# Table Of Contents

1. Audience .................................................................................................................. 5
2. Introduction ................................................................................................................... 5
3. Network Topology ......................................................................................................... 6
4. Lab Network Configuration ........................................................................................... 7
   4.1 Hardware Components ............................................................................................ 8
   4.2 Software Requirements .......................................................................................... 8
   4.3 IP Subnet Recommendation .................................................................................... 8
   4.4 Example Configuration Information ........................................................................ 8
5. Overview ....................................................................................................................... 10
   5.1 Routing Policies .................................................................................................... 10
   5.2 SIP Trunking Call Flows ....................................................................................... 10
6. Features Tested ............................................................................................................. 11
   6.1 SIP Trunk Supported Features ................................................................................ 11
   6.2 Avaya/Nortel CS1000 Tested Features ................................................................... 11
   6.3 Call Testing .......................................................................................................... 12
   6.4 Features Not Supported ........................................................................................ 12
7. Caveats ......................................................................................................................... 13
8. Avaya Aura™ CS1000 and Session Manager Configuration Walkthrough .................. 13
   8.1 SIP Gateway Configuration ..................................................................................... 14
      8.1.1 Element Manager Login .................................................................................. 14
      8.1.2 Select one of the Element Manager links ......................................................... 15
      8.1.3 Configuration of the ‘SIP Trunk Zone’ ............................................................. 15
      8.1.4 Configuration section of Bandwidth Zones ...................................................... 16
      8.1.5 System Overview ............................................................................................ 16
      8.1.6 IP Telephony Nodes ....................................................................................... 17
      8.1.7 Node Details (SIPGw) .................................................................................... 18
      8.1.8 Virtual Trunk Gateway Configuration Details ................................................ 19
      8.1.9 D-Channels ..................................................................................................... 23
      8.1.10 D-Channels 51 Property Configuration ........................................................ 24
      8.1.11 Routes and Trunks ......................................................................................... 25
      8.1.12 Virtual Terminal Sessions .......................................................................... 30
      8.1.13 Virtual Terminal Sessions ............................................................................ 31
      8.1.14 CLI outputs commands for CS1000 Configuration ....................................... 32
9. Avaya Aura™ Session Manager System Configuration .................................................. 38
   9.1 Set Up System Information .................................................................................... 38
   9.2 Avaya Aura Session Manager with System Manager release 5.2. SP2 SIP Configuration Guide 44
      9.2.1 Setup Network Routing Policy ......................................................................... 44
      9.2.2 Specify SIP Domain ......................................................................................... 45
      9.2.3 Add Location .................................................................................................. 45
      9.2.4 Add Adaptations Modules .............................................................................. 48
      9.2.5 Add SIP Entities ............................................................................................. 50
      9.2.6 Add Routing Policies ...................................................................................... 55
      Routing Policies describe the situations which calls will be routed to the SIP Entities specified as shown above. A routing policy must be added for Nortel CS1000 and EdgeMarc E-SBC. To add a routing policy, simply select ‘Routing Policies’ on the left and click on the New button on the right. Fill in the following: ........................................... 55
      9.2.7 Add Dial Patterns .......................................................................................... 58
      9.2.8 Add Session Manager .................................................................................... 65
Table of Figures

Figure 1 – Cox Fiber Network ................................................................. 5
Figure 2 – Reference Network Architecture ............................................. 6
Figure 3 – SIP Trunk Lab Reference Network ............................................. 7
Figure 4 – Avaya/Nortel Element Manager Login Screen ......................... 14
Figure 5 – Avaya/Nortel Element Manager Links Screen ......................... 14
Figure 6 – Avaya/Nortel Element Manager Bandwidth Zones & Numbering Zones Screen .................................................. 15
Figure 7 – Avaya/Nortel Element Manager Bandwidth Zones Detail ............. 15
Figure 8 – Zones Basic Property and Bandwidth Management Screen ........ 16
Figure 9 – Avaya/Nortel Element Manager System Overview .................... 16
Figure 10 – Avaya/Nortel Element Manager IP Telephony Nodes ............... 17
Figure 11 – Avaya/Nortel Element Manager Node Details (SIPGw) (1 of 2) .... 17
Figure 12 – Avaya/Nortel Element Manager Node Details (SIPGw) (2 of 2) .... 18
Figure 13 – Virtual Trunk Gateway Configuration – Node Details ............... 19
Figure 14 – Virtual Trunk Gateway Configuration - SIPGW .......................... 20
Figure 15 – Virtual Trunk Gateway Configuration: SIP URI Map .................. 21
Figure 16 – Virtual Trunk Gateway Configuration: User Information Fields .... 21
Figure 17 – Virtual Trunk Gateway Configuration: CIT Settings ................. 22
Figure 18 – Virtual Trunk Gateway Configuration: CTI CLID ...................... 22
Figure 19 – Virtual Trunk Gateway Configuration: Subscriber and Auto Attendant Service .................................................. 23
Figure 20 – Avaya/Nortel Element Manager D-Channels Configuration ........ 23
Figure 21 – Avaya/Nortel Element Manager D-Channels Property Configuration Screen .......................................................... 24
Figure 22 – Avaya/Nortel Element Manager Routes and Trunks Configuration Screen .................................................. 25
Figure 23 – Route 51 Trunk Listing ............................................................ 26
Figure 24 – Route 51 Property Configuration (1 of 2) ................................. 27
Figure 25 – Route 51 Property Configuration (1 of 4) ................................. 28
Figure 26 – Route 51 Property Configuration (3 of 4) ................................. 29
Figure 27 – Route 51 Property Configuration (4 of 4) ................................. 29
Figure 28 – Avaya/Nortel Element Manager Virtual Terminal Sessions ........ 30
Figure 29 – Virtual Terminal Active Session .............................................. 31
Figure 30 – Interactive Virtual Terminal Sessions ..................................... 31
Figure 31 – CLI output for DCH and DMI .................................................. 32
Figure 32 – CLI output for Route 51 .......................................................... 33
Figure 33 – CLI output for Route 52 .......................................................... 34
Figure 34 – CLI output Area Codes and RLIs (1 of 3) ................................. 35
Figure 35 – CLI output for Area Codes and RLIs (2 of 3) ............................ 36
Figure 36 – CLI output for Area Codes and RLIs (3 of 3) ............................ 36
Figure 37 – IP Settings on your PC ........................................................... 37
Figure 38 – Avaya Aura Login ................................................................. 38
Figure 39 – Avaya Aura Session Manager Selection ................................... 39
Figure 40 – Avaya Aura Session Manager Administration ......................... 40
Figure 41 – View Session Manager ............................................................................................................ 41
Figure 42 – Avaya Aura Local Host Name Resolution .................................................................................. 42
Figure 43 – Avaya Aura Firewall Configuration ........................................................................................ 43
Figure 44 – Introduction to Network Routing Policy (NRP).......................................................................... 44
Figure 45 – SIP Domain .................................................................................................................................. 45
Figure 46 – Location section............................................................................................................................ 47
Figure 47 – Adaptations Module .................................................................................................................... 48
Figure 48 – Adaptation Module Detail ........................................................................................................... 49
Figure 49 – Adaptation Module – Digit Conversion ...................................................................................... 49
Figure 50 – SIP Entities .................................................................................................................................... 54
Figure 51 – Routing Policies .......................................................................................................................... 57
Figure 52 – Dial Patterns ................................................................................................................................ 65
Figure 53 – Session Manager ........................................................................................................................ 67
Figure 54 – Local Host Names ....................................................................................................................... 69
Figure 55 – Time Range and Personal Settings ............................................................................................. 70

Table of Tables

Table 1 – Example IP Address Configuration .............................................................................................. 8
1 Audience
This document is intended for the SIP Trunk customer’s technical staff and Avaya Value Added Retailer (VAR) having installation and operational responsibilities.

2 Introduction
This Configuration Guide describes configuration steps for Cox SIP Trunking to an Avaya/Nortel CS1000 PBX v6.0 with Avaya Aura Session Manager v5.2 SP2. Cox SIP Trunking is a scalable and efficient IP trunking telecommunication solution for your business that provides all the traditional services such as Direct Inward Dialing, Hunting, Calling Name, Calling Number, Local/Long Distance and Cox network-based Business Continuity options, including:

- Burstable Trunk Capacity – Dynamically increases call capacity during peak busy periods so your customers never receive a busy signal.
- Call Forward Always – On the trunk group pilot number for all calls in case of an outage (flood, fire, power outage, etc.).
- Call Forward Not Reachable – On the trunk group pilot number that operates on a per-call contingency basis to forward the call to any PSTN number (e.g. call center or alternate office location) during temporary call completion impairments.
- Route Exhaustion – automatic reroute of trunk group calls to any PSTN phone number (i.e., a call center) if calls can’t be completed to the PBX.
- Support for geo-redundant PBX deployments and automatic reroute of SIP Trunks to the backup customer data center.

All calls are routed over Cox’s national fiber network with guaranteed Quality of Service (QoS); calls never traverse the Internet.

![Cox Fiber Network](image)
3 Network Topology

The high level Cox SIP Trunk network architecture is depicted below. The key network elements are:

- **IP PBX** – Customer PBX for terminating SIP Trunks.
- **Cox Enterprise Session Border Controller (E-SBC)** – The E-SBC is a smart service demarcation device and SIP Application Layer Gateway (ALG) installed and managed by Cox.
- **High Availability and Geo-Redundant Session Border Controllers (SBC) and Broadsoft SIP Call Servers** for survivability and reliability.
- **PSTN Gateway** for connections to the Public Switched Telephone Network (PSTN).

![Figure 2 – Reference Network Architecture](image)

This SIP Trunk network architecture is replicated across the Cox operating regions for scalability and operational autonomy.

Cox will deploy one or more Enterprise Session Border Controllers (E-SBCs) to meet call capacity, customer data center geo-redundancy and trunk group requirements. The E-SBC is owned and managed by Cox and is the service demarcation point. The E-SBC performs SIP ALG, SIP normalization, NAT, security, traffic shaping/prioritization, performance reporting and remote diagnostic functions.
4  Lab Network Configuration

The lab network for the SIP Trunk reference configuration is illustrated in Figure 3 and is representative of an Avaya Aura Session Manager geo-redundant deployment with the CS-1000 (CS1K) PBX.

![Network Diagram](image)

**Figure 3 – SIP Trunk Lab Reference Network**

The lab network consists of the following components:

- **Avaya Aura™ Session Manager** – The Session Manager provides a centralized SIP routing engine and integration of different services that enables communications between diverse SIP-enabled elements, e.g., IP PBXs, gateways, SIP applications, voice mail systems, etc. across the enterprise. The Session Manager enabled enterprise to implement centralized and policy-based routing, flexible dial plans, and consolidated trunking. Session Manager acts as a SIP interoperability facilitator among different SIP entities of a CS1000 SIP solution.

- **Avaya Aura™ System Manager** – Provides a common administration interface for centralized management of all Avaya Aura Session instances in an enterprise environment.

- **Avaya/Nortel CS1000** – The Nortel CS1000 Communication Server (CS) 1000 is a robust and highly scalable IP PBX that supports traditional Meridian features as well as new IP telephony features, including Session Initiation Protocol (SIP). With the CS 1000, customers can evolve from a traditional TDM network to a converged IP network. The CS 1000 is an IP PBX that supports TDM PBX capabilities. Unlike traditional, circuit-switched PBX systems, the IP-based CS 1000 Core Call Server has no dedicated switching infrastructure. All voice communication between network elements uses a Telephony LAN (TLAN) subnet. Evolving to the CS 1000 and a converged IP network provides several advantages.
4.1 Hardware Components
- Avaya s8800 Server for System Manager and Session Managers
- Nortel Media Gateway Controller (MGC) 4.0
- Nortel co-resident Call Server, Signaling Server, Network Routing Service (NRS), and Unified Communications Management (UCM)
- Avaya/Nortel 1120E IP Deskphone
- Avaya/Nortel 1230 IP Deskphone
- Avaya/Nortel 1140E IP Deskphone
- EdgeMarc 6400lf E-SBC
- Acme Net-Net 9200 SBC

4.2 Software Requirements
- Avaya/Nortel CS1K Call Server release 6, version 4021
- Avaya/Nortel CS1K Signaling Server release 6.00.18.00
- Avaya/Nortel CS1K Patches applied (see Appendix B below for all the listing)
- Avaya Aura System Manager release 5.2 (SP 2)
- Avaya Aura Session Manager release 5.2.2.0.522009
- EdgeMarc E-SBC 6400lf release 9.12.5

4.3 IP Subnet Recommendation
Routing and technical support are greatly simplified if the Cox E-SBC (EdgeMarc) is in the same subnet / VPN as the Avaya TLAN. Network best practices must applied, please consult with your Avaya/Nortel technical representative.

4.4 Example Configuration Information
The specific values listed in Table 1 below and in subsequent sections are used in this lab configuration described in this document, and are for illustrative purposes only. Customers must obtain and use the specific values for their own specific configurations.

Table 1 – Example IP Address Configuration

<table>
<thead>
<tr>
<th>Component</th>
<th>Cox Lab Value</th>
<th>Your Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avaya System Manager</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management IP Address</td>
<td>192.169.20.40</td>
<td></td>
</tr>
<tr>
<td><strong>Avaya Session Manager</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management IP Address #1</td>
<td>192.168.20.40</td>
<td></td>
</tr>
<tr>
<td>Management IP Address #2</td>
<td>192.168.20.42</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Cox Lab Value</td>
<td>Your Value</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>------------</td>
</tr>
<tr>
<td>• SIP IP Address #1</td>
<td>192.168.20.10</td>
<td></td>
</tr>
<tr>
<td>• SIP IP Address #2</td>
<td>192.168.30.10</td>
<td></td>
</tr>
</tbody>
</table>

**Avaya/Nortel LAN**

- TLAN 192.168.20.0/24
- ELAN 10.10.1.0/24

**Avaya/Nortel Meridian Integrated Recorded Announcements (MiRAN)**

- MiRAN IP Address 192.168.20.110

**Avaya/Nortel Media Gateway Controller (MGC) 4.0**

- MGC 4.0 TLAN IP 192.168.20.108
- MGC 4.0 ELAN IP 10.10.1.8
- MGC 4.0 DB1 192.168.20.112
- MGC 4.0 DB2 192.168.20.113

**Avaya/Nortel Media Gateway Controller (MGC) 8.0**

- MGC 8.0 TLAN IP 192.168.20.109
- MGC 8.0 ELAN IP 10.10.1.9
- MGC 8.0 DB1 192.168.20.114
- MGC 8.0 DB2 192.168.20.115

**Avaya/Nortel SIP Gateway A**

- Endpoint Name coxlabss01
- Node ID 1111
- Primary UCM, SS, NRS TLAN IP 192.168.20.101
- Primary UCM, SS, NRS ELAN IP 10.10.1.106

**Avaya/Nortel SIP Gateway B**

- Endpoint Name coxlabss02
- Node ID 1121
- Alternate UCM, SS, NRS TLAN IP 192.168.20.121
- Alternate UCM, SS, NRS ELAN IP 10.10.1.107

**E-SBC EdgeMarc 6400’s**

- LAN Subnet Mask 255.255.255.0
- LAN IP Address #1 192.168.20.100
- LAN IP Address #2 192.168.20.120
5 Overview

Avaya Aura™ Session Manager is the central control point of contact for all SIP-based communication for both internal and external services. Session Manager established SIP connections, process SIP sessions, and normalizes disparate SIP network components and provides a central contact point for external SIP trunking to the PSTN. The various SIP network components are represented as “SIP Entities” and the SIP Trunks between Session Manager and those components are represented as “Entity Links”. Thus, for example, rather than the Avaya Communication Manager connecting directly to all the Service Providers, but relies on Session Manager to route calls to the correct destination. This reduces the complexity of the dial plan and trunking administration needed.

5.1 Routing Policies
Routing Policies define how Session Manager routes calls between different SIP elements on the network. Routing Policies are dependent on several related items:
- SIP Entities
- Entity Links
- SIP Domains
- Locations
- Adaptations
- Dial Patterns
- Time Ranges

5.2 SIP Trunking Call Flows
To understand how Cox’s SIP Trunking calls are handled by Session Manager and CS1000, we will described three basic call flows in this section, however for briefness not all possible call flows are described in this document.
6 Features Tested

6.1 SIP Trunk Supported Features
The following SIP Trunk capabilities and features are supported:

- Inbound and outbound calls
- G.711 ulaw CODEC with 20 msec packetization rate
- Calling Party Number Presentation and Restriction
- DTMF translation to/from SIP signaling-based to RTP media-based (RFC 2833)
- High Availability (HA) Acme SBC
- Geo-Redundancy Acme SBC
- BroadWorks SIP Feature Server High Availability and Geo-Redundancy
- End-to-end SIP Trunk voice Quality of Service (QoS)
- Burstable Trunk capacity
- Business Continuity: Trunk Group Route Exhaustion

6.2 Avaya/Nortel CS1000 Tested Features
The following Avaya/Nortel CS1000 PBX features were successfully tested with Cox SIP Trunking for calls that traverse the SIP Trunks:

- 3-Way Calling
- Auto-Attendant
- Authorization Codes
- Blind Call Transfer
- Call Forward Busy
- Call Forward No Answer
- Call Forward Always
- Call Hold
- Calling Line ID Blocking per Call
- Call Park
- Call Pickup
- Call Waiting
- Caller ID – Name and Number
- Call Intercept
- Consultative Call Transfer
- Customer defined Calling Line ID outside the Trunk Group DID range (“spoofing”)
- Caller ID – Blocked call to Off-net number
- Do Not Disturb
- Group ID Delivery
- Sequential Ring
- Simultaneous Hunt
- Voice Mail (DTMF digits)
6.3 Call Testing
The following call types and optional Cox network-based features were verified with Cox SIP Trunks:

- Account Codes (Network Based)
- Authorization Codes (Network Based)
- Auto Attendant (Network Based)
- Hunt Groups (Network Based)
- 211 – Community Information and Referral Services
- 311 – Non-Emergency Police and Other Governmental Services
- 411 – Local Directory Assistance
- 511 – Traffic and Transportation Information (US); Provision of Weather and Traveller Information Services (Canada)
- 611 – Repair Service
- 711 – Telecommunications Relay Service (TRS)
- 811 – One Call Services to Protect Pipeline and Utilities from Excavation Damage (US); Non-Urgent Health Teletriage Services (Canada)
- 911 – Emergency Services
- International Calls
- Long Distance – 10- and 11-Digit Dialing
- Local call – 7- and 10-Digit Dialing
- Premium Services 900/976
- Toll free 800/866/877/888
- Directory Assistance 7-, 10- and 11-Digit Dialing 1+(NPA)-555-1212
- 10-10 Dialing Around
- G.711 Fax and Modem

6.4 Features Not Supported
- G.729, G.726 CODECs
- T.38 Fax Relay (Cox will support T.38 in 4Q11)
7  Caveats
There is no known caveat as of this writing.

8  Avaya Aura™ CS1000 and Session Manager Configuration Walkthrough
The following SIP Trunk configuration is based on the network configuration described above. The configuration example covers the following:

- Managing CS1000 with Element Manager
- Configuration of SIP Trunk Zone
- Configuration of IP Telephony Nodes
- Virtual Trunk Gateway Configuration
- Administration D-Channel
- Administration routes and trunks
- Virtual Terminal Sessions

The Avaya/Nortel CS1000 configuration detailed in this document is based on a lab environment with a basic dial plan to ensure interoperability between the Cox SIP network and Avaya Aura communications solution. Attention to detail is required to ensure these commands are implemented for successful SIP Trunk operation.
8.1 SIP Gateway Configuration

8.1.1 Element Manager Login

The IP Telephony and IP Trunk configuration is only configurable via Element Manager, which can only be accessed through Unified Common Manager. Use a browser (IE is the only supported Web Browser) and point to [http://192.168.20.106](http://192.168.20.106) (or 192.168.20.107) and log in.

![Figure 4 – Avaya/Nortel Element Manager Login Screen](image)

![Figure 5 – Avaya/Nortel Element Manager Links Screen](image)
8.1.2 Select one of the Element Manager links.
Select ever ‘EM on coxlabss01’ or ‘EM on coxlabss02’. That is the CS1K Signaling Server one and two, respectively.

![Figure 6 – Avaya/Nortel Element Manager Bandwidth Zones & Numbering Zones Screen](image)

8.1.3 Configuration of the ‘SIP Trunk Zone’.

![Figure 7 – Avaya/Nortel Element Manager Bandwidth Zones Detail](image)
8.1.4  **Configuration section of Bandwidth Zones.**
Each gateway’s SIP Trunks are in their own bandwidth management zone. The SIP Trunks of SIP Gateway A are on zone 51 and the SIP Trunks for SIP Gateway B are in zone 52.

![Zone Basic Property and Bandwidth Management Screen](image)

The zone is configured as a virtual trunk zone. Both zones are configured the same. The ‘Best Quality’ bandwidth strategy means the PBX will try to use G.711 first when negotiating a codec. G.729A is turned off and is not available to the SIP Gateways.

8.1.5  **System Overview.**
When you open Element Manager, the IP Node configuration pages can be found by clicking on ‘Node, Servers, and Media Cards’ in the left menu tab.

![Avaya/Nortel Element Manager System Overview](image)
8.1.6 **IP Telephony Nodes.**
Each Signaling Server can register 1800 SIP Trunks and 1200 H.323. Only the leader Signaling Server of a node can facilitate IP trunk registration. Node 1111 is SIP Gateway A, and Node 1121 is SIP Gateway B. SIPGW-A has 15 SIP Trunks registered to it and SIPGW-B has 14 SIP trunks registered to it.

**Figure 10 – Avaya/Nortel Element Manager IP Telephony Nodes**

**Figure 11 – Avaya/Nortel Element Manager Node Details (SIPGw) (1 of 2)**
8.1.7 **Node Details (SIPGw).**
To see the IP Trunk configuration of a node, click on ‘Gateway’.

Figure 12 – Avaya/Nortel Element Manager Node Details (SIPGw) (2 of 2)
8.1.8 **Virtual Trunk Gateway Configuration Details.**

At the top you can see the SIP Domain Name and the SIP Endpoint name. The SIP Domain Name is one of the prompts to be configured when changing between the EdgeMarc E-SBCs and the Avaya Session Manager SBCs.

Note that Cox does not use DNS, therefore the LAN IP Address of the Cox E-SBC should be input for the SIP Domain name. Please cross reference the lab network IP addresses in **Table 1** with the CS1K Element Manager screens shown here.

![Figure 13 – Virtual Trunk Gateway Configuration – Node Details](image-url)
The following shows the configuration of SIPGW-A when it is connected to EdgeMarc E-SBC-1. Notice that the **SIP Domain Name** is 192.168.20.100. If it was SIPGW-B, the **SIP Domain Name** would be 192.168.20.120, which would start the configuration of the connection between it and EdgeMarc E-SBC-2.

![Figure 14 – Virtual Trunk Gateway Configuration - SIPGW](image)

The Primary TLAN IP Address of the Proxy or Redirect server is the IP address of the device the CS1000E is sending calls to and from the SIP Gateway facilitated by the IP telephony node.
In this section the node configuration is the SIP URI Map. Notice the ‘National’ and ‘Subscriber’ boxes are empty.

**Figure 15 – Virtual Trunk Gateway Configuration: SIP URI Map**

Make sure that you have selected ‘SIP CTI Service’ in the following screen to Enable CTI service.

**Figure 16 – Virtual Trunk Gateway Configuration: User Information Fields**
The section shows the SIP CTI settings:

![Figure 17 – Virtual Trunk Gateway Configuration: CIT Settings](image)

Make sure set the ‘Calling Device URI Format’ to phone context = SIP URI Map Entities:

![Figure 18 – Virtual Trunk Gateway Configuration: CTI CLID](image)
The Subscriber Access and Auto Attendant Services were not used in the lab configuration:

Figure 19 – Virtual Trunk Gateway Configuration: Subscriber and Auto Attendant Service

8.1.9 D-Channels.

Click on D-Channels on the left to see the DCH configurations. The system uses 1 virtual DCH per node. DCH51 and DCH 52 are the virtual DCH in the lab.

Figure 20 – Avaya/Nortel Element Manager D-Channels Configuration
8.1.10 **D-Channels 51 Property Configuration.**

- The USR parameter is set to ISLD.
- The IFC parameter is set to SL1.

*Figure 21 – Avaya/Nortel Element Manager D-Channels Property Configuration Screen*
8.1.11  **Routes and Trunks**
Click on Routes and Trunks on the left panel to see the Route Data Block configuration. The SIP Trunk Route for SIPGW-A is Route 51, and the SIP Trunk Route for SIPGW-B is Route 52.

![Routes and Trunks Configuration Screen](image)

**Figure 22 – Avaya/Nortel Element Manager Routes and Trunks Configuration Screen**
Click the Route name to expand it to view the Trunks and ‘Edit’ to see the configuration.

**Figure 23 – Route 51 Trunk Listing**
To see the configuration of a trunk, click ‘Edit’ on a Trunk. For example: Route 51.

Figure 24 – Route 51 Property Configuration (1 of 2)
Figure 25 – Route 51 Property Configuration (1 of 4)
Figure 26 – Route 51 Property Configuration (3 of 4)

Figure 27 – Route 51 Property Configuration (4 of 4)
8.1.12 Virtual Terminal Sessions

A link to each device was created with a CLI under ‘Virtual Terminals’. The devices are the PBX, each MGC card, and each Signaling Server/NRS/SIP Gateway. The MGC card credentials are the same as the PBX.

![Image of virtual terminal session](image)

**Figure 28 – Avaya/Nortel Element Manager Virtual Terminal Sessions**

The yellow envelope with your software has the documentation CDs. The Software I/O Guides have all of the overlay prompts, their accepted input, and definitions. There are three guides:

1. Administration
2. System Messages
8.1.13 **Virtual Terminal Sessions**

After you click ‘Connect’, place the cursor in the bar at the bottom of the window in order to type.

![Virtual Terminal Active Session](image1)

**Figure 29 – Virtual Terminal Active Session**

![Interactive Virtual Terminal Sessions](image2)

**Figure 30 – Interactive Virtual Terminal Sessions**
8.1.14 CLI outputs commands for CS1000 Configuration

<table>
<thead>
<tr>
<th>CLI Command</th>
<th>DCH Outputs</th>
<th>DMI Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;ID 22</td>
<td>&gt;ID 22</td>
<td>&gt;ID 80</td>
</tr>
<tr>
<td>PT2000</td>
<td>PT2000</td>
<td>ESN000</td>
</tr>
</tbody>
</table>

```plaintext
MEM AVAIL: (UP): 98198537 USED
      U.P: 5385327 88485  TOT: 103652349
DISK SPACE NEEDED: 122 KBYTES
```

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUST</td>
<td>DMI</td>
</tr>
<tr>
<td>FEAT dgt</td>
<td>DMI</td>
</tr>
<tr>
<td>DMI</td>
<td>1</td>
</tr>
<tr>
<td>DEL</td>
<td>0</td>
</tr>
<tr>
<td>ISPNO</td>
<td>NPA</td>
</tr>
<tr>
<td>CTYP</td>
<td>NPA</td>
</tr>
<tr>
<td>DMI</td>
<td>9</td>
</tr>
<tr>
<td>DEL</td>
<td>0</td>
</tr>
<tr>
<td>ISPNO</td>
<td>NPA</td>
</tr>
<tr>
<td>INST</td>
<td>9</td>
</tr>
<tr>
<td>CTYP</td>
<td>NPA</td>
</tr>
<tr>
<td>DMI</td>
<td>12</td>
</tr>
<tr>
<td>DEL</td>
<td>0</td>
</tr>
<tr>
<td>ISPNO</td>
<td>NPA</td>
</tr>
<tr>
<td>INST</td>
<td>678238</td>
</tr>
<tr>
<td>CTYP</td>
<td>NPA</td>
</tr>
</tbody>
</table>

**Figure 31 – CLI output for DCH and DMI**
## Figure 32 – CLI output for Route 51

### Route 51 Members
<table>
<thead>
<tr>
<th>TN</th>
<th>244 00 03 MBER</th>
<th>1 SIPGWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>244 00 01 MBER</td>
<td>2 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 02 MBER</td>
<td>3 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 03 MBER</td>
<td>4 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 04 MBER</td>
<td>5 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 05 MBER</td>
<td>6 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 06 MBER</td>
<td>7 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 07 MBER</td>
<td>8 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 08 MBER</td>
<td>9 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 09 MBER</td>
<td>10 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 10 MBER</td>
<td>11 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 11 MBER</td>
<td>12 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 12 MBER</td>
<td>13 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 13 MBER</td>
<td>14 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 14 MBER</td>
<td>15 SIPGWA</td>
</tr>
</tbody>
</table>

### Route 51
<table>
<thead>
<tr>
<th>TN</th>
<th>244 00 03 MBER</th>
<th>1 SIPGWA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TN</th>
<th>244 00 01 MBER</th>
<th>2 SIPGWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>244 00 02 MBER</td>
<td>3 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 03 MBER</td>
<td>4 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 04 MBER</td>
<td>5 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 05 MBER</td>
<td>6 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 06 MBER</td>
<td>7 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 07 MBER</td>
<td>8 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 08 MBER</td>
<td>9 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 09 MBER</td>
<td>10 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 10 MBER</td>
<td>11 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 11 MBER</td>
<td>12 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 12 MBER</td>
<td>13 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 13 MBER</td>
<td>14 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 14 MBER</td>
<td>15 SIPGWA</td>
</tr>
</tbody>
</table>

### SIPGW-ATN
<table>
<thead>
<tr>
<th>TN</th>
<th>244 00 03 MBER</th>
<th>1 SIPGWA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>TN</th>
<th>244 00 01 MBER</th>
<th>2 SIPGWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN</td>
<td>244 00 02 MBER</td>
<td>3 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 03 MBER</td>
<td>4 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 04 MBER</td>
<td>5 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 05 MBER</td>
<td>6 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 06 MBER</td>
<td>7 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 07 MBER</td>
<td>8 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 08 MBER</td>
<td>9 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 09 MBER</td>
<td>10 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 10 MBER</td>
<td>11 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 11 MBER</td>
<td>12 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 12 MBER</td>
<td>13 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 13 MBER</td>
<td>14 SIPGWA</td>
</tr>
<tr>
<td>TN</td>
<td>244 00 14 MBER</td>
<td>15 SIPGWA</td>
</tr>
</tbody>
</table>

### CLI output

```plaintext
>ld 21
PT1000
REQ: ltm
CUST 0
ROUT 51
TYPE TLST
TKTP TIE
ROUT 51
DES SIPGWA

TN 244 00 03 MBER 1 SIPGWA
TN 244 00 01 MBER 2 SIPGWA
TN 244 00 02 MBER 3 SIPGWA
TN 244 00 03 MBER 4 SIPGWA
TN 244 00 04 MBER 5 SIPGWA
TN 244 00 05 MBER 6 SIPGWA
TN 244 00 06 MBER 7 SIPGWA
TN 244 00 07 MBER 8 SIPGWA
TN 244 00 08 MBER 9 SIPGWA
TN 244 00 09 MBER 10 SIPGWA
TN 244 00 10 MBER 11 SIPGWA
TN 244 00 11 MBER 12 SIPGWA
TN 244 00 12 MBER 13 SIPGWA
TN 244 00 13 MBER 14 SIPGWA
TN 244 00 14 MBER 15 SIPGWA

TN 244 00 03 MBER 1 SIPGWA
TN 244 00 01 MBER 2 SIPGWA
TN 244 00 02 MBER 3 SIPGWA
TN 244 00 03 MBER 4 SIPGWA
TN 244 00 04 MBER 5 SIPGWA
TN 244 00 05 MBER 6 SIPGWA
TN 244 00 06 MBER 7 SIPGWA
TN 244 00 07 MBER 8 SIPGWA
TN 244 00 08 MBER 9 SIPGWA
TN 244 00 09 MBER 10 SIPGWA
TN 244 00 10 MBER 11 SIPGWA
TN 244 00 11 MBER 12 SIPGWA
TN 244 00 12 MBER 13 SIPGWA
TN 244 00 13 MBER 14 SIPGWA
TN 244 00 14 MBER 15 SIPGWA
```
### Figure 33 – CLI output for Route 52

<table>
<thead>
<tr>
<th>Route 52 Members</th>
<th>Route 52</th>
<th>SIPGW-B-TN</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT1000</td>
<td>STRP</td>
<td>PT0000</td>
</tr>
<tr>
<td>REQ 01</td>
<td>ACO 2052</td>
<td>REQ 01</td>
</tr>
<tr>
<td>TKTP TIE</td>
<td>TCPP NO</td>
<td>TYPE PT5</td>
</tr>
<tr>
<td>CUST 0</td>
<td>AUP NO</td>
<td>TYPE TBN</td>
</tr>
<tr>
<td>ROUT 52</td>
<td>VRT NO</td>
<td>TN 231.0</td>
</tr>
<tr>
<td>TYPE 08</td>
<td>TAK 0</td>
<td>D01</td>
</tr>
<tr>
<td>ROUT 52</td>
<td>GLEN 100</td>
<td>DATE</td>
</tr>
<tr>
<td>TYPE RJ8</td>
<td>BUL NO</td>
<td>PAGE</td>
</tr>
<tr>
<td>CUST 00</td>
<td>OAGS 0</td>
<td>DES</td>
</tr>
<tr>
<td>ROUT 52</td>
<td>INST 0</td>
<td>DES</td>
</tr>
<tr>
<td>DES SIPGW</td>
<td>IDC YES</td>
<td>DES SIPGW</td>
</tr>
<tr>
<td>TN 244 01 00 MBER 1</td>
<td>SGPWB</td>
<td>TN 231.0</td>
</tr>
<tr>
<td>TN 244 01 01 MBER 2</td>
<td>SGPWB</td>
<td>TYPE PT5</td>
</tr>
<tr>
<td>TN 244 01 02 MBER 3</td>
<td>SGPWB</td>
<td>TYPE TBN</td>
</tr>
<tr>
<td>TN 244 01 03 MBER 4</td>
<td>SGPWB</td>
<td>TN 231.0</td>
</tr>
<tr>
<td>TN 244 01 04 MBER 5</td>
<td>SGPWB</td>
<td>DATE</td>
</tr>
<tr>
<td>TN 244 01 05 MBER 6</td>
<td>SGPWB</td>
<td>PAGE</td>
</tr>
<tr>
<td>TN 244 01 06 MBER 7</td>
<td>SGPWB</td>
<td>DES</td>
</tr>
<tr>
<td>TN 244 01 07 MBER 8</td>
<td>SGPWB</td>
<td>DES SIPGW</td>
</tr>
<tr>
<td>TN 244 01 08 MBER 9</td>
<td>SGPWB</td>
<td>TN 231.0</td>
</tr>
<tr>
<td>TN 244 01 09 MBER 10</td>
<td>SGPWB</td>
<td>TYPE PT5</td>
</tr>
<tr>
<td>TN 244 01 10 MBER 11</td>
<td>SGPWB</td>
<td>TYPE TBN</td>
</tr>
<tr>
<td>TN 244 01 11 MBER 12</td>
<td>SGPWB</td>
<td>TN 231.0</td>
</tr>
<tr>
<td>TN 244 01 12 MBER 13</td>
<td>SGPWB</td>
<td>DATE</td>
</tr>
<tr>
<td>TN 244 01 13 MBER 14</td>
<td>SGPWB</td>
<td>PAGE</td>
</tr>
</tbody>
</table>

**Note:** The output includes various CLI commands and settings specific to Route 52 members and the SIPGW-B-TN. Each line represents a different CLI command or setting.
These area codes routed over these RLIs...

Figure 34 – CLI output Area Codes and RLIs (1 of 3)
These area codes routed over this RLI...

Figure 35 – CLI output for Area Codes and RLIs (2 of 3)
These area codes routed over this RLI... I showed RLI 6 before this one because the rest of the area codes go out over this RLI.

Figure 36 – CLI output for Area Codes and RLIs (3 of 3)
9  Avaya Aura™ Session Manager System Configuration
This section provides the procedures for configuring Session Manager. The procedures include the following items:

Network Routing Policy
- SIP Domain
- Logical/Physical location that can be occupied by SIP Entities
- SIP Entities corresponding to CS1000 and Session Manager
- Adaptations Modules
- Entity Links, which define the SIP Trunks parameters used by Session Manager when routing calls to/from SIP Entities
- Routing Policies, which control call routing between the SIP Entities
- Dial Patterns, which govern to which SIP Entity a call is routed

Session Manager
- Session Manager Administration - Session Manager, corresponding to the Session Manager Server to be managed by System Manager
- Network Configuration
- Local Host Name Resolution - Local host name resolution entries corresponding to fully qualified domain names (FQDN’s)
- SIP Firewall – Firewall configuration - Rules
- System Status - System State Administration

9.1  Set Up System Information
To do this, you will need to connect to the Avaya Aura Session Manager:

1. Connect LAN cable to Avaya Aura Session Manager Server
2. Set TCP/IP properties as follows:

![Image of IP Settings on your PC]

Figure 37 – IP Settings on your PC
3. Open a Web browser, and enter the following in the address bar: https://192.168.20.42/SMGR
4. Enter login information: (this is just an example, your administrator must provide you with the User name and Password)
   - Username: admin
   - Password: admin01

![Figure 38 – Avaya Aura Login](image1)

5. Select the Session Manager tab.

![Figure 39 – Avaya Aura Session Manager Selection](image2)
6. Session Manager expanded view.

7. By selecting one of the entry below, for example; asset01, you will be able to see all the detail configurations. Detail view of Session Manager ‘asset01’.
**Edit Session Manager**

**General**
- SIP Entity Name: *session1*
- Description: Cox Lab ASM 1
- *Management Access Point Host Name/IP: 192.168.20.40
- *Direct Routing to Endpoints: Enable

**Security Module**
- SIP Entity IP Address: 192.168.20.44
- *Network Mask: 255.255.255.0
- *Default Gateway: 192.168.20.1
- *Call Control PRI: 64
- *QoS Priority: 6
- *Speed & Duplex: Auto
- WLAN ID: Admin1

**Monitoring**
- Enable Monitoring: 
- *Proactive cycle time (secs): 60
- *Reactive cycle time (secs): 60
- *Number of Retries: 1

**CDR**
- Enable CDR: 
- User: CDR User
- Password: ********
- Confirm Password: 

**Personal Profile Manager (PPM) - Connection Settings**
- Limited PPM Limit connection: 
- *Maximum Connection per PPM Client: 3
- *PPM Connection Timeout (mins): 5
- DPM Packet Rate Limiting: 
- *PPM Packet Rate Limiting Threshold: 50

**Event Server**
- Clear Subscription on Notification Failure: No

*Required

---

**Figure 41 – View Session Manager**
8. Local Host Name Resolution.
Local host name resolution entries corresponding to fully qualified domain names (FQDN’s), in our lab we have two entries – s8510.clan with IP addresses of 192.168.20.52 and 192.168.20.53

![Figure 42 – Avaya Aura Local Host Name Resolution](image-url)

In this section, we are selecting the Rules of rate limits base-by-base of all the conditions. Make sure that you select ‘Enabled’ per selection.

Figure 43 – Avaya Aura Firewall Configuration
9.2  Avaya Aura Session Manager with System Manager release 5.2. SP2 SIP Configuration Guide

9.2.1  Setup Network Routing Policy
The above screen show the overall step-by-step the required to setup the Network Routing Policy

Figure 44 – Introduction to Network Routing Policy (NRP)

Introduction to Network Routing Policy (NRP)

Network Routing Policy consists of several NRP applications like “Domains”, “Locations”, “SIP Entities”, etc.

The recommended order to use the NRP applications (that means the overall NRP workflow) to configure your network configuration is as follows:

Step 1: Create “Domains” of type SIP (other NRP applications are referring domains of type SIP).
Step 2: Create “Locations”
Step 3: Create “Adaptations”
Step 4: Create “SIP Entities”
  - SIP Entities that are used as “Outbound Proxies” e.g. a certain “Gateway” or “SIP Trunk”
  - Create all “other SIP Entities” (Session Manager, CM, SIPSIPN Gateways, SIP Trunks)
  - assign the appropriate “Locations”, “Adaptations” and “Outbound Proxies”
Step 5: Create the “Entity Links”
  - between Session Managers
  - between Session Managers and “other SIP Entities”
Step 6: Create “Time Ranges”
  - align with the tariff information received from the Service Providers
Step 7: Create “Routing Policies”
  - assign the appropriate “Routing Destination” and “Time Of Day”
  - assign the appropriate “time Range” and define the “Ranking”
Step 8: Create “Dial Pattern”
  - assign the appropriate “Locations” and “Routing Policies” to the “Dial Pattern”
Step 9: Create “Regular Expressions”
  - assign the appropriate “Routing Policies” to the “Regular Expressions”

Each “Routing Policy” defines the “Routing Destination” (which is a “SIP Entity”) as well as the “Time Of Day” and its associated “Ranking”.  

IMPORTANT: the appropriate dial patterns are defined and assigned afterwards with the help of NRP application “Dial pattern”. That’s why the overall NRP workflow can be interpreted as:

*Dial Patterns driven approach to define routing policies*

That means (with regard to steps listed above):

Step 7: “Routing Policies” are defined
Step 8: “Dial Patterns” are defined and assigned to “Routing Policies” and “Locations” (one step)
Step 9: “Regular Expressions” are defined and assigned to “Routing Policies” (one step)
9.2.2 Specify SIP Domain
Add the SIP Domain for which the Session Manager and CS1K will be authoritative. Select ‘SIP Domains’ on the left and click the New Button (not shown here) on the right. Fill in the following:

- **Name**: The authoritative domain name (e.g., “avaya.com”)
- **Notes**: Detail Description (optional)

![Figure 45 – SIP Domain](image)

9.2.3 Add Location
Locations are used to establish and discover logical and physical locations where SIP Entities reside for determination of bandwidth management and call admission control.

To add location, select ‘Locations’ on the left and click on the ‘New’ button on the right hand side. Under ‘General’, enter the following information:

- **Names**: Nortel (A descriptive name)
- **Notes**: Description of the location (optional)
- **Managed Bandwidth**:
- **Average Bandwidth per call**: 80 kbit/sec
- **Time to Live (secs)**: 3600

Click **Commit** to save the location definition.
Figure 46 – Location section
9.2.4 Add Adaptations Modules
Avaya Session Manager Adaptations are used as a SIP Header Manipulation rule engine. Session Manager includes a module called “DigitConversionAdapter”, which can convert digit strings in a SIP headers as well as hostnames in the Request-URI. As for Cox concern, we have created two Adaptations Modules; one for the first EdgeMarc 6400lf E-SBC and the other for the second EdgeMarc 6400lf. The intended modules are used for Ingress domain and egress domain modification, where we override the domain with the IP Addresses of the EdgeMarc E-SBCs on the egress domain modification and override the IP Address with the domain ‘avaya.com’ on the ingress domain modification.

To add Adaptations Module, select ‘Adaptations’ on the left and click on the ‘New’ button on the right hand side. The Adaptation Details page is displayed.

- Enter the Name, Adaptation Module and any other required fields in the first section.
  - Enter a descriptive name
  - Specify an adaptation module.
    - ‘Module name’ field contains only the name
    - ‘Module parameter’ field contain either a single parameter or a list of “name=value name=value name=value”
  - Enter a list of URI parameters to append to the Request-URI on egress in the ‘Egress URI Parameters’ field.

Click Commit to save the adaptation module.

![Figure 47 – Adaptations Module](image-url)
As shown in the following Adaptation Detail, the INGRESS Domain Modification Parameters are overridden for both the ingressOverrideDestinationDomain (iodstd) and ingressOverrideSourceDomain (iosrcd) to ‘avaya.com’. And we override EGRESS Domain Modification Parameters: overrideDestinationDomain with the IP Address of the EdgeMarc E-SBC ‘192.168.20.10’.

In following Digit Conversion screen for Incoming calls to Communication Manager, we inserted digits ‘+1’ for all incoming calls, basically, we convert all incoming calls from National Numbering to E.164 format before presenting to Avaya Communication Manager. And for the Digit Conversion of Outgoing Calls from the Communication Manager revert the process by either deleting the first digit (+) or first two digits (+1) before presenting to the EdgeMarc E-SBCs.
9.2.5 Add SIP Entities

A SIP Entity must be added for each of the Session Manager (for our example, there is two asset01 and asset02) and for each entity system supported by it using SIP Trunks. In our lab sample configuration, this would include the EdgeMarc E-SBC and Avaya/Nortel CS1K.

Select ‘SIP Entities’ on the left and click on the New button on the right. Under General, fill in the following:

- **Name:** Name description
- **FQDN or IP Address:** FQDN or IP Address of the Session Manager or the SIP signaling interface of the E-SBC and CS1000 telephony system
- **Type:** “Session Manager” for Session Manager or “Other” for both E-SBC and CS1000.
- **Location:** Select one of the locations defined previously.
- **Time Zone:** Time zone of the location.

Under Port, click Add, and then edit the fields in the resulting new row as show:

- **Port:** ‘5060’ Port number on which the system listens for SIP Requests. The default value is 5060
- **Protocol:** ‘UDP’ Transport protocol to be used to send SIP requests.
- **Default Domain:** “avaya.com” The domain used for the enterprise.

---

**Avaya Aura™ System Manager 5.2**

<table>
<thead>
<tr>
<th>Name</th>
<th>Entity Link</th>
<th>FQDN or IP Address</th>
<th>Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>asset01</td>
<td>9</td>
<td>192.168.0.24</td>
<td>Session Manager</td>
<td>E-Media Server 1</td>
</tr>
<tr>
<td>asset02</td>
<td>9</td>
<td>192.168.0.25</td>
<td>Other</td>
<td>Edgescape 10 E-SBC</td>
</tr>
<tr>
<td>edgemarc-e-sbc1</td>
<td>9</td>
<td>192.168.0.26</td>
<td>Other</td>
<td>Edgescape 10 E-SBC</td>
</tr>
<tr>
<td>edgemarc-e-sbc2</td>
<td>9</td>
<td>192.168.0.27</td>
<td>Other</td>
<td>Edgescape 10 E-SBC</td>
</tr>
<tr>
<td>nortel1</td>
<td>9</td>
<td>192.168.0.28</td>
<td>Other</td>
<td>Nortel 1 gateway</td>
</tr>
<tr>
<td>nortel2</td>
<td>9</td>
<td>192.168.0.29</td>
<td>Other</td>
<td>Nortel 2 gateway</td>
</tr>
<tr>
<td>edgemarc-e-sbc</td>
<td>9</td>
<td>192.168.0.30</td>
<td>Other</td>
<td>Edgescape 10 E-SBC</td>
</tr>
</tbody>
</table>

Select: All, Name ( 0 of 7 Selected)
### SIP Entity Details

**General**

- **Name:** NorTel<br>
- **FQDN or IP Address:** 192.168.20.101<br>
- **Type:** Other<br>
- **Notes:** NorTel gateway<br>
- **Adaptation:** NorTel<br>
- **Location:** NorTel<br>
- **Time Zone:** America/New_York (Eastern Standard Time)<br>

**SIP Link Monitoring**

- **SIP Link Monitoring:** Use Session Manager Configuration

### Entity Links

<table>
<thead>
<tr>
<th>ZMS</th>
<th>Entity Name</th>
<th>Protocol</th>
<th>Port</th>
<th>SIP Entity</th>
<th>Port</th>
<th>Trusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>spp01 1</td>
<td>UDF 5061</td>
<td></td>
<td>192.168.20.101</td>
<td>5060</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>spp02 2</td>
<td>UDF 5061</td>
<td></td>
<td>192.168.20.101</td>
<td>5060</td>
<td>0</td>
</tr>
</tbody>
</table>

*Input Required*
Figure 50 – SIP Entities
9.2.6  Add Routing Policies

Routing Policies describe the situations which calls will be routed to the SIP Entities specified as shown above. A routing policy must be added for Nortel CS1000 and EdgeMarc E-SBC. To add a routing policy, simply select ‘Routing Policies’ on the left and click on the New button on the right. Fill in the following:

- Under General:
  Enter a descriptive name in the Name field.
- Under SIP Entity as Destination:
  Click Select, and then choice the appropriate SIP Entity to which this routing policy applies.
- Under Time of Day:
  Select the default time range shown.

Defaults can be used for the remaining fields. Click Commit to save each Routing Policy.

![Avaya Aura™ System Manager 5.2](image-url)
### Routing Policy Details

#### General

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>SIP-Mermaid</td>
</tr>
<tr>
<td>Disabled</td>
<td>No</td>
</tr>
<tr>
<td>Notes</td>
<td>SIP - Mermaid</td>
</tr>
</tbody>
</table>

#### SIP Entity as Destination

<table>
<thead>
<tr>
<th>Name</th>
<th>IP/Port or IP Address</th>
<th>Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mermaid</td>
<td>192.168.20.01</td>
<td>Other</td>
<td>Hostel 1 gateway</td>
</tr>
</tbody>
</table>

#### Time of Day

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Start Time</th>
<th>End Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/7</td>
<td>00:00</td>
<td>23:59</td>
<td></td>
</tr>
</tbody>
</table>

#### Dial Patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Min</th>
<th>Max</th>
<th>Emergency Call</th>
<th>SIP Domain</th>
<th>Originating Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5674260</td>
<td>12</td>
<td>12</td>
<td></td>
<td>-44-</td>
<td>edgemv-bcc</td>
<td></td>
</tr>
</tbody>
</table>

#### Regular Expressions

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Rank Order</th>
<th>Dry</th>
<th>Notes</th>
</tr>
</thead>
</table>

[Filter: Enable]
Figure 51 – Routing Policies
9.2.7 Add Dial Patterns

Here we will define dial patterns to direct ingress and egress calls to the appropriate SIP Entity. Call begins with 1678283 should be routed to CS1000. And anything that begins with 1 or +1 should be routed to EdgeMarc E-SBC as shown above. To add a dial pattern, select ‘Dial Patterns’ on the left and click on the New Button on the right and fill in the following fields:

Under General:
- **Pattern:** Dialed number or prefix.
- **Min:** Minimum length of dialed number.
- **Max:** Maximum length of dialed number.
- **SIP Domain:** SIP domain specified below section.
- **Notes:** Comment or detail description.

Under Originating Locations and Routing Policies:
Click Add, and then select location and routing policy from the list. Default values can be used for the remaining fields. Click Summit to save each dial pattern.
## Avaya Aura™ System Manager 5.2

### Dial Pattern Details

#### General

- **Pattern:** 970
- **Min:** 10
- **Max:** 10
- **Emergency Call:**
- **SIP Domain:** ALL
- **Notes:** NORTEL OUT THRU 970

### Originating Locations and Routing Policies

<table>
<thead>
<tr>
<th>Originating Location Name</th>
<th>Originating Location Value</th>
<th>Routing Policy Name</th>
<th>Rank</th>
<th>Routing Policy Description</th>
<th>Routing Policy Destination</th>
<th>Routing Policy Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostel</td>
<td>C01010</td>
<td>C01010</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostel</td>
<td>C01010</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s9520-wm</td>
<td>s9520-wm</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s9520-wm</td>
<td>s9520-wm</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select: All, None | 0 of 4 Selected

### Denied Originating Locations

<table>
<thead>
<tr>
<th>Originating Location</th>
<th>Notes</th>
</tr>
</thead>
</table>

Input Required
### Dial Pattern Details

**General**

- **Pattern:** HOL1
- **Min:** 13
- **Max:** 19

**SIP Domain:** ALL

**Notes:** IP International to SRC's

---

### Originating Locations and Routing Policies

#### Add

**Items:** 4

<table>
<thead>
<tr>
<th>Originating Location Name</th>
<th>Originating Location Value</th>
<th>Routing Policy Name</th>
<th>Rank</th>
<th>Routing Policy Disabled</th>
<th>Routing Policy Destination</th>
<th>Routing Policy Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1550</td>
<td>sips://mt24.sip.country.com</td>
<td>...</td>
<td>10</td>
<td></td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>1550</td>
<td>sips://mt24.sip.country.com</td>
<td>...</td>
<td>0</td>
<td></td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>1550</td>
<td>sips://mt24.sip.country.com</td>
<td>...</td>
<td>10</td>
<td></td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

**Select:** All, None (0 of 4 Selected)

### Denied Originating Locations

#### Add

**Items:** 0

<table>
<thead>
<tr>
<th>Originating Location</th>
<th>Notes</th>
</tr>
</thead>
</table>

**Input Required**
**General**

- **Pattern**: 
- **Min**: 11
- **Max**: 11
- **Emergency Call**: 
- **SIP Domain**: ALL
- **Notes**: SIP to edgegate-sbc

**Originating Locations and Routing Policies**

<table>
<thead>
<tr>
<th>Originating Location Name</th>
<th>Originating Location Value</th>
<th>Routing Policy Name</th>
<th>Rank</th>
<th>Routing Policy Disabled</th>
<th>Routing Policy Destination</th>
<th>Routing Policy Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>Host C1010</td>
<td>Block to edgegate-sbc</td>
<td>0</td>
<td>false</td>
<td>edgegate-sbc</td>
<td>0</td>
</tr>
<tr>
<td>Host</td>
<td>Host C1010</td>
<td>Block to edgegate-sbc</td>
<td>0</td>
<td>false</td>
<td>edgegate-sbc</td>
<td>0</td>
</tr>
<tr>
<td>s0550-wm</td>
<td>s0550-wm</td>
<td>FF to edgegate-sbc</td>
<td>10</td>
<td>false</td>
<td>edgegate-sbc</td>
<td>10</td>
</tr>
<tr>
<td>s0550-wm</td>
<td>s0550-wm</td>
<td>FF to edgegate-sbc</td>
<td>10</td>
<td>false</td>
<td>edgegate-sbc</td>
<td>10</td>
</tr>
</tbody>
</table>

**Denied Originating Locations**

<table>
<thead>
<tr>
<th>Originating Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Dial Pattern Details

#### General

- **Pattern:** \*41
- **Min:** 10
- **Max:** 10
- **Emergency Call:** [ ]
- **SIP Domain:** [ ]
- **Notes:** [ ]

#### Originating Locations and Routing Policies

<table>
<thead>
<tr>
<th>Originating Location Name</th>
<th>Originating Location Notes</th>
<th>Routing Policy Name</th>
<th>Rank</th>
<th>Routing Policy Enabled</th>
<th>Routing Policy Destination</th>
<th>Routing Policy Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td></td>
<td>EP Primary to</td>
<td>0</td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP secondary to</td>
<td>10</td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP Default to</td>
<td>0</td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP secondary to</td>
<td>10</td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
<td></td>
<td>edgemarc-11</td>
<td></td>
</tr>
</tbody>
</table>

### Denied Originating Locations

#### Denied Originating Locations

<table>
<thead>
<tr>
<th>Originating Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Add Session Manager

In order to complete the configuration, we would need to add the Session Manager, by doing this we will provide the linkage between System Manager and Session Manager. Expand the **Session Manager** menu on the left and select **Session Manager Administration**. Then click **Add** (not shown), and fill in the fields as described below:

Under **General**:
- **SIP Entity Name**: Select the SIP Entity added for Avaya Session Manager
- **Description**: Descriptive comment
- **Management Access Point Host Name/IP**: Enter the IP address of the Session Manager management interface.

Under **Security Module**:
- **Network Mask**: Enter the network mask for the Session Manager
- **Default Gateway Manager**: Enter the default gateway IP address for the Session

Use default values for the rest of the fields. Click **Save** to add this Session Manager to your configuration.
## View Session Manager

### General

<table>
<thead>
<tr>
<th><strong>SIP Entity Name</strong></th>
<th>asr0001</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Cox Lab ASH 2</td>
</tr>
<tr>
<td><strong>Management Access Point Host Name/IP</strong></td>
<td>192.168.20.42</td>
</tr>
<tr>
<td><strong>Direct Routing to Endpoints</strong></td>
<td>Enable</td>
</tr>
</tbody>
</table>

### Security Module

<table>
<thead>
<tr>
<th><strong>SIP Entity IP Address</strong></th>
<th>192.168.20.42</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network Mask</strong></td>
<td>255.255.255.0</td>
</tr>
<tr>
<td><strong>Default Gateway</strong></td>
<td>192.168.20.1</td>
</tr>
<tr>
<td><strong>Call Control DPH</strong></td>
<td>46</td>
</tr>
<tr>
<td><strong>QoS Priority</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Speed &amp; Duplex</strong></td>
<td>Autoneg</td>
</tr>
<tr>
<td><strong>VLAN ID</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

### Monitoring

| **Enable Monitoring**                  | - |
| **Preaction cycle time (ms)**         | 200 |
| **Reaaction cycle time (ms)**         | 20 |
| **Number of Retries**                 | 1 |

### CDR

| **Enable CDR**                         | - |
| **User**                               | CDR_USER |
| **Password**                           | - |

### Personal Profile Manager (PPM) - Connection Settings

| **Limited PPM client connection**      | - |
| **Maximum Connection per PPM client** | - |
| **PPM Connection Timeout (mins)**     | 5 |
| **PPM Packet Rate Limiting**          | - |
| **PPM Packet Rate Limiting Threshold**| - |

### Event Server

| **Clear Subcription on notification Failure** | - |
### View Session Manager

#### General

- **SIP Entity Name**: access02
- **Description**: Cox Lab 5AM 2
- **Management Access Point Host Name/IP**: 192.168.20.45
- **Direct Routing to Endpoints**: Enable

#### Security Module

- **SIP Entity IP Address**: 192.168.20.48
- **Network Mask**: 255.255.255.0
- **Default Gateway**: 192.168.20.1
- **Call Control DNB**: 46
- **QoS Priority**: 6
- **Speed & Duplex**: AUTO
- **VLAN ID**: 

#### Monitoring

- **Enable Monitoring**: 
- **Proactive cycle time (sec)**: 20
- **Reactive cycle time (sec)**: 20
- **Number of Retries**: 1

#### CDR

- **Enable CDR**: 
  - **User**: COX_USER
  - **Password**: 

#### Personal Profile Manager (PPM) - Connection Settings

- **Limited PPM client connection**: 
- **Maximum Connection per PPM client**: 
- **PPM Connection Timeout (mins)**: 5
- **PPM Packet Rate Limiting**: 
- **PPM Packet Rate Limiting Threshold**: 

#### Event Server

- **Clear Subscription on notification Failure**: 

---

**Figure 53 – Session Manager**
### Define Local Host Names

Any FQDN host names referenced in SIP Entity definitions must be defined. Select **Session Manager → Network Configuration → Local Host Name Resolution** under the menu on your left. For each host name, click **New** and enter the following:

- **Host Name**: The FQDN used for the host
- **IP Address**: IP Address of the host’s network interface
- **Port**: Port number to which SIP requests are sent
- **Transport**: Transport to be used for SIP requests

Defaults values can be apply for the remaining fields. The **Priority** and **Weight** fields are used when multiple IP Addresses are defined for the same host.
### Edit Local Host Name Entries

<table>
<thead>
<tr>
<th>Host Name (FQDN)</th>
<th>IP Address</th>
<th>Port</th>
<th>Priority</th>
<th>Weight</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>sf100cdn</td>
<td>192.168.20.52</td>
<td>5063</td>
<td>100</td>
<td>100</td>
<td>TLS</td>
</tr>
</tbody>
</table>

Select: ALL Name (1 of 1 Selected)

*Required

---

**Figure 54 – Local Host Names**
9.2.10  Define Time Range and Personal Settings

Here we can define additional information like Time Range and Personal Settings on routing options.

Figure 55 – Time Range and Personal Settings
10 Appendix

10.1 Appendix A: DHCP Server and Default Settings (Information Only)
Cox recommends static IP addressing for the IP phones. However, if you decide to use DHCP for dynamic IP address assignments for the phones, take note of the information below in section 10.1.1:

10.1.1 The DHCP Server on Communication Manager Branch
An IP station needs an IP address to register. A Dynamic Host Configuration Protocol (DHCP) server provides each IP station with a unique IP address. If the DHCP server on Communication Manager Branch is used, it is administered using the Branch Device Manager interface. If the DHCP administration is incorrect or if there is a problem with the DHCP server, the IP stations will not receive an IP address and will not be able to register with the call server.

You can verify the performance of the Communication Manager Branch DHCP server by clicking DHCP Server under Maintenance and Monitoring > Platform > Data Services. The DHCP Server Bindings and Statistics screen displays.

The DHCP Server Bindings and Statistics screen provides a list of assigned IP addresses, as well as statistics about the overall performance of the DHCP server such as:

- The number of requests for IP addresses.
- The number of IP stations that were declined.
- The number of IP addresses that were released.

10.2 Appendix B: CS1K Patches

<table>
<thead>
<tr>
<th>IN-SERVICE PEPS</th>
<th>PATCH REF #</th>
<th>NAME</th>
<th>DATE</th>
<th>FILENAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECINS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>000 Q02038482</td>
<td>p28682_1</td>
<td>15/02/2011</td>
<td>p28682_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>001 Q00350041-01</td>
<td>p16376_1</td>
<td>15/02/2011</td>
<td>p16376_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>002 Q00349046-03</td>
<td>p17588_1</td>
<td>15/02/2011</td>
<td>p17588_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>003 Q01725096-03</td>
<td>p23200_1</td>
<td>15/02/2011</td>
<td>p23200_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>004 Q01680019</td>
<td>p24307_1</td>
<td>15/02/2011</td>
<td>p24307_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>005 Q02097405</td>
<td>p24463_1</td>
<td>15/02/2011</td>
<td>p24463_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>006 Q01782930-01</td>
<td>p24964_1</td>
<td>15/02/2011</td>
<td>p24964_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>007 Q01873266-02</td>
<td>p25747_1</td>
<td>15/02/2011</td>
<td>p25747_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>008 Q01844473-01</td>
<td>p26726_1</td>
<td>15/02/2011</td>
<td>p26726_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>009 Q01974578-04</td>
<td>p27329_1</td>
<td>15/02/2011</td>
<td>p27329_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>010 Q01974383-02</td>
<td>p27378_1</td>
<td>15/02/2011</td>
<td>p27378_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>011 Q01983521-04</td>
<td>p27616_1</td>
<td>15/02/2011</td>
<td>p27616_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>012 Q02092594</td>
<td>p27830_1</td>
<td>15/02/2011</td>
<td>p27830_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>013 Q01999478-01</td>
<td>p27897_1</td>
<td>15/02/2011</td>
<td>p27897_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>014 Q02064793-06</td>
<td>p27947_1</td>
<td>15/02/2011</td>
<td>p27947_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>015 Q02007976-03</td>
<td>p28028_1</td>
<td>15/02/2011</td>
<td>p28028_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>016 Q02007476</td>
<td>p28031_1</td>
<td>15/02/2011</td>
<td>p28031_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>017 Q01849803</td>
<td>p28064_1</td>
<td>15/02/2011</td>
<td>p28064_1.cpm</td>
<td>YES</td>
</tr>
<tr>
<td>018 Q02011613-01</td>
<td>p28108_1</td>
<td>15/02/2011</td>
<td>p28108_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>019 Q01982233-06</td>
<td>p28172_1</td>
<td>15/02/2011</td>
<td>p28172_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>020 Q01976701-01</td>
<td>p28211_1</td>
<td>15/02/2011</td>
<td>p28211_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>021 Q02019660-04</td>
<td>p28252_2</td>
<td>15/02/2011</td>
<td>p28252_2.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>022 Q02017013-01</td>
<td>p28313_1</td>
<td>15/02/2011</td>
<td>p28313_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>023 Q02097631</td>
<td>p28328_1</td>
<td>15/02/2011</td>
<td>p28328_1.cpm</td>
<td>NO</td>
</tr>
<tr>
<td>Q02088715-02</td>
<td>ISS3:1OF1</td>
<td>p29077_3</td>
<td>15/02/2011</td>
<td>p29077_3.cpm</td>
</tr>
<tr>
<td>Q02071739</td>
<td>ISS1:1OF1</td>
<td>p29096_1</td>
<td>15/02/2011</td>
<td>p29096_1.cpm</td>
</tr>
<tr>
<td>Q02043226-02</td>
<td>ISS1:1OF1</td>
<td>p29125_1</td>
<td>15/02/2011</td>
<td>p29125_1.cpm</td>
</tr>
<tr>
<td>Q02074796</td>
<td>ISS1:1OF1</td>
<td>p29126_1</td>
<td>15/02/2011</td>
<td>p29126_1.cpm</td>
</tr>
<tr>
<td>Q02084339-02</td>
<td>ISS1:1OF1</td>
<td>p29137_1</td>
<td>15/02/2011</td>
<td>p29137_1.cpm</td>
</tr>
<tr>
<td>Q02076740</td>
<td>ISS1:1OF1</td>
<td>p29154_1</td>
<td>15/02/2011</td>
<td>p29154_1.cpm</td>
</tr>
<tr>
<td>Q02071451</td>
<td>ISS1:1OF1</td>
<td>p29164_1</td>
<td>15/02/2011</td>
<td>p29164_1.cpm</td>
</tr>
<tr>
<td>Q02077171</td>
<td>ISS1:1OF1</td>
<td>p29169_1</td>
<td>15/02/2011</td>
<td>p29169_1.cpm</td>
</tr>
<tr>
<td>Q02077764-04</td>
<td>ISS1:1OF1</td>
<td>p29174_1</td>
<td>15/02/2011</td>
<td>p29174_1.cpm</td>
</tr>
<tr>
<td>Q02077977-01</td>
<td>ISS1:1OF1</td>
<td>p29177_1</td>
<td>15/02/2011</td>
<td>p29177_1.cpm</td>
</tr>
<tr>
<td>Q02064503</td>
<td>ISS1:1OF1</td>
<td>p29196_1</td>
<td>15/02/2011</td>
<td>p29196_1.cpm</td>
</tr>
<tr>
<td>Q02073690</td>
<td>ISS1:1OF1</td>
<td>p29208_1</td>
<td>15/02/2011</td>
<td>p29208_1.cpm</td>
</tr>
<tr>
<td>Q02055782-01</td>
<td>ISS1:1OF1</td>
<td>p29215_1</td>
<td>15/02/2011</td>
<td>p29215_1.cpm</td>
</tr>
<tr>
<td>Q02065521</td>
<td>ISS1:1OF1</td>
<td>p29218_1</td>
<td>15/02/2011</td>
<td>p29218_1.cpm</td>
</tr>
<tr>
<td>Q02083027</td>
<td>ISS1:1OF1</td>
<td>p29233_1</td>
<td>15/02/2011</td>
<td>p29233_1.cpm</td>
</tr>
<tr>
<td>Q02079649</td>
<td>ISS1:1OF1</td>
<td>p29238_1</td>
<td>15/02/2011</td>
<td>p29238_1.cpm</td>
</tr>
<tr>
<td>Q02086333</td>
<td>ISS1:1OF1</td>
<td>p29262_1</td>
<td>15/02/2011</td>
<td>p29262_1.cpm</td>
</tr>
<tr>
<td>Q02077909</td>
<td>ISS1:1OF1</td>
<td>p29272_1</td>
<td>15/02/2011</td>
<td>p29272_1.cpm</td>
</tr>
<tr>
<td>Q02077849-01</td>
<td>ISS1:1OF1</td>
<td>p29320_1</td>
<td>15/02/2011</td>
<td>p29320_1.cpm</td>
</tr>
<tr>
<td>Q02092223</td>
<td>ISS1:1OF1</td>
<td>p29343_1</td>
<td>15/02/2011</td>
<td>p29343_1.cpm</td>
</tr>
<tr>
<td>Q02093188</td>
<td>ISS1:1OF1</td>
<td>p29352_1</td>
<td>15/02/2011</td>
<td>p29352_1.cpm</td>
</tr>
<tr>
<td>Q02093256-03</td>
<td>ISS1:1OF1</td>
<td>p29354_1</td>
<td>15/02/2011</td>
<td>p29354_1.cpm</td>
</tr>
<tr>
<td>Q02093325</td>
<td>ISS1:1OF1</td>
<td>p29355_1</td>
<td>15/02/2011</td>
<td>p29355_1.cpm</td>
</tr>
<tr>
<td>Q02093535-01</td>
<td>ISS3:1OF1</td>
<td>p30074_1</td>
<td>15/02/2011</td>
<td>p30074_1.cpm</td>
</tr>
<tr>
<td>Q02094012</td>
<td>ISS1:1OF1</td>
<td>p29370_1</td>
<td>15/02/2011</td>
<td>p29370_1.cpm</td>
</tr>
<tr>
<td>Q02095619-04</td>
<td>ISS2:1OF1</td>
<td>p29376_2</td>
<td>15/02/2011</td>
<td>p29376_2.cpm</td>
</tr>
<tr>
<td>Q02100965</td>
<td>ISS1:1OF1</td>
<td>p29378_1</td>
<td>15/02/2011</td>
<td>p29378_1.cpm</td>
</tr>
<tr>
<td>Q02103928</td>
<td>ISS1:1OF1</td>
<td>p29486_1</td>
<td>15/02/2011</td>
<td>p29486_1.cpm</td>
</tr>
<tr>
<td>Q02104745-01</td>
<td>ISS1:1OF1</td>
<td>p29495_1</td>
<td>15/02/2011</td>
<td>p29495_1.cpm</td>
</tr>
<tr>
<td>Q02107402</td>
<td>ISS1:1OF1</td>
<td>p29512_1</td>
<td>15/02/2011</td>
<td>p29512_1.cpm</td>
</tr>
<tr>
<td>Q02109592</td>
<td>ISS1:1OF1</td>
<td>p29524_1</td>
<td>15/02/2011</td>
<td>p29524_1.cpm</td>
</tr>
<tr>
<td>Q02108821-01</td>
<td>ISS1:1OF1</td>
<td>p29529_1</td>
<td>15/02/2011</td>
<td>p29529_1.cpm</td>
</tr>
<tr>
<td>Q02109161</td>
<td>ISS1:1OF1</td>
<td>p29536_1</td>
<td>15/02/2011</td>
<td>p29536_1.cpm</td>
</tr>
<tr>
<td>Q02067377-05</td>
<td>ISS1:1OF1</td>
<td>p29537_1</td>
<td>15/02/2011</td>
<td>p29537_1.cpm</td>
</tr>
<tr>
<td>Q02110455-03</td>
<td>ISS1:1OF1</td>
<td>p29670_1</td>
<td>15/02/2011</td>
<td>p29670_1.cpm</td>
</tr>
<tr>
<td>Q02075949-04</td>
<td>ISS1:1OF1</td>
<td>p29671_1</td>
<td>15/02/2011</td>
<td>p29671_1.cpm</td>
</tr>
<tr>
<td>Q02157822-01</td>
<td>ISS1:1OF1</td>
<td>p30197_1</td>
<td>15/02/2011</td>
<td>p30197_1.cpm</td>
</tr>
<tr>
<td>Q02096730</td>
<td>ISS1:1OF1</td>
<td>p29462_1</td>
<td>15/02/2011</td>
<td>p29462_1.cpm</td>
</tr>
<tr>
<td>#</td>
<td>Q02071694-04</td>
<td>ISS1:1OF1</td>
<td>p29679_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>----</td>
<td>-------------</td>
<td>--------</td>
<td>---------</td>
<td>------------</td>
</tr>
<tr>
<td>130</td>
<td>Q02024749-02</td>
<td>ISS1:1OF1</td>
<td>p29680_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>131</td>
<td>Q02007724-04</td>
<td>ISS1:1OF1</td>
<td>p29681_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>132</td>
<td>Q02110973</td>
<td>ISS1:1OF1</td>
<td>p29690_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>133</td>
<td>Q02109731-02</td>
<td>ISS1:1OF1</td>
<td>p29694_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>134</td>
<td>Q02109705-04</td>
<td>ISS1:1OF1</td>
<td>p29701_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>135</td>
<td>Q02096711</td>
<td>ISS1:1OF1</td>
<td>p29714_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>136</td>
<td>Q02114752</td>
<td>ISS1:1OF1</td>
<td>p29718_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>137</td>
<td>Q02109705-04</td>
<td>ISS1:1OF1</td>
<td>p29744_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>138</td>
<td>Q02096711</td>
<td>ISS1:1OF1</td>
<td>p29755_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>139</td>
<td>Q02114752</td>
<td>ISS1:1OF1</td>
<td>p29759_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>140</td>
<td>Q02109731-02</td>
<td>ISS1:1OF1</td>
<td>p29825_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>141</td>
<td>Q02109705-04</td>
<td>ISS1:1OF1</td>
<td>p29827_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>142</td>
<td>Q02129264</td>
<td>ISS1:1OF1</td>
<td>p29998_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>143</td>
<td>Q02131547</td>
<td>ISS1:1OF1</td>
<td>p30004_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>144</td>
<td>Q02135191</td>
<td>ISS1:1OF1</td>
<td>p30007_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>145</td>
<td>Q02137476</td>
<td>ISS1:1OF1</td>
<td>p30018_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>146</td>
<td>Q02101541-03</td>
<td>ISS1:1OF1</td>
<td>p30027_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>147</td>
<td>Q02140914-02</td>
<td>ISS1:1OF1</td>
<td>p30045_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>148</td>
<td>Q02144165</td>
<td>ISS1:1OF1</td>
<td>p30053_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>149</td>
<td>Q02129264</td>
<td>ISS1:1OF1</td>
<td>p30065_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>150</td>
<td>Q02147768</td>
<td>ISS1:1OF1</td>
<td>p30085_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>151</td>
<td>Q02150271</td>
<td>ISS1:1OF1</td>
<td>p30104_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>152</td>
<td>Q02058869-01</td>
<td>ISS1:1OF1</td>
<td>p30124_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>153</td>
<td>Q02151971</td>
<td>ISS1:1OF1</td>
<td>p30156_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>154</td>
<td>Q02155698</td>
<td>ISS1:1OF1</td>
<td>p30172_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>155</td>
<td>Q02156053</td>
<td>ISS1:1OF1</td>
<td>p30176_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>156</td>
<td>Q02124989</td>
<td>ISS1:1OF1</td>
<td>p30184_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>157</td>
<td>Q02157668</td>
<td>ISS1:1OF1</td>
<td>p30204_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>158</td>
<td>Q02158724</td>
<td>ISS1:1OF1</td>
<td>p30210_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>159</td>
<td>Q02157937</td>
<td>ISS1:1OF1</td>
<td>p30218_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>160</td>
<td>Q02159328-01</td>
<td>ISS1:1OF1</td>
<td>p30223_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>161</td>
<td>Q02164720</td>
<td>ISS1:1OF1</td>
<td>p30282_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>162</td>
<td>Q02052184-01</td>
<td>ISS1:1OF1</td>
<td>p30288_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>163</td>
<td>Q02113482</td>
<td>ISS1:1OF1</td>
<td>p30294_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>164</td>
<td>Q02167838</td>
<td>ISS1:1OF1</td>
<td>p30324_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>165</td>
<td>Q02170814</td>
<td>ISS1:1OF1</td>
<td>p30345_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>166</td>
<td>Q02168320</td>
<td>ISS1:1OF1</td>
<td>p30346_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>167</td>
<td>Q02172404</td>
<td>ISS1:1OF1</td>
<td>p30357_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>168</td>
<td>w100730456</td>
<td>ISS1:1OF1</td>
<td>p30382_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>169</td>
<td>Q02160232</td>
<td>ISS1:1OF1</td>
<td>p30423_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>170</td>
<td>Q01994258-03</td>
<td>ISS1:1OF1</td>
<td>p30303_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>171</td>
<td>w100716535</td>
<td>ISS1:1OF1</td>
<td>p30371_1</td>
<td>15/02/2011</td>
</tr>
<tr>
<td>172</td>
<td>Q02110973</td>
<td>ISS1:1OF1</td>
<td>p29741_1</td>
<td>15/02/2011</td>
</tr>
</tbody>
</table>
10.3 Appendix C: Sample SIP Traces for Avaya Session Manager and EdgeMarc 6400 E-SBC

For trouble shooting Avaya Aura Session Manager, please refer to section SIP Tracer Configuration and SIP Trace Viewer. For further explanation refer to Administering Avaya Aura Session Manager document.

/* Example of incoming call - SIP INVITE */
18:29:56.160018 192.168.20.10.5060 > 192.168.20.44.5060:

INVITE sip:192.168.20.44.5060;branch=z9hG4bk3de12h5c5461c6d81g421d2uv6 Record-Route: <sip:6782381099@192.168.20.10:5060;rport;branch=z9hG4bK3de12h5c5461c6d81g421d2uv6;lr>From: "lab user 6782381099"

/* Example of outgoing call – SIP INVITE */
18:29:56.382439 192.168.20.44.5060 > 192.168.20.10.5060:

INVITE sip:192.168.20.10.5060;branch=z9hG4bk3de15h5c5461c6d81g421d2uv6;lr>From: "lab user 6782381099"

/* Example of Call Forward – SIP INVITE */
14:17:26.622540 192.168.1.10.5060 > 192.168.1.1.5060:

INVITE sip:192.168.1.1.5060;branch=z9hG4bK3de15h5c5461c6d81g421d2uv6;lr>From: "lab user 6782381099"
/* Example of Call Transfer - SIP INVITE */

User Datagram Protocol, Src Port: sip (5060), Dst Port: sip (5060)
Session Initiation Protocol
Request-Line: INVITE sip:192.168.20.10:5060;transport=udp SIP/2.0
Method: INVITE
Request-URI: sip:192.168.20.10:5060;transport=udp
Request-URI Host Port: 192.168.20.10
Request-URI Host Port: 5060
[Resent Packet: False]
Message Header
From: "Lab User 1099" <sip:6782381099@avaya.com;user=phone>;tag=80faff71246bdf11e234c0e2ec00
SIP Display info: "Lab User 1099"
SIP from address: sip:6782381099@avaya.com
SIP from address User Part: 6782381099
SIP from address Host Part: avaya.com
SIP tag: 80faff71246bdf11e234c0e2ec00
To: "4046691362" <sip:4046691362@avaya.com;user=phone>;tag=SDash3999-689327503-1274988098621
SIP Display info: "4046691362"
SIP to address: sip:4046691362@avaya.com
SIP to address User Part: 4046691362
SIP to address Host Part: avaya.com
SIP tag: SDash3999-689327503-1274988098621
Call-ID: 80faff71246bdf11f234c0e2ec00
CSeq: 4 INVITE
Sequence Number: 4
Method: INVITE
Max-Forwards: 67
Route: <sip:EWGW_0@192.168.20.10;lr>
Via: SIP/2.0/UDP 192.168.20.44;rport;branch=z9hG4bKC0A8142BBADFD00D000012882E4CD1C2486697-AP;ft=192.168.20.44-13c4
Transport: UDP
Sent-by Address: 192.168.20.44
RPort: rport
Branch: z9hG4bKC0A8142BBADFD00D000012882E4CD1C2486697-AP
Via: SIP/2.0/UDP 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFD00D000012882E4CD1C2486697-AP;ft=192.168.20.44-13c4
Transport: UDP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADFD00D000012882E4CD1C2486697
Via: SIP/2.0/UDP 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFD00D000012882E4CD1C;sap=2050292912*1*016asm-callprocessing.sar722708416-1274988048658-1547702683-1
Transport: TCP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADFD00D000012882E4CD1C;sap=2050292912*1*016asm-callprocessing.sar722708416-1274988048658-1547702683-1
Via: SIP/2.0/TLS 192.168.20.44;branch=z9hG4bK0164e80246bdf135234c0e2ec00-AP;ft=1596
Transport: TLS
Sent-by Address: 192.168.20.44
Branch: z9hG4bK0164e80246bdf135234c0e2ec00-AP
Via: SIP/2.0/TLS 192.168.20.52;branch=z9hG4bK0164e80246bdf135234c0e2ec00
Transport: TLS
Sent-by Address: 192.168.20.52
Branch: z9hG4bK0164e80246bdf135234c0e2ec00
Supported: timer, replaces, join, histinfo, 100rel
Allow: INVITE, CANCEL, BYE, ACK, PRACK, SUBSCRIBE, NOTIFY, REFER, OPTIONS, INFO, PUBLISH
Contact: <sip:814046691324@192.168.20.52;transport=tls;user=phone>

Property of Cox Communications, Inc. Version 1.1
Page 76 of 81
/* Example of Call Forward - SIP INVITE */


User Datagram Protocol, Src Port: sip (5060), Dst Port: sip (5060)

Session Initiation Protocol

Status-Line: SIP/2.0 181 Call Is Being Forwarded
Status-Code: 181

[Request Frame: 202]
[Response Time (ms): 45]

Message Header

From: "COMPTONU2L2" <sip:814046691324@192.168.20.10;user=phone>;tag=SDokche01-1981337805-1274988157030-
SIP Display info: "COMPTONU2L2"
SIP contact address: sip:814046691324@192.168.20.52
Session-Expires: 1200;refresher=uac
Min-SE: 1200
Content-Length: 0
P-Asserted-Identity: "COMPTONU2L2" <sip:814046691324@avaya.com>
SIP Display info: "COMPTONU2L2"
SIP PAI Address: sip:814046691324@avaya.com
User-Agent: Avaya CM/R015x.02.1.016.4 AVAYA-SM-5.2.1.1.521012

Contact Binding: "COMPTONU2L2"
Contact URI: "COMPTONU2L2"
Message Body

Session Description Protocol

Session Description Protocol Version (v): 0
Owner/Creator, Session Id (o): - 1 2 IN IP4 192.168.20.53
Owner Username: -
Session ID: 1
Session Version: 2
Owner Network Type: IN
Owner Address Type: IP4
Owner Address: 192.168.20.53
Session Name (s): -
Connection Information (c): IN IP4 192.168.20.51
Connection Network Type: IN
Connection Address Type: IP4
Connection Address: 192.168.20.51
Bandwidth Information (b): AS:64
Time Description, active time (t): 0 0
Session Start Time: 0
Session Stop Time: 0
Media Description, name and address (m): audio 2616 RTP/AVP 0 96
Media Type: audio
Media Port: 2616
Media Protocol: RTP/AVP
Media Format: ITU-T G.711 PCMU
Media Format: DynamicRTP-Type-96
Media Attribute (a): rtpmap:0 PCMU/8000
Media Attribute Fieldname: rtpmap
Media Format: 0
MIME Type: PCMU
Sample Rate: 8000
Media Attribute (a): rtpmap:96 telephone-event/8000
Media Attribute Fieldname: rtpmap
Media Format: 96
MIME Type: telephone-event
Sample Rate: 8000

No.     Time        Source                Destination           Protocol Info
229 140.166593  192.168.20.44         192.168.20.10         SIP      Request:
UPDATE sip:192.168.20.10:5060;transport=udp

Frame 229 (1349 bytes on wire, 1349 bytes captured)
Linux cooked capture
User Datagram Protocol, Src Port: sip (5060), Dst Port: sip (5060)
Session Initiation Protocol
Request-Line: UPDATE sip:192.168.20.10:5060;transport=udp SIP/2.0
Method: UPDATE
Request-URI: sip:192.168.20.10:5060;transport=udp
Request-URI Host Port: 192.168.20.10
Request-URI Host Port: 5060
[Resent Packet: False]
Message Header
From: "COMPTONU2L2"
<sip:4046691324@192.168.20.10;user=phone>;tag=040c395246bdf151234c0e2ec00
SIP Display info: "COMPTONU2L2"
SIP from address: sip:4046691324@192.168.20.10
SIP from address User Part: 4046691324
SIP from address Host Part: 192.168.20.10
SIP tag: 040c395246bdf151234c0e2ec00
To: "4046691362" <sip:4046691362@avaya.com;user=phone>;tag=SDg994999-938466331-1274988157498
SIP Display info: "4046691362"
SIP to address: sip:4046691362@avaya.com
SIP to address User Part: 4046691362
SIP to address Host Part: avaya.com
SIP tag: SDg994999-938466331-1274988157498
Call-ID: 040c395246bdf152234c0e2ec00
CSeq: 3 UPDATE
Sequence Number: 3
Method: UPDATE
Max-Forwards: 67
Route: <sip:EWGW_0@192.168.20.10;lr>
Via: SIP/2.0/UDP 192.168.20.44;rport;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486785-AP;ft=192.168.20.44-13c4
  Transport: UDP
  Sent-by Address: 192.168.20.44
  RPort: rport
  Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486785-AP
  ft=192.168.20.44-13c4
Via: SIP/2.0/UDP 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486785
  Transport: UDP
  Sent-by Address: 192.168.20.43
  Sent-by port: 5070
  Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486785
Via: SIP/2.0/TCP 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C;sap=-2050292912*1*016asm-callprocessing.sar722708416-1274988107842-1547702787-1
  Transport: TCP
  Sent-by Address: 192.168.20.43
  Sent-by port: 5070
  Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C;sap=-2050292912*1*016asm-callprocessing.sar722708416-1274988107842-1547702787-1
Via: SIP/2.0/TLS 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C;ft=192.168.20.43-13c4
  Transport: TLS
  Sent-by Address: 192.168.20.43
  Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C;ft=192.168.20.43-13c4
View: SIP/2.0/TLS 192.168.20.44;branch=z9hG4bK040c395246bdf155234c02ec00-AP;ft=1596
  Transport: TLS
  Sent-by Address: 192.168.20.44
  Branch: z9hG4bK040c395246bdf155234c02ec00-AP
Via: SIP/2.0/TLS 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C;ft=192.168.20.43-13c4
  Transport: TLS
  Sent-by Address: 192.168.20.43
  Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C
Supported: timer, replaces, join, histinfo, 100rel
Allow: INVITE, CANCEL, BYE, ACK, PRACK, SUBSCRIBE, NOTIFY, REFER, OPTIONS, INFO, PUBLISH
Contact: <sip:814046691324@192.168.20.52;transport=tls;user=phone>
  Binding: "COMPTONU2L2"
Contact: <sip:814046691324@192.168.20.52;transport=tls;user=phone>
  URI: "COMPTONU2L2"
SIP Display info: "COMPTONU2L2"
SIP contact address: sip:814046691324@192.168.20.52
Session-Expires: 1200;refresh=1200
Min-SE: 1200
Content-Length: 0
P-Asserted-Identity: "COMPTONU2L2" <sip:814046691324@avaya.com>
SIP Display info: "COMPTONU2L2"
SIP PAI Address: sip:814046691324@avaya.com
User-Agent: Avaya CM/R015x.02.1.016.4 AVAYA-SM-5.2.1.1.521012

/* Example of Anonymous Caller ID – SIP INVITE */

User Datagram Protocol, Src Port: sip (5060), Dst Port: sip (5060)
Session Initiation Protocol
  Request-Line: INVITE sip:192.168.20.10:5060;transport=udp SIP/2.0
  Method: INVITE
  Request-URI: sip:192.168.20.10:5060;transport=udp
  Request-URI Host Port: 192.168.20.10
  Request-URI Host Port: 5060
  [Resent Packet: False]
  Message Header
From: "Anonymous"
SIP Display info: "Anonymous"
SIP from address: sip:anonymous@anonymous.invalid
SIP from address User Part: anonymous
SIP from address Host Part: anonymous.invalid
SIP tag: 802afa1246bdf174234c0e2ec00
To: "4046691362"<sip:4046691362@avaya.com;user=phone>;tag=SDs2le999-514304466-1274988178818
SIP Display info: "4046691362"
SIP to address: sip:4046691362@avaya.com
SIP to address User Part: 4046691362
SIP to address Host Part: avaya.com
SIP tag: SDs2le999-514304466-1274988178818
Call-ID: 802afa1246bdf175234c0e2ec00
CSeq: 3 INVITE
Sequence Number: 3
Method: INVITE
Max-Forwards: 67
Route: <sip:EWGW_0@192.168.20.10;lr>
Via: SIP/2.0/UDP 192.168.20.44;rport;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486850-AP;ft=192.168.20.44-13c4
Transport: UDP
Sent-by Address: 192.168.20.44
RPort: rport
Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486850-AP
ft=192.168.20.44-13c4
Via: SIP/2.0/UDP 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486850
Transport: UDP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C2486850
Via: SIP/2.0/TCP 192.168.20.43:5070;branch=z9hG4bKC0A8142BBADFO0D0000012882E4CD1C;sap=2050292912*1*016asm-callprocessing.sar722708416-1274988129109-1547702819-1
Transport: TCP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADFO0D0000012882E4CD1C
sap=2050292912*1*016asm-callprocessing.sar722708416-1274988129109-1547702819-1
Via: SIP/2.0/TLS 192.168.20.43:5070;branch=z9hG4bK0b673a6246bdf17d234c0e2ec00-AP;ft=1596
Transport: TLS
Sent-by Address: 192.168.20.43
Branch: z9hG4bK0b673a6246bdf17d234c0e2ec00-AP
Via: SIP/2.0/TLS 192.168.20.52;branch=z9hG4bK0b673a6246bdf17d234c0e2ec00
Transport: TLS
Sent-by Address: 192.168.20.52
Branch: z9hG4bK0b673a6246bdf17d234c0e2ec00
Supported: timer, replaces, join, histinfo, 100rel
Allow: INVITE, CANCEL, BYE, ACK, PRACK, SUBSCRIBE, NOTIFY, REFER, OPTIONS, INFO, PUBLISH
Contact: "Lab User 1099"<sip:192.168.20.52;transport=tls>
Contact Binding: "Lab User 1099"<sip:192.168.20.52;transport=tls>
URI: "Lab User 1099"<sip:192.168.20.52;transport=tls>
SIP Display info: "Lab User 1099"
SIP contact address: sip:192.168.20.52
Session-Expires: 1200;refresher=uac
Min-SE: 1200
Accept-Language: en
Privacy: id
Content-Length: 0
P-Asserted-Identity: "Lab User 1099"
