



SIP Trunking Configuration Guide

for

Avaya Aura™ Session Manager v5.2 SP2 and Nortel CS1K v6.0

Document Version 1.1

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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 National IP Backbone

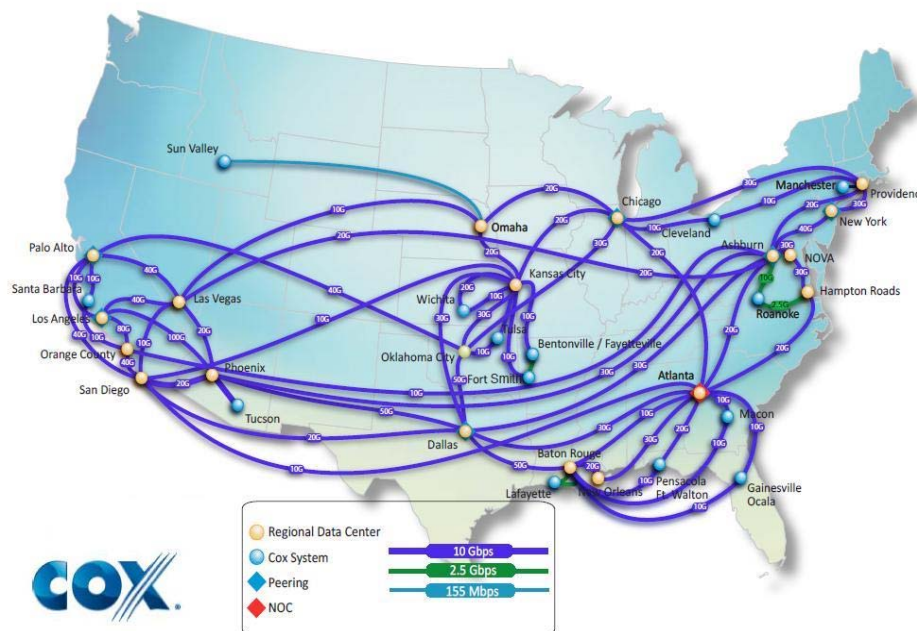


Figure 1 – Cox Fiber Network

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).

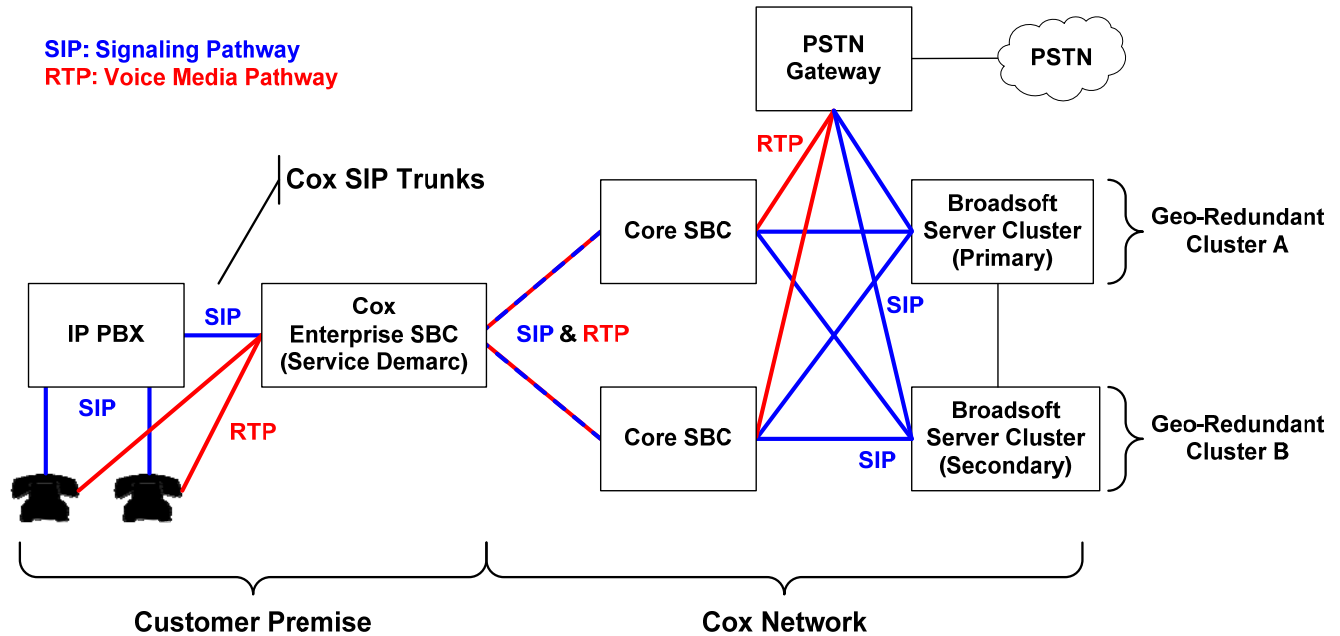


Figure 2 – Reference Network Architecture

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.

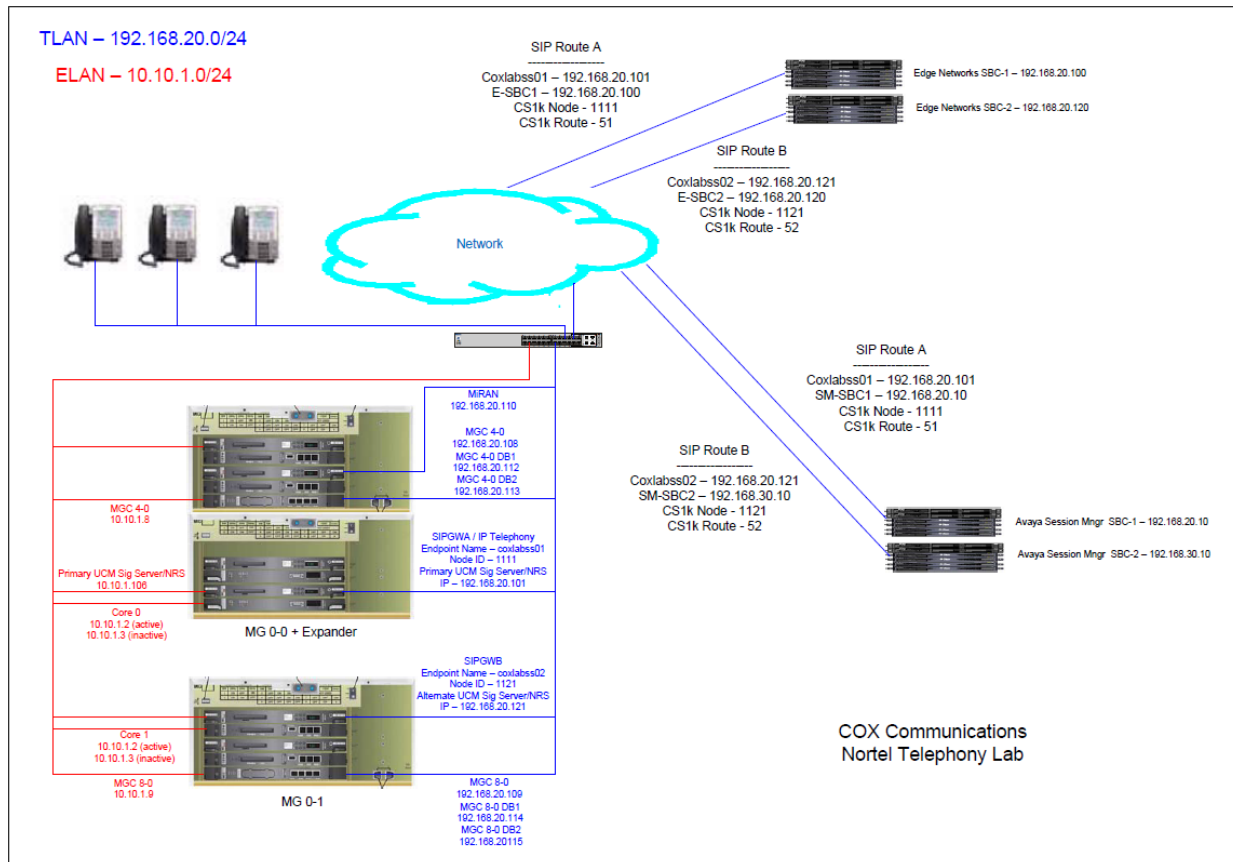


Figure 3 – SIP Trunk Lab Reference Network

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.



- Nortel Media Gateway – Provides the physical interfaces and media resources for Nortel CS1000.
- Nortel IP Phones – Represented with Nortel 1120E, 1230, and 1140E Series IP Telephones running SIP.
- The Cox E-SBC – The Edgewater Networks’ (www.edgewaternetworks.com) EdgeMarc 6400. The EdgeMarc is the service demarcation point between customer’s LAN network and Cox’s WAN network and provides firewall/NAT traversal, B2BUA and SIP Application-level gateway. The EdgeMarc has diverse routes to a primary and secondary Acme SBC.
- Acme Packet Net-Net 9200 Session Border Controllers (SBC) – In practice, these are deployed in high availability and geo-redundant pairs.

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

Component	Cox Lab Value	Your Value
Avaya System Manager		
• Management IP Address	192.169.20.40	
Avaya Session Manager		
• Management IP Address #1	192.168.20.40	
• Management IP Address #2	192.168.20.42	



Component	Cox Lab Value	Your Value
• SIP IP Address #1	192.168.20.10	
• SIP IP Address #2	192.168.30.10	
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 centralized control point of contact for all SIP-based communication for both internal and external services. Session Manager establishes SIP connections, processes 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, it 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 describe three basic call flows in this section, however for brevity 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.711ulaw 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 Triage 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

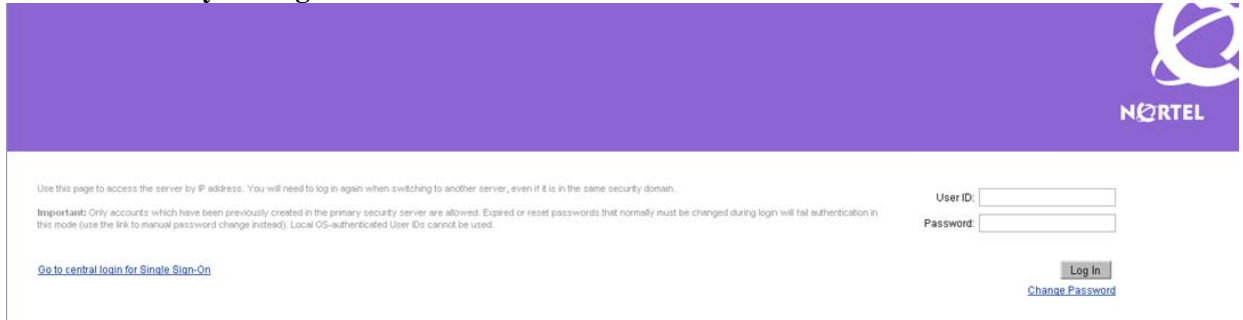


Figure 4 – Avaya/Nortel Element Manager Login Screen

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. User a browser (IE is the only supported Web Browser) and point to <http://192.168.20.106> (or 192.168.20.107) and log in.

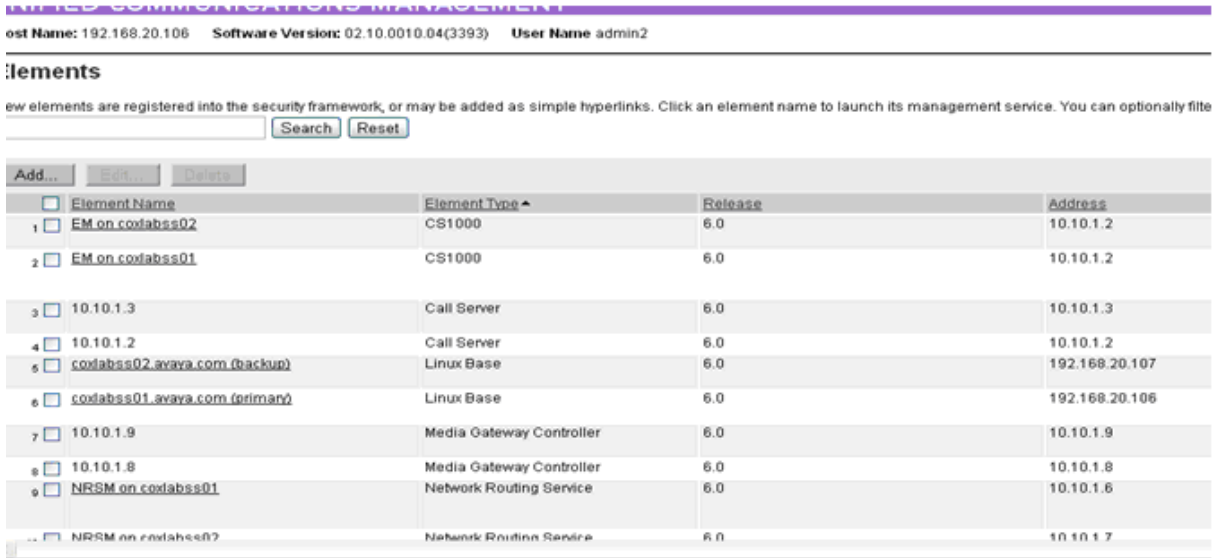


Figure 5 – Avaya/Nortel Element Manager Links Screen

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.

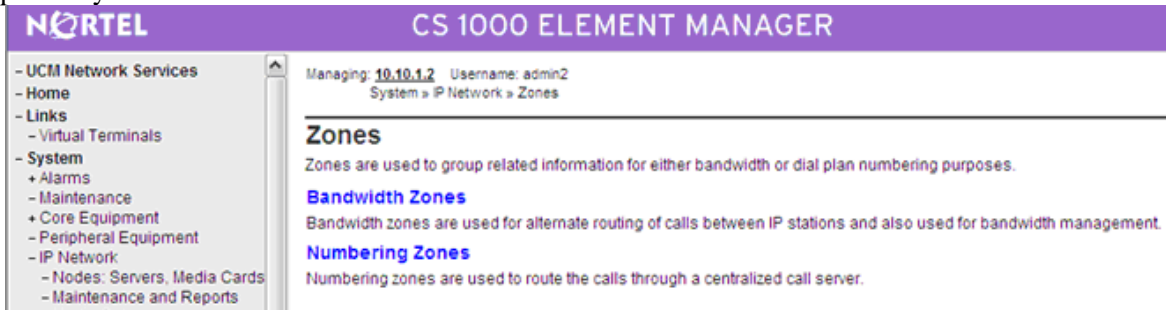


Figure 6 – Avaya/Nortel Element Manager Bandwidth Zones & Numbering Zones Screen

8.1.3 Configuration of the 'SIP Trunk Zone'.

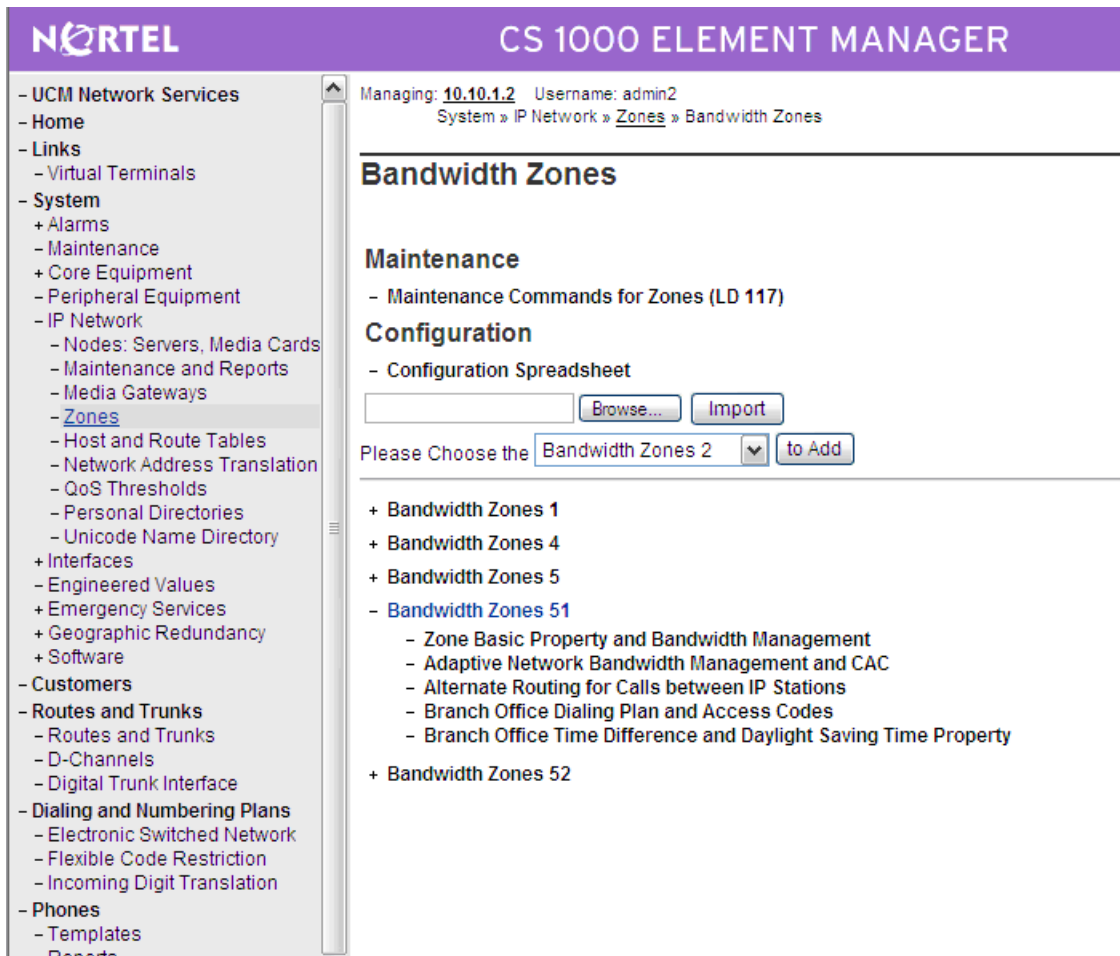


Figure 7 – Avaya/Nortel Element Manager Bandwidth Zones Detail

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.

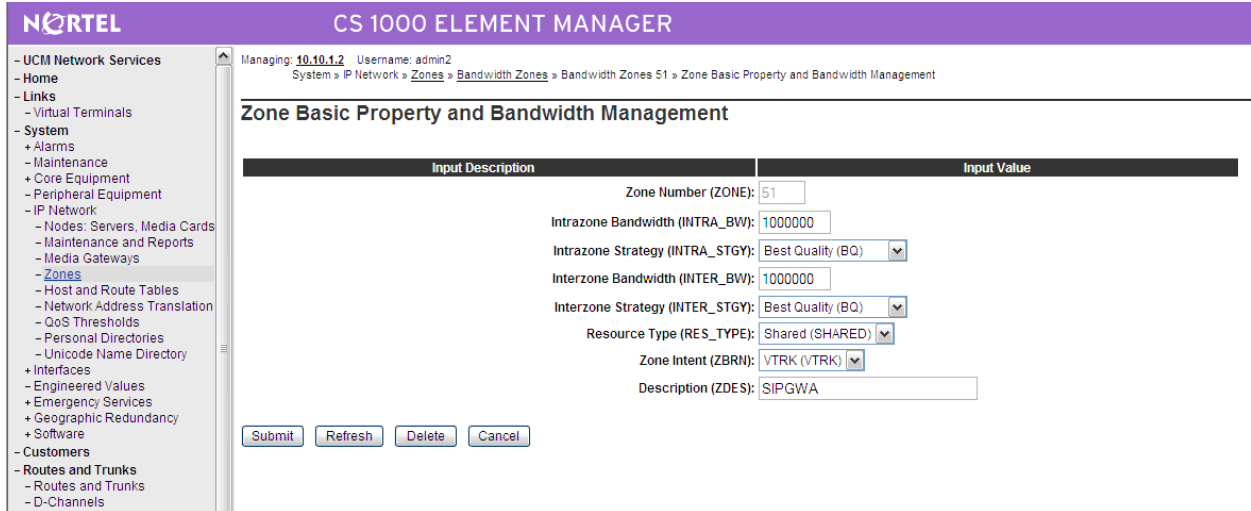


Figure 8 – Zones Basic Property and Bandwidth Management Screen

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.

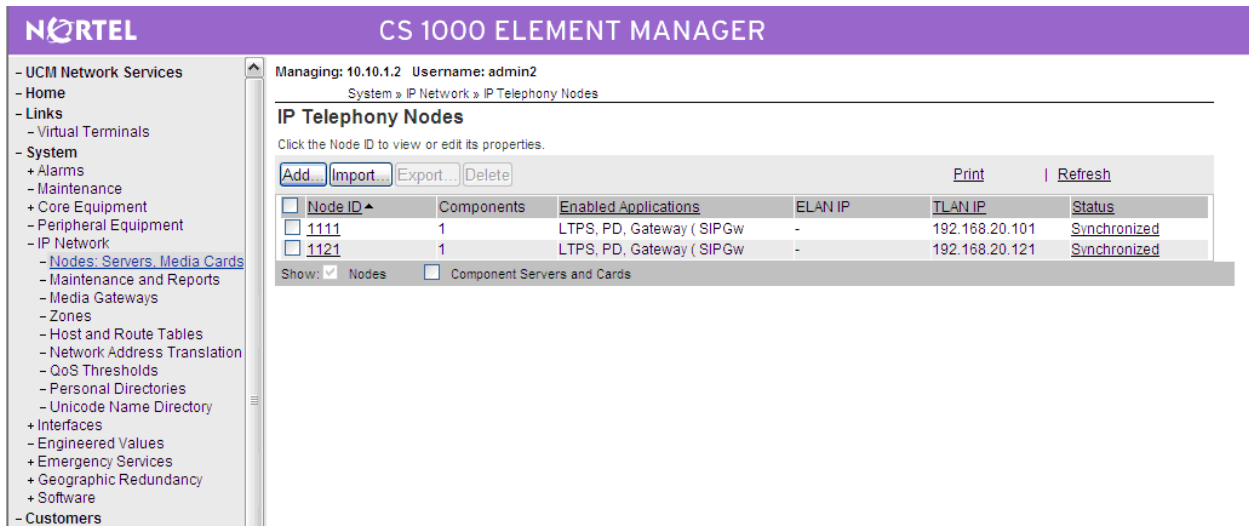
When you open Element Manager, the IP Node configuration pages can be found by clicking on ‘Node, Servers, and Media Cards’ in the left menu tab.



Figure 9 – Avaya/Nortel Element Manager System Overview

8.1.6 IP Telephony Nodes.

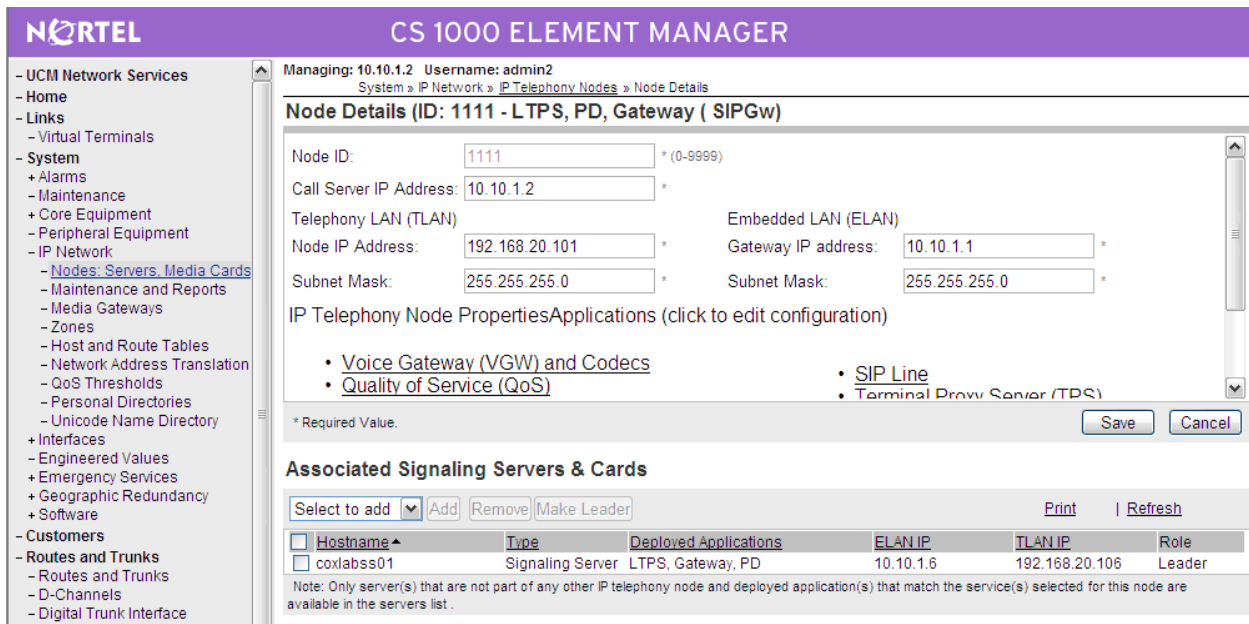
Each Signaling Server can register 1800 SIP Trunks and 1200 H.323. Only the leader Signaling Server of a node can facilitate IP trunk registration. Node 1111 is SIP Gateway A, and Node 1121 is SIP Gateway B. SIPGW-A has 15 SIP Trunks registered to it and SIPGW-B has 14 SIP trunks registered to it.



The screenshot shows the 'IP Telephony Nodes' page in the CS 1000 Element Manager. The left sidebar contains a navigation tree with categories like UCM Network Services, Home, Links, System, and Customers. The main content area displays a table of nodes with columns for Node ID, Components, Enabled Applications, ELAN IP, TLAN IP, and Status. Two nodes are listed: 1111 and 1121, both with 1 component and 'Synchronized' status.

Node ID	Components	Enabled Applications	ELAN IP	TLAN IP	Status
1111	1	LTPS, PD, Gateway (SIPGw)	-	192.168.20.101	Synchronized
1121	1	LTPS, PD, Gateway (SIPGw)	-	192.168.20.121	Synchronized

Figure 10 – Avaya/Nortel Element Manager IP Telephony Nodes



The screenshot shows the 'Node Details (ID: 1111 - LTPS, PD, Gateway (SIPGw))' page. It displays various configuration fields for the node, including Node ID, Call Server IP Address, Telephony LAN (TLAN) settings, and Embedded LAN (ELAN) settings. Below the fields, there are sections for 'IP Telephony Node Properties/Applications' and 'Associated Signaling Servers & Cards'.

Node Details (ID: 1111 - LTPS, PD, Gateway (SIPGw))

Node ID: 1111 * (0-9999)
 Call Server IP Address: 10.10.1.2 *
 Telephony LAN (TLAN)
 Node IP Address: 192.168.20.101 * Gateway IP address: 10.10.1.1 *
 Subnet Mask: 255.255.255.0 * Subnet Mask: 255.255.255.0 *

IP Telephony Node Properties/Applications (click to edit configuration)

- Voice Gateway (VGW) and Codecs
- Quality of Service (QoS)
- SIP Line
- Terminal Proxy Server (TPS)

* Required Value. [Save] [Cancel]

Associated Signaling Servers & Cards

Select to add [Add] [Remove] [Make Leader] [Print] [Refresh]

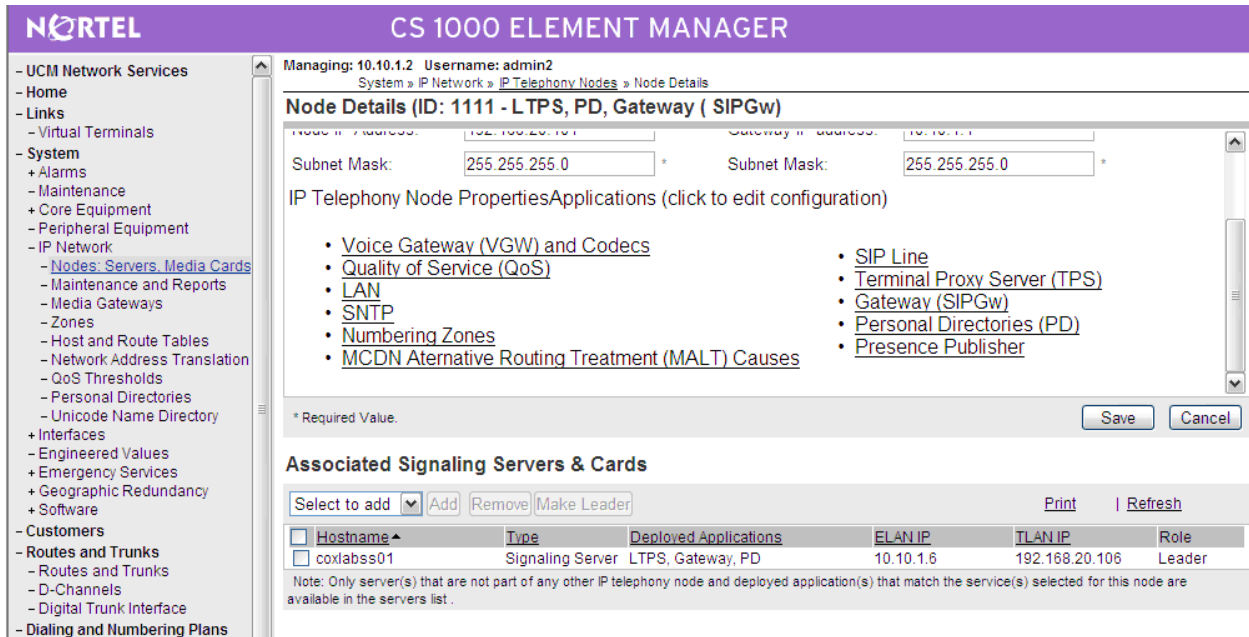
Hostname	Type	Deployed Applications	ELAN IP	TLAN IP	Role
coxlabss01	Signaling Server	LTPS, Gateway, PD	10.10.1.6	192.168.20.106	Leader

Note: Only server(s) that are not part of any other IP telephony node and deployed application(s) that match the service(s) selected for this node are available in the servers list.

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'.



NORTEL CS 1000 ELEMENT MANAGER

Managing: 10.10.1.2 Username: admin2
System » IP Network » IP Telephony Nodes » Node Details

Node Details (ID: 1111 - LTPS, PD, Gateway (SIPGw))

Node ID: 1111 Node IP Address: 192.168.20.106 Gateway ID: 1 Gateway IP Address: 10.10.1.1
Subnet Mask: 255.255.255.0 * Subnet Mask: 255.255.255.0 *

IP Telephony Node Properties Applications (click to edit configuration)

- Voice Gateway (VGW) and Codecs
- Quality of Service (QoS)
- LAN
- SNTP
- Numbering Zones
- MCDN Alternative Routing Treatment (MALT) Causes
- SIP Line
- Terminal Proxy Server (TPS)
- Gateway (SIPGw)
- Personal Directories (PD)
- Presence Publisher

* Required Value. Save Cancel

Associated Signaling Servers & Cards

Select to add Print | Refresh

<input type="checkbox"/>	Hostname	Type	Deployed Applications	ELAN IP	TLAN IP	Role
<input type="checkbox"/>	coxlabss01	Signaling Server	LTPS, Gateway, PD	10.10.1.6	192.168.20.106	Leader

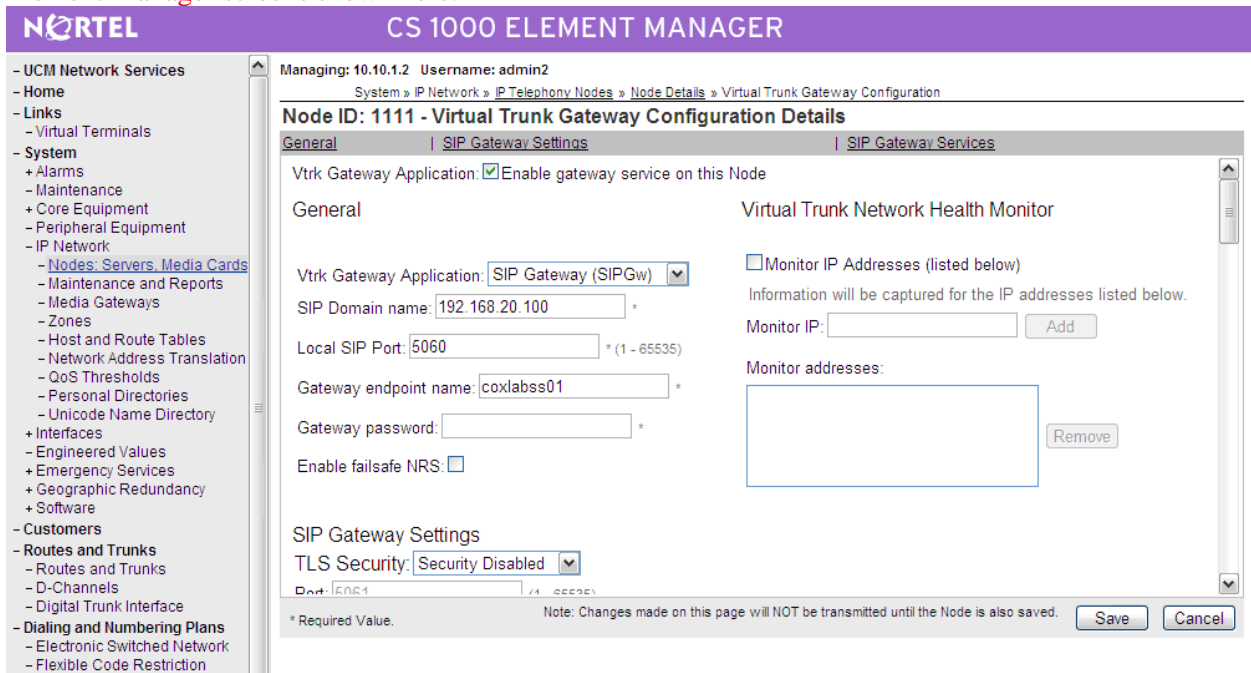
Note: Only server(s) that are not part of any other IP telephony node and deployed application(s) that match the service(s) selected for this node are available in the servers list.

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.



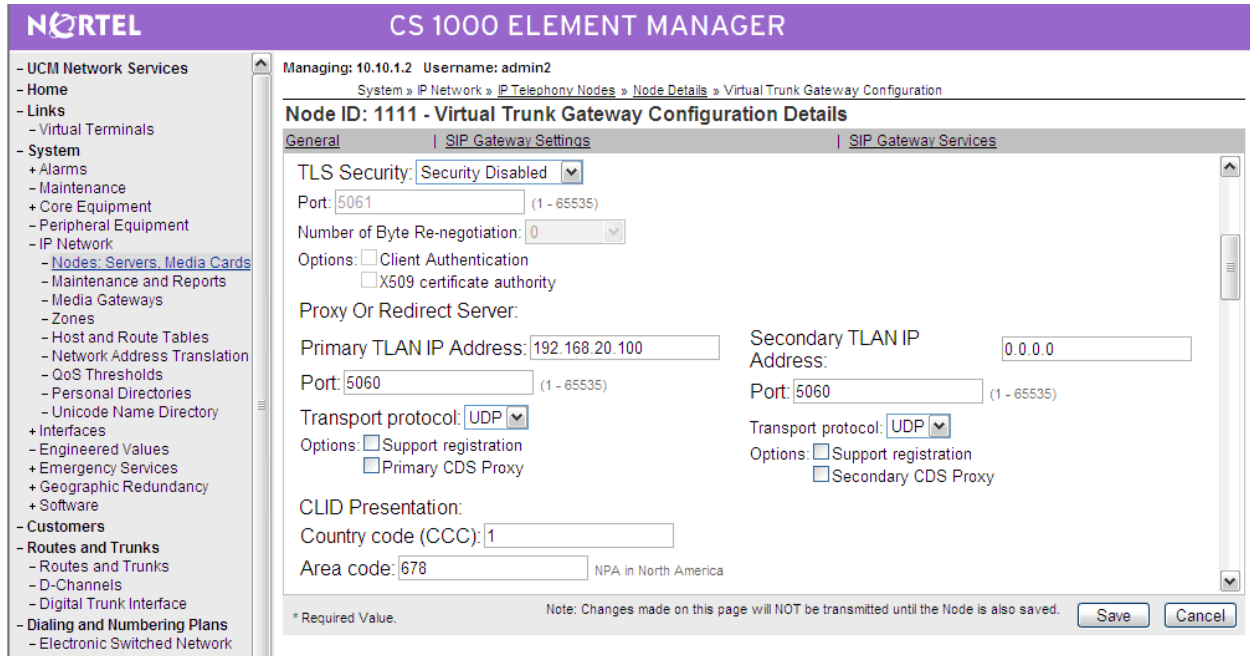
The screenshot displays the Nortel CS 1000 Element Manager interface. The main window is titled "Node ID: 1111 - Virtual Trunk Gateway Configuration Details". The interface is divided into several sections:

- General:**
 - Vtrk Gateway Application: Enable gateway service on this Node
 - Vtrk Gateway Application: SIP Gateway (SIPGw) (dropdown)
 - SIP Domain name: 192.168.20.100 *
 - Local SIP Port: 5060 *(1 - 65535)
 - Gateway endpoint name: coxlabss01 *
 - Gateway password: *
 - Enable failsafe NRS:
- SIP Gateway Settings:**
 - TLS Security: Security Disabled (dropdown)
- Virtual Trunk Network Health Monitor:**
 - Monitor IP Addresses (listed below)
 - Information will be captured for the IP addresses listed below.
 - Monitor IP: [input field] [Add]
 - Monitor addresses: [empty list box] [Remove]

At the bottom, there is a note: "Note: Changes made on this page will NOT be transmitted until the Node is also saved." and buttons for "Save" and "Cancel".

Figure 13 – Virtual Trunk Gateway Configuration – Node Details

The following shows the configuration of **SIPGW-A** when it is connected to EdgeMarc E-SBC-1. Notice that **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.



NORTEL CS 1000 ELEMENT MANAGER

Managing: 10.10.1.2 Username: admin2

System » IP Network » IP Telephony Nodes » Node Details » Virtual Trunk Gateway Configuration

Node ID: 1111 - Virtual Trunk Gateway Configuration Details

General | SIP Gateway Settings | SIP Gateway Services

TLS Security: Security Disabled

Port: 5061 (1 - 65535)

Number of Byte Re-negotiation: 0

Options: Client Authentication
 X509 certificate authority

Proxy Or Redirect Server:

Primary TLAN IP Address: 192.168.20.100
Port: 5060 (1 - 65535)
Transport protocol: UDP
Options: Support registration
 Primary CDS Proxy

Secondary TLAN IP Address: 0.0.0.0
Port: 5060 (1 - 65535)
Transport protocol: UDP
Options: Support registration
 Secondary CDS Proxy

CLID Presentation:

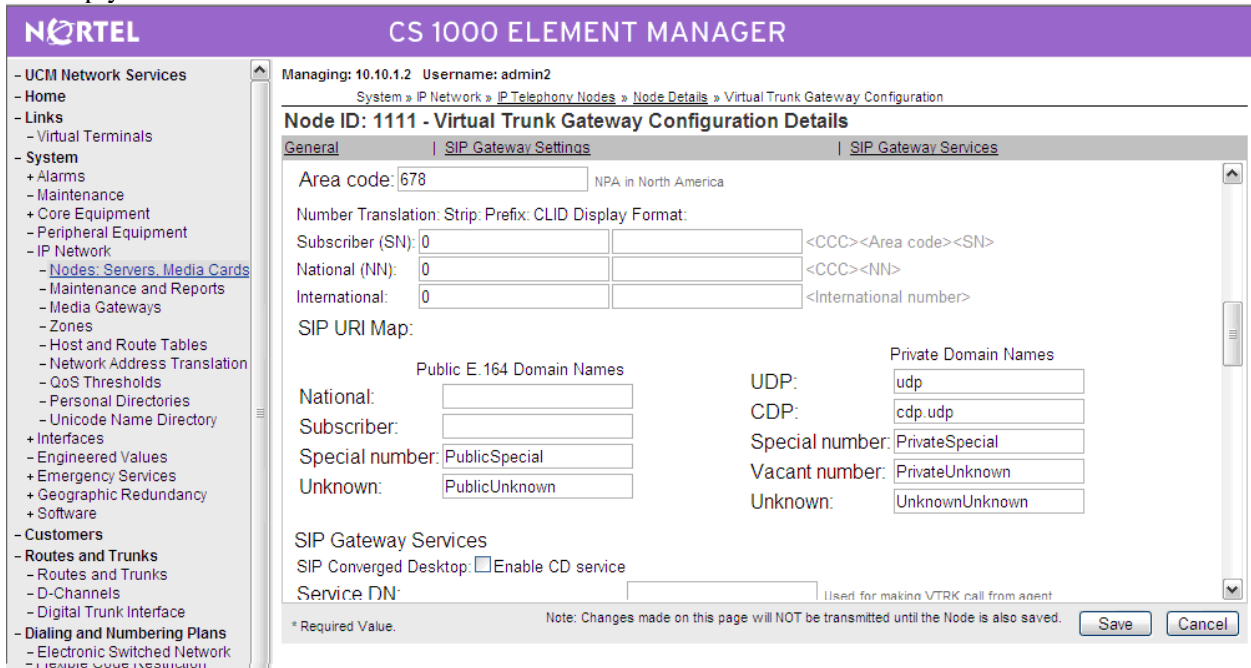
Country code (CCC): 1
Area code: 678 NPA in North America

* Required Value. Note: Changes made on this page will NOT be transmitted until the Node is also saved. Save Cancel

Figure 14 – Virtual Trunk Gateway Configuration - SIPGW

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.



NORTEL CS 1000 ELEMENT MANAGER

Managing: 10.10.1.2 Username: admin2
System » IP Network » IP Telephony Nodes » Node Details » Virtual Trunk Gateway Configuration

Node ID: 1111 - Virtual Trunk Gateway Configuration Details

General | SIP Gateway Settings | SIP Gateway Services

Area code: 678 NPA in North America

Number Translation: Strip: Prefix: CLID Display Format:

Subscriber (SN): 0 <CCC><Area code><SN>

National (NN): 0 <CCC><NN>

International: 0 <International number>

SIP URI Map:

	Public E. 164 Domain Names	Private Domain Names
National:		UDP: udp
Subscriber:		CDP: cdp.udp
Special number:	PublicSpecial	Special number: PrivateSpecial
Unknown:	PublicUnknown	Vacant number: PrivateUnknown
		Unknown: UnknownUnknown

SIP Gateway Services

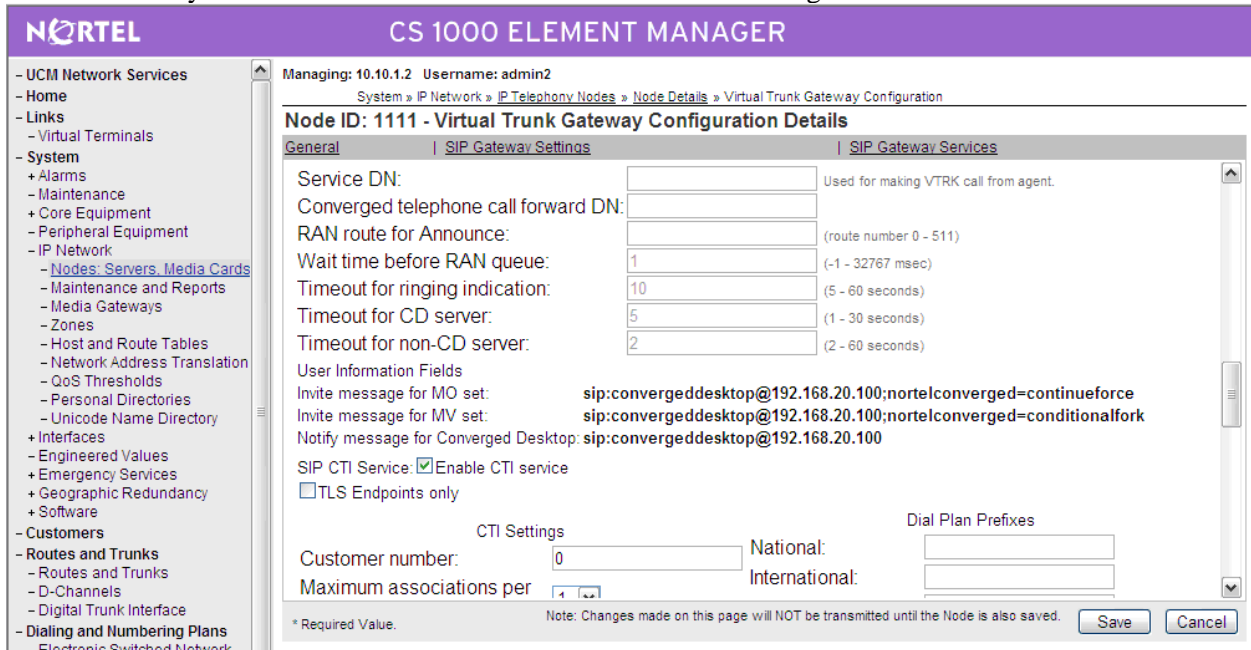
SIP Converged Desktop: Enable CD service

Service DN: _____ Used for making VTRK call from agent

* Required Value. Note: Changes made on this page will NOT be transmitted until the Node is also saved. Save Cancel

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.



NORTEL CS 1000 ELEMENT MANAGER

Managing: 10.10.1.2 Username: admin2
System » IP Network » IP Telephony Nodes » Node Details » Virtual Trunk Gateway Configuration

Node ID: 1111 - Virtual Trunk Gateway Configuration Details

General | SIP Gateway Settings | SIP Gateway Services

Service DN: _____ Used for making VTRK call from agent.

Converged telephone call forward DN: _____

RAN route for Announce: _____ (route number 0 - 511)

Wait time before RAN queue: 1 (-1 - 32767 msec)

Timeout for ringing indication: 10 (5 - 60 seconds)

Timeout for CD server: 5 (1 - 30 seconds)

Timeout for non-CD server: 2 (2 - 60 seconds)

User Information Fields

Invite message for MO set: sip:convergeddesktop@192.168.20.100;nortelconverged=continueforce

Invite message for MV set: sip:convergeddesktop@192.168.20.100;nortelconverged=conditionalfork

Notify message for Converged Desktop: sip:convergeddesktop@192.168.20.100

SIP CTI Service: Enable CTI service

TLS Endpoints only

CTI Settings

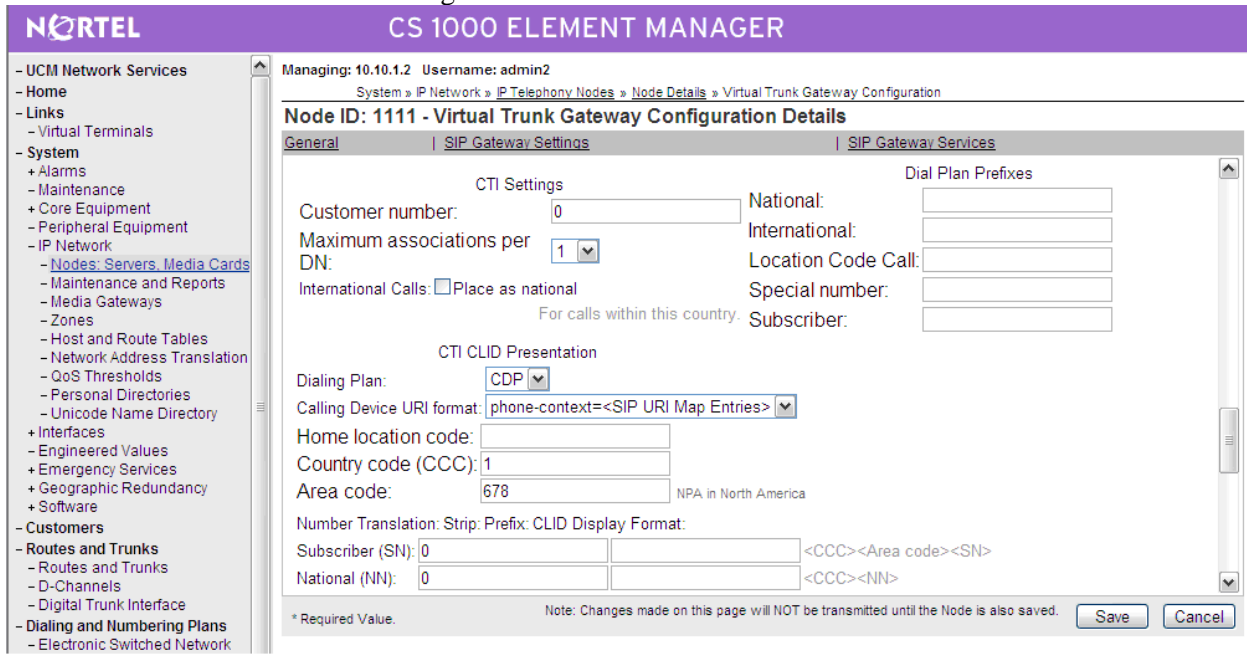
Customer number: 0 National: _____

Maximum associations per _____ International: _____

* Required Value. Note: Changes made on this page will NOT be transmitted until the Node is also saved. Save Cancel

Figure 16 – Virtual Trunk Gateway Configuration: User Information Fields

The section shows the SIP CTI settings:



Managing: 10.10.1.2 Username: admin2
System » IP Network » IP Telephony Nodes » Node Details » Virtual Trunk Gateway Configuration

Node ID: 1111 - Virtual Trunk Gateway Configuration Details

General | SIP Gateway Settings | SIP Gateway Services

CTI Settings

Customer number: National:

Maximum associations per DN: International:

International Calls: Place as national Location Code Call:

For calls within this country: Special number:

Subscriber:

CTI CLID Presentation

Dialing Plan:

Calling Device URI format:

Home location code:

Country code (CCC):

Area code: NPA in North America

Number Translation: Strip: Prefix: CLID Display Format:

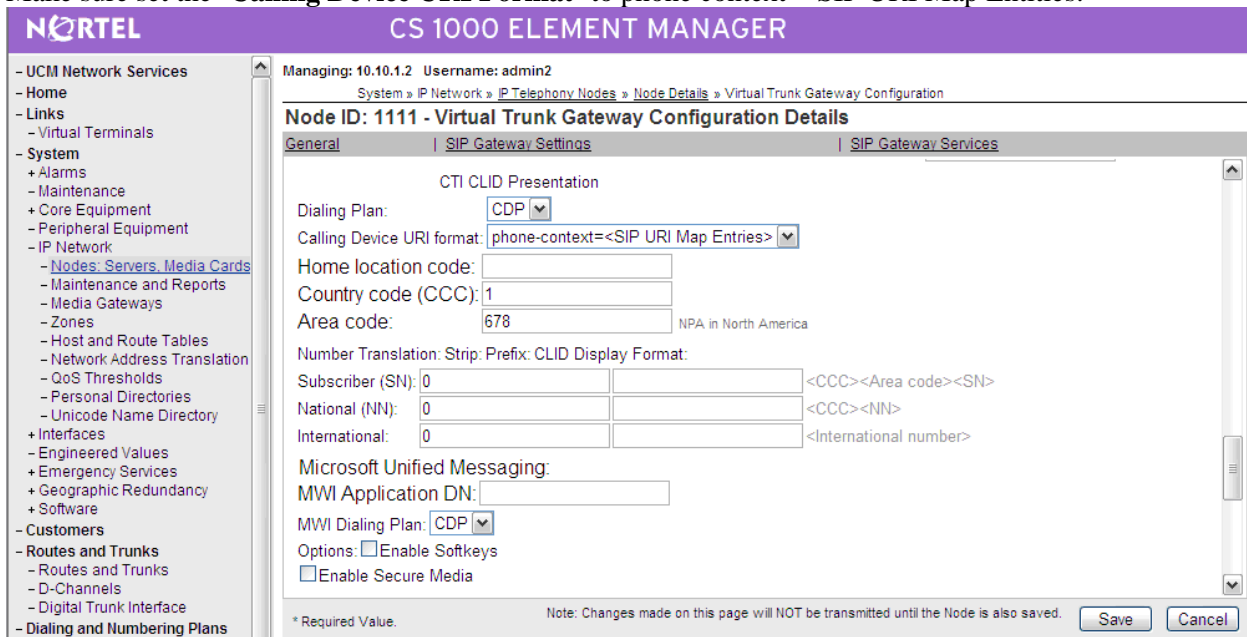
Subscriber (SN): <CCC><Area code><SN>

National (NN): <CCC><NN>

* Required Value. Note: Changes made on this page will NOT be transmitted until the Node is also saved.

Figure 17 – Virtual Trunk Gateway Configuration: CIT Settings

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



Managing: 10.10.1.2 Username: admin2
System » IP Network » IP Telephony Nodes » Node Details » Virtual Trunk Gateway Configuration

Node ID: 1111 - Virtual Trunk Gateway Configuration Details

General | SIP Gateway Settings | SIP Gateway Services

CTI CLID Presentation

Dialing Plan:

Calling Device URI format:

Home location code:

Country code (CCC):

Area code: NPA in North America

Number Translation: Strip: Prefix: CLID Display Format:

Subscriber (SN): <CCC><Area code><SN>

National (NN): <CCC><NN>

International: <International number>

Microsoft Unified Messaging:

MWI Application DN:

MWI Dialing Plan:

Options: Enable Softkeys

Enable Secure Media

* Required Value. Note: Changes made on this page will NOT be transmitted until the Node is also saved.

Figure 18 – Virtual Trunk Gateway Configuration: CTI CLID

The Subscriber Access and Auto Attendant Services were not used in the lab configuration:

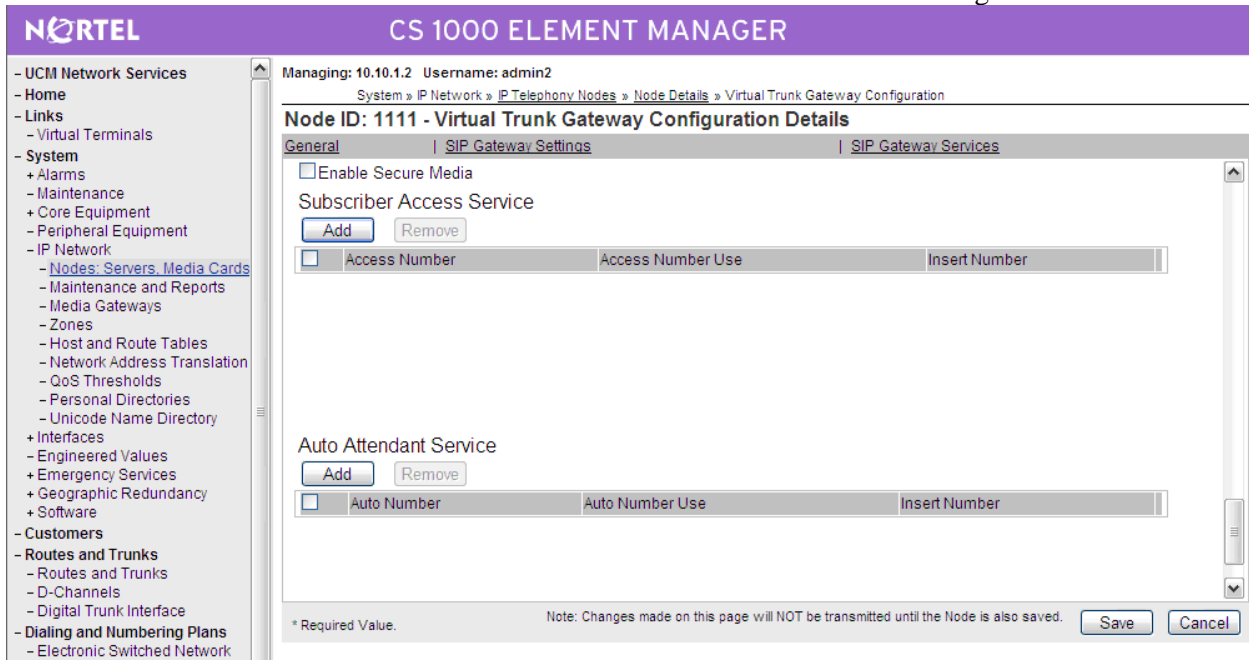


Figure 19 – Virtual Trunk Gateway Configuration: Subscriber and Auto Attendant Service

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.

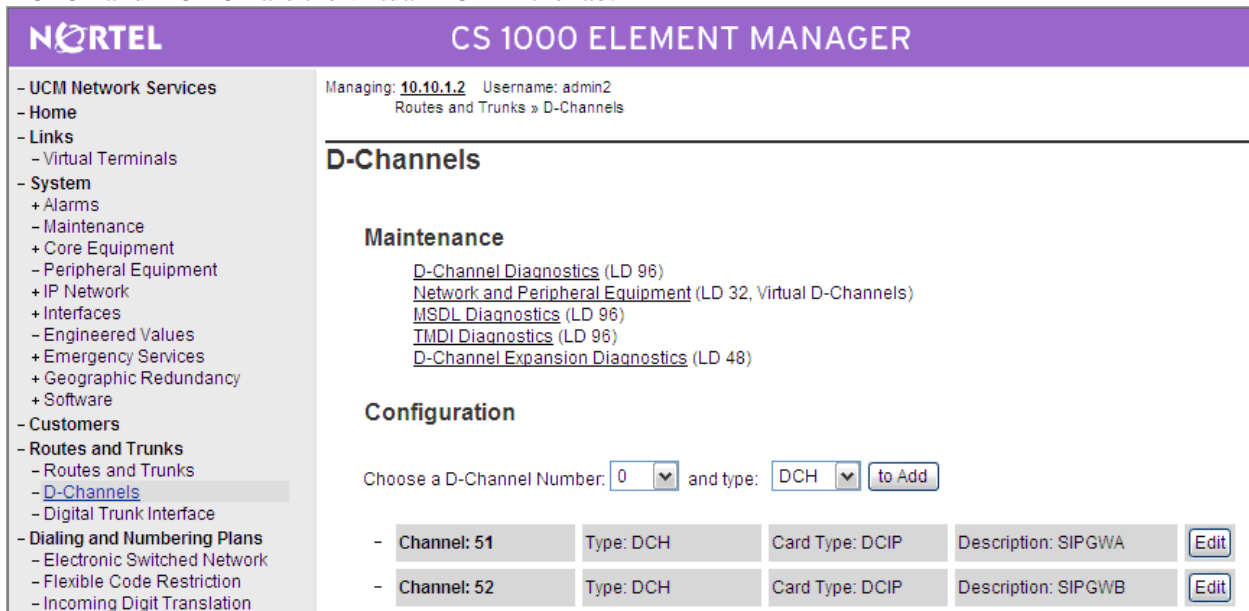
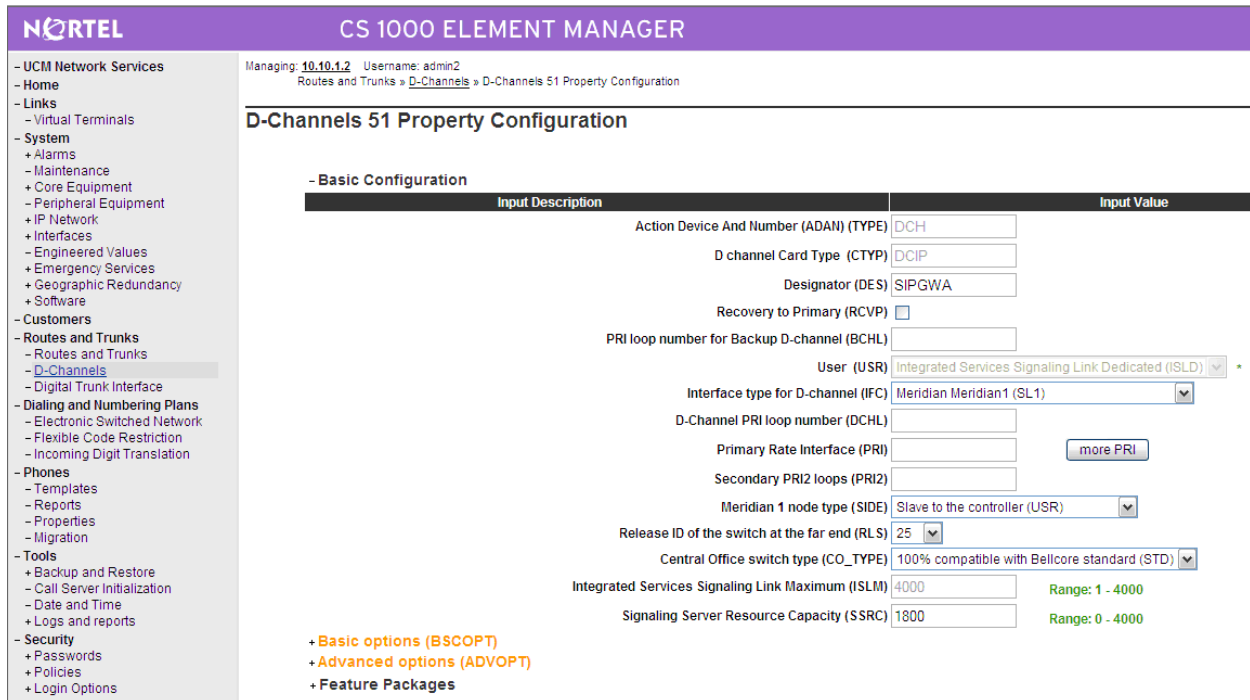


Figure 20 – Avaya/Nortel Element Manager D-Channels Configuration

8.1.10 D-Channels 51 Property Configuration.

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



The screenshot shows the Nortel CS 1000 Element Manager interface for configuring D-Channels 51. The left sidebar contains a navigation tree with categories like UCM Network Services, Customers, Routes and Trunks, and Security. The main content area is titled 'D-Channels 51 Property Configuration' and includes a breadcrumb trail: 'Managing: 10.10.1.2 Username: admin2 Routes and Trunks » D-Channels » D-Channels 51 Property Configuration'.

Under the '- Basic Configuration' section, there is a table with two columns: 'Input Description' and 'Input Value'. The configuration parameters are as follows:

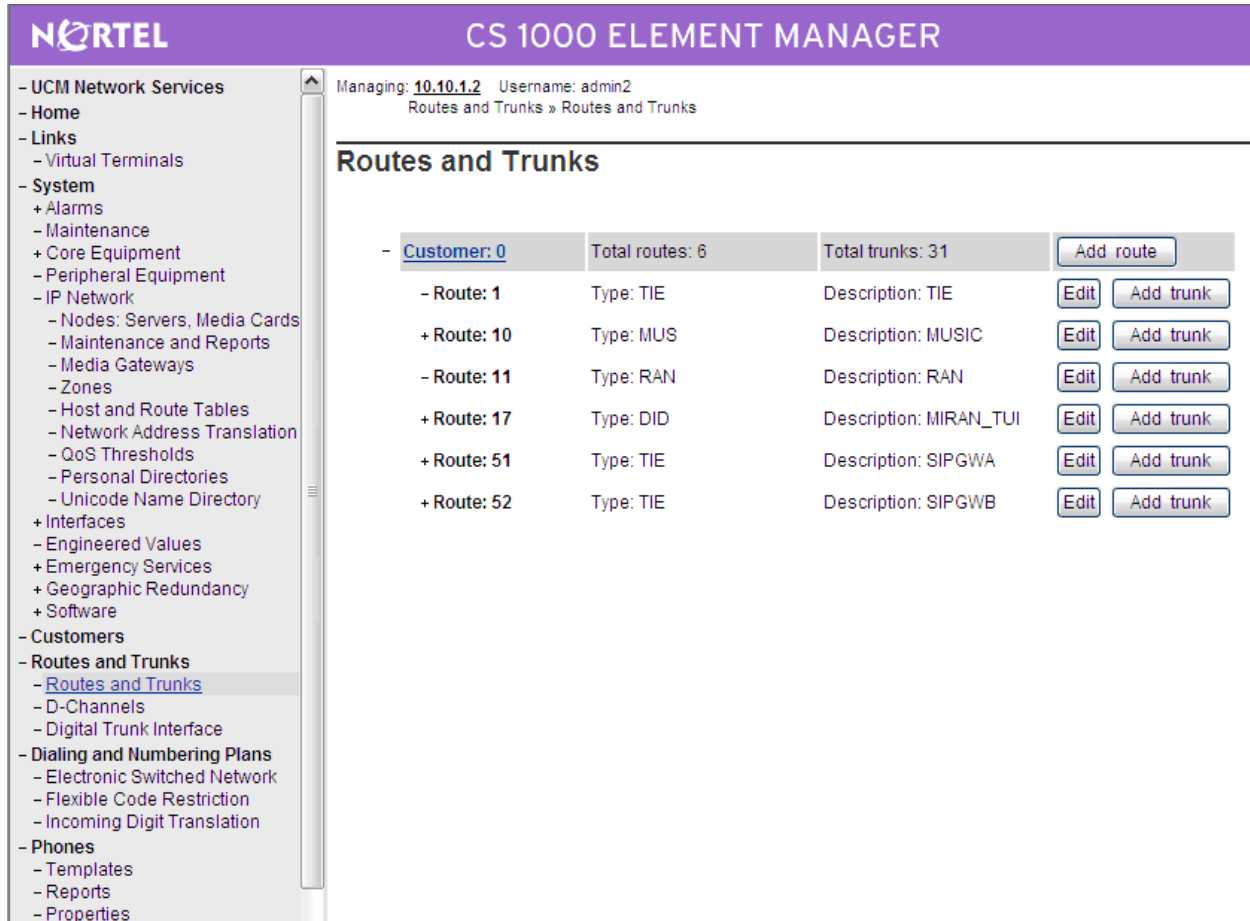
Input Description	Input Value
Action Device And Number (ADAN) (TYPE)	DCH
D channel Card Type (CTYP)	DCIP
Designator (DES)	SIPGWA
Recovery to Primary (RCVP)	<input type="checkbox"/>
PRI loop number for Backup D-channel (BCHL)	
User (USR)	Integrated Services Signaling Link Dedicated (ISLD)
Interface type for D-channel (IFC)	Meridian Meridian1 (SL1)
D-Channel PRI loop number (DCHL)	
Primary Rate Interface (PRI)	<input type="button" value="more PRI"/>
Secondary PRI2 loops (PRI2)	
Meridian 1 node type (SIDE)	Slave to the controller (USR)
Release ID of the switch at the far end (RLS)	25
Central Office switch type (CO_TYPE)	100% compatible with Bellcore standard (STD)
Integrated Services Signaling Link Maximum (ISLM)	4000 Range: 1 - 4000
Signaling Server Resource Capacity (SSRC)	1800 Range: 0 - 4000

Below the table, there are three expandable sections: '+ Basic options (BSCOPT)', '+ Advanced options (ADVOPT)', and '+ Feature Packages'.

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.



Managing: 10.10.1.2 Username: admin2
Routes and Trunks » Routes and Trunks

Routes and Trunks

Customer: 0	Total routes: 6	Total trunks: 31	Add route	
- Route: 1	Type: TIE	Description: TIE	Edit	Add trunk
+ Route: 10	Type: MUS	Description: MUSIC	Edit	Add trunk
- Route: 11	Type: RAN	Description: RAN	Edit	Add trunk
+ Route: 17	Type: DID	Description: MIRAN_TUI	Edit	Add trunk
+ Route: 51	Type: TIE	Description: SIPGWA	Edit	Add trunk
+ Route: 52	Type: TIE	Description: SIPGWB	Edit	Add trunk

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.

NORTEL
CS 1000 ELEMENT MANAGER

- UCM Network Services
- Home
- Links
 - Virtual Terminals
- System
 - + Alarms
 - Maintenance
 - + Core Equipment
 - Peripheral Equipment
 - + IP Network
 - + Interfaces
 - Engineered Values
 - + Emergency Services
 - + Geographic Redundancy
 - + Software
- Customers
- Routes and Trunks
 - [Routes and Trunks](#)
 - D-Channels
 - Digital Trunk Interface
- Dialing and Numbering Plans
 - Electronic Switched Network
 - Flexible Code Restriction
 - Incoming Digit Translation
- Phones
 - Templates
 - Reports
 - Properties
 - Migration
- Tools
 - + Backup and Restore
 - Call Server Initialization
 - Date and Time
 - + Logs and reports
- Security
 - + Passwords
 - + Policies
 - + Login Options

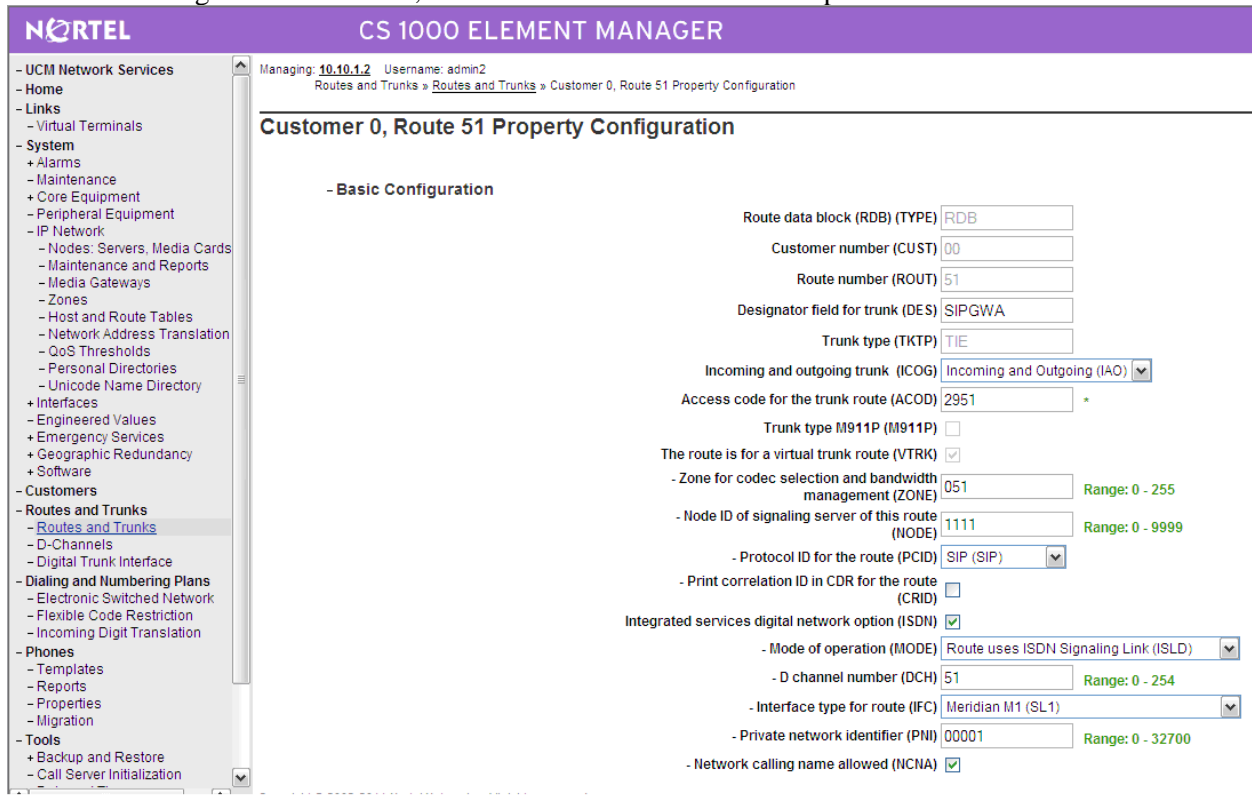
Routes and Trunks

- Customer: 0	Total routes: 6	Total trunks: 31		
- Route: 1	Type: TIE	Description: TIE	Edit	Add trunk
+ Route: 10	Type: MUS	Description: MUSIC	Edit	Add trunk
- Route: 11	Type: RAN	Description: RAN	Edit	Add trunk
+ Route: 17	Type: DID	Description: MIRAN_TUI	Edit	Add trunk
- Route: 51	Type: TIE	Description: SIPGWA	Edit	Add trunk
- Trunk: 1 - 15 Total trunks: 15				
- Trunk: 1	TN: 244 0 00 00	Description: SIPGWA	Edit	Multi - Del
- Trunk: 2	TN: 244 0 00 01	Description: SIPGWA	Edit	
- Trunk: 3	TN: 244 0 00 02	Description: SIPGWA	Edit	
- Trunk: 4	TN: 244 0 00 03	Description: SIPGWA	Edit	
- Trunk: 5	TN: 244 0 00 04	Description: SIPGWA	Edit	
- Trunk: 6	TN: 244 0 00 05	Description: SIPGWA	Edit	
- Trunk: 7	TN: 244 0 00 06	Description: SIPGWA	Edit	
- Trunk: 8	TN: 244 0 00 07	Description: SIPGWA	Edit	
- Trunk: 9	TN: 244 0 00 08	Description: SIPGWA	Edit	
- Trunk: 10	TN: 244 0 00 09	Description: SIPGWA	Edit	
- Trunk: 11	TN: 244 0 00 10	Description: SIPGWA	Edit	
- Trunk: 12	TN: 244 0 00 11	Description: SIPGWA	Edit	
- Trunk: 13	TN: 244 0 00 12	Description: SIPGWA	Edit	
- Trunk: 14	TN: 244 0 00 13	Description: SIPGWA	Edit	

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Figure 23 – Route 51 Trunk Listing

To see the configuration of a trunk, click 'Edit' on a Trunk. For example: Route 51.



NORTEL CS 1000 ELEMENT MANAGER

Managing: 10.10.1.2 Username: admin2
Routes and Trunks » Routes and Trunks » Customer 0, Route 51 Property Configuration

Customer 0, Route 51 Property Configuration

- Basic Configuration

- Route data block (RDB) (TYPE)
- Customer number (CUST)
- Route number (ROUT)
- Designator field for trunk (DES)
- Trunk type (TKTPT)
- Incoming and outgoing trunk (ICOG) ▼
- Access code for the trunk route (ACOD) *
- Trunk type M911P (M911P)
- The route is for a virtual trunk route (VTRK)
- Zone for codec selection and bandwidth management (ZONE) Range: 0 - 255
- Node ID of signaling server of this route (NODE) Range: 0 - 9999
- Protocol ID for the route (PCID) ▼
- Print correlation ID in CDR for the route (CRID)
- Integrated services digital network option (ISDN)
 - Mode of operation (MODE) ▼
 - D channel number (DCH) Range: 0 - 254
 - Interface type for route (IFC) ▼
 - Private network identifier (PNI) Range: 0 - 32700
 - Network calling name allowed (NCNA)

Figure 24 – Route 51 Property Configuration (1 of 2)

NORTEL CS 1000 ELEMENT MANAGER

- UCM Network Services
- Home
- Links
- Virtual Terminals
- System
 - + Alarms
 - + Maintenance
 - + Core Equipment
 - + Peripheral Equipment
 - IP Network
 - Nodes: Servers, Media Cards
 - Maintenance and Reports
 - Media Gateways
 - Zones
 - Host and Route Tables
 - Network Address Translation
 - QoS Thresholds
 - Personal Directories
 - Unicode Name Directory
 - + Interfaces
 - Engineered Values
 - + Emergency Services
 - + Geographic Redundancy
 - + Software
- Customers
 - Routes and Trunks
 - Routes and Trunks
 - D-Channels
 - Digital Trunk Interface
 - Dialing and Numbering Plans
 - Electronic Switched Network
 - Flexible Code Restriction
 - Incoming Digit Translation
 - Phones
 - Templates
 - Reports
 - Properties
 - Migration
 - Tools
 - + Backup and Restore
 - + Call Server Initialization

Network calling name allowed (NCHA)
 Network call redirection (NCRD)
 Trunk route optimization (TRO)
 Recognition of DTI2 ABCD FALT signal for ISL (FALT)
 Channel type (CHTY) B-channel (BCH)
 Call type for outgoing direct dialed TIE route (CTYP) Unknown Call type (UKWN)
 Insert ESN access code (INAC)
 Integrated service access route (ISAR)
 Display of access prefix on CLID (DAPC)
 Mobile extension route (MBXR)

- Basic Route Options

Attendant announcement (ATAN) No Attendant Announcement. (NO)

Billing number required (BILN)

Call detail recording (CDR)

North American toll scheme (NATL)

Controls or timers (CNTL)

Conventional (Tie trunk only) (CNVT)

Incoming DID digit conversion on this route (IDC)

- Day IDC tree number (DCNO) 1 Range: 0 - 254

- Night IDC tree number (NDNO) 1 Range: 0 - 254

- Display external dialed digits (DEXT)

MFC feature options (MFC_FEAT)

- Network Options

Electronic switched network pad control (ESN)

Signaling arrangement (SIGO) Standard (STD)

Route class (RCLS) Route Class marked as external (EXT)

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Figure 25 – Route 51 Property Configuration (1 of 4)

NORTEL CS 1000 ELEMENT MANAGER

- UCM Network Services
- Home
- Links
 - Virtual Terminals
- System
 - + Alarms
 - Maintenance
 - + Core Equipment
 - Peripheral Equipment
 - IP Network
 - Nodes: Servers, Media Cards
 - Maintenance and Reports
 - Media Gateways
 - Zones
 - Host and Route Tables
 - Network Address Translation
 - QoS Thresholds
 - Personal Directories
 - Unicode Name Directory
 - + Interfaces
 - Engineered Values
 - + Emergency Services
 - + Geographic Redundancy
 - + Software
- Customers
- Routes and Trunks
 - Routes and Trunks
 - D-Channels
 - Digital Trunk Interface
- Dialing and Numbering Plans
 - Electronic Switched Network
 - Flexible Code Restriction
 - Incoming Digit Translation
- Phones
 - Templates
 - Reports
 - Properties
 - Migration
- Tools
 - + Backup and Restore
 - Call Server Initialization

- General Options

Route class (RCLS)

Off-hook queuing (OHQ)

Off-hook queue threshold (OHQT)

Call back queuing (CBQ)

Number of digits (NDIG)

Authcode (AUTH)

M1 is the only controlling party on incoming calls (CPDC)

Dial tone on originating calls (DLTN)

Hold failure threshold (HOLD)

Trunk access restriction group (TARG)

Alternate trunk route for outgoing trunks (STEP) Range: 0 - 511

Actual outgoing toll digits to be ignored for code restriction (OABS)

Display IDC name (DNAM)

Enable equal access restrictions (EQAR)

ACD DNIS route (DNIS)

Include DNIS number in CDR records (DCDR)

- Advanced Configurations

Allow last re-directing number (ARDN)

ANI identifier number (ANTK)

Auto terminate (AUTO)

Maximum number of CNI digits (CLEN)

North American distinctive ringing for incoming calls (DRNG)

Home local number (HLCL)

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Figure 26 – Route 51 Property Configuration (3 of 4)

NORTEL CS 1000 ELEMENT MANAGER

- UCM Network Services
- Home
- Links
 - Virtual Terminals
- System
 - + Alarms
 - Maintenance
 - + Core Equipment
 - Peripheral Equipment
 - IP Network
 - Nodes: Servers, Media Cards
 - Maintenance and Reports
 - Media Gateways
 - Zones
 - Host and Route Tables
 - Network Address Translation
 - QoS Thresholds
 - Personal Directories
 - Unicode Name Directory
 - + Interfaces
 - Engineered Values
 - + Emergency Services
 - + Geographic Redundancy
 - + Software
- Customers
- Routes and Trunks
 - Routes and Trunks
 - D-Channels
 - Digital Trunk Interface
- Dialing and Numbering Plans
 - Electronic Switched Network
 - Flexible Code Restriction
 - Incoming Digit Translation
- Phones
 - Templates
 - Reports
 - Properties
 - Migration
- Tools
 - + Backup and Restore
 - Call Server Initialization

Home local number (HLCL)

Home national number (HNTN)

In-band automatic number identification route (IANI)

Internal/external definition (IDEF)

Insert (INST)

Manual outgoing trunk route (MANO)

Manual route (MNL)

Music on-hold (MUS)

Off-hook timer delay (OHTD)

Privacy indicator ignored (PII)

Auxiliary application (AUXP)

Protocol selection (PSEL)

Port type at far end (PTYP)

Route traffic information in ACD Reports (RACD)

Route number (RTN) Range: 0 - 511

Satellite used for trunk route (SAT)

Scheduled access restriction group (SGRP) Range: 0 - 999

Special service list number (SSL)

Standard signaling type (STYP)

CPP/CPPO flag for incoming non-ISDN trunk call tandemed to this trunk route (TCPPE)

Tone detector required (TDET)

Tromboning (TRMB)

Tone table number (TTBL)

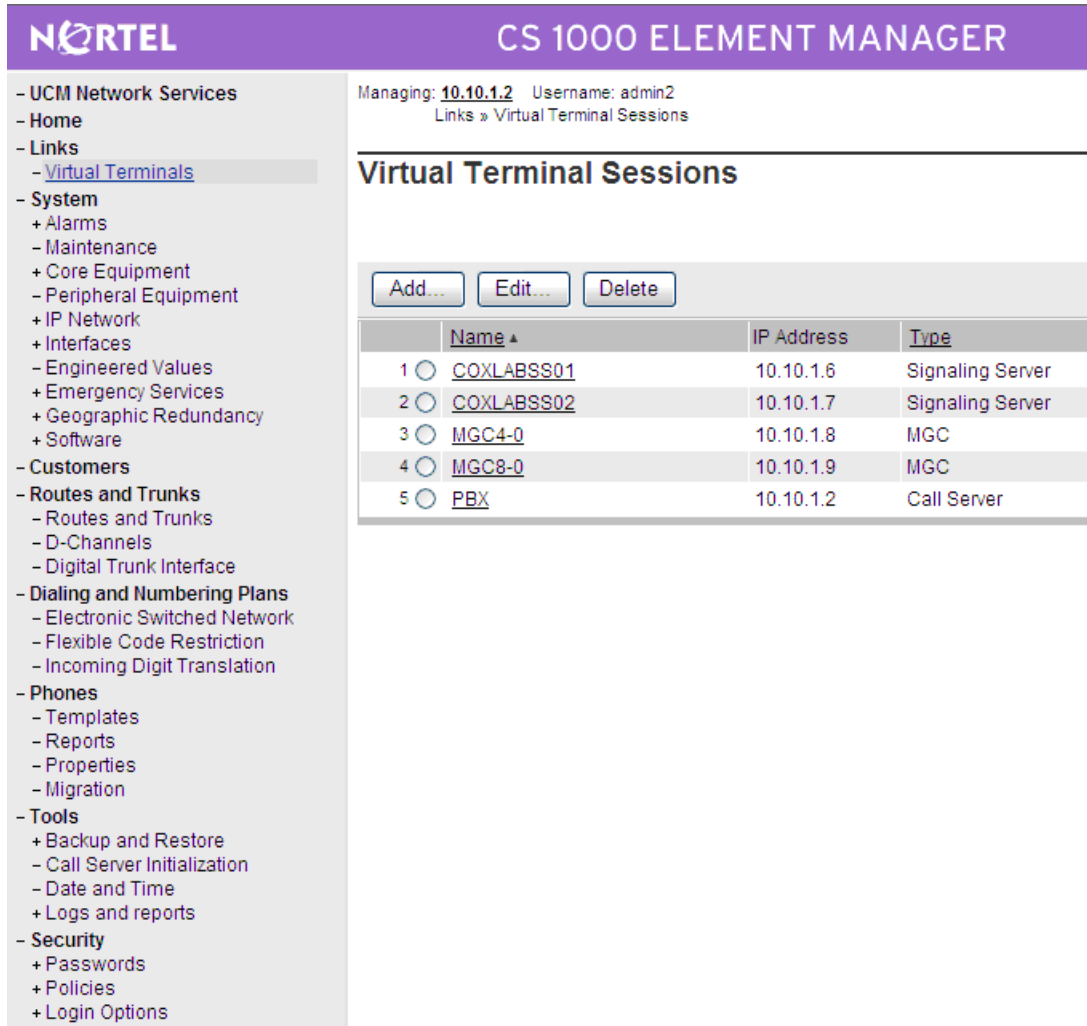
Answer an attendant extended call over VNS immediately on the incoming bearer trunk (VRAT)

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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.



The screenshot shows the Nortel Element Manager interface. The top navigation bar is purple with the Nortel logo and the text 'CS 1000 ELEMENT MANAGER'. Below this, the user is logged in as 'admin2' on IP '10.10.1.2'. The left sidebar contains a tree view of system components, with 'Virtual Terminals' selected. The main content area is titled 'Virtual Terminal Sessions' and features a table with five entries. Above the table are buttons for 'Add...', 'Edit...', and 'Delete'.

	Name ▲	IP Address	Type
1	COXLABSS01	10.10.1.6	Signaling Server
2	COXLABSS02	10.10.1.7	Signaling Server
3	MGC4-0	10.10.1.8	MGC
4	MGC8-0	10.10.1.9	MGC
5	PBX	10.10.1.2	Call Server

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
3. Maintenance.

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.

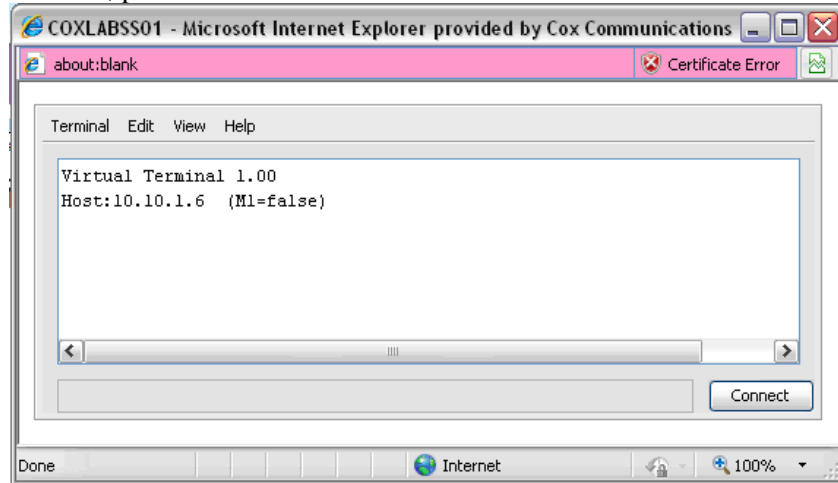


Figure 29 – Virtual Terminal Active Session

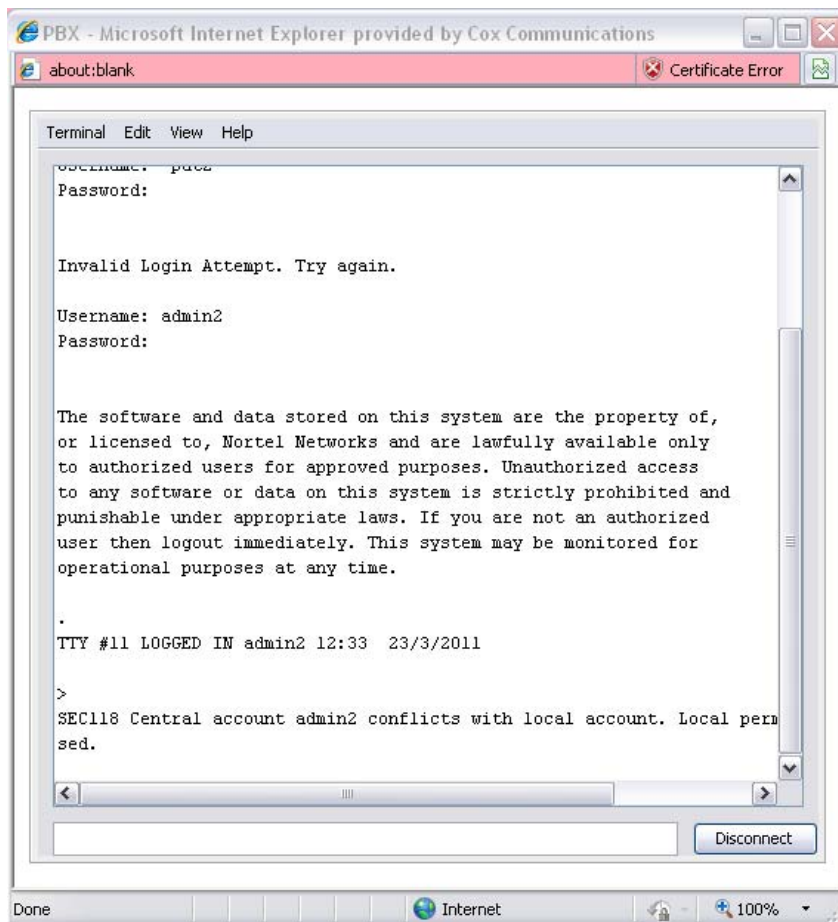


Figure 30 – Interactive Virtual Terminal Sessions



8.1.14 CLI outputs commands for CS1000 Configuration

<p><u>DCH 51</u></p> <p>>ld 22 PT2000</p> <p>REQ prt TYPE adan dch 51</p> <p>ADAN DCH 51 CTYP DCIP DES SIP USR ISLD ISLM 4000 SSRC 1800 OTBF 32 NASA NO IFC SL1 CNEG 1 RLS ID 25 RCAP MWI MBGA NO H323 OVLN NO OVLS NO</p>	<p><u>DCH 52</u></p> <p>>ld 22 PT2000</p> <p>REQ prt TYPE adan dch 52</p> <p>ADAN DCH 52 CTYP DCIP DES SIP USR ISLD ISLM 4000 SSRC 1800 OTBF 32 NASA NO IFC SL1 CNEG 1 RLS ID 25 RCAP MWI MBGA NO H323 OVLN NO OVLS NO</p>	<p><u>DMI Table</u></p> <p>>ld 86 ESN000</p> <p>MEM AVAIL: (U/P): 98198537 USED U P: 5365327 88485 TOT: 103652349 DISK SPACE NEEDED: 122 KBYTES</p> <p>REQ prt CUST 0 FEAT dgt DMI</p> <p>DMI 1 DEL 0 ISPN NO CTYP NPA</p> <p>DMI 9 DEL 0 ISPN NO INST 9 CTYP NCHG</p> <p>DMI 11 DEL 0 ISPN NO CTYP CDP</p> <p>DMI 12 DEL 0 ISPN NO INST 678238 CTYP NPA</p>
---	---	---

Figure 31 – CLI output for DCH and DMI



```

Route 51 Members
>ld 21
PT1000

REQ: ltm
CUST 0
ROUT 51

TYPE TLST
TKTP TIE
ROUT 51
DES SIPGWA
TN 244 0 00 00 MBER 1 SIPGWA
TN 244 0 00 01 MBER 2 SIPGWA
TN 244 0 00 02 MBER 3 SIPGWA
TN 244 0 00 03 MBER 4 SIPGWA
TN 244 0 00 04 MBER 5 SIPGWA
TN 244 0 00 05 MBER 6 SIPGWA
TN 244 0 00 06 MBER 7 SIPGWA
TN 244 0 00 07 MBER 8 SIPGWA
TN 244 0 00 08 MBER 9 SIPGWA
TN 244 0 00 09 MBER 10 SIPGWA
TN 244 0 00 10 MBER 11 SIPGWA
TN 244 0 00 11 MBER 12 SIPGWA
TN 244 0 00 12 MBER 13 SIPGWA
TN 244 0 00 13 MBER 14 SIPGWA
TN 244 0 00 14 MBER 15 SIPGWA

Route 51
>ld 21
PT1000

REQ: prt
TYPE: rdb
CUST 0
ROUT 51

TYPE RDB
CUST 00
ROUT 51
DES SIPGWA
TKTP TIE
M911P NO
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK YES
ZONE 051
PCID SIP
CRID NO
NODE 1111
DTRK NO
ISDN YES
MODE ISLD
DCH 51
IFC SL1
PNI 00001
NCNA YES
NCRD YES
TRO NO
FALT NO
CTYP UKWN
INAC NO
ISAR NO
DAPC NO
MBXR NO
PTYP ATT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH LIN

TRMB YES
STEP
ACOD 2951
TCPP NO
PII NO
AUXP NO
TARG
CLEN 10
BILN NO
OABS
INST
IDC YES
DCNO 1
NDNO 1 *
DEXT NO
DNAM NO
ANTK
SIGO STD
STYP SDAT
ICIS YES
TIMR ICF 512
OGF 512
EOD 13952
DSI 34944
NRD 10112
DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5
TFD 0
VSS 0
VGD 6
SST 5 0
NEDC ORG
FEDC ORG
CPDC NO
DLTN NO

HOLD 02 02 40
SEIZ 02 02
SVFL 02 02
DRNG NO
CDR NO
VRAT NO
MUS NO
RACD NO
MANO NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0
FRL 6 0
FRL 7 0
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TDET NO
TTBL 0
ATAN NO
OHTD NO
PLEV 2
ALRM NO
ART 0
SGRP 0
ARDN NO
AACR NO

SIPGW-A TN
>ld 20

PT0000
REQ: prt
TYPE: tn
TYPE TNB
TN 244 0 0 0
DATE
PAGE
DES

DES SIPGWA
TN 244 0 00 00 VIRTUAL
TYPE IPTI
CDEN 8D
CUST 0
XTRK VTRK
ZONE 051
LDOP BOP
TIMP 600
BIMP 600
AUTO_BIMP NO
NMUS NO
TRK ANLG
NCOS 0
RTMB 51 1
CHID 1
TGAR 0
STRI/STRO WNK WNK
SUPN YES
AST NO
IAPG 0
CLS CTD DTN CND ECD WTA LPR
APN THFD SPCD MSNV
P10 NTC
TKID
AACR NO
DATE 21 OCT 2010

```

Figure 32 – CLI output for Route 51



```

Route 52 Members
>ld 21
PT1000

REQ: ltm
CUST 0
ROUT 52

TYPE TLST
TKTP TIE
ROUT 52
DES SIPGWB
TN 244 0 01 00 MBER 1 SIPGWB
TN 244 0 01 01 MBER 2 SIPGWB
TN 244 0 01 02 MBER 3 SIPGWB
TN 244 0 01 03 MBER 4 SIPGWB
TN 244 0 01 04 MBER 5 SIPGWB
TN 244 0 01 05 MBER 6 SIPGWB
TN 244 0 01 06 MBER 7 SIPGWB
TN 244 0 01 07 MBER 8 SIPGWB
TN 244 0 01 08 MBER 9 SIPGWB
TN 244 0 01 09 MBER 10 SIPGWB
TN 244 0 01 10 MBER 11 SIPGWB
TN 244 0 01 11 MBER 12 SIPGWB
TN 244 0 01 12 MBER 13 SIPGWB
TN 244 0 01 13 MBER 14 SIPGWB

Route 52
>ld 21
PT1000

REQ: prt
TYPE: rdb
CUST 0
ROUT 52

TYPE RDB
CUST 00
ROUT 52
DES SIPGWB
TKTP TIE
M911P NO
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK YES
ZONE 052
PCID SIP
CRID NO
NODE 1121
DTRK NO
ISDN YES
MODE ISLD
DCH 52
IFC SL1
PNI 00001
NCNA YES
NCRD YES
TRO NO
FALT NO
CTYP UKWN
INAC NO
ISAR NO
DAPC NO
MBXR NO
PTYP ATT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH LIN

TRMB YES
STEP
ACOD 2952
TCPP NO
PII NO
AUXP NO
TARG
CLEN 10
BILN NO
OABS
INST
IDC YES
DCNO 1
NDNO 1 *
DEXT NO
DNAM NO
ANTK
SIGO STD
STYP SDAT
ICIS YES
TIMR ICF 512
OGF 512
EOD 13952
DSI 34944
NRD 10112
DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5
TFD 0
VSS 0
VGD 6
SST 5 0
NEDC ORG
FEDC ORG
CPDC NO
DLTN NO

HOLD 02 02 40
SEIZ 02 02
SVFL 02 02
DRNG NO
CDR NO
VRAT NO
MUS NO
RACD NO
MANO NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0
FRL 6 0
FRL 7 0
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TDET NO
TTBL 0
ATAN NO
OHTD NO
PLEV 2
ALRM NO
ART 0
SGRP 0
ARDN NO
AACR NO

SIPGW-B TN
>ld 20

PT0000
REQ: prt
TYPE: tn
TYPE TNB
TN 244 0 1 0
DATE
PAGE
DES

DES SIPGWB
TN 244 0 01 00 VIRTUAL
TYPE IPTI
CDEN 8D
CUST 0
XTRK VTRK
ZONE 052
LDOP BOP
TIMP 600
BIMP 600
AUTO_BIMP NO
NMUS NO
TRK ANLG
NCOS 0
RTMB 52 1
CHID 16
TGAR 0
STRI/STRO WNK WNK
SUPN YES
AST NO
IAPG 0
CLS CTD DTN CND ECD WTA LPR
APN THFD SPCD MSNV
P10 NTC
TKID
AACR NO
DATE 21 OCT 2010

```

Figure 33 – CLI output for Route 52



These area codes routed
over these RLIs...

<p>404, 678, 770</p> <p>>ld 86 ESN000</p> <p>MEM AVAIL: (U/P): 98198537 USED U P: 5365327 88485 TOT: 103652349 DISK SPACE NEEDED: 122 KBYTES</p> <p>REQ prt CUST 0 FEAT rib RLI 2</p> <p>RLI 2 ENTR 0 LTER NO ROUT 51 TOD 0 ON 1 ON 2 ON 3 ON 4 ON 5 ON 6 ON 7 ON</p> <p>VNS NO SCNV NO CNV NO EXP NO FRL 0 DMI 1 ISDM 0 FCI 0 FSNI 0 DORG NO SBOC RRA COPT 2 IDBB DBA IOHQ NO OHQ NO CBQ NO</p>	<p>1229, 1470, 1706, 1762, 1912</p> <p>>ld 86 ESN000</p> <p>MEM AVAIL: (U/P): 98198537 USED U P: 5365327 88485 TOT: 103652349 DISK SPACE NEEDED: 122 KBYTES</p> <p>REQ prt CUST 0 FEAT rib RLI 3</p> <p>RLI 3 ENTR 0 LTER NO ROUT 51 TOD 0 ON 1 ON 2 ON 3 ON 4 ON 5 ON 6 ON 7 ON</p> <p>VNS NO SCNV NO CNV NO EXP NO FRL 0 DMI 0 ISDM 0 FCI 0 FSNI 0 DORG NO SBOC RRA COPT 2 IDBB DBA IOHQ NO OHQ NO CBQ NO</p>	<p>ENTR 1 LTER NO ROUT 52 TOD 0 ON 1 ON 2 ON 3 ON 4 ON 5 ON 6 ON 7 ON</p> <p>VNS NO SCNV NO CNV NO EXP NO FRL 0 DMI 0 ISDM 0 FCI 0 FSNI 0 DORG NO SBOC RRA COPT 2 IDBB DBA IOHQ NO OHQ NO CBQ NO</p> <p>ISET 1 NALT 5 MFRL 0 OVLL 0</p>
---	--	---

Figure 34 – CLI output Area Codes and RLIs (1 of 3)



These area codes routed
over this RLI...

1204, 1226, 1250, 1289, 1306,
1403, 1416, 1418, 1450, 1506,
1519, 1581, 1587, 1600, 1604,
1613, 1647, 1705, 1709, 1778,
1780, 1807, 1819, 1902, 1905

```

>ld 86
ESN000

MEM AVAIL: (U/P): 98198537  USED
U P: 5365327 88485  TOT: 103652349
DISK SPACE NEEDED: 122 KBYTES
REQ prt
CUST 0
FEAT rlb
RLI 6

RLI 6
ENTR 0
LTER NO
ROUT 51
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
SCNV NO
CNV NO
EXP NO
FRL 0
DMI 0
ISDM 0
FCI 0
FSNI 0
DORG NO
SBOC RRA
COPT 2
IDBB DBA
IOHQ NO
OHQ NO
CBQ NO

ENTR 1
LTER NO
ROUT 52
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
SCNV NO
CNV NO
EXP NO
FRL 0
DMI 0
ISDM 0
FCI 0
FSNI 0
DORG NO
SBOC RRA
COPT 2
IDBB DBA
IOHQ NO
OHQ NO
CBQ NO

ENTR 2
LTER NO
ROUT 0
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
CNV NO
EXP NO
FRL 0
DMI 0
FCI 0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO
OHQ NO
CBQ NO
ISET 1
NALT 5
MFRL 0
OVLL 0

```

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.

```

>ld 86
ESN000

MEM AVAIL: (U/P): 98198537  USED U P:
5365327 88485  TOT: 103652349
DISK SPACE NEEDED: 122 KBYTES
REQ prt
CUST 0
FEAT rlb
RLI 5

RLI 5
ENTR 0
LTER NO
ROUT 51
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
SCNV NO
CNV NO
EXP NO
FRL 0
DMI 0
ISDM 0
FCI 0
FSNI 0
DORG NO
SBOC RRA
COPT 2
IDBB DBA
IOHQ NO
OHQ NO
CBQ NO

ENTR 1
LTER NO
ROUT 52
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
SCNV NO
CNV NO
EXP NO
FRL 0
DMI 0
ISDM 0
FCI 0
FSNI 0
DORG NO
SBOC RRA
COPT 2
IDBB DBA
IOHQ NO
OHQ NO
CBQ NO

ENTR 2
LTER NO
ROUT 0
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
CNV NO
EXP NO
FRL 0
DMI 0
FCI 0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO
OHQ NO
CBQ NO

ISET 1
NALT 5
MFRL 0
OVLL 0

```

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:

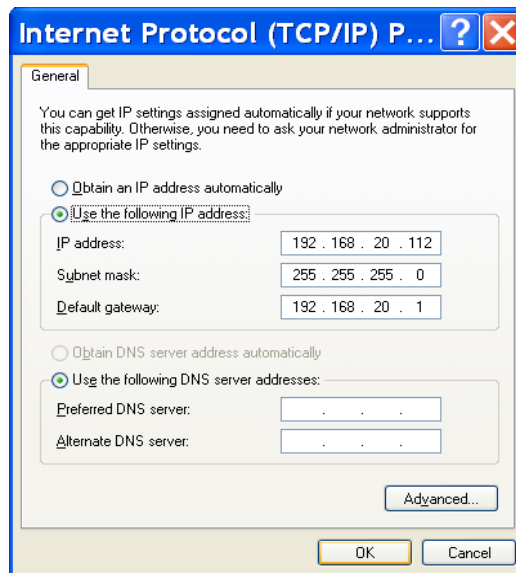
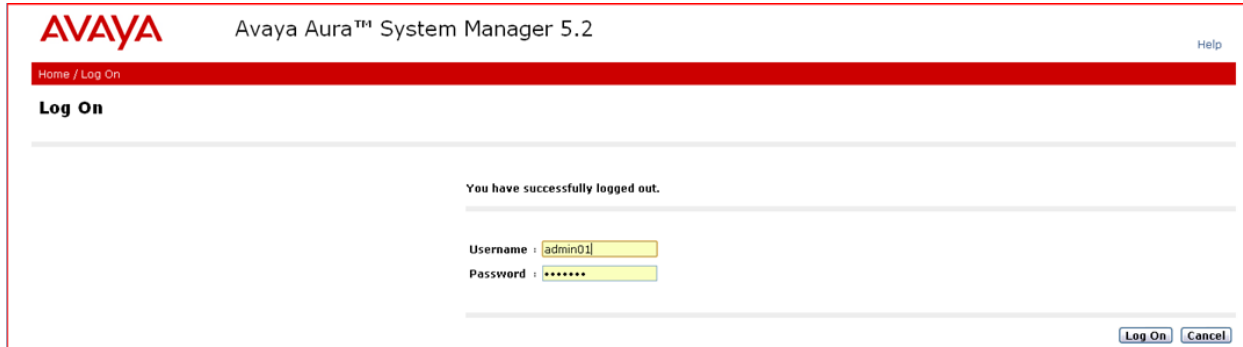


Figure 37 – IP Settings on your PC

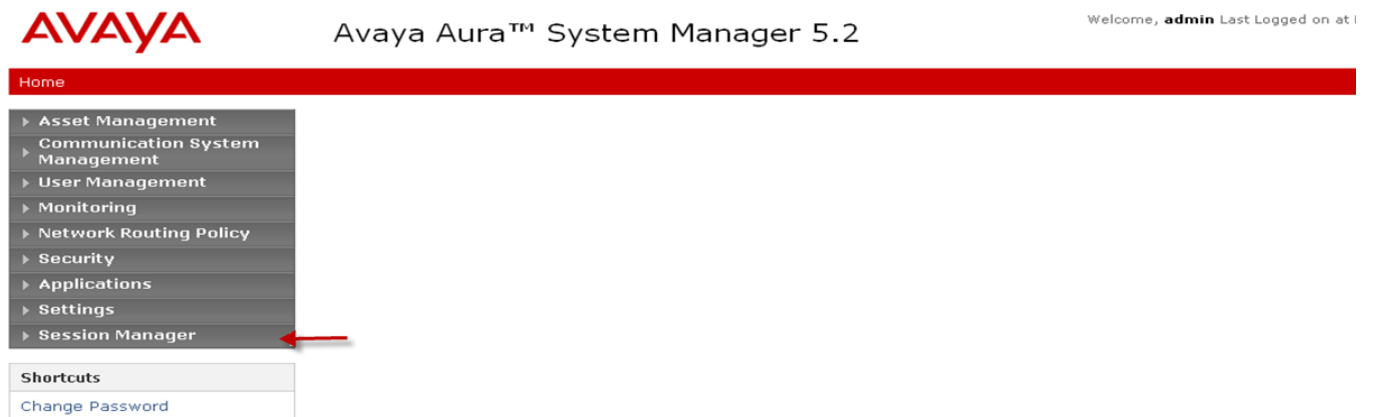
3. Open a Web browser, and enter the following in the address bar: <https://192.168.20.42/SMGR>
4. Enter login information: (this is just an example, your administrator must provide you with the User name and Password)
 - o Username: admin
 - o Password: admin01



The screenshot shows the Avaya Aura System Manager 5.2 login interface. At the top left is the AVAYA logo, followed by the text "Avaya Aura™ System Manager 5.2" and a "Help" link. Below this is a red navigation bar with "Home / Log On". The main heading is "Log On". A message states "You have successfully logged out." Below this are two input fields: "Username : admin01" and "Password : *****". At the bottom right are "Log On" and "Cancel" buttons.

Figure 38 – Avaya Aura Login

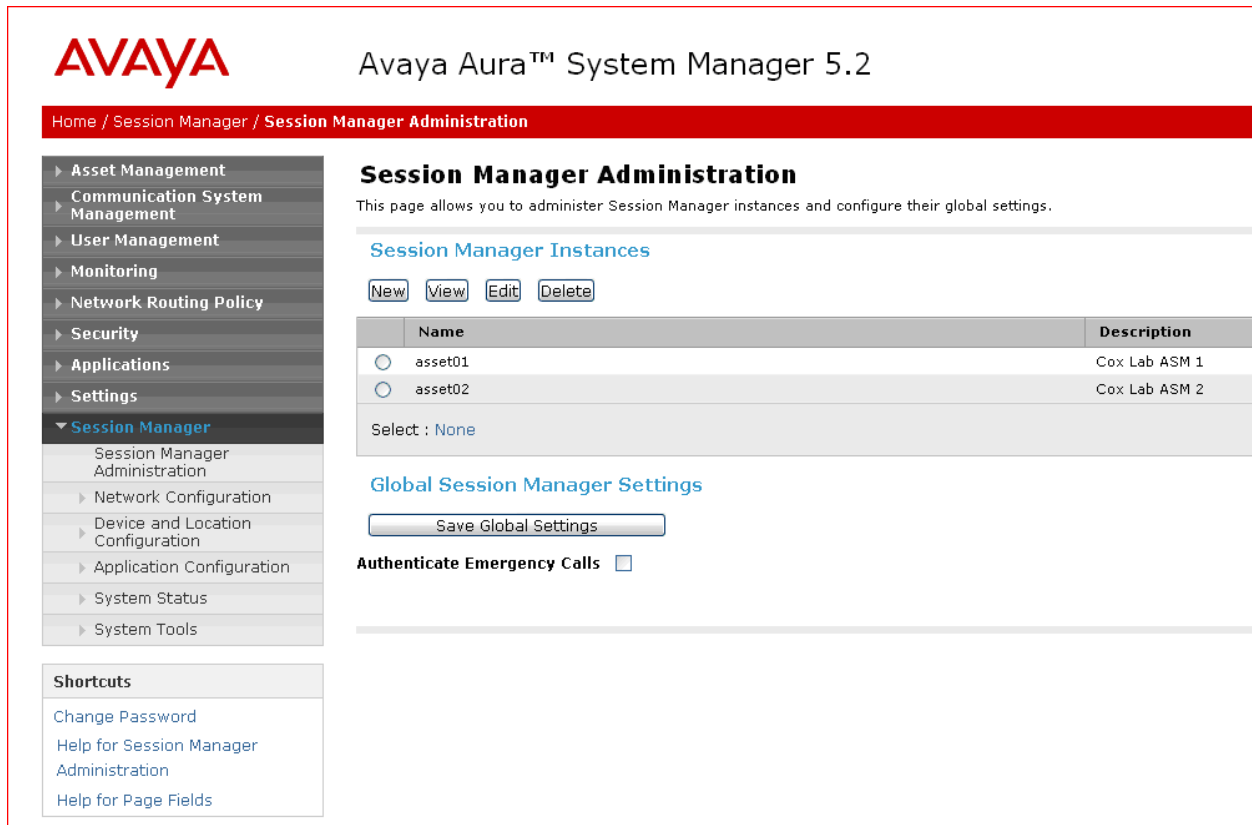
5. Select the Session Manager tab.



The screenshot shows the Avaya Aura System Manager 5.2 main menu. At the top left is the AVAYA logo, followed by "Avaya Aura™ System Manager 5.2" and "Welcome, admin Last Logged on at |". Below this is a red navigation bar with "Home". A sidebar menu lists several options: "Asset Management", "Communication System Management", "User Management", "Monitoring", "Network Routing Policy", "Security", "Applications", "Settings", and "Session Manager". A red arrow points to the "Session Manager" option. Below the menu is a "Shortcuts" section with a "Change Password" link.

Figure 39 – Avaya Aura Session Manager Selection

6. Session Manager expanded view.



The screenshot shows the Avaya Aura™ System Manager 5.2 interface. At the top left is the AVAYA logo. The page title is "Avaya Aura™ System Manager 5.2". Below the title is a breadcrumb trail: "Home / Session Manager / Session Manager Administration".

On the left is a navigation menu with the following items:

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▶ Network Configuration
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools

Below the navigation menu is a "Shortcuts" section with links to "Change Password", "Help for Session Manager Administration", and "Help for Page Fields".

The main content area is titled "Session Manager Administration" and includes the text: "This page allows you to administer Session Manager instances and configure their global settings." Below this is a section for "Session Manager Instances" with buttons for "New", "View", "Edit", and "Delete". A table lists the instances:

	Name	Description
<input type="radio"/>	asset01	Cox Lab ASM 1
<input type="radio"/>	asset02	Cox Lab ASM 2

Below the table is a "Select : None" dropdown. Further down is a "Global Session Manager Settings" section with a "Save Global Settings" button and an "Authenticate Emergency Calls" checkbox.

Figure 40 – Avaya Aura Session Manager Administration

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’.

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▶ Network Configuration
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools
- Shortcuts
 - Change Password
 - Help for Session Manager Administration
 - Help for Page Fields

Edit Session Manager

[Commit](#) [Cancel](#)

General | Security Module | Monitoring | CDR | Personal Profile Manager (PPM) - Connection Settings | Event Server |
 Expand All | Collapse All

General

SIP Entity Name

Description

*Management Access Point Host Name/IP

*Direct Routing to Endpoints

Security Module

SIP Entity IP Address

*Network Mask

*Default Gateway

*Call Control PHB

*QOS Priority

*Speed & Duplex

VLAN ID

Monitoring

Enable Monitoring

*Proactive cycle time (secs)

*Reactive cycle time (secs)

*Number of Retries

CDR

Enable CDR

User

Password

Confirm Password

Personal Profile Manager (PPM) - Connection Settings

Limited PPM client connection

*Maximum Connection per PPM client

*PPM Connection Timeout (mins)

PPM Packet Rate Limiting

*PPM Packet Rate Limiting Threshold

Event Server

Clear Subscription on Notification Failure

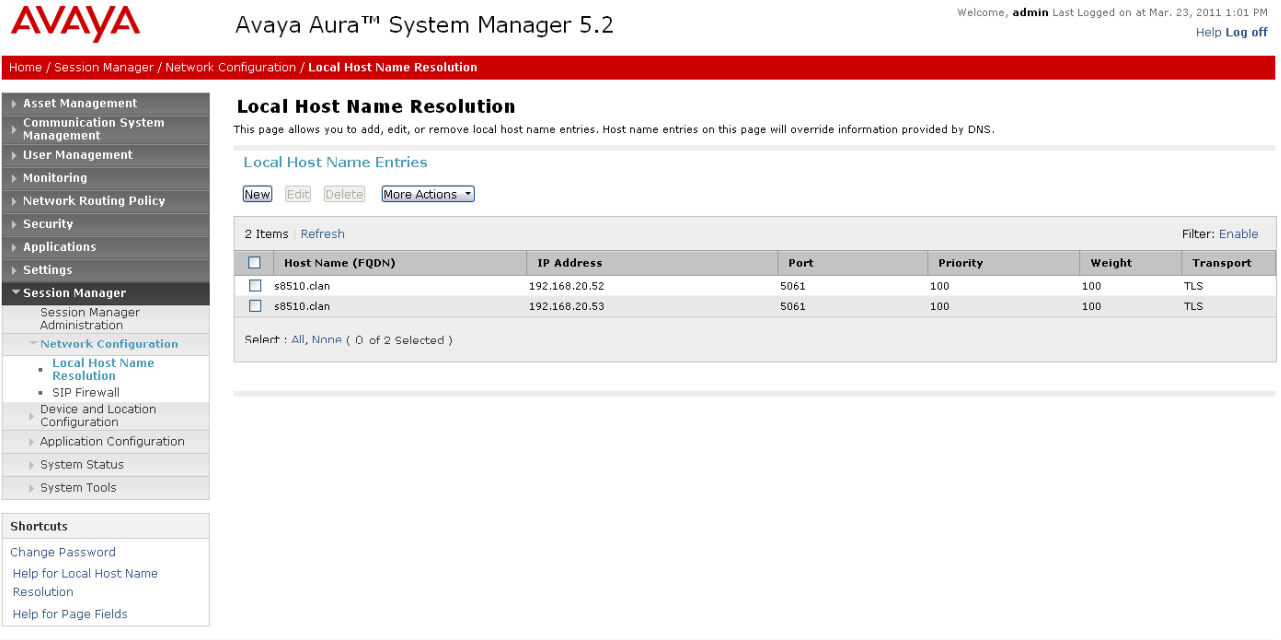
*Required

[Commit](#) [Cancel](#)

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



The screenshot shows the Avaya Aura System Manager 5.2 interface. The top navigation bar includes the Avaya logo, the product name "Avaya Aura™ System Manager 5.2", and a user status "Welcome, admin Last Logged on at Mar. 23, 2011 1:01 PM" with "Help" and "Log off" links. A red breadcrumb trail reads "Home / Session Manager / Network Configuration / Local Host Name Resolution".

The left sidebar contains a navigation menu with categories like Asset Management, Communication System Management, User Management, Monitoring, Network Routing Policy, Security, Applications, Settings, and Session Manager. Under Session Manager, the "Local Host Name Resolution" option is selected.

The main content area is titled "Local Host Name Resolution" and includes a sub-header "Local Host Name Entries". Below this, there are buttons for "New", "Edit", "Delete", and "More Actions". A table displays two entries:

<input type="checkbox"/>	Host Name (FQDN)	IP Address	Port	Priority	Weight	Transport
<input type="checkbox"/>	s8510.clan	192.168.20.52	5061	100	100	TLS
<input type="checkbox"/>	s8510.clan	192.168.20.53	5061	100	100	TLS

Below the table, it says "Select : All, None (0 of 2 Selected)".

Figure 42 – Avaya Aura Local Host Name Resolution

9. Firewall Configuration.

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.



Home / Session Manager / Network Configuration / SIP Firewall

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▼ Network Configuration
 - Local Host Name Resolution
 - ▶ SIP Firewall
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools

- Shortcuts
- Change Password
- Help for SIP Firewall Configuration
- Help for Page Fields

Firewall Configuration [Save](#)

General | Session Manager Instances | Rules | Blacklist | Whitelist |
 Expand All | Collapse All

General ▾

Session Manager Instances ▾ [More Actions](#)

<input type="checkbox"/>	Name	Description
<input checked="" type="checkbox"/>	asset01	Cox Lab ASM 1
<input type="checkbox"/>	asset02	Cox Lab ASM 2

Select : All, None (1 of 2 Selected)

Rules ▾ Enabled:

[New](#) [Edit](#) [Delete](#) [Up](#) [Down](#)

<input type="checkbox"/>	Enabled	Name	Action Type	Log Type	Log Message
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rate limit and Alarm high new calls rate	Rate Limit	Alarm	high new-calls rate
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rate Limit and Alarm high traffic from UA Connection	Rate Limit	Alarm	High traffic level from same UA Connection
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alarm high rate of INVITE Flood from UA Connection	None	Alarm	INVITE flood from same UA Connection
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rate Limit and Alarm slow INVITE Flood from UA Connection	Rate Limit	Alarm	slow INVITE flood from same UA Connection
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rate Limit and Alarm REGISTER Flood from UA Connection	Rate Limit	Alarm	REGISTER flood from same UA Connection
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rate Limit and Alarm OPTION Flood from UA Connection	Rate Limit	Alarm	OPTION flood from same UA Connection
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rate limit and alarm high traffic from NRP SIP Entity	Rate Limit	Alarm	High traffic level from same remote ip
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alarm INVITE flood from NRP SIP Entity	None	Yes	INVITE flood from same remote ip
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alarm high traffic from a user within NRP SIP Entity Connection	None	Yes	High traffic level from same user
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alarm INVITE flood from a user within NRP SIP Entity Connection	None	Yes	High traffic level (INVITE) from same user
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alarm REGISTER flood from a user within NRP SIP Entity Connection	None	Yes	High traffic level (REGISTER) from same user
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alarm OPTION flood from a user within NRP SIP Entity Connection	None	Yes	High traffic level (OPTIONS) from same user

Select : All, None (0 of 12 Selected)

Blacklist ▾ Enabled:

[New](#) [Delete](#)

<input type="checkbox"/>	Key	Value	Mask
--------------------------	-----	-------	------

Whitelist ▾ Enabled:

[New](#) [Delete](#)

<input type="checkbox"/>	Key	Value	Mask
<input type="checkbox"/>	Remote IP Address	192.11.13.2	255.255.255.255

Select : All, None (0 of 1 Selected)

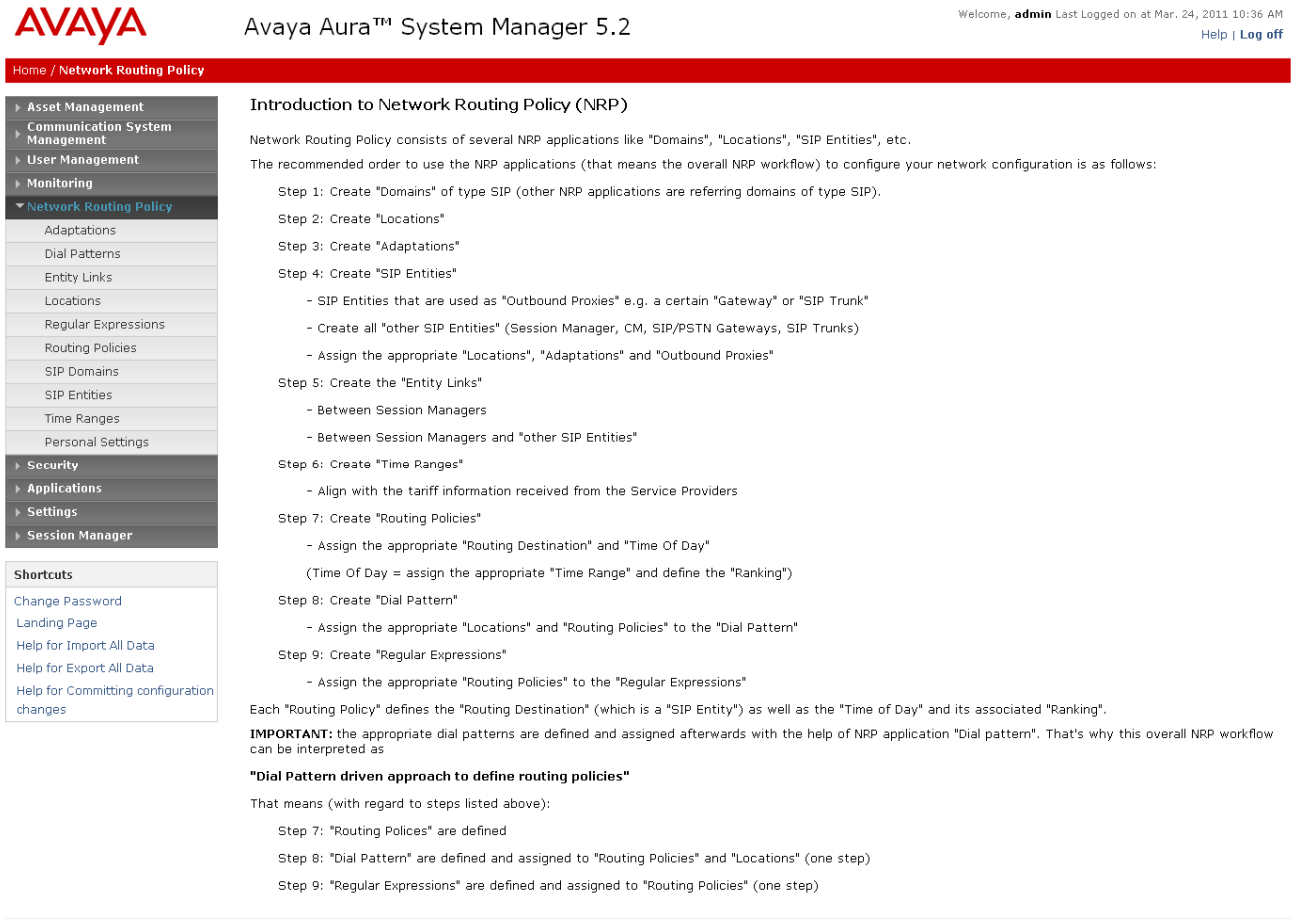
*Required [Save](#)

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



AVAYA Avaya Aura™ System Manager 5.2 Welcome, **admin** Last Logged on at Mar. 24, 2011 10:36 AM
Help | Log off

Home / Network Routing Policy

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, SIP/PSTN 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"
 - (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 this overall NRP workflow can be interpreted as

"Dial Pattern driven approach to define routing policies"

That means (with regard to steps listed above):

- Step 7: "Routing Policies" are defined
- Step 8: "Dial Pattern" are defined and assigned to "Routing Policies" and "Locations" (one step)
- Step 9: "Regular Expressions" are defined and assigned to "Routing Policies" (one step)

Figure 44 – Introduction to Network Routing Policy (NRP)

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)



AVAYA Avaya Aura™ System Manager 5.2 Welcome, admin Last Logged on at Mar. 24, 2011 10:36 AM
Help | Log off

Home / Network Routing Policy / SIP Domains

Domain Management

Edit New Duplicate Delete More Actions

1 Item Refresh Filter: Enable

<input type="checkbox"/>	Name	Type	Default	Notes
<input type="checkbox"/>	avaya.com	sip	<input type="checkbox"/>	

Select : All, None (0 of 1 Selected)

Shortcuts

- Change Password
- Help for NRP SIP Domains
- Help for SIP Domains fields
- Help for New SIP Domains
- Help for Delete Confirmation fields

Figure 45 – SIP Domain

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.

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- [Change Password](#)
 - [Help for NRP Locations](#)
 - [Help for Locations fields](#)
 - [Help for Locations Details fields](#)
 - [Help for Delete Confirmation fields](#)

Location

[Edit](#) [New](#) [Duplicate](#) [Delete](#) [More Actions](#) [Commit](#)

4 Items | [Refresh](#) Filter: Enable

<input type="checkbox"/>	Name	Notes
<input type="checkbox"/>	edgemarc-sbc1	Edgemarc 20.10 SBC
<input type="checkbox"/>	edgemarc-sbc2	Edgemarc 30.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000
<input type="checkbox"/>	s8510-cm	s8510-cm

Select : All, None (0 of 4 Selected)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- [Change Password](#)
 - [Help for Locations Details fields](#)
 - [Help for Committing configuration changes](#)

Location Details [Commit](#) [Cancel](#)

General

* Name:
 Notes:

Managed Bandwidth:

* Average Bandwidth per Call: [Kbit/sec](#)

* Time to Live (secs):

Location Pattern

[Add](#) [Remove](#)

0 Items | [Refresh](#) Filter: Enable

<input type="checkbox"/>	IP Address Pattern	Notes
--------------------------	--------------------	-------

* Input Required [Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Locations Details fields
 - Help for Committing configuration changes

Location Details [Commit](#) [Cancel](#)

General

* Name:
 Notes:

Managed Bandwidth:

* Average Bandwidth per Call: Kbit/sec

* Time to Live (secs):

Location Pattern

[Add](#) [Remove](#)

0 Items | [Refresh](#)

Filter: Enable

IP Address Pattern	Notes

* Input Required

[Commit](#) [Cancel](#)

Figure 46 – Location section

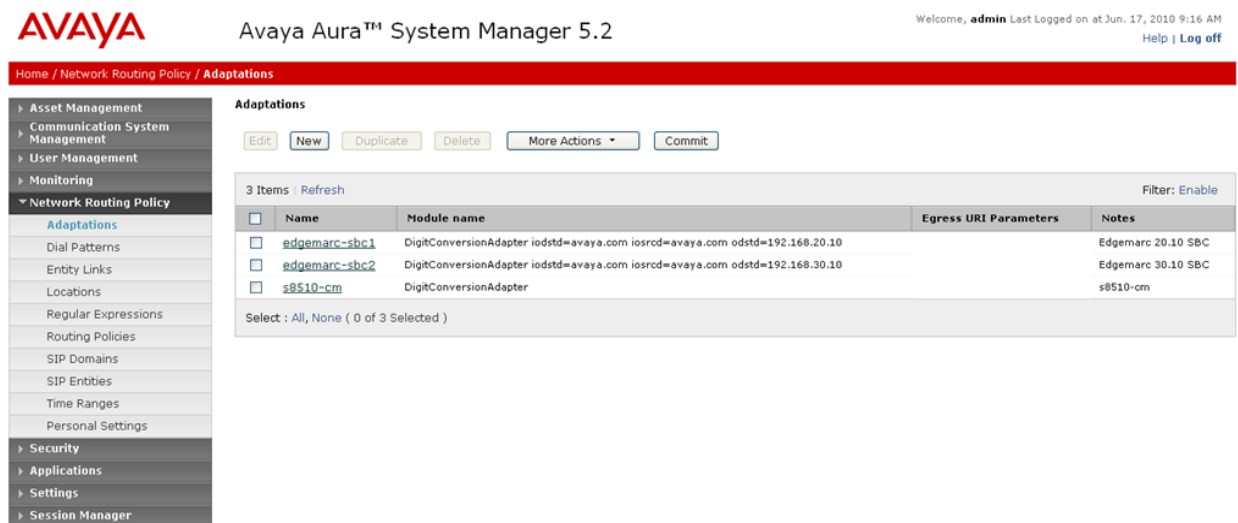
9.2.4 Add Adaptations Modules

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 as 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 use 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.

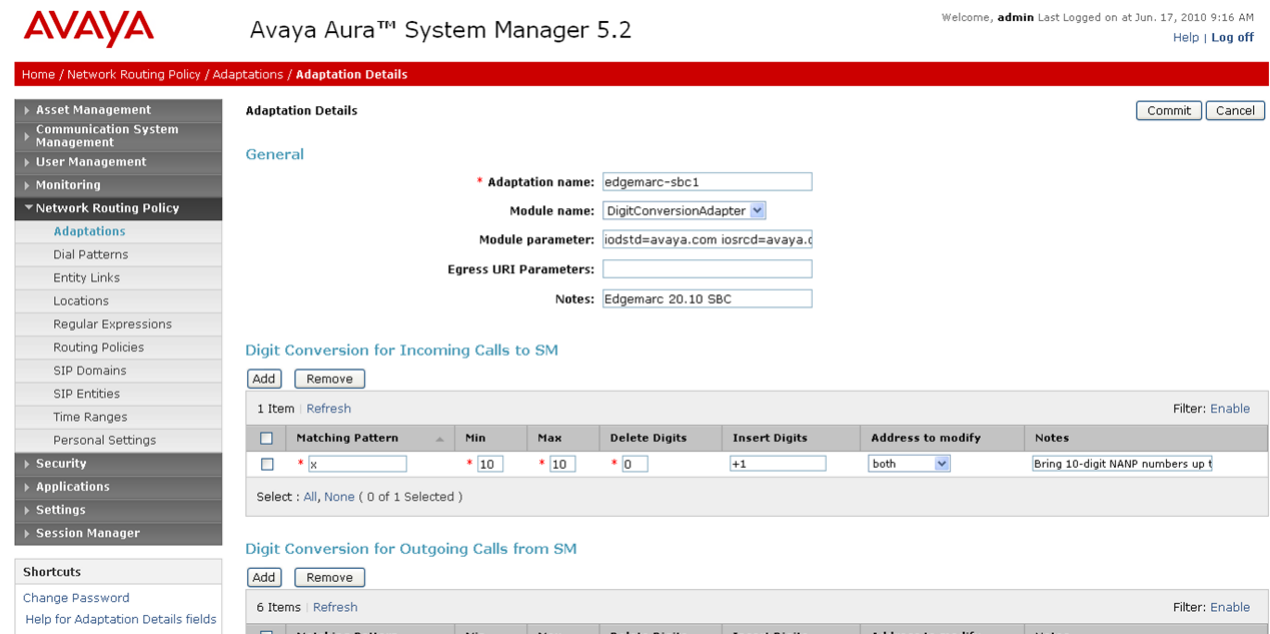
Click **Commit** to save the adaptation module.



The screenshot shows the Avaya Aura System Manager 5.2 interface. The top navigation bar includes the Avaya logo, the system name "Avaya Aura™ System Manager 5.2", and a user status "Welcome, admin Last Logged on at Jun. 17, 2010 9:16 AM" with "Help | Log off" links. The main content area is titled "Adaptations" and features a sidebar on the left with a tree view containing categories like Asset Management, Communication System Management, User Management, Monitoring, Network Routing Policy (expanded), Security, Applications, Settings, and Session Manager. Under "Network Routing Policy", "Adaptations" is selected. The main panel shows a table with 3 items, a "Refresh" button, and a "Filter: Enable" option. The table columns are Name, Module name, Egress URI Parameters, and Notes. The table contains three rows: "edgemarc-sbc1" (DigitConversionAdapter, iodstd=avaya.com iosrcd=avaya.com odstd=192.168.20.10, Edgemarc 20.10 SBC), "edgemarc-sbc2" (DigitConversionAdapter, iodstd=avaya.com iosrcd=avaya.com odstd=192.168.30.10, Edgemarc 30.10 SBC), and "s8510-cm" (DigitConversionAdapter, s8510-cm). Below the table, it says "Select : All, None (0 of 3 Selected)". At the top of the main panel, there are buttons for "Edit", "New", "Duplicate", "Delete", "More Actions", and "Commit".

Figure 47 – Adaptations Module

As shown in the following Adaptation Detail, the INGRESS Domain Modification Parameters are overridden for both the ingressOverrideDestinationDomain (iodstd) and ingresOverrideSourceDomain (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'.



AVAYA Avaya Aura™ System Manager 5.2 Welcome, admin Last Logged on at Jun. 17, 2010 9:16 AM
Help | Log off

Home / Network Routing Policy / Adaptations / Adaptation Details Commit Cancel

Adaptation Details

General

* Adaptation name: edgemarc-sbc1

Module name: DigitConversionAdapter

Module parameter: iodstd=avaya.com iosrcd=avaya.com

Egress URI Parameters:

Notes: Edgemarc 20.10 SBC

Digit Conversion for Incoming Calls to SM

Add Remove

1 Item Refresh Filter: Enable

<input type="checkbox"/>	Matching Pattern	Min	Max	Delete Digits	Insert Digits	Address to modify	Notes
<input type="checkbox"/>	*x	*10	*10	*0	+1	both	Bring 10-digit NANP numbers up t

Select : All, None (0 of 1 Selected)

Digit Conversion for Outgoing Calls from SM

Add Remove

6 Items Refresh Filter: Enable

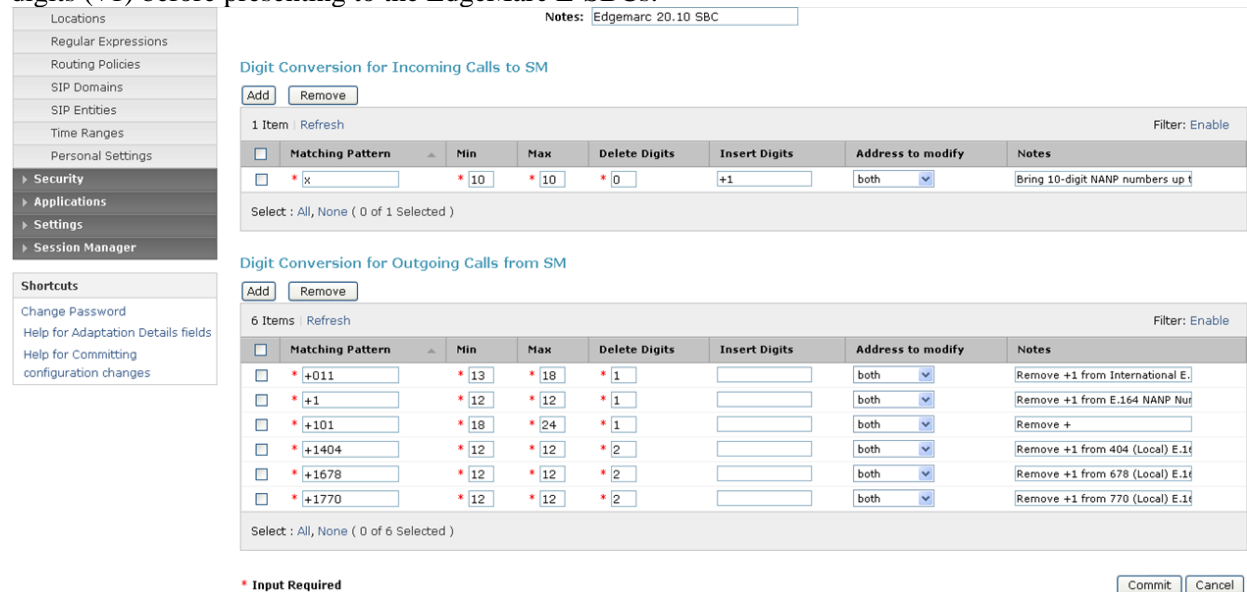
<input type="checkbox"/>	Matching Pattern	Min	Max	Delete Digits	Insert Digits	Address to modify	Notes
<input type="checkbox"/>	*+011	*13	*18	*1		both	Remove +1 from International E.
<input type="checkbox"/>	*+1	*12	*12	*1		both	Remove +1 from E.164 NANP Nur
<input type="checkbox"/>	*+101	*18	*24	*1		both	Remove +
<input type="checkbox"/>	*+1404	*12	*12	*2		both	Remove +1 from 404 (Local) E.14
<input type="checkbox"/>	*+1678	*12	*12	*2		both	Remove +1 from 678 (Local) E.14
<input type="checkbox"/>	*+1770	*12	*12	*2		both	Remove +1 from 770 (Local) E.14

Select : All, None (0 of 6 Selected)

* Input Required Commit Cancel

Figure 48 – Adaptation Module Detail

In following Digit Conversion screen for Incoming calls to Communication Manager, we inserted digits '+1' for all in coming 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.



Locations
Regular Expressions
Routing Policies
SIP Domains
SIP Entities
Time Ranges
Personal Settings

Security
Applications
Settings
Session Manager

Shortcuts
Change Password
Help for Adaptation Details fields
Help for Committing configuration changes

Notes: Edgemarc 20.10 SBC

Digit Conversion for Incoming Calls to SM

Add Remove

1 Item Refresh Filter: Enable

<input type="checkbox"/>	Matching Pattern	Min	Max	Delete Digits	Insert Digits	Address to modify	Notes
<input type="checkbox"/>	*x	*10	*10	*0	+1	both	Bring 10-digit NANP numbers up t

Select : All, None (0 of 1 Selected)

Digit Conversion for Outgoing Calls from SM

Add Remove

6 Items Refresh Filter: Enable

<input type="checkbox"/>	Matching Pattern	Min	Max	Delete Digits	Insert Digits	Address to modify	Notes
<input type="checkbox"/>	*+011	*13	*18	*1		both	Remove +1 from International E.
<input type="checkbox"/>	*+1	*12	*12	*1		both	Remove +1 from E.164 NANP Nur
<input type="checkbox"/>	*+101	*18	*24	*1		both	Remove +
<input type="checkbox"/>	*+1404	*12	*12	*2		both	Remove +1 from 404 (Local) E.14
<input type="checkbox"/>	*+1678	*12	*12	*2		both	Remove +1 from 678 (Local) E.14
<input type="checkbox"/>	*+1770	*12	*12	*2		both	Remove +1 from 770 (Local) E.14

Select : All, None (0 of 6 Selected)

* Input Required Commit Cancel

Figure 49 – Adaptation Module – Digit Conversion

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.



- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities**
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

SIP Entities

[Edit](#) [New](#) [Duplicate](#) [Delete](#) [More Actions](#) [Commit](#)

7 Items [Refresh](#)

Filter: Enable

<input type="checkbox"/>	Name	Entity Links	FQDN or IP Address	Type	Notes
<input type="checkbox"/>	asset01	▶	192.168.20.44	Session Manager	SM - Server 1
<input type="checkbox"/>	asset02	▶	192.168.20.46	Session Manager	SM - Server 2
<input type="checkbox"/>	edgemarc-sbc1	▶	192.168.20.10	Other	Edgemarc 20.10 SBC
<input type="checkbox"/>	edgemarc-sbc2	▶	192.168.30.10	Other	Edgemarc 30.10 SBC
<input type="checkbox"/>	Nortel1	▶	192.168.20.101	Other	Nortel 1 gateway
<input type="checkbox"/>	Nortel 2	▶	192.168.20.121	Other	Nortel 2 gateway
<input type="checkbox"/>	s8510-cm	▶	192.168.20.52	CM	s8510-cm

Select : All, None (0 of 7 Selected)

Shortcuts

- [Change Password](#)
- [Help for SIP Entities](#)
- [Help for SIP Entities fields](#)
- [Help for SIP Entity Details fields](#)
- [Help for Delete Confirmation fields](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities**
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

Shortcuts

- [Change Password](#)
- [Help for SIP Entity Details fields](#)
- [Help for Committing configuration changes](#)

SIP Entity Details [Commit](#) [Cancel](#)

General

* Name:

* FQDN or IP Address:

Type:

Notes:

Adaptation:

Location:

Time Zone:

Override Port & Transport with DNS SRV:

* SIP Timer B/F (in seconds):

Credential name:

Call Detail Recording:

SIP Link Monitoring

SIP Link Monitoring:

* Proactive Monitoring Interval (in seconds):

* Reactive Monitoring Interval (in seconds):

* Number of Retries:

Entity Links

[Add](#) [Remove](#)

2 Items [Refresh](#) Filter: Enable

<input type="checkbox"/>	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Trusted
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	<input type="text" value="edgemarc-sbc1"/>	* <input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	<input type="text" value="edgemarc-sbc1"/>	* <input type="text" value="5060"/>	<input checked="" type="checkbox"/>

Select : All, None (0 of 2 Selected)

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities**
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

Shortcuts

[Change Password](#)

[Help for SIP Entity Details fields](#)

[Help for Committing configuration changes](#)

SIP Entity Details

[Commit](#) [Cancel](#)

General

* Name:

* FQDN or IP Address:

Type:

Notes:

Adaptation:

Location:

Time Zone:

Override Port & Transport with DNS SRV:

* SIP Timer B/F (in seconds):

Credential name:

Call Detail Recording:

SIP Link Monitoring

SIP Link Monitoring:

Entity Links

[Add](#) [Remove](#)

2 Items | Refresh Filter: Enable

<input type="checkbox"/>	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Trusted
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="UDP"/>	<input type="text" value="5060"/>	<input type="text" value="Nortel1"/>	<input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="UDP"/>	<input type="text" value="5060"/>	<input type="text" value="Nortel1"/>	<input type="text" value="5060"/>	<input checked="" type="checkbox"/>

Select : All, None (0 of 2 Selected)

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities**
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for SIP Entity Details fields
 - Help for Committing configuration changes

SIP Entity Details

[Commit](#) [Cancel](#)

General

* Name:

* FQDN or IP Address:

Type:

Notes:

Location:

Outbound Proxy:

Time Zone:

Credential name:

SIP Link Monitoring

SIP Link Monitoring:

* Proactive Monitoring Interval (in seconds):

* Reactive Monitoring Interval (in seconds):

* Number of Retries:

Entity Links

[Add](#) [Remove](#)

5 Items | Refresh Filter: Enable

<input type="checkbox"/>	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Trusted
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	<input type="text" value="edgemarc-sbc2"/>	* <input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	<input type="text" value="Nortel 2"/>	* <input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	<input type="text" value="Nortel1"/>	* <input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="UDP"/>	* <input type="text" value="5060"/>	<input type="text" value="edgemarc-sbc1"/>	* <input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset01"/>	<input type="text" value="TLS"/>	* <input type="text" value="5061"/>	<input type="text" value="s8510-cm"/>	* <input type="text" value="5061"/>	<input checked="" type="checkbox"/>

Select : All, None (0 of 5 Selected)

Port

[Add](#) [Remove](#)

3 Items | Refresh Filter: Enable

<input type="checkbox"/>	Port	Protocol	Default Domain	Notes
<input type="checkbox"/>	<input type="text" value="5060"/>	<input type="text" value="TCP"/>	<input type="text" value="avaya.com"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="5060"/>	<input type="text" value="UDP"/>	<input type="text" value="avaya.com"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="5061"/>	<input type="text" value="TLS"/>	<input type="text" value="avaya.com"/>	<input type="text"/>

Select : All, None (0 of 3 Selected)

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities**
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

Shortcuts

- Change Password
- Help for SIP Entity Details fields
- Help for Committing configuration changes

SIP Entity Details

[Commit](#) [Cancel](#)

General

* Name:

* FQDN or IP Address:

Type:

Notes:

Location:

Outbound Proxy:

Time Zone:

Credential name:

SIP Link Monitoring

SIP Link Monitoring:

* Proactive Monitoring Interval (in seconds):

* Reactive Monitoring Interval (in seconds):

* Number of Retries:

Entity Links

[Add](#) [Remove](#)

5 Items | Refresh Filter: Enable

<input type="checkbox"/>	SIP Entity 1	Protocol	Port	SIP Entity 2	Port	Trusted
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="UDP"/>	<input type="text" value="5060"/>	<input type="text" value="edgemarc-sbc2"/>	<input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="UDP"/>	<input type="text" value="5060"/>	<input type="text" value="Nortel 2"/>	<input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="UDP"/>	<input type="text" value="5060"/>	<input type="text" value="Nortel1"/>	<input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="UDP"/>	<input type="text" value="5060"/>	<input type="text" value="edgemarc-sbc1"/>	<input type="text" value="5060"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="asset02"/>	<input type="text" value="TLS"/>	<input type="text" value="5061"/>	<input type="text" value="s8510-cm"/>	<input type="text" value="5061"/>	<input checked="" type="checkbox"/>

Select : All, None (0 of 5 Selected)

Port

[Add](#) [Remove](#)

3 Items | Refresh Filter: Enable

<input type="checkbox"/>	Port	Protocol	Default Domain	Notes
<input type="checkbox"/>	<input type="text" value="5060"/>	<input type="text" value="TCP"/>	<input type="text" value="avaya.com"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="5060"/>	<input type="text" value="UDP"/>	<input type="text" value="avaya.com"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="5061"/>	<input type="text" value="TLS"/>	<input type="text" value="avaya.com"/>	<input type="text"/>

Select : All, None (0 of 3 Selected)

* Input Required

[Commit](#) [Cancel](#)

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.

The screenshot shows the Avaya Aura System Manager 5.2 interface. The top navigation bar includes the Avaya logo, the title "Avaya Aura™ System Manager 5.2", and a user status message: "Welcome, admin Last Logged on at Mar. 24, 2011 10:36 AM Help | Log off". Below the navigation bar is a breadcrumb trail: "Home / Network Routing Policy / Routing Policies".

The left sidebar contains a menu with the following items: Asset Management, Communication System Management, User Management, Monitoring, Network Routing Policy (expanded), Adaptations, Dial Patterns, Entity Links, Locations, Regular Expressions, Routing Policies (highlighted), SIP Domains, SIP Entities, Time Ranges, Personal Settings, Security, Applications, Settings, and Session Manager. Below the menu is a "Shortcuts" section with links for "Change Password", "Help for NRP Routing Policies", "Help for Routing Policies fields", "Help for Routing Policy Details fields", and "Help for SIP Entity List".

The main content area is titled "Routing Policies" and contains a toolbar with buttons for "Edit", "New", "Duplicate", "Delete", "More Actions", and "Commit". Below the toolbar is a table with 5 items. The table has columns for "Name", "Disabled", "Destination", and "Notes".

<input type="checkbox"/>	Name	Disabled	Destination	Notes
<input type="checkbox"/>	RP -Nortel1	<input type="checkbox"/>	Nortel1	RP - Nortel 1
<input type="checkbox"/>	RP-Nortel2	<input type="checkbox"/>	Nortel 2	RP - Nortel 2
<input type="checkbox"/>	RP_primary_to_edgemarc-sbc1	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	RP_secondary_to_edgemarc-sbc2	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	RP to s8510-cm	<input type="checkbox"/>	s8510-cm	RP to s8510-cm

Below the table is a selection summary: "Select : All, None (0 of 5 Selected)".

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies**
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Routing Policy Details fields
 - Help for SIP Entity List
 - Help for Time Range List
 - Help for Pattern List
 - Help for Regular Expressions List
 - Help for Committing configuration changes

Routing Policy Details [Commit](#) [Cancel](#)

General

* Name:

Disabled:

Notes:

SIP Entity as Destination

[Select](#)

Name	FQDN or IP Address	Type	Notes
Nortel1	192.168.20.101	Other	Nortel 1 gateway

Time of Day

[Add](#) [Remove](#) [View Gaps/Overlaps](#)

1 Item | Refresh Filter: Enable

<input type="checkbox"/>	Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
<input type="checkbox"/>	0	24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7

Select : All, None (0 of 1 Selected)

Dial Patterns

[Add](#) [Remove](#)

1 Item | Refresh Filter: Enable

<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes
<input type="checkbox"/>	+16782383	12	12	<input type="checkbox"/>	-ALL-	edgemarc-sbcl	Inbound DP to Nortel

Select : All, None (0 of 1 Selected)

Regular Expressions

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Pattern	Rank Order	Deny	Notes
--------------------------	---------	------------	------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies**
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Routing Policy Details fields
 - Help for SIP Entity List
 - Help for Time Range List
 - Help for Pattern List
 - Help for Regular Expressions List
 - Help for Committing configuration changes

Routing Policy Details [Commit](#) [Cancel](#)

General

* Name:
 Disabled:
 Notes:

SIP Entity as Destination

[Select](#)

Name	FQDN or IP Address	Type	Notes
edgemarc-sbc1	192.168.20.10	Other	Edgemarc 20.10 SBC

Time of Day

[Add](#) [Remove](#) [View Gaps/Overlaps](#)

1 Item | Refresh Filter: Enable

<input type="checkbox"/>	Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
<input type="checkbox"/>	0	24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7

Select : All, None (0 of 1 Selected)

Dial Patterns

[Add](#) [Remove](#)

19 Items | Refresh Filter: Enable

<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	SIP Domain	Originating Location	Notes
<input type="checkbox"/>	+011	13	18	<input type="checkbox"/>	-ALL-	s8510-cm	DP International to SBC's
<input type="checkbox"/>	+011	13	18	<input type="checkbox"/>	-ALL-	Nortel	DP International to SBC's
<input type="checkbox"/>	+1	12	12	<input type="checkbox"/>	-ALL-	s8510-cm	DP to edgemarc-sbc
<input type="checkbox"/>	+1	12	12	<input type="checkbox"/>	-ALL-	Nortel	DP to edgemarc-sbc
<input type="checkbox"/>	1	11	11	<input type="checkbox"/>	-ALL-	s8510-cm	DP to edgemarc-sbc
<input type="checkbox"/>	1	11	11	<input type="checkbox"/>	-ALL-	Nortel	DP to edgemarc-sbc
<input type="checkbox"/>	101	17	24	<input type="checkbox"/>	-ALL-	Nortel	1015 Preferred Calls to SBC
<input type="checkbox"/>	404	10	10	<input type="checkbox"/>	-ALL-	Nortel	DP-404 10 digits outbund
<input type="checkbox"/>	404	10	10	<input type="checkbox"/>	-ALL-	s8510-cm	DP-404 10 digits outbund
<input type="checkbox"/>	678	10	10	<input type="checkbox"/>	-ALL-	Nortel	NORTEL OUT THRU SM 678
<input type="checkbox"/>	678	10	10	<input type="checkbox"/>	-ALL-	s8510-cm	NORTEL OUT THRU SM 678
<input type="checkbox"/>	770	10	10	<input type="checkbox"/>	-ALL-	Nortel	NORTEL OUT THRU sm 770
<input type="checkbox"/>	770	10	10	<input type="checkbox"/>	-ALL-	s8510-cm	NORTEL OUT THRU sm 770
<input type="checkbox"/>	911	3	3	<input checked="" type="checkbox"/>	-ALL-	s8510-cm	911
<input type="checkbox"/>	911	3	3	<input checked="" type="checkbox"/>	-ALL-	Nortel	911

Select : All, None (0 of 19 Selected) < Previous | Page 1 of 2 | Next >

Regular Expressions

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Pattern	Rank Order	Deny	Notes
--------------------------	---------	------------	------	-------

* Input Required

[Commit](#) [Cancel](#)

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
Welcome, admin Last Logged on at Mar. 24, 2011 10:36 AM
[Help](#) | [Log off](#)

[Home](#) / [Network Routing Policy](#) / [Dial Patterns](#) / [Dial Pattern Details](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

Shortcuts

- [Change Password](#)
- [Help for Dial Pattern Details fields](#)
- [Help for Location and Routing Policy Lists](#)
- [Help for Denied Location fields](#)
- [Help for Committing configuration changes](#)

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

2 Items | [Refresh](#) Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹ ▲	Originating Location Notes	Routing Policy Name	Rank ² ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	edgemarc-sbc1	Edgemarc 20.10 SBC	RP -Nortel1	0	<input type="checkbox"/>	Nortel1	RP - Nortel 1
<input type="checkbox"/>	edgemarc-sbc2	Edgemarc 30.10 SBC	RP -Nortel2	10	<input type="checkbox"/>	Nortel 2	RP - Nortel 2

Select : All, None (0 of 2 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items | [Refresh](#) Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required [Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns**
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Dial Pattern Details fields
 - Help for Location and Routing Policy Lists
 - Help for Denied Location fields
 - Help for Committing configuration changes

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

4 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹	Originating Location Notes	Routing Policy Name	Rank ²	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 4 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
 - ▶ Communication System Management
 - ▶ User Management
 - ▶ Monitoring
 - ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns**
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
 - ▶ Security
 - ▶ Applications
 - ▶ Settings
 - ▶ Session Manager
-
- Shortcuts**
- Change Password
 - Help for Dial Pattern Details fields
 - Help for Location and Routing Policy Lists
 - Help for Denied Location fields
 - Help for Committing configuration changes

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

4 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹	Originating Location Notes	Routing Policy Name	Rank ²	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 4 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns**
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Dial Pattern Details fields
 - Help for Location and Routing Policy Lists
 - Help for Denied Location fields
 - Help for Committing configuration changes

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

4 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹ ▲	Originating Location Notes	Routing Policy Name	Rank ² ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 4 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns**
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 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Dial Pattern Details fields
 - Help for Location and Routing Policy Lists
 - Help for Denied Location fields
 - Help for Committing configuration changes

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

4 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹	Originating Location Notes	Routing Policy Name	Rank ²	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP primary to edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP secondary to edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 4 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Dial Pattern Details fields
 - Help for Location and Routing Policy Lists
 - Help for Denied Location fields
 - Help for Committing configuration changes

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* Pattern:

* Min:

* Max:

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

2 Items Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name 1 ▲	Originating Location Notes	Routing Policy Name	Rank 2 ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP_primary_to_edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP_secondary_to_edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 2 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

- Shortcuts**
- Change Password
 - Help for Dial Pattern Details fields
 - Help for Location and Routing Policy Lists
 - Help for Denied Location fields
 - Help for Committing configuration changes

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* Pattern:

* Min:

* Max:

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

2 Items Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name 1 ▲	Originating Location Notes	Routing Policy Name	Rank 2 ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	edgemarc-sbc1	Edgemarc 20.10 SBC	RP -Nortel1	0	<input type="checkbox"/>	Nortel1	RP - Nortel 1
<input type="checkbox"/>	edgemarc-sbc2	Edgemarc 30.10 SBC	RP-Nortel2	10	<input type="checkbox"/>	Nortel 2	RP - Nortel 2

Select : All, None (0 of 2 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns**
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

Shortcuts

[Change Password](#)

[Help for Dial Pattern Details fields](#)

[Help for Location and Routing Policy Lists](#)

[Help for Denied Location fields](#)

[Help for Committing configuration changes](#)

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* **Pattern:**

* **Min:**

* **Max:**

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

4 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location Name ¹ ▲	Originating Location Notes	Routing Policy Name	Rank ² ▲	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP_primary_to_edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP_secondary_to_edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP_primary_to_edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP_secondary_to_edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 4 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items | Refresh Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
--------------------------	----------------------	-------

* Input Required

[Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▼ Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▶ Session Manager

Shortcuts

[Change Password](#)

[Help for Dial Pattern Details fields](#)

[Help for Location and Routing Policy Lists](#)

[Help for Denied Location fields](#)

[Help for Committing configuration changes](#)

Dial Pattern Details

[Commit](#) [Cancel](#)

General

* Pattern:

* Min:

* Max:

Emergency Call:

SIP Domain:

Notes:

Originating Locations and Routing Policies

[Add](#) [Remove](#)

4 Items [Refresh](#) Filter: Enable

<input type="checkbox"/>	Originating Location Name	Originating Location Notes	Routing Policy Name	Rank	<input type="checkbox"/>	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Nortel	Nortel CS1000	RP_primary_to_edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	Nortel	Nortel CS1000	RP_secondary_to_edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP_primary_to_edgemarc-sbc1	0	<input type="checkbox"/>	edgemarc-sbc1	First Choice to Edgemarc 20.10 SBC
<input type="checkbox"/>	s8510-cm	s8510-cm	RP_secondary_to_edgemarc-sbc2	10	<input type="checkbox"/>	edgemarc-sbc2	Second Choice to Edgemarc 30.10 SBC

Select : All, None (0 of 4 Selected)

Denied Originating Locations

[Add](#) [Remove](#)

0 Items [Refresh](#) Filter: Enable

<input type="checkbox"/>	Originating Location	Notes
0 Items		

* Input Required [Commit](#) [Cancel](#)

Figure 52 – Dial Patterns

9.2.8 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:** Enter the default gateway IP address for the Session Manager

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

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▶ Network Configuration
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools
- Shortcuts
 - Change Password
 - Help for Session Manager Administration
 - Help for Page Fields

View Session Manager [Return](#)

[General](#) | [Security Module](#) | [Monitoring](#) | [CDR](#) | [Personal Profile Manager \(PPM\) - Connection Settings](#) | [Event Server](#) | [Expand All](#) | [Collapse All](#)

General ▾

SIP Entity Name
 Description
 Management Access Point Host Name/IP
 Direct Routing to Endpoints

Security Module ▾

SIP Entity IP Address
 Network Mask
 Default Gateway
 Call Control PHB
 QOS Priority
 Speed & Duplex
 VLAN ID |

Monitoring ▾

Enable Monitoring
 Proactive cycle time (secs)
 Reactive cycle time (secs)
 Number of Retries

CDR ▾

Enable CDR
 User
 Password |

Personal Profile Manager (PPM) - Connection Settings ▾

Limited PPM client connection
 Maximum Connection per PPM client
 PPM Connection Timeout (mins)
 PPM Packet Rate Limiting
 PPM Packet Rate Limiting Threshold

Event Server ▾

Clear Subscription on Notification Failure

[Return](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▶ Network Configuration
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools
- Shortcuts
 - Change Password
 - Help for Session Manager Administration
 - Help for Page Fields

View Session Manager [Return](#)

[General](#) | [Security Module](#) | [Monitoring](#) | [CDR](#) | [Personal Profile Manager \(PPM\) - Connection Settings](#) | [Event Server](#) | [Expand All](#) | [Collapse All](#)

General ▾

SIP Entity Name
 Description
 Management Access Point Host Name/IP
 Direct Routing to Endpoints

Security Module ▾

SIP Entity IP Address
 Network Mask
 Default Gateway
 Call Control PHB
 QOS Priority
 Speed & Duplex
 VLAN ID |

Monitoring ▾

Enable Monitoring
 Proactive cycle time (secs)
 Reactive cycle time (secs)
 Number of Retries

CDR ▾

Enable CDR
 User
 Password |

Personal Profile Manager (PPM) - Connection Settings ▾

Limited PPM client connection
 Maximum Connection per PPM client
 PPM Connection Timeout (mins)
 PPM Packet Rate Limiting
 PPM Packet Rate Limiting Threshold

Event Server ▾

Clear Subscription on Notification Failure

[Return](#)

Figure 53 – Session Manager



9.2.9 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.



- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ **Session Manager**
 - Session Manager Administration
 - ▼ Network Configuration
 - Local Host Name Resolution
 - SIP Firewall
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools

Shortcuts

- Change Password
- Help for Local Host Name Resolution
- Help for Page Fields

Local Host Name Resolution

This page allows you to add, edit, or remove local host name entries. Host name entries on this page will override information provided by DNS.

Local Host Name Entries

[New](#) [Edit](#) [Delete](#) [More Actions](#)

2 Items [Refresh](#) Filter: Enable

<input type="checkbox"/>	Host Name (FQDN)	IP Address	Port	Priority	Weight	Transport
<input type="checkbox"/>	s8510.clan	192.168.20.52	5061	100	100	TLS
<input type="checkbox"/>	s8510.clan	192.168.20.53	5061	100	100	TLS

Select : All, None (0 of 2 Selected)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▶ Network Configuration
 - Local Host Name Resolution
 - SIP Firewall
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools

Shortcuts

- Change Password
- Help for Local Host Name Resolution
- Help for Page Fields

Edit Local Host Name Entries [Commit](#) [Cancel](#)

Edit Local Host Name Entries

<input checked="" type="checkbox"/>	Host Name (FQDN)	IP Address	Port	Priority	Weight	Transport
<input checked="" type="checkbox"/>	s8510.clan	192.168.20.52	5061	100	100	TLS

Select : All, None (1 of 1 Selected)

*Required [Commit](#) [Cancel](#)

- ▶ Asset Management
- ▶ Communication System Management
- ▶ User Management
- ▶ Monitoring
- ▶ Network Routing Policy
- ▶ Security
- ▶ Applications
- ▶ Settings
- ▼ Session Manager
 - Session Manager Administration
 - ▶ Network Configuration
 - Local Host Name Resolution
 - SIP Firewall
 - ▶ Device and Location Configuration
 - ▶ Application Configuration
 - ▶ System Status
 - ▶ System Tools

Shortcuts

- Change Password
- Help for Local Host Name Resolution
- Help for Page Fields

Edit Local Host Name Entries [Commit](#) [Cancel](#)

Edit Local Host Name Entries

<input checked="" type="checkbox"/>	Host Name (FQDN)	IP Address	Port	Priority	Weight	Transport
<input checked="" type="checkbox"/>	s8510.clan	192.168.20.53	5061	100	100	TLS

Select : All, None (1 of 1 Selected)

*Required [Commit](#) [Cancel](#)

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.



Home / Network Routing Policy / Time Ranges

- Asset Management
- Communication System Management
- User Management
- Monitoring
- Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- Security

Time Ranges

[Edit](#) [New](#) [Duplicate](#) [Delete](#) [More Actions](#) [Commit](#)

1 Item [Refresh](#) Filter: Enable

<input type="checkbox"/>	Name	Mo	Tu	We	Th	Fr	Sa	Su	Start Time	End Time	Notes
<input type="checkbox"/>	24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7

Select : All, None (0 of 1 Selected)



Home / Network Routing Policy / Personal Settings

- Asset Management
- Communication System Management
- User Management
- Monitoring
- Network Routing Policy
 - Adaptations
 - Dial Patterns
 - Entity Links
 - Locations
 - Regular Expressions
 - Routing Policies
 - SIP Domains
 - SIP Entities
 - Time Ranges
 - Personal Settings
- Security
- Applications
- Settings
- Session Manager

Personal settings for user 'admin'

[Restore Defaults](#) [Revert](#) [Apply](#)

Adaptations

* Matching Pattern Min Length:

* Matching Pattern Max Length:

Dial Patterns

* Dial Pattern Min Length:

* Dial Pattern Max Length:

Entity Links

* Listen Port:

Default Transport Protocol for Entity links:

Domain Management

Suffix:

SIP Entities

Type:

Time Zone:

Default Transport Protocol for Ports:

Override Port & Transport with DNS SRV:

Time Ranges

* Time Range Start Time:

* Time Range End Time:

Application Settings

Show warning message:

[Restore Defaults](#) [Revert](#) [Apply](#)

* Input Required

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

IN-SERVICE PEPS

PAT#	CR #	PATCH	REF #	NAME	DATE	FILENAME
SPECINS						
000	Q02038482	ISS1:10F1		p28682_1	15/02/2011	p28682_1.cpm NO
001	Q00350041-01	ISS1:10F1		p16376_1	15/02/2011	p16376_1.cpm NO
002	Q00349046-03	ISS1:10F1		p17588_1	15/02/2011	p17588_1.cpm NO
003	Q01725096-03	ISS1:10F1		p23200_1	15/02/2011	p23200_1.cpm NO
004	Q01680019	ISS1:10F1		p24307_1	15/02/2011	p24307_1.cpm NO
005	Q02097405	ISS1:10F1		p24463_1	15/02/2011	p24463_1.cpm NO
006	Q01782930-01	ISS1:10F1		p24964_1	15/02/2011	p24964_1.cpm NO
007	Q01873266-02	ISS1:10F1		p25747_1	15/02/2011	p25747_1.cpm NO
008	Q01884473-01	ISS1:10F1		p26726_1	15/02/2011	p26726_1.cpm NO
009	Q01974578-04	ISS1:10F1		p27329_1	15/02/2011	p27329_1.cpm NO
010	Q01974383-02	ISS1:10F1		p27378_1	15/02/2011	p27378_1.cpm NO
011	Q01983521-04	ISS1:10F1		p27616_1	15/02/2011	p27616_1.cpm NO
012	Q02092594	ISS1:10F1		p27830_1	15/02/2011	p27830_1.cpm NO
013	Q01999478-01	ISS1:10F1		p27897_1	15/02/2011	p27897_1.cpm NO
014	Q02064793-06	ISS1:10F1		p27947_1	15/02/2011	p27947_1.cpm NO
015	Q02007976-03	ISS1:10F1		p28028_1	15/02/2011	p28028_1.cpm NO
016	Q02007476	ISS1:10F1		p28031_1	15/02/2011	p28031_1.cpm NO
017	Q01849803	ISS1:10F1		p28064_1	15/02/2011	p28064_1.cpm YES
018	Q02011613-01	ISS1:10F1		p28108_1	15/02/2011	p28108_1.cpm NO
019	Q01982233-06	ISS1:10F1		p28172_1	15/02/2011	p28172_1.cpm NO
020	Q01976701-01	ISS1:10F1		p28211_1	15/02/2011	p28211_1.cpm NO
021	Q02019660-04	ISS2:10F1		p28252_2	15/02/2011	p28252_2.cpm NO
022	Q02017013-01	ISS1:10F1		p28313_1	15/02/2011	p28313_1.cpm NO
023	Q02097631	ISS1:10F1		p28328_1	15/02/2011	p28328_1.cpm NO



024	Q02024135-04	ISS1:10F1	p28381_1	15/02/2011	p28381_1.cpm	YES
025	Q01987270-02	ISS1:10F1	p28416_1	15/02/2011	p28416_1.cpm	NO
026	Q01938235-05	ISS2:10F1	p28418_2	15/02/2011	p28418_2.cpm	NO
027	Q02029209	ISS1:10F1	p28469_1	15/02/2011	p28469_1.cpm	NO
028	Q02022264	ISS1:10F1	p28486_1	15/02/2011	p28486_1.cpm	NO
029	Q02030977	ISS1:10F1	p28507_1	15/02/2011	p28507_1.cpm	NO
030	Q02032955-02	ISS1:10F1	p28529_1	15/02/2011	p28529_1.cpm	NO
031	Q02020526	ISS1:10F1	p28537_1	15/02/2011	p28537_1.cpm	NO
032	Q02031323-01	ISS1:1of1	p28546_1	15/02/2011	p28546_1.cpm	NO
033	Q02019323-01	ISS1:10F1	p28551_1	15/02/2011	p28551_1.cpm	NO
034	Q02034083	ISS1:10F1	p28553_1	15/02/2011	p28553_1.cpm	YES
035	Q02028560-04	ISS1:10F1	p28564_1	15/02/2011	p28564_1.cpm	NO
036	Q02034835	ISS1:10F1	p28569_1	15/02/2011	p28569_1.cpm	YES
037	Q02033951	ISS1:10F1	p28579_1	15/02/2011	p28579_1.cpm	NO
038	Q02033139	ISS1:10F1	p28582_1	15/02/2011	p28582_1.cpm	NO
039	Q02100914	ISS1:10F1	p28597_1	15/02/2011	p28597_1.cpm	NO
040	Q02018384	ISS1:10F1	p28598_1	15/02/2011	p28598_1.cpm	NO
041	Q02033201	ISS1:10F1	p28631_1	15/02/2011	p28631_1.cpm	YES
042	Q02032155	p28538	p28638_1	15/02/2011	p28638_1.cpm	YES
043	Q02040038-03	ISS1:10F1	p28647_1	15/02/2011	p28647_1.cpm	NO
044	Q02040015	ISS1:10F1	p28657_1	15/02/2011	p28657_1.cpm	NO
045	Q02038675	ISS1:10F1	p28665_1	15/02/2011	p28665_1.cpm	YES
046	Q02020734-02	ISS1:10F1	p28668_1	15/02/2011	p28668_1.cpm	NO
047	Q02038440	ISS1:10F1	p28674_1	15/02/2011	p28674_1.cpm	NO
048	Q02035396	ISS1:10F1	p28675_1	15/02/2011	p28675_1.cpm	NO
049	Q02031118	ISS1:10F1	p28680_1	15/02/2011	p28680_1.cpm	NO
050	Q02029228-01	ISS1:10F1	p28681_1	15/02/2011	p28681_1.cpm	NO
051	Q02032785	ISS1:10F1	p28935_1	15/02/2011	p28935_1.cpm	YES
052	Q02043231	ISS1:10F1	p28712_1	15/02/2011	p28712_1.cpm	NO
053	Q02024455-01	ISS1:10F1	p28717_1	15/02/2011	p28717_1.cpm	NO
054	Q02041981	p28695_1	p28719_1	15/02/2011	p28719_1.cpm	NO
055	Q02031359	p28679	p28725_1	15/02/2011	p28725_1.cpm	YES
056	Q02031959	ISS1:10F1	p28728_1	15/02/2011	p28728_1.cpm	NO
057	Q02033000	ISS1:1of1	p28736_1	15/02/2011	p28736_1.cpm	NO
058	Q02039217-03	ISS1:10F1	p28760_1	15/02/2011	p28760_1.cpm	NO
059	Q02043669	ISS1:10F1	p28771_1	15/02/2011	p28771_1.cpm	NO
060	Q02021470-02	ISS1:10F1	p28776_1	15/02/2011	p28776_1.cpm	NO
061	Q02079612-02	ISS1:10F1	p29191_1	15/02/2011	p29191_1.cpm	NO
062	Q02035555	ISS1:10F1	p28814_1	15/02/2011	p28814_1.cpm	NO
063	Q02049121-01	ISS1:10F1	p28819_1	15/02/2011	p28819_1.cpm	NO
064	Q01986974-05	ISS1:10F1	p28821_1	15/02/2011	p28821_1.cpm	YES
065	Q02031502	ISS1:10F1	p28832_1	15/02/2011	p28832_1.cpm	YES
066	Q02039427-02	ISS1:10F1	p28849_1	15/02/2011	p28849_1.cpm	NO
067	Q02095838	ISS1:10F1	p28852_1	15/02/2011	p28852_1.cpm	NO
068	Q02036885-02	ISS1:10F1	p28857_1	15/02/2011	p28857_1.cpm	NO
069	Q02043398	ISS1:10F1	p28869_1	15/02/2011	p28869_1.cpm	NO
070	Q02055997	ISS1:10F1	p28895_1	15/02/2011	p28895_1.cpm	NO
071	Q02061039-04	ISS1:10F1	p28927_1	15/02/2011	p28927_1.cpm	NO
072	Q02044341	ISS1:10F1	p28957_1	15/02/2011	p28957_1.cpm	NO
073	Q02058567-01	ISS1:10F1	p28965_1	15/02/2011	p28965_1.cpm	NO
074	Q02048680	ISS1:10F1	p28983_1	15/02/2011	p28983_1.cpm	NO
075	Q02062243-01	p29726	p28993_1	15/02/2011	p28993_1.cpm	NO
076	Q02062206-01	ISS1:1of1	p28994_1	15/02/2011	p28994_1.cpm	NO
077	Q02063326	ISS1:10F1	p29027_1	15/02/2011	p29027_1.cpm	NO
078	Q02041385-02	ISS1:10F1	p29032_1	15/02/2011	p29032_1.cpm	NO



079	Q02088715-02	ISS3:10F1	p29077_3	15/02/2011	p29077_3.cpm	NO
080	Q02071739	ISS1:10F1	p29096_1	15/02/2011	p29096_1.cpm	NO
081	Q02043226-02	ISS1:10F1	p29125_1	15/02/2011	p29125_1.cpm	NO
082	Q02074796	ISS1:10F1	p29126_1	15/02/2011	p29126_1.cpm	NO
083	Q02084339-02	ISS1:10F1	p29137_1	15/02/2011	p29137_1.cpm	NO
084	Q02076740	ISS1:10F1	p29154_1	15/02/2011	p29154_1.cpm	NO
085	Q02071451	ISS1:10F1	p29164_1	15/02/2011	p29164_1.cpm	NO
086	Q02077171	ISS1:10F1	p29169_1	15/02/2011	p29169_1.cpm	NO
087	Q02077764-04	ISS1:10F1	p29174_1	15/02/2011	p29174_1.cpm	NO
088	Q02077977-01	ISS1:10F1	p29177_1	15/02/2011	p29177_1.cpm	NO
089	Q02064503	ISS1:10F1	p29196_1	15/02/2011	p29196_1.cpm	NO
090	Q02073690	ISS1:10F1	p29208_1	15/02/2011	p29208_1.cpm	NO
091	Q02035822-01	ISS1:10F1	p29212_1	15/02/2011	p29212_1.cpm	NO
092	Q02057782-01	ISS1:10F1	p29215_1	15/02/2011	p29215_1.cpm	NO
093	Q02065521	ISS1:10F1	p29218_1	15/02/2011	p29218_1.cpm	NO
094	Q02083027	ISS1:10F1	p29233_1	15/02/2011	p29233_1.cpm	NO
095	Q02079849	ISS1:10F1	p29238_1	15/02/2011	p29238_1.cpm	NO
096	Q02086333	ISS1:10F1	p29262_1	15/02/2011	p29262_1.cpm	YES
097	Q02077909	ISS1:10f1	p29272_1	15/02/2011	p29272_1.cpm	NO
098	Q02077848-01	ISS1:10F1	p29320_1	15/02/2011	p29320_1.cpm	NO
099	Q02092223	ISS1:10f1	p29343_1	15/02/2011	p29343_1.cpm	NO
100	Q02093188	ISS1:10F1	p29352_1	15/02/2011	p29352_1.cpm	NO
101	Q02093256-03	ISS1:10F1	p29354_1	15/02/2011	p29354_1.cpm	NO
102	Q02093325	ISS1:10F1	p29355_1	15/02/2011	p29355_1.cpm	NO
103	Q02155346-01	ISS3:10F1	p30074_1	15/02/2011	p30074_1.cpm	NO
104	Q02094012	ISS1:10F1	p29370_1	15/02/2011	p29370_1.cpm	YES
105	Q02095619-04	ISS2:10F1	p29376_2	15/02/2011	p29376_2.cpm	NO
106	Q02039403-01	ISS1:10F1	p29378_1	15/02/2011	p29378_1.cpm	NO
107	Q02089914	ISS1:10F1	p29406_1	15/02/2011	p29406_1.cpm	NO
108	Q02096318	ISS1:10f1	p29423_1	15/02/2011	p29423_1.cpm	NO

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109	Q02097948	ISS1:10F1	p29443_1	15/02/2011	p29443_1.cpm	NO
110	Q02100965	ISS1:1 OF 1	p29450_1	15/02/2011	p29450_1.cpm	NO
111	Q02102219-01	ISS1:10F1	p29464_1	15/02/2011	p29464_1.cpm	NO
112	Q02149096	ISS1:10F1	p30090_1	15/02/2011	p30090_1.cpm	NO
113	Q02103392-01	ISS1:10F1	p29480_1	15/02/2011	p29480_1.cpm	NO

AUD370 VSID 16 CUST --

114	Q02103928	ISS1:10F1	p29486_1	15/02/2011	p29486_1.cpm	NO
115	Q01925518-06	ISS2:10F1	p29491_2	15/02/2011	p29491_2.cpm	NO
116	Q02104745-01	ISS1:10F1	p29495_1	15/02/2011	p29495_1.cpm	NO
117	Q02107402	ISS1:10F1	p29512_1	15/02/2011	p29512_1.cpm	NO
118	Q02109592	ISS1:10F1	p29524_1	15/02/2011	p29524_1.cpm	NO
119	Q02108821-01	ISS1:10F1	p29529_1	15/02/2011	p29529_1.cpm	NO
120	Q02109161	ISS1:10F1	p29536_1	15/02/2011	p29536_1.cpm	NO
121	Q02066737-05	ISS1:10F1	p29537_1	15/02/2011	p29537_1.cpm	NO
122	Q02110441-01	ISS1:10F1	p29577_1	15/02/2011	p29577_1.cpm	NO
123	Q02108873-02	ISS1:10F1	p29590_1	15/02/2011	p29590_1.cpm	NO
124	Q02119261	ISS2:10F1	p29613_2	15/02/2011	p29613_2.cpm	NO
125	Q02075949-04	ISS1:10F1	p29667_1	15/02/2011	p29667_1.cpm	NO
126	Q02110455-03	ISS1:10F1	p29670_1	15/02/2011	p29670_1.cpm	NO
127	Q02112375-02	ISS1:10F1	p29671_1	15/02/2011	p29671_1.cpm	NO
128	Q02157822-01	ISS1:10F1	p30197_1	15/02/2011	p30197_1.cpm	NO
129	Q02096730	p29462 p28557	p29676_1	15/02/2011	p29676_1.cpm	NO



130	Q02071694-04	ISS1:10F1	p29679_1	15/02/2011	p29679_1.cpm	NO
131	Q02024749-02	ISS1:10F1	p29680_1	15/02/2011	p29680_1.cpm	NO
132	Q02007724-04	ISS1:10F1	p29681_1	15/02/2011	p29681_1.cpm	YES
133	Q02110973	ISS1:10F1	p29690_1	15/02/2011	p29690_1.cpm	NO
134	Q02109731-02	ISS1:10F1	p29694_1	15/02/2011	p29694_1.cpm	YES
135	Q02109705-04	ISS1:10F1	p29701_1	15/02/2011	p29701_1.cpm	NO
136	Q02096711	ISS1:10F1	p29714_1	15/02/2011	p29714_1.cpm	NO
137	Q02114752	ISS1:10F1	p29718_1	15/02/2011	p29718_1.cpm	NO
138	Q02124953	ISS1:10F1	p29744_1	15/02/2011	p29744_1.cpm	NO
139	Q02100456-01	ISS1:1 OF 1	p29755_1	15/02/2011	p29755_1.cpm	NO
140	Q02108852	ISS1:10F1	p29825_1	15/02/2011	p29825_1.cpm	NO
141	Q02129264	ISS1:10F1	p29827_1	15/02/2011	p29827_1.cpm	NO
142	Q02111317	ISS1:10F1	p29844_1	15/02/2011	p29844_1.cpm	NO
143	Q02131547	ISS1:10F1	p29880_1	15/02/2011	p29880_1.cpm	NO
144	Q02135191	ISS1:10F1	p29935_1	15/02/2011	p29935_1.cpm	NO
145	Q02137476	ISS1:10F1	p29962_1	15/02/2011	p29962_1.cpm	NO
146	Q02011541-03	ISS1:10F1	p29998_1	15/02/2011	p29998_1.cpm	NO
147	Q02140914-02	ISS1:10F1	p30004_1	15/02/2011	p30004_1.cpm	NO
148	Q02144165	ISS1:10F1	p30036_1	15/02/2011	p30036_1.cpm	NO
149	Q02145667	p29534	p30053_1	15/02/2011	p30053_1.cpm	NO
150	Q02131549	ISS1:10F1	p30065_1	15/02/2011	p30065_1.cpm	NO
151	Q02147768	ISS1:10F1	p30085_1	15/02/2011	p30085_1.cpm	NO
152	Q02150271	ISS1:10F1	p30104_1	15/02/2011	p30104_1.cpm	NO
153	Q02058869-01	ISS1:10F1	p30124_1	15/02/2011	p30124_1.cpm	NO
154	Q02151971	ISS1:10F1	p30156_1	15/02/2011	p30156_1.cpm	NO
155	Q02155698	ISS1:10F1	p30172_1	15/02/2011	p30172_1.cpm	NO
156	Q02156053	ISS1:10F1	p30176_1	15/02/2011	p30176_1.cpm	NO
157	Q02124989	ISS1:10F1	p30184_1	15/02/2011	p30184_1.cpm	NO
158	Q02157668	ISS1:10F1	p30204_1	15/02/2011	p30204_1.cpm	NO
159	Q02158724	ISS1:10F1	p30210_1	15/02/2011	p30210_1.cpm	NO
160	Q02157937	ISS1:10F1	p30218_1	15/02/2011	p30218_1.cpm	YES
161	Q02159328-01	ISS1:10F1	p30223_1	15/02/2011	p30223_1.cpm	NO
162	Q02164720	ISS1:10F1	p30282_1	15/02/2011	p30282_1.cpm	NO
163	Q02052184-01	ISS1:10F1	p30288_1	15/02/2011	p30288_1.cpm	NO
164	Q02113482	ISS1:10F1	p30294_1	15/02/2011	p30294_1.cpm	NO
165	Q02167838	p29830	p30324_1	15/02/2011	p30324_1.cpm	NO
166	Q02170814	ISS1:10F1	p30345_1	15/02/2011	p30345_1.cpm	NO
167	Q02168320	ISS1:10F1	p30346_1	15/02/2011	p30346_1.cpm	NO
168	Q02172404	ISS1:10F1	p30357_1	15/02/2011	p30357_1.cpm	NO
169	wi00730456	ISS1:10F1	p30382_1	15/02/2011	p30382_1.cpm	NO
170	Q02160232	ISS1:10F1	p30243_1	15/02/2011	p30243_1.cpm	NO
171	Q01994258-03	ISS1:10F1	p30303_1	15/02/2011	p30303_1.cpm	NO
172	wi00716535	ISS1:10F1	p30371_1	15/02/2011	p30371_1.cpm	NO



```
/* Example of Call Transfer - SIP INVITE */
Internet Protocol, Src: 192.168.20.44 (192.168.20.44), Dst: 192.168.20.10
(192.168.20.10)
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 Part: 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=z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486697-
AP;ft=192.168.20.44~13c4
Transport: UDP
Sent-by Address: 192.168.20.44
RPort: rport
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486697-AP
ft=192.168.20.44~13c4
Via: SIP/2.0/UDP
192.168.20.43:5070;branch=z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486697
Transport: UDP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486697
Via: SIP/2.0/TCP
192.168.20.43:5070;branch=z9hG4bKC0A8142BBADF00D0000012882E4CD1C;sap=-
2050292912*1*016asm-callprocessing.sar722708416~1274988048658~1547702683~1
Transport: TCP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C
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
ft=1596
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: "COMPTONU2L2"
<sip:814046691324@192.168.20.52;transport=tls;user=phone>
```



```
Contact                               Binding:                               "COMPTONU2L2"
<sip:814046691324@192.168.20.52;transport=tls;user=phone>
URI:                                   "COMPTONU2L2"
<sip:814046691324@192.168.20.52;transport=tls;user=phone>
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

/* Example of Call Forward - SIP INVITE */
Internet Protocol, Src: 192.168.20.44 (192.168.20.44), Dst: 192.168.20.10
(192.168.20.10)
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
[Resent Packet: False]
[Request Frame: 202]
[Response Time (ms): 45]
Message Header
From: "COMPTONU2L2" <sip:4046691324@192.168.20.10;user=phone>;tag=SDokche01-
1981337805-1274988157030-
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: SDokche01-1981337805-1274988157030-
To: "ten"                               "ninety-nine"
<sip:6782381099@192.168.20.10>;tag=040c395246bdf150234c0e2ec00
SIP Display info: "ten ninety-nine"
SIP to address: sip:6782381099@192.168.20.10
SIP to address User Part: 6782381099
SIP to address Host Part: 192.168.20.10
SIP tag: 040c395246bdf150234c0e2ec00
Call-ID: SDokche01-7dcaab2bb4ac28be57f085e84e647323-vrvfv3
CSeq: 765176884 INVITE
Sequence Number: 765176884
Method: INVITE
Via: SIP/2.0/UDP 192.168.20.10:5060;branch=z9hG4bKubd457h63eg1c3o8sf76k52u47
Transport: UDP
Sent-by Address: 192.168.20.10
Sent-by port: 5060
Branch: z9hG4bKubd457h63eg1c3o8sf76k52u47
Record-Route: <sip:192.168.20.53:5061;lr;transport=tls>
Record-Route: <sip:bb0c99f@192.168.20.44;transport=tls;lr>
Record-Route: <sip:192.168.20.43:15060;lr;sap=-2050292912*1*016asm-
callprocessing.sar722708416~1274988107798~1547702783~1;transport=udp>
Record-Route: <sip:bb0c99f@192.168.20.44;transport=udp;lr>
Record-Route: <sip:6782381099@192.168.20.10;lr>
Contact: "Lab User 1099" <sip:6782381099@192.168.20.53:5061;transport=tls>
Contact Binding: "Lab User 1099"
<sip:6782381099@192.168.20.53:5061;transport=tls>
URI: "Lab User 1099" <sip:6782381099@192.168.20.53:5061;transport=tls>
SIP Display info: "Lab User 1099"
SIP contact address: sip:6782381099@192.168.20.53:5061
Supported: timer, replaces, join, histinfo, 100rel
Allow: INVITE, CANCEL, BYE, ACK, PRACK, SUBSCRIBE, NOTIFY, REFER, OPTIONS,
INFO, PUBLISH
RSeq: 1
Require: 100rel
Content-Type: application/sdp
Content-Length: 163
P-Asserted-Identity: <sip:4046691362@avaya.com:5061;user=phone>
SIP PAI Address: sip:4046691362@avaya.com:5061
Server: Avaya CM/R015x.02.1.016.4 AVAYA-SM-5.2.1.1.521012
```



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	Request:
229	140.166593	192.168.20.44	192.168.20.10	SIP		

UPDATE sip:192.168.20.10:5060;transport=udp

Frame 229 (1349 bytes on wire, 1349 bytes captured)

Linux cooked capture

Internet Protocol, Src: 192.168.20.44 (192.168.20.44), Dst: 192.168.20.10 (192.168.20.10)

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 Part: 192.168.20.10

Request-URI Host Port: 5060

[Resent Packet: False]

Message Header

From:

<sip:4046691324@192.168.20.10;user=phone>;tag=040c395246bdf151234c0e2ec00 "COMPTONU2L2"

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



Business®

```

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=z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486785-
AP;ft=192.168.20.44~13c4
Transport: UDP
Sent-by Address: 192.168.20.44
RPort: rport
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486785-AP
ft=192.168.20.44~13c4
Via: SIP/2.0/UDP
192.168.20.43:5070;branch=z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486785
Transport: UDP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486785
Via: SIP/2.0/TCP
192.168.20.43:5070;branch=z9hG4bKC0A8142BBADF00D0000012882E4CD1C;sap=-
2050292912*1*016asm-callprocessing.sar722708416~1274988107842~1547702787~1
Transport: TCP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C
sap=-2050292912*1*016asm-
callprocessing.sar722708416~1274988107842~1547702787~1
Via: SIP/2.0/TLS 192.168.20.44;branch=z9hG4bK040c395246bdf155234c0e2ec00-
AP;ft=1596
Transport: TLS
Sent-by Address: 192.168.20.44
Branch: z9hG4bK040c395246bdf155234c0e2ec00-AP
ft=1596
Via: SIP/2.0/TLS 192.168.20.52;branch=z9hG4bK040c395246bdf155234c0e2ec00
Transport: TLS
Sent-by Address: 192.168.20.52
Branch: z9hG4bK040c395246bdf155234c0e2ec00
Supported: timer, replaces, join, histinfo, 100rel
Allow: INVITE, CANCEL, BYE, ACK, PRACK, SUBSCRIBE, NOTIFY, REFER, OPTIONS,
INFO, PUBLISH
Contact: "COMPTONU2L2"
<sip:814046691324@192.168.20.52;transport=tls;user=phone>
Contact Binding: "COMPTONU2L2"
<sip:814046691324@192.168.20.52;transport=tls;user=phone>
URI: "COMPTONU2L2"
<sip:814046691324@192.168.20.52;transport=tls;user=phone>
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

```

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

```

Internet Protocol, Src: 192.168.20.44 (192.168.20.44), Dst: 192.168.20.10
(192.168.20.10)
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 Part: 192.168.20.10
Request-URI Host Port: 5060
[Resent Packet: False]
Message Header

```



From: "Anonymous"
<sip:anonymous@anonymous.invalid;user=phone>;tag=802afal246bdf174234c0e2ec00
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: 802afal246bdf174234c0e2ec00
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: 802afal246bdf175234c0e2ec00
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=z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486850-AP;ft=192.168.20.44~13c4
Transport: UDP
Sent-by Address: 192.168.20.44
RPort: rport
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486850-AP
ft=192.168.20.44~13c4
Via: SIP/2.0/UDP
192.168.20.43:5070;branch=z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486850
Transport: UDP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C2486850
Via: SIP/2.0/TCP
192.168.20.43:5070;branch=z9hG4bKC0A8142BBADF00D0000012882E4CD1C;sap=-2050292912*1*016asm-callprocessing.sar722708416~1274988129109~1547702819~1
Transport: TCP
Sent-by Address: 192.168.20.43
Sent-by port: 5070
Branch: z9hG4bKC0A8142BBADF00D0000012882E4CD1C
sap=-2050292912*1*016asm-
callprocessing.sar722708416~1274988129109~1547702819~1
Via: SIP/2.0/TLS 192.168.20.44;branch=z9hG4bK0b673a6246bdf17d234c0e2ec00-AP;ft=1596
Transport: TLS
Sent-by Address: 192.168.20.44
Branch: z9hG4bK0b673a6246bdf17d234c0e2ec00-AP
ft=1596
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"
<sip:6782381099@avaya.com:5061;user=phone>
SIP Display info: "Lab User 1099"
SIP PAI Address: sip:6782381099@avaya.com:5061



User-Agent: Avaya CM/R015x.02.1.016.4 AVAYA-SM-5.2.1.1.521012