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System Monitor

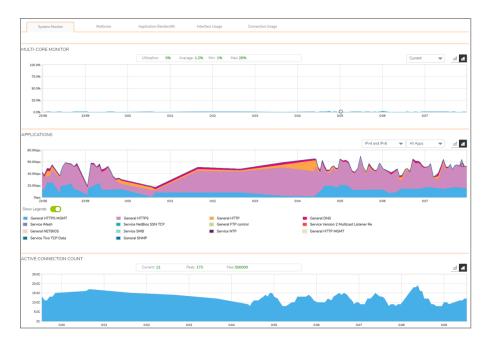
1

The **Real Time Charts > System Monitor** page provides a real-time, multi-functional display with information about hardware multi-core utilization, applications, bandwidth usage, packet rate, packet size, connection rate, and connection count.

() **NOTE:** A chart may be empty or blank if there are no recent data entries received within the viewing range.

There are five tabs displayed on the **System Monitor** page.

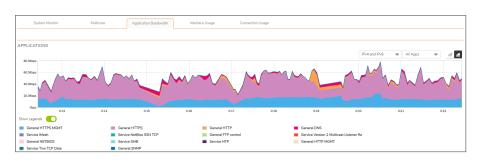
#### System Monitor



#### **Multicore**

Syst	em Monitor	Multicore	Аррін	ation Bandwidth	Interface Usage	Connection Usage							
MULTI-COR	LITI-CORE MONITOR Utilization: 0% Average 12% Min 1% Mac 20%												
100.0% 75.0%													
50.0%													
25.0%					0								
0.0%	.08	0.09	0:10	0:11	0:12	0.13	0.14	0:15	0:16	0:17			

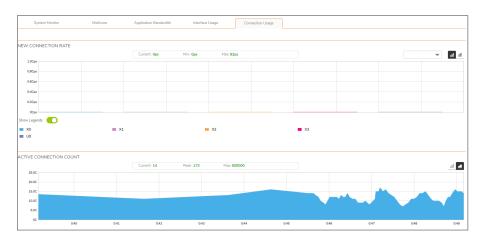
### Application Bandwidth



#### Application Bandwidth Current: 47.2Kbp Min: 2.7Kbs IPv4 and IPv6 🛛 💗 All inter d 🛃 ingres Ŧ 0.45 039 Current: 52.80 KET RATE urrent: 7ps Min: 3ps Al inter d 🛃 25.0Pps 20.0Pps 15.0Pps 30.0Pps 0Pps 0Pps 5.0Pps 10.0Pps 15.0Pps 20.0Pps 0.45 Legends ent Spe ACKET SIZE Current: 1206 Bytes Min: 271 Bytes Alin -4.043 3.043 2.043 1.043 08 08 2.043 3048 043 0.44 043 042 Mir: 550 Bytes Max: 3000 Bytes Egnats 0.45 0.38 0:40 Current: 1921 Bytes now Legends

### Interface Usage

### Connection Usage



# Using the Toolbar

0 -

The **Policy Monitor** toolbar contains features to specify the refresh rate, change the amount of data displayed, and pause or play the data flow. Changes made to the toolbar apply across all the data flows.

### PROTOCOL MONITOR TOOLBAR OPTIONS

O Refresh every: 3 sec.

Option	Widget	Description
Refresh Rate	Refresh every: 3 sec	Determines the frequency at which data is refreshed. A numerical integer between 1 to 10 seconds is required. The default is <b>3</b> seconds.
View Range	0 5 mins (	Displays data pertaining to a specific span of time. The <b>View Range</b> is configurable in 60 seconds, 2 minutes, 5 minutes, and 10 minutes. The default is <b>2</b> minutes.
Pause	(1)	Freezes the data flow. The <b>Pause</b> button appears black if the data flow has been frozen.
Play	$\odot$	Unfreezes the data flow. The time entries at the bottom of the tables will refresh as soon as the data flow is updated.
		The <b>Play</b> button appears black if the data flow is live.
Tips	Q	Mouse over a data point to see values at that instant.

### **Common Features**

**Topics:** 

- Legends
- Tooltips
- Changing Chart Format
- Selecting IPv6/IPv4
- Current, Minimum, Maximum Display

6

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## Legends

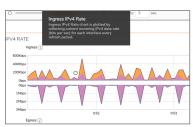
Most charts display a legend that shows the name and color used for the applications.

				IPv4 and IPv6 🛛 🔻 All Ap	ps 🔻 🛃
100.0Kbps					
80.0Kbps					
60.0Kbps					
40.0Kbps		$\checkmark$			
20.0Kbps		· · · · · · · · · · · · · · · · · · ·			
Obps					1990 - Contra 19
3:12	3:13 3:14	3:15 3:16	3:17 3:18	3:19 3:20	3:21
now Legends					
General HTTPS MGMT	General HTTPS	General HTTP	General DNS		
	Service NetBios SSN TCP	General FTP control	Service Version 2 Mi	Iticast Listener Re	
Service iMesh		Service NTP	General HTTP MGM	-	
Service iMesh General NETBIOS	Service SMB				

### Tooltips

Various elements of the charts have associated tool-tips:

• The name of each chart has two tool-tip icons (i) that briefly describe the ingress and egress information in the chart.



• Legend items display information about the item the legend represents.



• A small circle displays information about a precise moment on the chart.



To display a tool-tip, hover your mouse over the desired item or click on the chart. The information displayed varies by chart.

## **Changing Chart Format**

You are able to view individual charts in either bar chart format or stacked (area) chart format. Each chart

has Chart Format icons in the upper right corner of the chart 🛄 🖆 . The default is stack chart format.

### **Bar Chart**

The bar chart format displays applications individually, thus allowing you to compare applications. In this chart, the applications, interfaces, or core monitors are arranged along the x-axis, for applications and interfaces according to the color code shown in the Legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each application or interface. To display the data in bar chart

<u>.</u>11 format. click on the Bar Chart icon

The following example is a Bar Chart view.

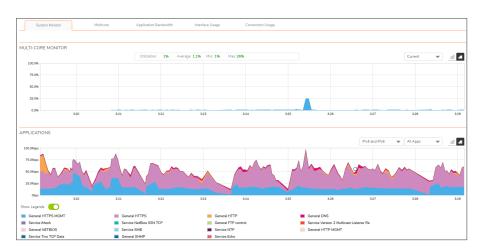


### Stacked Chart

The stack chart format displays over-lapping data in a stacked format as it occurs. In this chart, the x-axis displays the current time and the y-axis displays information appropriate to the chart, such as the amount of traffic for each application or the rate or size of the packets. To display data in the stack chart format, click

the Stacked Chart icon

The following example is a Stacked Chart view.

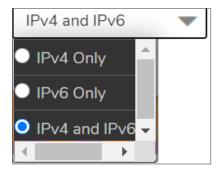


## Selecting IPv6/IPv4

For complete information on the SonicOS implementation of IPv6, see the *IPv6* section of the *SonicOS System Setup* technical documentation.

(i) | NOTE: This option applies only to the Applications and Ingress/Egress Bandwidth charts.

Live Monitor is configured the same in IPv6 and IPv4; select a radio button in the drop-down menu to change the view/configuration:



- IPv4 Only
- IPv6 Only
- IPv4 and IPv6

### Current, Minimum, Maximum Display

All charts, except **Applications**, display the current, minimum, and maximum values for the chart. The values vary by chart and can be in Mbps, Kbps, Pps (packets per second), Bytes, or Cps (connections per second).

Current: 37.9Kbps	Min: 2.5Kbps	Max: 684.2Kbps	Ingress

For the **Ingress/Egress** charts, the information is displayed for both halves, the Ingress on the top and the Egress on the bottom. For the other charts, the information is displayed on the top.

## **Multicore Monitor**

The **Multicore Monitor** displays dynamically updated statistics on utilization of the individual cores of the firewall. The information is shown either for combined data in flow chart format or for individual cores in bar chart format. Core 1 through core 8 handle the control plane. Core 1 through core 8 usage is displayed in green on the Multi-Core Monitor. The remaining cores handle the data plane. To maximize processor flexibility, functions are not dedicated to specific cores; instead all cores can process all data plane tasks. Memory is shared across all cores. Each core can process a separate flow simultaneously, allowing for up to 88 flows to be processed in parallel.

#### **Stacked Chart**

In the stacked chart format the x-axis displays the current time, and the y-axis displays the percentage of CPU used.

Sy	stem Monitor	Multicore	Application Bandwidth	Interface Usage	Connection Usage					
MULTI-CO	RE MONITOR		Utilization: 2	96 Average: 1.4% Min: 1%	Max: 20%			Current	-	
100.0%									•	
75.0%										
50.0%										
25.0%							•			
0.0%		3.56	3:	57	3:58	3.59		4.0	D	

#### **Bar Chart**

The bar chart format displays data pertaining to individual cores. The x-axis displays the cores while the yaxis displays the percentage of CPU used.

Sys	stem Monitor	Multicore	Application Bandwidth	Interface Usage	Connection Usage		
MULTI-COR	RE MONITOR						_
100.0%			Utilization: 1%	Average: 1.1% Min: 1%	Max: 26%		- <u>at</u>
75.0%							
50.0%							
25.0%							
25.0%							
0.0%						0	

## Options

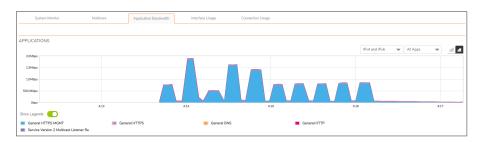
The following option is specific to the **Multicore** chart. For other options and display features, see Common Features.

Option	Widget	Description
Aggregate Display	Current Vagregate) O Current (Aggregate) O Avarage (Aggregate) Core 0 Core 1 Core 2 Core 3	Specifies which Cores are displayed in the Multi- Core Monitor Flow Chart. A drop-down menu allows you to specify <b>Current</b> (Aggregate), Average (Aggregate), and individual Cores. The individual Cores vary, depending on the number of Cores available. Multiple Cores can be selected.

## **Applications Bandwidth Monitor**

The Applications data flow provides a visual representation of the current applications accessing the network.

### **Stacked Chart**



#### **Bar Chart**



## Options

The following option is specific to the **Applications** chart. For other options and display features, see Common Features.

Option	Widget	Description
Lock		Locks the Display for the Applications chart. The lock/unlock option is available when you select <b>Most Frequent Apps</b> . Most Frequent Apps displays the top 25 apps; you can use the lock or unlock option to keep the report from altering the top 25 apps.
Unlock	<b>1</b>	Unlocks the Display for the Applications chart.
Application Display	Most Frequent Most Frequent Apps All Apps General HTTPS General HTTPS General DNS General HTTP Service Version 2 Multicast Listener	<ul> <li>Specifies the applications displayed in the Application Flow Chart.</li> <li>A drop-down menu allows you to specify <b>Most Frequent Apps</b>, <b>All Apps</b>, or individual applications. If desired, multiple applications can be selected by clicking more than one check box.</li> </ul>

## Interface Usage

The Ingress / Egress Bandwidth data stacked chart provides a visual representation of incoming (Ingress) and outgoing (Egress) bandwidth traffic. The current percentage of total bandwidth used, and the minimum and maximum amount of traffic that has gone through each interface is available in the display.

(i) **NOTE:** The Bandwidth charts have no direct correlation to the Application charts.

### **Stacked Chart**

The stacked chart format allows you to view all of the Ingress and Egress Bandwidth traffic as it occurs. The x-axis displays the current time, and the y-axis displays the Ingress and Egress Bandwidth traffic.

System Monitor	Multicore	Application	Bandwidth	Interface Usage	Connection Usage			
BANDWIDTH								
	Current: 48.2Kbps	Min: 4.0Kbps	Max: 1.4Mbps	Ingress		IPv4 and IPv6	<ul> <li>All Interfaces</li> </ul>	▼
100.0Kbps								
75.0Kbps								
50.0Kbps				A .				
25.0Kbps								
Obps					0			
Obps					-	-		
25.0Kbps								
50.0Kbps								$\sim$
75.0Kbps					· · ·			
100.0Kbps								
5:31	5:32		5:33		5:34		5:35	
Show Legends	Current: 46.5Kbps	Min: 3.5Kbps	Max: 23.4Mbps	Egress				
x0		X1		X2		🖬 X3		
U0								

### Bar Chart

The bar chart format displays data pertaining to individual interfaces in a bar chart; allowing comparisons of individual Bandwidth Interfaces. In this chart, the x-axis denotes the Interfaces whereas the y-axis denotes the Ingress and Egress Bandwidth traffic.

System Monitor	Multicore	Application	Bandwidth	Interface Usage	Connection Usage			
BANDWIDTH	Current: 46.6Kbps	Min: 4.0Kbps	Max: 1.4Mbps	Ingress		IPv4 and IPv6	<ul> <li>All Interfaces</li> </ul>	▼ <u>al</u> ≜
40.0Kbps 30.0Kbps 20.0Kbps 10.0Kbps 0bps 0bps				ingress	0		Alimenates	
20.0Kbps 40.0Kbps 60.0Kbps								
Show Legends () X0 U0	Current: 52.4Kbps	Min: 3.5Kbps X1	Max: 23.4Mbps	Egress X2		<b>X</b> 3		

### Options

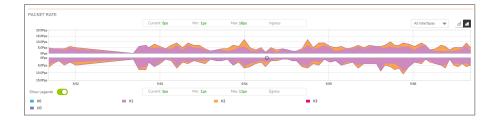
The following option is specific to the **Interface Usage** chart. For other options and display features, see Common Features.

Option	Widget	Description
Interface Rate Display	All Interfaces  All Interfaces Rate All Interfaces (%) XX Rate	Specifies which Interfaces are displayed in the Bandwidth Flow Chart.
	X0 (%)     X1 Rate     X2 (%)     X2 Rate     X2 (%)     X2 Rate     X3 (%)	A drop-down menu provides options to specify <b>All Interfaces Rate</b> , <b>All Interfaces (%)</b> , or rate or percentage (%) for individual interfaces.
		The individual interfaces vary depending on the number of interfaces on the network. Multiple interfaces can be selected if desired.

### Packet Rate Monitor

The **Ingress / Egress Packet Rate** monitor provides information on the ingress and egress packet rate as packets per second (pps). This can be configured to show packet rate by network interface. The chart shows the current packet rate, minimum packet rate, and maximum packet rate for both ingress and egress network traffic.

### **Stacked Chart**



### Bar Chart

ow Legends	<b>X</b> 1	Contenc 7ps	MIT: 105		C7/655	<b>X</b> 3		
ow Legends		Current: 7ps	Min: 1ps	Marc 12ps	Egress			
8.0Pps								
6.0Pps								
4.0Pps								
2.0Pps								
0Pps					0			
2.5Pps 0Pps						0		
5.0Pps								
7.5Pps								
10.0Pps								
		Current: 11ps	Min: 1ps	Max: 18ps	Ingress		ALL	nterfaces 🔻
CKET RATE		Current: 11ns	Mir: 1os	Max: 18os	Incress		411	nterfaces 🖉

### Packet Size Monitor

The **Ingress** / **Egress Packet Size** monitor provides information on the ingress and egress packet size in bytes (B). This can be configured to show packet size by network interface. The chart shows the current packet size, minimum packet size, and maximum packet size for both ingress and egress network traffic.

#### **Stacked Chart**



**Bar Chart** 



## **Connection Usage Monitor**

The **Connection Usage** Monitor is plotted by collecting the outgoing and incoming connection rates for each interface every refresh period. When looking at the combined connection rate of more than one interface at the same time, it may appear double than the actual connection rate. A single connection between a pair of interfaces is counted for both interfaces.

#### **Stacked Chart**



### **Bar Chart**



### **Connection Count Monitor**

The **Connection Count** Monitor provides a visual representation of the active total number of connections, peak number of connections, and maximum number of connections. The y-axis displays the total number of connections from 0C (zero connections) to 1KC (one kilo connections).

#### **Stacked Chart**



**Bar Chart** 



(i) NOTE: The Connection Count Monitor does not have legends.

2

## **Protocol Monitor**

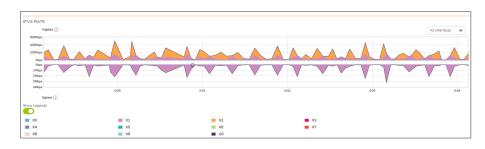
The **Real Time Charts > Protocol Monitor** page displays real-time charts showing ingress and egress traffic rates for the following protocols:

IPv4	Internet Protocol version 4
ARP	Address Resolution Protocol, used by IPv4 to map IP network addresses to link layer hardware addresses
IPv6	Internet Protocol version 6
UDP	User Datagram Protocol, a connection-less protocol used for example by DNS, SNMP, RIP, DHCP
TCP	Transmission Control Protocol, a connection oriented protocol allowing bidirectional traffic once the connection is established, used for example by FTP, SSH, Telnet, and also by DNS
ICMP	Internet Control Message Protocol, used by network devices to send error messages and operational information; ping uses ICMP to send echo request packets to a host
IGMP	Internet Group Management Protocol, used by hosts and routers to establish multicast group memberships

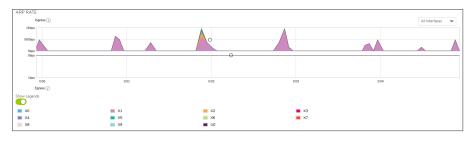
The seven real-time charts displayed on the **Protocol Monitor** page are shown in the images below. The **Ingress** rate is displayed on the top half of each chart, and the **Egress** rate is displayed on the bottom.

(i) **NOTE:** A chart may be empty or blank if there are no recent data entries received within the viewing range.

### **PROTOCOL MONITOR - IPV4 CHART**



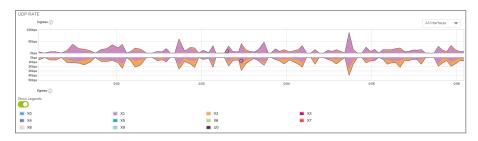
### **PROTOCOL MONITOR - ARP CHART**



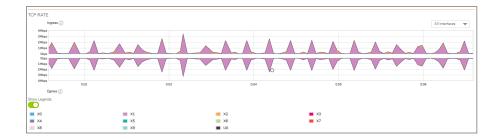
**PROTOCOL MONITOR - IPV6 CHART** 



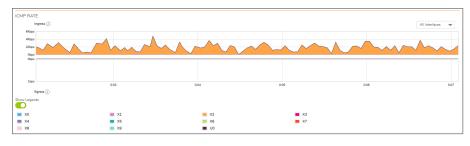
### **PROTOCOL MONITOR - UDP CHART**



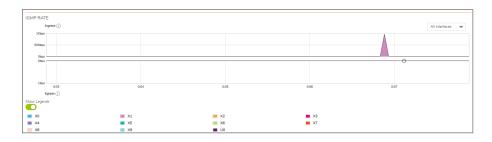
### **PROTOCOL MONITOR - TCP CHART**



### **PROTOCOL MONITOR - ICMP CHART**

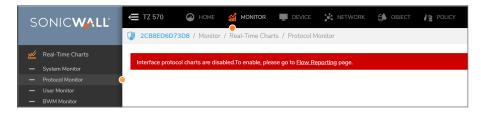


### **PROTOCOL MONITOR - IGMP CHART**



## **Enabling the Protocol Monitor**

The first time you access the Protocol Monitor, it is disabled.



To enable the Protocol Monitor and start displaying statistics in the different charts:

- Click on the Flow Reporting page link.
   You will be navigated to Device > App Flow > Flow Reporting page.
- 2. In the **Settings** tab, select **Interface protocols** option from the **Collect Real-Time Data For** dropdown and click **Accept**.

2CB8ED6D73D8 / Device / Ap	pFlow / Flow Reporting		Configuration 🚫 Non-Config
SETTINGS ()			
Report Connections	● AII ⑦	Enable Real-Time Data Collection [*]	<b>()</b>
	<ul> <li>Interface-based</li> </ul>		Top apps × Bits per sec ×
	C Firewall/App Rules-based		Packets per sec ×
Enable Aggregate AppFlow Report Data Collection	0	Collect Real-Time Data For	Average packet size × 🗸 🗸
Data Collection			Connections per sec × Core util ×
	Apps Report × User Report ×		Memory util ×
Collect Report Data For	IP Report × Threat Report × 💌	Ø	Top apps
	Geo-IP Report × URL Report ×		✓ Bits per sec
			✓ Packets per sec
LOCAL SERVER SETTINGS ()			Average packet size
Enable AppFlow To Local Collector	0		✓ Connections per sec
			✓ Core util
OTHER REPORT SETTINGS ()			Interface protocols
Skip Reporting STACK Connections	0	Enable Geo-IP Resolution	✓ Memory util

The settings are enabled, and statistics are displayed in the **Protocol Monitor** page.

## Using the Toolbar

The Protocol Monitor toolbar contains features to specify the refresh rate, change the amount of data displayed, and pause or play the data flow. Changes made to the toolbar apply across all the data flows.

0 <u> </u>	O Refresh every: 3 sec.	

#### **PROTOCOL MONITOR TOOLBAR OPTIONS**

Option	Widget	Description
Refresh Rate	Refresh every: 3 sec	Determines the frequency at which data is refreshed. A numerical integer between 1 to 10 seconds is required. The default is <b>3</b> seconds.
View Range	0 5 mins	O Displays data pertaining to a specific span of time. The <b>View Range</b> is configurable in 60 seconds, 2 minutes, 5 minutes, and 10 minutes (default).
Pause		Freezes the data flow. The <b>Pause</b> button appears black if the data flow has been frozen.
Play	$\odot$	Unfreezes the data flow. The time entries at the bottom of the tables will refresh as soon as the data flow is updated.
		The <b>Play</b> button appears black if the data flow is live.
Tips	Q	Mouse over a data point to see values at that instant.

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# Using Per-Chart Viewing Options

### **Topics:**

- Legends
- Tooltips

### Legends

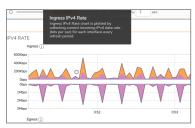
Each chart displays a legend that shows the name and color used for the interfaces selected in the chart's display options drop-down menu. To view the chart, select the interfaces from **All Interfaces** drop-down and toggle the **Show Legends** option.

IPV4 RATE Ingress () 300kgss 200kgss 100kgss 00gss 500kgss 500kgss	0				All interfaces
2Mesa Egress () Show Lagends X0 X4 X8	041 X1 X5 X3	042 X2 X6 U0	0.43 ■ X3 ■ X7	0.44	■ X5 ■ X5 ■ X6 ■ X7 ■ X8 ■ X8

### Tooltips

Various elements of the charts have associated tool-tips:

• The name of each chart has two tool-tip icons that briefly describe the ingress and egress information in the chart.



• Legend items display information about the item the legend represents.

IPV4 RATE	
Ingress $(\hat{i})$	
- 0	
150Kbps	
100Kbps	
50Kbps	
Obps	
Obps	
500Kbps	
1Mbps	
2Mbps	
2Mbps	
3N <sup>e</sup> X0 Name: X0 Ingress Rate: 0 Egress Rate: 0	0.55
<b>X</b> 0	🔲 X1

• A small circle displays information about a precise moment on the chart.

TCP PAIRE Ingene ()					Mincles - W
1 fan					
No. No.	V	TTT	V V V V	VVV	
anger (anger ()	101	10	348	1.14	Len

To display a tool-tip, hover your mouse over the desired item or click on the chart. The information displayed varies by chart.

## **Policy Monitor**

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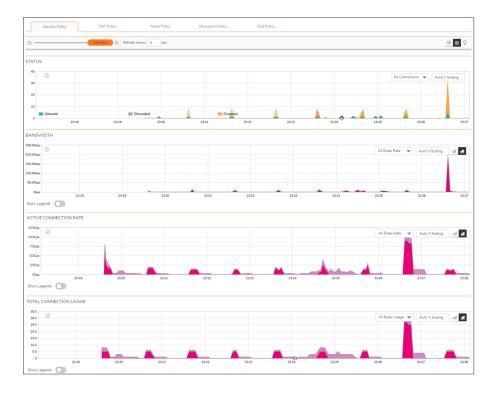
The **Real Time Charts > Policy Monitor** page provides a real-time, multi-functional display with information about security, NAT, Route, Decryption, and DoS policies.

(i) **NOTE:** A chart may be empty or blank if there are no recent data entries received within the viewing range.

There are five tabs displayed on the **Policy Monitor** page.

#### **Security Policy**

To view the Security Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > Security Policy**.



### **NAT Policy**

To view the NAT Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > NAT Policy**.

	10 mins	O Refresh every: 3	iec.				0	0
TUS								
Ø							All Connections V Auto Y-Sca	
							All Connections 🐨 Auto Y-Sca	aling
-								
Translated	2.08 22	Untranslated 22:10	22:11	22:12	22:13	22:14	22:15 22:16	22:1
					11.17		ALLY ALLY	
IDWIDTH								
Tops								
bps							All Rules Rate 🐨 Auto Y-Scaling	<u>a</u>
bps								
bps						1 1 1		- 1
								-
ops								
bps	22:08	22.09 22.10	22-11	22:12	22:13	22:14	22.15 22.16	22:1
V Legends		22:09 22:10	22:11	22:12	22:13	22:14	2215 2216	221
VE CONNECTION		22:09 22:10	22:11	22:12	22.13	2214		
v Legends		22:09 22:10	22.11	22:12	2213	2214		
kps V Legends  VE CONNECTION		22:09 22:10	22.11	22:12	2213	22:14		
re CONNECTION		22:09 22:10	2211	22:12	2213	2214		

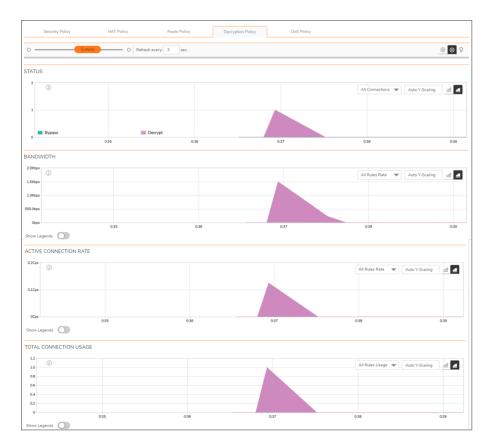
#### **Route Policy**

To view the Route Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > Route Policy**.



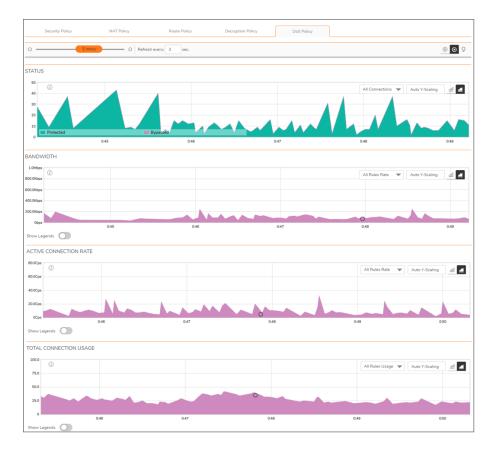
### **Decryption Policy**

To view the Decryption Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > Decryption Policy**.



### **DoS Policy**

To view the DoS Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > DoS Policy**.



## Using the Toolbar

The **Policy Monitor** toolbar contains features to specify the refresh rate, change the amount of data displayed, and pause or play the data flow. Changes made to the toolbar apply across all the data flows.





### **PROTOCOL MONITOR TOOLBAR OPTIONS**

Option	Widget		Description
Refresh Rate	Refresh every: 3	sec	Determines the frequency at which data is refreshed. A numerical integer between 1 to 10 seconds is required. The default is <b>3</b> seconds.
View Range	0	5 mins	O Displays data pertaining to a specific span of time. The <b>View Range</b> is configurable
-			in 60 seconds, 2 minutes, 5 minutes, and 10 minutes. The default is <b>2</b> minutes.

Pause		Freezes the data flow. The <b>Pause</b> button appears black if the data flow has been frozen.
Play	$\odot$	Unfreezes the data flow. The time entries at the bottom of the tables will refresh as soon as the data flow is updated.
		The <b>Play</b> button appears black if the data flow is live.
Tips	Q	Mouse over a data point to see values at that instant.

## **Common Features**

Topics:

- Legends
- Tooltips
- Changing Chart Format
- Scaling a Chart

## Legends

Most charts display a legend that shows the name and color used for the policies.

BANDV	VIDTH				
10.0Kbps	0				
8.0Kbps	٢				All Rules Rate 🔻 Auto Y-Scaling 🔟 📶
6.0Kbps					
4.0Kbps					
2.0Kbps					
Obps	1:14	1:15	1:16	1:17	1:18
Show Le	gends 🛑				
Rou	te Policy_5	Route Policy_7	Route Policy_3	Route Policy_10	
Rou	te Policy_2	Route Policy_1	Route Policy_11	Route Policy_4	
Rou	te Policy_6	Route Policy_12	Route Policy_9	Route Policy_8	
-					

## Tooltips

Various elements of the charts have associated tool-tips:

• The name of the chart has a tool-tip icon that briefly describe the chart.

Security Policy	NAT Policy Ros	te Policy Decryption Policy	DoS Policy		
o —	5 mins O Refresh every: 3	500.			• <b>•</b> •
TATUS This chart sh	hows connections that are nd untranslated by NAT rules.				
40 (j)	na ann ansianna ay trea rues.			All Connection	s 🔻 Auto Y-Scaling
30					
	Untranslated				

• Legend items display information about the item the legend represents.

BANDWIDTH				
400.0Kbps				All Rules Rate 👻 Auto Y-Scaling 🔤 🜌
300.0Kbps				All Notes Rate V Auto 1-scaling 42
200.0Kbps				
100.0Kbps	_			
Otes Default NAT Policy_9				
Show Legends  Rate: 17918 bps	1:28	129	1:30	131
Default NAT Policy_9	Default NAT Policy_14	Default NAT Policy_20	Default NAT Policy_11	
Default NAT Policy_2	Default NAT Policy_10	Default NAT Policy_8	Default NAT Policy_1	
Default NAT Policy_3	Default NAT Policy_4	Default NAT Policy_5	Default NAT Policy_6	
Default NAT Policy_7	Default NAT Policy_12	Default NAT Policy_13	Default NAT Policy_15	
Default NAT Policy_16	Default NAT Policy_17	Custom NAT Policy_18	Default NAT Policy_19	
Default NAT Policy_21	Default NAT Policy_22	Default NAT Policy_23	Default NAT Policy_24	
Default NAT Policy_25	Default NAT Policy_26			

• A small circle displays information about a precise moment on the chart.

ſ	Security Policy	NAT	Policy	Route Policy	Decryption Policy	DoS Policy				
0 -	0 - 10 mm 0 Rufred work 3 sec. 0 0						⊚ ତ ତ			
STAT	US									
10 8	٢								All Con	Auto Y-Scaling
6										
2	Allowed		🔳 Disca	rded	E Dropped	1				
0		5:30	531	5:32	5:33	8:34	5.35	5:36	5:37	5:38 Discarded - 0 5:39

To display a tool-tip, hover your mouse over the desired item or click on the chart. The information displayed varies by chart.

### **Changing Chart Format**

You are able to view individual charts in either bar chart format or stacked (area) chart format. Each chart

has Chart Format icons in the upper right corner of the chart \_\_\_\_\_\_. The default is stack chart format.

### Bar Chart

The bar chart format displays applications individually, thus allowing you to compare policies. In this chart, the policies or rules arranged along the x-axis according to the color code shown in the Legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each policy.

To display the data in bar chart format, click on the **Bar Chart** icon

The following example is a Bar Chart view.

ow Legends	Custom Security Policy_1	Custom Security Policy_2	Custom Security Policy_6	
Cops				
D.Obps				
OKbps				
SKbps				
OKops (j)				All Rules Rate 🔻 Auto Y-Scaling 📶
NDWIDTH				

### Stacked Chart

The stack chart format displays over-lapping data in a stacked format as it occurs. In this chart, the x-axis displays the current time and the y-axis displays information appropriate to the chart, such as the amount of

traffic for each policy. To display data in the stack chart format, click the **Stacked Chart** icon . The following example is a Stacked Chart view.

BANDWIDTH						
30.0Kbps 25.0Kbps					All Rules Rate	Auto Y-Scaling
20.0Kbps 15.0Kbps 10.0Kbps						
5.0Kbps Obps						
Show Legends	5:47	5.48	554		:50	5:51
Custom Security Policy_3 Custom Security Policy_5	Custom Security Poli Custom Security Poli		Custom Security Policy_2	Custom Security Policy_6		

### Scaling a Chart

The Scale box, , to the upper right of each chart, allows for automatic y-axis scaling or custom scaling of a chart.

- Auto (default) Auto Y-Scaling, where the y-axis is scaled so it is just large enough to show the maximum data in the chart.
- <num>[<unit>] The values for customized scaling must be a numeric integer. Specifying a unit is optional. If a unit is desired, four options are available:
  - K for Kilo
  - M for Mega
  - G for Giga
  - % for Percentage

For example, if a custom scale of 100Kbps is desired, then 100K should be entered: The numeric integer 100 followed by the unit K.

(i) **NOTE:** An invalid entry results in the default, Auto Y-Scaling, being used.

# **Security Policy**

To view the Security Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > Security Policy**.

### Status

The Status chart displays connections that are allowed, discarded, and dropped by the rules configured. The x-axis displays the current time and the y-axis displays the number of policies that are allowed, discarded, and dropped.

STA	rus						
10	Ø						All Connections 🐨 Auto Y-Scaling
6							
	Allowed	III Discarded	Dropped				
°		158 2	59 3	:00	3:	01	3.02

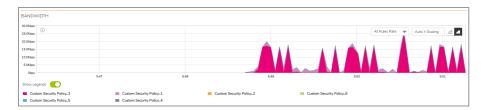
(i) | NOTE: The Status chart is displayed in stacked format and does not have legends.

### Bandwidth

Bandwidth chart is plotted by collecting number of bytes per rule traversing through the firewall every refresh period.

### Stacked Chart

In the stacked chart, the x-axis displays the current time and the y-axis displays the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).



#### Bar Chart

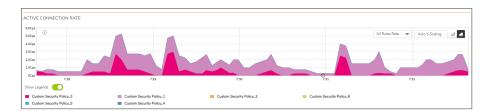
The bar chart format displays policies individually along the x-axis according to the color code shown in the legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).

ANDWIDTH				
2.0Rbps				All Rules Rate 💌 Auto Y-Scaling 🔐
-5Kbps				
1.0Kbps				
00.06ps				
Obps				
how Legends				
Custom Security Policy_3	Custom Security Policy_1	Custom Security Policy_2	Custom Security Policy_6	
Custom Security Policy_5	Custom Security Policy_4			

### Active Connection Rate

The Active Connection Rate chart provides a visual representation of the current total number of outgoing and incoming connection rate for each rule in Cps (Connections per second).

#### **Stacked Chart**



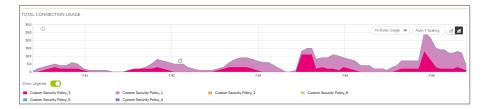
**Bar Chart** 

Cps			All Rules Rate 💗 Auto Y-Scaling all
Cps			
Cps			
Cps			
DS		0	

### **Total Connection Usage**

The Connection Usage chart provides a visual representation of the total number of connections per rule.

### **Stacked Chart**



**Bar Chart** 



# NAT Policy

To view the NAT Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > NAT Policy**.

## Status

The Status chart displays connections that are translated and untranslated by NAT rules. The x-axis displays the current time and the y-axis displays the number of policies that are translated and untranslated by NAT rules.

	Security Policy	NAT Policy	Route Policy	Decryption Policy	DoS Policy		
0 -	5 mins	O Refresh	every: 3 sec.				@ <b>0</b> 9
STAT							
40	(i)						All Connections 🐨 Auto Y-Scaling
20							
10	Translated	4	Intranslated		and Untranslated - 2	347	2.48

(i) | NOTE: The Status chart is displayed in stacked format and does not have legends.

### Bandwidth

Bandwidth chart is plotted by collecting number of bytes per rule traversing through the firewall every refresh period.

### Stacked Chart

In the stacked chart, the x-axis displays the current time and the y-axis displays the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).

BANDWIDTH				
70.0Kbps 60.0Kbps 50.0Kbps				All Rules Rate 💌 Auto Y-Scaling 💷
40.0Kbps 30.0Kbps				
20.0Kbps				
0bps 7.54	7.55	7.56	7.57	7:58
Show Legends O	Default NAT Policy_14	Default NAT Policy_20	Default NAT Policy_11	
Default NAT Policy_10 Default NAT Policy_3	Default NAT Policy_2 Default NAT Policy_4	Default NAT Policy_1 Default NAT Policy_5	Default NAT Policy_8 Default NAT Policy_6	
Default NAT Policy_7     Default NAT Policy_16	Default NAT Policy_12 Default NAT Policy_17	Default NAT Policy_13 Custom NAT Policy_18	Default NAT Policy_15 Default NAT Policy_19	
Default NAT Policy_21     Default NAT Policy_25	<ul> <li>Default NAT Policy_22</li> <li>Default NAT Policy_26</li> </ul>	Default NAT Policy_23	Default NAT Policy_24	

#### **Bar Chart**

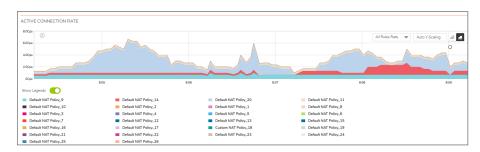
The bar chart format displays policies individually along the x-axis according to the color code shown in the legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).

BANDWIDTH				
20.0Kbps				
15.0Kbps				All Rules Rate 💌 Auto Y-Scaling 📶 🚈
10.0Kbps				
5.0Kbps			0	
Ubps				
Show Legends	Default NAT Policy_14	Default NAT Policy_20	Default NAT Policy_11	
Default NAT Policy_10	Default NAT Policy_14	Default NAT Policy_1	Default NAT Policy_8	
Default NAT Policy_3	Default NAT Policy_4	Default NAT Policy_5	Default NAT Policy_6	
Default NAT Policy_7	Default NAT Policy_12	Default NAT Policy_13	Default NAT Policy_15	
Default NAT Policy_16	Default NAT Policy_17	Custom NAT Policy_18	Default NAT Policy_19	
Default NAT Policy_21	Default NAT Policy_22	Default NAT Policy_23	Default NAT Policy_24	
Default NAT Policy_25	Default NAT Policy_26			

### Active Connection Rate

The Active Connection Rate chart provides a visual representation of the current total number of outgoing and incoming connection rate for each rule in Cps (Connections per second).

#### **Stacked Chart**



#### **Bar Chart**



## Total Connection Usage

The Connection Usage chart provides a visual representation of the total number of connections per rule.

### Stacked Chart

TOTAL CONNECTION USAGE						
300 250 200 150 50					All Roles Usage 💌 🗌 Auto Y	^Scaling dd 🜌
0	8:24	8.25	8:26		8.27	8.28
Show Legends						
Default NAT Policy_9	Default NAT Policy_14			Default NAT Policy_11		
Default NAT Policy_10	Default NAT Policy_2	Default NAT F	Policy_1	Default NAT Policy_8		
Default NAT Policy_3	Default NAT Policy_4	Default NAT F	Policy_5	Default NAT Policy_6		
Default NAT Policy_7	Default NAT Policy_13	2 Default NAT F	Policy_13	Default NAT Policy_15		
Default NAT Policy_16	Default NAT Policy_12	Custom NAT	Policy_18	Default NAT Policy_19		
Default NAT Policy_21	Default NAT Policy_22	Default NAT F	Policy_23	Default NAT Policy_24		
Default NAT Policy_25	Default NAT Policy_28	5				

### Bar Chart

TOTAL CONNECTION USAGE				
10.0				
80				All Rules Usage 🐨 🛛 Auto Y-Scaling 🔜 🛋
6.0				
4.0				
20				
Show Legends				
Default NAT Policy_9	Default NAT Policy_14	Default NAT Policy_20	Default NAT Policy_11	
Default NAT Policy_10	Default NAT Policy_2	Default NAT Policy_1	Default NAT Policy_8	
Default NAT Policy_3	Default NAT Policy_4	Default NAT Policy_5	Default NAT Policy_6	
Default NAT Policy_7	Default NAT Policy_12	Default NAT Policy_13	Default NAT Policy_15	
Default NAT Policy_16	Default NAT Policy_17	Custom NAT Policy_18	Default NAT Policy_19	
Default NAT Policy_21	Default NAT Policy_22	Default NAT Policy_23	Default NAT Policy_24	
Default NAT Policy_25	Default NAT Policy_26			

# **Route Policy**

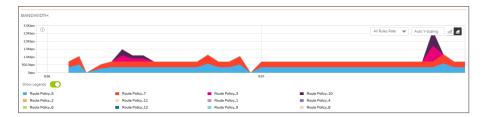
To view the Route Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > Route Policy**.

### Bandwidth

Bandwidth chart is plotted by collecting number of bytes per rule traversing through the firewall every refresh period.

#### **Stacked Chart**

In the stacked chart, the x-axis displays the current time and the y-axis displays the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).



#### **Bar Chart**

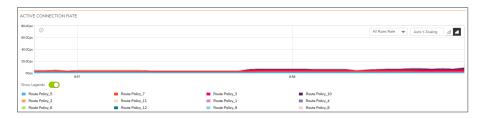
The bar chart format displays policies individually along the x-axis according to the color code shown in the legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).

BANDWIDTH	-				
600.0bps					
500.0bps					All Rules Rate 🗢 Auto Y-Scaling 📶 🛲
400.0bps					
300.0bps					
200.0bps					
100.0bps					
Obps					
Show Legends					
Route Polis		Route Policy_7	Route Policy_3	Route Policy_10	
Route Polic		Route Policy_11	Route Policy_1	Route Policy_4	
Route Polis		Route Policy_12	Route Policy_9	Route Policy_8	

### Active Connection Rate

The Active Connection Rate chart provides a visual representation of the current total number of outgoing and incoming connection rate for each rule in Cps (Connections per second).

#### **Stacked Chart**



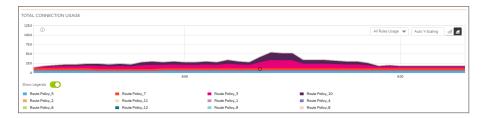
#### **Bar Chart**



## Total Connection Usage

The Connection Usage chart provides a visual representation of the total number of connections per rule.

### Stacked Chart



#### **Bar Chart**

TOTAL C	CONNECTION U	JSAGE							
7.0 6.0 5.0	0						All Rules	Usage 🔻 🗛	uto Y-Scaling 📶 🛲
4.0 3.0									
2.0 1.0			0						
	jends 🚺								
Rout				ute Policy_7	Route Policy_3	Route Po			
Rout	e Policy_2 e Policy_6			ute Policy_11 ute Policy_12	Route Policy_1 Route Policy_9	Route Po			

## **Decryption Policy**

To view the Decryption Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > Decryption Policy**.

### Status

The Status chart displays connections that are bypassed and decrypted by decryption rules. The x-axis displays the current time and the y-axis displays the number of policies that are bypassed and decrypted by decryption rules.

STATUS				
14 12 10 8	0		All Connections 🐨 Auto V.Scaling all	2
6 4 2	Bypass	Decrypt		
•	9:47	Ded ypt	9.48	

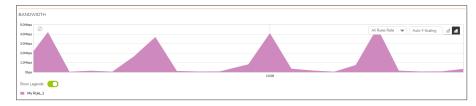
(i) NOTE: The Status chart is displayed in stacked format and does not have legends.

## Bandwidth

Bandwidth chart is plotted by collecting number of bytes per rule traversing through the firewall every refresh period.

### **Stacked Chart**

In the stacked chart, the x-axis displays the current time and the y-axis displays the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).



### Bar Chart

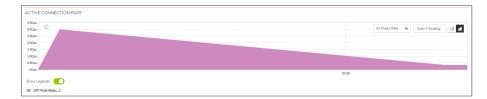
The bar chart format displays policies individually along the x-axis according to the color code shown in the legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).

BANDV	VIDTH						
60.0Kbps							
50.0Kbps	0				All Rules Rate 🛛 🔻	Auto Y-Scaling	ना 🖷
40.0Kbps							
30.0Kbps							
20.0Kbps							
10.0Kbps							
Obps							
Show Le	igends 🔘						
My My	Rule_1						

### Active Connection Rate

The Active Connection Rate chart provides a visual representation of the current total number of outgoing and incoming connection rate for each rule in Cps (Connections per second).

### **Stacked Chart**



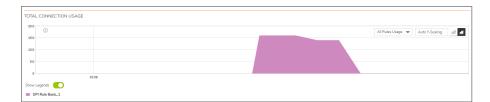
### **Bar Chart**

	CONNECTION RAT	E				
3.0Cps 2.5Cps	(j)					All Rules Rate 💌 Auto Y-Scaling 📶
2.0Cps						
1.5Cps						
1.0Cps						
0.5Cps						
0Cps						
Show Le	agends 🔘					
DPI	Rule Basic_1					

### **Total Connection Usage**

The Connection Usage chart provides a visual representation of the total number of connections per rule.

#### **Stacked Chart**



#### **Bar Chart**

2.5	Ø				All Rules Usage 🛛 🔫	Auto Y-Scaling
7.5						
.0						
.5						

## **DoS Policy**

To view the DoS Policy chart, you must configure and enable a policy under **Policy > Rules and Policies > DoS Policy**.

### Status

The Status chart displays connections that are protected and bypassed by DoS rules. The x-axis displays the current time and the y-axis displays the number of policies that are protected and bypassed by DoS rules.



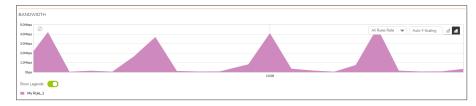
(i) NOTE: The Status chart is displayed in stacked format and does not have legends.

## Bandwidth

Bandwidth chart is plotted by collecting number of bytes per rule traversing through the firewall every refresh period.

### **Stacked Chart**

In the stacked chart, the x-axis displays the current time and the y-axis displays the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).



### Bar Chart

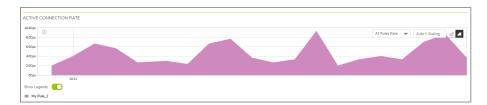
The bar chart format displays policies individually along the x-axis according to the color code shown in the legend. The y-axis displays information appropriate to the chart, such as the amount of traffic for each policy in Kbps or bps (kilobits or bits per second).

BANDV	VIDTH						
60.0Kbps							
50.0Kbps	0				All Rules Rate 🛛 🔻	Auto Y-Scaling	ना 🖷
40.0Kbps							
30.0Kbps							
20.0Kbps							
10.0Kbps							
Obps							
Show Le	igends 🔘						
My My	Rule_1						

### Active Connection Rate

The Active Connection Rate chart provides a visual representation of the current total number of outgoing and incoming connection rate for each rule in Cps (Connections per second).

### **Stacked Chart**



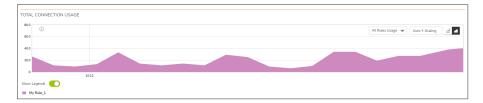
### **Bar Chart**

ACTIVE	E CONNECTION RAT	F						
5.0Cps		E						
4.0Cps	0					All Rules Rate 🛛 🔻	Auto Y-Scaling	<u>al</u> =
3.0Cps								
2.0Cps								
1.0Cps								
OCps Show Let	egends							
My	egends 🚺							

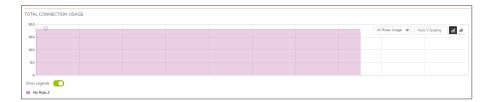
### **Total Connection Usage**

The Connection Usage chart provides a visual representation of the total number of connections per rule.

### **Stacked Chart**



### **Bar Chart**



## **User Monitor**

4

The **Real Time Charts > User Monitor** page provides a quick and easy method to monitor the number of active users on the SonicWall security appliance.

2CB8ED827DF0	/ Moni	itor / I	Real-Tir	ne Cha	arts / I	Jser Mi	onitor																		Con	nfiguratio	in 🔵
View Style: Las	it 30 Min	utes	<b>~</b> \	/ertical	Axis:	4000 U	Jsers	~																			Q
IUMBER OF U	SERS L	OGGE	D IN -	LAST	30 M	INUTE	S														SO users		'lient use	rs 📕	- Web users		nactive use
4000																									- 1100 03013		
2800 2800 2400 2000																											
1600																											
0 4	4 28	4 27	4 26	4 25	4 24	4 23	4 22	4	4 20	5 19	5	5	5 16	5 15	5 14	5 13	5 12	5	5 10	5 9	5 8	5 5	5 5 6 5		5 <u>5</u> 4 3	5 2	5 5 1 Nov

The **User Monitor** page provides these options to customize the display of recent user activity in the User Monitor table:

- View Style: Sets the scale of the X-axis, which displays the duration of time. The available options are:
  - Last 30 Minutes
  - Last 24 Hours
  - Last 30 Days
- Vertical Axis: Sets the scale of the Y-axis, which displays the number of users. The available options reflect the number of users. For example, two different systems would have different options.

### **EXAMPLE OF OPTIONS FOR Y-AXIS BASED ON NUMBER OF USERS**

Few Users	Many Users
10	800
100	8000
1000	80000

• Select User Types icon : Displays a pop-up window, where you can select the types of users to be displayed, indicated by the associated color.

SELECT THE USER TYPES TO DISPLAY	
Remote Users with GVC/L2TP Client	
ОК	CANCEL

By default, the above two options are displayed. If you wish to display inactive users and users authenticated by Single-Sign-On method, navigate to **Device > Users > Settings** and enable **SSO Agent** option and click **Accept**.

S	onic <b>wall</b> '	🗲 NSA 2700 🥥 HOME 🕋 MONITOR 📮 DEVICE 🔀 NETWORK 🎒 OBJECT 🔏 POLICY	
		2CB8ED827DF0 / Device / Users / Settings	
FIREW	VALL		
	Settings	Authentication Web Login Authentication Bypass User Sessions Accounting	
_	Licenses	USER AUTHENTICATION SETTINGS (	
	Administration		
_	Time	User authentication method Local Users	
_	Certificates	Configure RADIUS Configure	
-	SNMP		
-	Firmware and Settings	Configure LDAP Configure	
-	Storage	Configure TACACS+ Configure	
-	Restart		
00		SINGLE-SIGN-ON METHOD(S)	
		SINGLE-SIGN-ON METHOD(S)	
-	Users	Configure SSO Configure	
-	Status		
-	Settings	SSO Agent	
- 1	Partitions	Terminal Services Agent	
_	Local Users & Groups		

When **SSO Agent** is enabled, the options **Inactive Users** and **Users Authenticated by Single-Sign-on** are displayed, indicated by the associated color.

SONIC <b>WALL</b>	E NSA 2700 🕢 HOME 🔮 MONITOR 🗰 DEVICE 🔀 NETWORK 🎒 OBECT 🔏 POLICY	E 🗶 🤁 🖓 Q 🗛
	2CB8ED827DF0 / Monitor / Real-Time Charts / User Monitor	Configuration 🔵 Non-Config
Meal-Time Charts	View Style: Last 30 Minutes V Vertical Aria: 40000 Users V	. C
- System Monitor	1997 2496 C85130 HINDRS - VELOCIONE - 40000 0595	0.5
<ul> <li>Protocol Monitor</li> </ul>		
- User Moritor		
<ul> <li>BWM Monitor</li> </ul>	NUMBER OF USERS LOGGED IN	
🐺 AppFlow	SELECT THE USER TYPES TO DISPLAY	- SSO users - Client users - Web users - Inactive users
🔄 SDWAN	Users Authenticated by Single-Sign-On	
Logs	40000 S0000 Remote Users with GVCA_ZTP Client	
	2000 Users Authenticated by Web Login	
🔑 Tools & Monitors	2000 Inactive Users	
	2000	
	16000 OK CANCEL	
	400	
		<u> 5 5 5 5 5 5 5 5 5 5 5 5 5</u>

- Users Authenticated by Single-Sign-On (blue)
- Remote Users with GVC/L2TP Client (green)
- Users Authenticated by Web Login (orange)
- Inactive Users (grey)
- **Refresh** icon : Refreshes the User Monitor chart.

**Bandwidth Monitor** 

5

The **Real Time Charts > BWM Monitor** page displays policy-based bandwidth usage for ingress and egress network traffic, and a second chart with the top 10 for policy-based bandwidth usage.

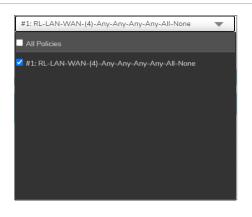


The Bandwidth Monitor charts are available for All Policies or for selected policies in the drop-down policies list next to the chart. The refresh interval rate is configurable from 3 to 30 seconds. The bandwidth management priority is depicted by guaranteed, maximum, and dropped. The following display settings and configurable controls are available on this page:

Option	Widget	Description
Refresh every	Refresh every: 3 sec	Determines the frequency at which data is refreshed. A numerical integer between 1 to 10 seconds is required. The default is <b>3</b> seconds.
View Range	0 <u> </u>	Displays data pertaining to a specific span of time. The <b>View Range</b> is configurable in 60 seconds, 2 minutes, 5 minutes, and 10 minutes (default).

Pause		Freezes the data flow. The time and date will also freeze.
		The <b>Pause</b> button appears black if the data flow has been frozen.
Play	$\odot$	Unfreezes the data flow. The time and date will refresh as soon as the data flow is updated.
		The <b>Play</b> button appears black if the data flow is live.
Stacked Chart		Click the <b>Stacked Chart</b> icon to display the chart in flow (area) chart format. The x-axis displays the current time and the y-axis displays the amount of ingress and egress traffic in Mbps.
Bar Chart	<u>.11</u>	Click the <b>Bar Chart</b> icon to display the chart in bar chart format. The x-axis displays Rules in the Policy-Based Ingress/Egress chart and the names of the top 10 policies for bandwidth usage in the Policy-Based Top 10 chart. The y-axis displays the amount of ingress and egress traffic in Mbps. The Policy-Based Top 10 chart is always displayed as a bar chart with one bar for each policy.

Policies display



Specifies which Policies are displayed in the Policy-Based Ingress/Egress chart.

A drop-down menu allows you to specify All Policies or select individual policies.

The individual policies vary depending on the configured policies available. Multiple policies can be selected.

## **Enabling BWM Monitor**

Bandwidth Management policies are configured from the **Policy > Rules and Policies > Access Rules** page.

To view the BWM chart, edit the access rule for which you want to view the BWM chart and under **Traffic Shaping** tab, select the **Egress BWM**, **Ingress BWM**, and enable **Track Bandwidth Usage** options.

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# SonicWall Support

Technical support is available to customers who have purchased SonicWall products with a valid maintenance contract.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. To access the Support Portal, go to https://www.sonicwall.com/support.

The Support Portal enables you to:

- View knowledge base articles and technical documentation
- View and participate in the Community forum discussions at https://community.sonicwall.com/technology-and-support.
- View video tutorials
- Access https://mysonicwall.com
- Learn about SonicWall professional services
- Review SonicWall Support services and warranty information
- Register for training and certification
- Request technical support or customer service

To contact SonicWall Support, visit https://www.sonicwall.com/support/contact-support.

## About This Document

- (i) NOTE: A NOTE icon indicates supporting information.
- () | IMPORTANT: An IMPORTANT icon indicates supporting information.
- (i) **TIP:** A TIP icon indicates helpful information.
- CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.
- WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

SonicOSX Real Time Charts Administration Guide Updated - April 2021 Software Version - 7 232-005652-00 Rev A

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### End User Product Agreement

To view the SonicWall End User Product Agreement, go to: https://www.sonicwall.com/legal/end-user-product-agreements/.

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