



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

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# **Application notes for Configuring eTelemetry Locate911-N High Availability (HA) Version 1.4.14 with Avaya Communication Server 1000 Emergency Services Release 7.5 – Issue 1.0**

## **Abstract**

These Application Notes describe a solution comprised of Avaya Communication Server 1000 Release 7.5 and the eTelemetry Locate911-N High Availability (HA) Solution. During the compliance testing, the Locate911-N HA Solution was able to operate as an External Discovery Manager (DM) of the Avaya Communication Server 1000 Release 7.5 to locate the Avaya IP telephones on the network of the Avaya Communication Server 1000.

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 provide detail configurations of Avaya Communication Server 1000 Emergency Service Release 7.5 (hereafter referred to as Avaya CS1000) and the eTelemetry Locate911-N High Availability (HA) Solution (hereafter referred to as Locate911 HA).

Locate911 HA is a network appliance used to track the changing locations of IP phones on a corporate LAN, acting as an External Discovery Manager (DM) for one or more Avaya CS1000 signaling servers. The new Emergency Respond Location (ERL) of each updated phone location is reported to its registered signaling server, ensuring that the correct physical location will be transmitted to the Public Safety Answering Point (PSAP) when a 911 call is placed from that phone. Locate911 HA automatically discovers all registered phones, along with their extensions, TN, model and firmware information. It can then be used as an IP phone asset tracking device.

## 2. General Test Approach and Test Results

This section describes the general test approach used to verify the interoperability of the eTelemetry Locate911 HA Solution with the Avaya CS1000 Emergency Service release 7.5.

This section also covers the test results.

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

### 2.1. Interoperability Compliance Testing

The general test approach was to verify the integration of the Locate911 HA Solution with the Emergency Service on the Avaya CS1000. Verifying the failover mechanism of the Locate911 HA system to ensure the secondary Locate911 server can take over and resume operation as if it is a primary server. Various emergency calls were placed from Avaya CS1000 IP telephones to an emergency number to verify the events were properly logged by the secondary Locate911 in a timely manner. IP telephones were given different IP addresses, and the IP phones were moved between different switches and ports within the network to verify that the secondary Locate911 solution correctly identified the IP address and network location of each phone. Additionally, basic serviceability testing examined the handling of and recovery from error conditions (such as network disconnects and power failures).

### 2.2. Test Results

The eTelemetry Locate911-N HA Solution successfully passed compliance testing.

## 2.3. Supports

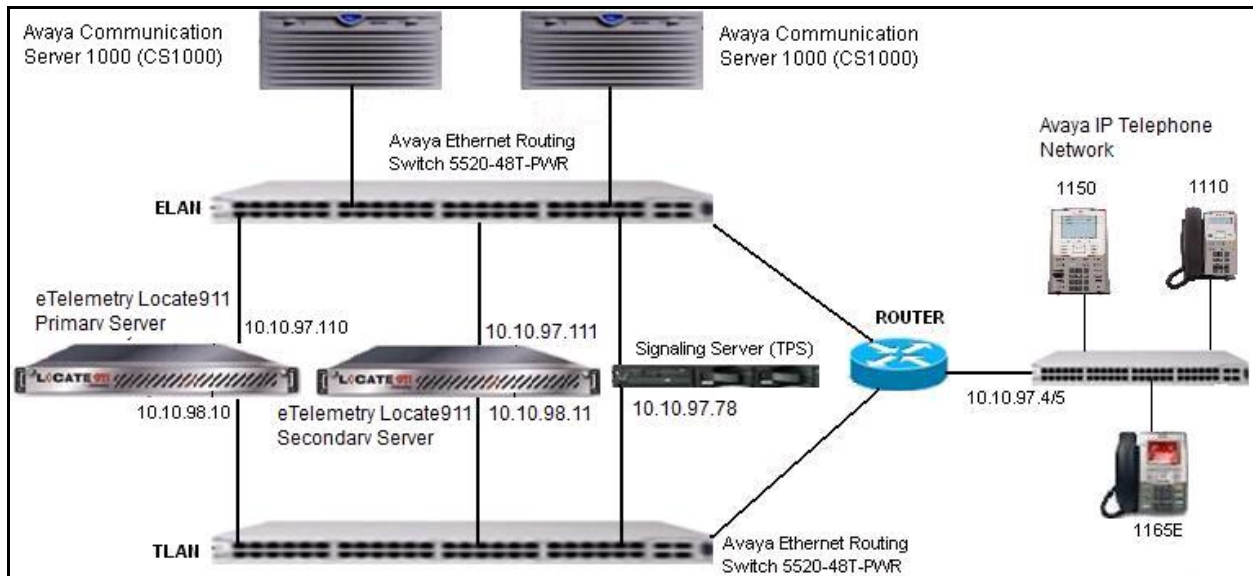
For technical support on eTelemetry Locate911-N HA, please contact eTelemetry technical support at:

- Email: [support@etelemetry.com](mailto:support@etelemetry.com)
- Phone: +1(410) 266-6513

### 3. Reference Configuration

**Figure 1** below illustrates the reference configuration used during compliance testing. The eTelemetry Locate911 HA System management ports TLAN are connected to the CS1000 via network routing layer 2 switch.

Note: For the purpose of safety and security, all the real IP addresses have been changed.



**Figure 1: eTelemetry Locate911-N HA System and Avaya Communication Server 1000 Emergency Service**

### 4. Equipment and Software Validated

Equipment	Software Version
Avaya CS1000E	Call Server: 7.50Q Signaling Server: 7.50.17
Avaya CS1000 IP (UNISTm) Phones: 1110 1165 1150	0623C8J 0626C8J 0627C8J
eTelemetry Locate911-N HA System	1.4.14
Avaya Ethernet Routing Switch 5520-48T-PWR	FW: 6.0.0.13 SW: v6.2.2.024

The following packages must be enabled in the keycode file in order for the Emergency Service Access feature to operate successfully in the Avaya Communication Server 1000 emergency service system.

#### Feature Packaging Requirement

Package	Mnemonic	Name	Description
329	ESA	Emergency Services Access	Defines an emergency number as being dial-able without a prefix. Recognizes the emergency call and provides special treatment and route to CAMA, PRI or other trunks. Provides flexible ANI number translation for DID numbers and sends out the ANI with the call to enable the PSAP to look up the caller. Includes Enhanced Routing functionality, Multiple ESDNs, and Misdial Prevention.
330	ESA_SUPP	ESA Supplementary	Provides networking support by routing node-to-node ANI info for forwarding to a PSAP. Converts incoming ISDN to CAMA tandem which allows CLID forwarding via out-pulsed CAMA. Also provides On-Site-Notification (OSN) so that the customer staff is aware of the call. This includes OSN phones per ERL.
331	ESA_CLMP	ESA Calling Number Mapping	Provides flexible ANI number translation for non-DID numbers (i.e. to translate non-DID numbers to DID numbers). This includes Dynamic ELIN functionality.
337	ESA_EXTERNAL_DM	ESA External DM Interface	Allows the use of an external Discover Manager (and corresponding LIS) to provide advanced location determination for IP phones. Additionally, the External Discovery Manager is charged separately.

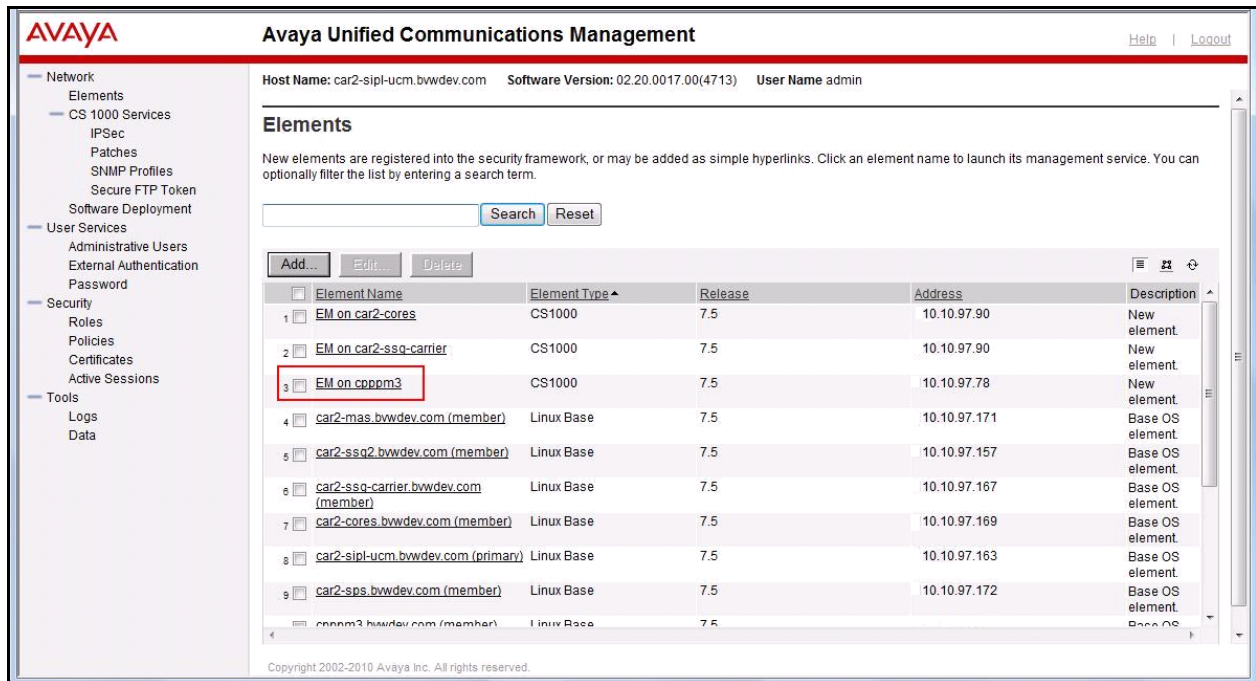
## 5. Configure the Avaya CS1000 - Emergency Service Access (ESA)

This section describes the steps to configure Emergency Service Access (ESA) on an Avaya CS1000 system using Element Manager Web portal. Repeat these steps for other Avaya CS1000 systems in the Avaya CS1000 network. For more information, see [1].

### 5.1. Log in to Unified Communications Management (UCM) and Element Manager (EM)

Use a web browser to launch the Avaya CS1000 UCM web portal at <http://<IP Address or FQDN>> where <IP address or FQDN> is the UCM Framework IP address or FQDN for UCM server. Login with the username/password which was defined during the primary security server configuration (not shown). For more information, see [2].

On the **Elements** page of Unified Communications Management, under the **Element Name** column, click the server name to navigate to Element Manager for that server.



The screenshot displays the Avaya Unified Communications Management web interface. The top navigation bar includes the Avaya logo, the title 'Avaya Unified Communications Management', and links for 'Help' and 'Logout'. Below the navigation bar, the page shows the 'Elements' section. The 'Host Name' is 'car2-sipl-ucm.bvwdev.com', 'Software Version' is '02.20.0017.00(4713)', and 'User Name' is 'admin'. The 'Elements' table lists various elements, with 'EM on ccppm3' highlighted. The table columns are Element Name, Element Type, Release, Address, and Description.

Element Name	Element Type	Release	Address	Description
1 EM on car2-cores	CS1000	7.5	10.10.97.90	New element
2 EM on car2-ssq-carrier	CS1000	7.5	10.10.97.90	New element
3 EM on ccppm3	CS1000	7.5	10.10.97.78	New element
4 car2-mas.bvwdev.com (member)	Linux Base	7.5	10.10.97.171	Base OS element
5 car2-ssq2.bvwdev.com (member)	Linux Base	7.5	10.10.97.157	Base OS element
6 car2-ssq-carrier.bvwdev.com (member)	Linux Base	7.5	10.10.97.167	Base OS element
7 car2-cores.bvwdev.com (member)	Linux Base	7.5	10.10.97.169	Base OS element
8 car2-sipl-ucm.bvwdev.com (primary)	Linux Base	7.5	10.10.97.163	Base OS element
9 car2-sps.bvwdev.com (member)	Linux Base	7.5	10.10.97.172	Base OS element
10 ccppm3.bvwdev.com (member)	Linux Base	7.5		Base OS element

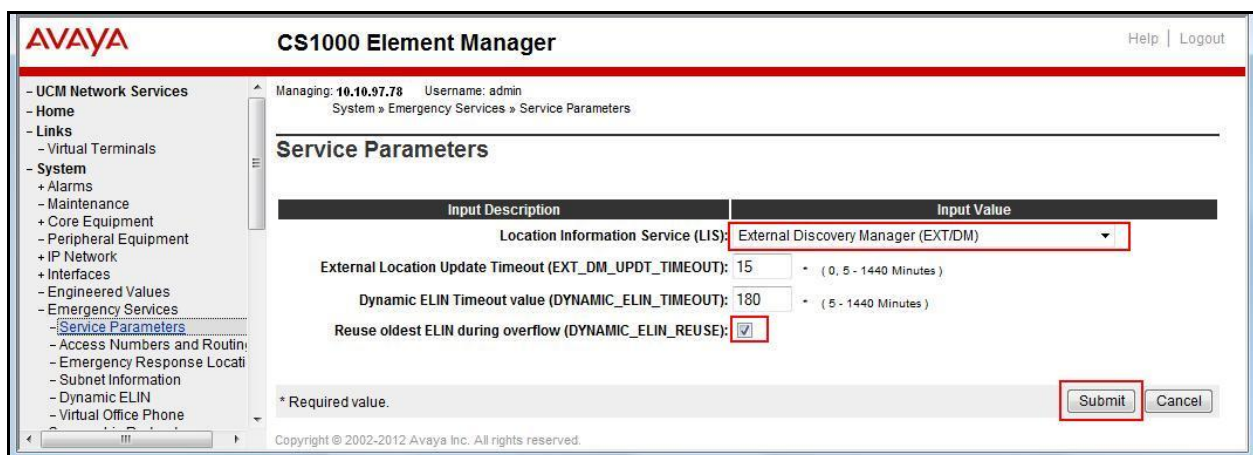
The Avaya CS1000 Element Manager (EM) page appears as shown.



## 5.2. ESA Service Parameters Configuration

On the EM page, navigate to **System** → **Emergency Services** → **Service Parameters**. The **Service Parameters** page appears below.

- On the **Service Parameters** page, from the **Location Information Services (LIS)** list, select **External Discovery Manager (EXT/DM)**.
- Enable the **Reuse oldest ELIN during overflow (DYNAMIC\_ELIN\_REUSE)** parameter.
- Click **Submit**.



### 5.3. Access Numbers and Routing Configuration

On the EM page, navigate to **System → Emergency Services → Access Numbers and Routing**. If there was no ESA Access Numbers and Routing configured, the **Add Customer x Emergency Services Directory Number** page appears as shown in figure below.

- On the **Add Customer x Emergency Services Directory Number** page, enter a directory number in the **Directory Number** text box.
- Enter directing digits in the **Directing Digits** text box.
- Enter Default Calling Number in the **Default Calling Number** text box.
- Enter a number in the **On-Site Notification System DN** text box.
- At the **Routing Method** attribute, select **Route List Index** and choose the appropriate value available from the pull down menu.
- Check the **Misdial Prevention** box.
- A dialog box appears asking for your confirmation to enable the feature (not shown), click **OK**.
- The remaining fields were left at their default values.
- Click **Save**.

The screenshot displays the AVAYA CS1000 Element Manager interface. The main title is "CS1000 Element Manager" with a "Help | Logout" link. The breadcrumb trail is "System > Emergency Services > Access Numbers and Routing > Add Customer 0 Emergency Services Directory Number". The page title is "Add Customer 0 Emergency Services Directory Number". The form contains the following fields and values:

- Directory Number: 911
- Directing Digits: 911
- Default Calling Number: 6139675000
- On-Site Notification Station DN: 55911
- Routing Method: Route List Index: 911
- Misdial Prevention: ☒
- Misdial Delay: 2 (seconds)
- Last ESDN Digit Repetition: ☒

At the bottom right are "Save" and "Cancel" buttons. A note at the bottom left states "\* Required value." The footer includes "Copyright © 2002-2012 Avaya Inc. All rights reserved."



## 5.4. Emergency Response Location (ERL) Configuration

On the EM page, navigate to **System → Emergency Services → Emergency Response Location**. If there was no ERL created, a dialog appears asking for your confirmation to create a new ERL. Click **OK**. The **Add Emergency Response Location** page appears (not shown).

- On the **Add Emergency Response Location** page, enter ERL number in the **Emergency Response Location (ERL)** text box.
- Enter the site name in the **Site Name (SITENAME)** text box.
- Enter the location description in the **Location Description (LOCDESC)** text box.
- From the **Routing Method** pull down list, select a routing method and enter corresponding **route number/route list index** in the next text box as shown.
- Enter the **Static ELIN (LOCATOR)** number in textbox.
- Click **Submit**.

**AVAYA** CS1000 Element Manager Help | Logout

Managing: 10.10.97.78 Username: admin  
System » Emergency Services » Emergency Response Location » Edit Emergency Response Location

### Edit Emergency Response Location

Input Description	Input Value
Emergency Response Location (ERL):	1 *
Site Name (SITENAME):	BVW
Location Description (LOCDESC):	BELLEVILLE DEVCONNEC
Routing Method (ROUTING):	Route List Index (RLI) ▼ 911
Access Code (AC):	Null (NULL)
Prepend Digits (PREPEND):	
Static ELIN (LOCATOR):	6139675000
On-Site Notification DN (OSDN):	

\* Required value.

**Submit** Refresh Cancel

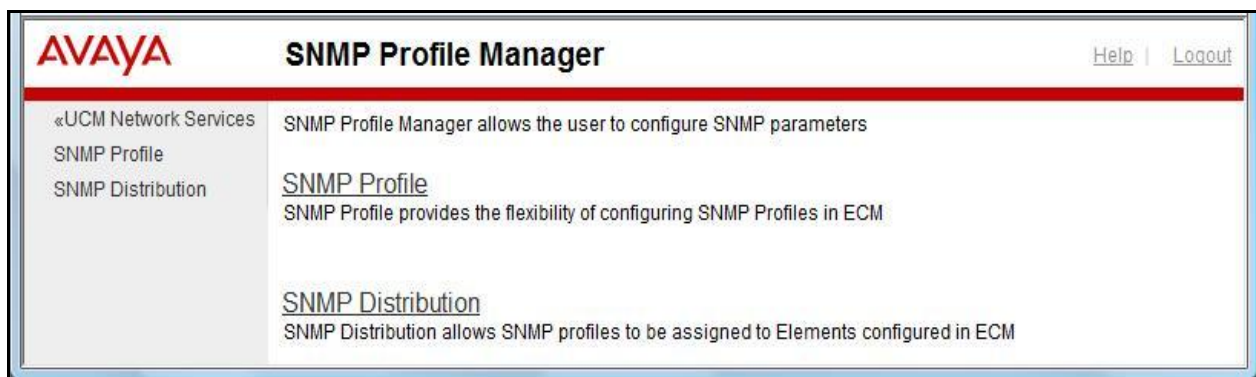
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## 5.5. Configure the Avaya CS1000 - Alarms

This section describes the steps to configure Alarms on the Avaya CS1000 system using SNMP Profile Manager. This is to generate alarms when 911 calls are made and sending the alarms to the management port of Locate911 server for trap/alert. Repeat these steps for other Avaya CS1000 systems in the Avaya CS1000 network. For more information, see [3].

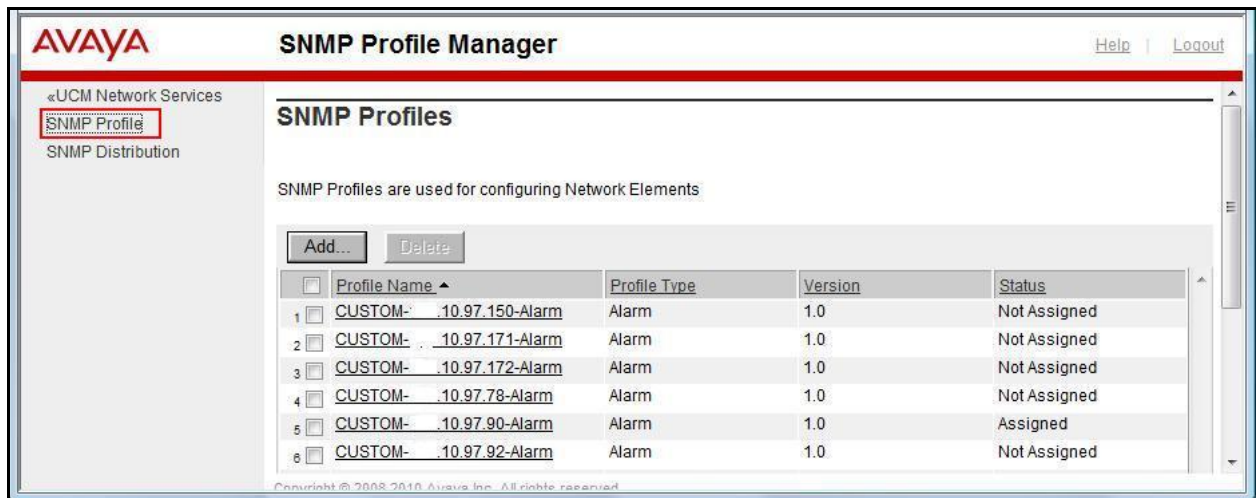
### 5.5.1. Log in to Unified Communications Management (UCM) and SNMP Profile Manager

Refer to **Section 5.1** to see how to login into the Unified Communications Management (UCM). From the UCM Home page, navigate to **Network → CS1000 Services → SNMP Profiles** (not shown). The **SNMP Profile Manager** page appears as shown.



### 5.5.2. Create a New SNMP Profile

On the **SNMP Profile Manager** page, navigate to **SNMP Profile**. The **SNMP Profiles** page appears as shown below. On the **SNMP Profiles** page, click **Add**.



The **New SNMP Profile** page appears.

- Enter a name in the **Profile Name** text box.
- From the **Profile Type** list, select **ALARM** (not shown).
- Additional parameters appear after a profile type is selected. Enter a trap community in the **Trap Community** text box. The string is “public” (without quotes) by default.
- Ensure that the **Option** check box is checked to enable trap sending.
- Enter Locate911 Management IP addresses and ports (port 162 by default) in the **Trap Destinations**.
- Click **Save**.

**Note:** For Locate911 HA configuration, the **Trap Destination** can be programmed to send SNMP trap to secondary **IP address2** and **port2**.

The screenshot displays the Avaya SNMP Profile Manager web interface. The page title is "SNMP Profile Manager" with "Help" and "Logout" links. A left sidebar contains navigation links: "«UCM Network Services", "SNMP Profile", and "SNMP Distribution". The main content area is titled "SNMP Alarm Profiles Details :Customed\_CS1K\_Sentry911\_Alarm". It contains the following configuration fields:

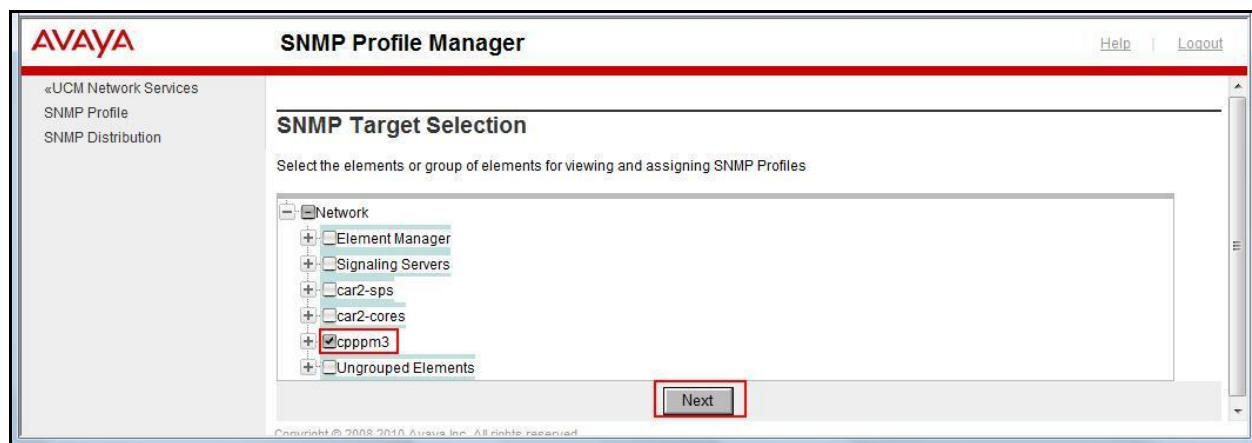
- Profile Name:** Customed\_CS1K\_Locate911\_Alarm
- Trap community:** public
- Alarm Threshold:** None (with a dropdown arrow)
- Option:** ☒ (labeled "Enable trap sending")
- Trap Destinations:**
  - IPAddress1:** 10.10.98.10
  - Port1:** 162
  - IPAddress2:** 10.10.98.11
  - Port2:** 162

At the bottom, a small copyright notice reads: "Copyright © 2008-2010 Avaya Inc. All rights reserved."

### 5.5.3. Assign an SNMP Profile to a Network Element.

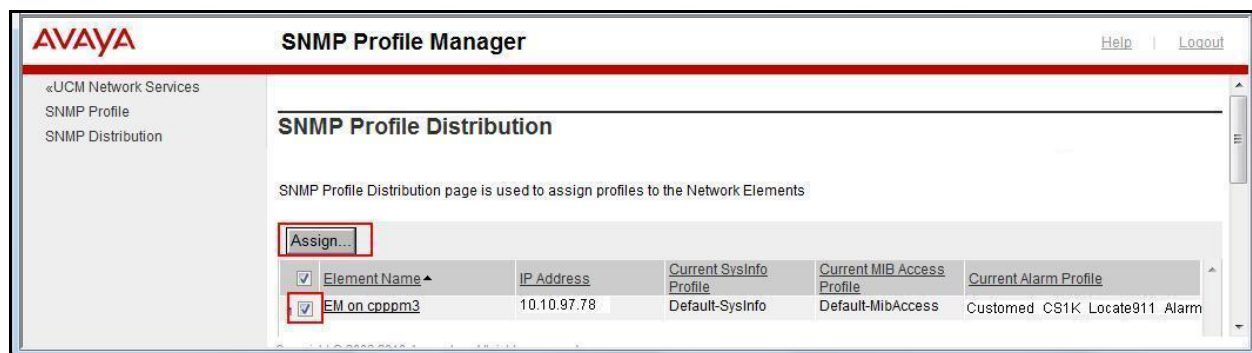
On the **SNMP Profile Manager** page, navigate to **SNMP Distribution**. The **SNMP Target Selection** page is shown below.

- Select the element that will be assigned to the newly created SNMP profile.
- Click **Next**.



The **SNMP Profile Distribution** page appears as shown below.

- Select a Network Element (ELAN IP address of Avaya CS1000 call server) .
- Click the **Assign** button.



The **SNMP Profile Distribution Details** page appears as shown below.

- On the **SNMP Profile Distribution Details** page, from the **Alarm Profile** list, select the profile created in **Section 5.5.2**.
- Click **Save**.

**AVAYA** SNMP Profile Manager Help | Logout

«UCM Network Services  
SNMP Profile  
SNMP Distribution

### SNMP Profile Distribution Details [EM on cpppm3]

SysInfo Profile: Default-SysInfo ▼  
MIB Access Profile: Default-MibAccess ▼  
Alarm Profile: Customized CS1K Locate911 Alarm ▼

SysInfo Profile: Default-SysInfo  
System name: System Name  
System contact: System Contact

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After assigning newly created SNMP profile to the network element, the newly created profile will be shown in the **SNMP Profile Manager** under the **SNMP Profiles** page as shown below.

**AVAYA** SNMP Profile Manager Help | Logout

«UCM Network Services  
**SNMP Profile**  
SNMP Distribution

### SNMP Profiles

SNMP Profiles are used for configuring Network Elements

<input type="checkbox"/>	Profile Name ▲	Profile Type	Version	Status
<input type="checkbox"/>	1 CUSTOM- 10.10.97.150-Alarm	Alarm	1.0	Not Assigned
<input type="checkbox"/>	2 CUSTOM- 10.10.97.171-Alarm	Alarm	1.0	Not Assigned
<input type="checkbox"/>	3 CUSTOM- 10.10.97.172-Alarm	Alarm	1.0	Not Assigned
<input type="checkbox"/>	4 CUSTOM- 10.10.97.78-Alarm	Alarm	1.0	Not Assigned
<input type="checkbox"/>	5 CUSTOM- 10.10.97.90-Alarm	Alarm	1.0	Assigned
<input type="checkbox"/>	6 CUSTOM- 10.10.97.92-Alarm	Alarm	1.0	Not Assigned
<input type="checkbox"/>	7 Customized CS1K Locate911 Alarm	Alarm	3.0	Assigned
<input type="checkbox"/>	8 Default-Alarm	Alarm	1.0	Not Assigned

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## 6. Locate911 HA Configuration

It is assumed that the Locate911 HA system has been installed and properly configured ready for the integration with Avaya CS1000. Please refer to the Locate911 HA Users Guide documentation which can be obtained by contacting eTelemetry. This section below only provides the set-up to configure the Locate911 HA to interoperate with Avaya CS1000.

### 6.1. Login to web management console of Locate 911

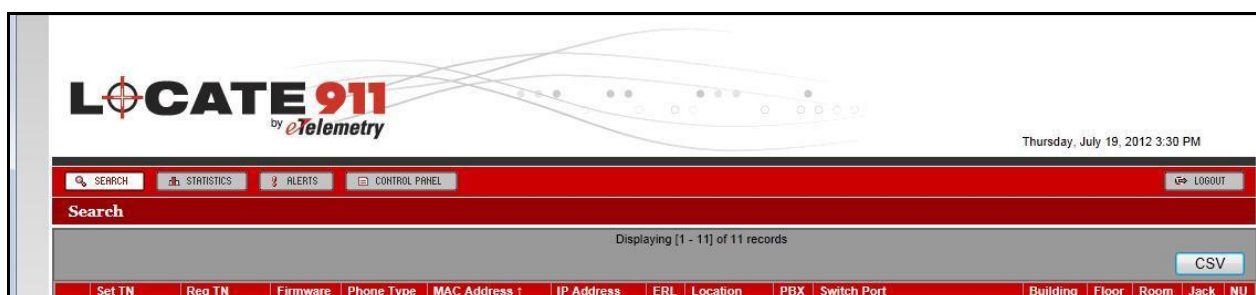
Access the Locate911 web interface by opening a web browser and entering the following URL; **http://<Management IPAddress>**. Enter appropriate information below:

- Enter the **User** name.
- Enter assigned **Password**.
- Check the checkbox of **I accept the terms in the license agreement**.
- Click on **Login** button.



The screenshot shows the Locate911 web management console login page. The header features the 'LOCATE 911 by eTelemetry' logo. Below the header is a red horizontal bar. The main content area contains a 'LOGIN:' section with a grey background. It includes input fields for 'User:' (containing 'admin') and 'Password:' (containing masked characters). A 'LOGIN' button is positioned below the password field. At the bottom of the login section, there is a checkbox labeled 'I accept the terms in the license agreement' which is checked. A copyright notice is visible at the very bottom of the page.

After login, the Locate911 server displays the **Search** page.



The screenshot shows the Locate911 Search page. The header features the 'LOCATE 911 by eTelemetry' logo. Below the header is a red horizontal bar. The main content area contains a 'Search' section with a grey background. It includes a search bar and a 'SEARCH' button. Below the search bar, there is a table with columns: 'Set TN', 'Reg TN', 'Firmware', 'Phone Type', 'MAC Address', 'IP Address', 'ERL', 'Location', 'PBX', 'Switch Port', 'Building', 'Floor', 'Room', 'Jack', and 'NU'. The table displays 11 records. A 'CSV' button is located to the right of the table. The page also includes a navigation bar with links for 'SEARCH', 'STATISTICS', 'ALERTS', and 'CONTROL PANEL', and a 'LOGOUT' button.



## 6.2. Configure Avaya Settings

Click on **Control Panel** on the toolbar, Control Panel page is shown below.

The screenshot displays the 'Control Panel' page of the Locate911 by eTelemetry application. The interface features a red header bar with the 'LOCATE 911 by eTelemetry' logo on the left and a navigation toolbar on the right containing links for SEARCH, STATISTICS, ALERTS, and CONTROL PANEL, along with a LOGOUT button. Below the header, a red banner reads 'Control Panel' followed by the instruction 'Please select one administrative function from the choices below:'. The main content area is organized into five sections, each with a red header and a list of administrative functions:

- Management Consoles:**
  - Manage User Account Passwords
  - Manage Current User Parameters
  - Manage Global Application Parameters
  - Manage Avaya Settings
  - Manage Avaya Call Servers
  - Manage Redundancy Configuration
- Add to or Replace the contents of tables:**
  - Upload Values into the table Switches
  - Upload Values into the table Network Documentation
  - Upload Values into the table User-Defined Switch Trunks
- Application Assistants:**
  - Set Network Documentation Default Values for All Ports on a Switch
  - Create or Edit Network Documentation for Switches
- View Application Logs & Status:**
  - View the Redundancy Status and Control
  - View the Crawler Status
  - View the Application Log
  - View the Error Log
- Download eTelemetry Software**
  - LENS Alert Agent for Windows™: Allows you to receive Emergency Call Alerts from Locate911 and LENS.

At the bottom of the page, there is a footer section with links for SUPPORT, LEGAL, and PRIVACY, and a copyright notice: 'Copyright 2003-2012. All Rights Reserved. While every effort is made to ensure the timeliness and accuracy of the information displayed in this product, eTelemetry assumes no legal liability or responsibility for the completeness, accuracy or usefulness of any of the information disclosed.'

Navigate to **Control Panel → Management Consoles → Manage Avaya Settings** to set up the Avaya specific configuration as follow.

- Choose **Every half hour** for **Signaling Server Polling Frequency** from drop down menu.
- **Default ERL** is **0**.
- **Need Update Threshold** is **20**.
- **OSN Map Link** is being <http://company.com/map.php>.
- Click **Validate Parameters**.
- Click **Commit**.

The screenshot shows the LOCATE911 by eTelemetry Control Panel. The page title is "Control Panel Manage Avaya Server Settings". The page contains a table with configuration parameters and their values. At the bottom, there are buttons for "Validate Parameters", "Commit", "Reset to Defaults", and "Cancel".

Parameter	Value	Description
Signaling Server Polling Frequency:	Every half hour	How often Locate911 should connect to the signaling servers to receive phone updates. (Default: Once per day)
Default ERL:	0	The default ERL for phones that cannot be located. (Default: 0)
Need Update Threshold:	20	The number of times a phone must be reported as needing its location updated before the default ERL is used. (Default: 20)
OSN Map Link Label:	Emergency Map Link	The label to display next to the link in the OSN details.
OSN Map Link:	http://www.company.com/maps.php	A fully-formed URL to an external map for a specified ERL. If provided, this link will be inserted into OSN records so that the Alert Agent can display a link to a map (or other relevant information). Use <ERL> wherever you want the ERL to be inserted. (e.g.: http://company.com/maps.html?erl=<ERL>)
ISSS Mode of Operation:	Off	Select the Intra System Signaling Security (ISSS) mode of operation. This setting should match that of the Call Server. <b>Note:</b> When ISSS is enabled, this Locate911 system must also be added to the Unified Communications Management system as a <i>Manual Target</i> (see Avaya UCM documentation for details). (Default: Off)
ISSS Pre-shared Key:		The ISSS pre-shared key. If this field is blank, then no ISSS is assumed (even if a mode is set above).
Disable Location Updates:	No (false)	Setting this value to TRUE will turn off the Locate911 feature that sends location update information to the CS1000. Under almost all circumstances, you would want this enabled.
Enable Routed Call Alerts:	No (false)	Enable alerts from the CS1000 for calls that did not originate from a phone connected to the local PBX (eg. cellphones, from outside lines, or calls routed from another CS1000). Normally, Locate911 will not process these alerts as there would be no valid location information to display.

Buttons: [Validate Parameters](#) [Commit](#) [Reset to Defaults](#) [Cancel](#)

Footer: SUPPORT LEGAL PRIVACY  
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### 6.3. Configure Avaya Call Servers

This will allow user to discover CS1000 systems in a network. Information to be located such as Signaling servers and its associated TPS components, and the IP phones' details.

Navigate to **Control Panel → Management Consoles → Manage Avaya Call Server**, to add Avaya call server.

- Fill in the **IP address** of a CS1000 call server.
- **Username** is the CS1000 call server user name.
- CS1000 appropriate assigned **Password** of the call server.
- **Public Community String** is **otm123**.
- **Description** is optional.

If there is more than one call servers in the network of CS1000, click on the **Add Row** button to continue creating new entry of call server to be located.

The screenshot shows the LOCATE 911 by eTelemetry web interface. At the top, there is a navigation bar with links for SEARCH, STATISTICS, ALERTS, and CONTROL PANEL. The main content area is titled 'Control Panel' and 'Manage Avaya Servers'. Below this, there is a section titled 'Configure Avaya Call Servers' which contains a table with the following data:

#	IP Address	Username	Password	Public Community String	Description
1	10.10.97.78	admin	.....	otm123	CS1000 Bottom

Below the table, there are buttons for 'Add Row', 'Remove Row', 'Commit', and 'Cancel'. At the bottom of the page, there is a footer with links for SUPPORT, LEGAL, and PRIVACY, and a copyright notice: 'Copyright 2003-2012. All Rights Reserved. While every effort is made to ensure the timeliness and accuracy of the information displayed in this product, eTelemetry assumes no legal liability or responsibility for the completeness, accuracy or usefulness of any of the information disclosed.'

Click on the **Commit** button to save the configuration and start the dynamic discovery process. Wait a few minutes for the process to be complete, all the call servers and their associated signaling servers are located as show below.

**Note:** All the green circles with check marks are indicating that Locate911 server has been able to communicate with target call and signaling servers successfully.

The screenshot shows the 'Control Panel' for 'Manage Avaya Servers'. The interface includes a navigation bar with 'SEARCH', 'STATISTICS', 'ALERTS', and 'CONTROL PANEL' tabs. The 'CONTROL PANEL' tab is active. Below the navigation bar, the 'Results' section states 'You configured 1 server.' The 'Call Servers Configured' section displays a table with one server:

#	IP Address	Ping	SNMP	Valid	Description
1	10.10.97.78	✓	✓	✓	CS1000 Bottom

An 'Edit Call Servers' button is located below the table. The 'Signaling Servers Configured' section displays a table with two servers:

#	IP Address	Call Server	Ping	Auth	TPS
1	10.10.97.69	10.10.97.78	✓	✓	-
2	10.10.97.78	10.10.97.78	✓	✓	✓

A 'Please note' box below the table states: 'Please note: if you recently deployed a new Signaling Server and it does not appear in the list above, it is possible that the daily inventory has not yet been rebuilt. You may choose to wait up to 24 hours for this to occur, or you may force a rebuild manually in the Call Server. For more information, contact your Avaya support personnel.' The 'Seed Database from Signaling Servers' section contains a warning: 'By clicking the button below, the signaling servers connected to each of your Avaya Call Servers will be queried for existing IP phones. Warning! All current phones in the database will be replaced by those reported by the signaling servers. This could be a lengthy process, cannot be undone, and should not be interrupted.' Below this warning are two buttons: 'Seed Phones Database...' and 'Return to Control Panel'. The footer includes links for 'SUPPORT', 'LEGAL', and 'PRIVACY', and a copyright notice: 'Copyright 2003-2012. All Rights Reserved. While every effort is made to ensure the timeliness and accuracy of the information displayed in this product, eTelemetry assumes no legal liability or responsibility for the completeness, accuracy or usefulness of any of the information disclosed.'

## 6.4. Configure HA system (Redundancy)

To setup Locate911 HA system, navigate to **Control Panel → Management Consoles → Manage Redundancy Configuration** to enter the HA system information.

- Enter **Secondary IP** address of the HA/failover Locate911 server.
- Fill in **Service IP** address which manages web interface of the HA system.
- Enter **Pingable Device #1 IP** address to verify network connectivity of the HA configuration.
- Enter **Pingable Device #2 IP** address to verify network connectivity of the HA configuration.
- **Poll Cycle** is set to **5**.
- **Maximum Ping Failures** is set to **3**.
- **Auto Toggle Back** is **15** in this testing.
- Click **Commit**.

**LOCATE911** by eTelemetry

Tuesday, July 24, 2012 3:43 PM

SEARCH STATISTICS ALERTS CONTROL PANEL LOGOUT

**Control Panel** Manage Redundancy Configuration Parameters

Parameter	Value	Description
Secondary IP:	10.10.98.11	This is the IP of the system's secondary node.
Service IP:	10.10.98.12	This is the cluster's floating IP. It will be enabled on whichever node is running as a primary. It is the address all clients should use to access the Locate911 system/service.
Pingable Device #1 IP:	10.10.97.65	This is the IP address of a device that will respond to pings as part of verification of network connectivity (perhaps a gateway or some other reliable infrastructure device).
Pingable Device #2 IP:	10.10.98.65	This is the IP of an another device that will respond to pings as part of verification of network connectivity (perhaps a gateway or some other reliable infrastructure device).
Poll Cycle:	5	The amount of time between local state checks, measured in seconds. (Default: 5)
Maximum Ping Failures:	3	The maximum amount of failed pings before the system switches operations. (Default: 3)
Auto Toggle Back:	15	The amount of cycles before the system toggles back to normal operation, '0' for no toggle back. (Default: 15)

Validate Parameters Commit Reset to Defaults Cancel

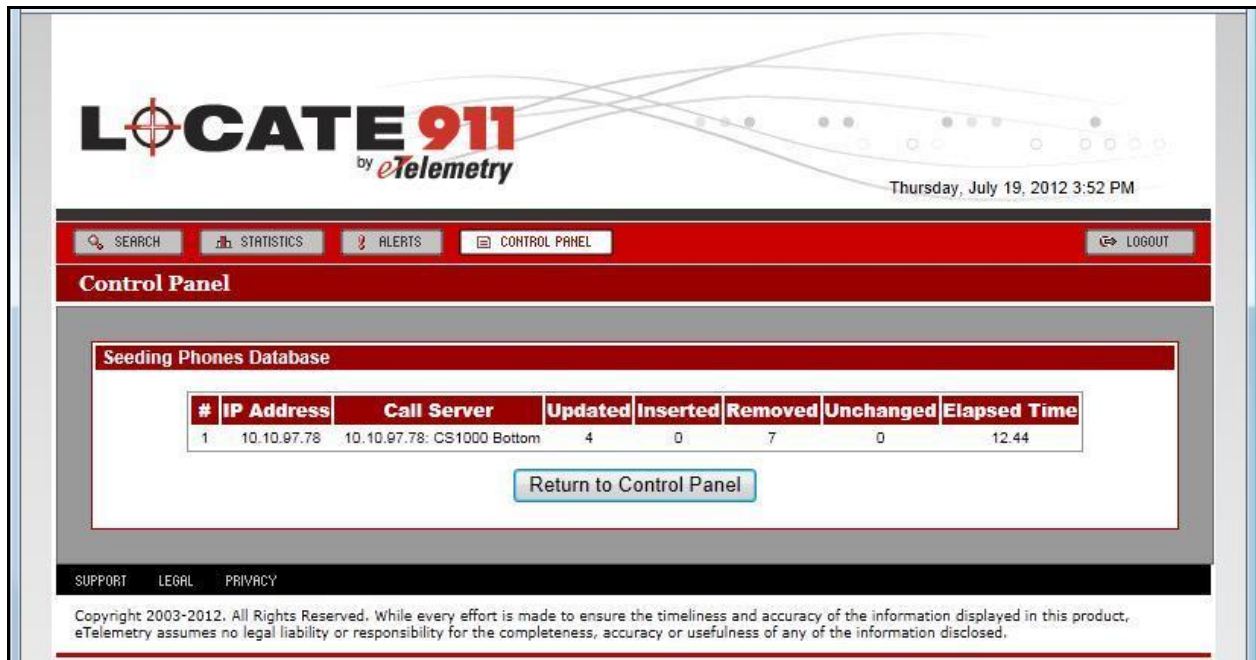
SUPPORT LEGAL PRIVACY

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## 6.5. Seed Phones Database

Seed phones database will allow the Locate911 to query all existing IP telephones from all CS100 signaling servers connecting to their respective call servers.

Click on **Seed Phones Database** button from the last screen shown in **Section 6.3** and wait for a few minutes for the process to be completed.



The screenshot displays the LOCATE 911 by eTelemetry Control Panel. The header includes the logo and a navigation bar with links for SEARCH, STATISTICS, ALERTS, CONTROL PANEL, and LOGOUT. The main content area is titled "Control Panel" and features a "Seeding Phones Database" section. This section contains a table with the following data:

#	IP Address	Call Server	Updated	Inserted	Removed	Unchanged	Elapsed Time
1	10.10.97.78	10.10.97.78: CS1000 Bottom	4	0	7	0	12.44

Below the table is a button labeled "Return to Control Panel". The footer of the page includes links for SUPPORT, LEGAL, and PRIVACY, along with a copyright notice: "Copyright 2003-2012. All Rights Reserved. While every effort is made to ensure the timeliness and accuracy of the information displayed in this product, eTelemetry assumes no legal liability or responsibility for the completeness, accuracy or usefulness of any of the information disclosed."

## 6.6. Load Network Switches File

Create a csv file in excel format of network switches where all the CS1000 systems are connected to. The sample file used for this compliance testing is below.

serial	switch_ip	label	layer2	layer3	community_public	
AABQGHAQEQDP	10.10.97.3	Layer 3 Router 1	0	1	public	
AABQGHAQEQDP	10.10.97.4	Layer 2 Switch 1	1	0	public	
AABQGHAQEQDP	10.10.97.5	Layer 2 Switch 2	1	0	public	

From Locate911 Home Page, navigate to **Control Panel** → **Add to or Replace the contents of tables** → **Upload Values into the table Switches** (not shown).

- Select delimited type in the **Delimited** list in the drop down menu, used **Comma** type for this testing.
- Enter the location of the file in the **Upload File** text box or click **Browse** to browse to the file location.
- Click **Send File**. The **Verify Values for Upload** page appears (not shown).
- Click **Commit to the Table**. The **Upload Status** page appears (not shown).
- Click **OK**.

**LOCATE911** by eTelemetry

Friday, July 20, 2012 12:03 PM

SEARCH STATISTICS ALERTS CONTROL PANEL LOGOUT

**Control Panel** Upload Values into the table Switches

**Select File for Upload:**

UPLOAD FILE EDIT VALUES EXPORT CSV

This action will populate the table: **Switches**, by uploading a file formatted as: **Comma** - Delimited

Please browse to select a prepared file where the first line is a Header containing the field names, and the subsequent lines contain matching data, one line per record.

Available Field Names: serial, switch\_ip, label, layer2, layer3, query\_delay, community\_public, community\_private, v3\_auth\_protocol, v3\_auth\_passwd, v3\_security\_level, v3\_user, v3\_priv\_protocol, v3\_priv\_passwd

Upload File: G:\eTelemetry\Switches.csv Browse Send File

Send File Cancel

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User can also edit the existing list of switches by clicking on the **Edit Values** button from the above figure. List of switches with their editable information in table format will appear as shown below.

- To add more network switch, click on the **Add Row** button and enter the switch information.
- To remove the network switch, click on the **Clear Row** button.
- Click on **Send File**. The **Verify Values for Upload** page appears (not shown).
- Click **Commit to the Table**. The **Upload Status** page appears (not shown).
- Click **OK**.

**LOCATE 911**  
by eTelemetry

Friday, July 20, 2012 12:03 PM

SEARCH STATISTICS ALERTS CONTROL PANEL LOGOUT

**Control Panel** Upload Values into the table Switches

**Select File for Upload:**

UPLOAD FILE EXPORT CSV

This action will populate the table: **Switches**, by uploading a file formatted as: **Comma** - Delimited

Please browse to select a prepared file where the first line is a Header containing the field names, and the subsequent lines contain matching data, one line per record.

Available Field Names: serial, switch\_ip, label, layer2, layer3, query\_delay, community\_public, community\_private, v3\_auth\_protocol, v3\_auth\_passwd, v3\_security\_level, v3\_user, v3\_priv\_protocol, v3\_priv\_passwd

**Edit Values**

serial	switch_ip	label	layer2	layer3	query_delay	community_public
AABQGHAEQDP	10.10.97.3	Layer 3 Router 1	0	1	0	public
AABQGHAEQDP	10.10.97.4	Layer 2 Switch 1	1	0	0	public
AABQGHAEQDP	10.10.97.5	Layer 2 Switch 2	1	0	0	public

Add Row Clear Row

Send File Cancel

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## 6.7. Load Network Documentation Files

Create a csv file in excel format of network switch ports where all the CS1000 IP telephones are connected to. The sample file used for this compliance testing is below.

switch_port	location_key	location	building	floor	room
10.10.97.4 ifc11 (Slot: 1 Port: 11)	1	Call Center 1	1	2	200
10.10.97.4 ifc12 (Slot: 1 Port: 12)	1	Call Center 1	1	2	200
10.10.97.4 ifc13 (Slot: 1 Port: 13)	1	Call Center 1	1	2	200
10.10.97.5 ifc11 (Slot: 1 Port: 11)	2	Call Center 2	1	4	400
10.10.97.5 ifc12 (Slot: 1 Port: 12)	2	Call Center 2	1	4	400
10.10.97.5 ifc13 (Slot: 1 Port: 13)	2	Call Center 2	1	4	400

From Locate911 Home Page, navigate to **Control Panel → Add to or Replace the contents of tables → Upload Values into the table Network Documentation** (not shown).

- Select delimited type in the **Delimited** list in the drop down menu, used **Comma** type for this testing.
- Enter the location of the file in the **Upload File** text box or click **Browse** to browse to the file location.
- Click **Send File**. The **Verify Values for Upload** page appears (not shown).
- Click **Commit to the Table**. The **Upload Status** page appears (not shown).
- Click **OK**.

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SEARCH STATISTICS ALERTS CONTROL PANEL LOGOUT

**Control Panel** Upload Values into the table Network\_Doc

**Select File for Upload:**

UPLOAD FILE EDIT VALUES EXPORT CSV

This action will populate the table: **Network\_Doc**, by uploading a file formatted as: **Comma** - Delimited

Please browse to select a prepared file where the first line is a Header containing the field names, and the subsequent lines contain matching data, one line per record.

Available Field Names: **switch\_port, location\_key, patch\_panel, jack, building, location, floor, room**

Upload File:

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Similar to **Section 6.5**, user can also edit the existing network switch ports by clicking on **Edit Values** and follow the same process to send file to the Locate911.

## 6.8. Load User Defined Switch Trunks files

Create a csv file in excel format of network switch ports where all the CS1000 IP telephones are connected to. The sample file used for this compliance testing is below.

switch_ip	trunk_port
10.10.97.4	ifc48 (Slot: 1 Port: 48)
10.10.97.5	ifc24 (Slot: 1 Port: 24)

From Locate911 Home Page, navigate to **Control Panel** → **Add to or Replace the contents of tables** → **Upload Values into the table User-Defined Switch Trunks** (not shown).

- Select delimited type in the **Delimited** list in the drop down menu, used **Comma** type for this testing.
- Enter the location of the file in the **Upload File** text box or click **Browse** to browse to the file location.
- Click **Send File**. The **Verify Values for Upload** page appears (not shown).
- Click **Commit to the Table**. The **Upload Status** page appears (not shown).
- Click **OK**.

**LOCATE 911**  
by eTelemetry

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SEARCH STATISTICS ALERTS CONTROL PANEL LOGOUT

**Control Panel** Upload Values into the table User\_Switch\_Trunks

**Select File for Upload:**

UPLOAD FILE EDIT VALUES EXPORT CSV

This action will populate the table: **User\_Switch\_Trunks**, by uploading a file formatted as: **Comma** - Delimited

Please browse to select a prepared file where the first line is a Header containing the field names, and the subsequent lines contain matching data, one line per record.

Available Field Names: **switch\_ip, trunk\_port**

Upload File: G:\eTelemetry\User\_Switch\_Trunks **Browse...** **Send File**

**Send File** **Cancel**

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Similar to **Section 6.5**, user can also edit the existing network switch ports by clicking on **Edit Values** and follow the same process to send file to the Locate911.



## 7. Verification Steps

This section includes some steps that can be followed to verify the configuration.

### 7.1. Verify HA Configuration

Navigate to **Control Panel → View Application Logs & Status → View Redundancy Status and Control** (not shown), both primary and secondary Locate911 nodes should have green display indicating that they are both up and functioning in normal operation.

The screenshot displays the 'Control Panel' for 'Locate911 by eTelemetry'. The page title is 'Redundancy Status and Control'. The main content area shows the 'Primary/Secondary Node Status' table, which indicates that both nodes are 'Normal' and 'Up'. Below this table, there is a 'Control Action' section with radio buttons for 'Primary', 'Secondary', and 'Both', a '-Select-' dropdown, and an 'Execute' button. A note at the bottom states: 'Note: You are currently using the Redundancy Service IP. If you plan to execute Redundancy control actions, you should access them using either the Primary Node or Secondary Node fixed IP link.'

**Primary/Secondary Node Status**

Parameter	Primary Node	Secondary Node
Op Status:	Normal	Normal
Service IP:	Up	Up
Peer IP:	Up	Up
Pingable Dev #1 IP:	Up	Up
Pingable Dev #2 IP:	Up	Up
Poll Cycles:	21	22
Replication Queue:	1	

Next status update in 8

**Control Action**

☐ Primary  
☐ Secondary  
☐ Both

-Select-

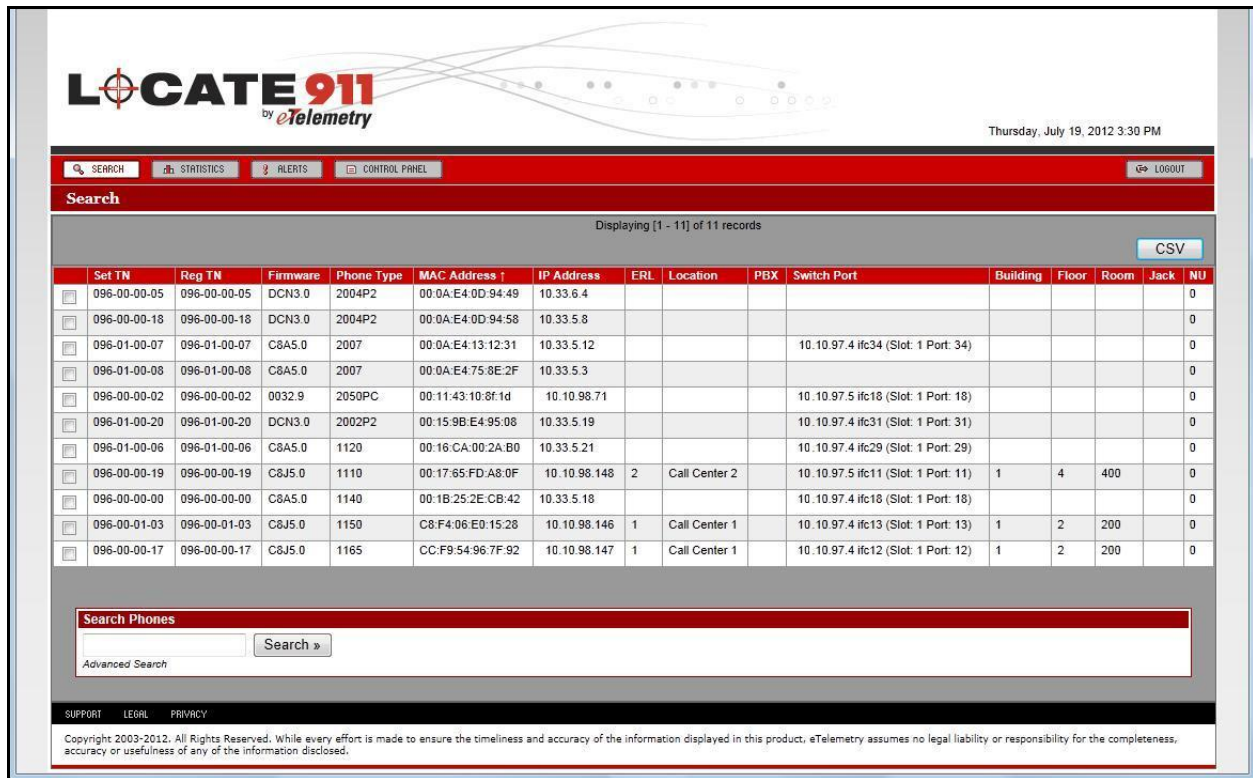
**Note:** You are currently using the Redundancy Service IP.  
If you plan to execute Redundancy control actions, you should access them using either the **Primary Node** or **Secondary Node** fixed IP link.

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## 7.2. Verify IP Phones Detected

Allow the Locate911 enough time to poll the network switches, CS1000 call and signaling servers as determined by the Locate911 Management of Avaya Settings initially configured in **Section 6.2**. Access the Locate911 web interface as described in **Section 6.1**. Click on the **Search** button on menu bar, the list of IP phones being located by the Locate911 is as shown.

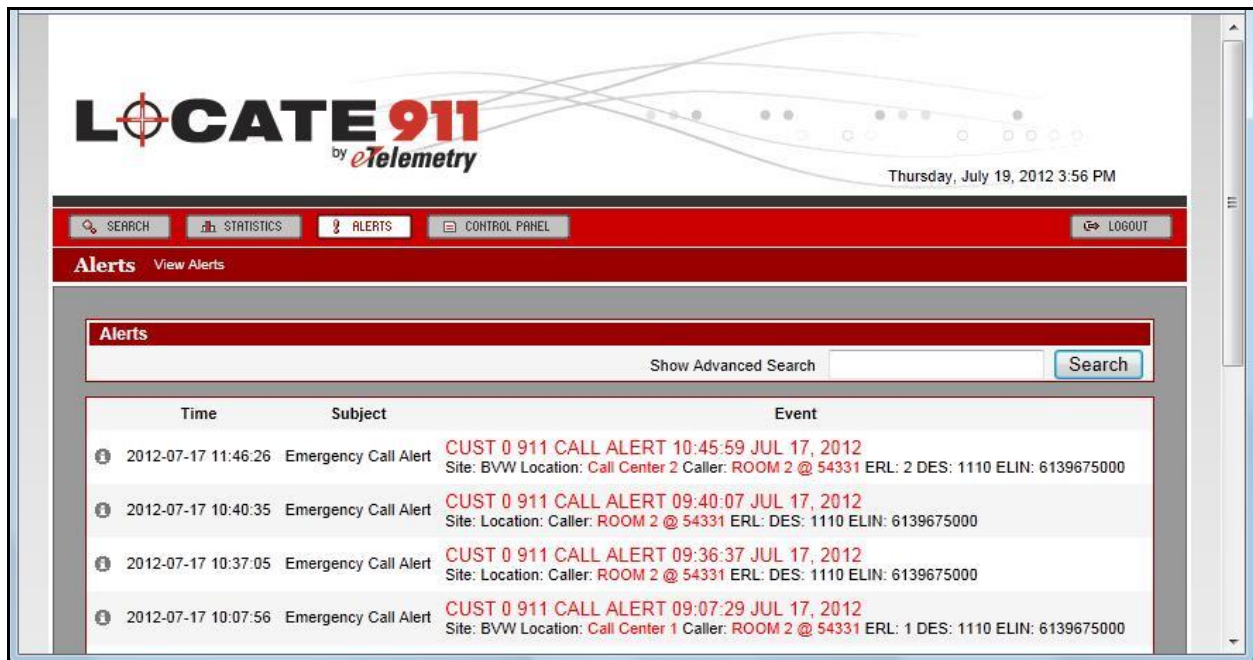


The screenshot displays the Locate911 web interface. At the top, the logo "LOCATE911 by eTelemetry" is visible on the left, and the date "Thursday, July 19, 2012 3:30 PM" is on the right. Below the header is a navigation bar with buttons for "SEARCH", "STATISTICS", "ALERTS", and "CONTROL PANEL", along with a "Logout" button. The main content area is titled "Search" and shows "Displaying [1 - 11] of 11 records". A table lists the detected IP phones with columns for Set TN, Reg TN, Firmware, Phone Type, MAC Address, IP Address, ERL, Location, PBX, Switch Port, Building, Floor, Room, Jack, and NU. Below the table is a "Search Phones" section with a search bar and a "Search" button. At the bottom, there are links for "SUPPORT", "LEGAL", and "PRIVACY", and a copyright notice for 2003-2012.

Set TN	Reg TN	Firmware	Phone Type	MAC Address	IP Address	ERL	Location	PBX	Switch Port	Building	Floor	Room	Jack	NU
096-00-00-05	096-00-00-05	DCN3.0	2004P2	00:0A:E4:0D:94:49	10.33.6.4									0
096-00-00-18	096-00-00-18	DCN3.0	2004P2	00:0A:E4:0D:94:58	10.33.5.8									0
096-01-00-07	096-01-00-07	C8A5.0	2007	00:0A:E4:13:12:31	10.33.5.12				10.10.97.4 ifc34 (Slot: 1 Port: 34)					0
096-01-00-08	096-01-00-08	C8A5.0	2007	00:0A:E4:75:8E:2F	10.33.5.3									0
096-00-00-02	096-00-00-02	0032.9	2050PC	00:11:43:10:8f:1d	10.10.98.71				10.10.97.5 ifc18 (Slot: 1 Port: 18)					0
096-01-00-20	096-01-00-20	DCN3.0	2002P2	00:15:9B:E4:95:08	10.33.5.19				10.10.97.4 ifc31 (Slot: 1 Port: 31)					0
096-01-00-06	096-01-00-06	C8A5.0	1120	00:16:CA:00:2A:B0	10.33.5.21				10.10.97.4 ifc29 (Slot: 1 Port: 29)					0
096-00-00-19	096-00-00-19	C8J5.0	1110	00:17:65:FD:A8:0F	10.10.98.148	2	Call Center 2		10.10.97.5 ifc11 (Slot: 1 Port: 11)	1	4	400		0
096-00-00-00	096-00-00-00	C8A5.0	1140	00:1B:25:2E:CB:42	10.33.5.18				10.10.97.4 ifc18 (Slot: 1 Port: 18)					0
096-00-01-03	096-00-01-03	C8J5.0	1150	C8:F4:06:E0:15:28	10.10.98.146	1	Call Center 1		10.10.97.4 ifc13 (Slot: 1 Port: 13)	1	2	200		0
096-00-00-17	096-00-00-17	C8J5.0	1165	CC:F9:54:96:7F:92	10.10.98.147	1	Call Center 1		10.10.97.4 ifc12 (Slot: 1 Port: 12)	1	2	200		0

### 7.3. Verify 911 Call Alert

Make a 911 emergency call from one of the detected IP phone from the list in **Section 7.2**. Verify that there is a notification Alert being generated.



The screenshot displays the LOCATE 911 by Telemetry web application. The header includes the logo, a date/time stamp (Thursday, July 19, 2012 3:56 PM), and navigation tabs for SEARCH, STATISTICS, ALERTS, and CONTROL PANEL. A LOGOUT button is also present. Below the navigation bar, the 'Alerts' section is active, showing a 'View Alerts' link and a 'Show Advanced Search' button. The main content area contains a table with four columns: Time, Subject, and Event. The table lists four emergency call alerts from July 17, 2012, all originating from 'ROOM 2 @ 54331'.

Time	Subject	Event
2012-07-17 11:46:26	Emergency Call Alert	CUST 0 911 CALL ALERT 10:45:59 JUL 17, 2012 Site: BVW Location: Call Center 2 Caller: ROOM 2 @ 54331 ERL: 2 DES: 1110 ELIN: 6139675000
2012-07-17 10:40:35	Emergency Call Alert	CUST 0 911 CALL ALERT 09:40:07 JUL 17, 2012 Site: Location: Caller: ROOM 2 @ 54331 ERL: DES: 1110 ELIN: 6139675000
2012-07-17 10:37:05	Emergency Call Alert	CUST 0 911 CALL ALERT 09:36:37 JUL 17, 2012 Site: Location: Caller: ROOM 2 @ 54331 ERL: DES: 1110 ELIN: 6139675000
2012-07-17 10:07:56	Emergency Call Alert	CUST 0 911 CALL ALERT 09:07:29 JUL 17, 2012 Site: BVW Location: Call Center 1 Caller: ROOM 2 @ 54331 ERL: 1 DES: 1110 ELIN: 6139675000

## 8. Conclusion

The eTelemetry Locate911-N HA Solution passed the compliance testing. These Application Notes describe the procedures required for the eTelemetry Locate911-N HA Solution to interoperate with Avaya Communication Server 1000 Emergency Services to support the reference configuration shown in **Figure 1**.

## 9. Additional References

Product documentation for Avaya products may be found at: <http://support.avaya.com>

[1] *NN43001-613, 05.03 Communication Server 1000 Emergency Services Access Fundamentals.*

[2] *NN43001-116, 05.16 Communication Server 1000 Unified Communications Management Common Services Fundamentals.*

[3] *NN43001-719, 05.02 Communication Server 1000 Fault Management – SNMP.*

Product information for eTelemetry Locate911-N HA system products can be found at <http://www.etelemetry.com/products/locate911n.aspx>

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