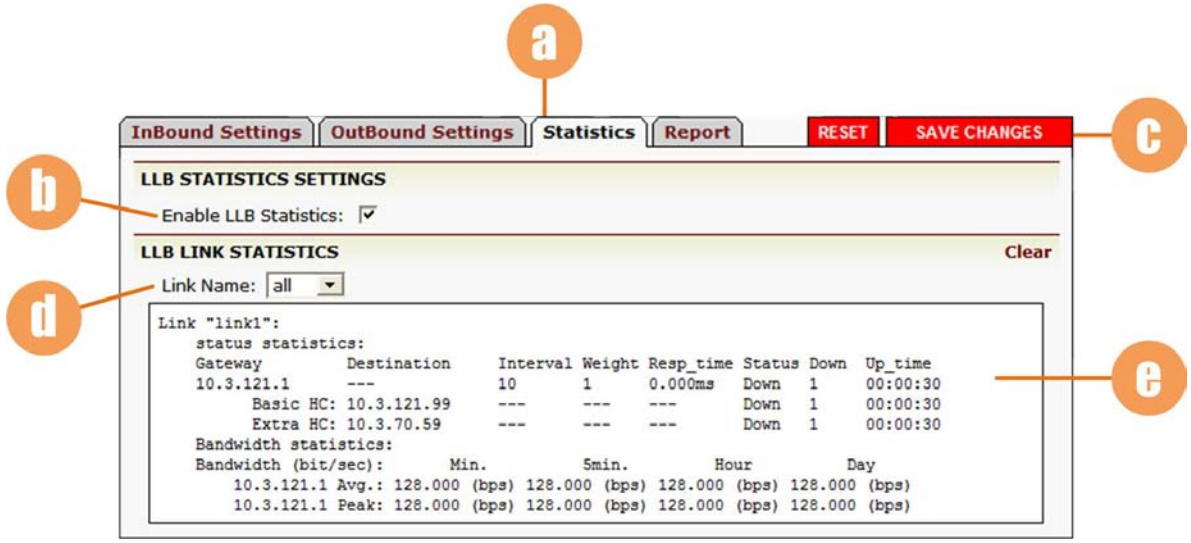


Statistics

Make certain you are in Config mode and have selected the "**Statistics**" tab **[a]**.

Use the check box **[b]** to enable the function of displaying the LLB statistics. Once any change is made, the "RESET" and "SAVE CHANGES" buttons appear. Remember to save any change made by clicking on the button **[c]**.

Once the "Enable LLB Statistics" function is enabled, you can view the statistics about all the links in the table **[d]**.

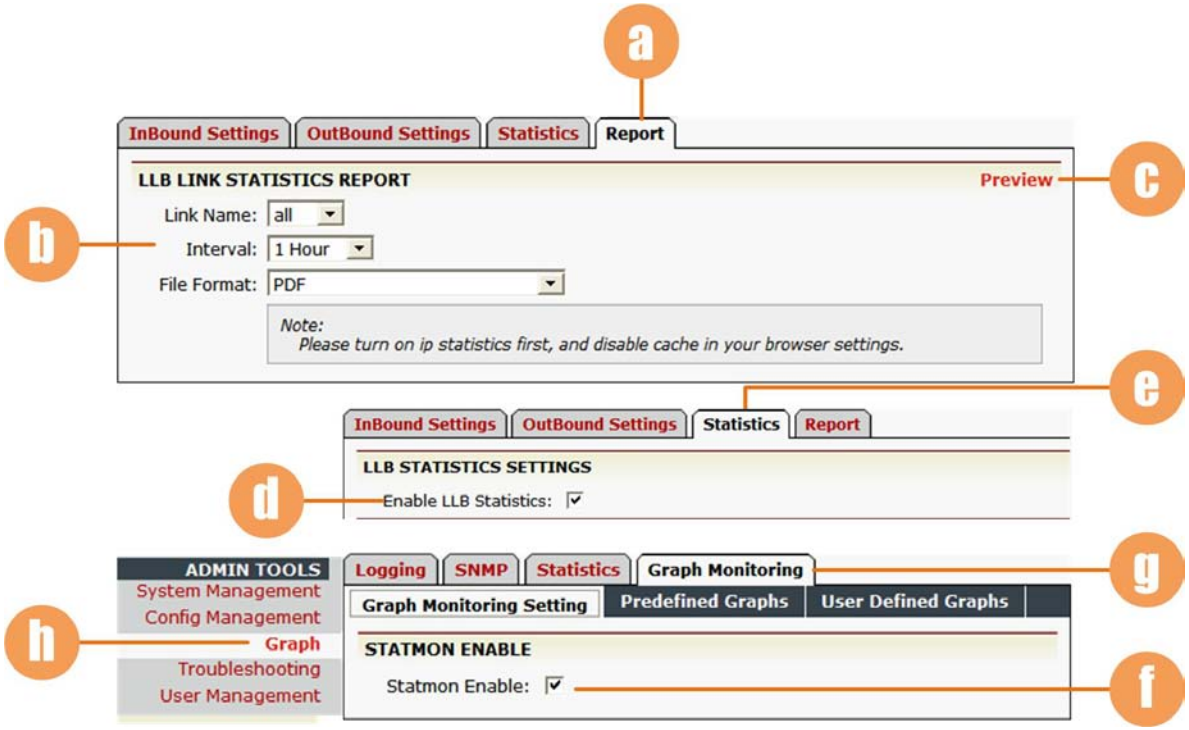


Report

Select the "**Report**" tab **[a]**. You can view the report under the Enable mode.

Specify the link name, interval and format of the report via the selectors **[b]** and click on the action link "Preview" **[c]**. Then, you will be presented with an LLB Link Statistics Report in the format you have specified.

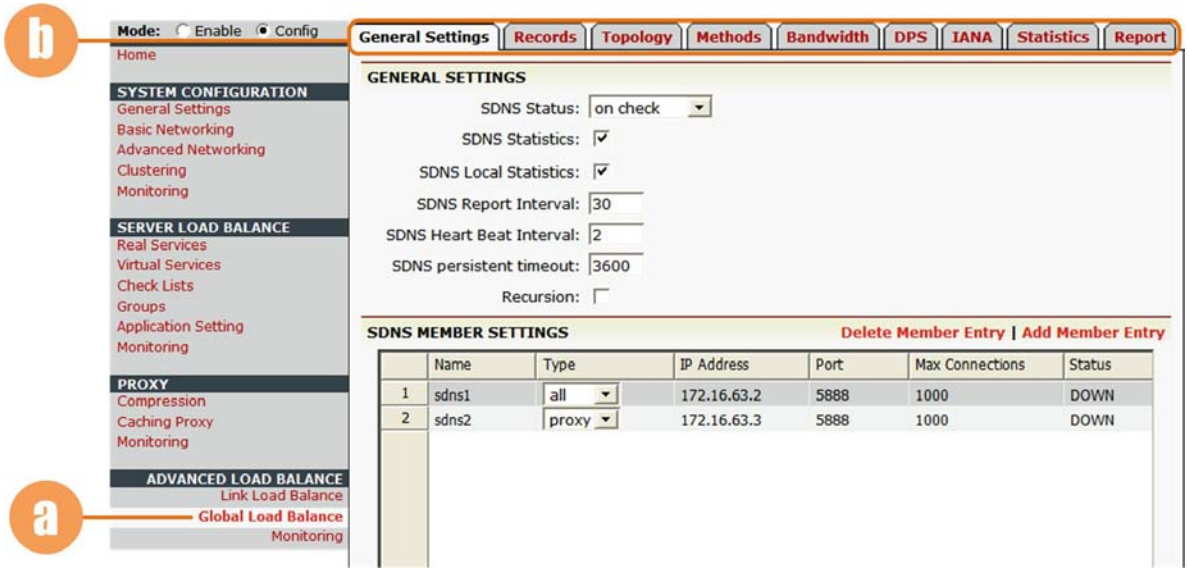
Note that the **Report** page is available only after you have selected the "Enable LLB Statistics" check box **[d]** on the **Statistics** page **[e]**, and also have enabled the statmon function via the check box **[f]** on the **Graph Monitoring Setting** page under the "**Graph Monitoring**" tab **[g]** (select the Graph feature link under the **Admin Tools** feature group [h]).



Global Load Balance

Fortinet GSLB (SDNS) solution transforms the FortiBalancer appliance into a complementary DNS server which is able to resolve a set of defined domain names based on the configured load balancing methods. SDNS runs on each FortiBalancer appliance and is able to resolve a given domain name (A Record) as an authoritative DNS server. When DNS queries (typically forwarded by Corporate DNS Server or ISP DNS Server) for the domain name received, the SDNS function will resolve the domain name with IP addresses selected from its Domain Name and IP Service Database with load balancing method configured.

Make certain you are in Config mode, and have selected the feature link **Global Load Balance** from the sidebar **[a]**. Then, nine tabs **[b]** will be displayed on the configuration page. The default page is **General Settings**.



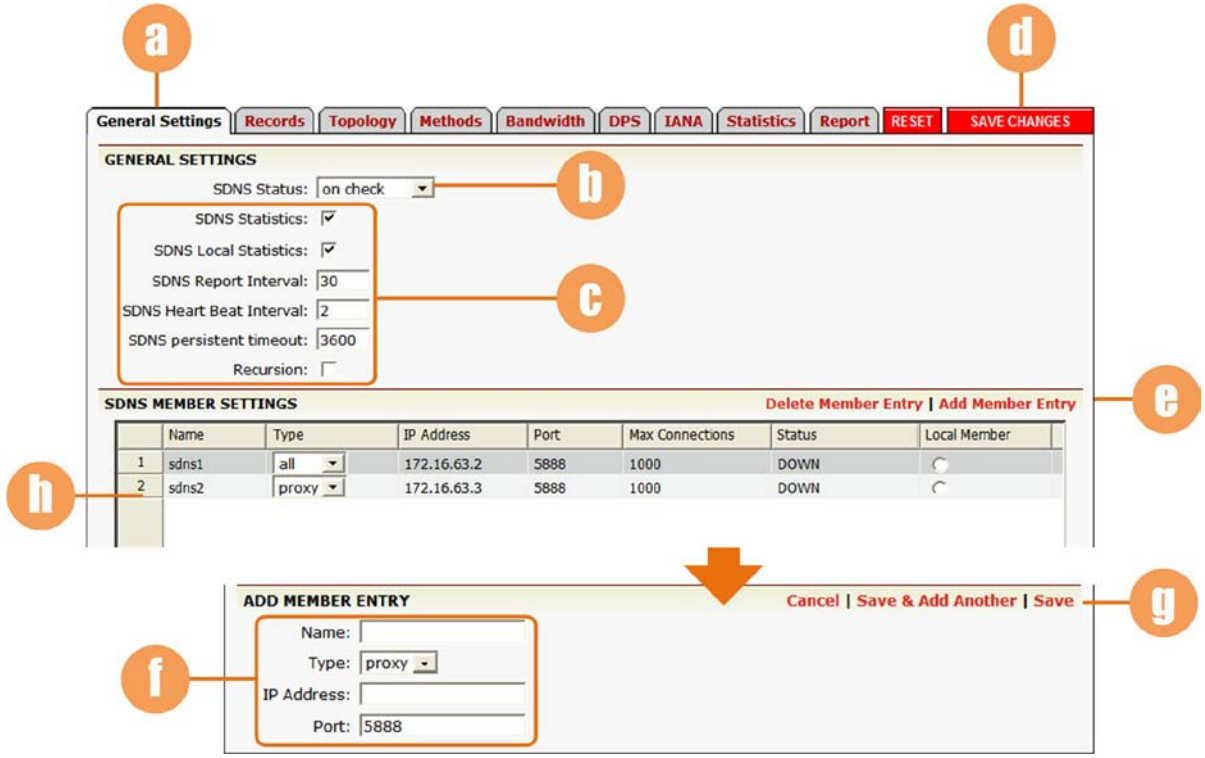
General Settings

Select the **General Settings** tab **[a]**. First, turn on or turn off the SDNS function via the selector **[b]**; to turn on the function, you need to further specify checking (on check) or not checking (on no check) virtual hosts' health status.

Next, you can make some basic SDNS settings **[c]**: enable or disable the SDNS statistics and local DNS statistics functions, specify how often HTTP proxy cache servers should report their local status information, specify how long the FortiBalancer appliance will wait to send heartbeat messages to all other members in an SDNS network, specify the SDNS persistent timeout value, and enable or disable the SDNS recursive query. Then, click on the "SAVE CHANGES" button **[d]** to save your settings.

To add an SDNS member, click on the action link "Add Member Entry" **[e]**. In the new configuration page, specify the name, type, IP address and port number (defaults to 5888) of the SDNS host **[f]**, and click on "Save" **[g]**. The newly created SDNS host will be displayed in the sort ready table **[h]**.

You can also change the SDNS members' type or set them as local DNS member in the sort ready table. Remember to click on "SAVE CHANGES" **[d]** to save your change.



Records

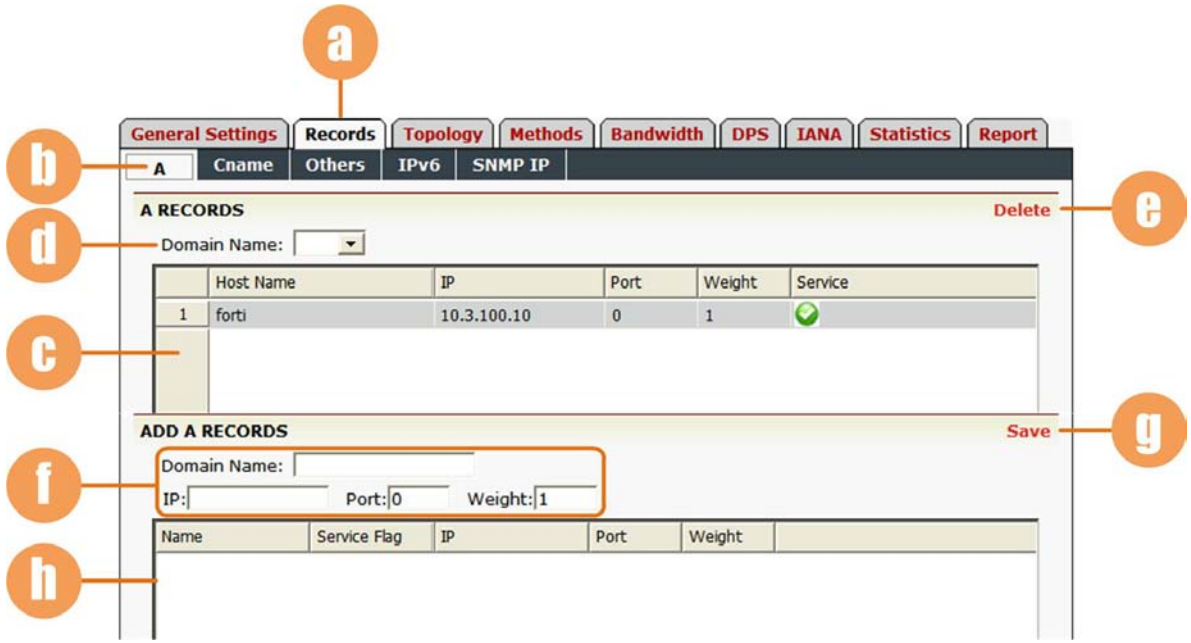
Select the "**Records**" tab **[a]**. The configuration page will display five sub-tabs. The default page is A **[b]**.

A

On this page, all the existing DNS A records in the system are displayed in the sort ready table **[c]**. Select a host via the selector **[d]**, and the table will only display the A records about the selected host. To delete a record, simply select it in the table and click on the "Delete" action link **[e]**.

To add a new A record, supply the domain name, IP address, port number, weight value and link route in the text fields **[f]**, and click on the "Save" action link **[g]**. The newly created A record will be displayed in the table **[c]**.

In the sort ready table **[h]**, all the existing real servers and virtual servers in the system are displayed. You can use their IP addresses as the IP address of newly added A records. To do this, simply input the domain name, select one or more real/virtual server in the table **[h]**, input the port and weight, and click on "Save". The newly created A record(s) will be displayed in the table **[c]**.

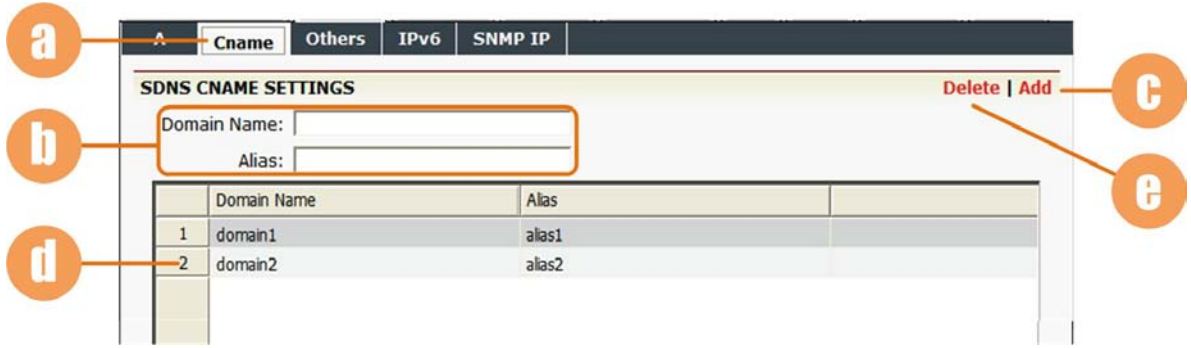


Records (Continue)

Cname

Select the sub-tab "**Cname**" **[a]**. You can add new CNAME records for a domain name. Supply the domain name and alias name in the text fields **[b]** and click on the action link "Add" **[c]**. The newly added CNAME records will be displayed in the sort ready table **[d]**.

To delete an entry in the table, simply select the entry and click on the "Delete" action link **[e]**.



Records (Continue)

Others

Select the sub-tab "**Others**" **[a]**.

You can reboot the local DNS function by clicking on the "Restart" button **[b]**.

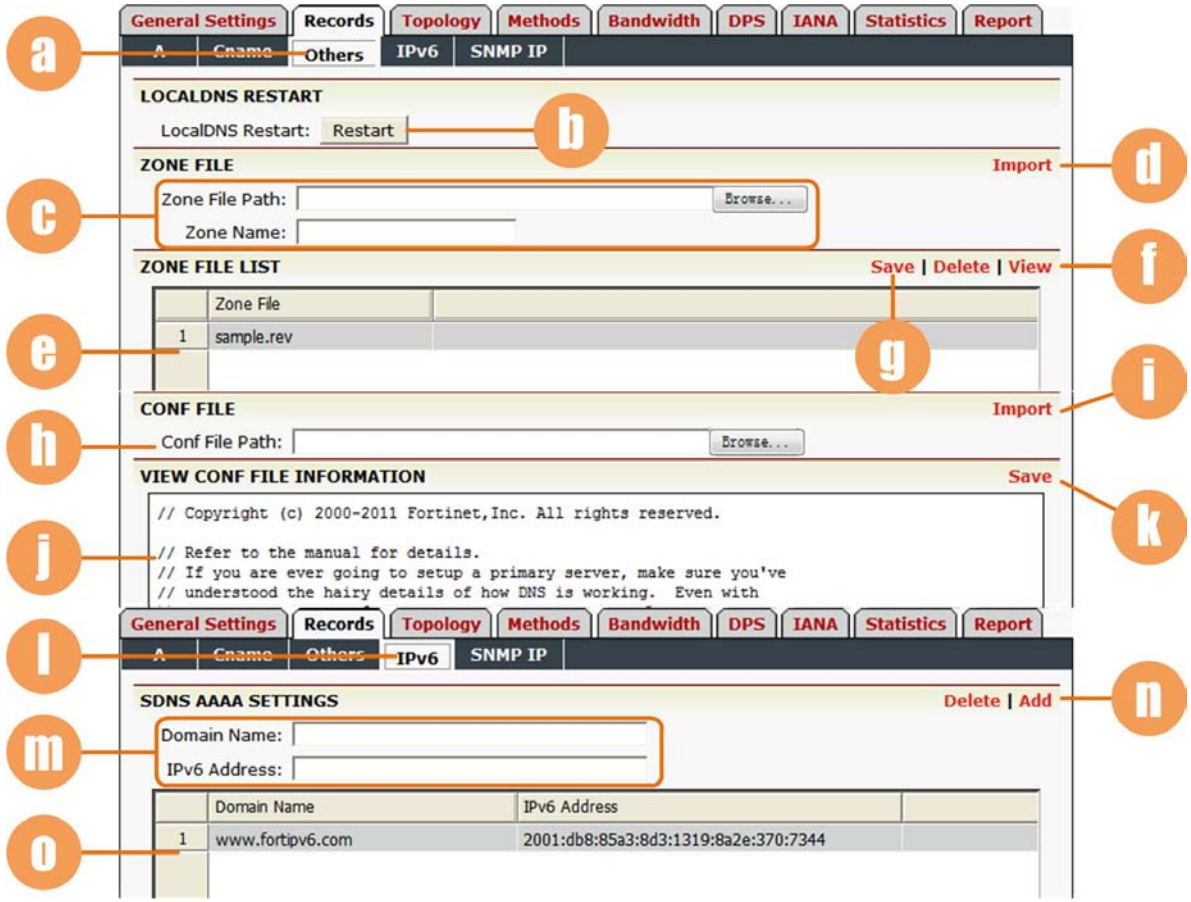
Supply the path and name of the zone file in the text fields **[c]** and click on the action link "Import" **[d]**. Then, the name of the imported zone file will be displayed in the list box [e]. Multiple zone files can be imported.

To view the contents of a file, double click on the file in the list, or select it and click on the action link "View" **[f]**. The file contents will be displayed in a new page. To save a zone file, simply click on the action link "Save" **[g]**.

Specify the path of the config file in the text field **[h]** and click on the action link "Import" **[i]**. The contents of the config file will be displayed in the box **[j]**. You can save the file by clicking on the action link "Save" **[k]**.

IPv6

Select the sub-tab "IPv6" **[l]**. You can add a new IPv6 record for a domain name. Supply the domain name and IPv6 address in the text fields **[m]** and click on the action link "Add" **[n]**. The newly added record will be displayed in the sort ready table **[o]**.



Records (Continue)

SNMP IP

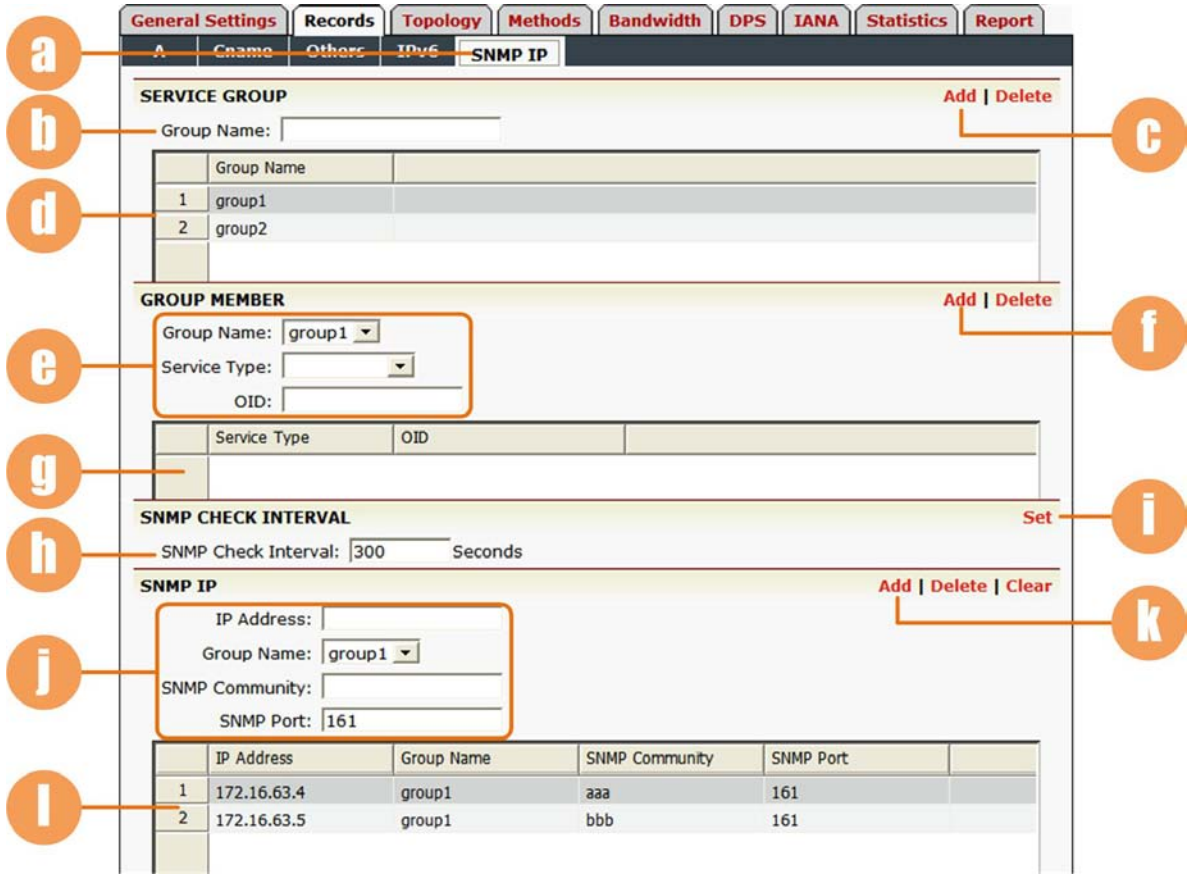
Select the sub-tab "**SNMP IP**" **[a]**.

To create an SNMP service group, you can supply the group name in the text field **[b]** and click on the action link "Add" **[c]**. The newly added group information will be displayed in the sort ready table **[d]**.

You can further add members for the SNMP group. Select a group via the selector, and then specify the service type and OID **[e]**, and click on the action link "Add" **[f]**. The group member information will be displayed in the sort ready table **[g]**.

You can set the SNMP check interval (in seconds) in the text field **[h]** and click on "Set" to save your setting **[i]**.

Then, you can configure the IP address of the created SNMP group. Supply the IP address, select the group name and set the SNMP community and port number **[j]**. Then, click on the action link "Add" **[k]**. The newly created SNMP IP information will be displayed in the sort ready table **[l]**.



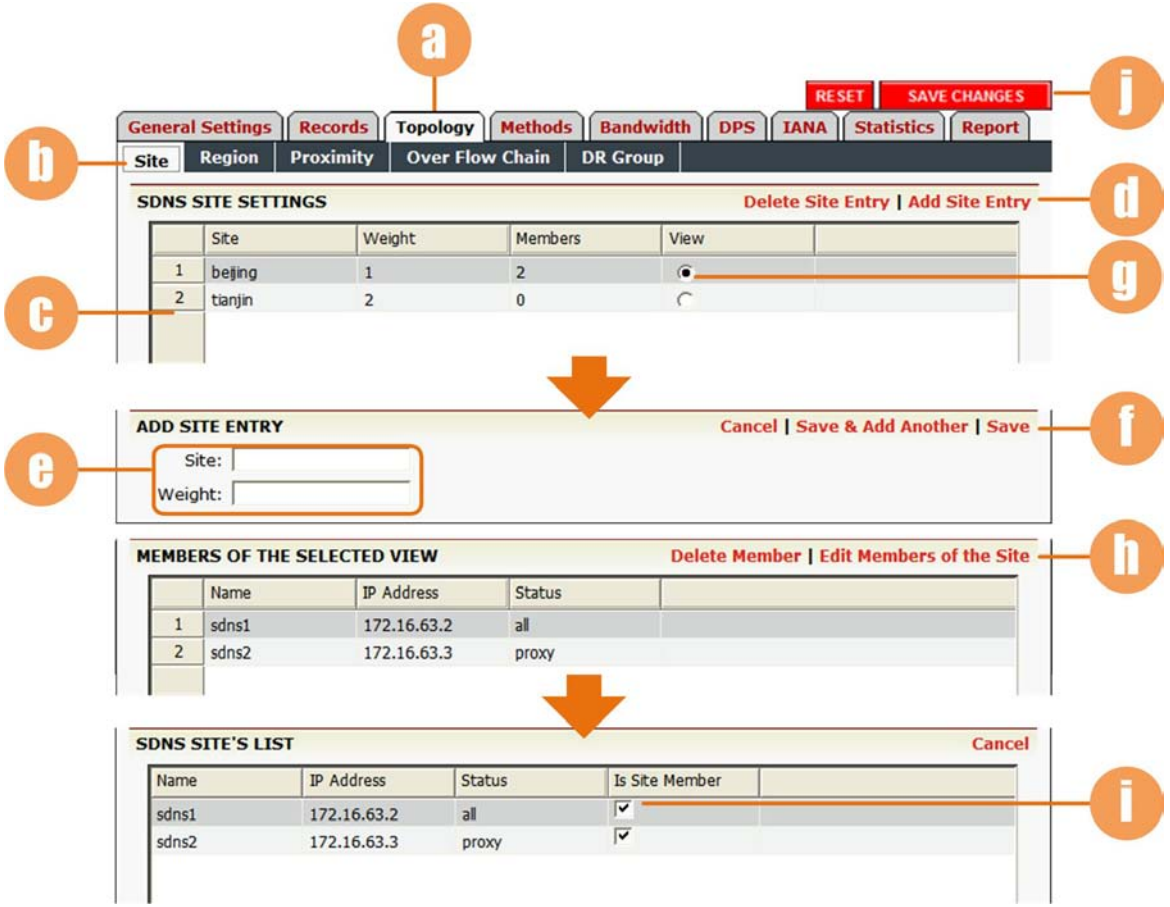
Topology

Select the "**Topology**" tab **[a]**. The configuration page will display five sub-tabs. The default page is Site **[b]**.

Site

On the "**Site**" page, all sites previously configured are displayed in the sort ready table **[c]**. To add a new site, click on the action link "Add Site Entry" **[d]**, supply the site name and weight **[e]** in the new configuration page and click on "Save" **[f]**. Then the newly created site will be displayed in the sort ready table **[c]**.

You can select a desired site via the radio button to view the members of the selected site **[g]**. To edit the site members, click on the action link "Edit Members of the Site" **[h]**. Select the members for the site via the check boxes **[i]**, and click on the "SAVE CHANGES" button **[j]** when it appears to make your change take effect.



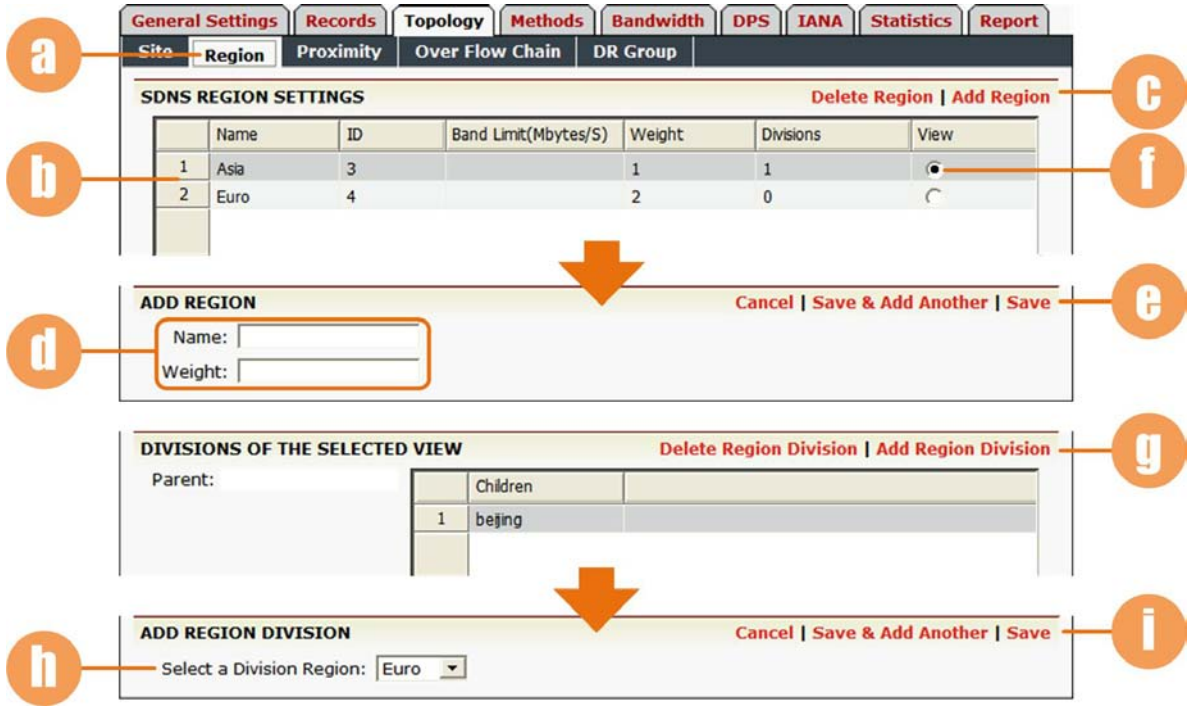
Topology (Continue)

Region

Select the sub-tab "**Region**" **[a]**.

On the "Region" page, all regions previously configured are displayed in the sort ready table **[b]**. To add a new region, click on the action link "Add Region" **[c]**, supply the region name and weight **[d]** in the new configuration page and click on "Save" **[e]**. Then the newly created region will be displayed in the sort ready table **[b]**.

You can select a desired region via the radio button to view its child regions **[f]**. To add a new child region for the selected region, click on the action link "Add Region Division" **[g]**, and select a division region via the selector **[h]**. Then click on the "Save" action link **[i]** to make your setting take effect.



Topology (Continue)

Proximity

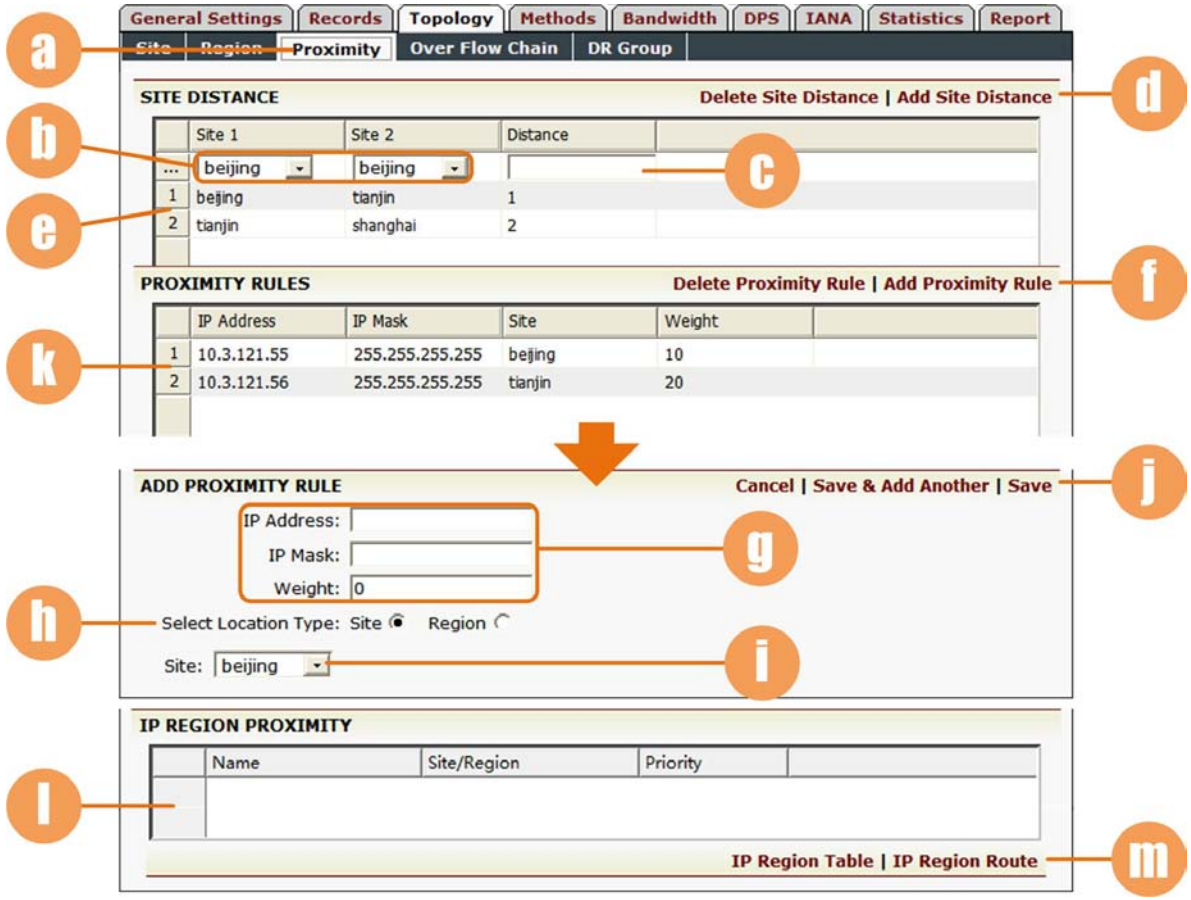
Select the sub-tab "**Proximity**" **[a]**.

You can set the distance between two sites. First, specify two sites via the selectors respectively **[b]** and input the distance between the two sites **[c]**. Click on the action link "Add Site Distance" **[d]**. The new configuration will be displayed in the sort ready table **[e]**.

Still on this configuration page, click on the action link "Add Proximity Rule" **[f]**. The window will display a new configuration page.

Input the IP address, mask and weight in the text fields **[g]**, select the location type via radio buttons **[h]** and set the site via the pull down menu **[i]**. Then, click on "Save" **[j]**. The newly created proximity rule will be displayed in the sort ready table **[k]**.

The IP region information will be shown in the "IP Region Proximity" table **[l]**. Clicking on the action link "IP Region Table" and "IP Region Route" **[m]** will direct you to the related configuration pages..



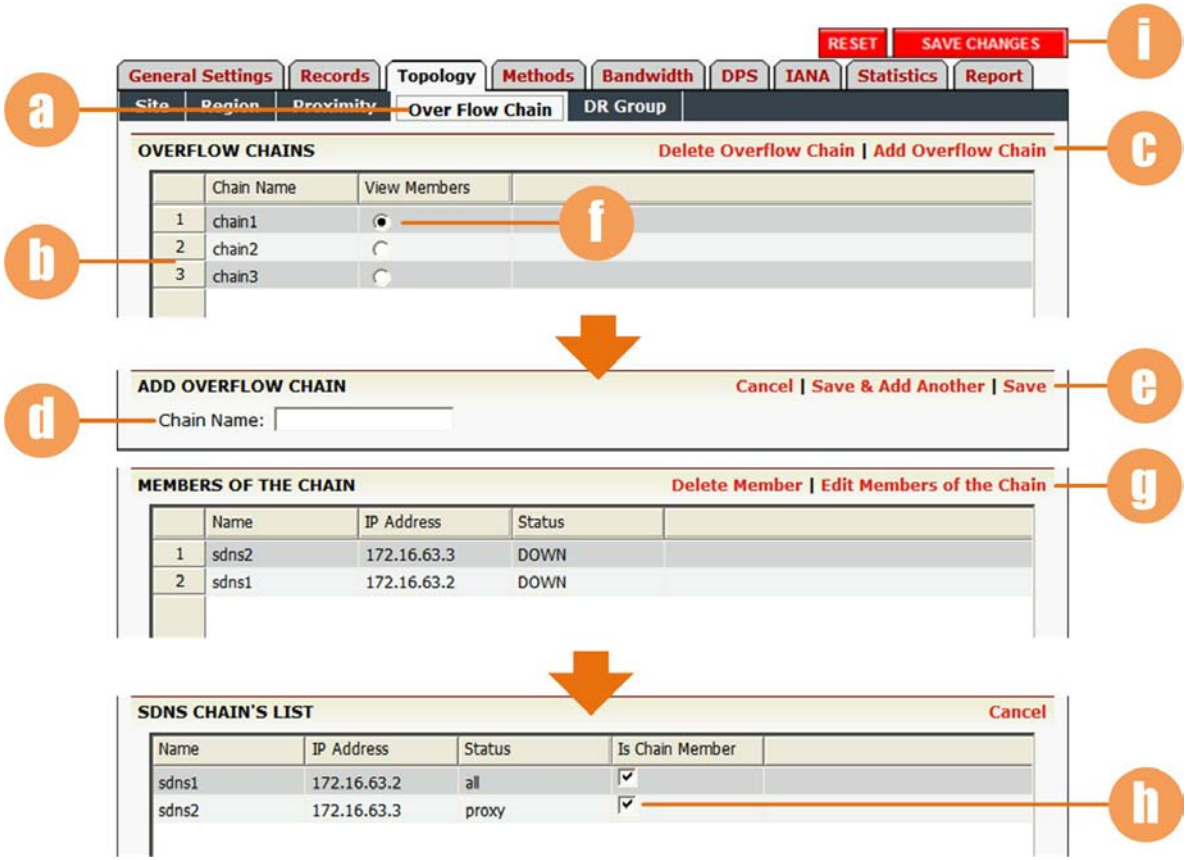
Topology (Continue)

Over Flow Chain

Select the sub-tab "**Over Flow Chain**" **[a]**.

On this page, all overflow chains previously configured are displayed in the sort ready table **[b]**. To add a new chain, click on the action link "Add Overflow Chain" **[c]**, supply the chain name **[d]** in the new configuration page and click on "Save" **[e]**. Then the newly created chain will be displayed in the sort ready table **[b]**.

You can select a desired chain via the radio button to view the members of the chain **[f]**. To edit the chain members, click on the action link "Edit Members of the Chain" **[g]**. Select the members for the chain via the check boxes **[h]**, and click on the "SAVE CHANGES" button **[i]** when it appears to make your change take effect.



Topology (Continue)

DR Group

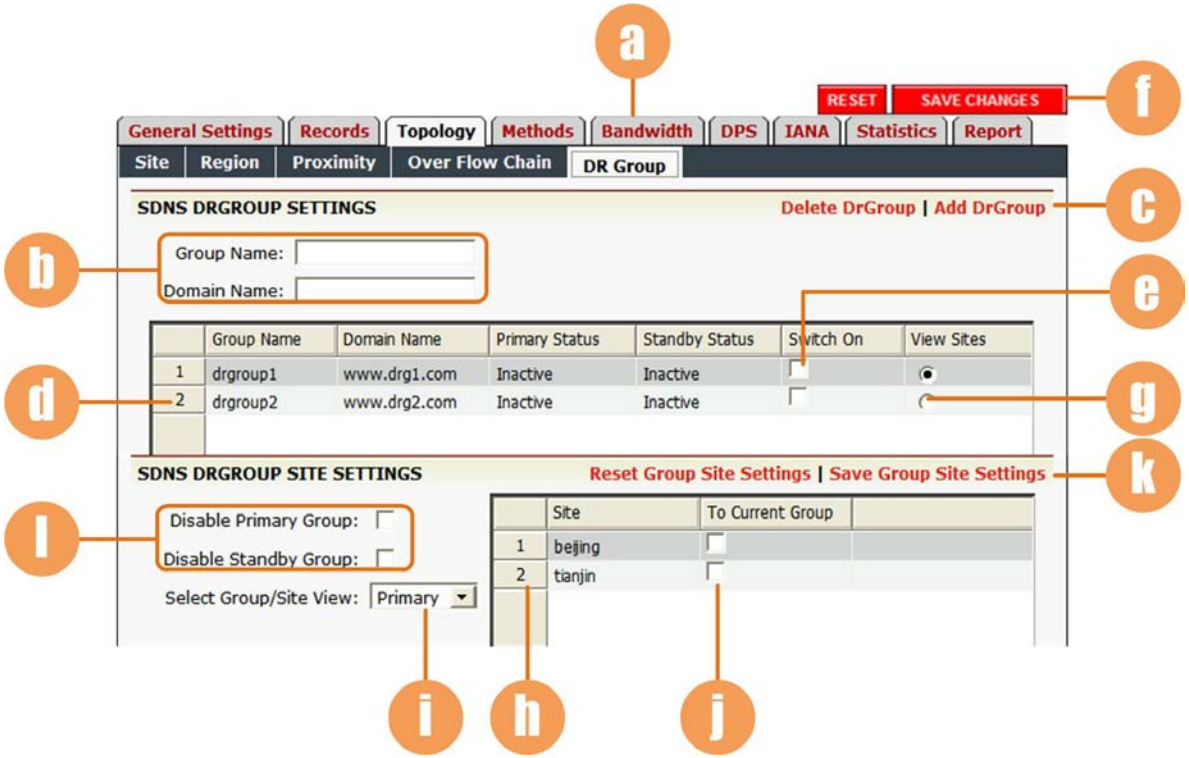
Select the sub-tab "**DR Group**" **[a]**.

Enter the DR (disaster recovery) group name and the domain name that requires disaster recovery in the text fields **[b]**, and click on the action link "Add DrGroup" **[c]**. The newly added group information will be displayed in the sort ready table **[d]**.

In the table, you can switch on/off a DR group via the check box **[e]**. Remember to click on the "SAVE CHANGES" button **[f]** when it appears to save your change.

Select a desired DR group via the radio button **[g]**, and you can see the list of the sites in the group **[h]**. You can further add these sites into a primary DR group or a standby DR group. To do this, select "Primary" or "Standby" via the selector **[i]**, and specify the sites to be added into the group via the check boxes **[j]**. Then, click on the "Save Group Site Settings" action link **[k]** to save your changes.

You can disable the primary group or standby group via the check boxes **[l]**.



Methods

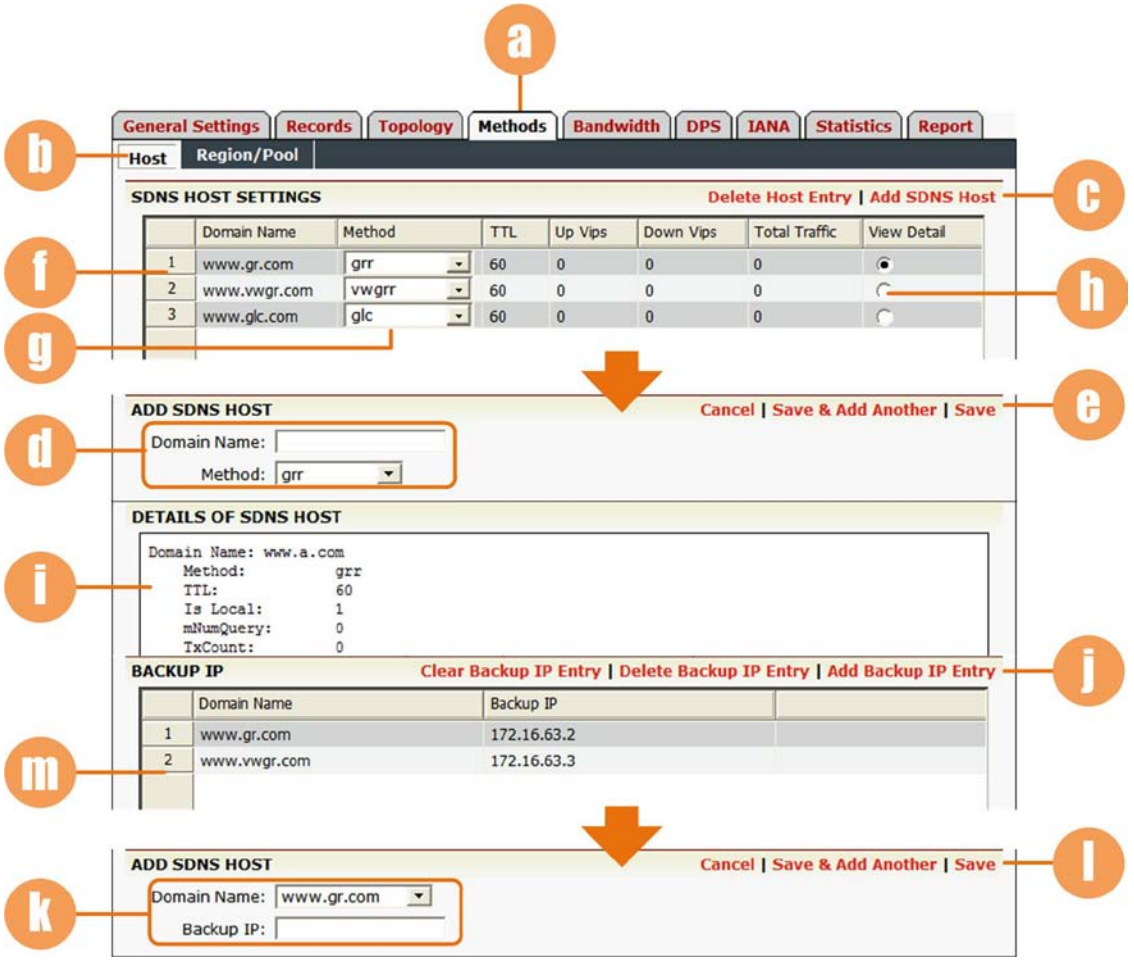
Select the "**Methods**" tab **[a]**. The configuration page will display two sub-tabs. The default page is Host **[b]**.

Host

Click on the action link "Add SDNS Host" **[c]**. Enter the SDNS host name in the text field and specify the host method via the selector **[d]**. Then, click on the action link "Save" **[e]** to save your settings. The created SDNS host will be displayed in the sort ready table **[f]**.

You can modify the SDNS hosts' methods via the selectors **[g]**. Select a desired SDNS host via the radio buttons **[h]** and the window will display details about the SDNS host in the table **[i]**.

You can add backup IP addresses for SDNS hosts. Click on the "Add Backup IP Entry" action link **[j]**, and then select desired host name from the drop-down list of existing hosts and further specify the backup IP address for the host **[k]**. Click on "Save" **[l]**, and the configured backup IP address will be displayed in the sort-ready table **[m]**. Note that backup IP address is used for DNS resolving when and only when all the other IP addresses are not available.



Methods (Continue)

Region/Pool

Select the sub-tab "**Region/Pool**" **[a]**.

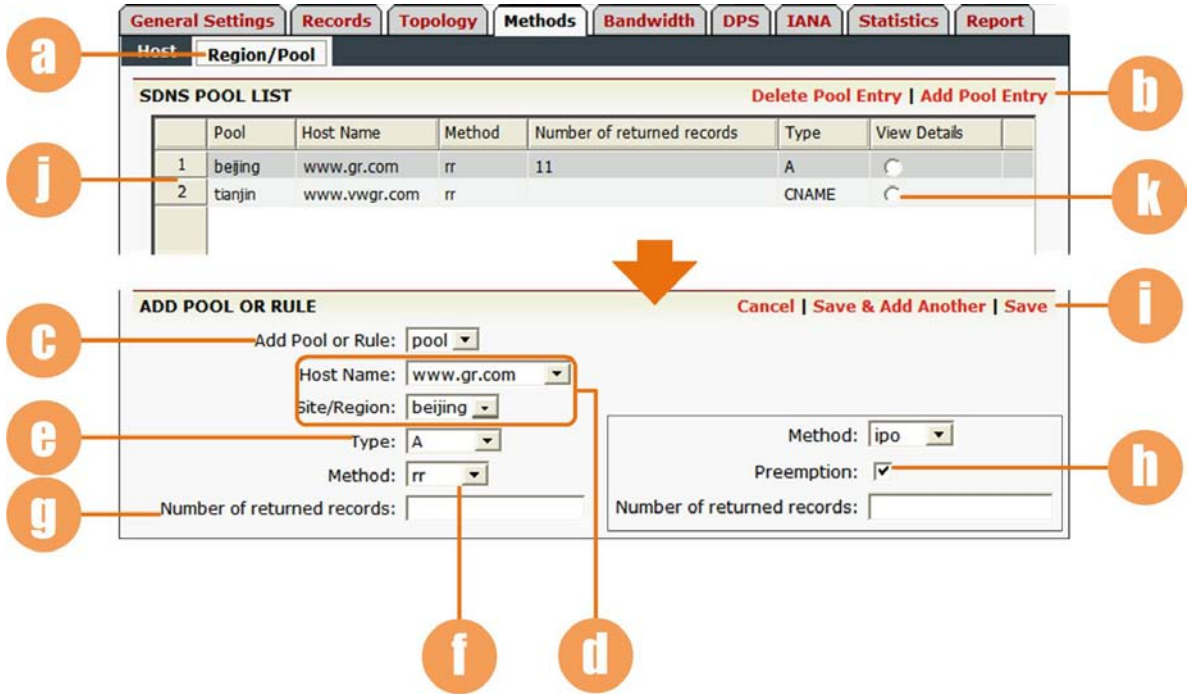
Click on the action link "Add Pool Entry" **[b]**. A new configuration page will appear. Select to add an SDNS pool or an SDNS rule via the selector **[c]**, and the parameter fields will vary with your selection. The following will introduce how to add an SDNS pool and how to add an SDNS rule.

To add an SDNS pool, specify a host and select a configured region or site to be the pool via the selectors respectively **[d]**, and set the pool type (A or CNAME) via the selector **[e]**.

For type "A", you need to set the pool's method **[f]**. For method rr, wrr or snmp, you need to enter the number of returned IPs **[g]**. For method ipo, you need to enable or disable the SDNS pool ipo preemption **[h]** and further enter the number of returned IPs.

Then, click on "Save" **[i]**. The newly added pool will be displayed in the sort ready table **[j]**.

To modify the SDNS pool settings, you can select an entry and select the radio button **[k]**, or double click on the entry. The window will display a new configuration page.



Methods (Continue)

Region/Pool (Continue)

In this new page, you can modify the pool type via the selector **[a]**. If A is selected, you need to set the method **[b]**. If you select the "snmp" method, you need to further set the order type (ascending or descending), service type and weight value **[c]**. Click on the action link "Save" **[d]** to save your configuration.

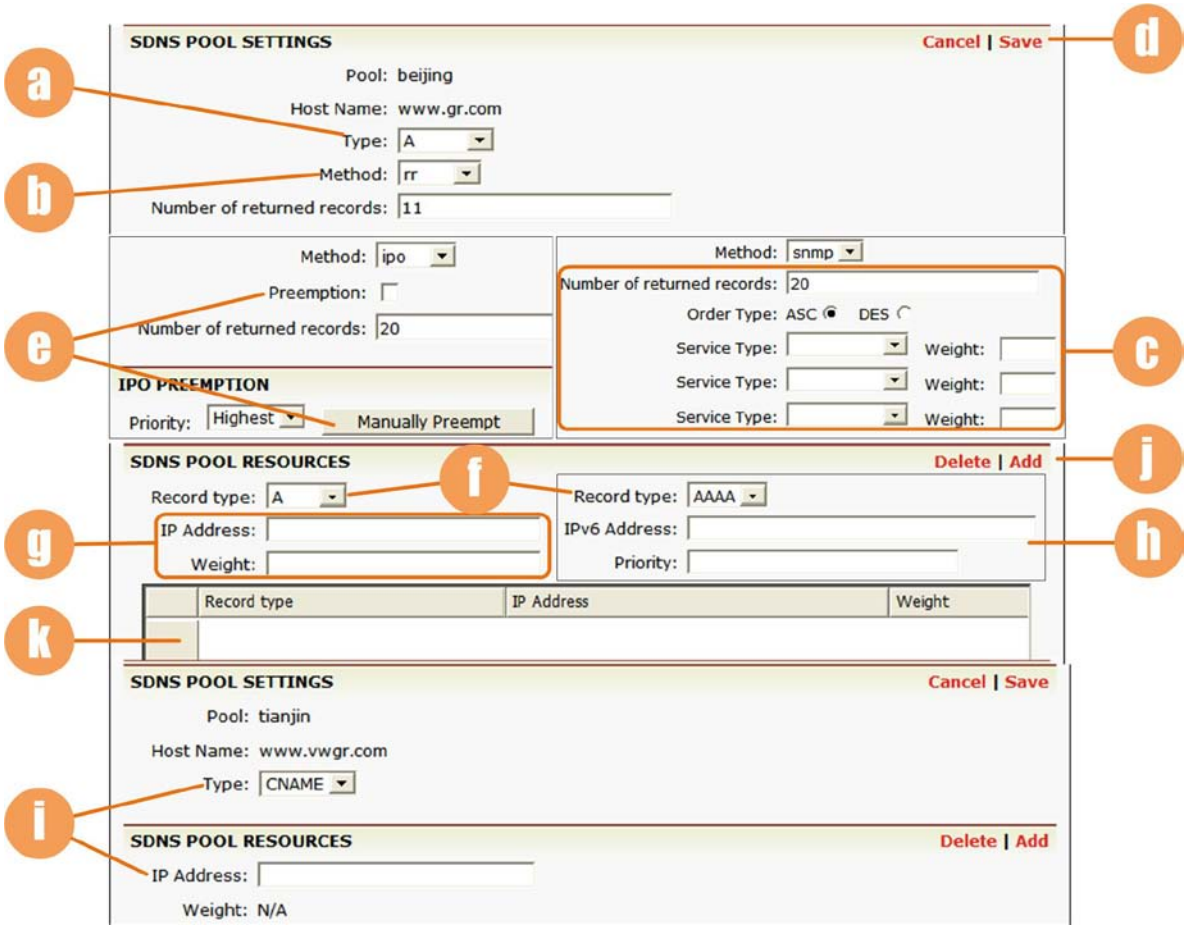
If the "ipo" method is selected and if the SDNS pool ipo preemption is disabled, you can manually preempt **[e]**.

You can further add pool resources.

For pool type "A", you need to specify the record type (A or AAAA) via the selector **[f]**: if "A" is selected, you need to input the IP address and priority in the text fields **[g]**; if "AAAA" is selected, you need to input the IPv6 address and priority in the text fields **[h]**.

For pool type "CNAME", you need to input the IP address **[i]**.

Click on the action link "Add" **[j]**. The newly added pool resource will be displayed in the sort ready table **[k]**.



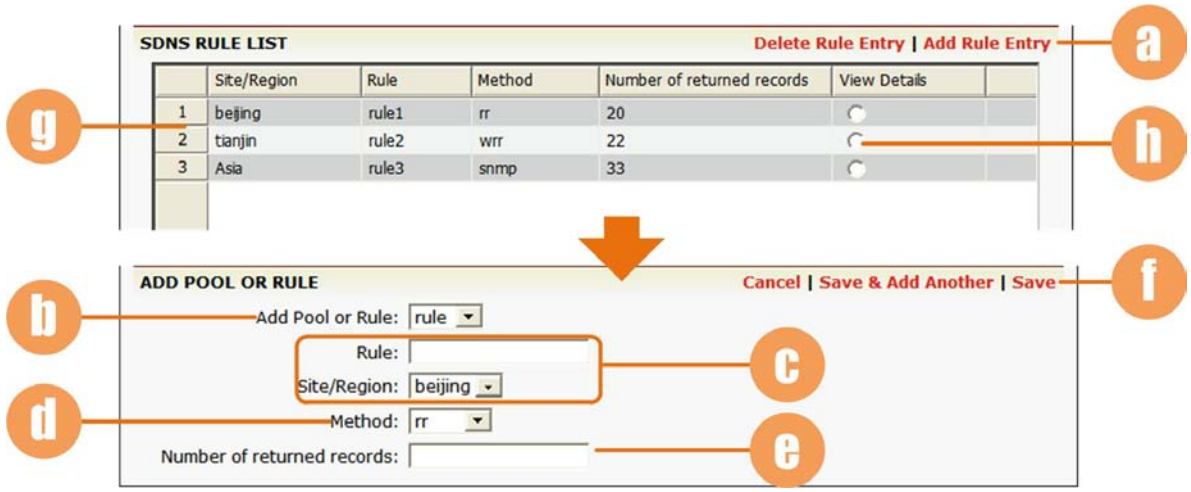
Methods (Continue)

Region/Pool (Continue)

To add an SDNS rule, click on the “Add Rule Entry” action link **[a]**. In the new configuration page, select “rule” via the selector **[b]**, input the rule name in the text field and select a configured region or site via the selector **[c]**. Set the method via the selector [d] and enter the number of returned records in the text field **[e]**.

Click on the “Save” action link **[f]**. The newly added rule will be displayed in the sort ready table **[g]**.

In the table, you can select the radio button **[h]** or double click on an entry The window will display a new configuration page.



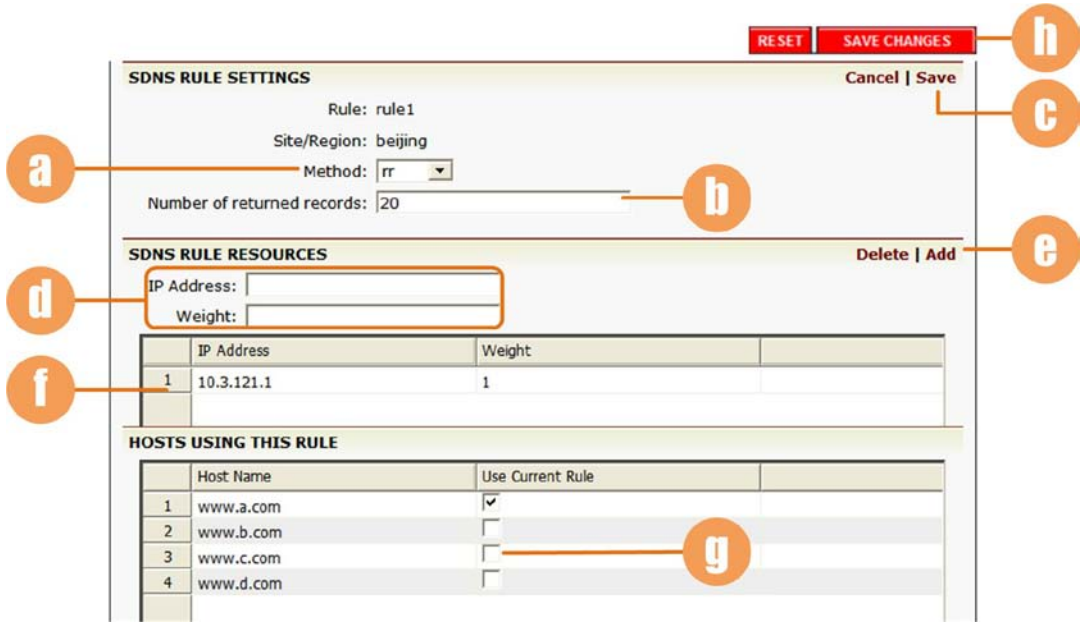
Methods (Continue)

Region/Pool (Continue)

In this new page, you can modify the method via the selector **[a]**, and set the number of returned records in the text field [b]. Then, click on the action link “Save” **[c]** to save your configuration.

You can further add rule resources. Input the IP address and weight properly in the text fields [d] and click on the action link “Add” **[e]**. Then the newly added information will be displayed in the sort ready table **[f]**.

You can further specify the hosts that use the created rule. Specify the desired hosts via the check boxes **[g]** and click on the “SAVE CHANGES” button **[h]** when it appears to make your settings take effect.



Bandwidth

Select the "**Bandwidth**" tab **[a]**. The configuration page will display five sub-tabs. The default page is Region **[b]**.

Region

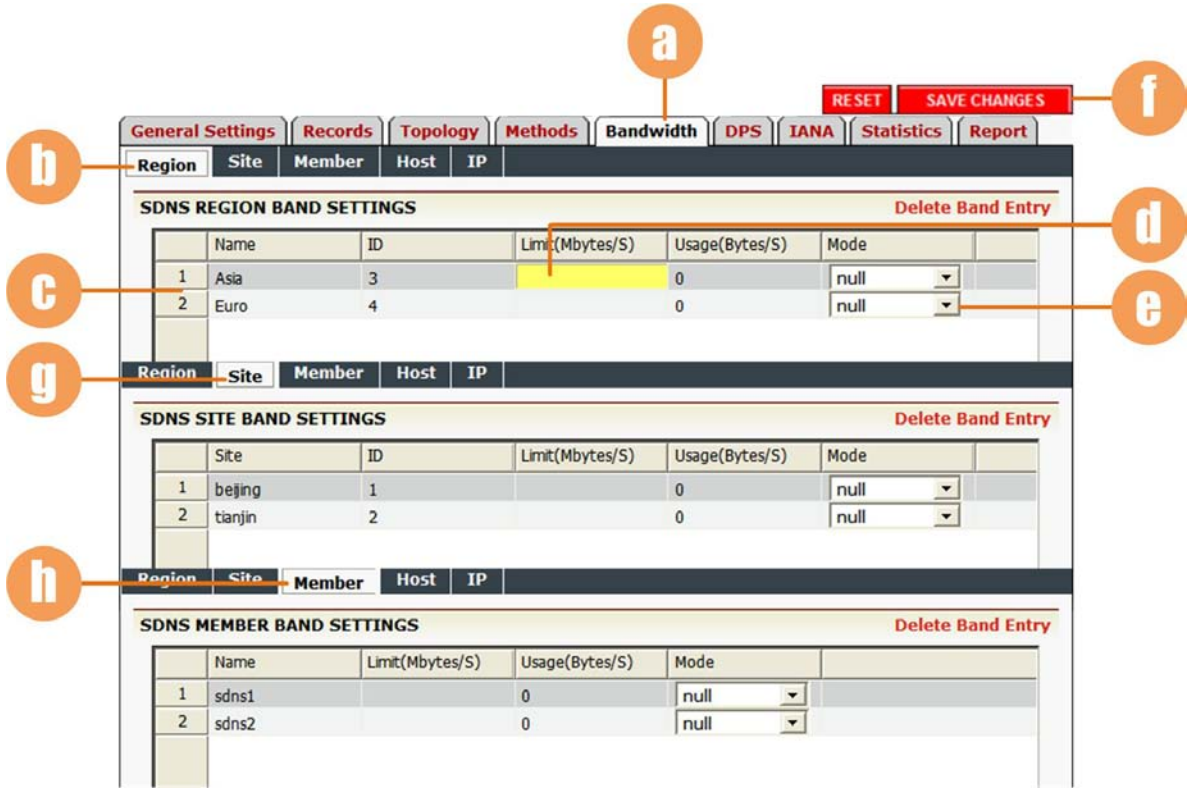
On the new page, all regions configured previously are displayed in the sort ready table **[c]**. To specify the maximum bandwidth of a region, double click on the entry under the "Limit" column and input the value in the text field **[d]**. You can also set the mode of each region via the selector **[e]**. Remember to click on the "SAVE CHANGES" button **[f]** when it appears to save your configuration.

Site

Select the sub-tab "**Site**" **[g]**. Follow the same steps with the region band settings to set the bandwidth for sites.

Member

Select the sub-tab "Member" **[h]**. Follow the same steps with the region band settings to set the bandwidth for members.



Bandwidth (Continue)

Host

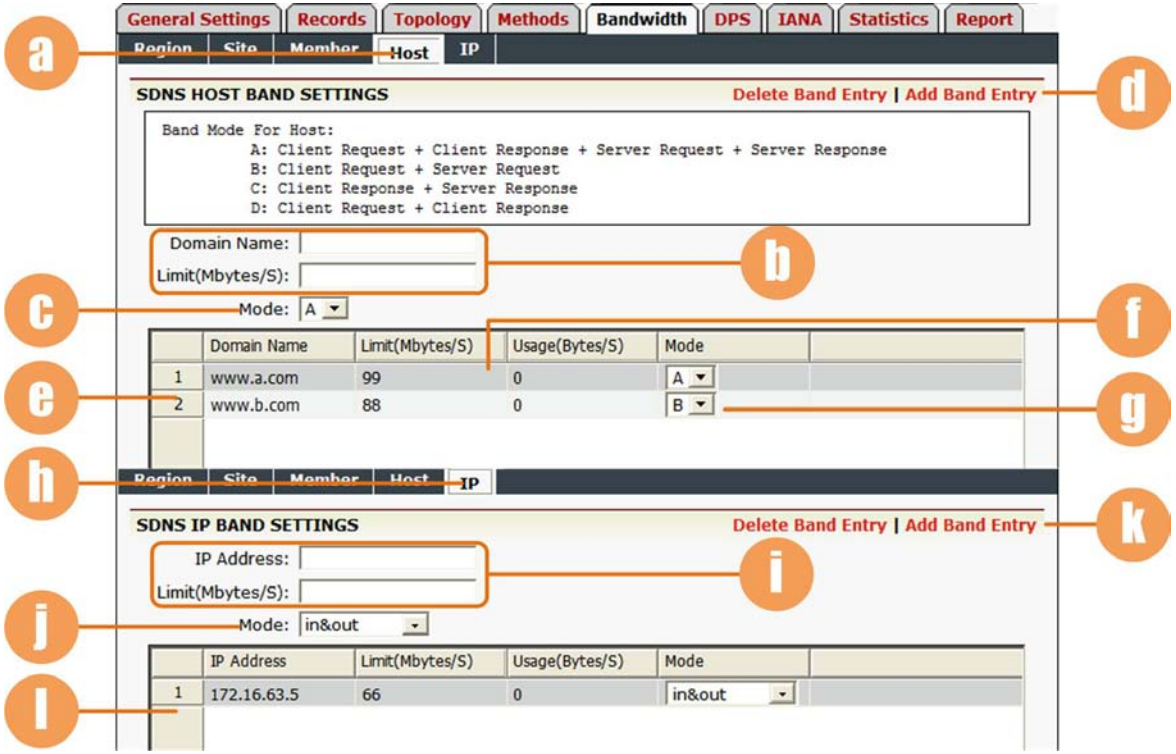
Select the sub-tab "**Host**" **[a]**. Enter the domain name and the maximum bandwidth in the text fields **[b]**. Specify the bandwidth mode via the selector **[c]**. Then, click on the action link "Add Band Entry" **[d]**, and the information will be displayed in the sort ready table **[e]**.

You can modify the maximum bandwidth by double clicking on it under the "Limit" column **[f]**. You can also change the mode via the selector **[g]**.

IP

Select the "IP" sub-tab **[h]**. Enter the IP address and the maximum bandwidth of the IP address in the text fields **[i]**. Set the bandwidth mode via the selector **[j]**. Then, click on the action link "Add Band Entry" **[k]**, and the configured information will be displayed in the sort ready table **[l]**.

To modify the IP bandwidth and mode, follow the same way with the host bandwidth modification.



DPS

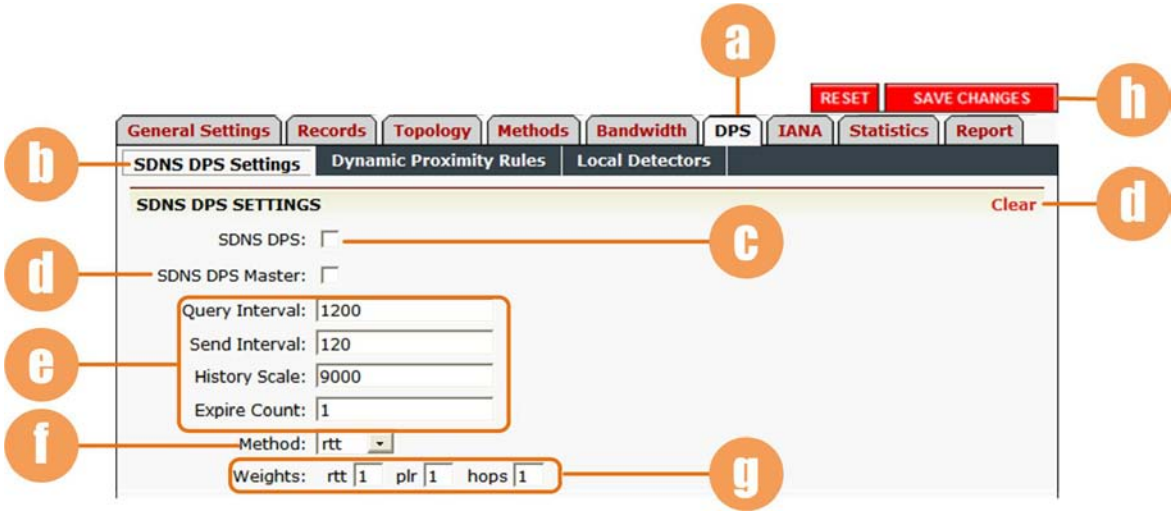
SDNS Dynamic Proximity System (DPS) aims at providing a dynamically generated proximity rule table, instead of statically configured proximity rules for Fortinet SDNS. For DPS feature, DPS detectors are needed for proximity detection and DPS servers are used for DNS resolution.

Select the "**DPS**" tab **[a]**. The configuration page will display three sub-tabs. The default page is SDNS DPS Settings **[b]**.

SDNS DPS Settings

You can turn on SDNS DPS by selecting the check box **[c]**, and start the DPS master by selecting the check box **[d]**. Specify the interval of SDNS dynamic proximity query, the interval of sending local DNS IP addresses, the time span of history data that the detector detects, and the expiry count in the text fields respectively **[e]**. Select the method of SDNS DPS server via the selector **[f]** (defaults to "rtt"). If you set the method to "mix", the DPS detector will detect a mixed value of the rtt, plr and hops methods. In this case, you need to further specify the weights of the three methods in the text fields **[g]**.

After confirming the inputted information, click on the "SAVE CHANGES" button to save the settings **[h]**.

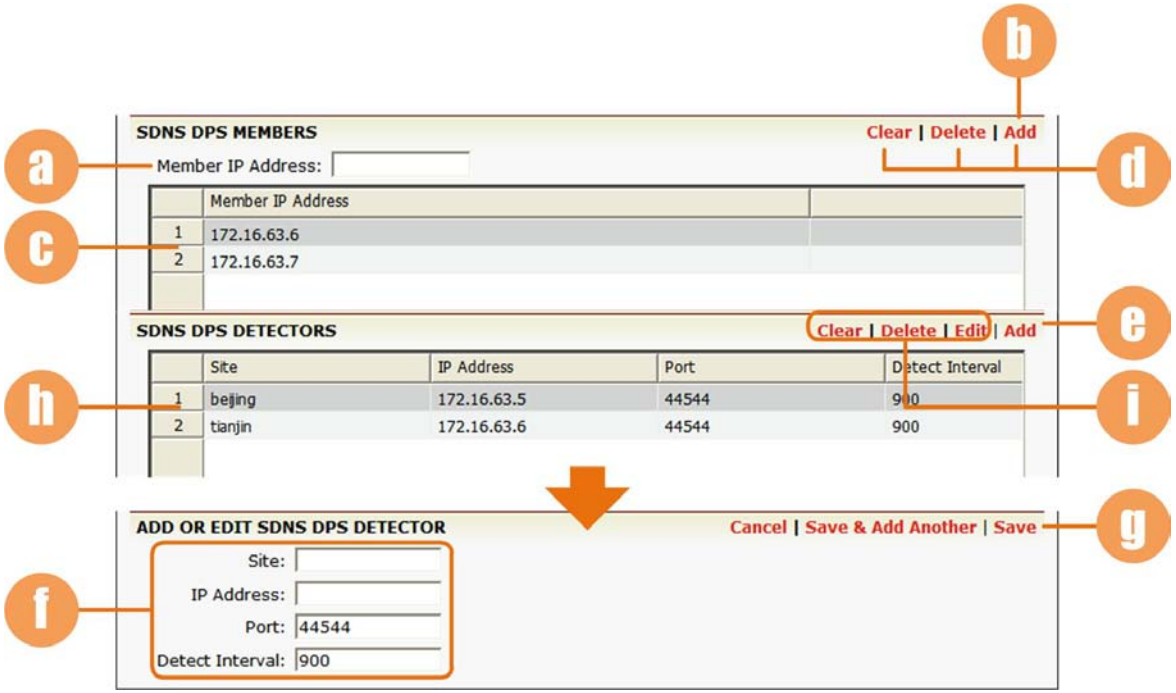


DPS (Continue)

SDNS DPS Settings (Continue)

To add a DPS server into the DPS member list, enter the IP address of the DPS server in the text field **[a]** and click on the "Add" action link **[b]**. The new member will be displayed in the sort ready table **[c]**. You can delete a member from the list or clear all members by clicking on the desired action link **[d]**.

To add an SDNS DPS detector, you can click on the action link "Add" **[e]**, and the configuration window will display a new page. Specify the site (must have been defined in SDNS configuration), the IP address of the detector, port number (defaults to 44544) and detect interval in the text fields **[f]**. Click on the "Save" action link **[g]**, and the settings will be displayed in the sort ready table **[h]**. You can select to delete a detector, edit detector configuration or clear all detectors' configuration by clicking on the desired action link **[i]**.



DPS (Continue)

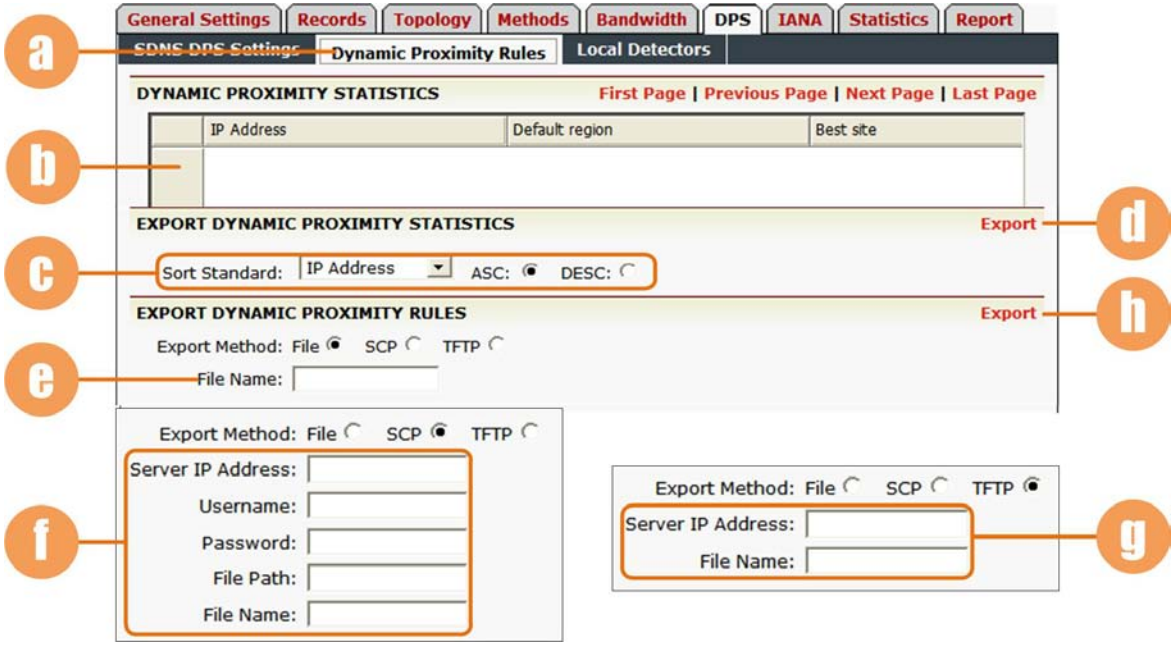
Dynamic Proximity Rules

Select the **"Dynamic Proximity Rules**" sub tab **[a]**. On this page, all the dynamic proximity statistics generated based on the detection results will be displayed in the table **[b]**.

To export the dynamic proximity statistics, you can first select the sort standard and specify to export the statistics in ascending or descending order **[c]**, and then click on the "Export" action link **[d]**.

You can export the dynamic proximity rules via three methods: File, SCP and TFTP. For File method, select the "File" radio button and input the file name in the text field **[e]**; for SCP method, select the "SCP" radio button and input required information in the text fields **[f]**; for TFTP method, select the "TFTP" radio button and input required information in the text fields **[g]**.

After confirming the inputted information, click on the "Export" action link **[h]** to start exporting.



DPS (Continue)

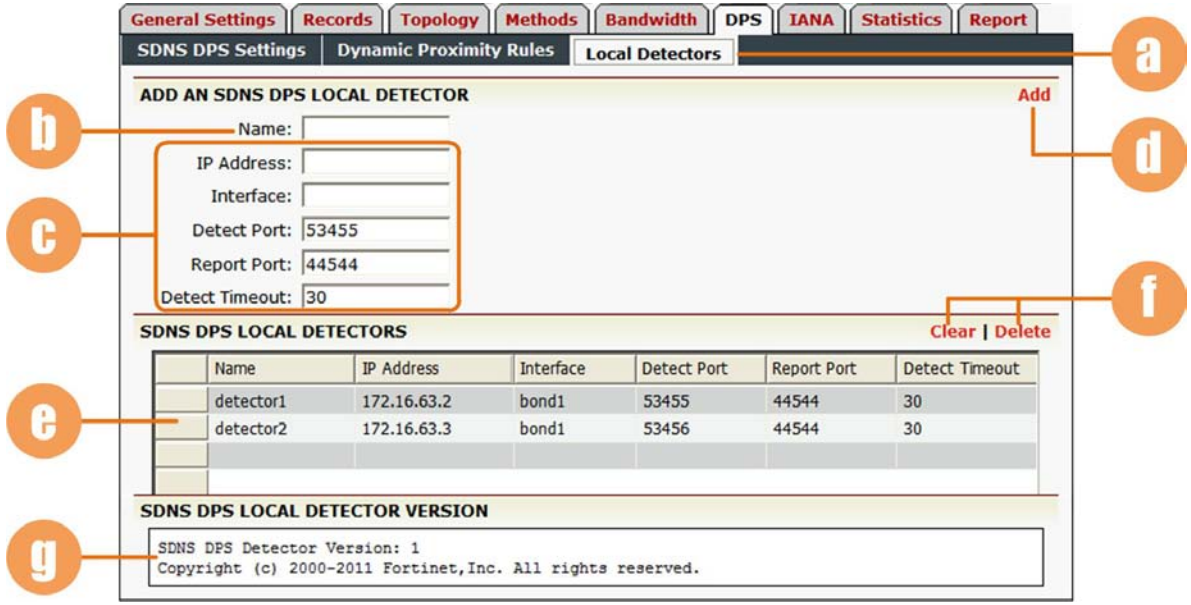
Local Detectors

Select the "**Local Detectors**" sub tab **[a]**.

To add and SDNS DPS local detectors, first specify a name for the local detector **[b]**. Then, enter the IP address, interface name, detect port number, report port number and detect timeout value in the text fields **[c]**. After confirming the inputted information, click on the action link **[d]**. The configured information of the local detectors will be displayed in the table below **[e]**.

To delete a local detector or clear all local detectors, you can click on the desired action link **[f]**.

You can view the version information of the SNDS DPS local detector in the table **[g]**.



IANA

Select the "**IANA**" tab **[a]**. The window presents two sub tabs. The Import page is displayed by default **[b]**.

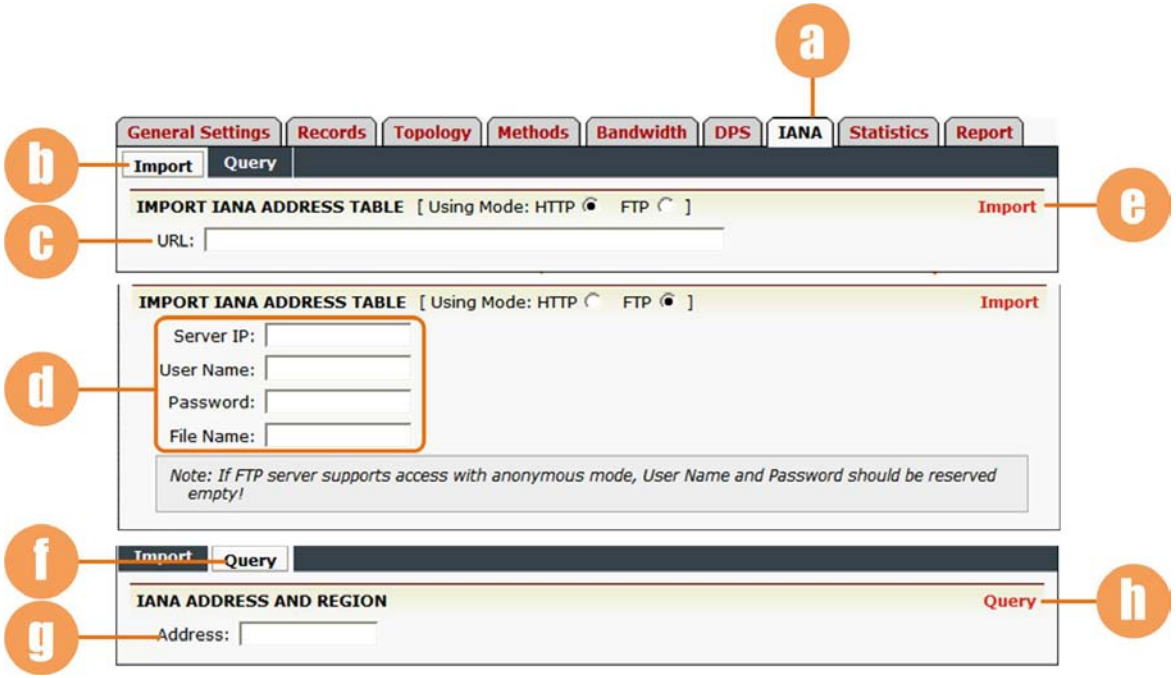
Import

You can import an IANA address table via HTTP or FTP method. To import via HTTP method, supply the URL address in the text field **[c]**. To import via FTP method, supply the parameter fields properly **[d]**.

Confirm the inputted information, and click on the action link "Import" **[e]**.

Query

Select the "Query" sub tab **[f]**. You can query the corresponding region of an IANA address. Supply the address in the text field **[g]** and click on the action link **[h]** to begin query.



Statistics

Select the "**Statistics**" tab **[a]**, and the configuration page will display four sub-tabs. The default page is **Local DNS [b]**. To view the statistics, you just need to enter the Enable mode.

Local DNS

This page displays all local DNS statistics information **[c]**.

SDNS Host

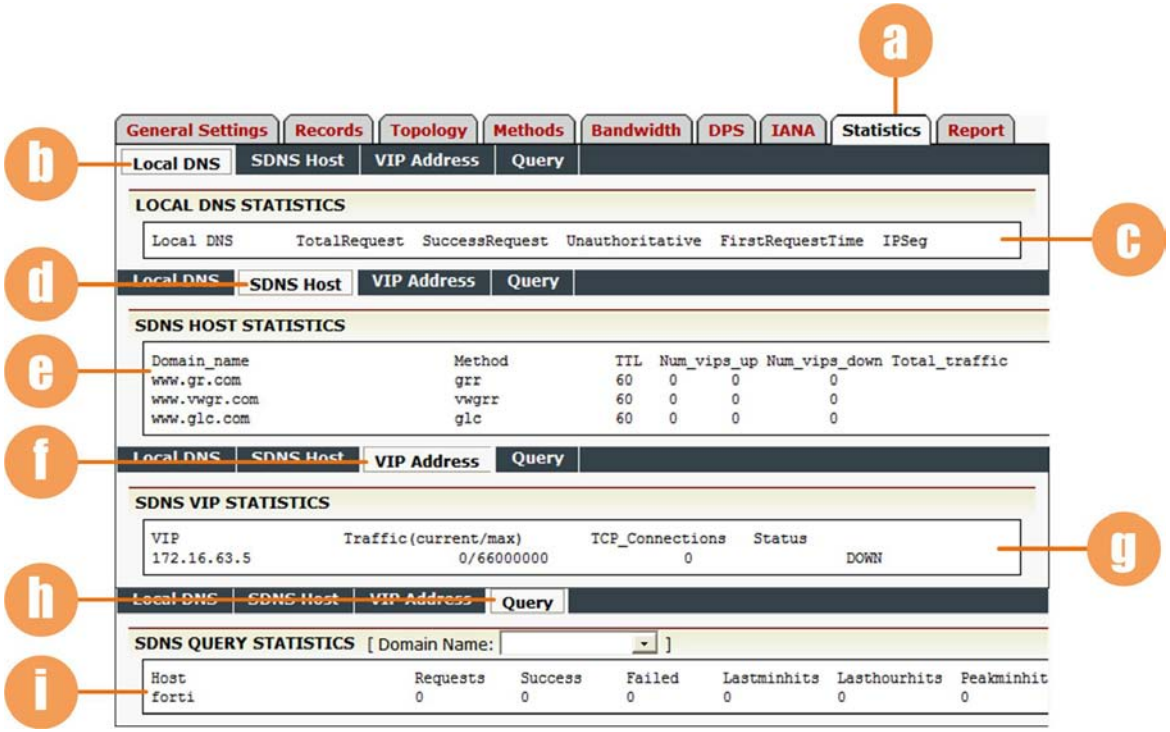
Select the sub-tab "SDNS Host" **[d]**. This page displays all SDNS host statistics, including host name, method, time to live (TTL), the number of up VIPs, the number of down VIPs and total traffic **[e]**.

VIP Address

Select the sub-tab "VIP Address" **[f]**. The configuration page will display all VIPs statistics of SDNS, including virtual IP, traffic information, the number of TCP connections and the VIP status **[g]**.

Query

Select the "Query" sub tab **[h]** to view all query statistics of SDNS **[i]**.



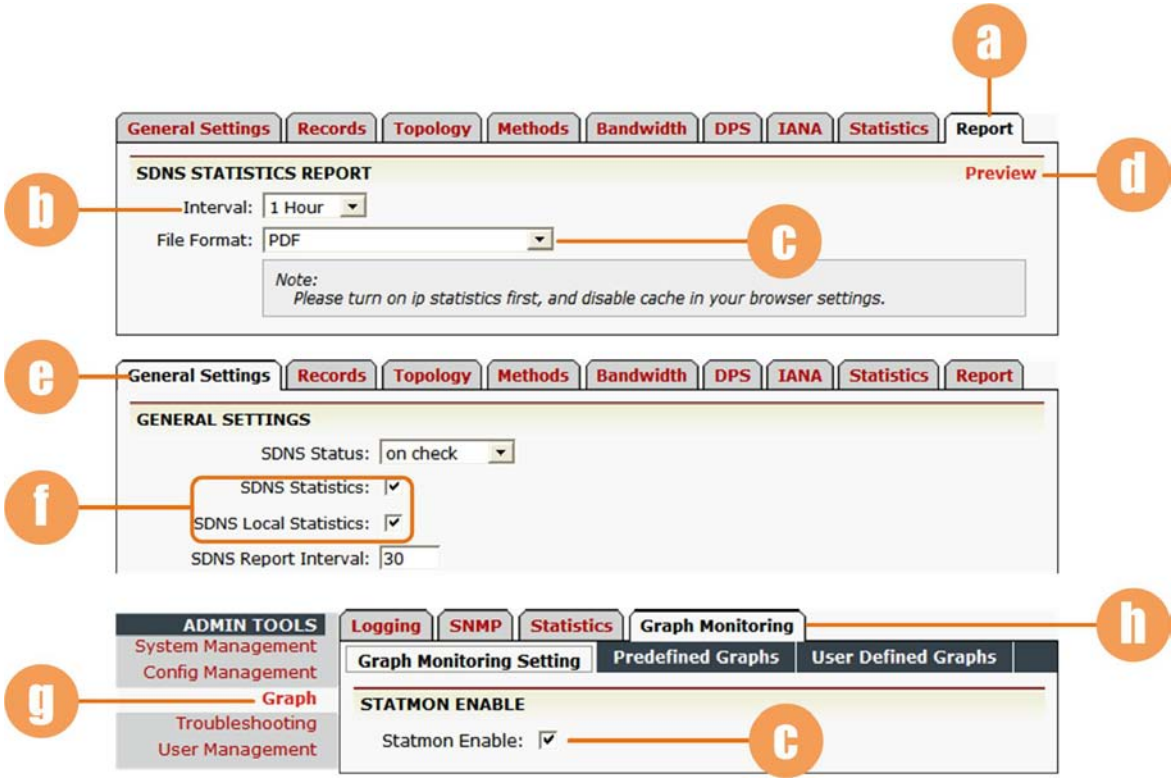
Report

Select the "**Report**" tab **[a]**. To view the report, you just need to enter the Enable mode.

Specify the interval of the report via the selector **[b]** and select the desired report format **[c]**. Click on the action link "Preview" **[d]**. Then, you will be presented with an SDNS Statistics Report file in the format you have specified.

Note that the contents on the Report page are available only after you have made the following configurations.

- Go to the General Settings page **[e]**, and enable the SDNS Statistics and SDNS Local Statistics functions **[f]**.
- Select the Graph feature link **[g]** under the Admin Tools feature group, and go to the Graph Monitoring Setting page under the "Graph Monitoring" tab **[h]**. Then, enable the statmon function via the check box **[i]**.



Monitoring

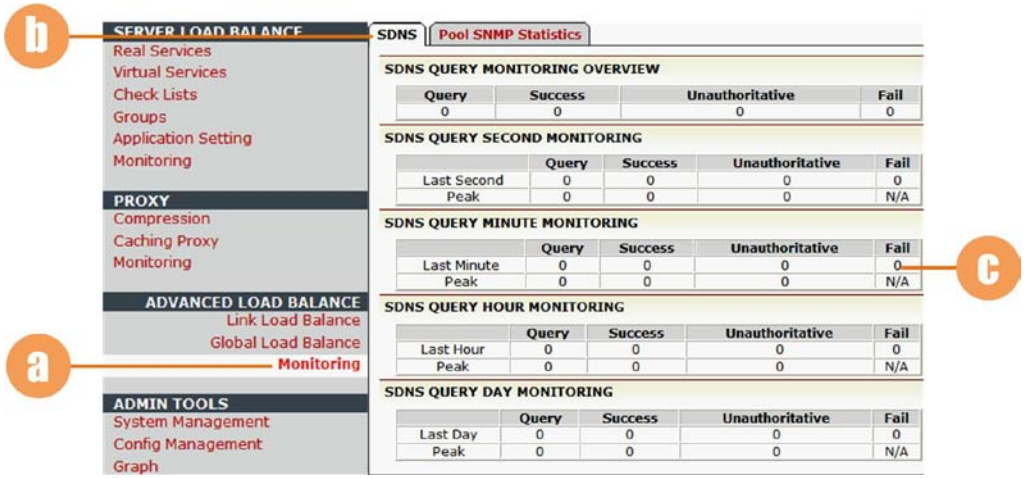
FortiBalancer appliance allows users to monitor real-time SDNS query and pool SNMP statistics.

SDNS

To use this feature, **you just need to enter the Enable mode**.

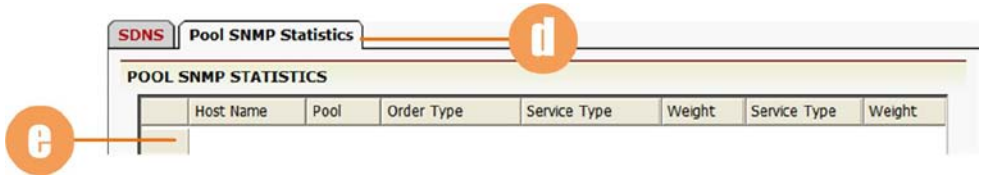
Select the feature link **Monitoring** from the sidebar **[a]**.

Select the "**SDNS**" tab **[b]**, and the window will display the monitoring information about SDNS queries in the table **[c]**.



Pool SNMP Statistics

Select the "**Pool SNMP Statistics**" tab **[d]**. The window will display the monitoring information about pool SNMP statistics in the table **[e]**.



Admin Tools

System Management

In this section, we will discuss various configuration management functions available for the FortiBalancer appliance.

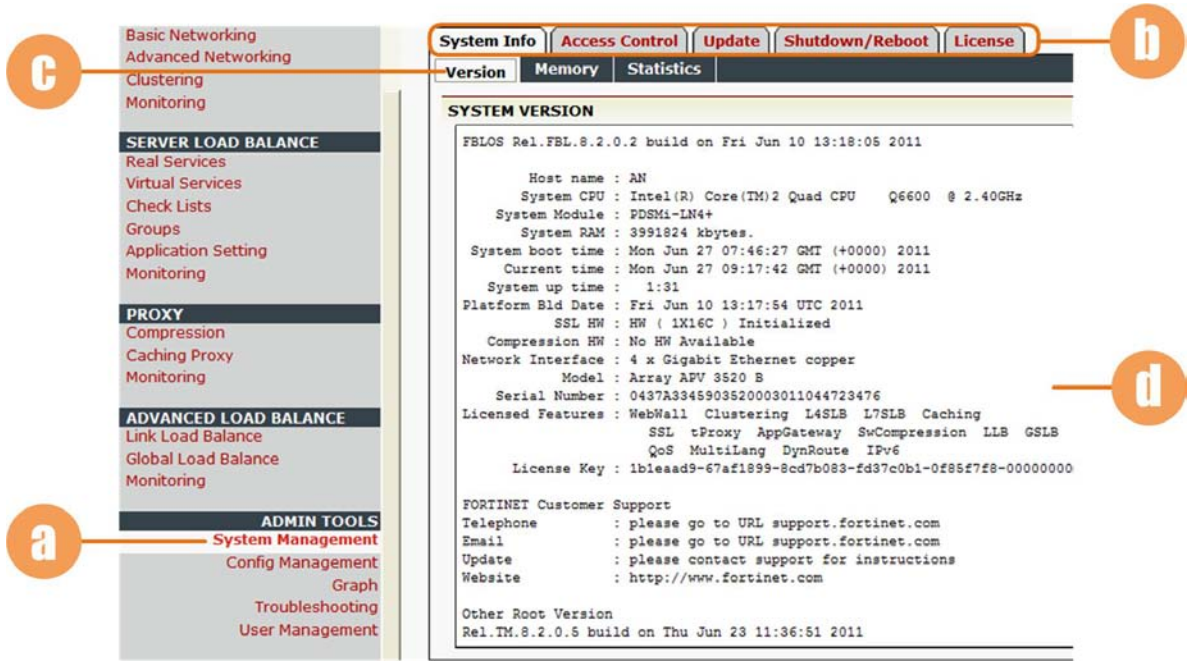
System Info

Make certain you are in Config mode and have selected the **System Management** feature link from the sidebar **[a]**. The configuration window will present a page with five navigational tabs **[b]**.

Under the "**System Info**" tab, there are three sub tabs: **Version**, **Memory** and **Statistics**. By default, the **Version** page is displayed **[c]**.

Version

On this page, the window displays the current running version and related information of the FBLOS powering the FortiBalancer appliance **[d]**.



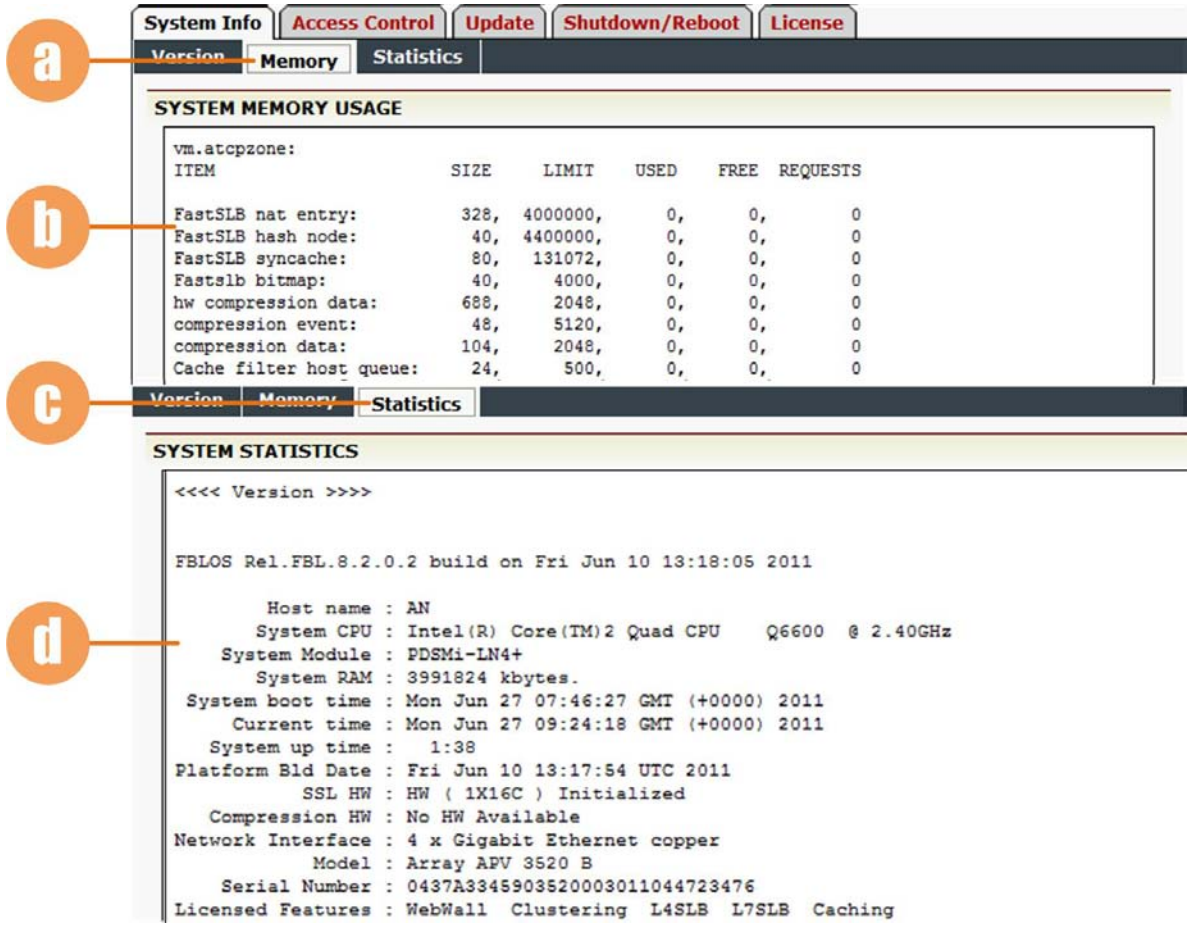
System Info (Continue)

Memory

Select the "**Memory**" sub tab **[a]**, and the window will display all data about current memory usage in the box **[b]**.

Statistics

Select the "**Statistics**" sub tab **[c]**, and the window will display all information about current configuration in the box **[d]**.



Access Control

Select the "**Access Control**" tab **[a]**, where you can perform settings about access control.

Enable or disable WebUI via the check box **[b]**, and change WebUI IP or port settings via text fields **[c]**. Please read the Note messages **[d]** before making configuration here.

Enable or disable XMLRPC via the check box **[e]**. Supply the desired port number in the text field **[f]**.

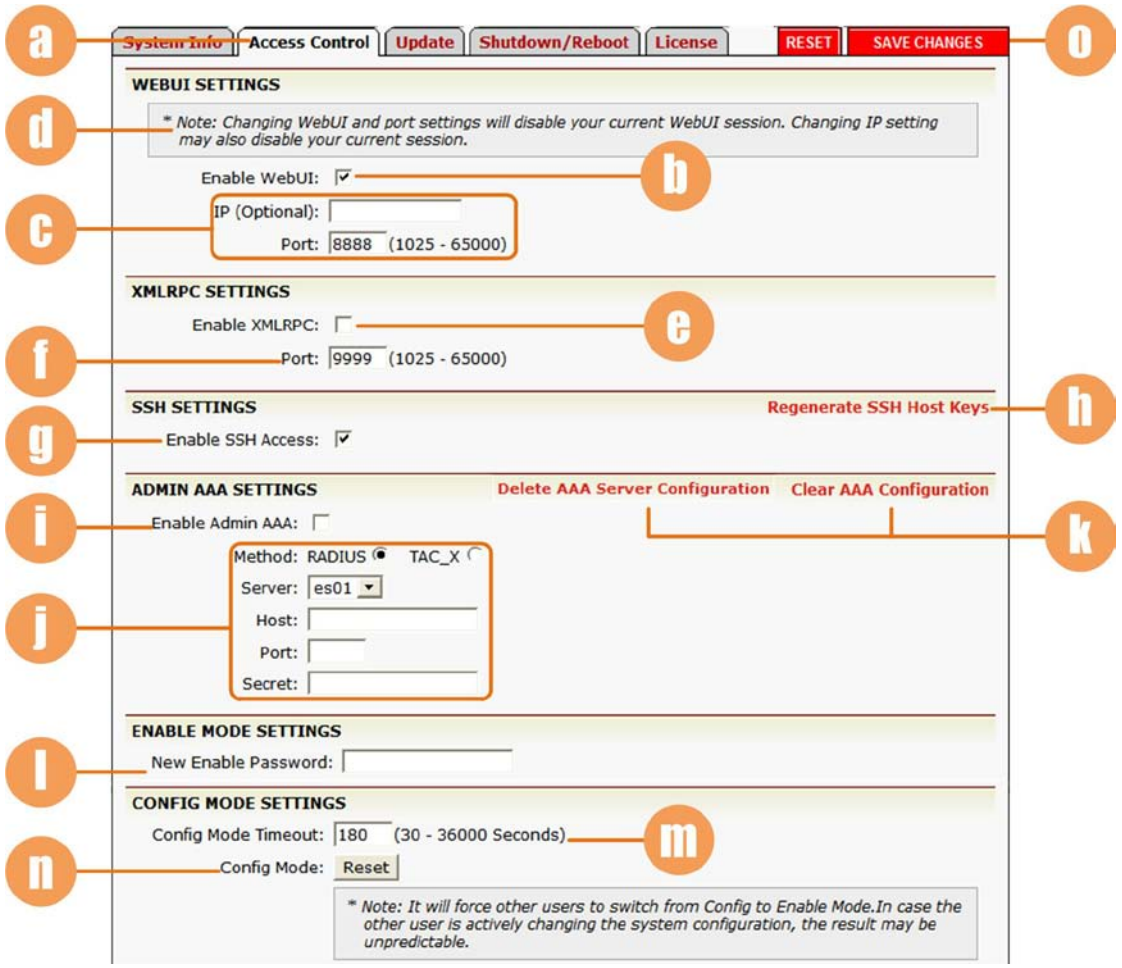
Enable or disable SSH access to the FortiBalancer appliance via the check box **[g]**. You can click on the action link **[h]** to regenerate SSH host keys.

Enable or disable the external authentication via the check box **[i]**. Then, specify the authentication method, server, host name, port number and secret key in the area **[j]**. To delete or clear AAA configuration, you can click on the desired action link **[k]**.

To change the enable mode password, you can input the new password in the text field **[l]**. The default password is null.

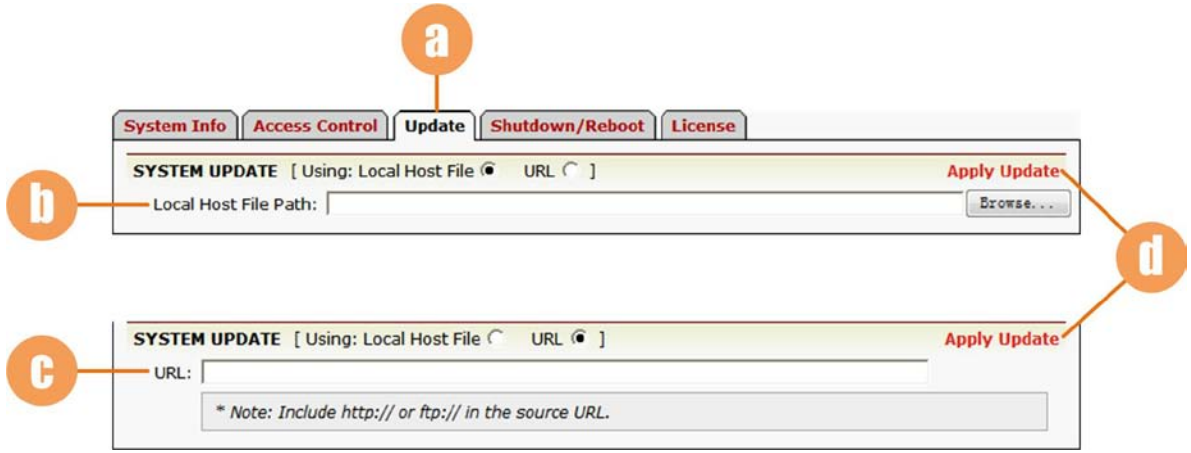
You can set the Config Mode timeout value in the text field **[m]**, or reset the Config Mode immediately by clicking on the "Reset" button **[n]**. Note that resetting Config Mode will terminate the current WebUI session.

Remember to click on the "SAVE CHANGES" button **[o]** to save the changes made.



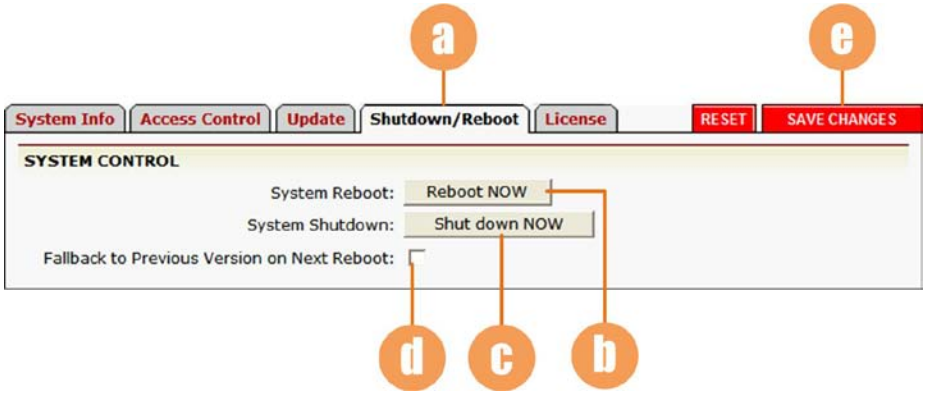
Update

Select the "**Update**" tab **[a]**, and the window will present a new configuration page. You can update the system by using a local host file or a URL. To update via a local host file, select the radio button and specify the file path **[b]** (a browse button is present to help locate files). To update via a URL, select the radio button and specify the URL **[c]**. Once the file path is located or the URL path is specified, click on the "Apply Update" action link **[d]**.



Shutdown/Reboot

Select the "**Shutdown/Reboot**" tab **[a]**, and the window will present a new configuration page. You can reboot the system by clicking on the "Reboot NOW" button **[b]**, and shut down the system by clicking on the "Shut down NOW" button **[c]**. The check box **[d]** can be selected to fall back to the previous software version on the next reboot. Remember to click on the "SAVE CHANGES" button **[e]** when it appears to save your configuration.



License

Select the "**License**" tab **[a]**, and a new configuration page will be displayed. In the text field **[b]**, the current license for the FortiBalancer appliance is displayed. If you want to replace the license with a new license, input the new one in the field **[b]** and click on the desired action link **[c]**.

Config Management

In this section, we will discuss the configuration management functions available for the FortiBalancer appliance.

View

Make certain you are in Config mode and have selected the **Config Management** feature link from the sidebar **[a]**. The window will present a configuration page with seven navigational tabs. The View page is displayed by default **[b]**.

Under the "View" tab, there are three sub tabs: Running Config, Startup Config and Saved File **[c]**.

Running Config

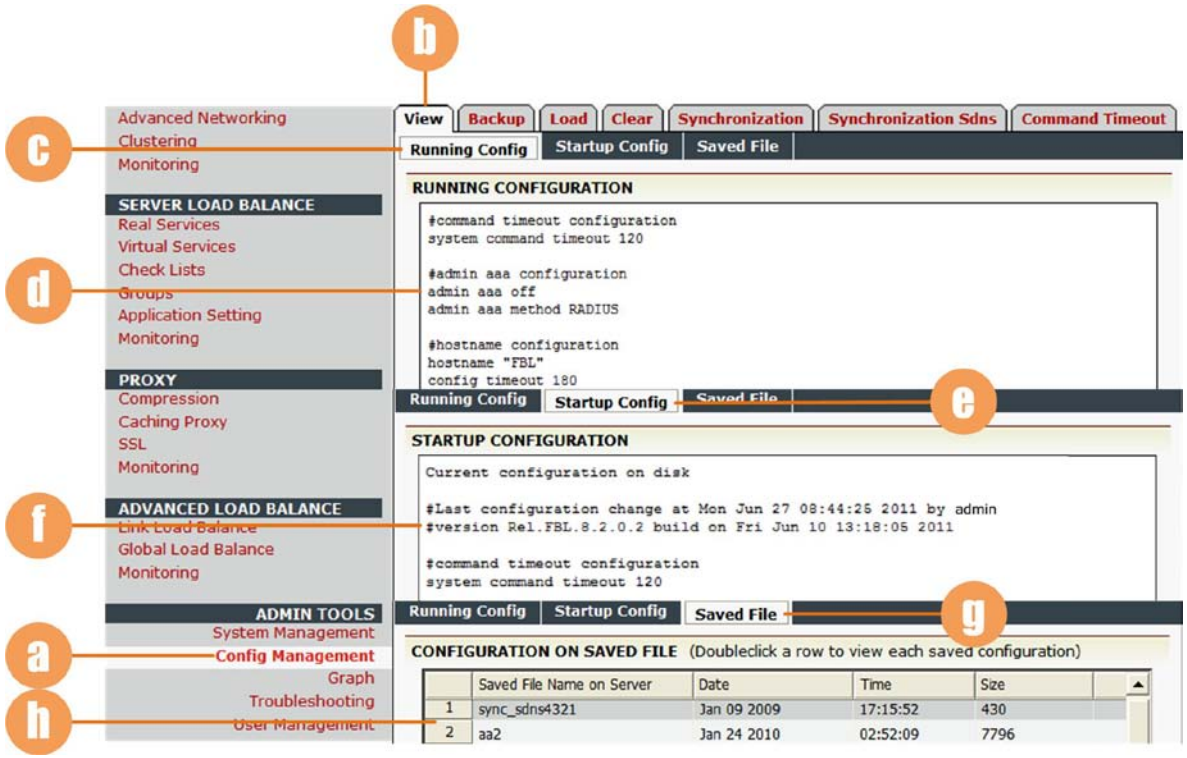
The **Running Config** page displays information about the current running configurations **[d]**.

Startup Config

Select the "**Startup Config**" sub tab **[e]**, and the configuration window will display the startup configuration information **[f]**.

Saved File

Select the "**Saved File**" sub tab **[g]**, and the configuration window will display all configuration files currently saved in the sort ready table **[h]**. Double click on a file entry to view the file details.



Backup

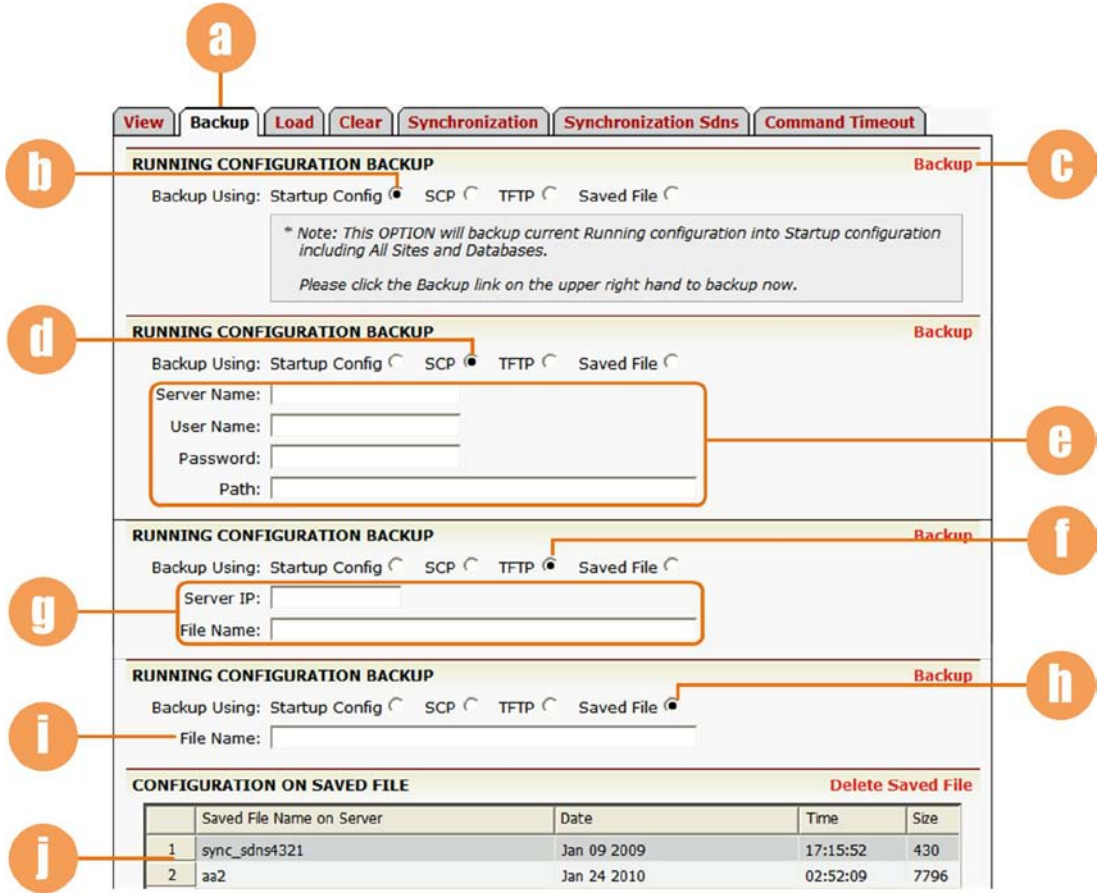
Select the "**Backup**" tab **[a]**, and the configuration window will present several options for backing up configuration files.

To simply back up the existing running configuration and retain this as the "Startup Config", simply select the radio button **[b]** and click on the action link "Backup" **[c]**.

To back up the configuration file using SCP **[d]**, supply the SCP server name, user name, password and server path in the text fields **[e]** and click on the action link "Backup" to begin the backup.

To back up the configuration file using TFTP **[f]**, supply the TFTP server IP address and file name in the text fields **[g]** and click on the action link "Backup" to begin the backup.

To save the configuration in a local file **[h]**, supply the file name in the text field **[i]** and click on the action link "Backup" to begin the backup. A list of previously saved files will be displayed in the sort ready table **[j]**. You may select one of these files to be updated or deleted.



Load

Select the "**Load**" tab **[a]**, and the configuration window will present several options for loading configuration files.

To load the last running configuration, select the "Startup Config" radio button **[b]** and click on the action link "Load" **[c]**.

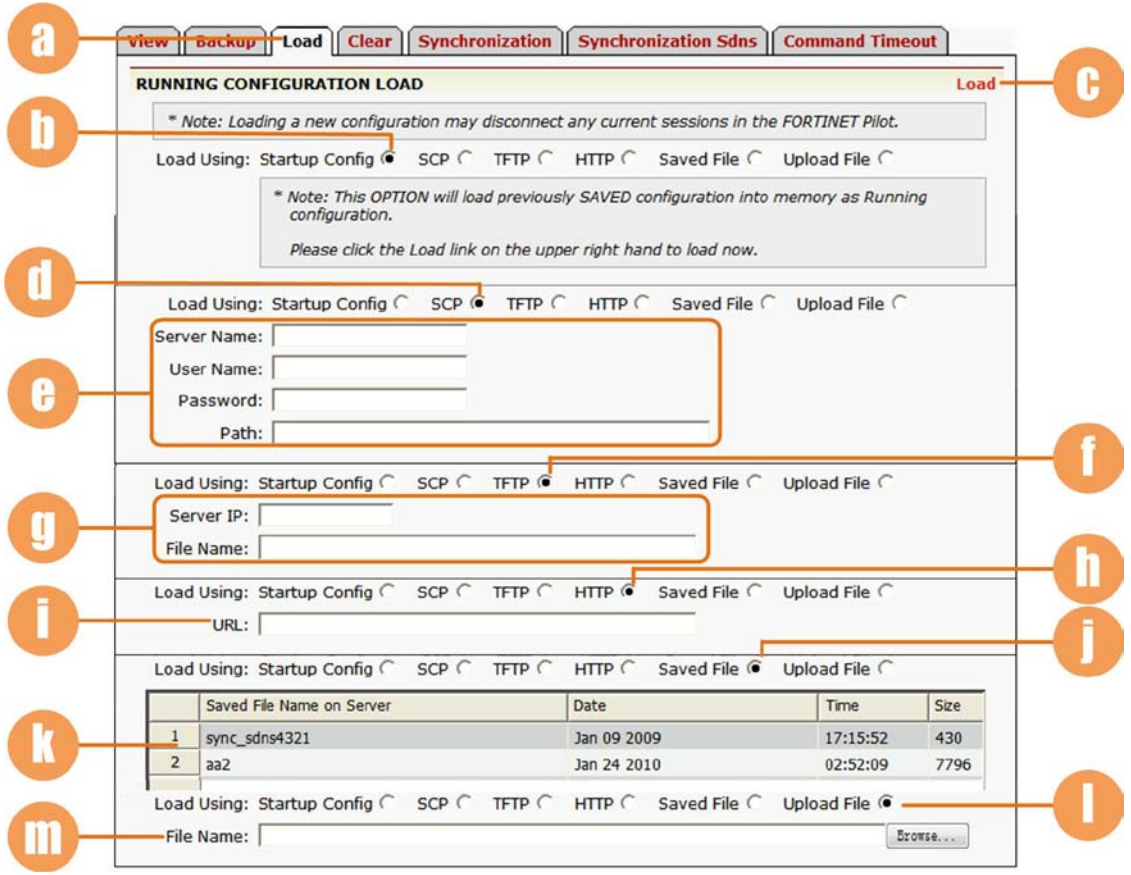
To load a file from an SCP server **[d]**, supply the SCP server name, user name, password and server path in the text fields **[e]** and click on the action link "Load" to begin loading.

To load a file using TFTP **[f]**, supply the TFTP server IP address and file name in the text fields **[g]** and click on the action link "Load" to begin loading.

To load a file from an HTTP server **[h]**, supply the HTTP URL in the text field **[i]** and click on the action link "Load".

To load a locally saved file **[j]**, select the file name from a list of previously saved files **[k]** and click on the action link "Load".

To load a file from a network location **[l]**, supply the file name in the field **[m]** or click on the "Browse" button to locate the file. Then click on the action link "Load".



Clear

Caution should be taken when clearing configurations from the FortiBalancer appliance. Make certain that you only clear those configurations you wish to clear. If you have any questions with clearing a running or saved configuration, please contact Fortinet Customer Support.

Select the "**Clear**" tab **[a]** and the configuration window will present four buttons for clearing various configurations.

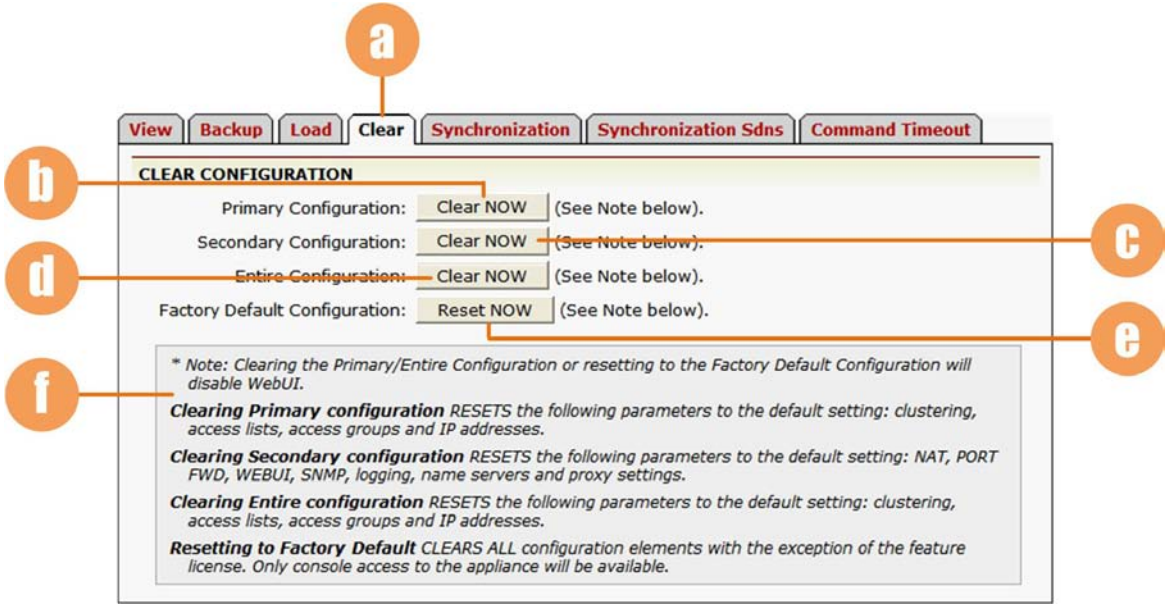
To reset the primary networking functions of the FortiBalancer appliance to the default, including all access lists and groups, IP addresses, clustering and synchronization, click on the "Clear NOW" button **[b]** for primary configuration.

To reset those secondary network functions of the configuration such as WebUI, NAT, proxy settings, SNMP and logging, click on the "Clear NOW" button for secondary configuration **[c]**.

To clear and delete all locally saved configuration files, except for the default startup file, click on the "Clear NOW" button for entire configuration **[d]**.

To reset the FortiBalancer appliance to factory default allowing for console connectivity only, click on the "Reset NOW" button for factory default configuration **[e]**.

Read the notes **[f]** carefully before clearing.



Synchronization

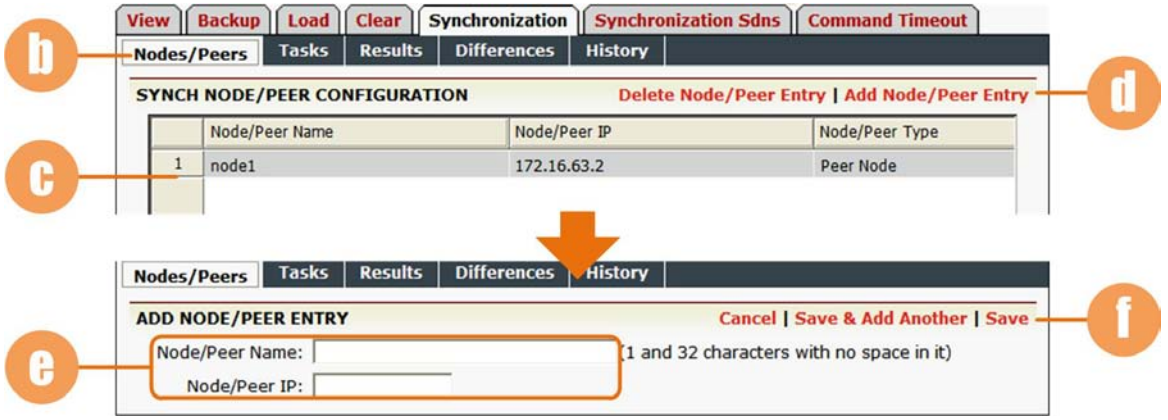
The synchronization feature allows you to transfer configuration information among separate FortiBalancer appliances (referred to as Peers or Nodes) on the same network. Using configuration synchronization, you can also setup an active-standby configuration for failover support. The basic configuration must be completed before configuring the virtual clustering functionality.

Nodes/Peers

Make certain you have selected the "**Synchronization**" tab **[a]**, and the window presents five sub tabs. The Nodes/Peers page is displayed by default **[b]**. Here, all peers previously configured will be displayed in the sort ready table **[c]**. The first step with synchronization is to define the name and IP address for each peer. To do this, you can click on the action link "Add Node/Peer Entry" **[d]**.

In the new configuration window, supply the node/peer name and IP address in the texts fields **[e]** and click on the "Save" action link **[f]**.

All newly added peers will be displayed in the sort ready table **[c]**.



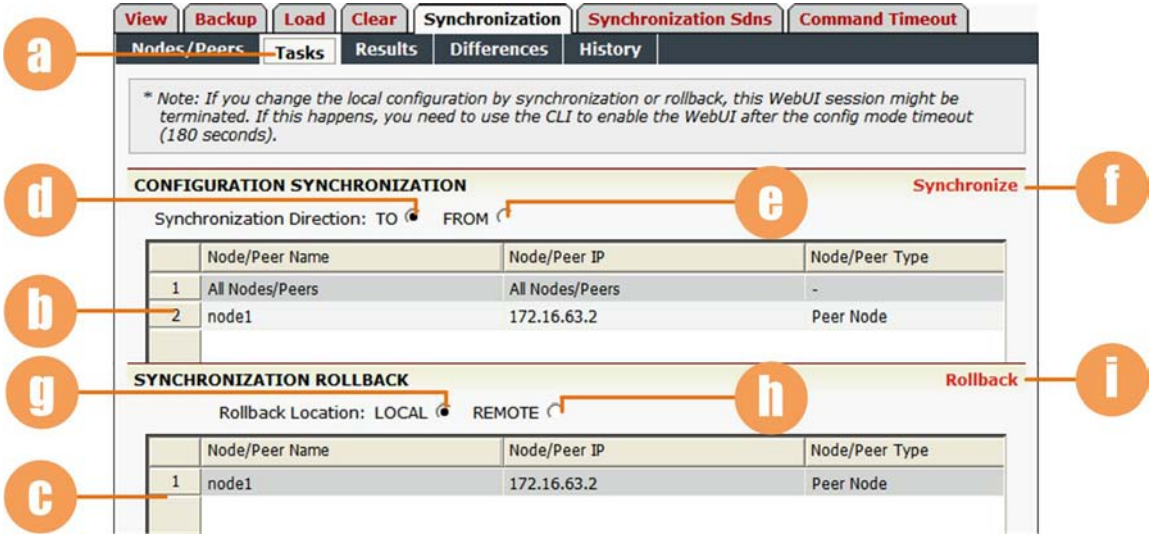
Synchronization (Continue)

Tasks

Select the "**Tasks**" sub tab **[a]**. The configuration window will display all configured peers in the table under "Configuration Synchronization" **[b]** where all individual FortiBalancer appliances share the same configuration, and also in the table under "Synchronization Rollback" **[c]**, where you can pull a specific FortiBalancer appliance back out of a clustered group and rollback the configuration to the pre-synchronized status (refer to the following "Synchronization Rollback" section).

Configuration Synchronization: This feature allows you to either "push" a configuration onto other FortiBalancer appliances in the network via the "TO" radio button **[d]** or "pull" a configuration from a specific appliance and place the configuration on the appliance being setup via the "FROM" radio button **[e]**. Note that you may "push" a configuration onto all existing appliances, but you can only "pull' a configuration from one appliance at a time. Once you have selected the appliances to synchronize, click on the link **[f]**.

Synchronization Rollback: To reset to a previously synchronized configuration that was received from another peer appliance on the network, select the "LOCAL" radio button **[g]**, select the peer appliance that originated the configuration from the list **[c]** and click on the "Rollback" action link **[i]**. To reset a peer that received the configuration from the current appliance, select "REMOTE" **[h]**, specify the destination appliance from the list **[c]** and click on the action link **[i]**.



Synchronization (Continue)

Results

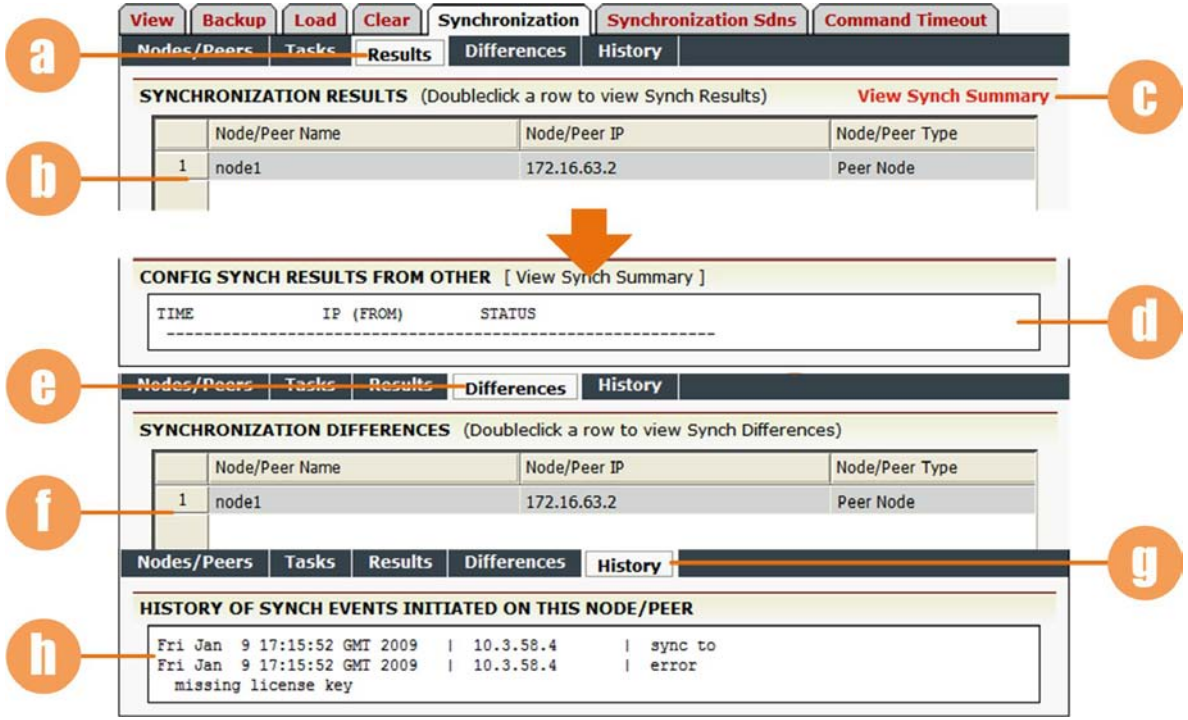
Select the "**Results**" sub tab **[a]**, and the configured peers are displayed in the sort ready table **[b]**. You can view the synchronization results of a peer by double clicking on it in the table or selecting it and clicking on the action link "View Synch Summary" **[c]**. Then, the results will be displayed in the table below **[d]**.

Differences

Select the "**Differences**" sub tab **[e]**, and all configured peers are displayed in the sort ready table **[f]**. Double click on a desired peer to view the configuration differences between the selected remote peer FortiBalancer appliance and the appliance which you are currently synchronizing from.

History

Select the "**History**" sub tab **[g]**, and the page will display all synchronization events related to the current FortiBalancer appliance being configured in the box **[h]**.



Synchronization Sdns

The SDNS Synchronization feature of the FortiBalancer appliance allows administrators to synchronize SDNS configurations and BIND 9 zone files except SDNS member configurations from a FortiBalancer appliance to its peers.

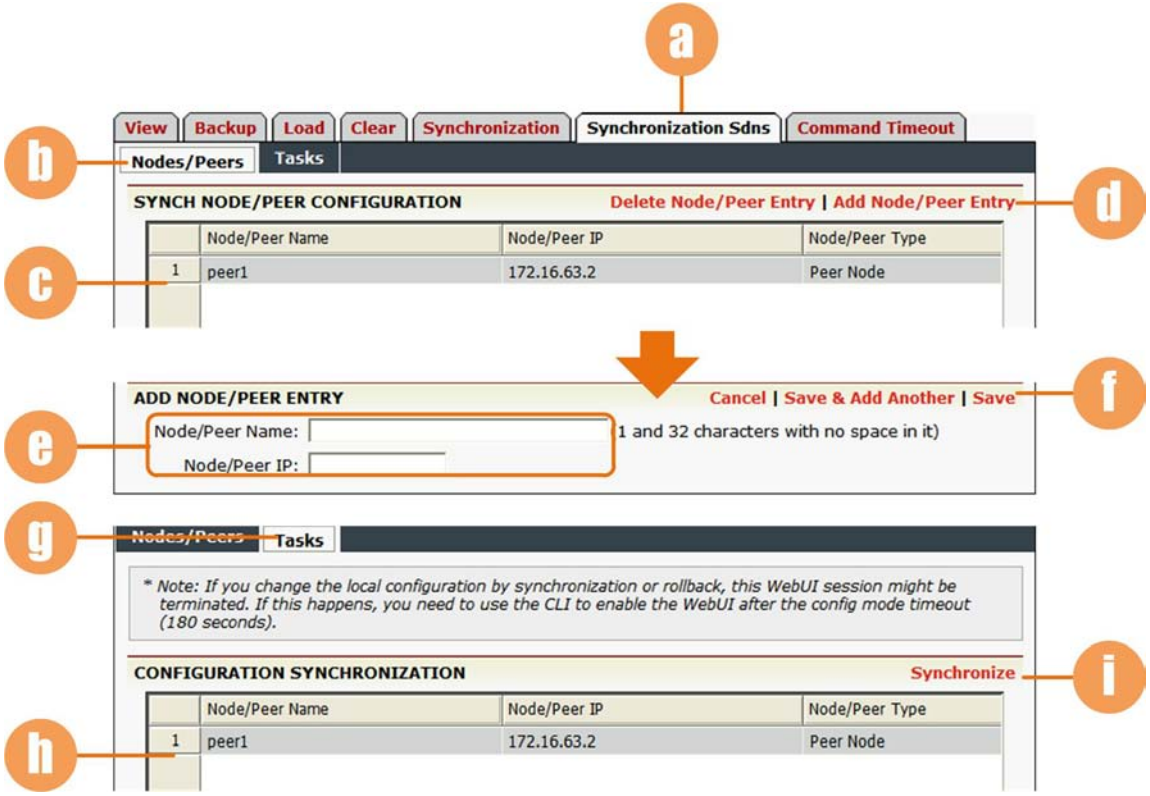
Select the "**Synchronization Sdns**" tab **[a]**, and the window presents two sub tabs.

Nodes/Peers

Select the "**Nodes/Peers**" sub tab **[b]**. All peers previously configured will be displayed in the sort ready table **[c]**. The first step with synchronization is to define the name and IP address for each peer. To do this, you can click on the action link "Add Node/Peer Entry" **[d]**. In the new configuration window, supply the node/peer name and IP address in the texts fields **[e]** and click on the "Save" action link **[f]**. The newly added peers will be displayed in the sort ready table **[c]**.

Tasks

Select the "**Tasks**" sub tab **[g]**. The configuration window will display all configured peers in the table under "Configuration Synchronization" **[h]**. Select a desired node or peer in the table and click on the "Synchronization" action link **[i]** to begin synchronizing.

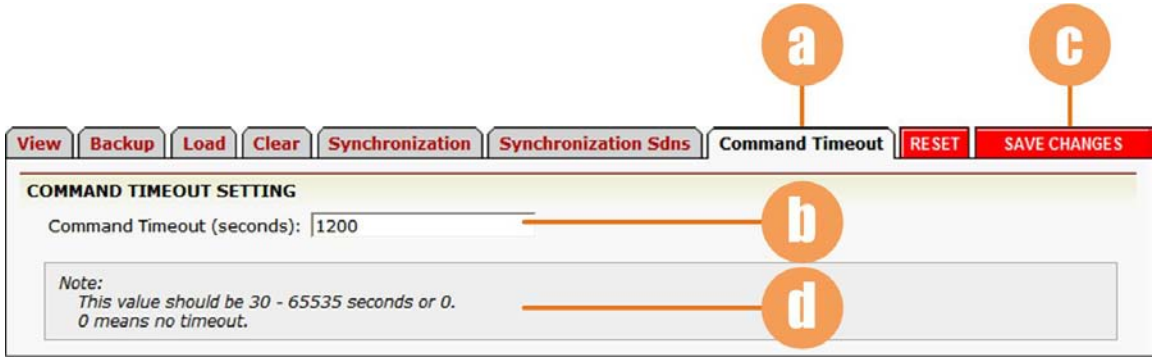


Command Timeout

Select the "**Command Timeout**" tab **[a]**, and a new configuration window is displayed.

You can specify the command timeout value (in seconds) in the text field **[b]**. Remember to click on the "SAVE CHANGES" button **[c]** when it appears to save your configuration.

Please read the notes **[d]** carefully before you set the timeout value.



Graph

Make certain you are in Config mode and have selected the Graph feature link from the sidebar **[a]**. The configuration window presents four tabs **[b]**.

Logging

Under the "**Logging**" tab, there are five sub tabs **[c]**. The **General** page is displayed by default **[d]**.

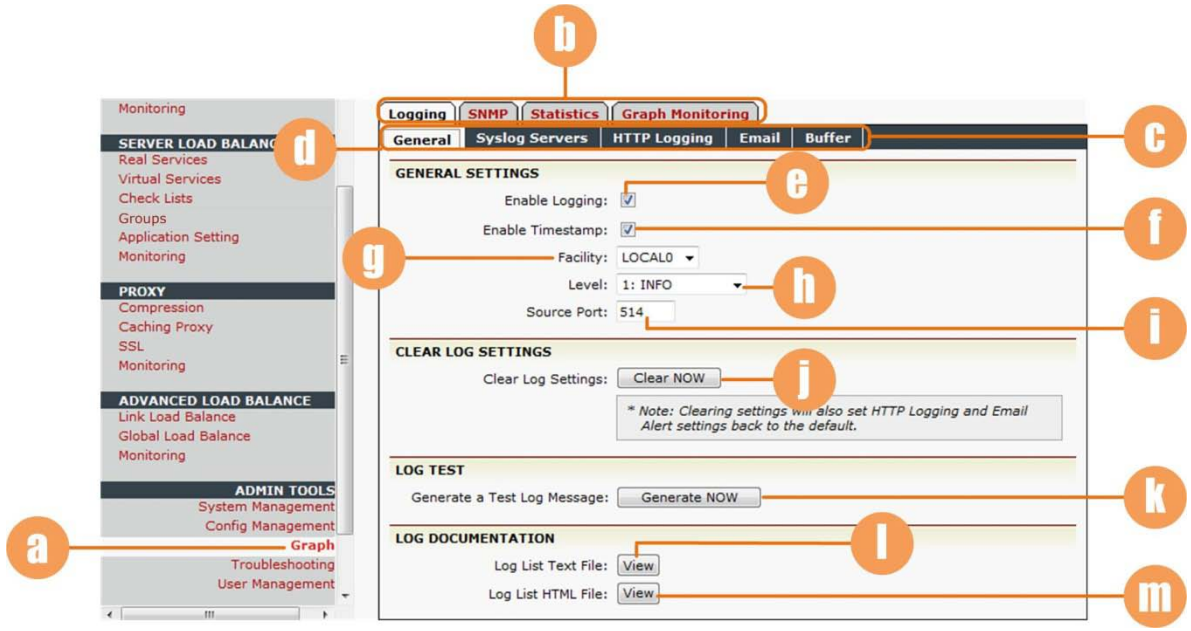
General

Enable the logging feature via the check box **[e]**, and enable the timestamp feature for log entries via the check box **[f]**. Set the facility from LOCAL0 to LOCAL7 via the selector **[g]**, and set the log level (any message below the specified level will be ignored) via the selector **[h]**. Set the source port in the text field **[i]**.

You can reset the log setting by clicking on the "Clear NOW" button **[j]**. Note that this operation will set log setting to the default.

You can generate a test log message by clicking on the "Generate NOW" button **[k]**.

You can view the log list text file or HTML file by clicking on the "View" buttons **[l]** and [m] respectively.



Logging (Continue)

Syslog Servers

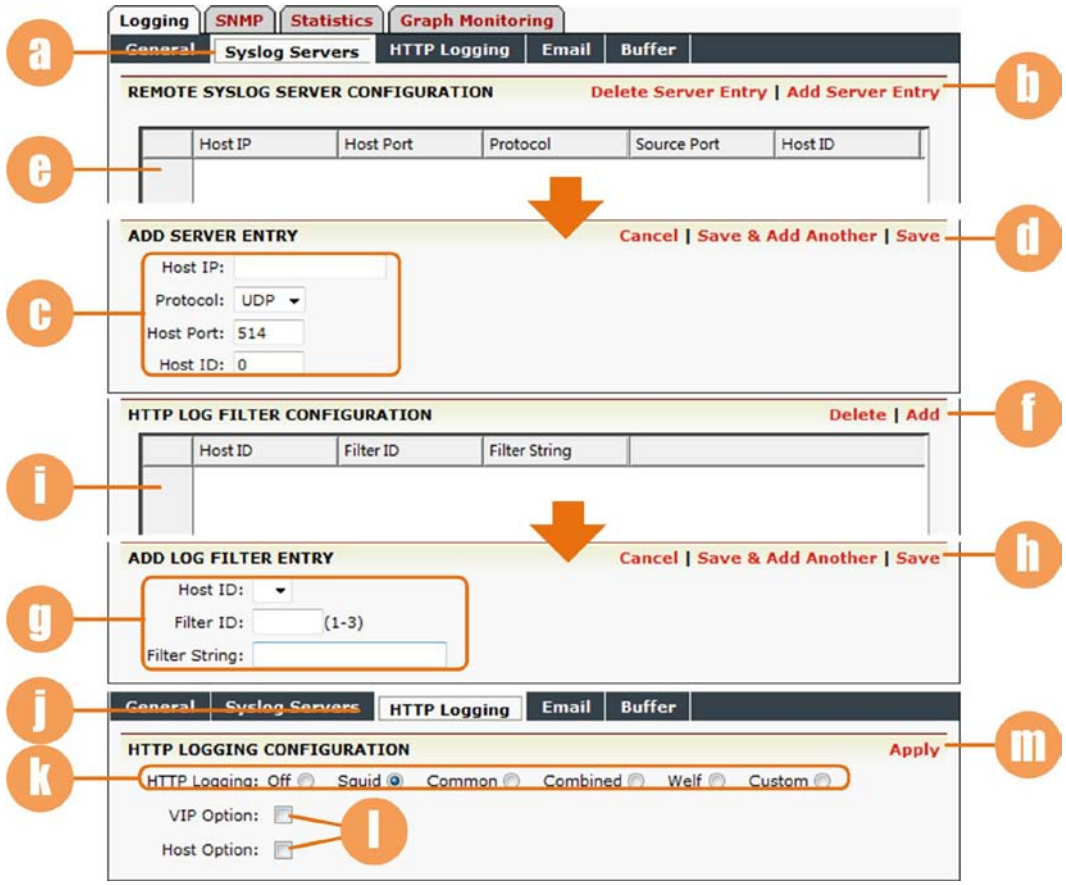
Select the "**Syslog Servers**" sub tab **[a]**. The log host is the remote Syslog server receiving messages. Up to three servers may be configured (all messages will be sent to all servers). The host port number defaults to 514.

To add a Syslog server, click on the action link "Add Server Entry" **[b]**. In the new window, set the server host IP, logging protocol, host port and host ID **[c]**. Then, click on the "Save" action link **[d]**. The configuration will be displayed in the sort-ready table **[e]**.

You can also configure HTTP log filters to filter undesired logs. To add a log filter, click on the action link "Add" **[f]**. In the new window, select the server ID, set the filter ID and input the filter string **[g]**. Then, click on the "Save" action link **[h]**. The configuration will be displayed in the sort-ready table **[i]**.

HTTP Logging

Select the "**HTTP Logging**" sub tab **[j]**. You can enable or disable HTTP logging and further set the format via the radio buttons **[k]**. You can also select to include the VIP and Host in log reports via the check boxes **[l]**. Then, click on the "Apply" action link **[m]** to make the configuration take effect.



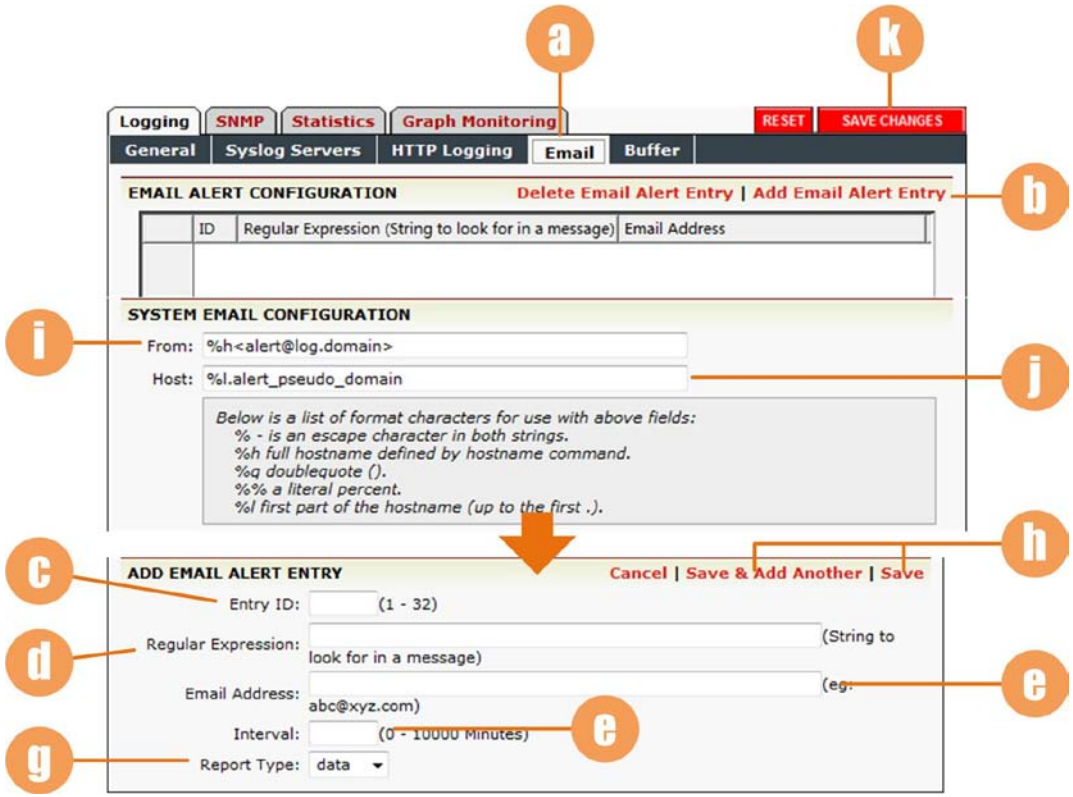
Logging (Continue)

Email

Select the "**Email**" sub tab **[a]**, and a new configuration page is displayed. You can configure an alert email to report issues. To add an email alert, click on the action link "Add Email Alert Entry" **[b]** and a new configuration page appears.

Set the log/entry ID in the text field **[c]**, define the message that accompanies the log alert **[d]** as a message of importance, supply the email address of the recipient **[e]** and the interval between sending reports (in minutes) **[f]**, and specify the report type via the selector **[g]**. The report can be either a "data" report or a "count" (number of incidents) report. At last, click on the desired action link **[h]** to complete configuration.

You can set the "From" header in the mail being sent out via the text field **[i]**, and set the value of the hostname from which the mail is recorded as sent via the text field **[j]**. Remember to click on "SAVE CHANGES" **[k]** when it appears to save your configuration.

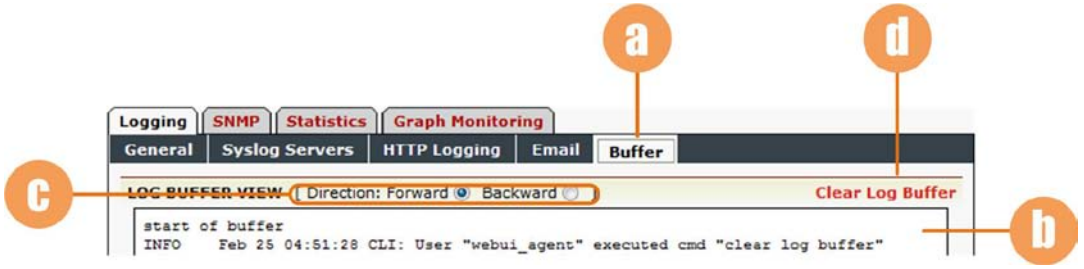


Logging (Continue)

Buffer

Select the "**Buffer**" sub tab **[a]** and the configuration window will display a scrolling list **[b]** (if applicable) of logged events based on the logging configuration to this point. You can set the display order of events in the list via the "Forward" and "Backward" radio buttons **[c]**. Forward means the oldest events are listed on the top, while backward means to display the most recent events on the top.

You may also clear the log buffer by selecting the action link "Clear Log Buffer" **[d]**.



SNMP

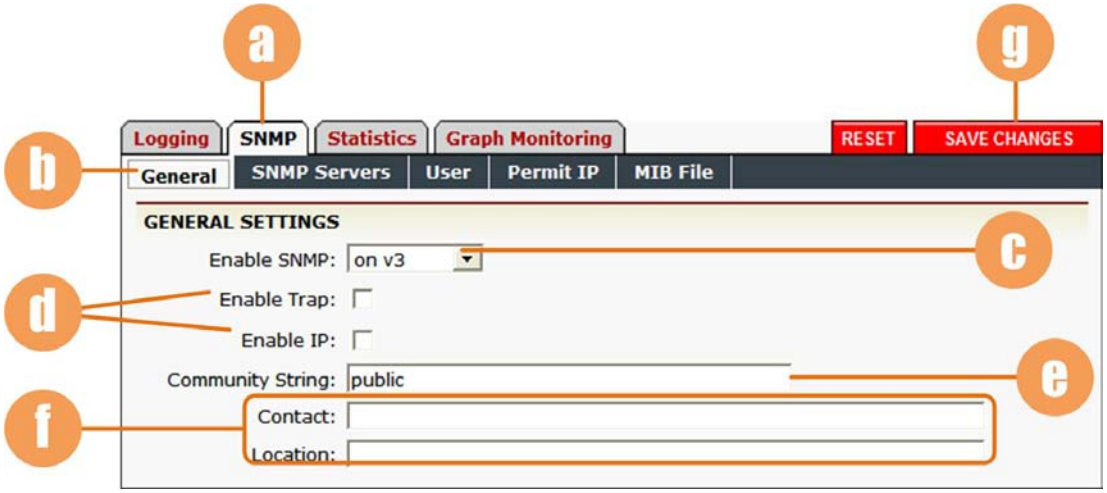
SNMP (Simple Network Management Protocol) is a widely used protocol for network monitoring and control. Data are passed from SNMP agents, which are hardware and/or software processes reporting activity on each network device to the workstation console which oversees the network. At most three SNMP hosts can be configured. Note that SNMP traps must be enabled to view graphs on the FortiBalancer Flight Deck.

Make certain that you are in Config mode and have selected the "**SNMP**" tab **[a]**. The window presents five sub tabs. By default, the General page is displayed **[b]**.

General

Enable/disable the SNMP feature via the selector **[c]**. You can enable the FortiBalancer appliance to send generic and enterprise traps via the "Enable Trap" check box, and enable access control based on the source IP of an SNMP client via the "Enable IP" check box **[d]**. Define a community string **[e]** (at most 32 characters) to act as a password to limit or control access from the NMS to the agent. Specify the contact person and FortiBalancer appliance location in the text fields **[f]** (at most 128 characters for each). Click on the "SAVE CHANGES" button **[g]** when it appears to save changes made.

Note: For the sake of security, it is strongly recommended to modify the default SNMP community string to avoid possible system information interception.

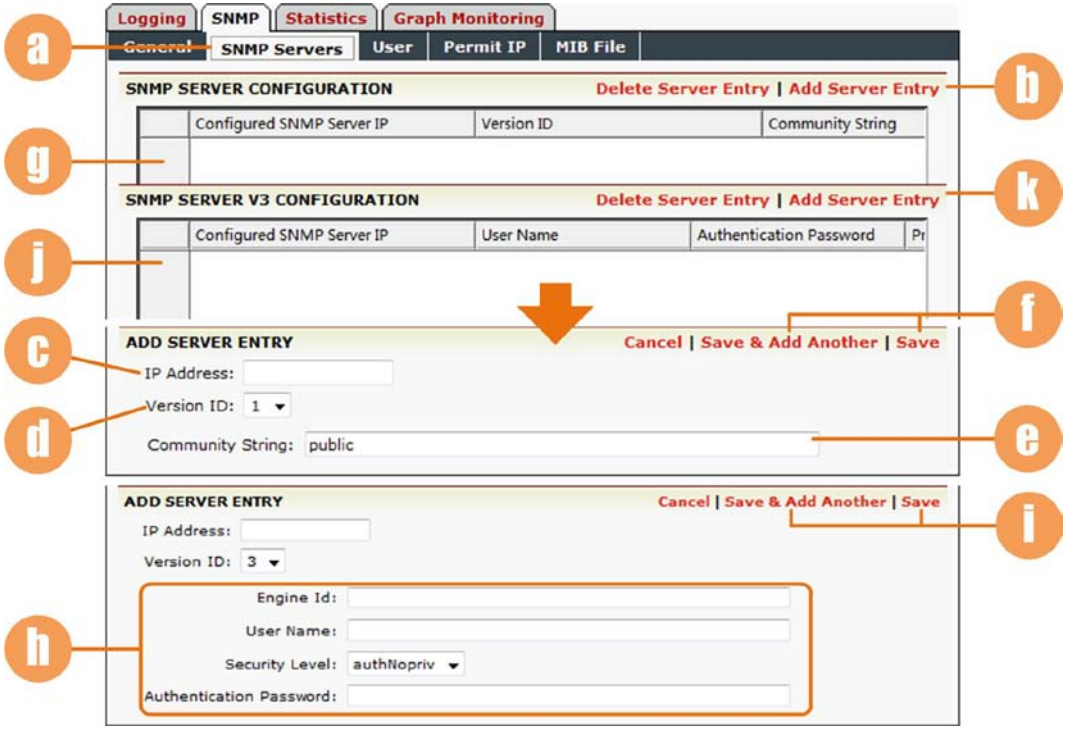


SNMP (Continue)

SNMP Servers

Select the "**SNMP Servers**" sub tab **[a]**, and the configuration window will present a list of configured SNMP servers. To add a new entry, click on "Add Server Entry" **[b]**. In the fields provided on the new configuration page, supply the SNMP server IP address **[c]**, specify the SNMP trap version via the selector **[d]**, and supply the community string **[e]**. Complete the configuration by clicking on the desired action link **[f]**. Then, the added entry will be displayed in the table **[g]**.

If you specify the SNMP trap version to be 3 **[d]**, several new parameter fields **[h]** will appear. Set them properly and click on the desired action link **[i]**. Then, the added entry will be displayed in the table **[j]**. To do this, you can also directly click on the action link add "Add Server Entry" **[k]**.



SNMP (Continue)

User

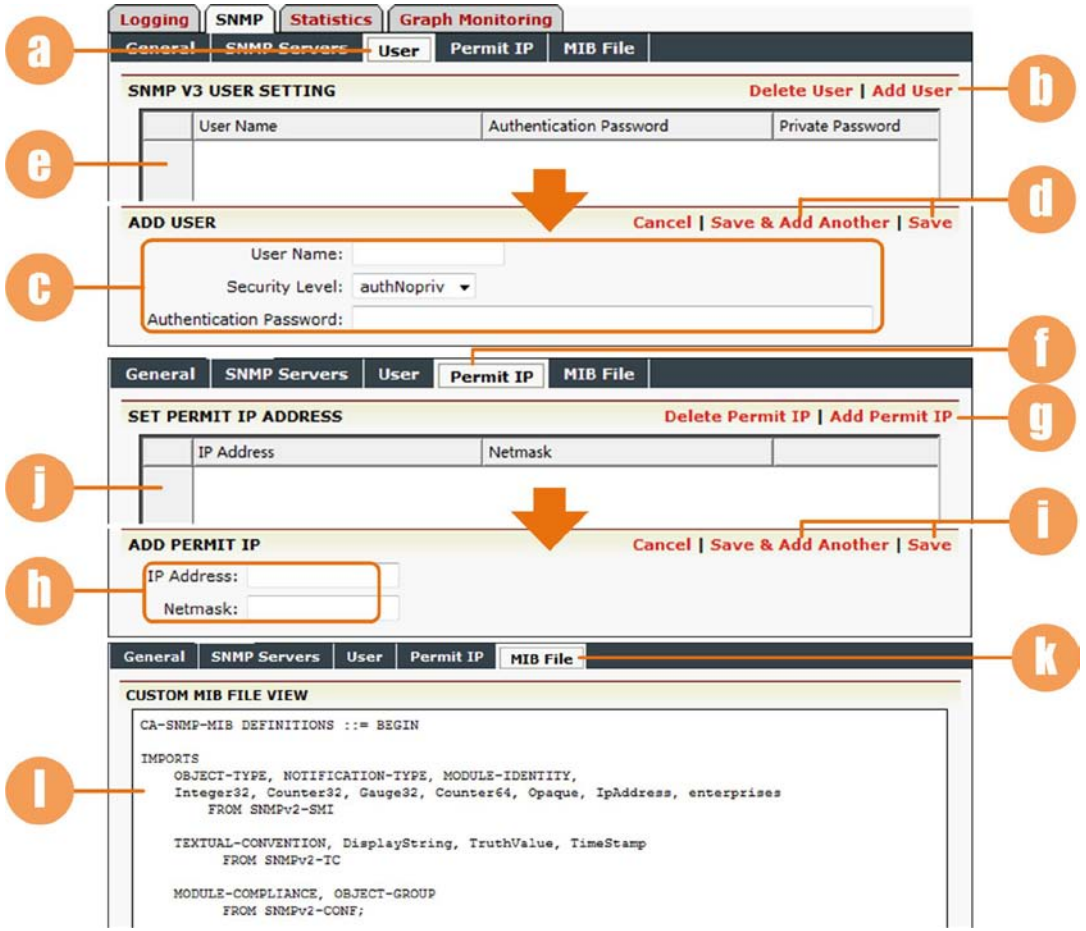
Select the "**User**" sub tab **[a]**, and the configuration window will present a list of SNMP V3 users. To add a user, click on the action link "Add User" **[b]**. In the fields **[c]** provided on the new configuration page, supply the user name, specify the security level and set the authentication password. Then, click on the desired action link **[d]**. The added user entry will be displayed in the table **[e]**.

Permit IP

Select the "**Permit IP**" sub tab **[f]**, and the configuration window presents a list of permitted IP addresses. To add an IP address, click on the action link "Add Permit IP" **[g]**. The window will present a new configuration page. Supply the IP address and netmask **[h]**, and click on the desired action link **[i]**. Then, the added IP address entry will be displayed in the table **[j]**.

MIB File

Select the "**MIB File**" sub tab **[k]**, and the configuration window will display the user's MIB file in the box **[l]** if applicable.

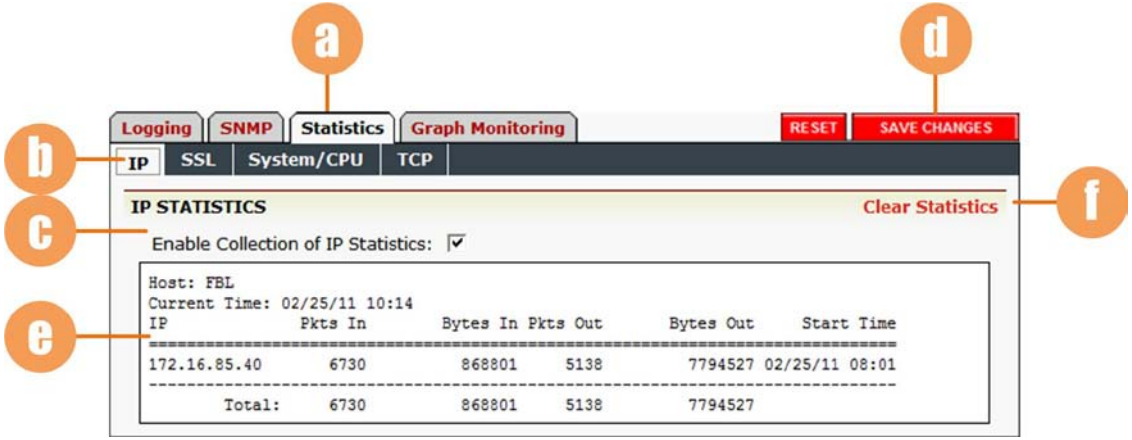


Statistics

Make certain that you are in Config mode and have selected the "**Statistics**" tab **[a]**. The configuration window will present four sub tabs, the default sub tab is "IP" **[b]**.

IP

Select the "**IP**" sub tab to view the IP statistics. You can enable/disable the collection of IP statistics via the check box **[c]**. Then, click on the "SAVE CHANGES" button **[d]** when it appears. The IP statistics info will be displayed in this area **[e]**, you can click on the "Clear Statistics" action link **[f]** to remove the statistical information about IP addresses.



Statistics (Continue)

SSL

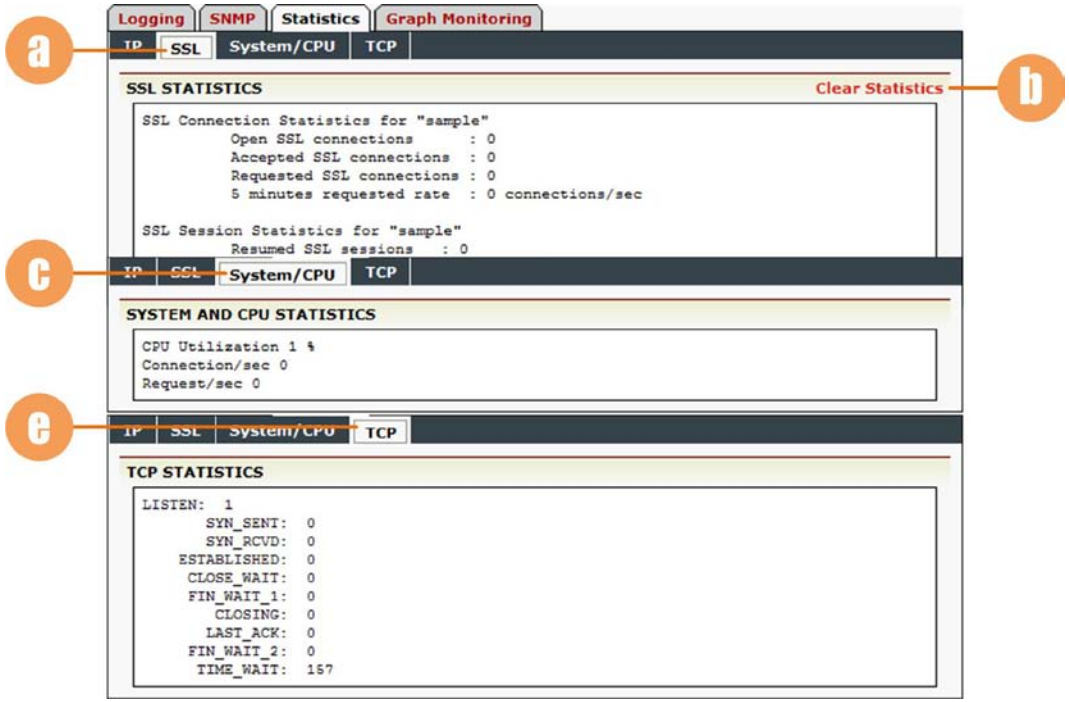
Select the "**SSL**" sub tab **[a]** to view SSL statistics. You can clear the SSL statistics by clicking on the action link **[b]**.

System CPU

Select the "**System/CPU**" sub tab **[c]** to view system and CPU statistics.

TCP

Select the "**TCP**" sub tab **[d]** to view TCP statistics.



Graph Monitoring

Make certain you are in Config mode and have selected the "**Graph Monitoring**" tab **[a]**, and the configuration window will present three sub tabs.

Graph Monitoring Setting

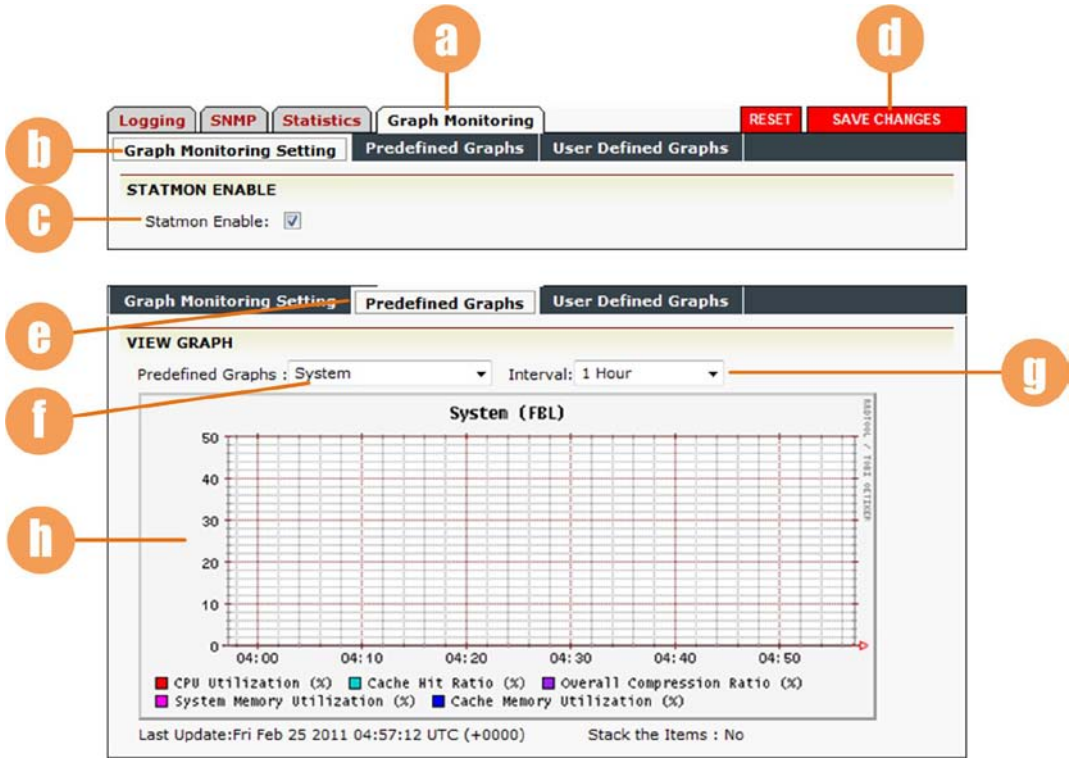
Select the sub tab "**Graph Monitoring Setting**" **[b]**, and the configuration window will present a page where you can enable the Statmon feature via the check box **[c]**. Remember to click on the "SAVE CHANGES" button **[d]** when it appears to save your configuration.

Note that the **Predefined Graphs** and **User Defined Graphs** pages are available only after the statmon function is enabled.

Predefined Graphs

Select the sub tab "**Predefined Graphs**" **[e]** and a new configuration window appears. You can view different predefined graphs by selecting from the selector **[f]**. You can also set the interval via the selector **[g]**.

In different graph types, the numbers on the vertical axis **[h]** have varied symbols followed with varied meanings. For details, please refer to the right table.



Graph Monitoring (Continue)

Predefined Graphs (Continue)

In the “Predefined Graphs” dropdown list, if one item of the graph types is selected, the number on the vertical axis will have its corresponding symbol followed. For meanings of these symbols, please refer to the right table.

Symbol	Meaning	Symbol	Meaning
a	10e-18 (Ato)	k	10e3 (Kilo)
f	10e-15 (Femto)	M	10e6 (Mega)
p	10e-12 (Pico)	G	10e9 (Giga)
n	10e-9 (Nano)	T	10e12 (Terra)
u	10e-6 (Micro)	P	10e15 (Peta)
m	10e-3 (Milli)	E	10e18 (Exa)
None	Base		

Graph Monitoring (Continue)

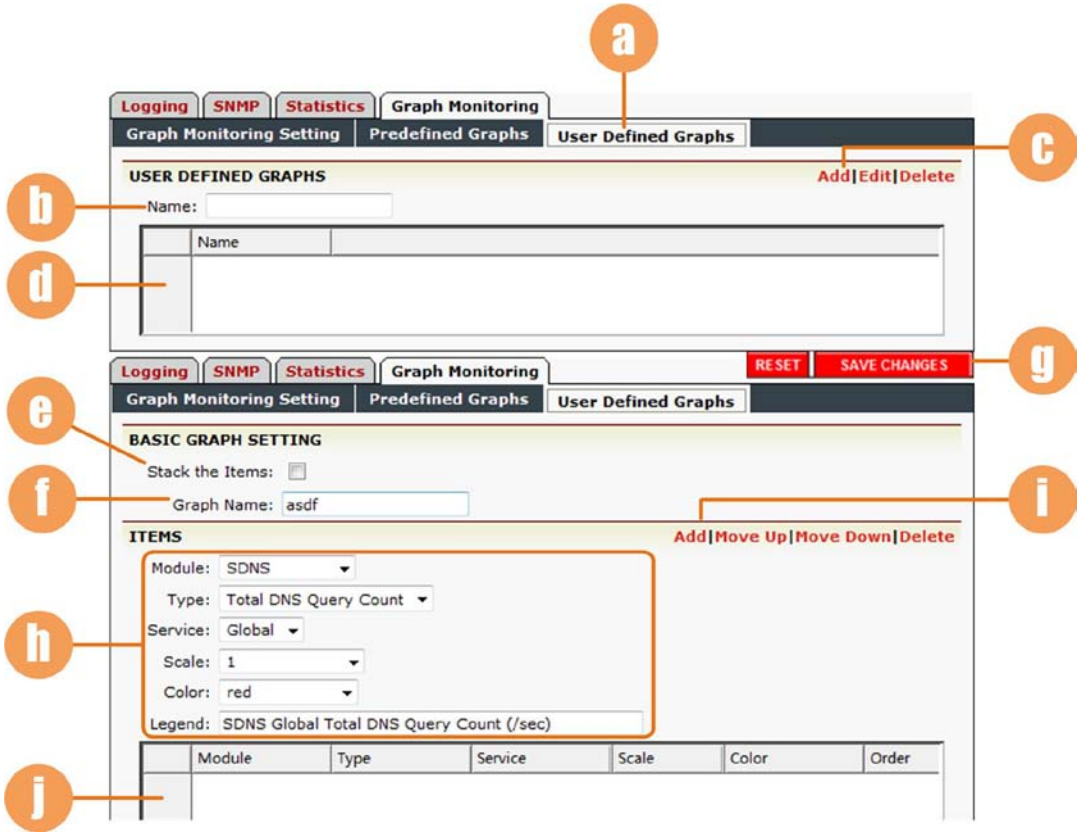
User Defined Graphs

Select the "**User Defined Graphs**" sub tab **[a]**, and the configuration window will present a page allowing you to select to view preferred graphs.

Input a name for your preferred graph in the text field **[b]**, and click on the action link "Add" **[c]**. Then, the added graph name will be displayed in the list box **[d]**. You can double click on a name to further define the graph on a new page.

Select the check box **[e]** to stack the items, and change the graph name if needed in the text field **[f]**. Then, click on the button **[g]** when it appears to save changes.

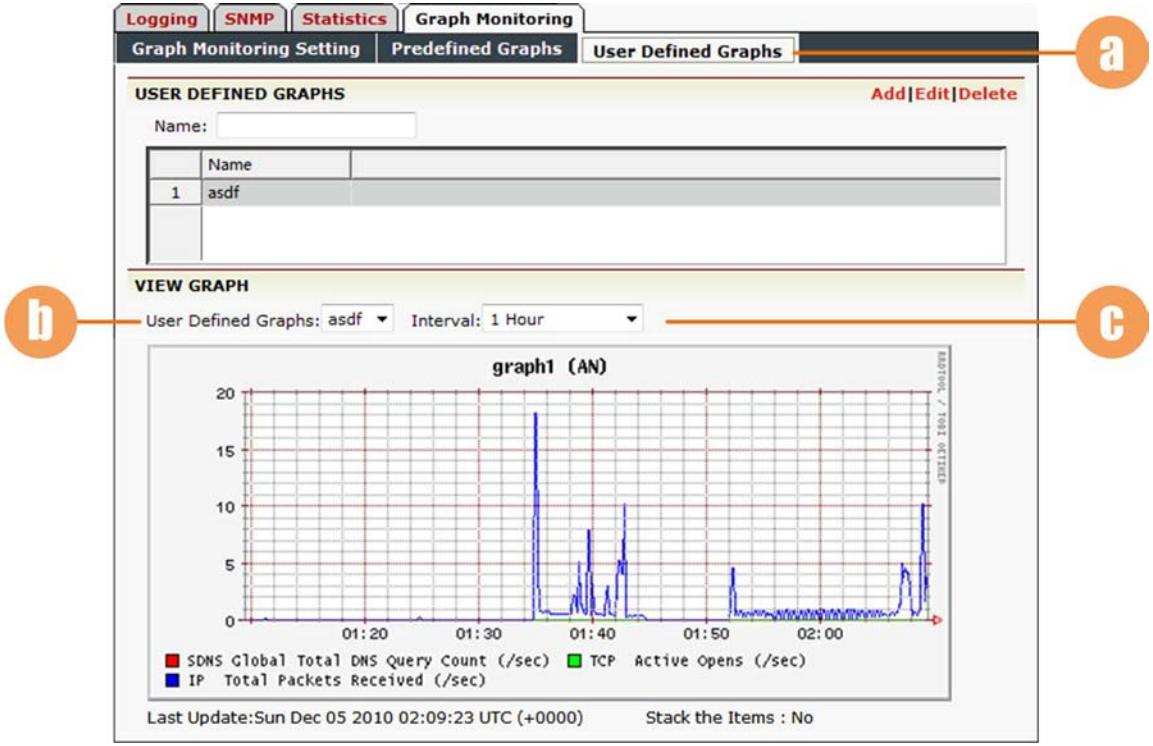
Then, you can define your preferred graph by adding items to the graph through the parameter fields **[h]**. After setting them properly, click on the action link "Add" **[i]** and the added module will be displayed in the sort ready table **[j]**.



Graph Monitoring (Continue)

User Defined Graphs (Continue)

Then, click on "**User Defined Graphs**" **[a]** again, and you can view your defined graphs on the page. You can further switch among the graphs you have defined via the selector **[b]**, or set the interval as desired via the selector **[c]**.



Troubleshooting

This feature provides simple tools for ping (generate an echo request), packet trace, name server verification and system debugging files exporting.

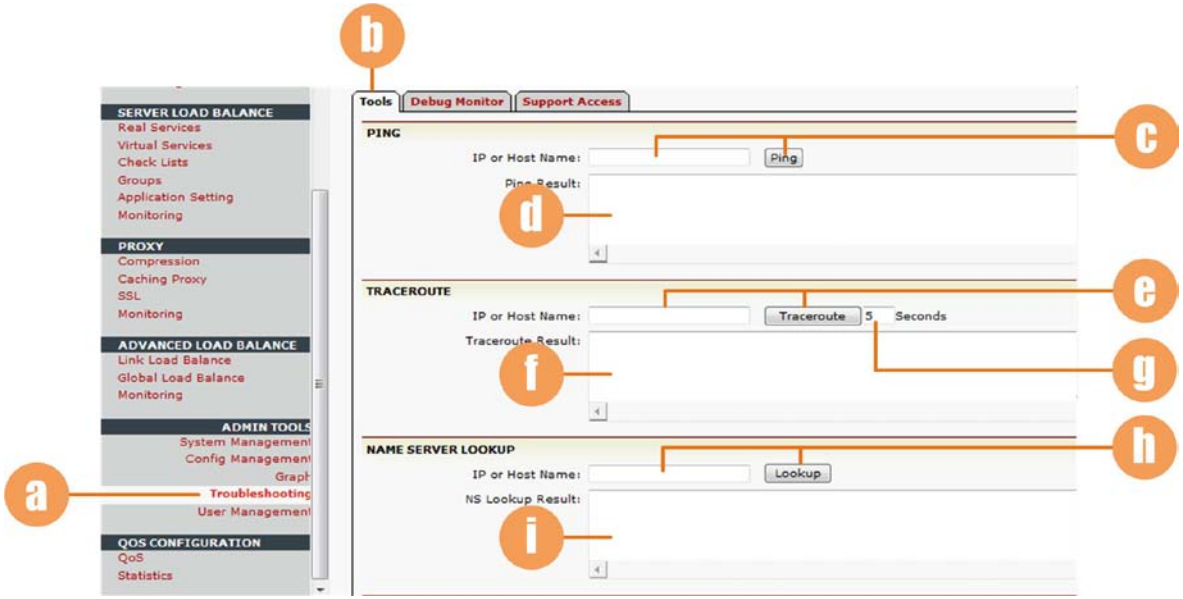
Tools

Make certain you are in Config mode and have selected Troubleshooting from the sidebar **[a]**. The window will present three tabs. By default, the Tools page is displayed **[b]**.

Ping: To generate a network connectivity echo request directed towards a specified IP address or “ping”, enter the IP address or host name and click on the “Ping” button **[c]**. The ping result will be displayed in the box **[d]**.

Traceroute: Enter the IP address or host name and click on the “Traceroute” button **[e]**. The traceroute result will be displayed in the box **[f]**. Here, you are allowed to set the traceroute timeout value (in seconds, defaults to 5) in the text field **[g]**.

Name server lookup: This feature allows the user to verify the IP address for the given hostname. Enter the IP address or host name for the name server and click on the “Lookup” button **[h]**. The verification result will be displayed in the box **[i]**.



Tools (Continue)

Build Debug Files: Via this operation, the system will generate four kinds of system debug files which respectively record the system activities information by categories:

sys_snap.tar.gz

sys_log.tar.gz

sys_core.tar.gz

app_core.tar.gz

You can manually generate and obtain these files. First, set the number of the debug files to obtain (0-10, 0 means do not obtain any file) **[a]**, and click on "Build" **[b]**.

After a while, the system debug files obtained successfully will be displayed in the sort ready table **[c]**.

Export debug files: You can export the system debug files via the local file, FTP or SCP method. Select a file to export **[d]**, and specify the export method via the radio buttons **[e]**. For the FTP and SCP method, you need to input the IP address of the FTP or SCP server and the user name and password to access the server **[f]**. Then, click on "Export" **[g]**.

Note: The "sys_debug" system debug file in the list is generated by successively executing the command "debug enable" and "debug disable" via CLI. Users can also export the file here.

Debug Monitor

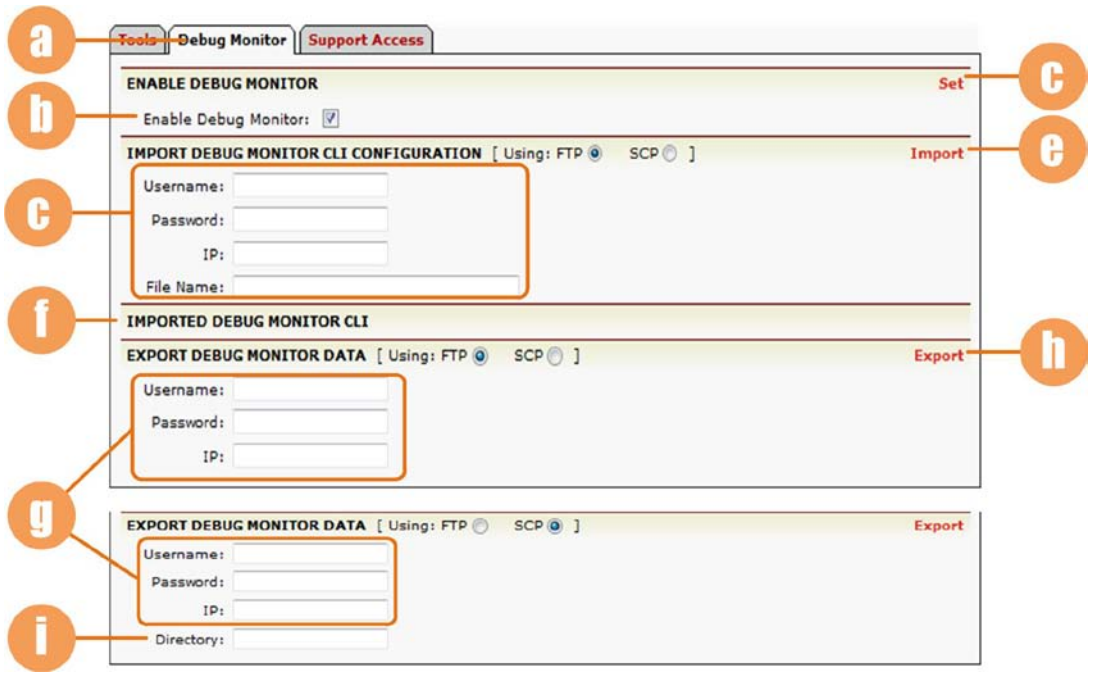
Select the "**Debug Monitor**" tab **[a]**.

You can enable or disable the debug monitor function via the check box **[b]**, and then click on the "Set" action link **[c]** to make your configuration take effect. By default, the debug monitor function is enabled.

You can self-define the CLI commands to be executed for monitor purpose in a file, and then import the file via FTP or SCP method. To import the file, input user name, password, IP address of the FTP or SCP server and the file name in the text fields **[d]**, and click on the "Import" action link **[e]**.

After the file is imported successfully, the CLI commands defined in the file will be displayed in the area **[f]**. The system will execute these commands every 1 minute automatically and further save the monitor data.

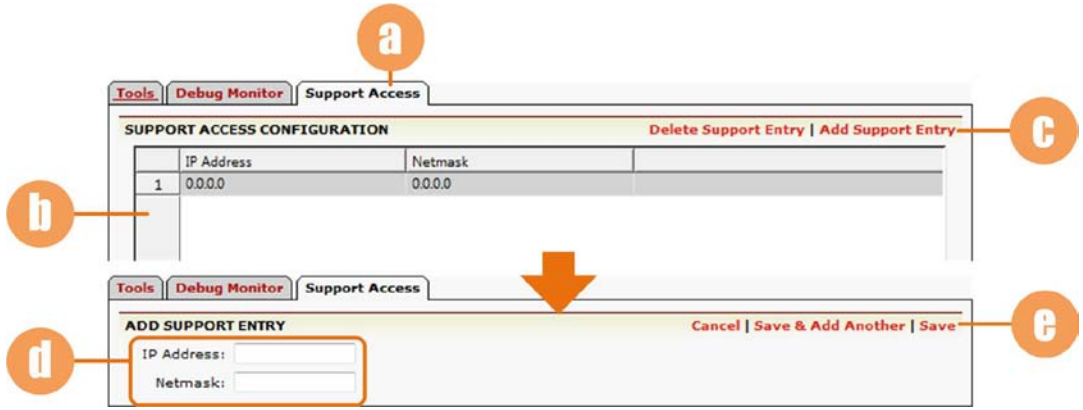
You can also export the monitor data via FTP or SCP method. Input user name, password, IP address of the FTP or SCP server in the text fields **[g]**, and click on the "Export" action link **[h]**. For SCP method, you further need to input the directory path to save the monitor data **[i]**.



Support Access

This function allows Fortinet Customer Satisfaction personnel access to the FortiBalancer appliance directly. You should first contact the Customer Satisfaction department at Fortinet before you configure this operation. Select the "**Support Access**" tab **[a]**, and all configured access points are displayed in the sort ready table **[b]**.

To add a support entry, you can click on the action link "Add Support Entry" **[c]**. On the new configuration page, supply the IP address and netmask in the text fields **[d]** and click on the "Save" action link **[e]**. Then, the entry will be displayed in the sort ready table **[b]**.



User Management

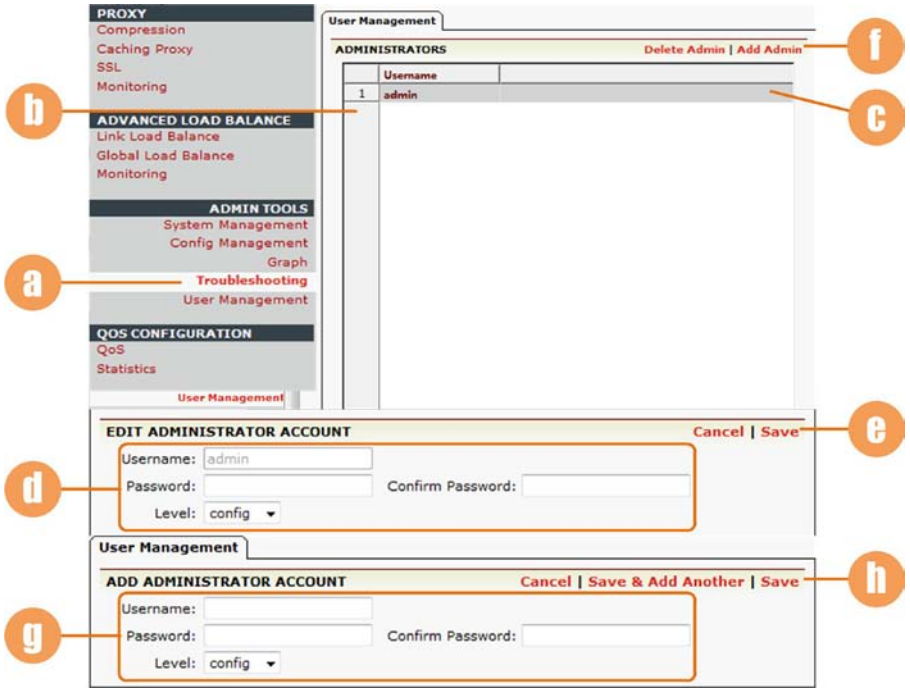
Make certain you are in Config mode and have selected the User Management feature link from the sidebar **[a]**. The configuration window will display all administrators thus far established in the "Administrators" list **[b]**.

User Management

To edit the account information of an administrator, you can double click on the user name in the list **[c]**, and change the password and user level in the parameter fields and dropdown list **[d]** as desired on the new configuration page. Then, click on the action link "Save" to save the new account information **[e]**.

Note: The "Username" field does not support special characters like ",\t:+&#%$^()!@~*?"<>=|\\/\". "$" is just allowed as the final character of the user name.

To add an administrator account, click on the action link "Add Admin" **[f]**, and a new configuration page appears. Set the parameters properly in the text fields **[g]**, and click on the action link "Save" **[h]**. Then, the newly added administrator will be displayed in the list **[b]**.



QoS Configuration

Quality of Service (QoS) for networks is an industry-wide set of standards and mechanisms for ensuring high-quality performance for critical applications. By using QoS mechanisms, network administrators can use existing resources efficiently and ensure the required level of service without reactively expanding or over-provisioning their networks.

QoS

QoS enables network administrators to manage TCP, UDP or ICMP flows via queuing mechanism and packet filtering policies. The FortiBalancer appliance has developed a tree-like queue structure.

Make certain you are in Config mode, and have selected the feature link **QoS** from the sidebar **[a]**. The configuration window will present two new tabs. The QoS Entries page is displayed by default **[b]**.

QoS Entries

When you first enter this page, no QoS entries exist. You need to configure desired QoS queues and filter policies for existing interfaces on your FortiBalancer appliance.

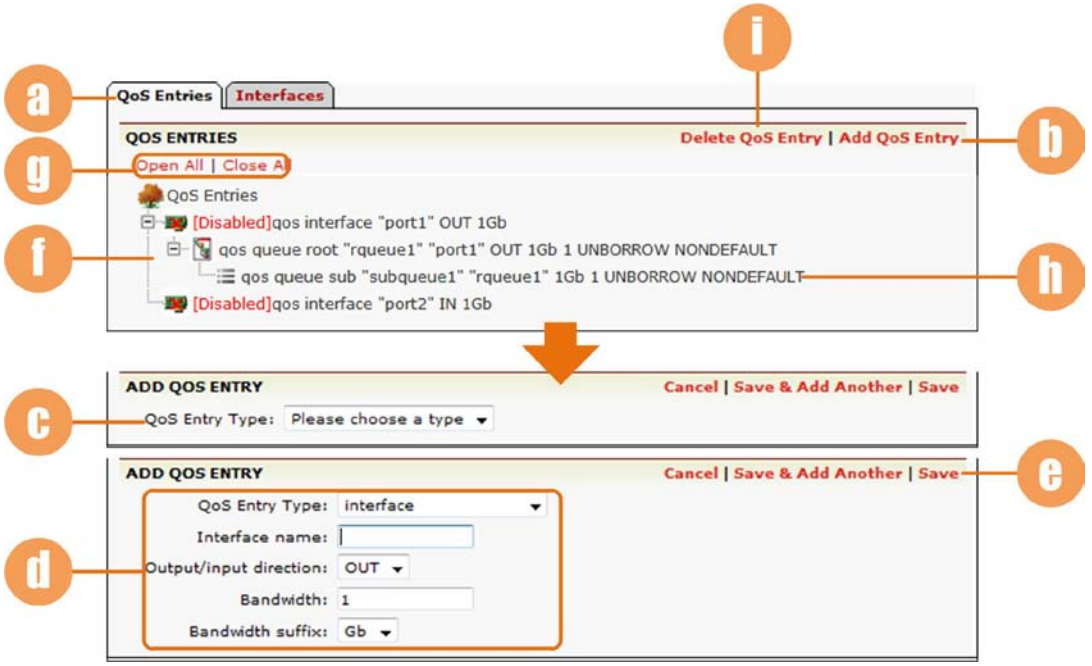
Select the "**QoS Entries**" tab **[a]**, click on the "Add QoS Entry" action link **[b]**, and a new configuration page appears. Choose an entry type via the selector **[c]**, and new parameter fields will appear **[d]**. The fields vary with different entry types. Set the fields properly and click on the "Save" button **[e]**.

Note that you have to configure an interface first, and then the root queue, sub queue and filter policy under it.

After you add desired QoS entries, they will be displayed as a QoS tree **[f]** on the QoS Entries page.

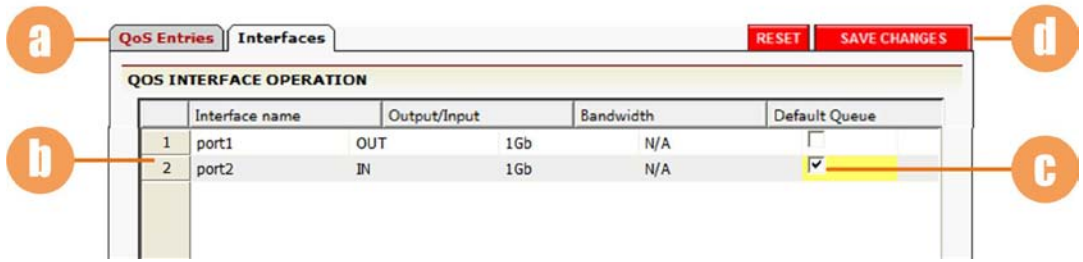
You can click on the action link "Open All" to view all entries, or "Close All" to hide the entries under each QoS interface **[g]**.

To delete an entry from the tree, you can select one **[h]** and click on the "Delete QoS Entry" action link **[i]**. Then, all entries under it will be deleted.



Interfaces

Select the “Interfaces” tab **[a]** and the page will display basic information about the interfaces previously configured on the QoS Entries page in the table **[b]**. You can enable the QoS policies of an interface on OUT or IN direction by selecting the desired check box **[c]** and clicking on the “SAVE CHANGES” button **[d]**.



Statistics

Select the feature link Statistics from the sidebar **[a]**. To view the statistics, you only need to enter the Enable mode.

The configuration window will present the QoS Interface Statistic page **[b]**. You can view the QoS statistics of existing interfaces on either in, out, or both directions.

QoS Interface Statistics

Specify an interface via the selector **[c]**, and further specify a direction (IN or OUT) of the interface from the selector **[d]**, where "ANY" means both the IN and OUT directions. Then the desired interface statistics will be displayed in the table **[e]**. You can click on the action link "Refresh" **[f]** to view the latest statistics.

To clear the statistics, you need to enter the Config mode and click on the "Clear" action link **[g]**.