

SOPHOS XG QoS for Digital Island VoIP

To ensure quality of service for Digital Island VoIP traffic when using a SOPHOS XG make sure that there is a firewall rule in place that is applying a traffic shaping policy to the VoIP traffic.

In this example we're allocating a 100KBps bandwidth guarantee per potential simultaneous call to allow for the 96KB requirement of a G711 call with IP overheads. This rule will be applied to all traffic going to the Digital Island FQDN hostnames used for testing. An IP address group could be used instead of an FQDN group. This will utilize an outbound firewall rule since SIP registration traffic is expected to be initialized from the LAN. If SIP peering is used then an inverse rule should be created for WAN initiated traffic.

Method

1. Check that the VoIP Guarantee traffic shaping policy exists and has a guaranteed bandwidth of 100KBps for each potential simultaneous VoIP call. e.g. If your phone system has potential for 10 simultaneous calls then set the guarantee value at 1000.

[\[Configure > System Services > Traffic Shaping\]](#)

SOPHOS XG Firewall

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High Availability Traffic Shaping Settings RED Log Settings Data Anonymization Traffic Shaping Services

Edit Traffic Shaping (QoS) Policy

Name * VoIP Guarantee

Policy Association ☐ Users ☒ Rules ☐ Web Categories ☐ Applications

Rule Type ☐ Limit ☒ Guarantee

Limit Upload/Download Separately ☒ Disable ☐ Enable

Priority * 0 - [Real Time - e.g. VOIP] (Highest)

Guarantee - Limit * 100 - 2560000 Kbps [2 - 2560000]

Bandwidth Usage Type ☒ Individual ☐ Shared

Description Attach the policy to the firewall rule to allocate guaranteed bandwidth that corresponds to VoIP traffic requirement.

Add Schedule wise Traffic Shaping Policy Details to override default Traffic Shaping Policy Details

<input type="checkbox"/> Schedule	Rule Type	Up/Down Bandwidth (Min/Max Kbps)	Upload Bandwidth (Min/Max Kbps)	Download Bandwidth (Min/Max Kbps)	Manage
No Records Found					

Save Cancel

2. Create an FQDN Host group that includes the FQDN hosts used by the Digital Island SIP servers. Be sure to include the media (RTP) server too. For this example we use FQDN hosts in an FQDN host group but IP hosts in an IP host group could be used too or instead if the sip servers do not resolve at a known FQDN.

[[System > Hosts and Services > FQDN Host Group](#)]

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Edit FQDN Host Group

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IP Host

IP Host Group

MAC Host

FQDN Host

FQDN Host Group

Country Group

Services

Service Group

Name *

Digital_Island_Hosts

Description

Digital Island VoIP FQDN hostnames

Select Host

Digital_Island_SIP

Digital_Island_Digidemo

Add New Item

Save

Cancel

3. Create a new firewall at the top of the firewall rules list to apply to traffic with the following conditions;

Source Zone : LAN

Destination Zone : WAN

Destination Networks : Digital_Island_Hosts (as defined in previous step)

Do not match known users

Traffic Shaping Policy : VoIP Guarantee

rewrite source address (masquerading) : Yes

[Protect > Firewall > IPv4 > Add Firewall Rule > User/Network Rule]

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Edit User/Network Rule

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Rule Name *
VoIP QoS

Description
QoS for VoIP traffic

Action
Accept Drop Reject

Source

Source Zones *
LAN
Add New Item

Source Networks and Devices *
Any
Add New Item

During Scheduled Time
All the Time

Destination & Services

Destination Zones *
WAN
Add New Item

Destination Networks *
Digital_Island_Hosts
Add New Item

Services *
Any
Add New Item

Identity

☐ Match known users

☐ Scan HTTP
☐ Decrypt & Scan HTTPS
☐ Detect zero-day threats with Sandstorm
☐ Scan FTP for Malware

Advanced

User Applications
Intrusion Prevention ⚠
None
Traffic Shaping Policy
VoIP Guarantee
Web Policy ⚠
None
☐ Apply Web Category based Traffic Shaping Policy
Application Control ⚠
None
☐ Apply Application-based Traffic Shaping Policy

Synchronized Security ⚠
Minimum Source HB Permitted:
☒ GREEN ☐ YELLOW
☒ No Restriction
☐ Block clients with no heartbeat
Minimum Destination HB Permitted:
☐ GREEN ☐ YELLOW
☒ No Restriction
☐ Block request to destination with no heartbeat

NAT & Routing
☒ Rewrite source address (Masquerading)
☐ Use Gateway Specific Default NAT Policy
Use Outbound Address
MASQ
MASQ (Interface Default IP)
Primary Gateway
WAN Link Load Balance
Backup Gateway
None
DSCP Marking
Select DSCP Marking

Log Traffic

☐ Log Firewall Traffic

Save

Cancel

- As VoIP traffic is processed by the VoIP QoS rule it will be prioritized according to the traffic shaping policy and the byte count of the rule will increment.

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IPv4 IPv6 Enable Filter

+ Add Firewall Rule

ID	Name	Source	Destination	What	Action	Features
2	VoIP QoS in 0 B, out 0 B	LAN, Any Host	WAN, Digital_Island_Hosts	Any Service	Accept	AV WEB APP QoS HB RT NAT LOG IPS
1	#Default_Network_P... in 0 B, out 0 B	LAN, Any Host	WAN, Any Host	Any Service	Accept	AV WEB APP QoS HB RT NAT LOG IPS