Avaya Solution & Interoperability Test Lab

Application Notes for Tone Software Streamline Network Assessment Service with Avaya IP Office – Issue 1.1

Abstract

These Application Notes describe the configuration steps required for Streamline Network Assessment Service to interoperate with Avaya IP Office. In the compliance testing, the Tone Software Streamline Network Assessment Service collected and analyzed IP packets from the Avaya IP Telephones, and produced results to measure the state of the network infrastructure.

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.

Note - Tone Software acquired Communicado Streamline Network Assessment technology on April 14, 2009.

1. Introduction

Tone Software Streamline Network Assessment Service is a service that analyzes IP packets and produces results to measure the state of the network infrastructure. When used for network pre-assessment, two or more Tone Software Streamline Agents are loaded onto computers at different points of the customer network to simulate VoIP calls. When used for network post-assessment, the port mirroring method can be used to replicate IP packets from the monitored endpoints to the local Tone Software Streamline Agent.

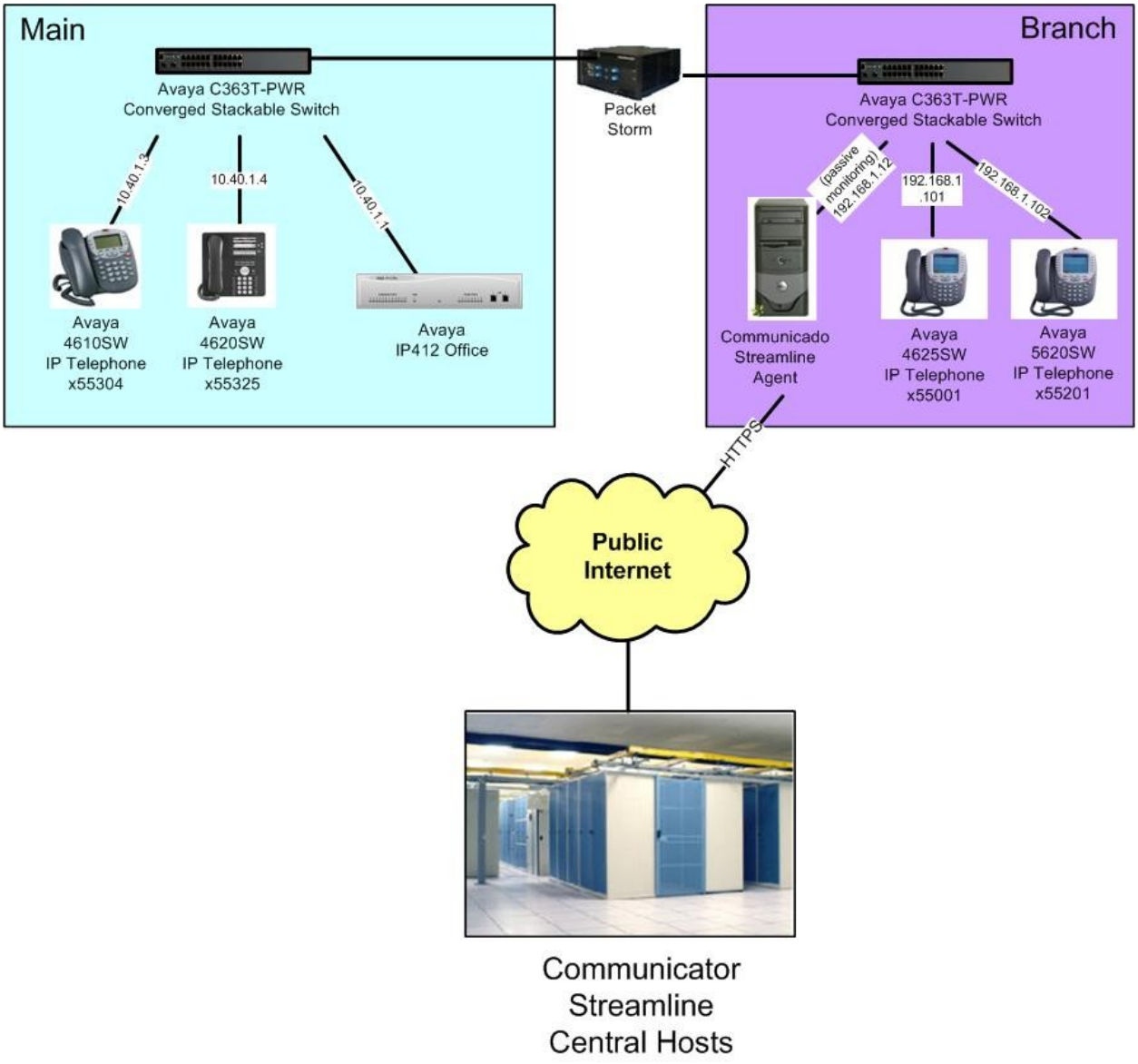


Figure 1: Tone Software Streamline Network Assessment Service with Avaya IP Office

Each Tone Software Streamline Agent hosts two NIC cards, one to interface to the local network, and the other to the Tone Software Streamline Central Host in the public network. The IP packets from the Avaya IP Telephones are captured from the Tone Software Streamline Agent's local network interface, and reported to the Tone Software Streamline Central Host over the public interface. The Tone Software Streamline Agent reports several call quality affecting attributes such as jitter, delay, and packet loss via HTTPS connections to the Tone Software Streamline Central Host for data collection, analysis, and presentation.

The interoperability with Avaya IP Office is accomplished through the Avaya IP Telephones for network post-assessment. In the compliance testing, the RTP stream for the Avaya IP Telephones in the Branch site are mirrored from the layer 2 switch, and replicated over to the Tone Software Streamline Agent in the Branch site shown in **Figure 1**. The Packet Storm is used as a tool to inject network impairments, such as jitter/delay/loss, into the network for calls between the Main and Branch sites.

The Avaya IP Telephone configuration, port mirroring on the layer 2 switch, network impairment injection from the Packet Storm, and network pre-assessment configuration are not the focus of these Application Notes and will not be described.

2. Equipment and Software Validated

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

Equipment	Software
Avaya IP412 Office	4.1.15
Avaya 4600 Series IP Telephones (H.323)	2.7
Avaya 5600 Series IP Telephone (H.323)	2.7
Packet Storm	14.1v1
Tone Software Streamline Network Assessment Service	2.5.1

3. Configure Tone Software Streamline Network Assessment Service for Network Post-Assessment

This section provides the procedures for configuring the Tone Software Streamline Network Assessment Service for network post-assessment. The procedures fall into the following areas:

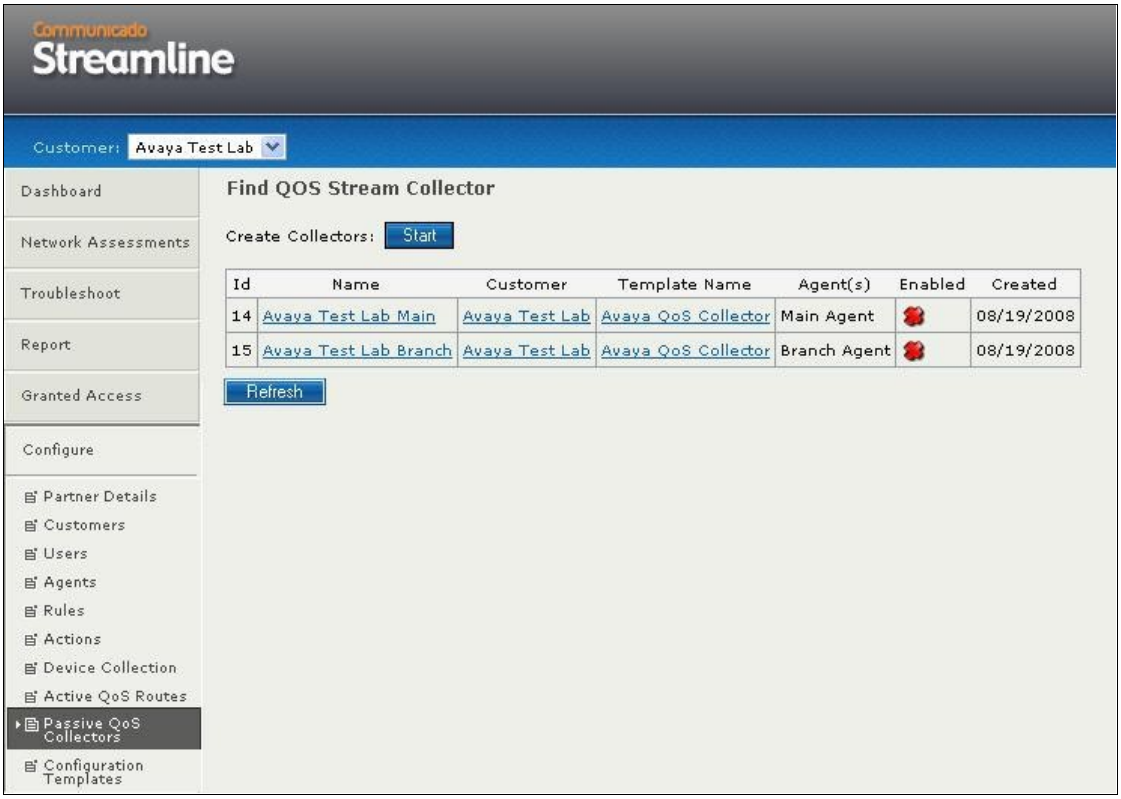
- Launch Tone Software Streamline Network Assessment Service
- Administer Passive QoS Collector

3.1. Launch Tone Software Streamline Network Assessment Service

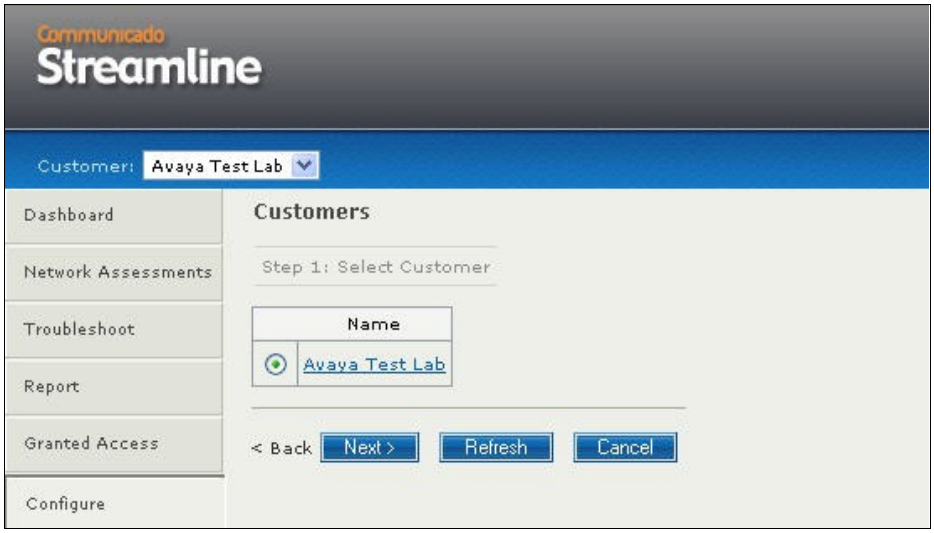
From any PC with public internet access, launch an Internet browser window to access the Tone Software Streamline Network Assessment Service web based interface. Use the URL provided by Tone Software, in this case "https://avayacertification.streamlined.cc/". Enter the appropriate credentials provided by Tone Software, and click **Login**.

3.2. Administer Passive QoS Collector

In the subsequent screen that is displayed, select the customer name provided by Tone Software from the **Customer** field drop-down list located at the top of the screen. Select **Configure > Passive QoS Collectors** from the left pane, to display the **Find QOS Stream Collector** screen in the right pane. Click **Start** to create a new collector.

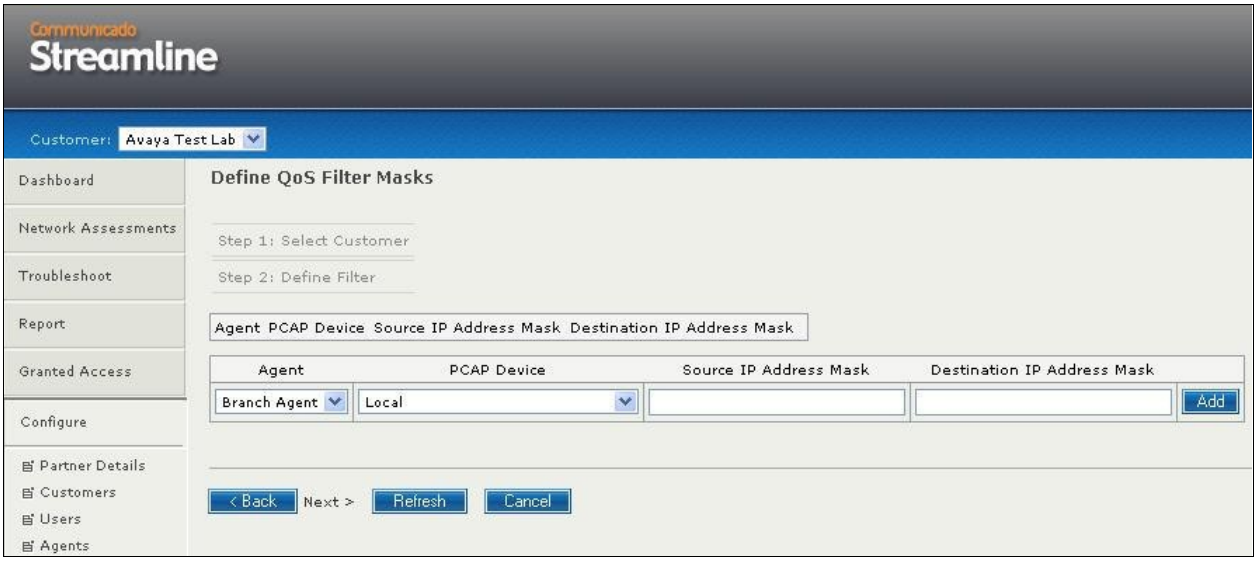


The **Customers** screen is displayed in the right pane. Click **Next**.

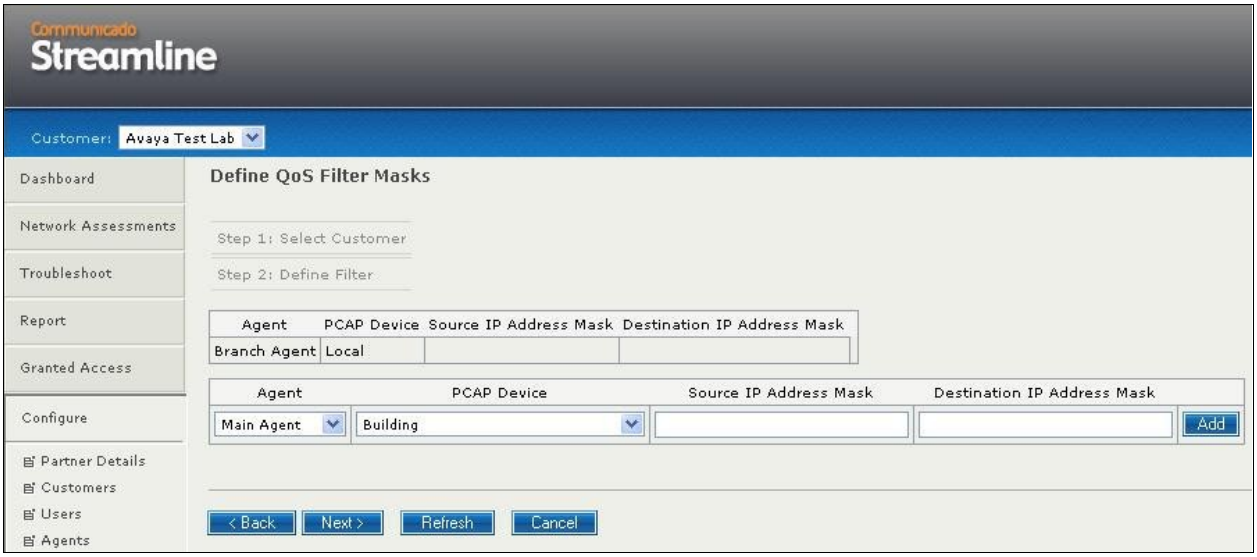


The **Define QoS Filter Masks** screen is displayed. In the **Agent** field, select the agent pre-installed on the Branch site, in this case "Branch Agent". Note that the name may vary. In the compliance testing, the name "Branch Agent" was configured for the Tone Software Streamline Agent in the Branch site, as part of installation.

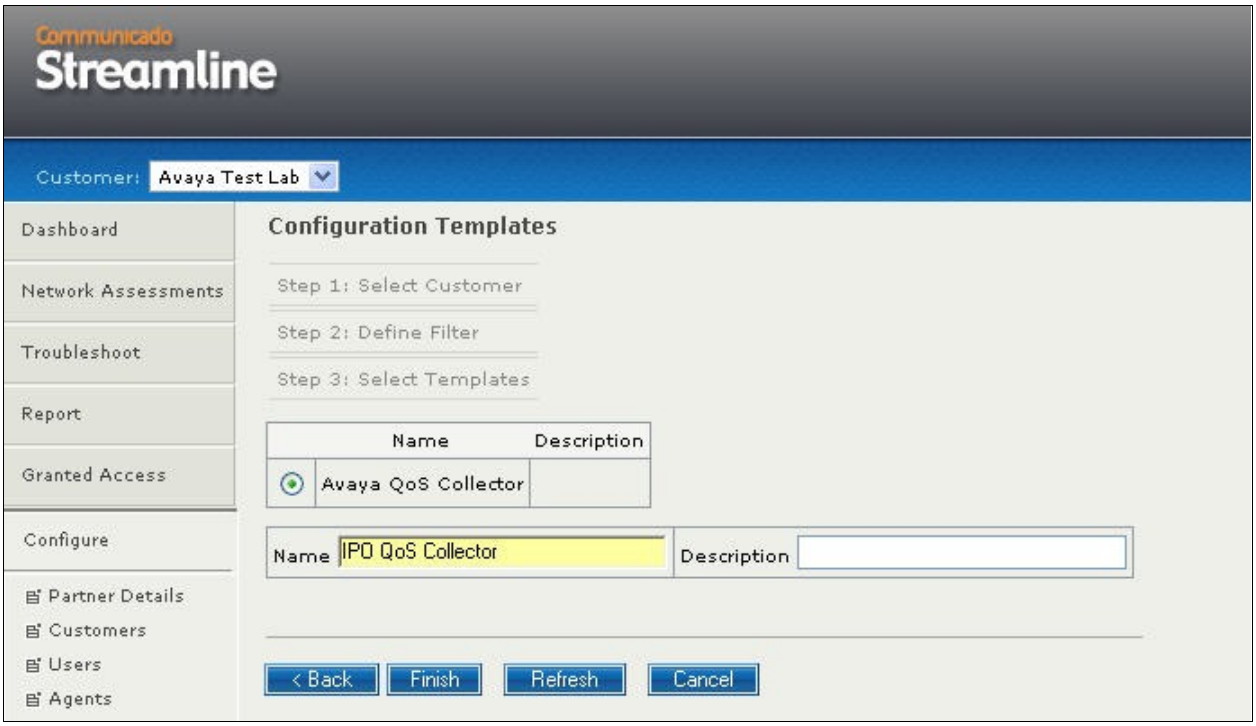
In the **PCAP Device** field, select the network interface that corresponds to the local network for this agent. Click **Add**.



The **Define QoS Filter Masks** screen is updated with the newly created QoS filter, as shown below. Click **Next**.



The **Configuration Templates** screen is displayed. Select the appropriate template pre-configured by Tone Software, in this case "Avaya QoS Collector". Enter desired values for the **Name** and **Description** fields, and click **Finish**.



4. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying Tone Software's capture and analysis of IP packets from the Avaya IP Telephones. The call scenarios included audio codec with and without IP media shuffling (also referred to as direct IP-IP audio connection), basic telephony features such as hold/reconnect and transfer/conference, and network impairments.

The serviceability testing focused on verifying the ability of Tone Software to recover from adverse conditions, such as disconnecting the Ethernet cables to the Tone Software Streamline Agent.

4.1. General Test Approach

All tests were performed manually. The Packet Storm was used to inject network impairments, such as jitter/delay/loss, into the network for calls between the two sites.

The serviceability test cases were performed manually by disconnecting and reconnecting the LAN cable to the Tone Software Streamline Agent.

The verification of all tests included checking of proper display of call data by the Tone Software Streamline Network Assessment Service, and of comparing the reported network impairments from Tone Software with the audio quality data reported on the Avaya IP Telephones.

4.2. Test Results

All tests were executed and passed. Below are the observations from the compliance test:

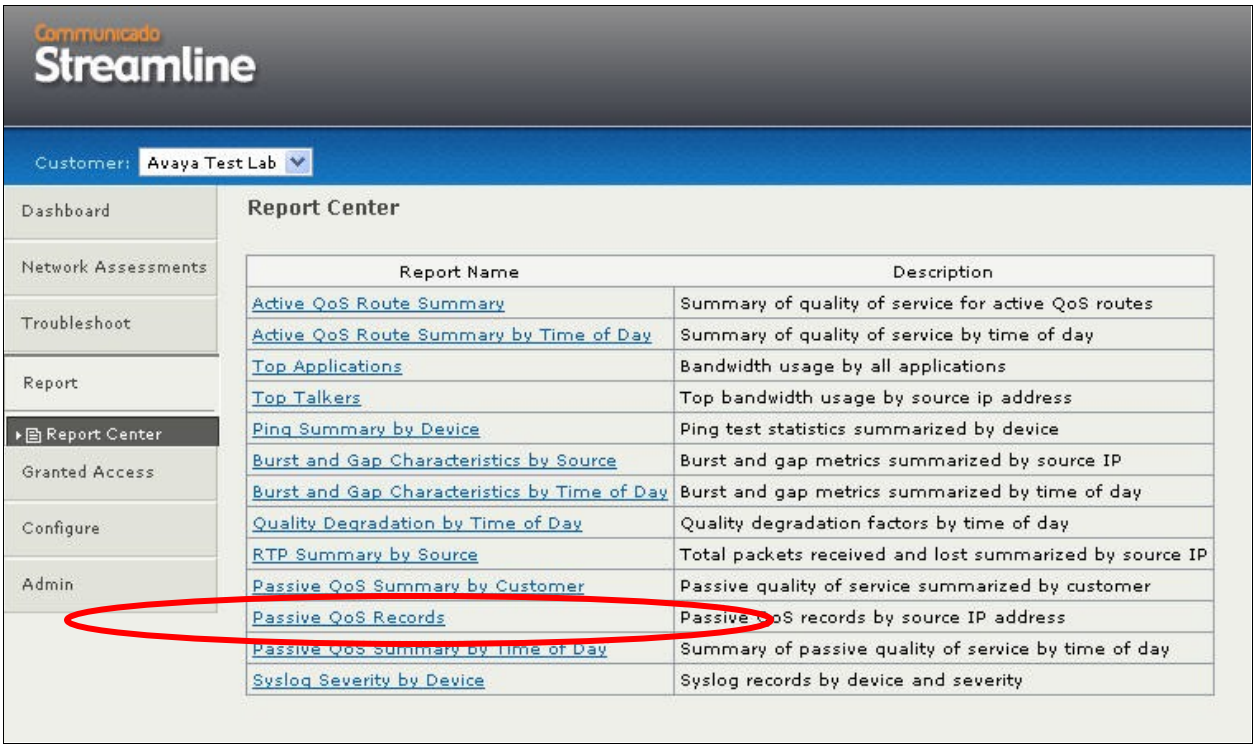
- A call scenario can generate multiple passive QoS records.
- The same call scenario can generate varying number of passive QoS records.
- The delay reported in the passive QoS records include the nominal delay for codec compression/decompression and jitter buffer, and the value increased accordingly as additional delay was injected by Packet Storm.

5. Verification Steps

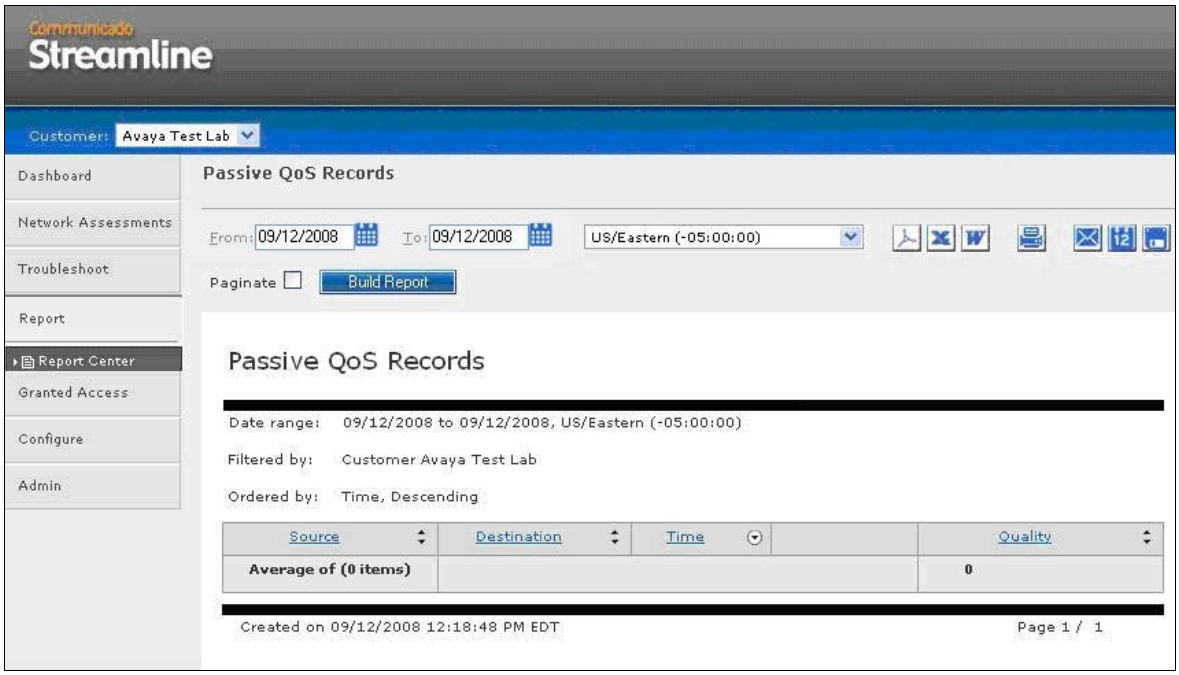
This section provides the tests that can be performed to verify proper configuration of Tone Software Streamline Network Assessment Service.

5.1. Verify Tone Software Streamline Network Assessment Service

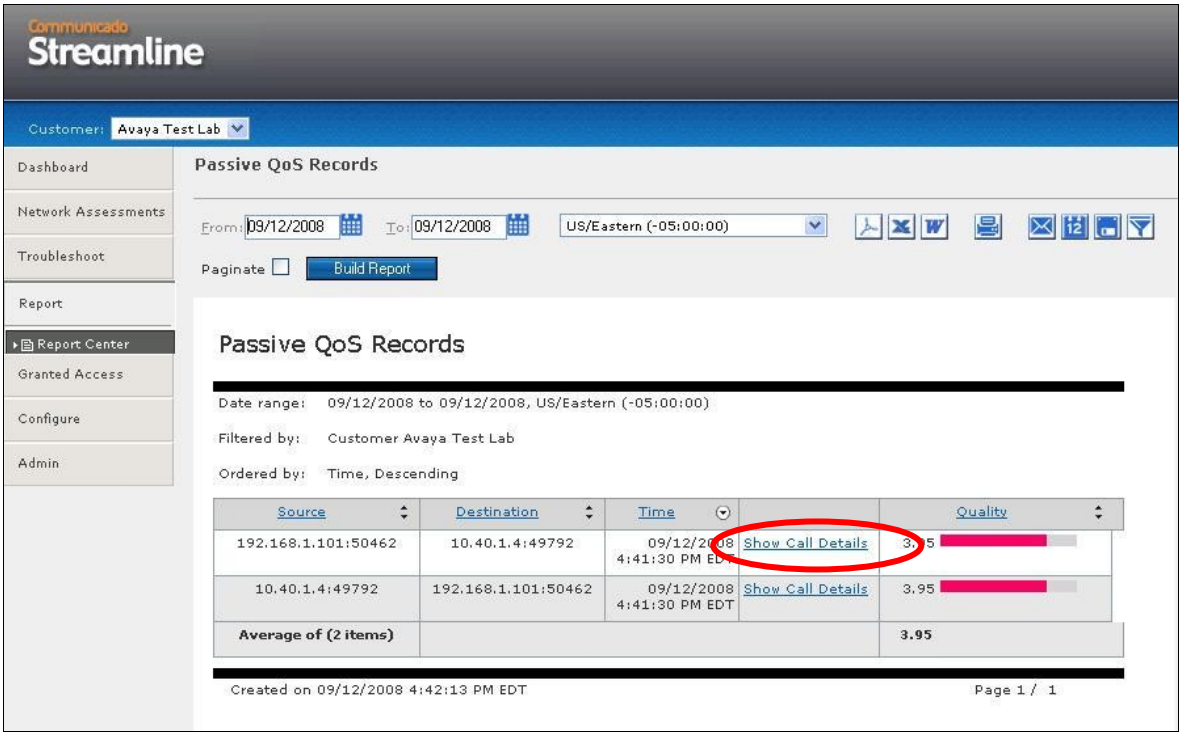
Launch the Tone Software Streamline Network Assessment Service web interface described in **Section 3.1**. Select **Report > Report Center** from the left pane, to display the **Report Center** screen in the right pane. Select **Passive QoS Records**.



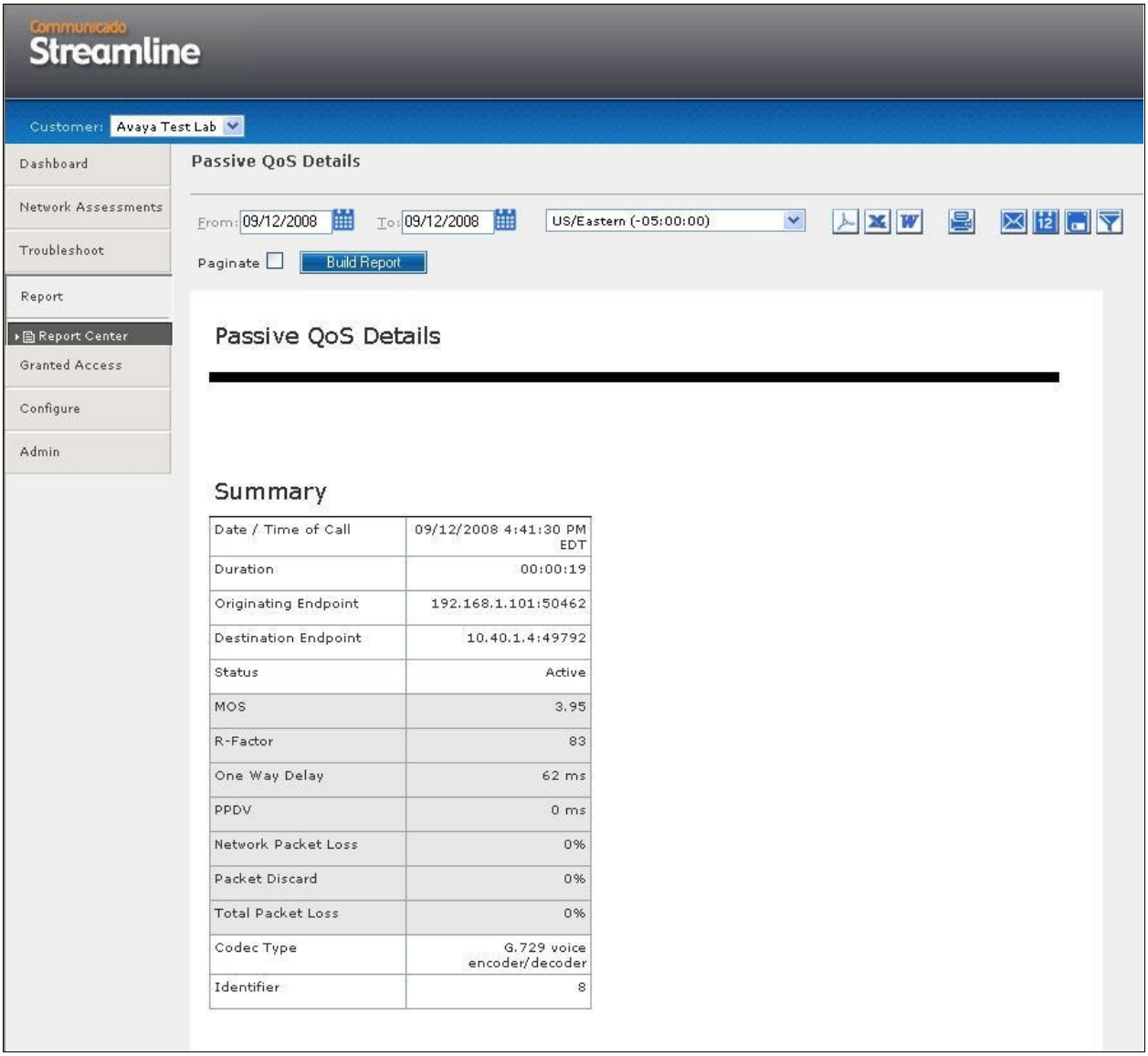
The **Passive QoS Records** screen is displayed in the right pane.



Establish a call between the Main and Branch sites. A manual refresh of the **Passive QoS Records** screen will display records associated with the active call after the next interval data pull from the Tone Software Streamline Agent. Click **Show Call Details** on one of the records.



The **Passive QoS Details** screen is displayed in the right pane. Verify the **Status** and **Codec Type** from the **Summary** table shown below.



6. Support

Technical support on Tone Software Streamline Network Assessment Service can be obtained through the following:

- **Phone:** (866) 489-8722
- **Email:** support@tonesoft.com

7. Conclusion

These Application Notes describe the configuration steps required for Tone Software Streamline Network Assessment Service to interoperate with Avaya IP Office via Avaya IP Telephones. All feature and serviceability test cases were completed successfully. Below are the observations from the compliance test:

- A call scenario can generate multiple passive QoS records.
- The same call scenario can generate varying number of passive QoS records.
- The delay reported in the passive QoS records include the nominal delay for codec compression/decompression and jitter buffer, and the value increased accordingly as additional delay was injected by Packet Storm.

8. Additional References

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

- *IP Office 4.2 Documentation CD*, August 2008, available at http://support.avaya.com.
- *Streamline Quick Start Guide, Passive Voice Quality Reporting*, available upon request to support@tonesoft.com
- *Streamline Quick Start Guide, Network Assessment*, available upon request to support@tonesoft.com

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 DevConnect Program at http://www.avaya.com/devconnect.