



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

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# **Application Notes for TONE Software ReliaTel with Avaya Modular Messaging 5.2 – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required for TONE Software ReliaTel to interoperate with Avaya Modular Messaging 5.2 using SNMP.

TONE Software 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, TONE Software ReliaTel used the SNMP interface from Avaya Modular Messaging 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 to interoperate with Avaya Modular Messaging 5.2 using SNMP.

TONE Software 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 SNMP interfaces from the Avaya Modular Messaging system, consisting of the Avaya Messaging Storage Server (MSS) and one Avaya Messaging Application Server (MAS), to provide alarm monitoring.

Upon detection of a failure, the Avaya MSS or MAS can raise alarms and send SNMP traps to TONE Software ReliaTel. TONE Software ReliaTel collects and stores the alarm information from the Avaya Modular Messaging SNMP traps, and presents the alarms on the monitoring screen. The integration uses SNMP version 2c.

## 2. General Test Approach and Test Results

The feature test cases were performed manually. Different SNMP traps were generated on MSS and MAS and verified on the ReliaTel web-based alarm monitoring screen. The verification also included the use of a protocol analyzer to view the SNMP traps sent from Modular Messaging.

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

### 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 MSS reboot, MSS messaging start/stop, MAS MM Message Waiting Indicator Server start/stop, and MAS MM Messaging Application Server start/stop.

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 passed.

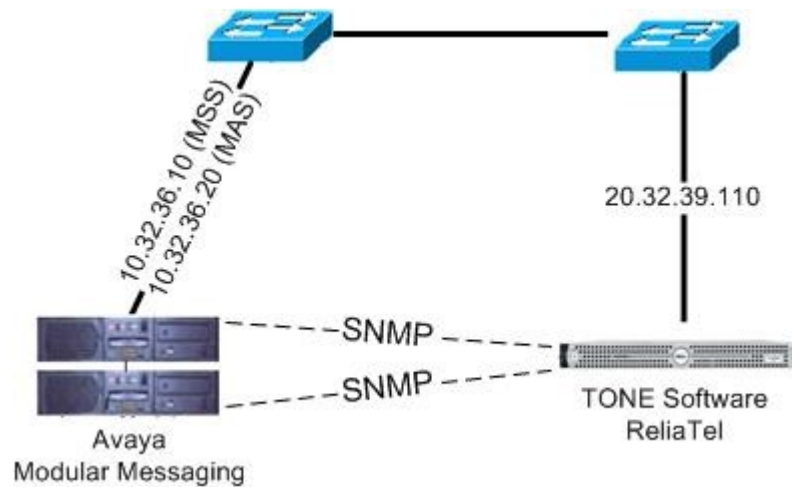
### 2.3. Support

Technical support on ReliaTel can be obtained through the following:

- **Phone:** (800) 833-8663
- **Email:** [info@tonesoft.com](mailto:info@tonesoft.com)
- **Web:** [http://www.tonesoft.com/Support\\_and\\_Services](http://www.tonesoft.com/Support_and_Services)

### 3. Reference Configuration

The configuration used for the compliance testing is shown below.



### 4. Equipment and Software Validated

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

Equipment	Software
Avaya Modular Messaging <ul style="list-style-type: none"><li>Messaging Storage Server</li><li>Messaging Application Server</li></ul>	5.2 SP8 P4 5.2 SP8 P4
TONE Software ReliaTel	3.1.0.145

## 5. Configure Avaya Modular Messaging Storage Server

This section provides the procedures for configuring the Modular Messaging MSS component. The procedures include the following areas:

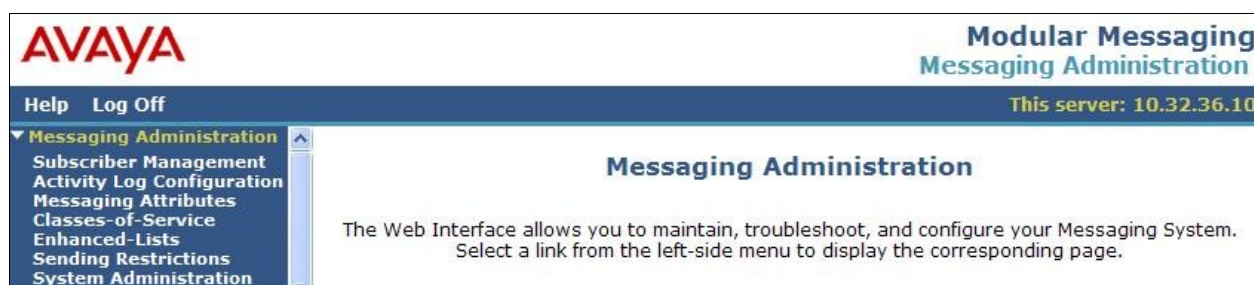
- Launch web interface
- Administer alarm configuration
- Administer community
- Administer trap destination

### 5.1. Launch Web Interface

Access the MSS web interface by using the URL “http://ip-address” in an Internet browser window, where “ip-address” is the IP address of the MSS server. The **Logon** screen is displayed. Log in using the appropriate credentials.



The **Messaging Administration** screen appears, as shown below.



## 5.2. Administer Alarm Configuration

Select **Alarming > Alarming Configuration** from the left pane, to display the **Configure Alarms** screen. For **Alarm Origination**, select “SNMP” from the drop-down list. For **Alarm Level**, select the desired level of alarms to be sent to ReliaTel. Retain the default values in the remaining fields.

The screenshot shows the 'Configure Alarms' web interface. The left navigation pane is expanded to 'Alarming > Alarming Configuration'. The main content area contains the following fields:

- Product ID**: 2000000000
- Alarm Origination**: SNMP (dropdown)
- Alarm Level**: ALL (dropdown)
- Alarm Suppression**: INACTIVE (dropdown)
- Clear Alarm Notification**: ACTIVE (dropdown)
- Modem Dialout Destination**: (empty text field)
- Modem To Be Configured**: No configured modem found (dropdown)

At the bottom of the form are 'Save' and 'Help' buttons. The top right of the page indicates 'This server: 10.32.36.10'.

## 5.3. Administer Community

Select **Alarming > SNMP Community** from the left pane, to display the **Administer SNMP Community** screen. Click **Add** to add a community.

The screenshot shows the 'Administer SNMP Community' web interface. The left navigation pane is expanded to 'Alarming > SNMP Community'. The main content area displays:

- A header: **Administer SNMP Community**
- A table with one row: 

Community String	Apply To
No SNMP Communities Administered Yet!	

At the bottom of the screen are 'Add', 'Change', 'Delete', and 'Help' buttons. The top right of the page indicates 'This server: 10.32.36.10'.

The **Add New SNMP Community** screen is displayed. Enter a desired **Community**, and select “trap” for **Apply To**.

The screenshot shows the 'Add New SNMP Community' screen. The left navigation pane is expanded to 'Security'. The main content area has the title 'Add New SNMP Community'. Below the title, there is a text input field for 'Community' with the value 'public' and a dropdown menu for 'Apply To' with the value 'trap'. At the bottom of the form are three buttons: 'Back', 'Save', and 'Help'. The top right of the interface shows 'Modular Messaging Messaging Administration' and 'This server: 10.32.36.10'.

## 5.4. Administer Trap Destination

Select **Alarming > SNMP Trap Destinations** from the left pane, to display the **Administer SNMP Trap Destinations** screen. Click **Add** to add a new trap destination.

The screenshot shows the 'Administer SNMP Trap Destinations' screen. The left navigation pane is expanded to 'Alarming'. The main content area has the title 'Administer SNMP Trap Destinations'. Below the title, there are two labels: 'Alarm Level: WARNING' and 'Alarm Suppression: INACTIVE'. Below these labels is a table with the following columns: 'IP Address or Host Name', 'Community', 'NMS Type', 'Port Number', and 'Destination Status'. The table is currently empty, with the text 'No Trap Destinations Administered Yet!' displayed below the column headers. At the bottom of the screen are four buttons: 'Add', 'Change', 'Delete', and 'Help'. The top right of the interface shows 'Modular Messaging Messaging Administration' and 'This server: 10.32.36.10'.



The **Add New SNMP Trap Destination** screen is displayed. Enter the IP address of the ReliaTel server in the **IP Address or Host Name** field, and retain the default values in the remaining fields.

The screenshot shows the Avaya Modular Messaging Administration web interface. The top header features the Avaya logo on the left and 'Modular Messaging Administration' on the right, with a status bar indicating 'This server: 10.32.36.10'. A left-hand navigation menu lists various system management tasks, including 'Security' and 'Alarming'. The main content area is titled 'Add New SNMP Trap Destination' and contains four configuration fields: 'IP Address or Host Name' (text input with '20.32.39.110'), 'Community' (dropdown menu with 'public'), 'NMS Type' (dropdown menu with 'INADS'), and 'Port Number' (text input with '162'). At the bottom of the form are three buttons: 'Back', 'Save', and 'Help'.

**AVAYA** Modular Messaging Administration  
This server: 10.32.36.10

Help Log Off

Server Software Display  
Software Installation  
Software Verification  
Software Removal  
Software Update  
Advanced Installation

▼ **Security**  
Change My Password  
Password Rules  
Administrative Roles  
Local Administrators  
AAA Configuration  
ASG Login Administration  
ASG Login Display  
ASG Login Violation  
Subscriber Access  
Change LDAP Password  
PPP Configuration  
Client Certificate Management  
Install Server Certificate  
Security Warning  
Server Certificate Management  
Certificate Signing Request

▼ **Alarming**  
Alarming Configuration  
SNMP MIB II Parameters  
Query Originators  
SNMP Trap Destinations

## Add New SNMP Trap Destination

IP Address or Host Name 20.32.39.110

Community public ▼

NMS Type INADS ▼

Port Number 162

Back Save Help

## 6. Configure Avaya Modular Messaging Application Server

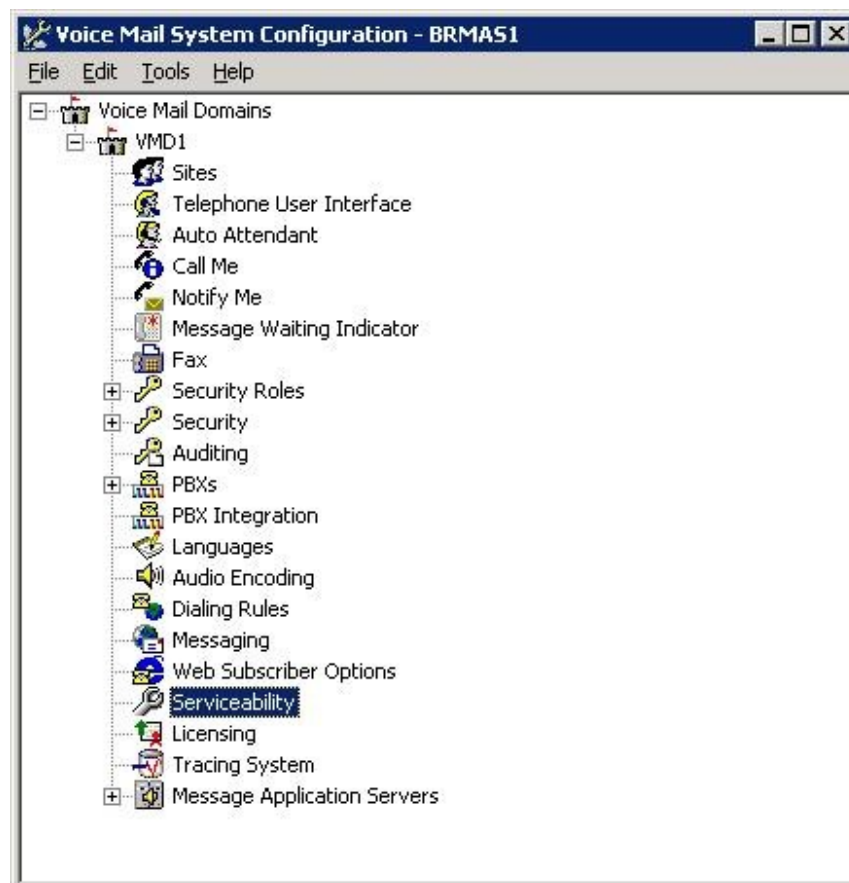
This section provides the procedures for configuring the Modular Messaging MAS component. The procedures include the following areas:

- Launch Voice Mail System Configuration
- Administer community
- Administer trap destination
- Administer SNMP alarm

The Modular Messaging system can support multiple MAS servers. In the compliance testing, only one MAS server was used. For Modular Messaging systems with multiple MAS servers, this section can be repeated for each MAS server desired to be monitored by ReliaTel.

### 6.1. Launch Voice Mail System Configuration

On the MAS server, launch the Voice Mail System Configuration application by selecting **Start > Programs > Avaya Modular Messaging > Voice Mail System Configuration**. The **Voice Mail System Configuration** screen is displayed. Select **Voice Mail Domains > VMD1 > Serviceability** as shown below, where **VMD1** is the local voice mail domain.





## 6.2. Administer Community

The **Serviceability – Voice Mail Domain** screen is displayed. Select the **Communities** tab, and click **Add** to add a community.

The screenshot shows the 'Serviceability - Voice Mail Domain' window with the 'Communities' tab selected. The window has a title bar with a close button. Below the title bar are five tabs: 'General', 'SNMP Trap Destinations', 'SAL Destinations', 'Communities', 'Query Originators', 'Internet Proxies', and 'Syslog'. The 'Communities' tab is active. The main area contains a table with two columns: 'Community' and 'Apply To'. The table is currently empty. At the bottom right of the window are two buttons: 'Add' and 'Remove'.

The screen is updated with a new entry line. Click on the **Community** field in the entry line, and enter a desired community string, in this case “avayaatrap”. Click on the **Apply To** field in the entry line, and select “Traps”, as shown below.

The screenshot shows the same 'Serviceability - Voice Mail Domain' window with the 'Communities' tab selected. The table now has one entry. The 'Community' field contains the text 'avayaatrap' and the 'Apply To' field contains the text 'Traps'. The 'Apply To' field is a dropdown menu with a downward arrow. The 'Add' and 'Remove' buttons are still at the bottom right.

### 6.3. Administer Trap Destination

Select the **SNMP Trap Destinations** tab, and click **Add** to add a trap destination.

IP Address /Host	Community	Type	Port	Status
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Add Remove

The screen is updated with a new entry line. Click the **IP Address /Host** field in the entry line, and enter the IP address of the ReliaTel server. Retain the default values in the remaining fields.

IP Address /Host	Community	Type	Port	Status
20.32.39.110	avayaatrap	INADS	162	Inactive

## 6.4. Administer SNMP Alarm

Select the **General** tab. For **Alarm Origination**, select “SNMP” from the drop-down list. For **Send alarm at this level or higher**, select the desired alarm level. Retain the default values in the remaining fields.

The screenshot shows a configuration window titled "Serviceability - Voice Mail Domain". It has several tabs: "Communities", "Query Originators", "Internet Proxies", "Syslog", "General", "SNMP Trap Destinations", and "SAL Destinations". The "General" tab is selected. Inside the "General" tab, the "Alarm Origination" dropdown menu is set to "SNMP". Below this, there are three checkboxes: "Suppress alarm notifications" (unchecked), "Clear Alarm Notification" (checked), and "Send alarm at this level or higher:" (set to "All" in a dropdown). Under the heading "When stopping the MAS service:", there are three radio button options: "Wait for ports to become idle" (unchecked), "Wait indefinitely" (unchecked), and "Wait for (minutes)" (checked with a value of "10" in a text box). At the bottom, there are three buttons: "OK", "Cancel", and "Help".

## 7. Configure TONE Software ReliaTel

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

- Launch web interface
- 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.

### 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.



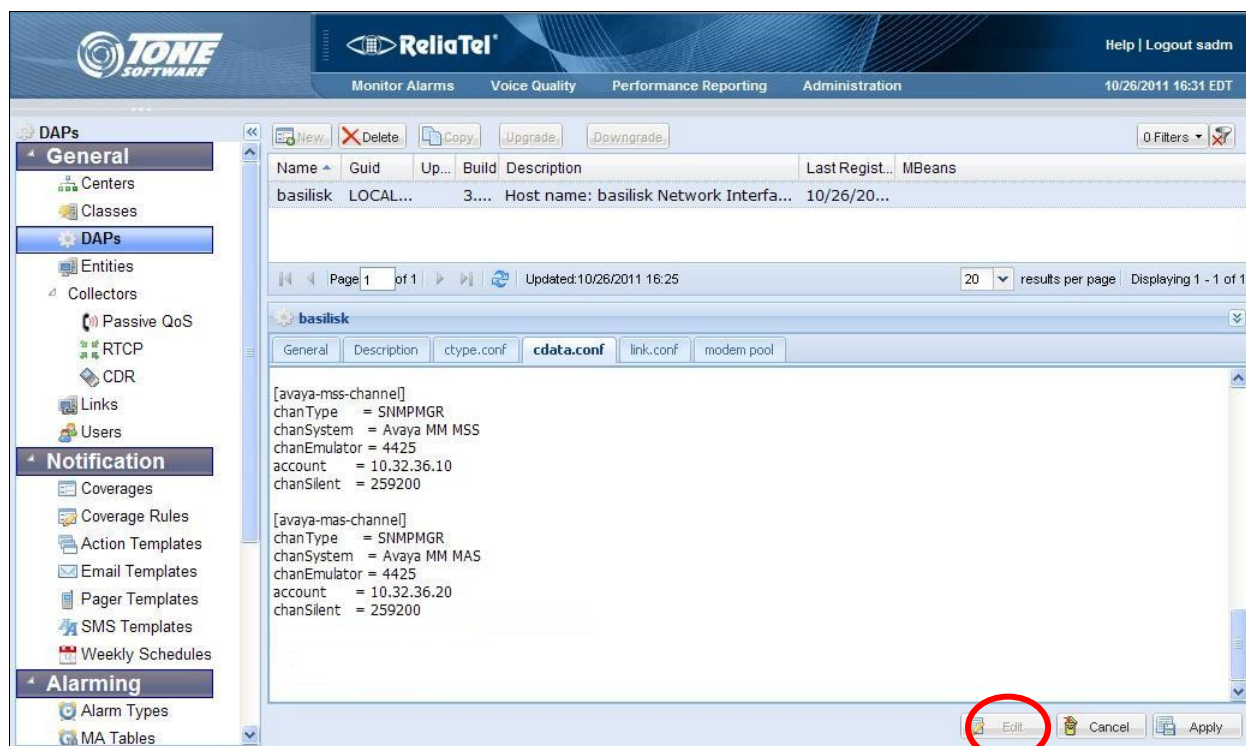
## 7.2. Administer DAPs

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 each MSS and MAS, using descriptive channel names within the brackets, descriptive **chanSystem**, and IP address of MSS or MAS for **account**. Enter all other entry lines exactly as shown.



### 7.3. 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 the MSS. Select the appropriate pre-configured **Center** from the drop-down list, in this case “production”. For **Class**, select “cl-avaya-mm”.

The screenshot shows the ReliaTel Administration interface. The left sidebar contains a tree view with 'Entities' selected. The main area displays a table of entities and a 'New Entity' form.

Name	Description	Center	Class	Coverage
myself		system	entity	
rclog		system	entity	

Page 1 of 1 | Updated: 10/26/2011 16:20 | 20 results per page | Displaying 1 - 3 of 3

**New Entity**

General | Logging | Attributes | Polling | Poll Patterns | Actions | MA Patterns | MA Tables | Monitors | Scan Patterns | Schedules | References

Name: Avaya-MSS  
 Description: Avaya MM MSS  
 Center: production | Class: cl-avaya-mm | Coverage:

Select the **Logging** tab. Check the **Log State** field. For **Channel**, enter the corresponding channel name from **Section 7.2**. For **Log Pattern**, select “l-amm” from the drop-down list. Retain the default values in the remaining fields.

Repeat this section to create an entity for each MAS server desired to be monitored. In the compliance testing, one MSS entity “Avaya-MSS” and one MAS entity “Avaya-MAS” were created.

The screenshot shows the ReliaTel Administration interface with the 'Logging' tab selected for the 'New Entity' form.

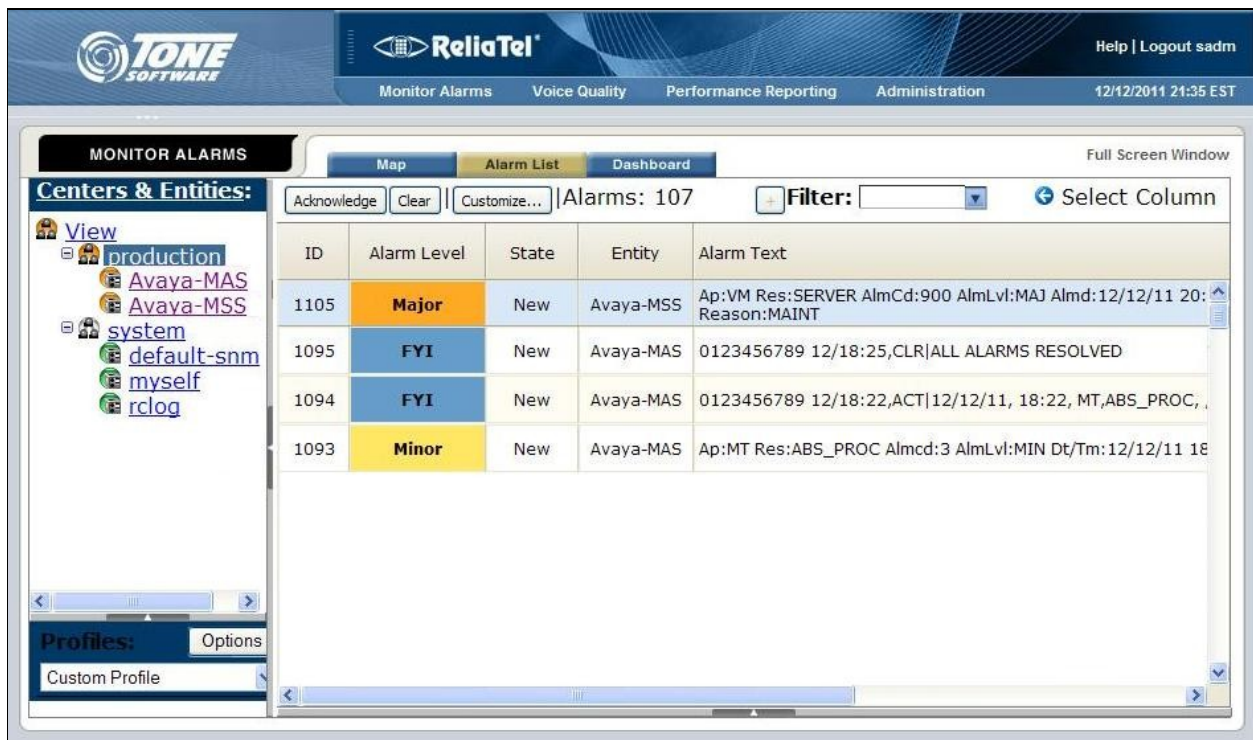
Log State: ☒  
 Channel: avaya-mss-channel  
 Log Pattern: l-amm  
 Log Age (Days): 30  
 Message Timeout (Seconds): 10

## 8. Verification Steps

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

Generate alarms on the MSS and MAS, such as start/stop messaging on the MSS and start/stop a service on the MAS. With a protocol analyzer, verify that SNMP traps are sent to ReliaTel.

In the ReliaTel screen, select **Monitor Alarms** from the top menu. Select **View > production** in the left pane, where **production** is the existing center name from **Section 7.3**. Verify that the new traps are displayed in the right pane, as shown below.



The screenshot displays the ReliaTel web interface for monitoring alarms. The top navigation bar includes the TONE SOFTWARE logo, the ReliaTel logo, and links for Help, Logout, and adm. The main menu has tabs for Monitor Alarms, Voice Quality, Performance Reporting, and Administration. The current view is 'Monitor Alarms', which is further divided into 'Map', 'Alarm List', and 'Dashboard'. The 'Alarm List' tab is active, showing a table of 107 alarms. The left sidebar, titled 'Centers & Entities', shows a tree view with 'production' selected. Below this, there are links for 'Avaya-MAS', 'Avaya-MSS', 'system', 'default-snm', 'myself', and 'rlog'. The 'Profiles' section at the bottom left shows 'Custom Profile' selected. The main table lists alarms with columns for ID, Alarm Level, State, Entity, and Alarm Text.

ID	Alarm Level	State	Entity	Alarm Text
1105	Major	New	Avaya-MSS	Ap:VM Res:SERVER AlmCd:900 AlmLvl:MAJ Almcd:12/12/11 20: Reason:MAINT
1095	FYI	New	Avaya-MAS	0123456789 12/18:25,CLR ALL ALARMS RESOLVED
1094	FYI	New	Avaya-MAS	0123456789 12/18:22,ACT 12/12/11, 18:22, MT,ABS_PROC, ,
1093	Minor	New	Avaya-MAS	Ap:MT Res:ABS_PROC Almcd:3 AlmLvl:MIN Dt/Tm:12/12/11 18

## 9. Conclusion

These Application Notes describe the configuration steps required for TONE Software ReliaTel to successfully interoperate with Avaya Modular Messaging 5.2. All feature and serviceability test cases were completed.

## 10. Additional References

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

1. *Modular Messaging with the Avaya MSS Messaging Application Server (MAS) Administration Guide*, November 2009, available at <http://support.avaya.com>.
2. *ReliaTel Monitoring and Management Solution Installation and Configuration Guide*, Version 3 Release 1 Modification 0, contact ReliaTel support at [info@tonesoft.com](mailto:info@tonesoft.com).
3. *ReliaTel Monitoring and Management Solution User's Guide*, Version 3 Release 1 Modification 0, contact ReliaTel support at [info@tonesoft.com](mailto:info@tonesoft.com).
4. *ReliaTel Avaya Call Detail Reporting Operator Guide*, Version 3 Release 1 Modification 0, contact ReliaTel support at [info@tonesoft.com](mailto:info@tonesoft.com).

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