



Avaya Solution & Interoperability Test Lab

Application Notes for TONE Software ReliaTel with Avaya Aura® Communication Manager 6.2 Using RTCP – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for TONE Software ReliaTel to interoperate with Avaya Aura® Communication Manager 6.2 using Real-Time Transport Control Protocol (RTCP). ReliaTel is a monitoring and management solution that can monitor and maintain groups of telephone switches, PBX systems, and other devices from a single control point.

In the compliance testing, ReliaTel used the RTCP interface from Avaya Aura® Communication Manager to provide reporting on voice quality of service.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for TONE Software ReliaTel to interoperate with Avaya Aura® Communication Manager using RTCP. ReliaTel is a monitoring and management solution that can monitor and maintain groups of telephone switches, PBX systems, and other devices from a single control point.

In the compliance testing, ReliaTel used the RTCP interface from Avaya Aura® Communication Manager and from the Avaya IP Deskphones to obtain voice quality data. The obtained data was used to provide voice quality of service reporting via the ReliaTel web interface.

2. General Test Approach and Test Results

The feature test cases were performed manually. Calls were placed to/from PSTN and various IP Deskphones to enable RTCP data to be sent to ReliaTel. A network impairment tool was used to inject VoIP impairments into the network. The voice quality of service data reported by ReliaTel was compared to the injected impairments by the network impairment tool, and to the raw RTCP data sent from Communication Manager and IP Deskphones.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cable to the ReliaTel server.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the proper collection, analysis, and reporting of RTCP data by ReliaTel from Avaya G430 Media Gateway and IP Deskphones consisting of types 1616 and 9650 (H.323), and 9630 (SIP). The various call scenarios included inbound, outbound, internal, external, ACD, non-ACD, G.711, G.729, G.726, conference, and transfer.

The serviceability testing focused on verifying the ability of ReliaTel to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to ReliaTel.

2.2. Test Results

All test cases were executed and verified. The one observation on ReliaTel from the compliance testing was that for the 9630 IP Deskphone running the SIP firmware, “Unknown” was reported as endpoint type.

2.3. Support

Technical support on ReliaTel can be obtained through the following:

- **Phone:** (800) 833-8663
- **Email:** info@tonesoft.com

3. Reference Configuration

The configuration used for the compliance testing is shown below. Session Manager was used in the configuration to support IP Deskphones running the SIP firmware. A network impairment tool was used to inject VoIP impairments, such as packet delay, jitter, and loss, into the network.

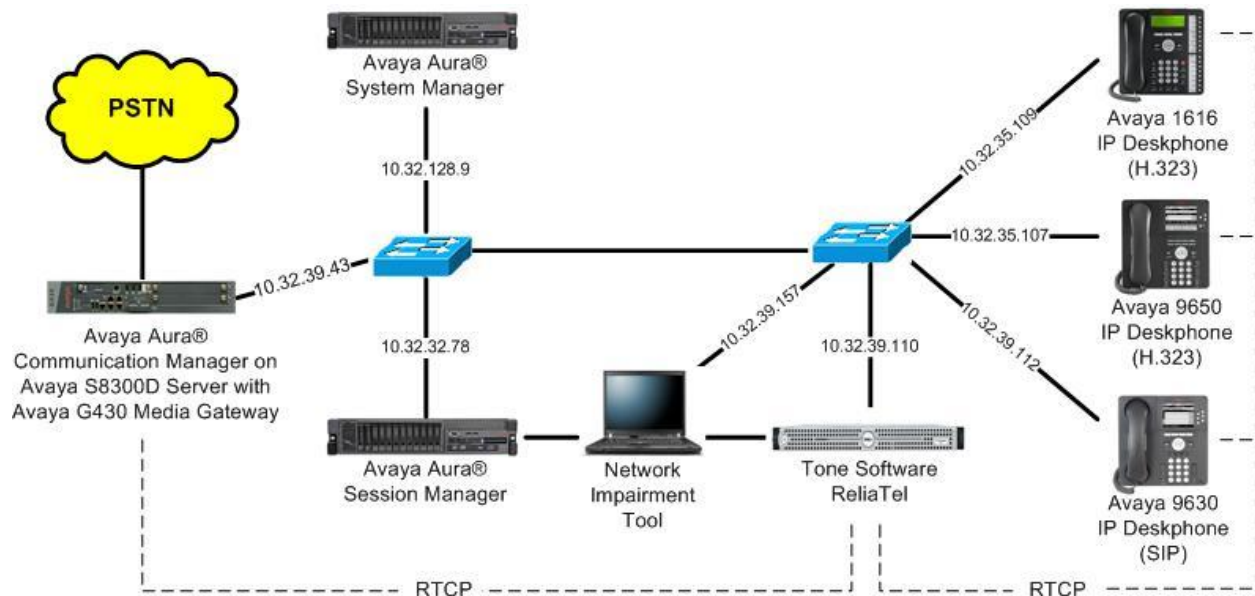


Figure 1: Compliance Testing Configuration

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager on Avaya S8300D Server with Avaya G430 Media Gateway	6.2 SP3 (R016x.02.0.823.0-20001)
Avaya Aura® Session Manager	6.2 SP3
Avaya Aura® System Manager	6.2
Avaya 1616 IP Deskphone (H.323)	1.302S
Avaya 9650 IP Deskphone (H.323)	3.105S
Avaya 9630 IP Deskphone (SIP)	2.6.9.1
TONE Software ReliaTel	4.1.0

5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager. The procedures include the following areas:

- Administer system parameters IP options
- Administer IP network region

5.1. Administer System Parameters IP Options

Log in to the System Access Terminal (SAT) of Communication Manager, and enter the command “change system-parameters ip-options”.

In the **RTCP MONITOR SERVER** sub-section, enter the IP address of the ReliaTel server for **Server IPV4 Address**, a desired port for **IPV4 Server Port**, and a desired interval for **RTCP Report Period**, as shown below. Retain the default values in the remaining fields.

```
change system-parameters ip-options                               Page 1 of 4
                        IP-OPTIONS SYSTEM PARAMETERS

IP MEDIA PACKET PERFORMANCE THRESHOLDS
  Roundtrip Propagation Delay (ms)      High: 800      Low: 400
      Packet Loss (%)                   High: 40        Low: 15
      Ping Test Interval (sec): 20
  Number of Pings Per Measurement Interval: 10
      Enable Voice/Network Stats? n
RTCP MONITOR SERVER
  Server IPV4 Address: 10.32.39.110    RTCP Report Period(secs): 5
      IPV4 Server Port: 5005
  Server IPV6 Address:
      IPV6 Server Port: 5005
```

5.2. Administer IP Network Region

Use the “change ip-network-region n” command, where “n” is an existing network region number used by the IP Deskphones. Navigate to **Page 2**, and enable **RTCP Reporting Enabled**, as shown below.

Repeat this section to enable RTCP reporting on all IP network regions used by the IP Deskphones.

```
change ip-network-region 1                                         Page 2 of 20
                        IP NETWORK REGION

RTCP Reporting Enabled? y

RTCP MONITOR SERVER PARAMETERS
  Use Default Server Parameters? Y
```

6. Configure Avaya IP Deskphones

For IP Deskphones that are running the SIP firmware, the RTCP settings are configured in the phone settings file.

From the appropriate HTTP server serving the IP Deskphones, locate the **46xxsettings.txt** file. Navigate to the **RTCP MONITORING** section. Set **RTCPMON** to the IP address of the ReliaTel server. Set **RTCPMONPORT** to the same port number from **Section 5.1**. Set **RTCPMONPERIOD** to the desired interval.

Manually reboot the IP Deskphones that are running the SIP firmware, to obtain the updated settings.

```
##### RTCP MONITORING #####
##
## The RTCP monitor
##   One RTCP monitor (VMM server) IP address in
##   dotted-decimal format or DNS name format (0 to 15
##   characters). Note that for H.323 telephones only this
##   parameter may be changed via signaling from Avaya
##   Communication Manager. For 96xx SIP models in Avaya
##   environments, this parameter is set via the PPM server.
##   This parameter is not supported on 16CC model phones.
##   Note : This setting is applicable for 1603 SIP phones also.
## SET RTCPMON 192.168.0.10
##
## RTCPMONPORT sets the port used to send RTCP information
## to the IP address specified in the RTCPMON parameter.
## RTCPMONPORT is only supported on 46xx SIP telephones and
## 96xx telephones in non-Avaya environments. For 96xx SIP
## models in Avaya environments, this parameter is set via
## the PPM server. The default value is 5005.
## Note : This setting is applicable for 1603 SIP phones also.
## SET RTCPMONPORT "5005"
##
## RTCP Monitor Report Period
##   Specifies the interval for sending out RTCP monitoring
##   reports (5-30 seconds). Default is 5 seconds. This
##   parameter applies only to 96xx SIP telephones.
##   Note : This setting is applicable for 1603 SIP phones also.
## SET RTCPMONPERIOD 5
##

SET RTCPMON 10.32.39.110
SET RTCPMONPORT "5005"
SET RTCPMONPERIOD 5
```

7. Configure TONE Software ReliaTel

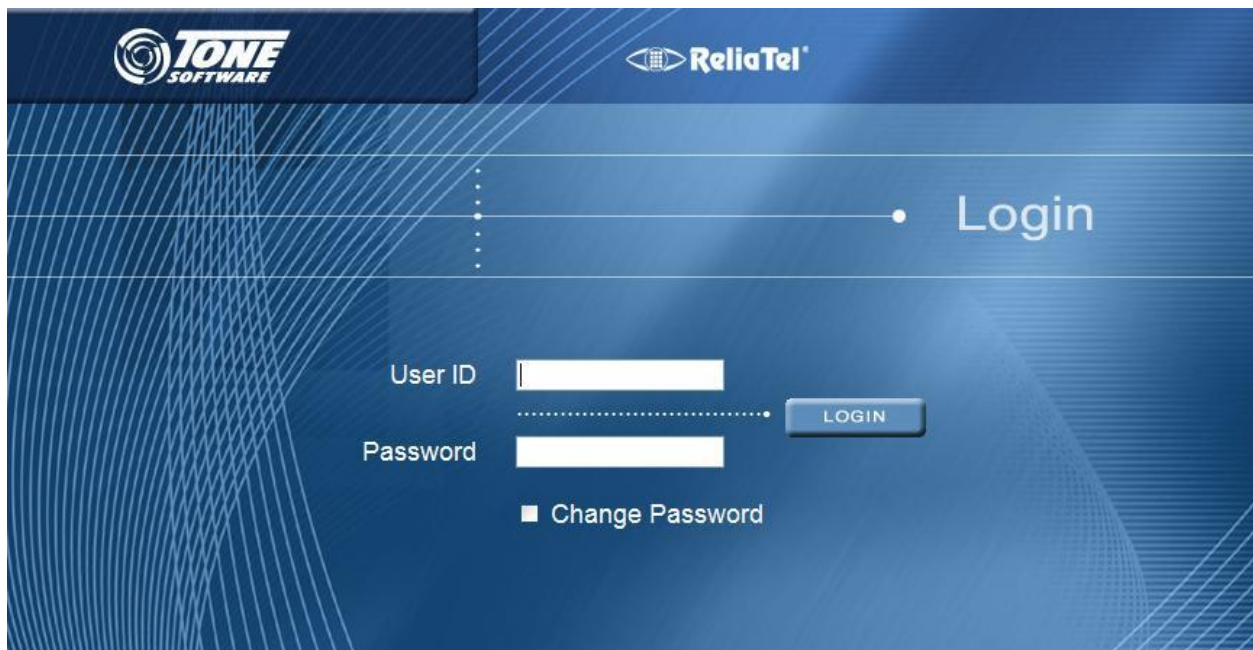
This section provides the procedures for configuring ReliaTel. The procedures include the following areas:

- Launch web interface
- Administer centers
- Administer RTCP collectors

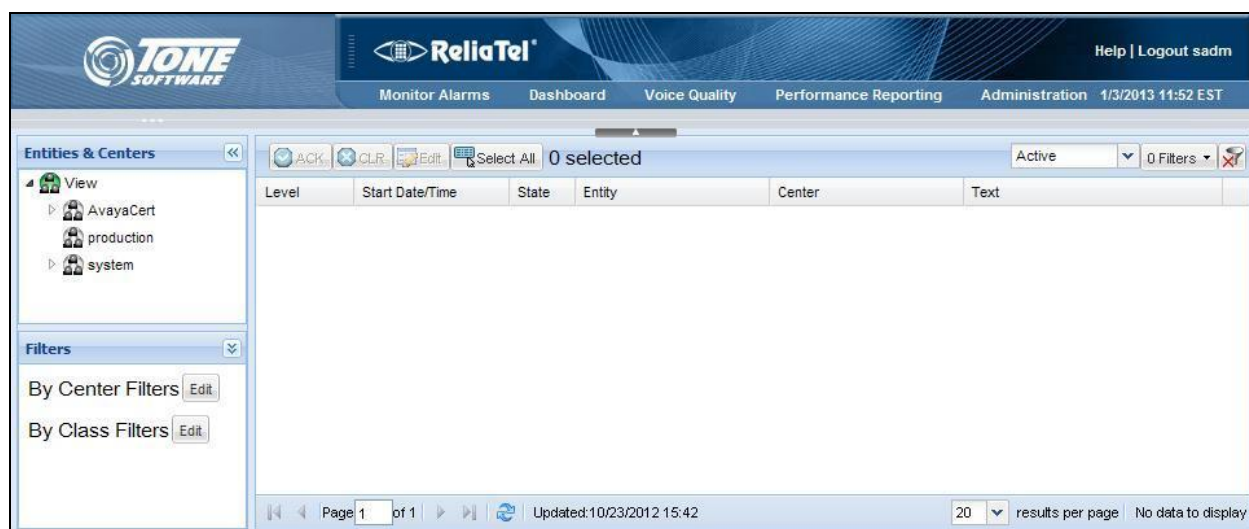
The configuration of ReliaTel is typically performed by TONE Software technicians. The procedural steps are presented in these Application Notes for informational purposes.

7.1. Launch Web Interface

Access the ReliaTel web interface by using the URL “http://ip-address:8080/ems/app” in an Internet browser window, where “ip-address” is the IP address of the ReliaTel server. Log in using the appropriate credentials.

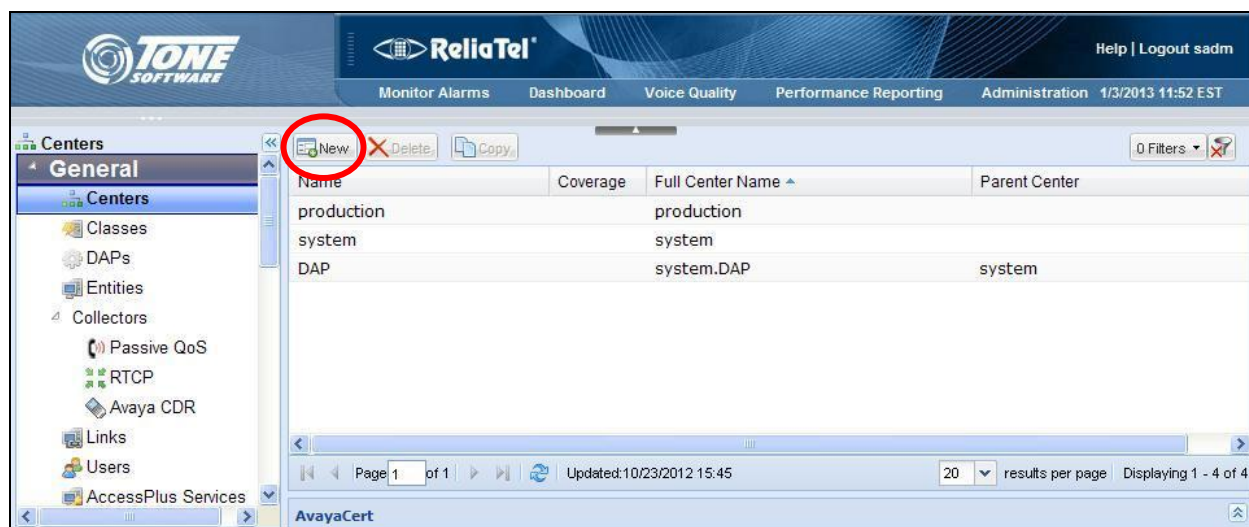


The **ReliaTel** screen is displayed. Select **Administration** → **General Administration** from the top menu.

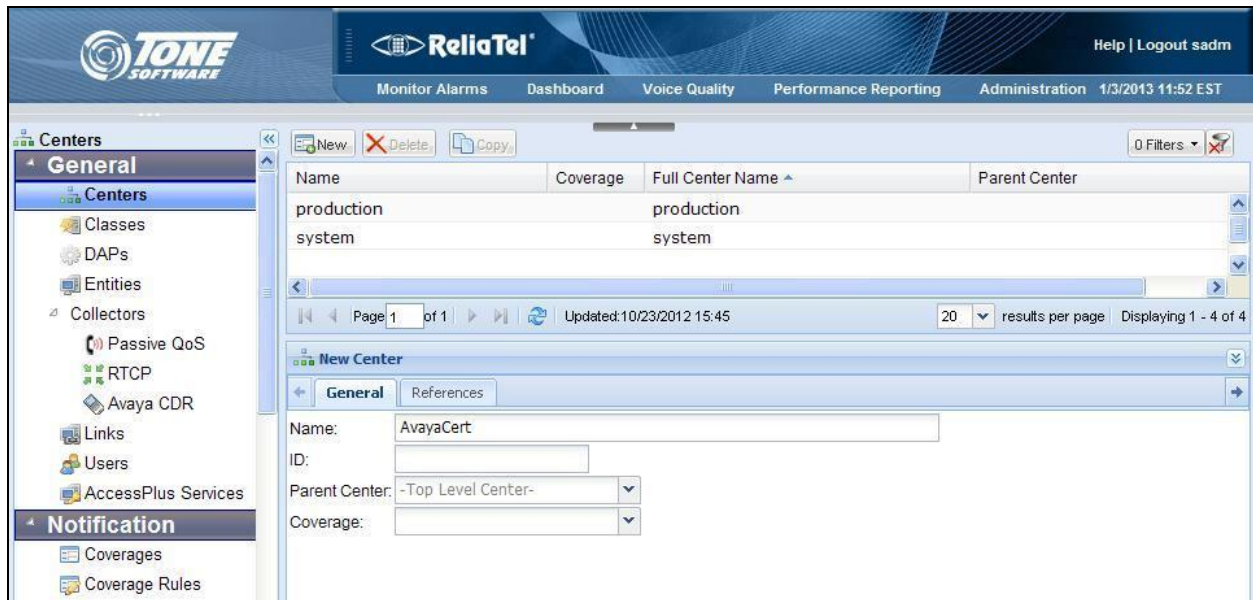


7.2. Administer Centers

The **ReliaTel** screen is updated as shown below. Select **General** → **Centers** in the left pane to display a list of centers in the right pane. Click **New** to add a new center.



In the lower portion of the screen, select the **General** tab. Enter a descriptive **Name**, and retain the default values in the remaining fields.



7.3. Administer RTCP Collectors

Select **General** → **Collectors** → **RTCP** in the left pane. Select **New** to add a new collector.



In the lower portion of the screen, select the **General** tab. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Name:** A descriptive name.
- **Center:** Select the center from **Section 7.2**.
- **DAP:** Select the appropriate pre-configured DAP.
- **RTCP Parser:** “Avaya RTCP”
- **Default Codec:** Select the desired codec to use for reporting of non-recognized codec.
- **RTCP Listening:** The RTCP port from **Section 5.1**.
- **Class:** “RtcpCollector”
- **IP Address:** IP address of the ReliaTel server.

The screenshot shows the ReliaTel administration interface. The left sidebar contains a tree view with categories: RTCP (General, Centers, Classes, DAPs, Entities, Collectors, Passive QoS), Notification (Coverages, Coverage Rules, Action Templates, Email Templates, Pager Templates, SMS Templates, Weekly Schedules, Notification Status), and AccessPlus Services. The main area displays the 'New RTCP' form under the 'General' tab. The form fields and their values are as follows:

Field	Value
Name	Avaya-RTCP
Description	
Center	AvayaCert
Class	RtcpCollector
Coverage	
Timezone	
DAP	basisk
IP Address	10.32.39.110
RTCP Parser	Avaya RTCP
Default Codec	G.726 16k
RTCP Listening Port(s)	5005
Enabled	<input type="checkbox"/>
Avaya CDR	Avaya CDR

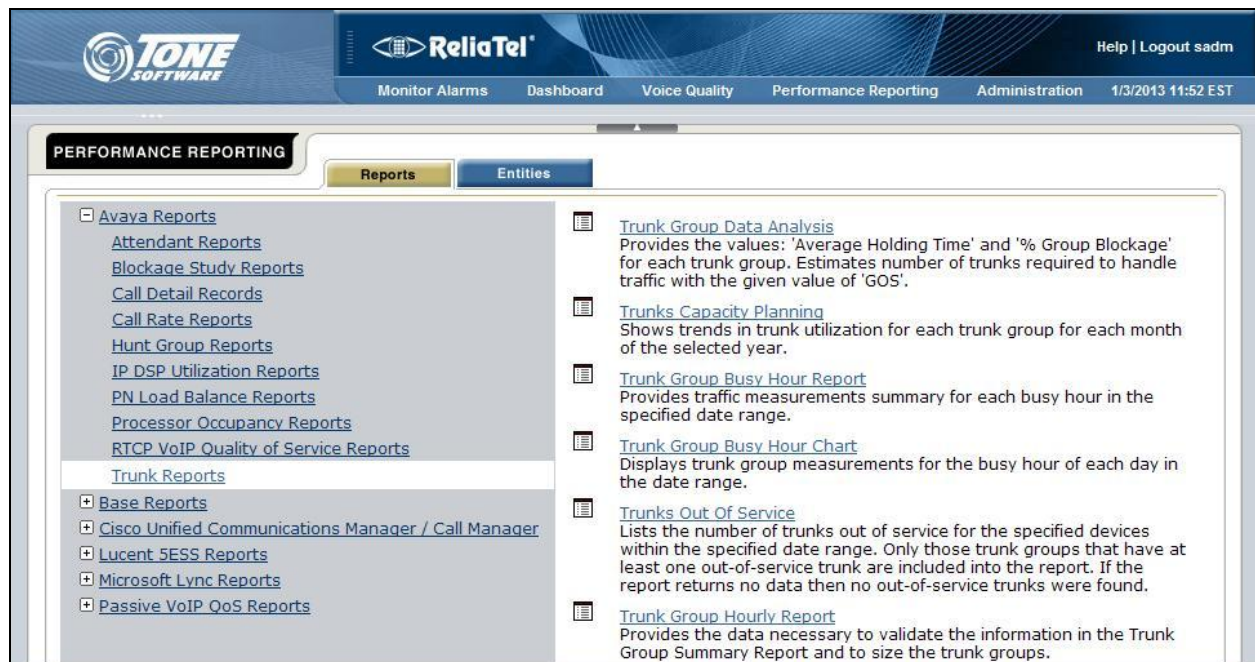
At the bottom of the form, there are buttons for 'Edit', 'Cancel', and 'Apply'.

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Communication Manager and ReliaTel.

Prior to verification, place and complete an incoming trunk call to an IP Deskphone.

From the **ReliaTel** screen, select **Performance Reporting** from the top menu. Select **Avaya Reports** → **RTCP VoIP Quality of Service Reports** in the left pane.



In the left pane of the subsequent screen, select “All Calls Voice Quality” for **Standard Report List**, and select the RTCP collector name from **Section 7.3** for **RTCP Collector**. Click **Run Report**.

The screenshot shows the ReliaTel interface with the 'All Calls Voice Quality' report configuration. The 'Standard Report List' is set to 'All Calls Voice Quality' and the 'RTCP Collector' is set to 'Avaya-RTCP'. The 'Run Report' button is circled in red.

Date/Time	Endpoint1	Endpoint2	Duration	Codec1	Codec2	Avg MOS1	Avg MOS2
No data to display							

Verify the screen is updated with entries, and that the reported values for the entries are appropriate for the last call.

The screenshot shows the ReliaTel interface with the 'All Calls Voice Quality' report results. The table displays two entries with their respective endpoints, durations, and MOS values.

Date/Time	Endpoint1	Endpoint2	Duration	Codec1	Codec2	Avg MOS1	Avg MOS2
1/3/2013 12:39:19	0.1.129.0	gwp@20.32.39.43	00:00:01		G.711u		4.41
1/3/2013 12:39:48	10.64.125.33	ext45001@20.32.39.109:3226	00:00:15		G.711u		4.41

9. Conclusion

These Application Notes describe the configuration steps required for TONE Software ReliaTel to successfully interoperate with Avaya Aura® Communication Manager 6.2 using RTCP. All feature and serviceability test cases were completed.

10. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura® Communication Manager*, Document 03-300509, Issue 7.0, Release 6.2, July 2012, available at <http://support.avaya.com>.
2. *ReliaTel Operator Guide*, Release 4.1, Guide Version 1.0, October 2012, contact ReliaTel support at info@tonesoft.com.

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