Implementing Quality of Service (QoS) on the Avaya™ S8700 Media Server, Avaya™ G600 Media Gateway and Avaya™ P330 Switches with Avaya™ X330WAN Access Router Modules
-Issue 1.0

Abstract

These Application Notes present a sample Quality of Service (QoS) configuration to support Voice over IP (VoIP) calls for the Avaya™ S8700 Media Server with Avaya™ G600 Media Gateways (IP Connect) in an Avaya™ network infrastructure. Avaya products verified include the Avaya™ S8700 Media Server with G600 Media Gateways, Avaya™ IP Telephones, and Avaya™ P330 Stackable Switches with Avaya™ X330WAN Access Router Modules. Topics covered include setting up end-to-end VoIP QoS using Layer 2 802.1p/Q priority, Layer 3 DiffServ and IP RTP header compression on PPP and Frame Relay over T1 link.

1. Introduction

IP networks were originally designed to carry data on a best-effort delivery basis, which meant that all traffic had equal priority and an equal chance of being delivered in a timely manner. All traffic had an equal chance of being dropped when congestion occurred. To carry voice in this kind of network, Quality of Service (QoS) has to be implemented throughout the entire network.

In order to achieve good voice quality, the VoIP traffic must be classified. The Avaya S8700 Media Server, Avaya G600 Media Gateway and Avaya IP Telephones support both Layer 2 802.1.p/Q priority and Layer 3 Differentiated Services (DiffServ). Avaya P330 switches and Avaya X330WAN Access Router Modules can be configured to prioritize VoIP traffic based on these values.

The network diagram in **Figure 1** shows the network topology used to verify these Application Notes. A pair of redundant S8700 Media Servers in Office 1 control two G600 Media Gateways: a G600 Media Gateway1 in the local Office 1 and a G600 Media Gateway 2 in the remote Office 2. The Avaya P334T switch is stacked with the Avaya P333R switch in each office. An X330WAN Access Router Module is inserted into each P333R switch and functions as an access router in each office. These Application Notes focus mainly on QoS related configurations, which apply to PPP over T1 and Frame Relay over T1 as illustrated in **Figure 1**. Check the related Application Notes in Section 7.

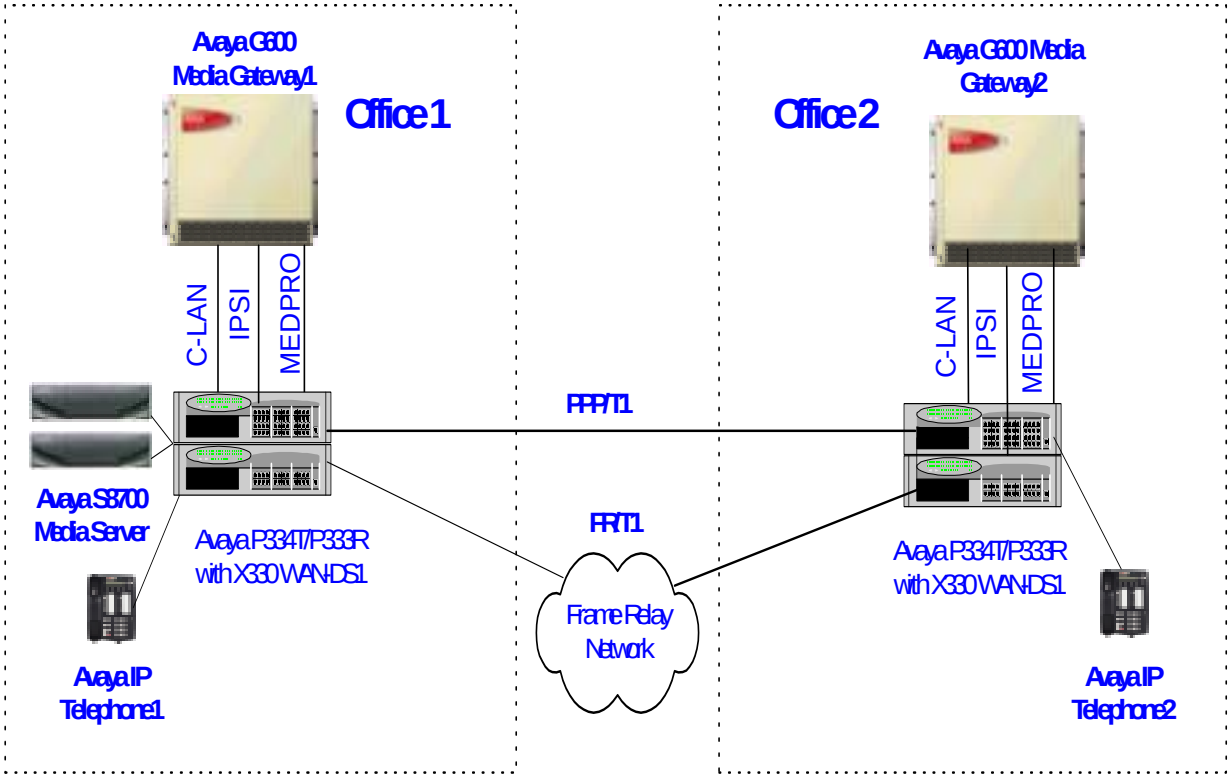

Figure 1: Sample Avaya S8700 Media Server IP Connect Configuration in Avaya Data Network Infrastructure

2. Software and Hardware Validated

This configuration was based on the following versions:

Hardware Component	Version
Avaya™ S8700 Media Server	R011rl00.1.060.4 with Patch 13
Avaya™ IP Service Interface	HW32 FW045
Avaya™ C-LAN	HW DP FW005
Avaya™ MEDPRO	HW03 FW045
Avaya™ P333R Stackable Switch	3.12.0
Avaya™ X330W-DS1 Access Router module	3.12.10

3. Device Configurations

The X330WAN Access Router Module supports 4 strict priority queues. If it is configured to trust 802.1p/Q priority, 802.1p/Q priority 6 and 7 are mapped to the highest priority queue by default. If it is configured to trust DiffServ, DiffServ values between 48 and 63 are mapped to the highest priority queue by default.

In order to put VoIP traffic into the highest priority queue on the P333R switch and the X330WAN Access Router Module, QoS must be enabled on the following Avaya VoIP components with Ethernet 802.1p/Q priority 6 (or 7) and DiffServ 48 (or larger) for signaling and media :

- IP Server Interface (IPSI) boards
- S8700 Media Servers
- MEDPRO and C-LAN boards
- IP Telephones

Sections 3.1 through 3.4 show detailed steps of the above configurations. Sections 3.5 to 3.7 show how to configure the P333R switch and the X330 Access Router Module to use these QoS values to prioritize VoIP traffic. Section 3.8 shows how to enable IP RTP header compression.

3.1. IPSI QoS Configuration

The following procedures show how to configure IPSI QoS.

- There are two Ethernet ports on each IPSI card; the upper one is the service port with the pre-configured IP address 192.11.13.6/255.255.255.252 and the lower one is the network control port. The network control port can be configured through the service port. Configure a laptop's IP address to 192.11.13.5/255.255.255.252 and connect its Ethernet interface to the service port with a crossover Ethernet cable.

- Telnet to the service port IP address 192.11.13.6 and type "**ipsilogin**" at the IPSI prompt. Log in to the IPSI with the default login and password.

Figure 2 shows how to configure QoS and VLAN tagging to the Media Server from the IPSI. After issuing the configuration commands, reset the IPSI and log in again to verify that the settings are in effect. **Figure 3** shows the new (and now current) QoS settings after the reset. Use this procedure for both Media Gateway1 and Media Gateway2. Please note that the VLAN ID is set to 0 by default and cannot be changed.

```
TN2312 IPSI IP Admin Utility
Copyright Avaya Inc, 2000, 2001, All Rights Reserved
[IPSI]: ipsilogin
Login: craft
Password:
[IPADMIN]: set diffserv 48
[IPADMIN]: set user priority 6
[IPADMIN]: set VLAN tagging on
[IPADMIN]: reset
```

Figure 2: IPSI QoS and VLAN Tagging Configuration

```
[IPADMIN]: show qos
  QoS values currently in use:
  VLAN tagging       :      on
  VLAN id            :      0
  VLAN user priority :      6
  Diffserv value     :      48
QoS values to be used after next reset:
  VLAN tagging       :      on
  VLAN id            :      0
  VLAN user priority :      6
  Diffserv value     :      48
```

Figure 3: Display IPSI Configuration (second login sequence not shown)

3.2. Avaya S8700 Media Server QoS Configuration

There are two steps involved in configuring QoS on the servers to support communication with the IPSIs. Configuration must be done via the web interface to enable 802.1p/Q tagging, and also via the System Access Terminal (SAT) interface to specify the appropriate priorities at Layer 2 and 3. Remember to save translations after completing the administration commands.

3.2.1. Web interface

The following steps must be repeated for each of the two redundant servers. Launch an Internet browser and type the active server's IP address in the URL field. Select the **Configure Server** option and check **Enable VLAN 802.1q priority tagging**, as shown in **Figure 4**. Continue through the configuration steps, finishing at the "Update System" step. Repeat these steps for the other server.

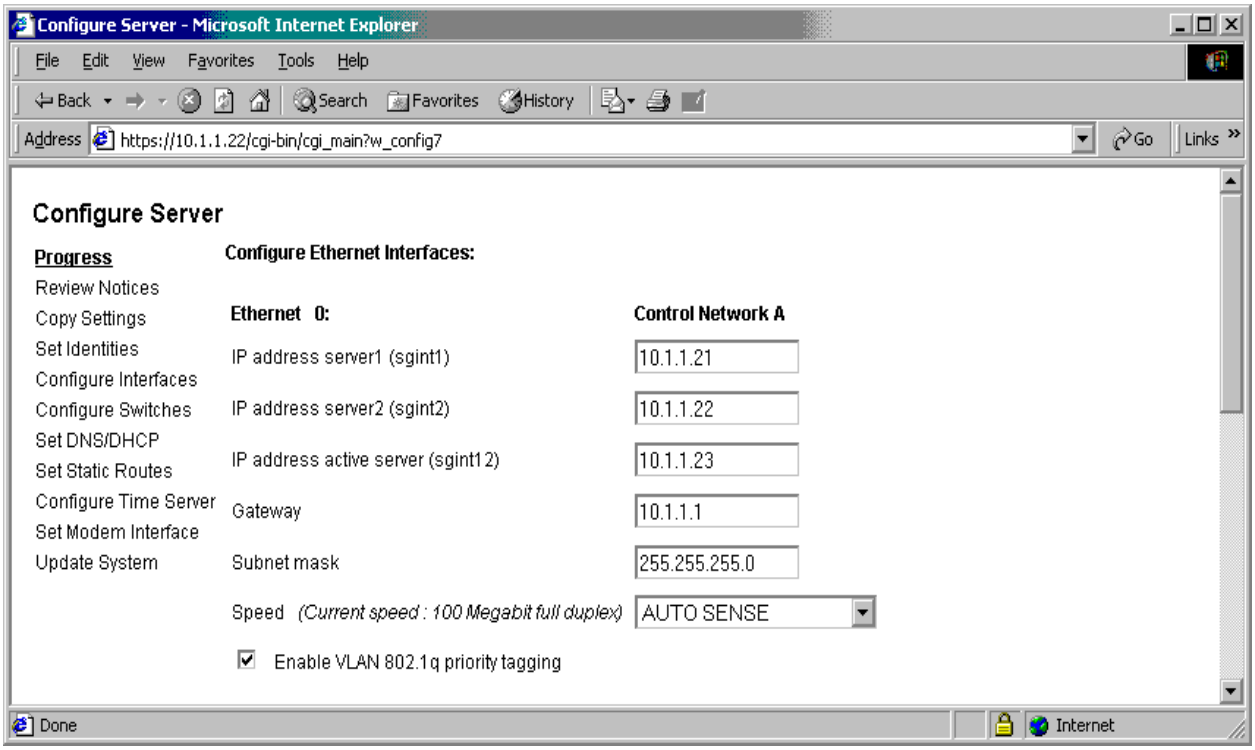

Figure 4: Configure S8700 Media Server 802.1Q Priority Tagging

3.2.2. SAT Interface

Telnet into the active S8700 Media Server and start the SAT with the command **sat**, supplying the proper login/password. Use the command **change ipserver-interface <cabinet number>** to set the 802.1p and DiffServ value, as shown in **Figure 5**. Please note that the check box **'Enable VLAN 802.1q priority tagging'** in **Figure 4** globally enables tagging on the S8700 Media server. The command **change ipserver-interface 1** in **Figure 5** will set the 802.1p and DiffServ values on tagged traffic to this IPSI. VLAN ID is set to 0 by default and cannot be changed. The command must be executed for both G600 Media Gateway 1 and G600 Media Gateway 2.

```
change ipserver-interface 1                                    Page   1 of   1

          IP SERVER INTERFACE (IPSI) ADMINISTRATION - PORT NETWORK 1

                                                        Socket Encryption? y


 Primary IPSI                                          QoS Parameters
 ------------                                          --------------
  Location:  1A02                                       Call Control 802.1p: 6
      Host: 10.1.1.9                                   Call Control DiffServ: 48
   DHCP ID: ipsi-A01a
```

Figure 5: SAT Command for S8700 Media Server QoS to IPSI

3.3. C-LAN and MEDPRO QoS Configuration

Use the SAT command **change ip-network-region <network-region>** to configure VLAN (VLAN ID is set to 0 by default), 802.1p/Q priority, and DiffServ values for the C-LAN and the MEDPRO. Note that IP network regions 1 and 2 are created for Media Gateway 1 and Media Gateway 2 and are associated with the appropriate C-LAN and MEDPRO interfaces via the **change ip-interfaces** command. Codec set 1 with G.711MU is used for the communication in the same network region and Codec set 2 with G.729 is used for the communication between the two Media Gateways through the T1 link for efficient bandwidth utilization. Because RSVP is not used in this configuration, it must be disabled for network regions 1 and 2. **Figure 6** shows the configuration for IP network region 1 and region 2. **Figure 7** shows the Codec configuration.

```
change ip-network-region 1                                    Page   1 of   2
                              IP Network Region

      Region: 1
        Name:

Audio Parameters                  Direct IP-IP Audio Connections? y
   Codec Set: 1                             IP Audio Hairpinning? y
    Location:
  UDP Port Range                                       RTCP Enabled? y
         Min: 2048                RTCP Monitor Server Parameters
         Max: 65535                Use Default Server Parameters? y

DiffServ/TOS Parameters
 Call Control PHB Value: 48
   VoIP Media PHB Value: 48
          BBE PHB Value: 34       Resource Reservation Parameters
                                                  RSVP Enabled? n
             802.1p/Q Enabled? y
 Call Control 802.1p Priority: 6
   VoIP Media 802.1p Priority: 6
                  802.1Q VLAN: 0

--------------------------------------------------------------------------------

change ip-network-region 1                                    Page   2 of   2

                   Inter Network Region Connection Management

Region                               (Group Of 32)
        1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2
001-032 1 2
033-064
065-096
097-128
129-160
161-192
193-224
225-250
```

Figure 6: Configuring QoS for C-LAN and MEDPRO

```
change ip-codec-set 1                                          Page   1 of 1

                         IP Codec Set

    Codec Set: 1

    Audio      Silence      Frames   Packet
    Codec      Suppression  Per Pkt  Size(ms)
 1: G.711MU         n         2        20
 2:

-------------------------------------------------------------------------------

change ip-codec-set 2                                          Page   1 of 1

                         IP Codec Set

    Codec Set: 2

    Audio      Silence      Frames   Packet
    Codec      Suppression  Per Pkt  Size(ms)
 1: G.729           n         2        20
 2:
 3:
```

Figure 7: Codec Configuration

3.4. Avaya IP Telephones QoS Configuration

There is no manual configuration needed for Avaya IP Telephones. 802.1p/Q Tagging for the Avaya IP Telephone must be enabled through a DHCP server so that the IP Telephone can receive 802.1p/Q priority and DiffServ from the S8700 Media servers (As shown in **Figure 6** for the IP network region configuration) when it registers.

3.5. Basic Avaya X330WAN Access Router Module Configuration

When an X330WAN Access Router Module is inserted into the expansion slot on the P333R switch, it functions as an access router. The FabricFastEthernet interface on the X330WAN Access Router Module is an internal 100 Mbps connection to the P330 switching Fabric and supports VLANs. The command **ip routing-mode rt_primary_mgmt** must be configured on the FabricFastEthernet to support IP routing (**Figure 13**). The P333R Switch must be configured to support layer 3 routing for all the VLANs used by the end devices to maximize performance. The FabricFastEthernet interface should only be used for the interconnection.

There are two Avaya X330WAN Access Router Modules: X330W-DS1 and X330W-USP. The X330W-DS1 access module has two channelized E1/T1 interfaces and the X330W-USP contains two universal serial interfaces. An external CSU/DSU is needed to access a service provider's network if the X330W-USP access module is used. The Avaya X330WAN MultiService WAN Access Router Module supports PPP and Frame Relay. The following configurations are for the

X330WAN Access Router Module. **Figure 8** and **Figure 9** are specific to the X330W-DS1 Access Module, the rest of the configurations apply to both the X330W-DS1 and the X330W-USP Access Router Modules.

Figure 8 shows a T1 configuration with 24 clear DS0 channels for the DS1 interface.

Configuration	Description
controller T1 1 **linecode b8zs** **framing esf** **channel-group 1 timeslots 1-24 speed 64**	Standard T1 configuration with linecode b8zs, framing esf. The default clock source is line. Channel group 1 is configured with 24 clear (64kbps)channels.

Figure 8: X330WAN T1 Configuration

Use the command **show controller 1** to verify that the T1 is up:

```
X330WAN-2DS1-1(super)# show controller 1
T1 1 is up.

  Cablelength is long gain26 0db.
  No alarms detected.
  Framing is ESF, Line Code is B8ZS, Clock Source is Line.
  channel-group 1 timeslots 1-24 speed 64
  Data in current interval (162 seconds elapsed):
    0 Line Code Violations, 0 Path Code Violations
    0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
    0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
  Data in interval 1:
  ---- more
```

Figure 9: Verify that T1 is Up

Figure 10 shows PPP configuration and **Figure 11** shows Frame Relay configuration.

Configuration	Description
interface Serial 1:1 **encapsulation ppp** **ip address 10.0.0.5 255.255.255.252**	Serial 1:1 corresponds channel group 1 on the first T1 interface. "**encapsulation ppp**" enables layer 2 ppp encapsulation.

Figure 10: PPP Configuration

Use the command **show interface serial 1:1** to verify that layer 2 PPP is up. Ping the remote IP address to verify that layer 3 is up.

Configuration	Description
interface Serial 1:1 **encapsulation frame-relay ietf** **!** **interface Serial 1:1.1 point-to-point** **ip address 10.0.0.5 255.255.255.252** **frame-relay interface-dlci 100**	Enable Frame Relay encapsulation in the main interface. Auto detection for FR LMI is enabled by default. Create a point-to-point sub-interface. Configure the sub-interface DLCI.

Figure 11: Frame Relay Configuration

The Frame Relay protocol is more complex than PPP. **Figure 12** shows how to verify that Frame Relay is up.

Verification	Description
X330WAN-2DS1-1(super)# **show interface Serial 1:1** **Serial 1:1 is up, line protocol is up** MTU 1500 bytes, Bandwidth 1536 Kbit Reliability 255/255 txLoad 1/255 rxLoad 1/255 Encapsulation FRAME-RELAY IETF Link status trap disabled **LMI enq sent 6393, LMI stat recvd 6389, LMI upd recvd 0, DTE LMI up** **LMI DLCI 0, LMI type is CCITT Annex A (Auto Detected)**, frame relay DTE ----- more	Verify that the interface is up and line protocol is up. If line protocol is down, verify that LMI type is detected and the interface can send and receive LMI.
X330WAN-2DS1-1(super)# **show frame-relay pvc** Showing 1 PVC PVC Statistics for interface Serial 1:1 (Frame Relay DTE) Active Inactive Deleted Static Local 1 0 0 0 Unused 0 0 0 0 **DLCI = 110, USAGE = LOCAL , PVC STATUS = ACTIVE, INTERFACE = Serial 1:1.1** ROLE = Primary , PRIORITY CLASS = None	Verify that PVC status is active. If not, verify if the interface DLCI is configured correctly. This command should also show the DLCI configured on the provider's Frame Relay switch. If nothing is there, contact the service provider. If the correct DLCIs are configured on both sides and the PVC is still not active, contact the service provider.

Figure 12: Verify that Frame Relay is Up

After verifying that the layer 2 Frame Relay is up, ping the remote side's IP to verify that layer 3 is up.

Figure 13 shows the FabricFastEthernet configuration on the Avaya X330WAN Access Router Module.

Configuration	Description
interface FabricFastEthernet 1:1022 **ip address 10.0.0.1 255.255.255.252** **ip routing-mode rt_primary_mgmt**	VLAN 1022 is configured on the X330 WAN. The P333R should configure an interface with the same VLAN for the interconnection. **ip routing-mode rt_primary_mgmt** must be enabled in this interface to allow IP routing.

Figure 13: FabricFastEthernet Configuration

3.6. Avaya P333R Switch and X330WAN MultiService WAN Access Router Module Configuration to support 802.1p/Q priority

The Avaya P333R Switch and X330WAN Access Router Module can be configured to prioritize VoIP packets based on 802.1p/Q priority or DiffServ. This section shows how to configure the Avaya P333R Switch and the X330WAN Access Router Module to trust 802.1p/Q priority. Section 3.7 shows how to configure the Avaya P333R Switch and the X330WAN Access Router Module to trust DiffServ.

Figure 14 shows how to configure the Avaya P333R Switch to trust 801.p/Q priority.

Configuration	Description
set qos policy-source local **set qos trust trust-cos**	Set policy source to local first. Set to trust 802.1p/Q priority globally

Figure 14: P333R Switch Configuration using 802.1p/Q Priority

Figure 15 shows how to configure the Avaya X330WAN Access Router Module to trust 802.1p/Q priority

Configuration	Description
set qos policy-source local **ip access-list 101 1 permit ip any any** **ip access-list-dscp trust 101 trust-cos** interface Serial 1 encapsulation ppp **ip access-group 101 out** ip address 10.0.0.5 255.255.255.252	Set policy source to local first. Define a policy to trust 802.1p/Q priority for all IP traffic Apply the policy to the egress of the serial interface

Figure 15: X330WAN Module Configuration using 802.1p/Q Priority

3.7. Avaya P333R Switch and X330WAN Access Router Module Configuration to Support DiffServ

Figure 16 shows how to configure the Avaya P333R Switch to trust DiffServ.

Configuration	Description
set qos policy-source local **set qos trust trust-dscp**	Set policy source to local first. Set to trust DiffServ priority globally

Figure 16: P333R Switch Configuration using DiffServ

Figure 17 shows how to configure the AvayaX330WAN Access Router Module to trust DiffServ.

Configuration	Description
set qos policy-source local **ip access-list 102 1 permit ip any any** **ip access-list-dscp trust 102 trust-dscp** interface Serial 1 encapsulation ppp **ip access-group 102 out** ip address 10.0.0.5 255.255.255.252	Set policy source to local first Define a policy to trust DiffServ. Apply the policy to the egress of the serial interface

Figure 17: X330WAN Access Router Module Configuration using DiffServ

3.8. Enable IP RTP header compression on the Avaya X330WAN Access Router Module

VoIP runs over Real Time Protocol (RTP). RTP runs over UDP and UDP runs over IP. The total RTP, UDP and IP header is 40 bytes (RTP: 12 bytes, UDP: 8 bytes, IP: 20 bytes). RTP header compression can reduce the size of all three headers to 2-4 bytes. For example, each G.729 phone call consumes about 26kbps without compression, and only consumes about 12 kbps when RTP header compression is enabled. It is recommended to use the G.729 Codec across the WAN link.

Figure 18 shows how to enable **IP RTP header compression**. Note that this feature must be enabled on both sides.

Configuration	Description
interface Serial 1:1.1 point-to-point ip access-group 102 out ip address 10.0.0.5 255.255.255.252 **ip rtp header-compression** frame-relay interface-dlci 100	The X330 WAN compresses UDP range 2048 to 65535 by default, which is also the default setting for the IP network region configuration in **Figure 6**. If a different range is configured, use the command **ip rtp port-range** to reflect the change.

Figure 18: Enable IP RTP Header Compression on the Avaya X330WAN Access Router Module

The command **show ip rtp header-compression** is very useful to verify that **IP RTP header compression** is enabled. The Efficiency Improvement Factor for the G.729 Codec with 20ms packet size (**Figure 7**) is around 2.48 as shown in **Figure 19**. This factor is reduced to around 1.22 for G711MU Codec. Therefore, it is more efficient to enable this feature for the G.729 Codec.

```
X330WAN-2DS1-1(super)# show ip rtp header-compression
IP RTP header compression statistics:
Interface Serial 1:1.1:
  Rcvd:    34 Full Headers, 10044 Compressed, 0 Errors
  Sent:    35 Full Headers, 10085 Compressed,
           362848 Bytes Saved, 244352 Bytes Sent,
           2.48 Efficiency Improvement Factor
  Connect: Active, 16 Rx Slots, 16 Tx Slots,
           Max Time 5, Max Period 256
```

Figure 19: Verify that IP RTP Header Compression is Enabled on the Avaya X330WAN Access Router Module

4. Sample Avaya P333R Switch and X330WAN Access Router Module Configurations

The following sections show the configurations for Avaya P333R Switch and the X330WAN Access Router Module with Frame Relay encapsulation using DiffServ. Note that:

1. The P333R Switch trusts DiffServ by default.
2. A loopback address is configured on the X330WAN Access Router Module and used as an OSPF router ID.
3. The X330W-DS1 Module supports T1 or E1 mode. The default is T1 mode.

4.1. The P333R Switch Configuration in Office 1

```
! Avaya Inc. P333R Switch - Router configuration
! version 3.12.0
set vlan    1011 name "vlan1011"
set vlan    1022 name "ToXWAN"
!
set qos policy-source local
!
interface "ToXWAN"
 ip vlan name "ToXWAN"
 ip address 10.0.0.2        255.255.255.252
!
interface "vlan1011"
 ip vlan name "vlan1011"
 ip address 10.1.1.1        255.255.255.0
!
router ospf
 network 10.0.0.0        0.0.0.3         area 0.0.0.0
 network 10.1.1.0        0.0.0.255       area 0.0.0.0
```

4.2. The X330WAN MultiService WAN Access Router Module Configuration in Office 1

```
! version 3.12.10
set system location ""
set system name ""
set system contact ""
ip access-list-name 101 "list #101"
 ip access-list 101    1 permit ip   any any
!
ip access-list-name 102 "list #102"
 ip access-list 102    1 permit ip   any any
 ip access-list-dscp trust 102 trust-dscp
!
set qos policy-source local
!
ds-mode t1
!
controller T1 1
 linecode b8zs
 framing esf
 channel-group 1 timeslots 1-24 speed 64
!
controller T1 2
!
interface FabricFastEthernet 1
!
interface FabricFastEthernet 1:1022
 ip address 10.0.0.1        255.255.255.252
 ip routing-mode rt_primary_mgmt
!
```

```
interface FastEthernet 1
!
interface Loopback 1
 ip address 172.16.0.1      255.255.255.255
!
interface Serial 1:1
 encapsulation frame-relay ietf
!
interface Serial 1:1.1 point-to-point
 ip access-group 102 out
 ip address 10.0.0.5        255.255.255.252
 ip rtp header-compression
 frame-relay interface-dlci 100
!
ip ospf router-id 192.16.0.1
!
router ospf
 network 10.0.0.0        0.0.0.3         area 0.0.0.0
 network 10.0.0.4        0.0.0.3         area 0.0.0.0
!
interface Console
```

4.3. The P333R Switch Configuration in Office 2

```
! Avaya Inc. P333R Switch - Router configuration
! version 3.12.0
set vlan    1033 name "vlan1033"
set vlan    1044 name "toWAN"
!
set qos policy-source local
hostname "P333R-PN2"
!
interface "ToWAN"
 ip vlan name "toWAN"
 ip address 10.0.0.10       255.255.255.252
!
interface "vlan1033"
 ip vlan name "vlan1033"
 ip address 10.3.3.1        255.255.255.0
!
router ospf
 network 10.0.0.8        0.0.0.3         area 0.0.0.0
 network 10.3.3.0        0.0.0.255       area 0.0.0.0
```

4.4. The X330WAN Access Router Module Configuration in Office 2

```
! version 3.12.10
set system location ""
set system name ""
set system contact ""
ip access-list-name 101 "list #101"
 ip access-list 101    1 permit ip   any any
```

```
!
ip access-list-name 102 "list #102"
 ip access-list 102    1 permit ip   any any
 ip access-list-dscp trust 102 trust-dscp
!
set qos policy-source local
!
ds-mode t1
!
controller T1 1
 linecode b8zs
 framing esf
 channel-group 1 timeslots 1-24 speed 64
!
controller T1 2
!
interface FabricFastEthernet 1
!
interface FabricFastEthernet 1:1044
 ip address 10.0.0.9        255.255.255.252
 ip routing-mode rt_primary_mgmt
!
interface FastEthernet 1
!
interface Loopback 1
 ip address 192.16.0.2      255.255.255.255
!
interface Serial 1:1
 encapsulation frame-relay ietf
!
interface Serial 1:1.1 point-to-point
 ip access-group 102 out
 ip address 10.0.0.6        255.255.255.252
 ip rtp header-compression
 frame-relay interface-dlci 110
!
ip ospf router-id 192.16.0.2
!
router ospf
 network 10.0.0.4        0.0.0.3         area 0.0.0.0
 network 10.0.0.8        0.0.0.3         area 0.0.0.0
!
interface Console
```

5. Verification

In order for end-to-end QoS for VoIP to work, all the related components must be configured as detailed in Section 3. If poor voice quality is experienced, verify the configuration. Make a phone call and use the status station command to verify that the appropriate codec is used.

6. Conclusion

As illustrated in these Application Notes, QoS based on 802.1p/Q priority and DiffServ can be successfully configured for the Avaya S8700 Media Server with the Avaya G600 Media

Gateway, Avaya IP Telephones, Avaya P333R Switch, and X330WAN Access Router Module for PPP and Frame Relay over T1 Access. Since 802.1p/Q priority cannot be carried on the WAN link, it is recommended to use DiffServ.

7. References

1. Refer to the Application Notes “Sample Avaya 8700 Media Server IP connect Configuration” on how to administer Avaya S8700 Media Servers and Avaya G600 Media Gateways.
2. Refer to the Application Notes “Implementing Quality of Service (QoS) on the Avaya™ S8700 Media Server, Avaya™ G600 Media Gateway, Avaya™ X330WAN Access Router Modules and Cisco Access Router for Frame Relay Traffic Shaping and Fragmentation” for the QoS configuration when the access rate on one end of a Frame Relay PVC is less than 1.2 Mbps.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya Solution & Interoperability Test Lab at interoplabnotes@list.avaya.com