



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for TONE Software ReliaTel Global Quality, Performance, and Service Level Management with Avaya IP Office 9.0 – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for TONE Software ReliaTel Global Quality, Performance, and Service Level Management to interoperate with Avaya IP Office 9.0 using SNMP.

TONE Software ReliaTel Global Quality, Performance, and Service Level Management 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, TONE Software ReliaTel Global Quality, Performance, and Service Level Management used the SNMP interface from Avaya IP Office to provide alarm monitoring.

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 Global Quality, Performance, and Service Level Management to interoperate with Avaya IP Office 9.0 using SNMP.

TONE Software ReliaTel Global Quality, Performance, and Service Level Management 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, the application used the SNMP interface from Avaya IP Office to provide alarm monitoring.

Upon detection of failures, Avaya IP Office raised alarms and sent SNMP traps to TONE Software ReliaTel Global Quality, Performance, and Service Level Management. The application collected and stored the information from the Avaya IP Office SNMP traps, and presented the information on the monitoring screen. The integration used SNMP version 2c.

## 2. General Test Approach and Test Results

The feature test cases were performed manually. Different SNMP traps were generated on IP Office and verified on the ReliaTel web-based alarm monitoring screen.

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

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 handling and displaying of received SNMP traps by ReliaTel for scenarios including IP Office reboot, H.323 and SIP telephone registration/un-registration, Voicemail Pro connect/disconnect, and connect/disconnect of digital telephone.

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

### 2.2. Test Results

All test cases were executed and passed.

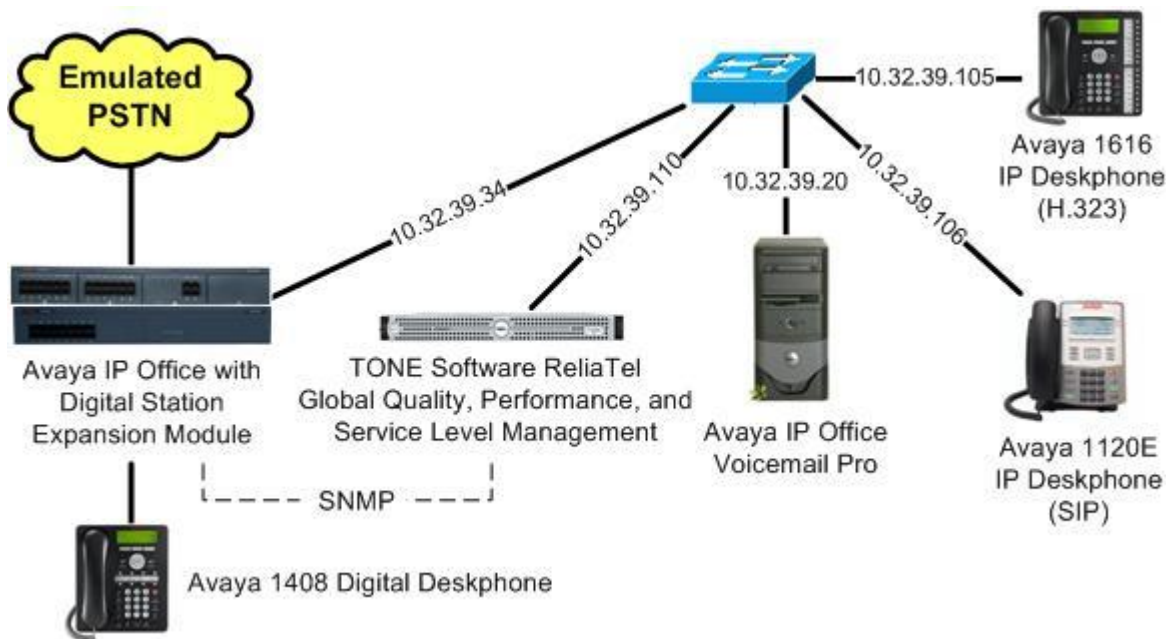
## 2.3. Support

Technical support on ReliaTel can be obtained through the following:

- **Phone:** (800) 833-8663
- **Email:** [support@tonesoft.com](mailto:support@tonesoft.com)
- **Web:** <http://www.tonesoft.com/tone-secure/support-home/login-reliatel/>

## 3. Reference Configuration

The configuration used for the compliance testing is shown below.



**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 IP Office on IP500V2 <ul style="list-style-type: none"><li>Digital Station Expansion Module</li></ul>	9.0 SP1 (9.0.100.845) 9.0.0.829
Avaya IP Office Voicemail Pro	9.0 (311)
Avaya 1616 IP Deskphone (H.323)	1.343A
Avaya 1120E IP Deskphone (SIP)	04.03.18.00
Avaya 1408 Digital Deskphone	NA
TONE Software ReliaTel	4.1.5.381

*Testing was performed with IP Office 500 V2 R9.0, but it also applies to IP Office Server Edition R9.0. Note that IP Office Server Edition requires an Expansion IP Office 500 V2 R9.0 to support analog or digital endpoints or trunks. IP Office Server Edition does not support TAPI Wave or Group Voicemail.*

## 5. Configure Avaya IP Office

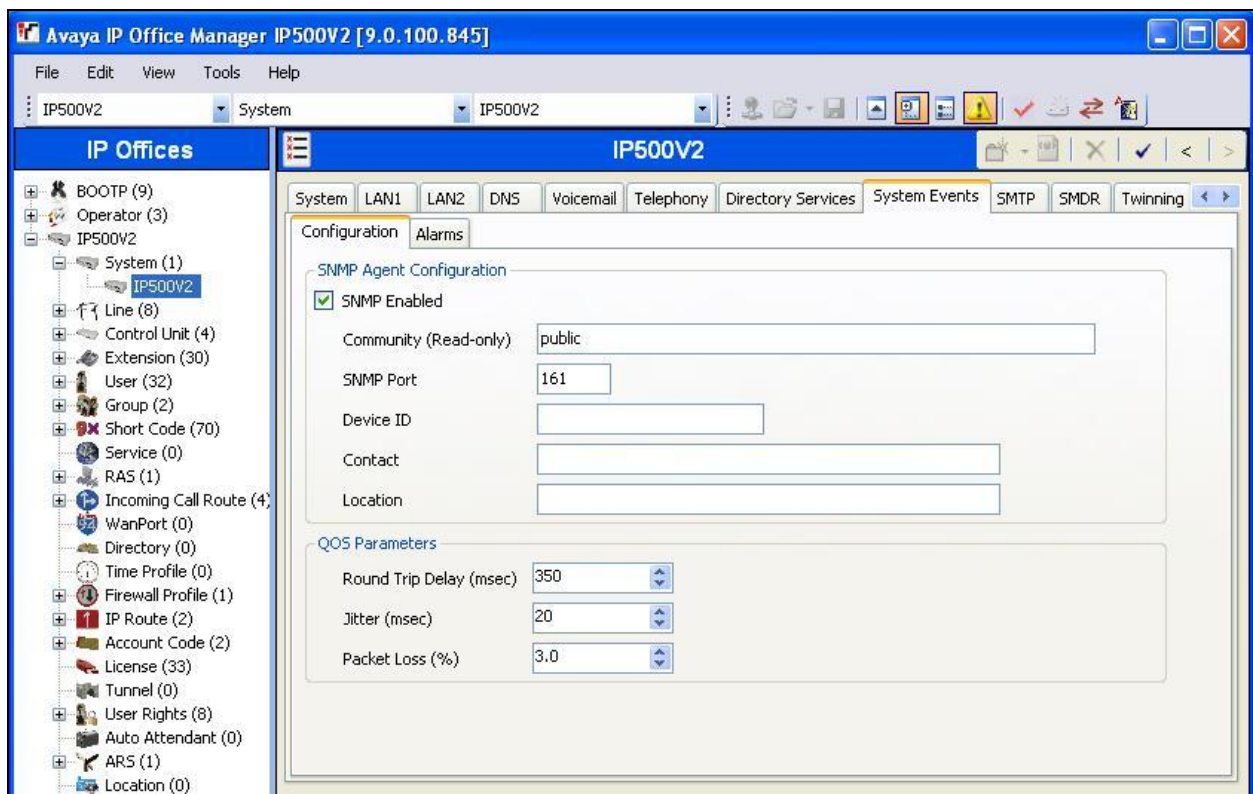
This section provides the procedures for configuring IP Office. The procedures include the following areas:

- Administer SNMP
- Administer alarms

### 5.1. Administer SNMP

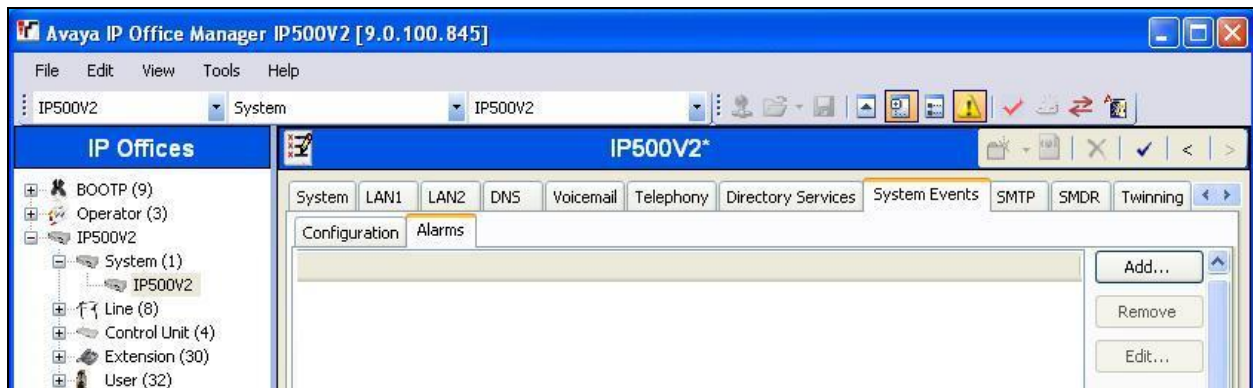
From a PC running the IP Office Manager application, select **Start → Programs → IP Office → Manager** to launch the application. Select the proper IP Office system, and log in using the appropriate credentials.

The **Avaya IP Office Manager** screen is displayed. From the configuration tree in the left pane, select **System** to display the **IP500V2** screen in the right pane. Select the **System Events** tab, followed by the **Configuration** sub-tab. Check the **SNMP Enabled** field, and retain the default values in the remaining fields.

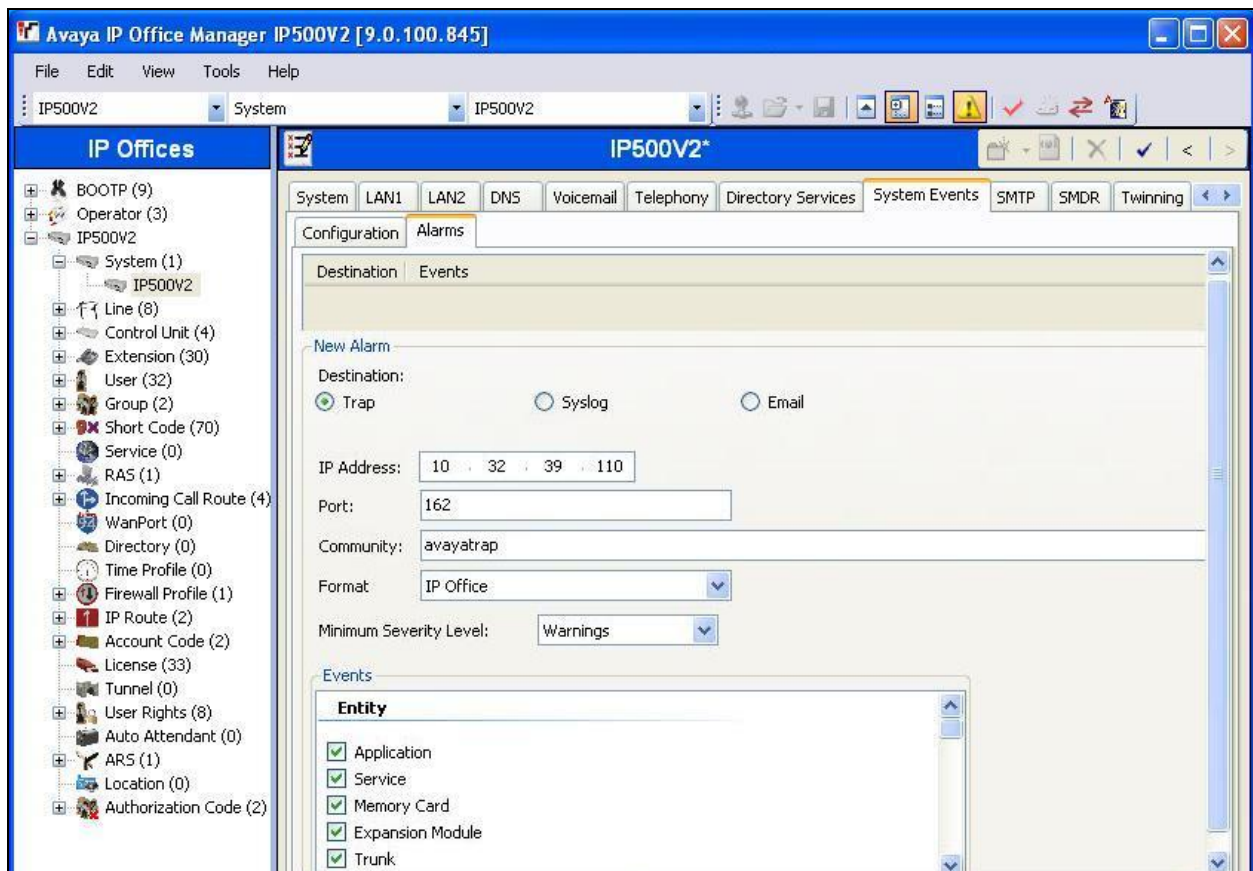


## 5.2. Administer Alarms

Select the **Alarms** sub-tab, and click **Add**.



The screen is updated with new parameters, as shown below. Select the radio button for **Trap**, and enter the IP address of ReliaTel in the **IP Address** field. Enter a desired string for **Community**. Note that the community string is not used by ReliaTel, but needs to be configured on IP Office. In the **Events** section, scroll down the pane as necessary to check all desired events to be collected and sent. Retain the default values in the remaining fields.



## 6. Configure TONE Software ReliaTel Global Quality, Performance, and Service Level Management

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

- Launch web interface
- Administer centers
- Administer DAPs
- Administer entities

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

### 6.1. 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.



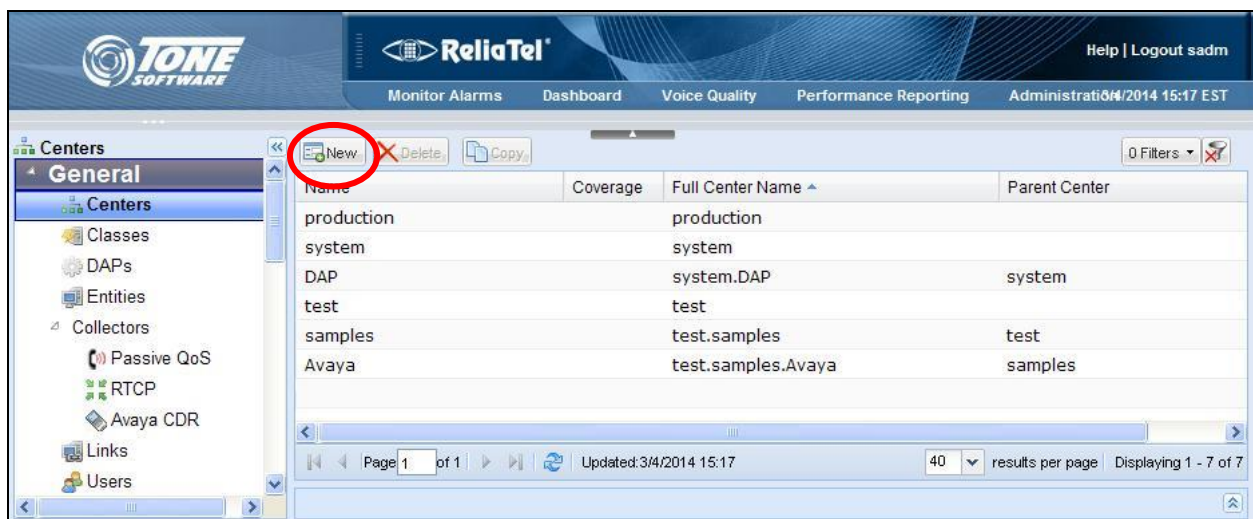


The **ReliaTel** screen is displayed. Select **Administration** → **General Administration** from the top menu.



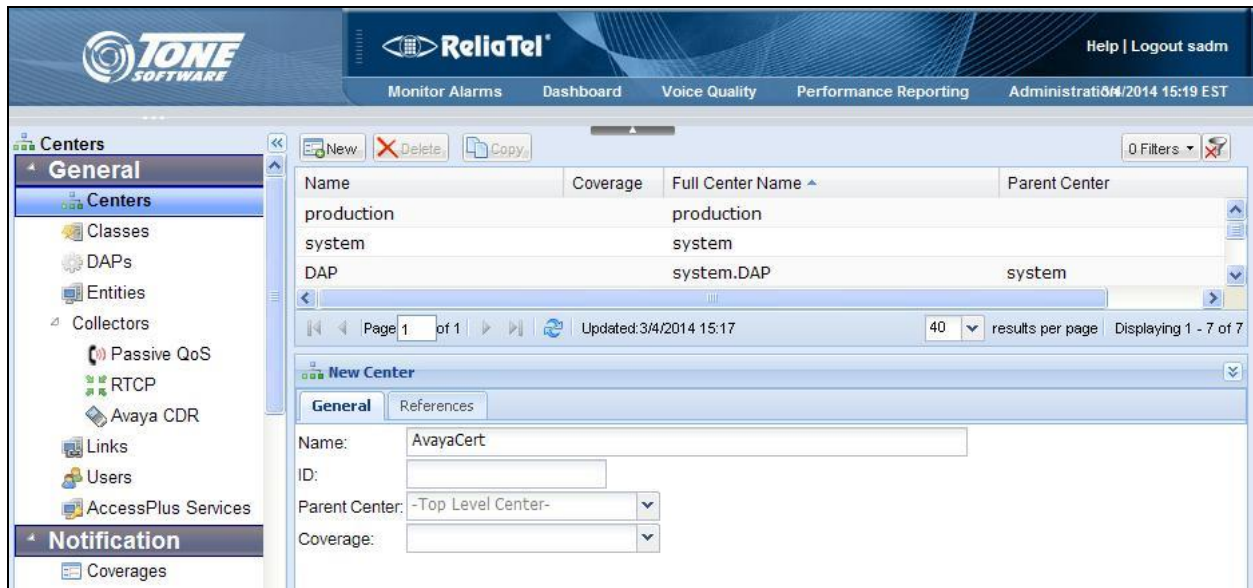
## 6.2. Administer Centers

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



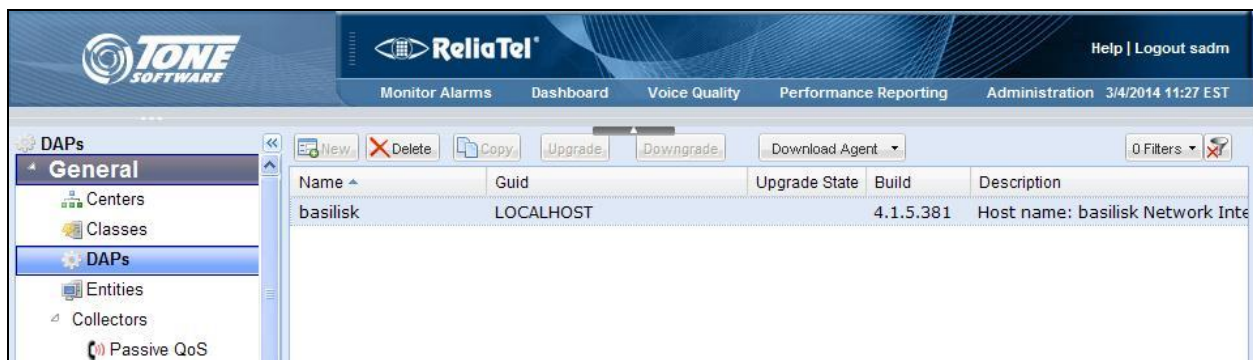


In the bottom pane, select the **General** tab. Enter a descriptive **Name**, and retain the default values in the remaining fields.

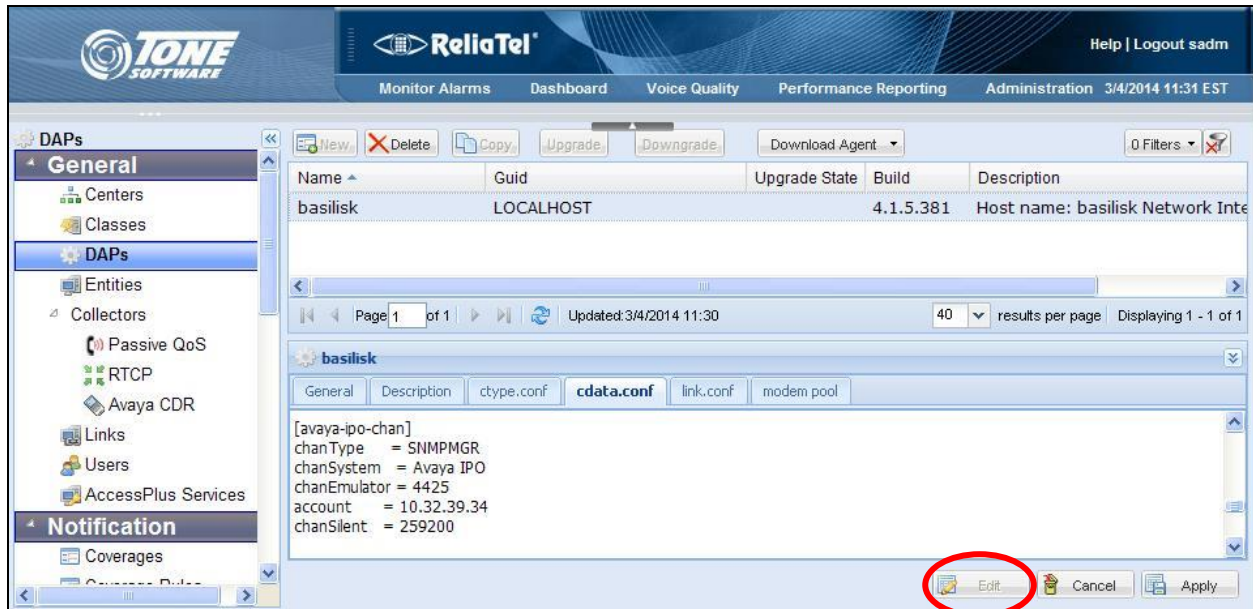


### 6.3. Administer DAPs

Select **General** → **DAPs** from the left pane to display the screen below. Select the displayed entry in the right pane.

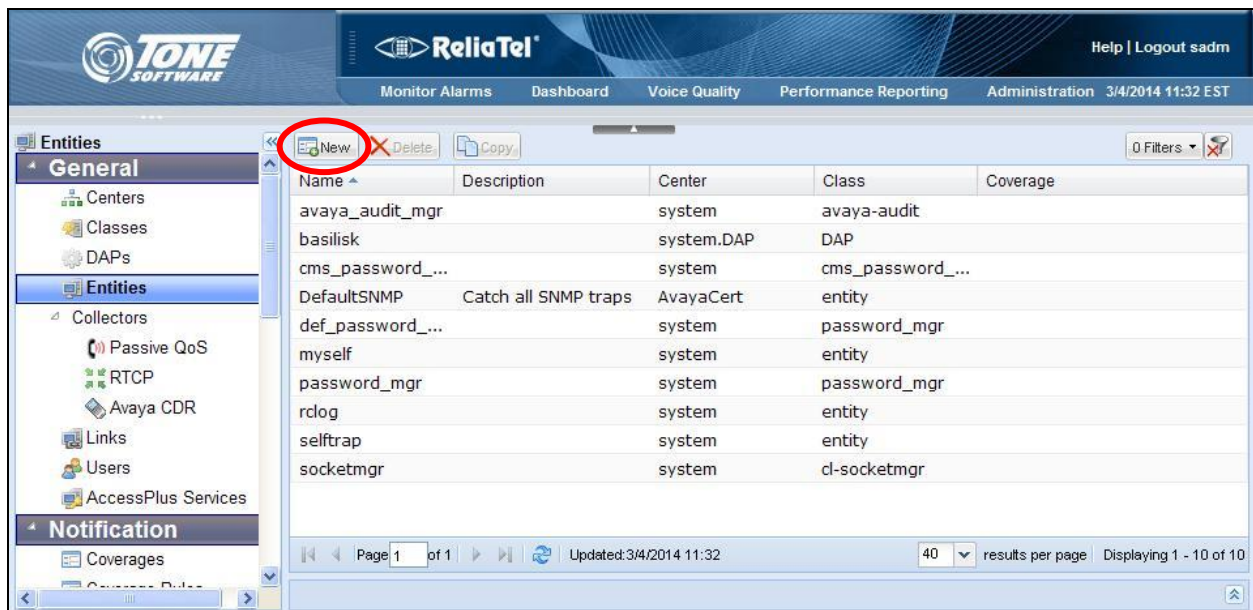


The screen is updated with details in the bottom right pane. Select the **cdata.conf** tab and click **Edit**. Scroll down the bottom right pane, and add a set of entry lines shown below for IP Office, using a descriptive channel name within the brackets, a descriptive **chanSystem**, and the IP address of IP Office for **account**. Enter all other entry lines exactly as shown.



## 6.4. Administer Entities

Select **General** → **Entities** from the left pane to display a list of entities in the right pane. Click **New** to add a new entity.



In the lower portion of the screen, select the **General** tab. Enter a descriptive **Name** and a desired **Description**. For **Center**, select the center name from **Section 6.2**. For **Class**, select “cl-avaya-ipoff”.

The screenshot shows the ReliaTel administration interface. The left sidebar contains a tree view with 'Entities' expanded, showing 'Centers', 'Classes', 'DAPs', 'Collectors', 'Passive QoS', 'RTCP', 'Avaya CDR', 'Links', 'Users', 'AccessPlus Services', 'Notification', 'Coverages', 'Coverage Rules', 'Action Templates', and 'Email Templates'. The main area displays a table of entities with columns: Name, Description, Center, Class, and Coverage. The table lists 'avaya\_audit\_mgr' (system, avaya-audit) and 'basilisk' (system.DAP, DAP). Below the table is a 'New Entity' form with tabs: General, Logging, Attributes, Actions, MA Patterns, Monitors, Scan Patterns, MA Tables, Schedules, Alarm Suppression, AccessPlus, and References. The 'General' tab is active, showing fields for Name (Avaya-IPO), Description, Center (AvayaCert), Class (cl-avaya-ipoff), Coverage, Host, DAP, and Use Polling.

Name	Description	Center	Class	Coverage
avaya_audit_mgr		system	avaya-audit	
basilisk		system.DAP	DAP	

Page 1 of 1 Updated: 3/4/2014 11:32 40 results per page Displaying 1 - 10 of 10

**New Entity**

General | Logging | Attributes | Actions | MA Patterns | Monitors | Scan Patterns | MA Tables | Schedules | Alarm Suppression | AccessPlus | References

Name: Avaya-IPO  
 Description:  
 Center: AvayaCert Class: cl-avaya-ipoff Coverage:  
 Host (if blank, defaults to channel config):  
 DAP (if blank, defaults to channel config):  
 Use Polling: ☐

Edit Cancel Apply

Select the **Logging** tab. Check the **Log State** field. For **Channel**, enter the channel name from **Section 6.3**. For **Log Pattern**, select “l-avaya-ipoff” from the drop-down list. Retain the default values in the remaining fields.

The screenshot shows the ReliaTel administration interface with the 'New Entity' form in the 'Logging' tab. The 'Log State' checkbox is checked. The 'Channel' field is set to 'avaya-ipo-chan', 'Log Pattern' is set to 'l-avaya-ipoff', 'Log Age (days)' is 30, and 'Message Timeout (seconds)' is 10.

Name	Description	Center	Class	Coverage
avaya_audit_mgr		system	avaya-audit	
basilisk		system.DAP	DAP	

Page 1 of 1 Updated: 3/4/2014 11:32 40 results per page Displaying 1 - 10 of 10

**New Entity**

General | **Logging** | Attributes | Actions | MA Patterns | Monitors | Scan Patterns | MA Tables | Schedules | Alarm Suppre

Log State: ☒  
 Channel: avaya-ipo-chan  
 Log Pattern: l-avaya-ipoff  
 Log Age (days): 30  
 Message Timeout (seconds): 10

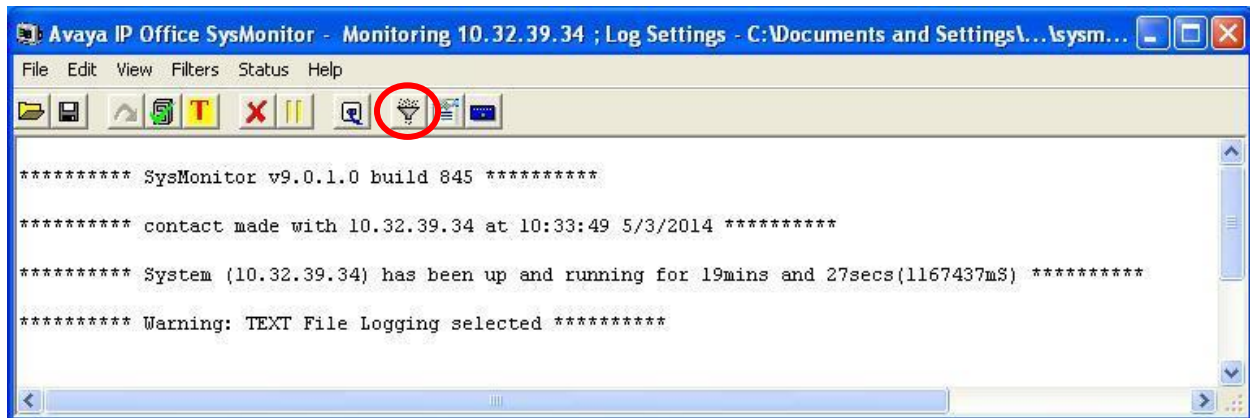
Edit Cancel Apply

## 7. Verification Steps

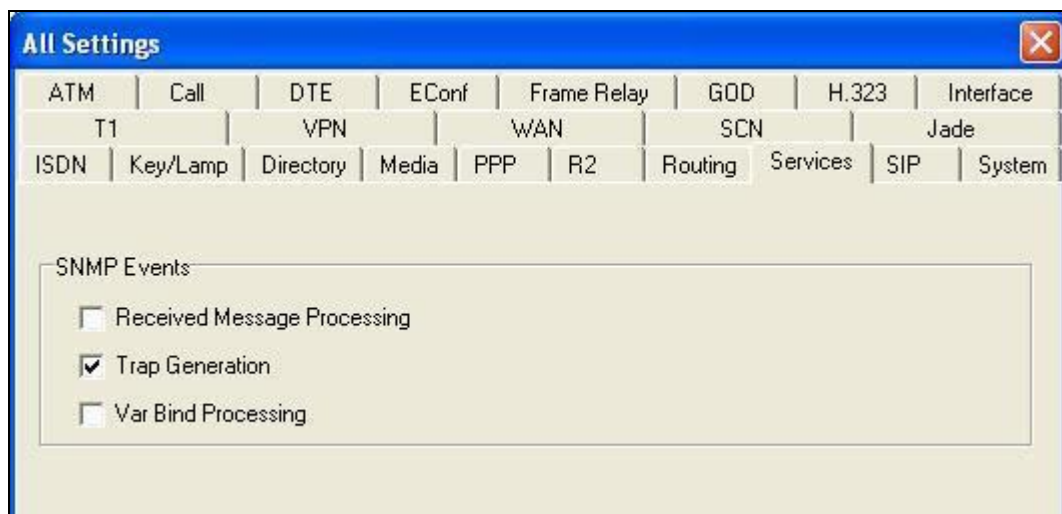
This section provides the test that can be performed to verify proper configuration of IP Office and ReliaTel.

### 7.1. Verify Avaya IP Office

From a PC running the IP Office Monitor application, select **Start → Programs → IP Office → Monitor** to launch the application. The **Avaya IP Office SysMonitor** screen is displayed, as shown below. Click on the **Filter** icon.



The **All Settings** screen is displayed. Select the **Services** tab. In the **SNMP Events** sub-section, check **Trap Generation**, as shown below.





Generate an alarm on IP Office, such as disconnect and reconnect an IP telephone. Verify that the generated SNMP traps are displayed on the **Avaya IP Office SysMonitor** screen, as shown below.

```

Avaya IP Office SysMonitor - Monitoring 10.32.39.34 ; Log Settings - C:\Documents and Settings\...sysmoni...
File Edit View Filters Status Help

***** SysMonitor v9.0.1.0 build 845 [connected to 10.32.39.34 ] *****
629664mS SNMPTrapGen: Requesting ipoPhonesChangeSvcEvent Trap - Index 24
629664mS SNMPTrapGen: The phone with id 8001 has been removed for extension 20031
629665mS SNMPTrapGen: The phone with id 8001 has been removed for extension 20031
629665mS SNMPTrapGen: Sending trap to 10.32.39.110:162
629665mS SNMPTrapGen: Enterprise 1.3.6.1.4.1.6889.2.2.1.1.1
629665mS SNMPTrapGen: Generic trap type 6, specific trap type 2
650776mS SNMPTrapGen: Requesting ipoPhonesChangeSvcEvent Trap - Index 24
650776mS SNMPTrapGen: The phone type 1616 (id 8001) has been plugged in for extension 20031
650776mS SNMPTrapGen: The phone type 1616 (id 8001) has been plugged in for extension 20031
650776mS SNMPTrapGen: Sending trap to 10.32.39.110:162
650776mS SNMPTrapGen: Enterprise 1.3.6.1.4.1.6889.2.2.1.1.1
650776mS SNMPTrapGen: Generic trap type 6, specific trap type 2
***** SysMonitor v9.0.1.0 build 845 [connected to 10.32.39.34 ] *****

```

## 7.2. Verify TONE Software ReliaTel Global Quality, Performance, and Service Level Management

On the **ReliaTel** screen, select **Monitor Alarms** → **Alarm List** from the top menu. Select **View** → **AvayaCert** → **Avaya-IPO** in the left pane, where **AvayaCert** is the center name from **Section 6.2**, and **Avaya-IPO** is the entity name from **Section 6.4**.

Verify that the new traps from **Section 7.1** are displayed in the right pane, as shown below. Note that the first two entries with **Level FYI** are generated internally by ReliaTel.

Level	ID	Start Date/Time	State	Entity	Center	Text
MIN	1191	3/5/2014 10:51	New	Avaya-IPO	AvayaCert	The phone type a1616ip(62) (id 8001) has been plugged in
MIN	1190	3/5/2014 10:50	New	Avaya-IPO	AvayaCert	The phone with id 8001 has been removed for extension 0
FYI	1189	3/5/2014 10:47	New	Avaya-IPO	AvayaCert	102:112 Available All
FYI	1188	3/5/2014 10:46	New	Avaya-IPO	AvayaCert	102:112 Available: Channel



## 8. Conclusion

These Application Notes describe the configuration steps required for TONE Software ReliaTel Global Quality, Performance, and Service Level Management to successfully interoperate with Avaya IP Office 9.0. All feature and serviceability test cases were completed.

## 9. Additional References

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

1. *Avaya IP Office Manager*, Release 9.0, Issue 9.01, September 2013, Document Number 15-601011, available at <http://support.avaya.com>.
2. *ReliaTel Release 4.1.5 Administrator Guide*, Guide Version 4.0, available via the ReliaTel web interface.
3. *ReliaTel Operator Guide Release 4.1.*, Guide Version 4.0, available via the ReliaTel web interface.

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