

Quality of Service

RGS200-12P

Support Notes

Jun 2016

QoS Application Guide

Quality of Service (QoS) features allow you to allocate network resources to mission-critical applications at the expense of applications that are less sensitive to such factors as time delays or network congestion. You can configure your network to prioritize specific types of traffic, ensuring that each type receives the appropriate Quality of Service (QoS) level.

SP/SPWRR

The RGS can be configured to have 8 output Class of Service (CoS) queues (Q0~Q7) per port, into which each packet is placed. Q0 is the highest priority Queue. Each packet's 802.1p priority determines its CoS queue. User needs to bind VLAN priority/queue mapping profile to each port, for every VLAN priority need assign a traffic descriptor for it. The traffic descriptor defines the shape parameter on every VLAN priority for Ethernet interface. Currently RGS supports Strict Priority and SP+WRR(Weighted Round Robin) scheduling methods on each port. Please find the detail reference on RGS200-12P user manual.

Default Priority and Queue mapping as below:

Priority0	Priority1	Priority2	Priority3	Priority4	Priority5	Priority6	Priority7
Queue0	Queue1	Queue2	Queue3	Queue4	Queue5	Queue6	Queue7
SPQ	SPQ	SPQ	SPQ	SPQ	SPQ	SPQ	SPQ

Application Examples

Following we provide several examples for various QoS combinations and you can configure QoS using the Web-based management system, CLI (Command Line Interface) or SNMP.

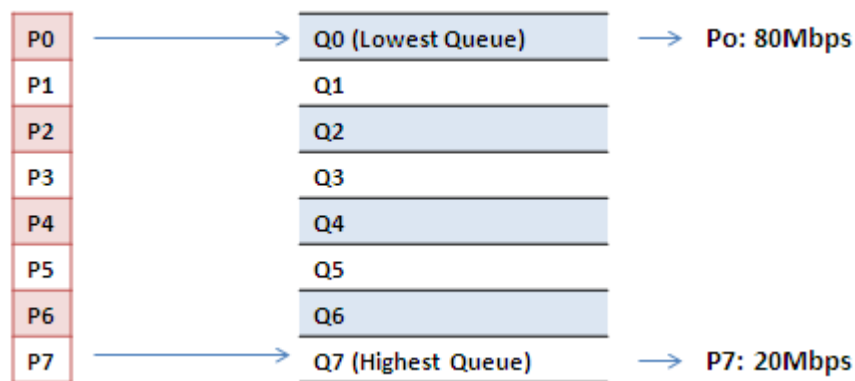
Example 1: SPQ with Shaping

We send 2 Streams (Stream0, Stream1) from port1 to port-2. Both 2 Streams each have 100Mbps. Stream0 includes VLAN Priority0, Stream1 includes VLAN Priority7. Stream3 and Stream4 only for learning which make sure the traffic are not flooding.

Expected Result:

We expect PORT-2 only can receive 20Mbps of Stream1, and 80Mbps of Stream0. This case will help user to know how SPQ works on the RGS200-12P.

Port VLAN Priority & Queue mapping:



● Stream0 :

Dst Mac : 00:00:00:00:20:01

Src Mac : 00:00:00:00:10:01

Vlan : 100

Vlan prio : 0

Send rate : 100Mbps

Packet length: 1518bytes

● **Stream1:**

Dst Mac : 00:00:00:00:20:02

Src Mac : 00:00:00:00:10:02

Vlan : 100

Vlan prio : 7

Send rate : 100Mbps

Packet length: 1518bytes

● **Stream3 : (for Learning)**

Dst Mac : 00:00:00:00:10:01

Src Mac : 00:00:00:00:20:01

Vlan : 100

Vlan prio : 0

Send rate : 10Mbps

Packet length: 1518bytes

● **Stream4 : (for Learning)**

Dst Mac : 00:00:00:00:10:02

Src Mac : 00:00:00:00:20:02

Vlan : 100

Vlan prio : 0

Send rate : 10Mbps

Packet length: 1518bytes

Web management:

Step1. Go to Configuration -> Qos→ Port Shaping, to create a Qos profile on Port-2.

ZyXEL RGS200-12P

Configuration

- System
- EEE
- Ports
- DHCP
- Security
- Aggregation
- Loop Protection
- Spanning Tree
- IPMC Profile
- IPMC
- LLDP
- PoE
- MAC Table
- VLANs
- Voice VLAN
- QoS**
 - Port Classification
 - Port Policing
 - Port Scheduler
 - Port Shaping
 - Port Tag Remarking
 - Port DSCP
 - DSCP-Based QoS
 - DSCP Translation
 - DSCP Classification
 - QoS Control List
 - Storm Control
- Mirroring
- GVRP
- RingV2
- DDMI

Monitor

Diagnostics

Maintenance

QoS Egress Port Shapers

Port	Q0	Q1	Q2	Q3	Shapers	Q4	Q5	Q6	Q7	Port
1	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
2	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
3	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
4	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
5	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
6	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
7	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
8	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
9	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
10	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
11	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
12	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled

Step2. Select schedule mode be “Strict Priority” and set shaping rate for queue 0 and queue 7 as below.

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QoS Egress Port Scheduler and Shapers Port 2

Scheduler Mode: Strict Priority

Queue	Queue Shaper				Port Shaper
	Enable	Rate	Unit	Excess	
Q0	<input checked="" type="checkbox"/>	80	Mbps	<input type="checkbox"/>	STRICT
Q1	<input type="checkbox"/>	500	kbps	<input type="checkbox"/>	
Q2	<input type="checkbox"/>	500	kbps	<input type="checkbox"/>	
Q3	<input type="checkbox"/>	500	kbps	<input type="checkbox"/>	
Q4	<input type="checkbox"/>	500	kbps	<input type="checkbox"/>	
Q5	<input type="checkbox"/>	500	kbps	<input type="checkbox"/>	
Q6	<input type="checkbox"/>	500	kbps	<input type="checkbox"/>	
Q7	<input checked="" type="checkbox"/>	20	Mbps	<input type="checkbox"/>	

Port Shaper: ☐ 500 kbps

CLI configuration command:

```
interface GigabitEthernet 1/2
  switchport trunk native vlan 100
  switchport trunk allowed vlan 1,100
  switchport trunk vlan tag native
  switchport mode trunk
  qos queue-shaper queue 0 80000
  qos queue-shaper queue 7 20000
```