ATT IP Toll Free Service with Avaya SM/CM 6.3 & Oracle Enterprise Session Border Controller

Technical Application Note

Disclaimer

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

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Intended Audience

This document is intended for use by Oracle Systems Engineers, third party Systems Integrators, Oracle Enterprise customers and partners and end users of the Oracle Enterprise Session Border Controller (E-SBC). It assumes that the reader is familiar with basic operations of the Oracle Enterprise Session Border Controller 3820/4500 platforms.

Document Overview

This Oracle technical application note outlines the recommended configurations for the Oracle enterprise session border controller 3820 series for connecting AT&T's IP Toll Free service to Avaya Aura 6.3 customers. The solution contained within this document has been certified on Oracle's Acme Packet OS SCZ 7.3p2.

Avaya Aura® Session Manager 6.3 is a core SIP routing and integration engine that connects disparate SIP devices and applications within an enterprise. Avaya Aura® Communication Manager 6.3 is a telephony application server and is the point of connection between the enterprise endpoints and Avaya Aura® Session Manager. The Oracle ESBC is the point of connection between Avaya Aura® Session Manager and the AT&T IP Toll Free service and is used to not only secure the SIP trunk, but also to make adjustments to the SIP signaling for interoperability. The AT&T IP Toll Free service, (referred to in the remainder of this document as IPTF), is a managed Voice over IP (VoIP) communications solution that provides toll-free services over SIP trunks utilizing AVPN or MIS/PNT transport.

It should be noted that while this application note focuses on the optimal configurations for the Oracle ESBC in an enterprise Avaya 6.3 environment, the same SBC configuration model can also be used for other enterprise SIP trunking applications with a few tweaks to the configuration for required features. In addition, it should be noted that the SBC configuration provided in this guide focuses strictly on the Avaya Server associated parameters. Many SBC applications may have additional configuration requirements that are specific to individual customer requirements. These configuration items are not covered in this guide. Please contact your Oracle representative with any questions pertaining to this topic.

For additional information on Avaya Aura Communication Manager 6.3, please visit
https://downloads.avaya.com/css/P8/documents/100171719

Introduction

Audience

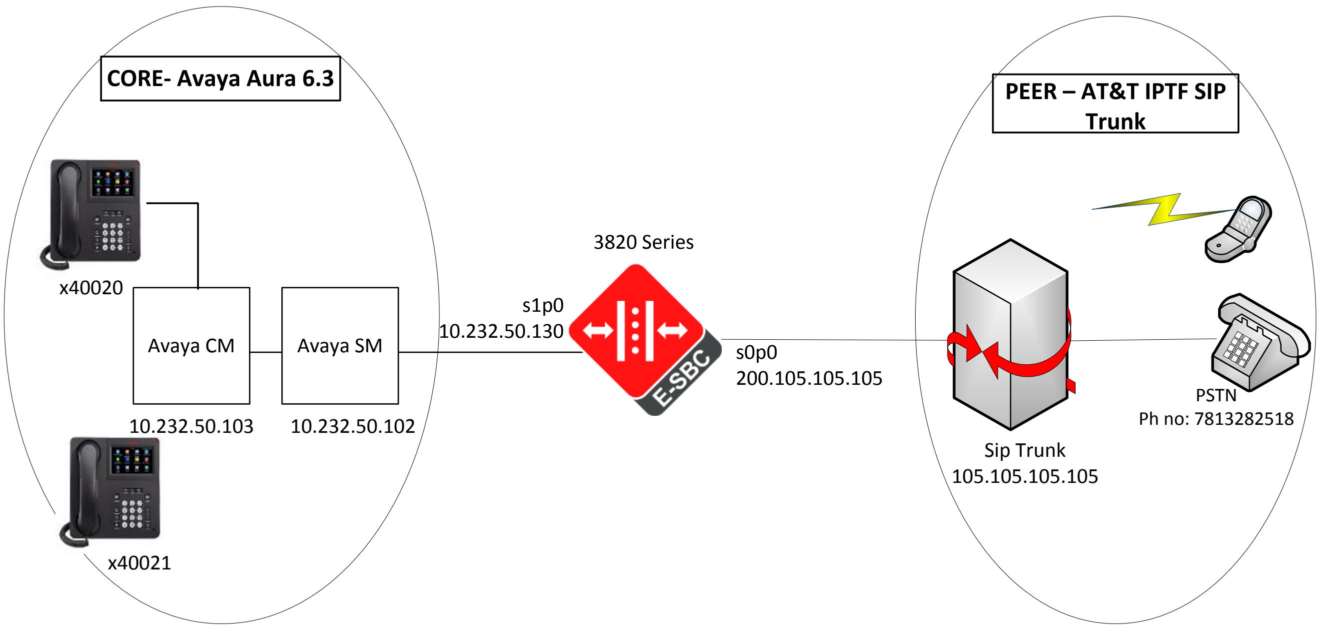
This is a technical document intended for telecommunications engineers with the purpose of configuring the Oracle Enterprise SBC and Avaya Aura 6.3. There will be steps that require navigating the Avaya System Manager configuration as well as the Acme Packet Command Line Interface (ACLI). Understanding the basic concepts of TCP/UDP, IP/Routing, and SIP/RTP are also necessary to complete the configuration and for troubleshooting, if necessary.

Requirements

- Fully functional Avaya Aura setup consisting of the Avaya CM, SM and System Manager
- Avaya soft phone and hard phones connected/registered to the Avaya CM server
- Oracle Enterprise Session Border Controller (hereafter Oracle E-SBC) 3820 or any other platforms (VME, 1100, 4500, 4600, 6300) series running ECZ7.3.0p2. Note: the configuration running on the SBC is backward/forward compatible with any release in the 7.2.0 or greater stream
- Oracle E-SBC having established SIP connectivity with Avaya SM on CPE side and ATT IPTFSIP trunk on PSTN side.

Lab Configuration

The following diagram, similar to the Reference Architecture described earlier in this document, illustrates the lab environment created to facilitate certification testing.



Configuring the Oracle Enterprise SBC

In this section we describe the steps for configuring an Oracle Enterprise SBC, formally known as an Acme Packet Net-Net Session Director ("SBC"), for use with Avaya Aura SM in an ATT IPTF SIP Trunk service.

In Scope

The following guide configuring the Oracle E-SBC assumes that this is a newly deployed Avaya topology in an enterprise dedicated to a single customer. If a service provider currently has the SBC deployed and is adding Avaya CM customers, then please see the ACLI Configuration Guide on http://docs.oracle.com/cd/E56581_01/index.htm for a better understanding of the Command Line Interface (CLI).

Note that Oracle offers several models of SBC. This document covers the setup for the 3820 platform series running Net-Net OS ECZ7.3.0 or newer. If instructions are needed for other Oracle SBC models, please contact your Oracle representative.

Out of Scope

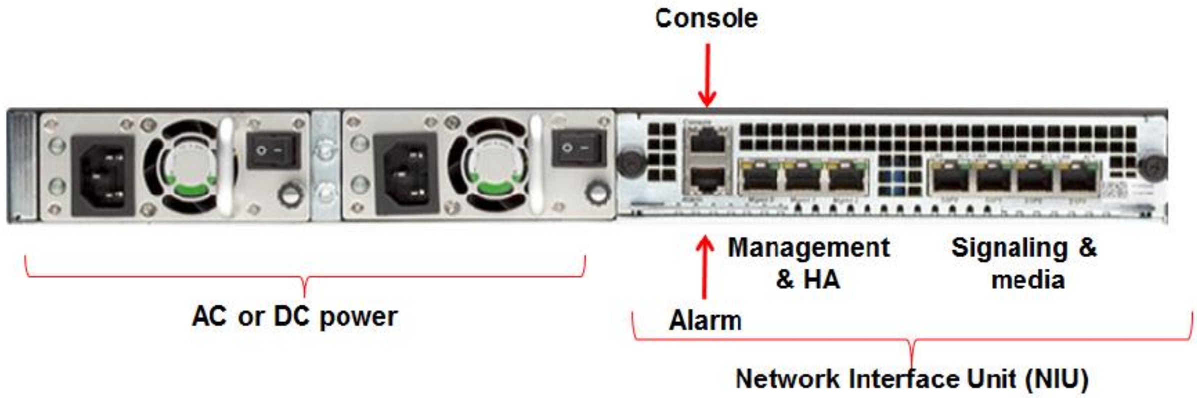
- Configuration of Network management including SNMP and RADIUS

What you will need

- Serial Console cross over cable with RJ-45 connector
- Terminal emulation application such as PuTTY or HyperTerm
- Passwords for the User and Superuser modes on the Oracle SBC
- IP address to be assigned to management interface (Wancom0) of the SBC - the Wancom0 management interface must be connected and configured to a management network separate from the service interfaces. Otherwise the SBC is subject to ARP overlap issues, loss of system access when the network is down, and compromising DDoS protection. Oracle does not support SBC configurations with management and media/service interfaces on the same subnet.
- IP address of the Avaya Aura SM SIP interface facing the SBC
- IP addresses to be used for the SBC internal (Avaya facing) and external facing ports (Service Interfaces)
- IP address of the next hop gateway in the ATT IPTF network

Configuring the SBC

Once the Oracle SBC is racked and the power cable connected, you are ready to set up physical network connectivity.



Plug the slot 0 port 0 (s0p0) interface into your outside (ATT next-hop facing) network and the slot 1 port 0 (s0p1) interface into your inside (Avaya server-facing) network. Once connected, you are ready to power on and perform the following steps.

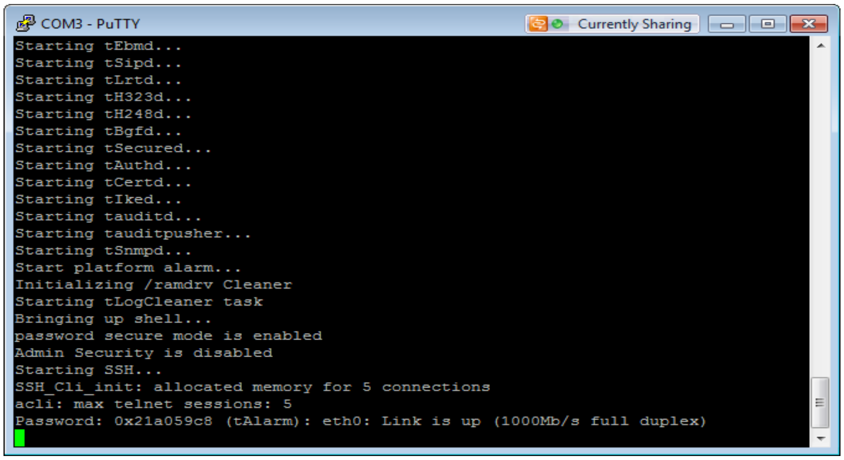
All commands are in bold, such as **`configure terminal`**; parameters in bold red such as ATT-IPTFare parameters which are specific to an individual deployment. **Note:** The ACLI is case sensitive.

Establish the serial connection and logging in the SBC

Confirm the SBC is powered off and connect one end of a straight-through Ethernet cable to the front console port (which is active by default) on the SBC and the other end to console adapter that ships with the SBC, connect the console adapter (a DB-9 adapter) to the DB-9 port on a workstation, running a terminal emulator application such as PuTTY. Start the terminal emulation application using the following settings:

- Baud Rate=115200
- Data Bits=8
- Parity=None
- Stop Bits=1
- Flow Control=None

Power on the SBC and confirm that you see the following output from the bootup sequence.



Enter the following commands to login to the SBC and move to the configuration mode. Note that the default SBC password is "**acme**" and the default super user password is "**packet**".

```
Password: acme
ATT-IPTF> enable
Password: packet
ATT-IPTF# configure terminal
ATT-IPTF(configure)#
```

You are now in the global configuration mode.

Initial Configuration – Assigning the management Interface an IP address

To assign an IP address, one has to configure the bootparams on the SBC by going to

ATT-IPTF#configure terminal --- >bootparams

- Once you type "bootparam" you have to use "carriage return" key to navigate down
- A reboot is required if changes are made to the existing bootparams

```
ATT-IPTF#(configure)bootparam
'.' = clear field;  '-' = go to previous field;  q = quit
boot device              : eth0
processor number         : 0
host name                : acmesystem
file name                : /boot/ EZ730p2.32.bz --- >location where the software is loaded
on the SBC
inet on ethernet (e)     : 172.18.255.104:ffffff80 --- > This is the ip address of the
management interface of the SBC, type the IP address and mask in hex
inet on backplane (b)    :
host inet (h)            :
gateway inet (g)         : 172.18.0.1 --- > gateway address here
user (u)                 : vxftp
ftp password (pw) (blank = use rsh)      : vxftp
flags (f)                :
target name (tn)         : ATT-IPTF
startup script (s)       :
other (o)                :
```

Configuring the SBC

The following section shows the Oracle Communications Enterprise SBC configuration required to work with Avaya Aura 6.3 and ATT's IPTF SIP Trunk server. In the configuration, the transport protocol used between the SBC and the Avaya server is TCP and the SIP trunk is configured for UDP in this certification testing.

It is outside the scope of this document to include all the interoperability working information as it will differ in every deployment.

High Availability

The wancom1 and wancom 2 port which is on the rear panel of the SBC is used for the purpose of High Availability in the 3820. Please refer to the Oracle Enterprise Session Border Controller ECZ7.3.0 ACLI Configuration guide for more detailed update on High availability configuration. (http://docs.oracle.com/cd/E61547_01/index.htm)

The following section entails notable configuration highlights that pertain to an enterprise environment that deploys an Oracle E-SBC and Avaya Aura 6.3 to work with ATT IPTF SIP trunk service. A full copy of the configuration that was used for this certification follows the section as well.

Configuration Highlights

The SBC configuration in general follows enterprise SIP trunk configuration, with a few additional elements specific to interworking with Avaya. These are outlined below.

SIP Manipulations

SIP Manipulation for Setting the correct ptime and ensuring topology hiding in place

This sip-manipulation is applied as in-manipulationid facing the core interface of the SBC. ATT IPTF SIP trunk service requires the CPE to set ptime header in the SDP of the SIP requests to 30, which the SBC sets.

```
sip-manipulation
        name                                    Changeptime
        description
        split-headers
        join-headers
        header-rule
                name                                    Checkptimeexists
                header-name                             Content-type
                action                                  store
                comparison-type                         pattern-rule
                msg-type                                any
                methods
                match-value
                new-value
                element-rule
                        name                                    ptimexists
                        parameter-name                       application/sdp
                        type                                    mime
                        action                                  store
                        match-val-type                          any
                        comparison-type                       pattern-rule
                        match-value                            (a=ptime:30)
                        new-value
        header-rule
                name                                    Addptime
                header-name                             Content-type
                action                                  manipulate
```

```
            comparison-type                          boolean
            msg-type                                 any
            methods
            match-value                 !($Checkptimeexists.$ptimexists)
            new-value
            element-rule
                    name                                     Changesdp
                    parameter-name                      application/sdp
                    type                                     mime
                    action                             find-replace-all
                    match-val-type                           any
                    comparison-type                        pattern-rule
                    match-value                             (m=audio\,*)
                    new-value                       $1+$CRLF+a=ptime:30
        last-modified-by                         admin@172.18.0.119
        last-modified-date                       2015-04-07 14:03:21
```

The below SIP manipulation NAT_IP is used for topology hiding, as well as for adding the P-Asserted-ID header if not already present in the SIP requests. It also includes the manipulation for deleting a b line which is present in the SDP of the SIP requests sent from the Avaya to the SIP trunk through the SBC. Hence this manipulation is applied on the out-manipulationid of the SIP interface facing the ATT trunk.

```
sip-manipulation
        name                                     NAT_IP
        description
        split-headers
        join-headers
        header-rule
                name                                     From
                header-name                              From
                action                                   manipulate
                comparison-type                          case-sensitive
                msg-type                                 any
                methods
                match-value
                new-value
                element-rule
                        name                                    From_header
                        parameter-name
                        type                                     uri-host
                        action                                   replace
                        match-val-type                           any
                        comparison-type                      case-sensitive
                        match-value
                        new-value                                $LOCAL_IP
                element-rule
                        name                                     SourcePort
                        parameter-name
                        type                                     uri-port
                        action                                   replace
                        match-val-type                           any
```

```
                comparison-type                     case-sensitive
                match-value
                new-value                              $LOCAL_PORT
        header-rule
            name                                To
            header-name                         To
            action                              manipulate
            comparison-type                     case-sensitive
            msg-type                            request
            methods
            match-value
            new-value
            element-rule
                name                                To
                parameter-name
                type                                uri-host
                action                              replace
                match-val-type                      any
                comparison-type                 case-sensitive
                match-value
                new-value                           $REMOTE_IP
        header-rule
            name                                CheckPAIexists
            header-name                        P-Asserted-Identity
            action                              store
            comparison-type                     case-sensitive
            msg-type                            request
            methods
            match-value
            new-value
        header-rule
            name                             Add_P_Asserted_ID_new
            header-name                        P-Asserted-Identity
            action                              add
            comparison-type                     boolean
            msg-type                            request
            methods                             INVITE
            match-value                         !$CheckPAIexists
            new-value          "<sip:"+$FROM_USER.$0+"@"+$LOCAL_IP+">"
        header-rule
            name                                Changetransport
            header-name                         From
            action                              manipulate
            comparison-type                     case-sensitive
            msg-type                            any
            methods
            match-value
            new-value
            element-rule
                name                               Changetransport
                parameter-name                          transport
                type                                    uri-param
                action                             find-replace-all
```

```
                match-val-type                          any
                comparison-type                     case-sensitive
                match-value                             Tcp
                new-value                               udp
        header-rule
            name                                StripBline
            header-name                         Content-type
            action                              manipulate
            comparison-type                     pattern-rule
            msg-type                            any
            methods
            match-value
            new-value
            element-rule
                name                                   deletebline
                parameter-name                     application/sdp
                type                                    mime
                action                            find-replace-all
                match-val-type                          any
                comparison-type                     case-sensitive
                match-value                       (b=AS.*)\r\n
                new-value
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-04-15 14:45:53
```

The SIP manipulation NATtingavaya is used to change the host portion of the To, From, Request-URI and PAI headers to aura.com. This is applied on the out-manipulationid of the SIP interface facing the Avaya.

```
sip-manipulation
        name                                    NATtingavaya
        description
        split-headers
        join-headers
        header-rule
            name                                From
            header-name                         From
            action                              manipulate
            comparison-type                     case-sensitive
            msg-type                            any
            methods
            match-value
            new-value
            element-rule
                name                                   From_header
                parameter-name
                type                                    uri-host
                action                                  replace
                match-val-type                          any
                comparison-type                     case-sensitive
                match-value
                new-value                               aura.com
        header-rule
```

```
        name                                    To
        header-name                             To
        action                                  manipulate
        comparison-type                         case-sensitive
        msg-type                                any
        methods
        match-value
        new-value
        element-rule
                name                                    To
                parameter-name
                type                                    uri-host
                action                                  replace
                match-val-type                          any
                comparison-type                     case-sensitive
                match-value
                new-value                               aura.com
header-rule
        name                                    Ruri_hr
        header-name                             Request-URI
        action                                  manipulate
        comparison-type                         case-sensitive
        msg-type                                any
        methods
        match-value
        new-value
        element-rule
                name                                    Ruri_er
                parameter-name
                type                                    uri-host
                action                                find-replace-all
                match-val-type                          any
                comparison-type                     case-sensitive
                match-value
                new-value                               aura.com
header-rule
        name                                    Pai
        header-name                            P-Asserted-Identity
        action                                  manipulate
        comparison-type                         case-sensitive
        msg-type                                any
        methods
        match-value
        new-value
        element-rule
                name                                    Pai_header
                parameter-name
                type                                    uri-host
                action                                  replace
                match-val-type                          any
                comparison-type                     case-sensitive
                match-value
                new-value                               aura.com
```

```
        last-modified-by                        admin@172.18.0.109
        last-modified-date                      2015-02-13 15:26:31
```

The ATT IPTF SIP trunk converts the 888XXXXXXX number into a DNIS which is of 5 leading 0's followed by 5 previously configured digits. When a call is made to the 888 number, the INVITE coming from the SIP trunk has the 888 number in the To header and the 10 digit DNIS in the RequestURI. The SIP manipulation RemoveExtraDigits checks how many digits are received in the Request URI header in the INVITE from the ATT SIP trunk, and if it receives extra leading 0's, it strips the Request URI user part to exact 10 digits with only 5 leading 0's.

```
sip-manipulation
        name                                    RemoveExtraDigits
        description
        split-headers
        join-headers
        header-rule
                name                                    RemovefromReqURI
                header-name                             Request-URI
                action                                  manipulate
                comparison-type                         case-sensitive
                msg-type                                request
                methods
                match-value
                new-value
                element-rule
                        name                                   Stripdigits
                        parameter-name
                        type                                    uri-user
                        action                             find-replace-all
                        match-val-type                          any
                        comparison-type                     case-sensitive
                        match-value                    [0-9]{6,}([0-9]{5,})
                        new-value                               "00000"+$1
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-05-19 15:25:43
```

This completes the major configuration highlights from the testing. A fully copy of the E-SBC configuration is elaborated in the Appendix Section of this document.

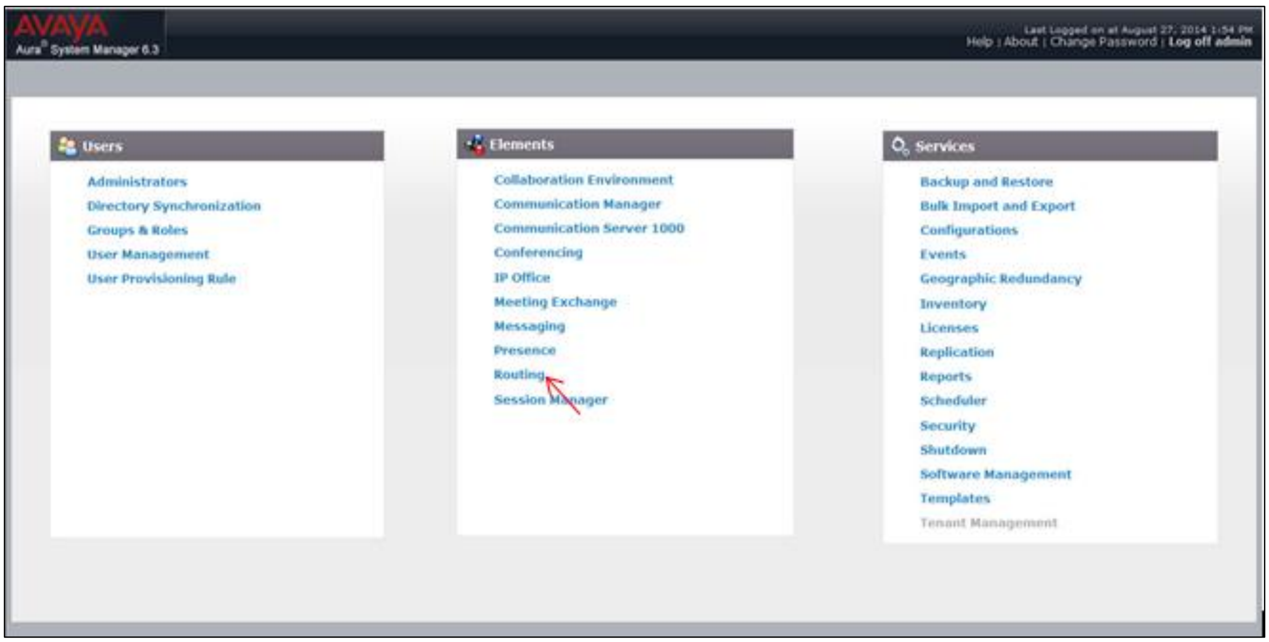
Configuring the Avaya System Manager

The enterprise has a fully functional Avaya Aura System Manager. Configuring the System Manager to operate with the E-SBC consists of three steps –

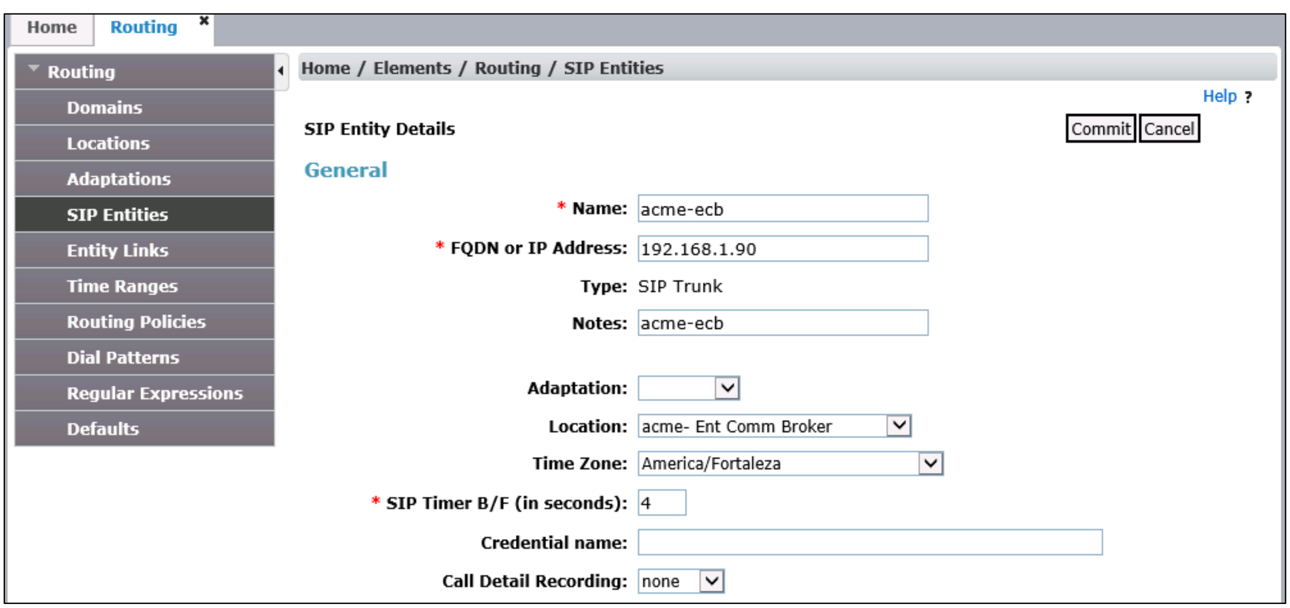
- Adding the E-SBC as a SIP Entity
- Configuring an Entity link between E-SBC and Session Manager
- Creating a Routing policy to assign the appropriate routing destination.

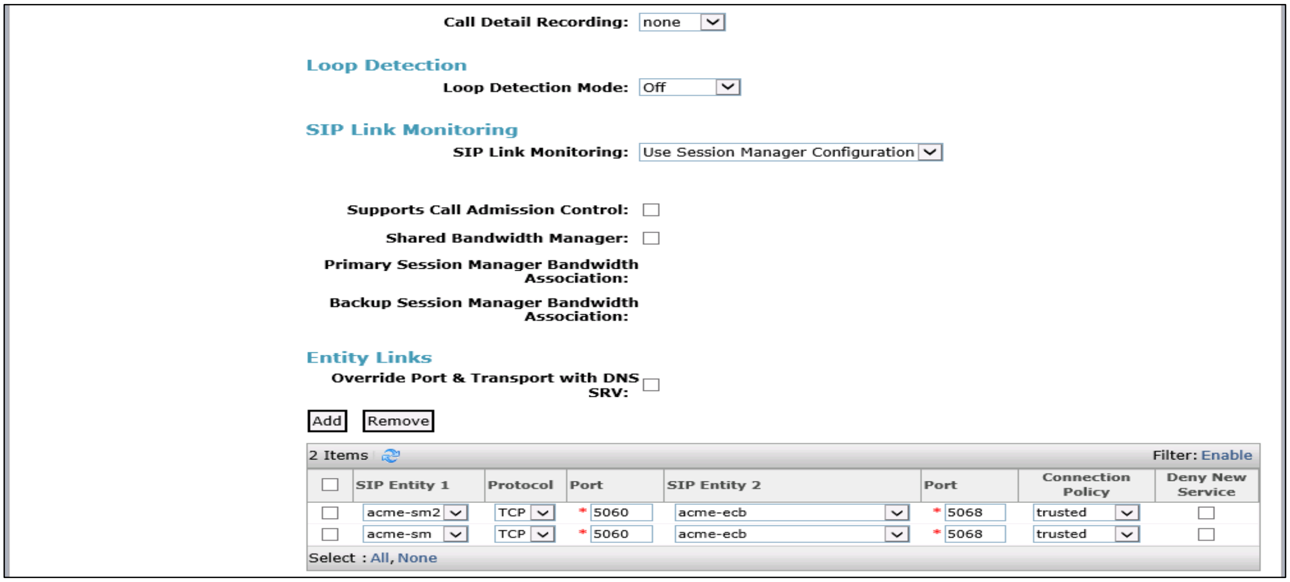
Adding the E-SBC as a SIP Entity

Log in to the Aura System Manager. Click on **Routing** under the **Elements** section.



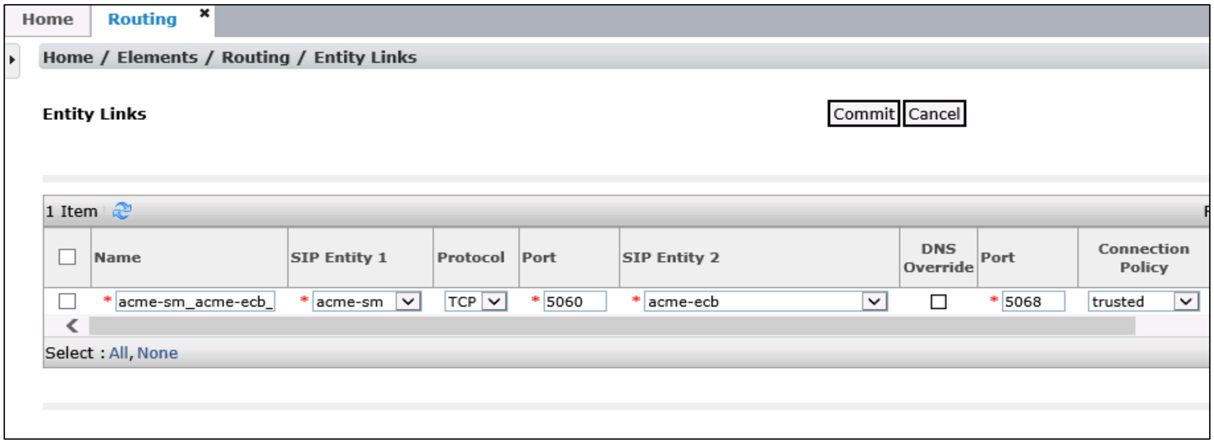
On the **Routing** tab, select **SIP Entities** from the menu on the left side of the screen. Click **New** to add E-SBC as a SIP entity as shown below and click **Commit**.




Call Detail Recording: none
Loop Detection
Loop Detection Mode: Off
SIP Link Monitoring
SIP Link Monitoring: Use Session Manager Configuration
Supports Call Admission Control:
Shared Bandwidth Manager:
Primary Session Manager Bandwidth Association:
Backup Session Manager Bandwidth Association:
Entity Links
Override Port & Transport with DNS SRV:
Add
Remove
2 Items
Filter: Enable
SIP Entity 1
Protocol
Port
SIP Entity 2
Port
Connection Policy
Deny New Service
acme-sm2
TCP
* 5060
acme-ecb
* 5068
trusted
acme-sm
TCP
* 5060
acme-ecb
* 5068
trusted
Select : All, None

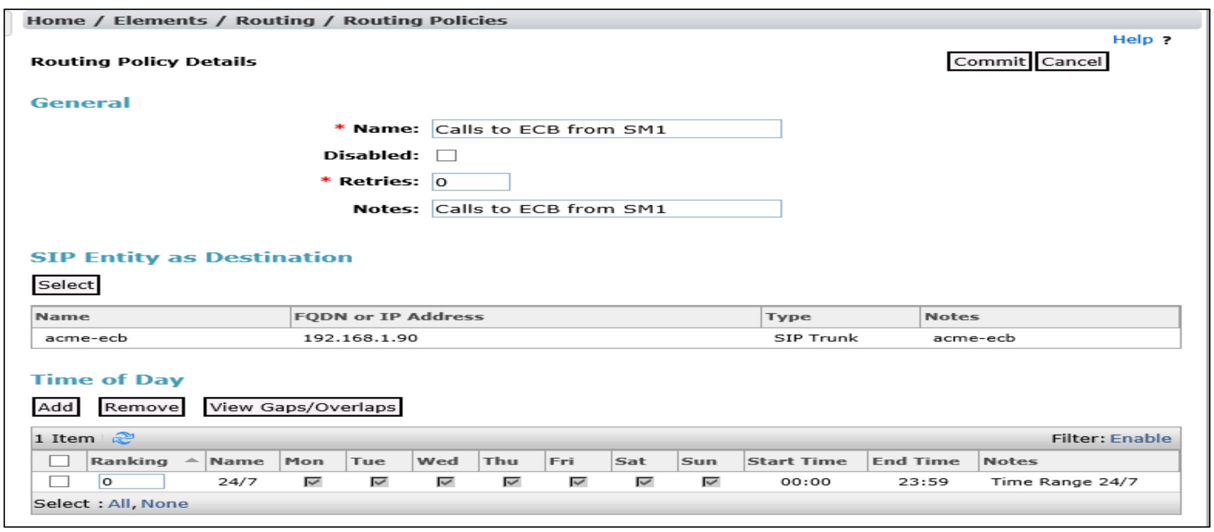
Configuring an Entity link between E-SBC and Session Manager

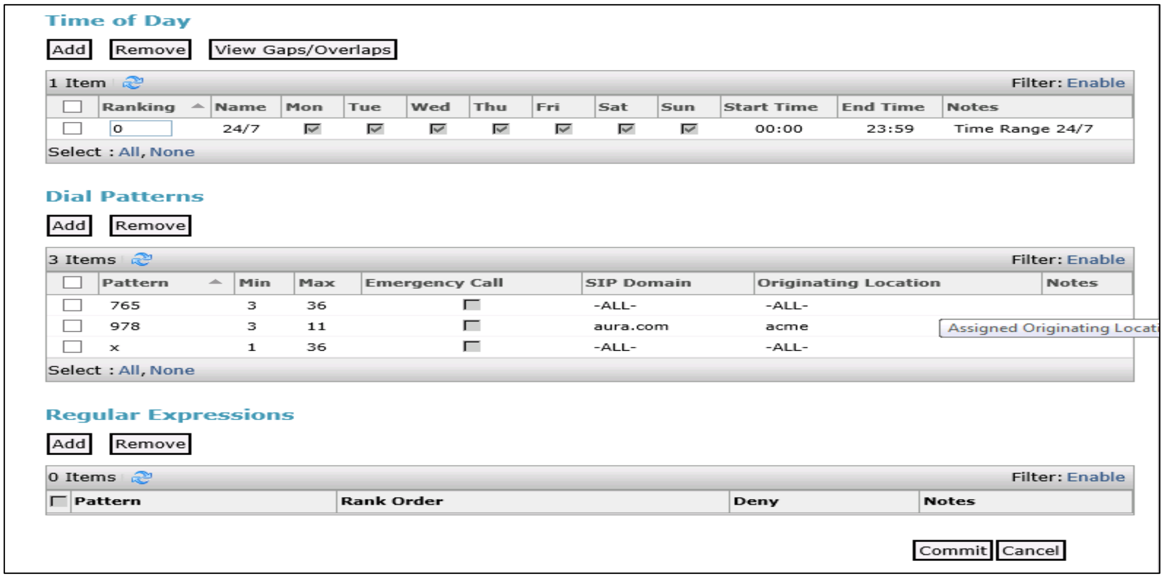
Select **Entity Links** from the menu and click on **New** to add an Entity Link between E-SBC and SM with the following settings and click **Commit.**



Creating a Routing policy to assign the appropriate routing destination

Select **Routing policies** from the menu and click on **New** to add a routing policy between E-SBC and SM with the following settings and click **Commit**.





The Avaya System Manager is now configured to operate with E-SBC.

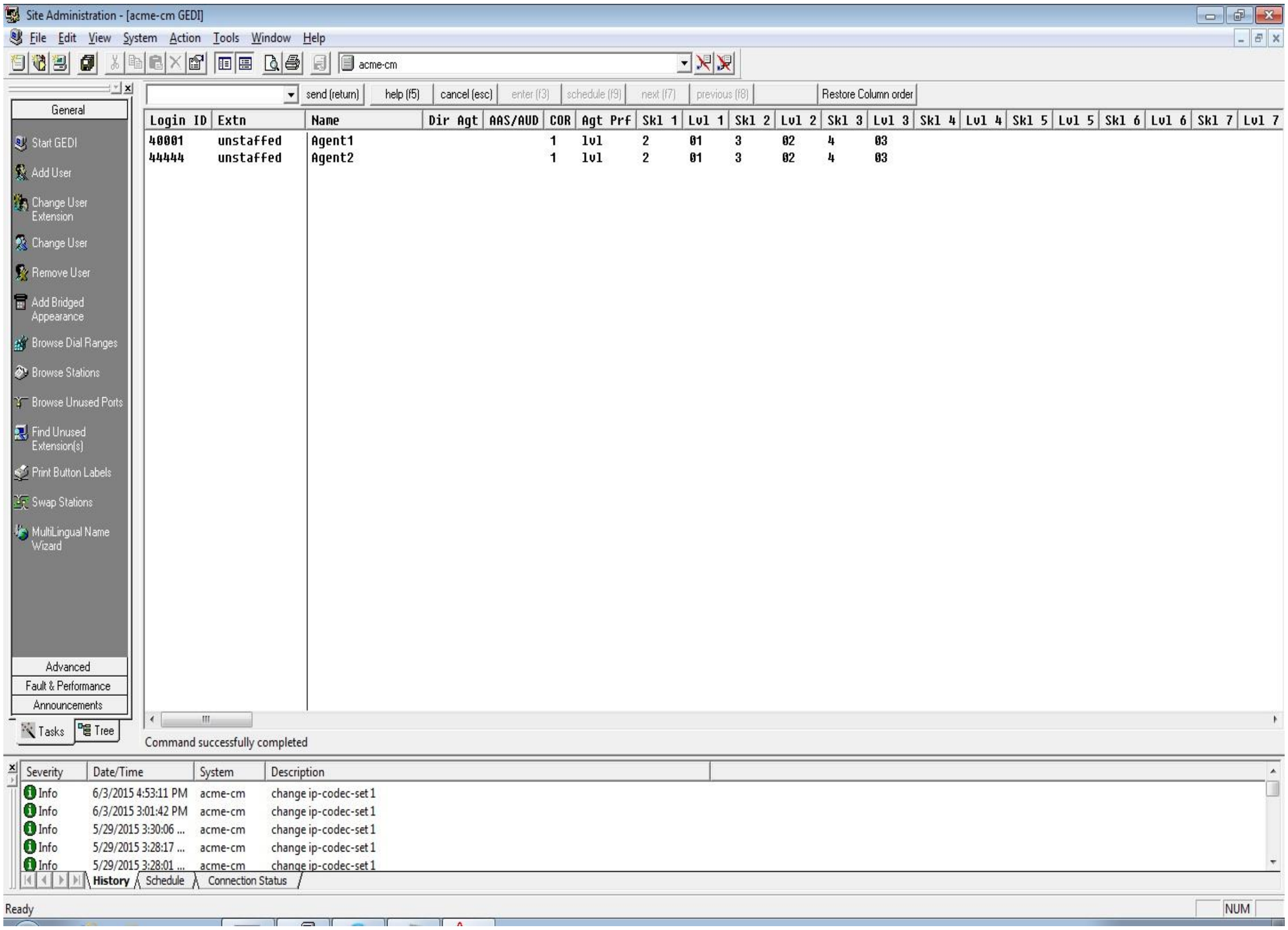
Configuring the Avaya Communication Manager

For the IPTF testing, hunt groups are configured on the Avaya CM to emulate Call Center Application. There are 3 hunt groups with 1 agent skilled for each. The three hunt groups created are Tech Support, Billing and Sales. For the purpose of this testing, the incoming call from the AT&T trunk would reach a welcome message and be prompted for each of the hunt groups through the SBC. Once one was selected the caller would hear another announcement and then ring the agent’s phone.

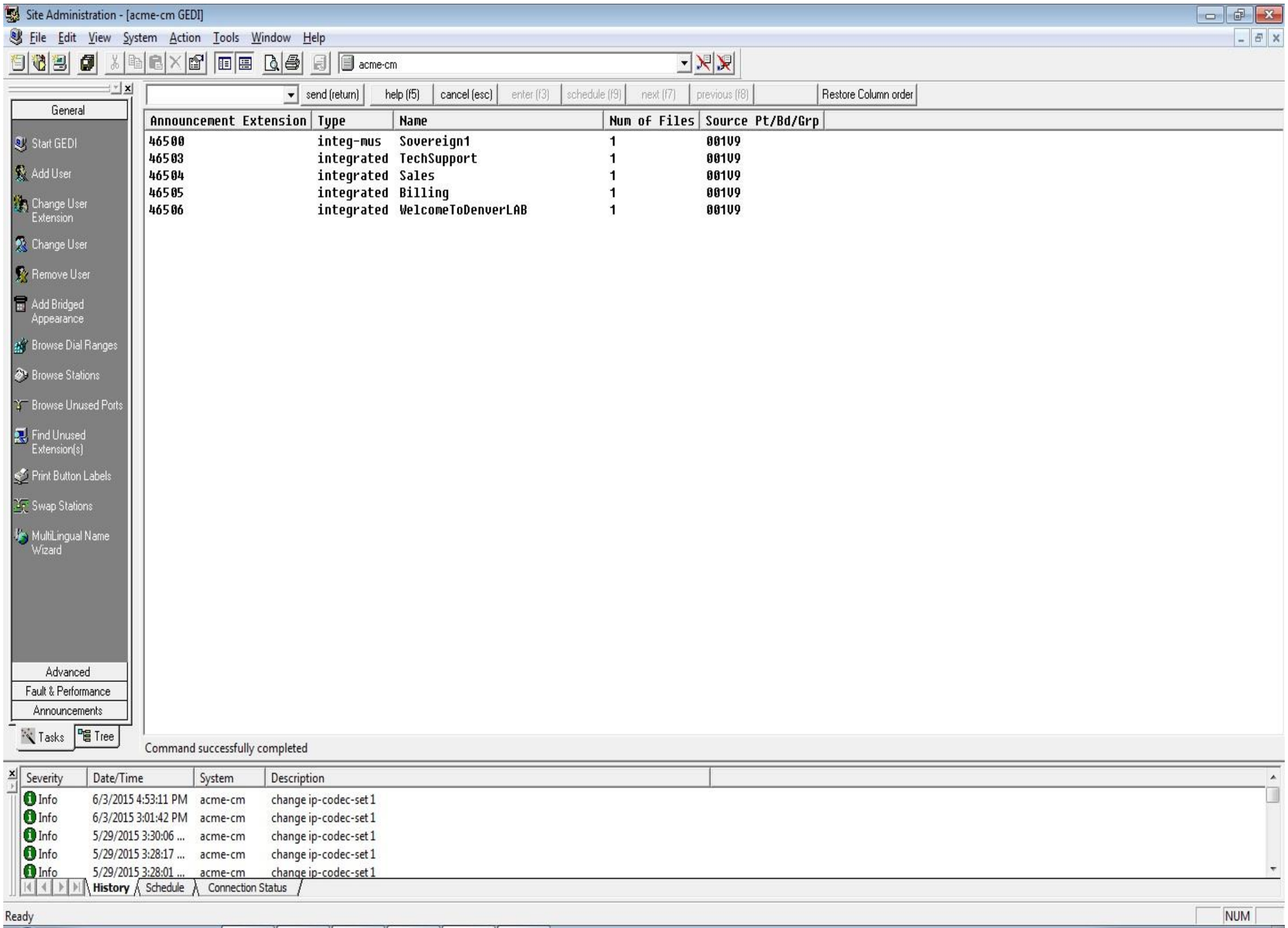
On the direct agent testing, “change in-call-handling-trmt trunk” command is executed to take the ATT IPTF numbers and convert them to a direct agent VDN. On the other test calls we used the digit manipulation on the Digit Conversion adapter ADAPTATION pointed at the Avaya Communication Manager.

Steps for configuring on CM:

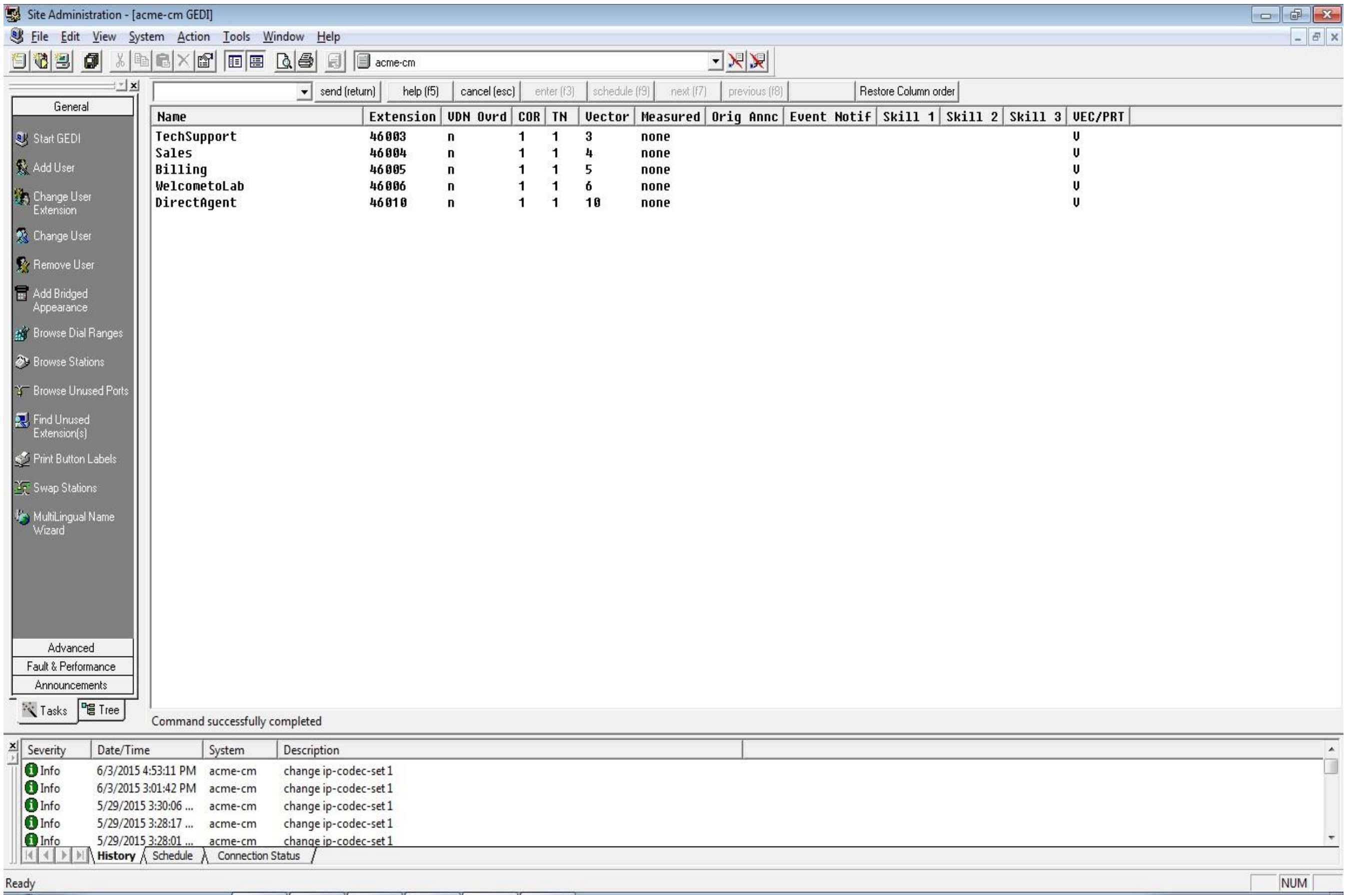
1. **Create the Agent ID and password**



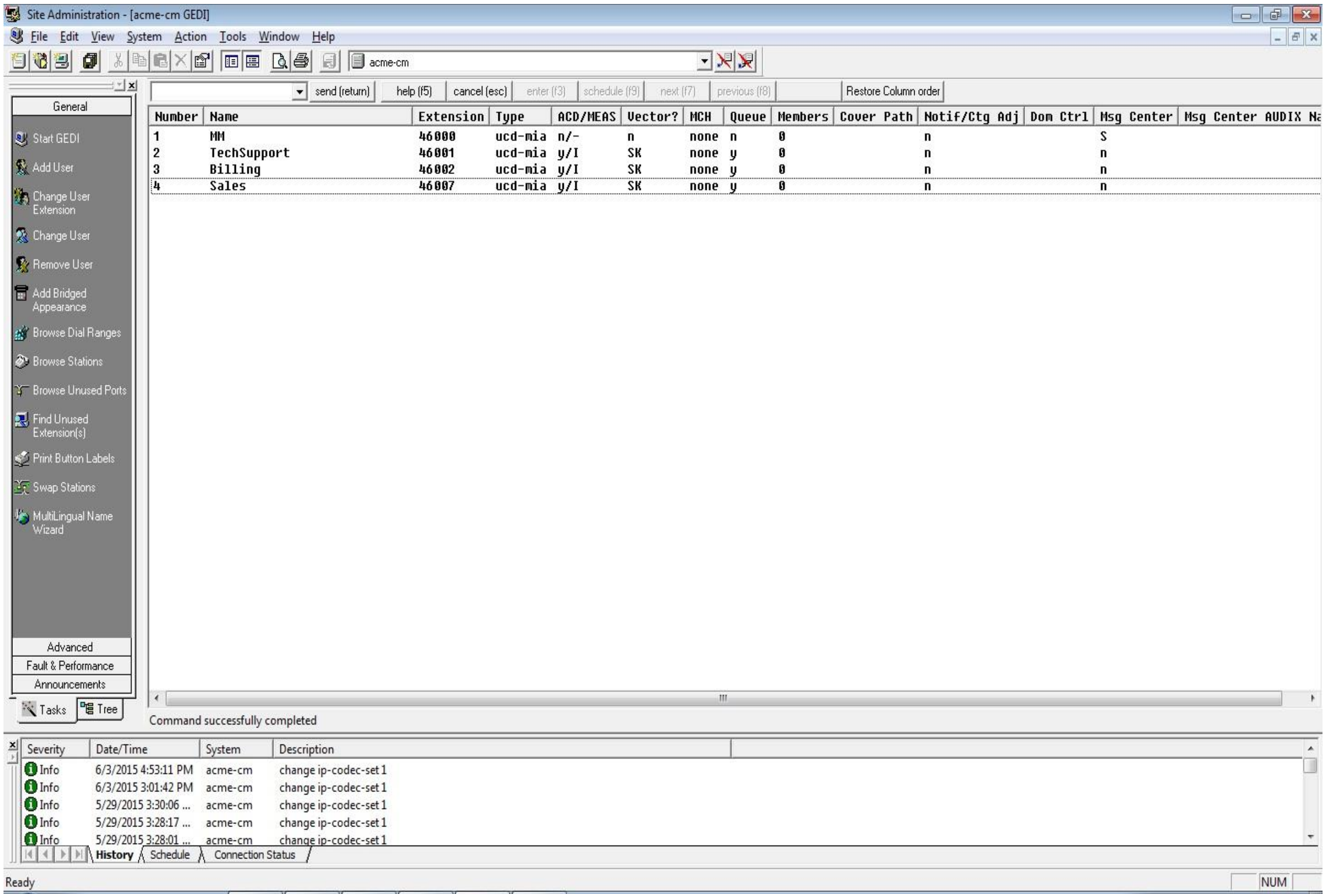
2. Create announcements

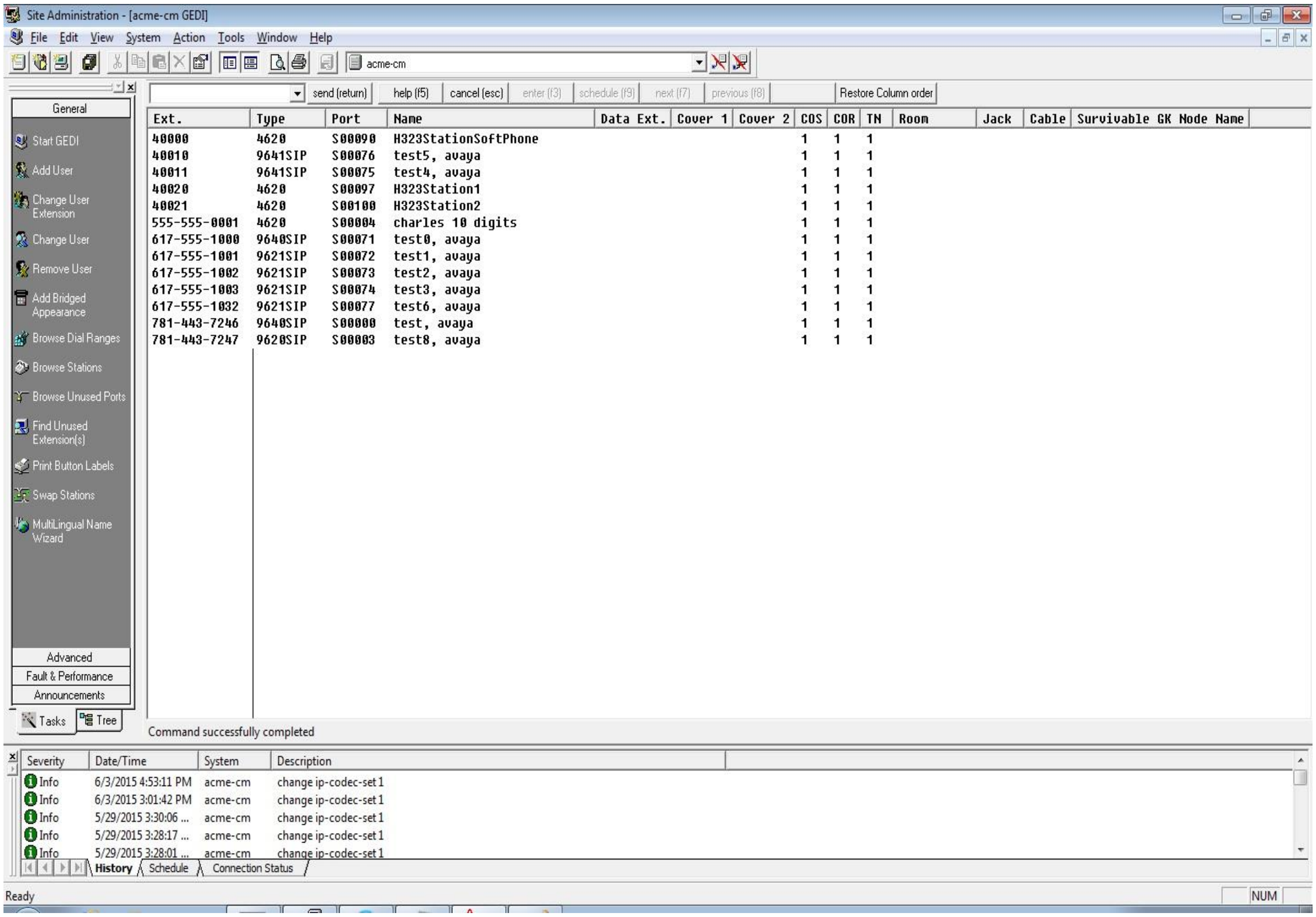


3. Create the Vector Directory Numbers (VDN)

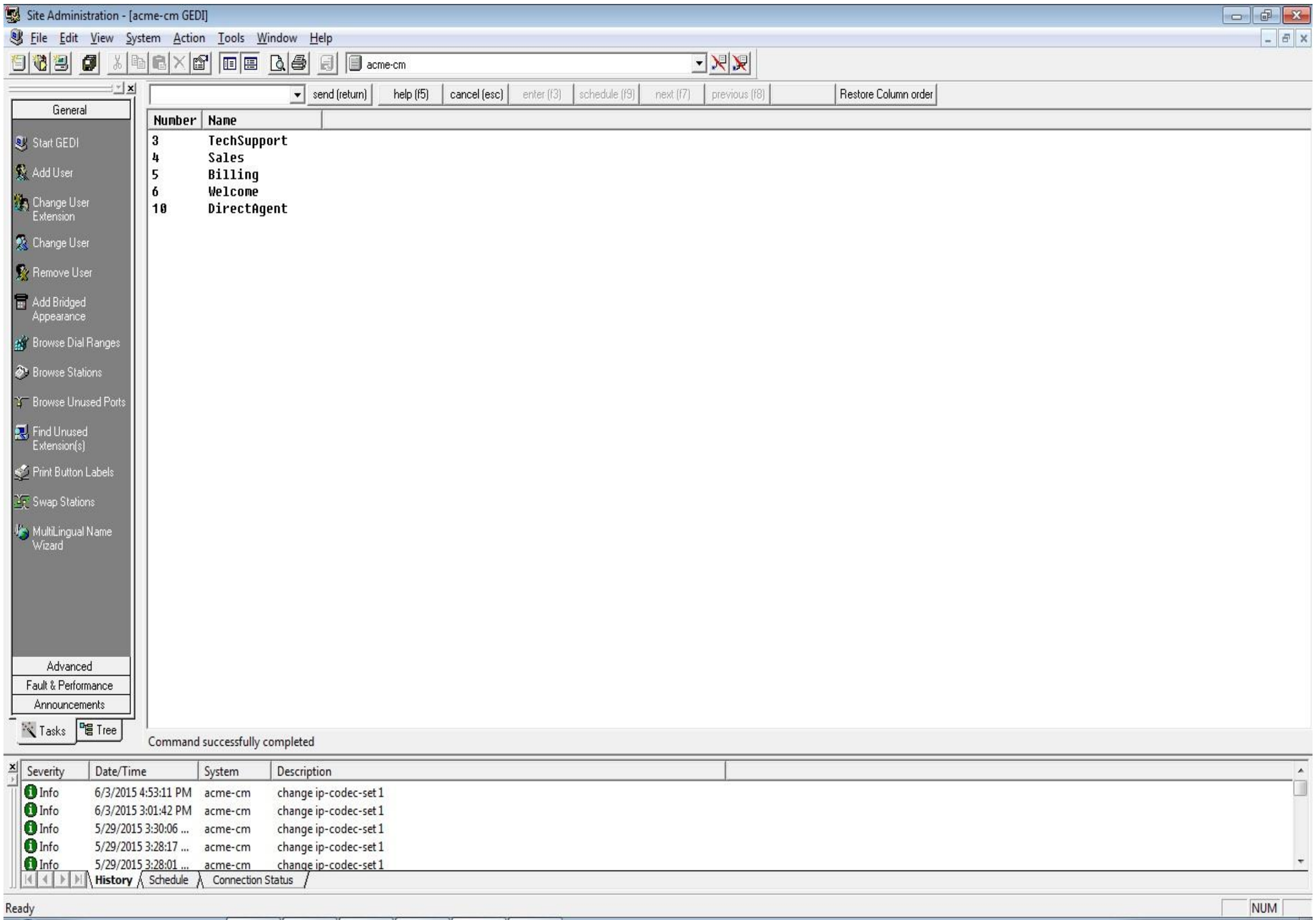


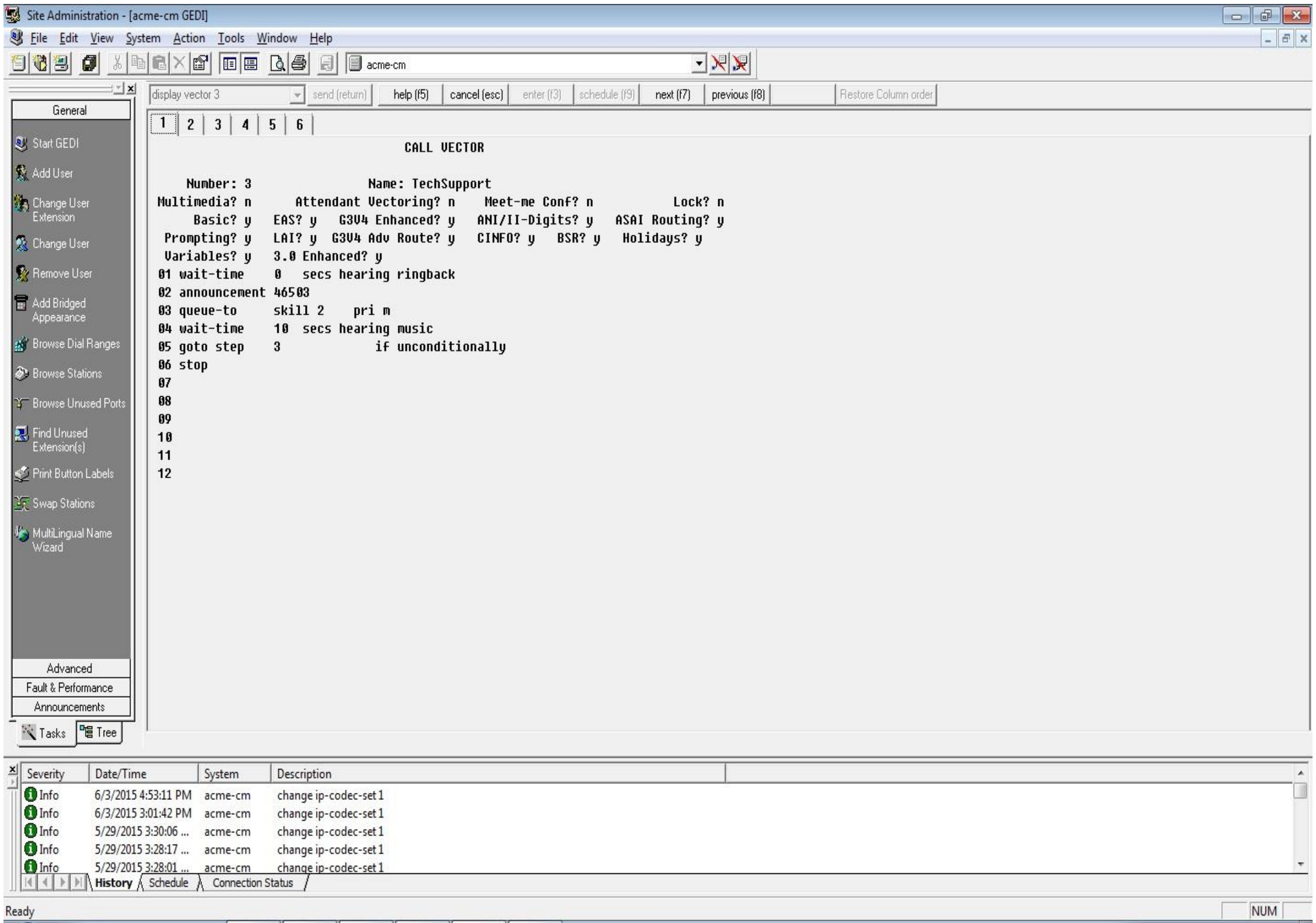
4. Create the HUNT GROUPS and associated extensions

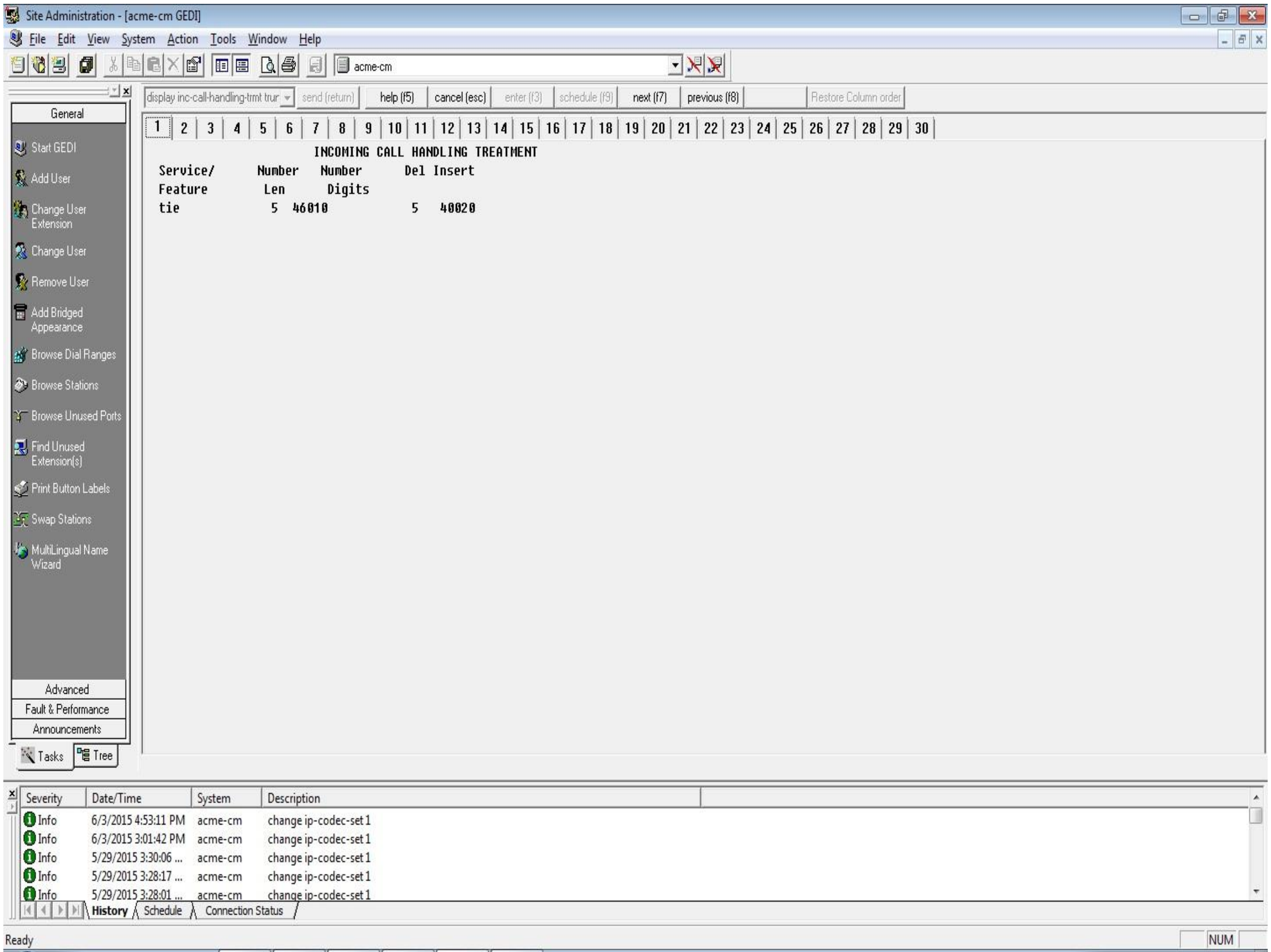



Site Administration - [acme-cm GEDI]
File Edit View System Action Tools Window Help
acme-cm
send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8) Restore Column order
General
Start GEDI
Add User
Change User Extension
Change User
Remove User
Add Bridged Appearance
Browse Dial Ranges
Browse Stations
Browse Unused Ports
Find Unused Extension(s)
Print Button Labels
Swap Stations
MultiLingual Name Wizard
Advanced
Fault & Performance
Announcements
Tasks
Tree
Ext. Type Port Name Data Ext. Cover 1 Cover 2 COS COR TN Room Jack Cable Survivable GK Node Name
40000 4620 S00090 H323StationSoftPhone 1 1 1
40010 9641SIP S00076 test5, avaya 1 1 1
40011 9641SIP S00075 test4, avaya 1 1 1
40020 4620 S00097 H323Station1 1 1 1
40021 4620 S00100 H323Station2 1 1 1
555-555-0001 4620 S00004 charles 10 digits 1 1 1
617-555-1000 9640SIP S00071 test0, avaya 1 1 1
617-555-1001 9621SIP S00072 test1, avaya 1 1 1
617-555-1002 9621SIP S00073 test2, avaya 1 1 1
617-555-1003 9621SIP S00074 test3, avaya 1 1 1
617-555-1032 9621SIP S00077 test6, avaya 1 1 1
781-443-7246 9640SIP S00000 test, avaya 1 1 1
781-443-7247 9620SIP S00003 test8, avaya 1 1 1
Command successfully completed
Severity Date/Time System Description
Info 6/3/2015 4:53:11 PM acme-cm change ip-codec-set 1
Info 6/3/2015 3:01:42 PM acme-cm change ip-codec-set 1
Info 5/29/2015 3:30:06 ... acme-cm change ip-codec-set 1
Info 5/29/2015 3:28:17 ... acme-cm change ip-codec-set 1
Info 5/29/2015 3:28:01 ... acme-cm change ip-codec-set 1
History Schedule Connection Status
Ready
NUM

5. **Create the Vectors needed for conditional routing**




Site Administration - [acme-cm GEDI]
File Edit View System Action Tools Window Help
acme-cm
display vector 3
send (return)
help (f5)
cancel (esc)
enter (f3)
schedule (f9)
next (f7)
previous (f8)
Restore Column order
General
Start GEDI
Add User
Change User Extension
Change User
Remove User
Add Bridged Appearance
Browse Dial Ranges
Browse Stations
Browse Unused Ports
Find Unused Extension(s)
Print Button Labels
Swap Stations
MultiLingual Name Wizard
Advanced
Fault & Performance
Announcements
Tasks
Tree
1 2 3 4 5 6
CALL VECTOR
Number: 3 Name: TechSupport
Multimedia? n Attendant Vectoring? n Meet-me Conf? n Lock? n
Basic? y EAS? y G3V4 Enhanced? y ANI/II-Digits? y ASAI Routing? y
Prompting? y LAI? y G3V4 Adv Route? y CINFO? y BSR? y Holidays? y
Variables? y 3.0 Enhanced? y
01 wait-time 0 secs hearing ringback
02 announcement 46503
03 queue-to skill 2 pri m
04 wait-time 10 secs hearing music
05 goto step 3 if unconditionally
06 stop
07
08
09
10
11
12
Severity Date/Time System Description
Info 6/3/2015 4:53:11 PM acme-cm change ip-codec-set 1
Info 6/3/2015 3:01:42 PM acme-cm change ip-codec-set 1
Info 5/29/2015 3:30:06 ... acme-cm change ip-codec-set 1
Info 5/29/2015 3:28:17 ... acme-cm change ip-codec-set 1
Info 5/29/2015 3:28:01 ... acme-cm change ip-codec-set 1
History
Schedule
Connection Status
Ready
NUM


Site Administration - [acme-cm GEDI]
File Edit View System Action Tools Window Help
acme-cm
display inc-call-handling-trmt trur
send (return)
help (f5)
cancel (esc)
enter (f3)
schedule (f9)
next (f7)
previous (f8)
Restore Column order
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
INCOMING CALL HANDLING TREATMENT
Service/ Number Number Del Insert
Feature Len Digits
tie 5 46010 5 40020
General
Start GEDI
Add User
Change User Extension
Change User
Remove User
Add Bridged Appearance
Browse Dial Ranges
Browse Stations
Browse Unused Ports
Find Unused Extension(s)
Print Button Labels
Swap Stations
MultiLingual Name Wizard
Advanced
Fault & Performance
Announcements
Tasks
Tree
Severity Date/Time System Description
Info 6/3/2015 4:53:11 PM acme-cm change ip-codec-set 1
Info 6/3/2015 3:01:42 PM acme-cm change ip-codec-set 1
Info 5/29/2015 3:30:06 ... acme-cm change ip-codec-set 1
Info 5/29/2015 3:28:17 ... acme-cm change ip-codec-set 1
Info 5/29/2015 3:28:01 ... acme-cm change ip-codec-set 1
History
Schedule
Connection Status
Ready
NUM

Test Results

Category	ID	Abstract	Test Result	Comments
Call Center Application (SIP) - PSTN to CPE Termination - DNIS or CED Routing Origination (US) and Termination (US)	3101	**DNIS Based Routing (CC/ACD)** - From populated with CPN information - PAI populated with CPN - Routes call to desired dept/group/skill set,etc), - Verify Voice Cut Through - Agent is Available - Keep call up for 2 minutes - Agent/Called Party disconnects from the call first - Caller/Calling Party is automatically disconnected after network receives BYE from CPE	PASS	
	3102	**CED Based Routing (CC/ACD)** - From "Unavailable" <sip: Anonymous@ip.address> - PAI (excluded) - Prompts caller for digits - Based on CED, Routes call to desired dept/group/skill set,etc), - Verify Voice Cut Through - Agent is Available - Keep call up for 2 minutes - Caller/Calling Party disconnects from the call first - Agent/Called Party is automatically disconnected after network receives BYE from CPE	PASS	
	3103	**DNIS or CED Based Routing (CC/ACD)** - Routes call to desired dept/group/skill set,etc), - Verify Voice Cut Through - Agent is Unavailable - Call placed into queue - Out-of-Queue when agent becomes available - Keep call up for 2 minutes	PASS	
	3104	**DNIS or CED Based Routing (ACD/CC)** - Agent places caller on hold - Verify Music on Hold, Off Hold, Retrieve from Hold - Verify voice path is re-established between agent/caller	PASS	
	3107	**DNIS or CED Based Routing (ACD/CC) - Long Duration** Call - up for a minimum of 1 hour - Tester verifies that call remains up for a minimum of 1 hour and then reflect test as pass or fail accordingly	PASS	

IP-PBX (SIP) - PSTN to CPE termination Origination (US) and Termination (US)	3108	**IP PBX (no ACD or CC)** - From populated with CPN information - PAI populated with CPN - Routes directly to agent - Agent is available and answers call - Verify Voice Cut Through - Keep call up for 2 minutes - Agent/Called Party drops from call first - Caller is disconnected automatically after network receives BYE from CPE	PASS	
	3109	IP PBX (no ACD/CC) - From "Unavailable" <sip: Anonymous@ip.address> - PAI (excluded) - Routes directly to agent - Verify Voice Cut Through - Keep call up for 2 minutes - Caller/Calling Party drops from call first - Agent/IP PBX is automatically disconnected after IP PBX receives BYE from the network	PASS	
	3110	IP PBX (no ACD/CC) - Agent places caller on hold - Verify Music on Hold, Off Hold, Retrieve from Hold - Verify voice path is re-established between agent/caller	PASS	
DNIS Translations	3115	Translate 9 or 10 digits DNIS - 9 or 10 digits will be set as default - Mark as "Pass" or "Fail" based on results observed on CC/ACD and IP PBX calls	PASS	
	3116	Translate 15 digits DNIS	PASS	
	3117	Translate 21 digits DNIS	PASS	
	3118	PPSP 1 (G.729A) - annexb=no	PASS	
	3119	PPSP 2 (G.729AB) - without annexb parameter or with annexb=yes	PASS	
	3120	PPSP 3 (G.711) - mulaw only	PASS	
	3122	PPSP X (any PPSP populated with 3 codecs) Default - g.729 w/annexb=no, g.711u, g.726	PASS	

Codec Negotiation	3124A	**G.729 Mismatch** - Network offers G.729A, CPE provisioned G.729B CPE negotiates G.729A (label test case 3124A) (Describe CPE's response)	PASS	
	3124B	**G.729 Mismatch** - Network offers G.729AB, CPE provisioned G.729A CPE negotiates G.729A (label test case 3124B) (Describe CPE's response)	PASS	
Dynamic Payload	3125	PSTN to Call Center or IP PBX - Verify that CPE automatically updates Dynamic Payload during an IPTF call	PASS	
Codec Negotiation - Failure	3126	CPE must return of the SIP Error responses for unsupported codec - 415 Unsupported media type - 488 Not Acceptable Here - 606 Not Acceptable	PASS	
	3130	ADR/BUSY - 486 - Busy Here (User Busy) - Indicate which configuration (CC or IP-PBX sends back this SIP Error response	PASS	
	3131	ADR/BUSY - 503 - Service Unavailable - Indicate which configuration (CC or IP-PBX sends back this SIP Error response	CONDITIONAL PASS	Avaya CM sends 503 Service Unavailable, but the Session Manager changes the 503 error code to 500
	3132	ADR/BUSY - 500 - Server Internal Error	PASS	
	3135	Transfer to 8YY - If CC subscription, call is connected to TP. Verify RP and TP voice path - TP drops from call (simply hangs up the phone) - Confirm that CP and RP voice-path is still established - If BT or ST subscription, the network drops RP from call therefore dropping the TP would not apply	PASS	

Legacy Transfer Connect (Inband) ***<u>Human</u>***	3136	Transfer to POTS - TP drops from call (simply hangs up the phone) - Confirm that CP and RP voice-path is re-established - If BT or ST subscription, the network drops RP from call therefore dropping the TP would not apply	PASS	
	3137	Request Help - **4/**H - First request enter **4/**H (hear announcement) - Second request enter **4**H (hear 2nd announcement) - Third attempt is blocked - no future assistance	PASS	
	3138	Delete Partial Digits - *3/*D - Enter a few wrong digits to start transfer and then enter *3/*D to delete digits entered - Immediately enter correct digits - Verify call connects to desired TP	PASS	
	3139	Place CP on Hold - *4/*H - IPTF call is established - Agent/RP decides to place CP on hold by entering *4/*H - Verify CP is on hold - Agent/RP removes CP from hold by entering *7/*R - Verify voice path between CP and RP is re-established	PASS	
	3140	RP drops TP - **9/**X - Establish a call to the TP - After verifying voice path, drop TP from the call by entering **9/**X - Verify voice path between CP and RP is re-established	PASS	
	3141	RP drops immediately after transfer to TP - TP and CP merged - RP Transfers call to the TP - RP does not wait for connection and simply drops from the call - Verify voice path between CP and TP is established	CONDITIONAL PASS	CP heard the announcement played after the RP dropped from the call and responded by entering the prompter digits. However no indication on trunk that the call routed back into SBC for the TP leg of the call

	3142	CP, RP, and TP call legs merged - **CC subscription only** - Establish call to TP - RP enters *7/*R to retrieve CP from hold - Verify all three parties are on the call (CP, RP, and TP) - TP drops from the call	PASS	
	3144	Error Response - TP Busy/Unavailable - Attempt to transfer the call to the TP - Verify that when the TP is unavailable, the RP hears appropriate network response	PASS	
	3148	Error Response - Invalid DN/SDC - RP attempts to transfer call with an invalid DN/SDC - Verify that the network responds with appropriate announcement - RP ends calls	PASS	
Intra-site Unattended Transfer	3158	PSTN to Phone 1/Agent 1. Phone 1 transfers to Phone 2/Agent 2 at same IP PBX site.	PASS	
	3159	Ring Back Unattended Transfer	PASS	
Intra-site Attended Transfer	3160	PSTN to Phone 1/Agent 1. Phone 1 transfers to Phone 2/Agent 2 at same IP PBX site.	PASS	
Intra-site Conference	3161	PSTN to Phone 1/Agent 1. Phone 1 conferences Phone 2/Agent 2 at same IP PBX site. Drop Transfer Call	PASS	
Voice Quality	3171	PSTN to CPE (CC or IP PBX)	PASS	
Simultaneous Calls (Minimum of 2)	3173	PSTN to CPE (CC or IP PBX)	PASS	
MISC-SIP Options	3177	CPE - Accepts SIP Options - SIP Options received - CPE responds with 200 OK or other message	PASS	
PSTN to CPE - AVPN Transport	3178	Confirm Voice Traffic (RTP & Signaling) is assigned to Class Of Service 1 (COS1)	PASS	

PSTN to CPE - US, Canada, and MOW	3182	PSTN to CPE - Contact Center/IP PBX CP (Canada) RP (US)	PASS	
	3183	PSTN to CPE - Contact Center/IP PBX CP (US) RP (MOW)	PASS	
	3184	PSTN to CPE - Contact Center/IP PBX CP (Canada) RP (MOW)	PASS	
	3187	ADR/BUSY - 486 - Busy Here (User Busy) - Indicate which configuration (CC or IP-PBX sends back this SIP Error response	PASS	
	3188	ADR/BUSY - 500 - Server Internal Error	PASS	
	3189	ADR/BUSY - 503 - Service Unavailable - Indicate which configuration (CC or IP-PBX sends back this SIP Error response	CONDITIONAL PASS	Avaya CM sends 503 Service Unavailable, but the Session Manager changes the 503 error code to 500
INFOPACK - CP to RP	3301	**CPN = no, BN = yes, OLI = yes, UUI = yes** - Verify BN, OLI, UUI (if available) populated in incoming INVITE of RP Note: UUI will only be present if it is sent from the PSTN to IP network	CONDITIONAL PASS	UUI header not present in FROM header hence marking conditionally pass
	3302	**CPN = yes, BN = yes, OLI = yes, UUI = yes** - Verify CPN, BN, OLI, UUI (if available) populated in incoming INVITE of RP Note: UUI will only be present if it is sent from the PSTN to IP network	CONDITIONAL PASS	UUI header not present in FROM header hence marking conditionally pass
	3303	**CPN = yes, BN = no, OLI = yes, UUI = no** - Verify OLI, CPN(if available) populated in incoming INVITE of RP	PASS	

The summary of the test plan is as follows

Total Test Cases	Pass	Fail	Conditional Pass
49	44	0	5

Troubleshooting Tools

If you find that you are not able to complete calls or run into issues when going through the test plan, there are a few tools and methodologies available in Avaya SM, Oracle SBC logging and tracing which may be of assistance. In this section we will provide a list of tools which you can use to aid in troubleshooting any issues you may encounter.

A good area to start troubleshooting when calls are not working or having issues is to look at signaling traces for SIP messages during call establishment through traces from Avaya and SBC.

Avaya Aura SM/CM

The Avaya SM can be accessed via SSH. The command used to trace the SIP messages in and out of the Avaya SM/CM is traceSM, this is particularly useful to troubleshoot any signaling between the Avaya SM and CM.

Configuration checklist when outbound calls are failing:

- Check for Dial plan/route issues
- Check Gateway and trunk configuration for TCP connections
- SIP OPTIONS message connectivity between SBC and Avaya

Wireshark

Wireshark is also a network protocol analyzer which is freely downloadable from www.wireshark.org. Wireshark could be installed on the server hosting Avaya and have the SBC send packet trace to this remote location.

Oracle E-SBC 3820

The Oracle SBC provides a rich set of statistical counters available from the ACLI, as well as log file output with configurable detail. The follow sections detail enabling, adjusting and accessing those interfaces.

Resetting the statistical counters, enabling logging and restarting the log files.

At the SBC Console:

```
ATT-IPTF# reset sipd
ATT-IPTF# notify sipd debug
ATT-IPTF#
enabled SIP Debugging
ATT-IPTF# notify all rotate-logs
```

Examining the log files

Note: You will FTP to the management interface of the SBC with the username user and user mode password (the default is “**acme**”).

```
C:\Documents and Settings\user>ftp 192.168.5.24
Connected to 192.168.85.55.
220 ATT-IPTFFTP server (VxWorks 6.4) ready.
User (192.168.85.55:(none)): user
331 Password required for user.
Password: acme
```

```
230 User user logged in.
ftp> cd /ramdrv/logs
250 CWD command successful.
ftp> get sipmsg.log
200 PORT command successful.
150 Opening ASCII mode data connection for '/ramdrv/logs/sipmsg.log' (3353
bytes).
226 Transfer complete.
ftp: 3447 bytes received in 0.00Seconds 3447000.00Kbytes/sec.
ftp> get log.sipd
200 PORT command successful.
150 Opening ASCII mode data connection for '/ramdrv/logs/log.sipd' (204681
bytes).
226 Transfer complete.
ftp: 206823 bytes received in 0.11Seconds 1897.46Kbytes/sec.
ftp> bye
221 Goodbye.
```

You may now examine the log files with the text editor of your choice.

Through the Web GUI

You can also check the display results of filtered SIP session data from the Oracle Enterprise Session Border Controller, and provides traces in a common log format for local viewing or for exporting to your PC. Please check the "Monitor and Trace" section (page 145) of the Web GUI User Guide available at http://docs.oracle.com/cd/E56581_01/index.htm

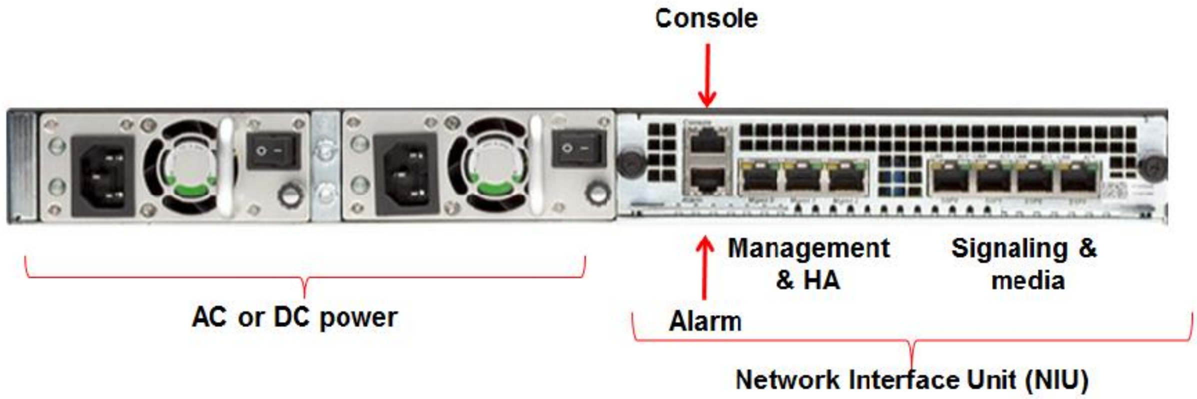
Appendix A

Accessing the ACLI

Access to the ACLI is provided by:

- The serial console connection;
- TELNET, which is enabled by default but may be disabled; and
- SSH, this must be explicitly configured.

Initial connectivity will be through the serial console port. At a minimum, this is how to configure the management (eth0) interface on the SBC.

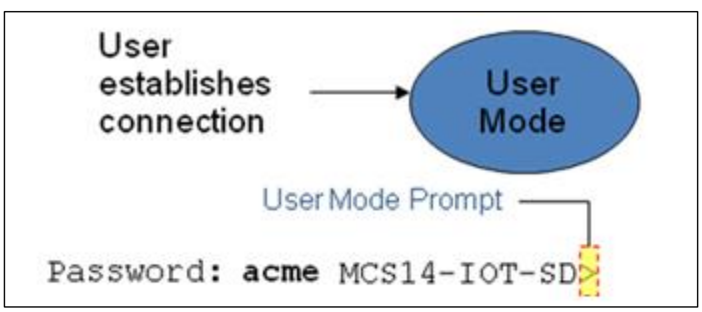


ACLI Basics

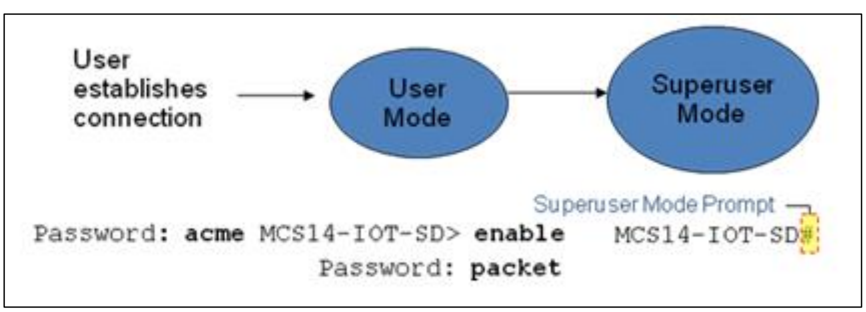
There are two password protected modes of operation within the ACLI, User mode and Superuser mode.

When you establish a connection to the SBC, the prompt for the User mode password appears. The default password is acme.

User mode consists of a restricted set of basic monitoring commands and is identified by the greater than sign (>) in the system prompt after the target name. You cannot perform configuration and maintenance from this mode.



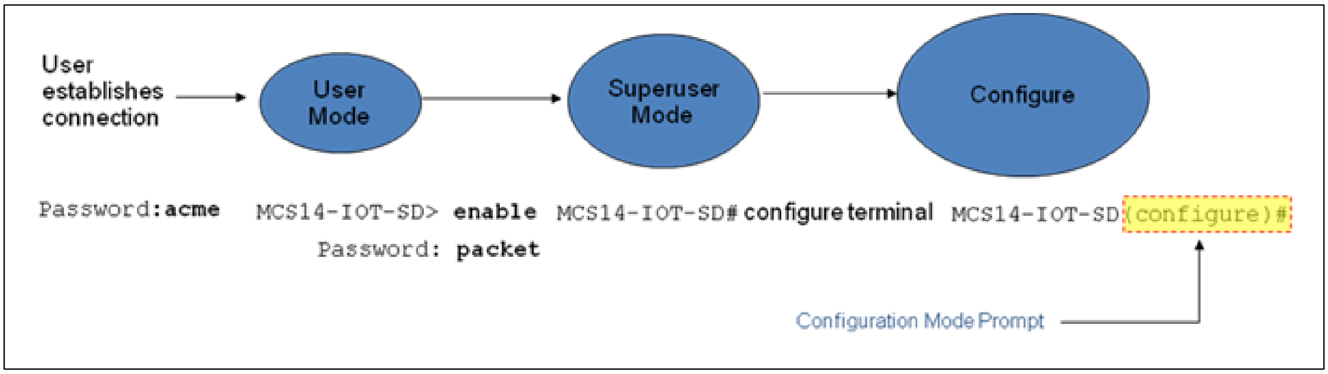
The Superuser mode allows for access to all system commands for operation, maintenance, and administration. This mode is identified by the pound sign (#) in the prompt after the target name. To enter the Superuser mode, issue the enable command in the User mode.



From the Superuser mode, you can perform monitoring and administrative tasks; however you cannot configure any elements. To return to User mode, issue the exit command.

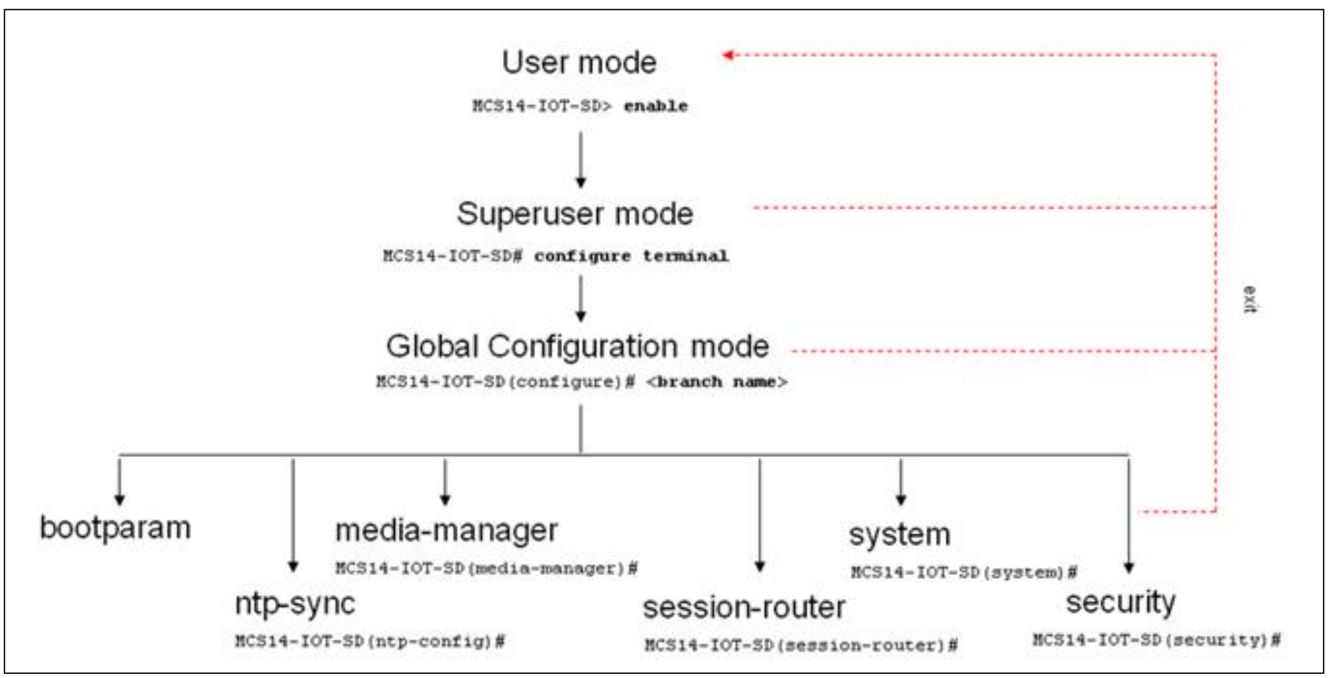
You must enter the Configuration mode to configure elements. For example, you can access the configuration branches and configuration elements for signaling and media configurations. To enter the Configuration mode, issue the **`configure terminal`** command in the Superuser mode.

Configuration mode is identified by the word configure in parenthesis followed by the pound sign (#) in the prompt after the target name, for example, **ATT-IPTF(configure)#**. To return to the Superuser mode, issue the **`exit`** command.



In the configuration mode, there are six configuration branches:

- bootparam;
- ntp-sync;
- media-manager;
- session-router;
- system; and
- security.



The ntp-sync and bootparams branches are flat branches (i.e., they do not have elements inside the branches). The rest of the branches have several elements under each of the branches.

The bootparam branch provides access to SBC boot parameters. Key boot parameters include:

- boot device – The global management port, usually eth0
- file name – The boot path and the image file.
- inet on ethernet – The IP address and subnet mask (in hex) of the management port of the SD.
- host inet –The IP address of external server where image file resides.
- user and ftp password – Used to boot from the external FTP server.
- gateway inet – The gateway IP address for reaching the external server, if the server is located in a different network.

```
'.' = clear field;  '-' = go to previous field;  q = quit
boot device              : eth0
processor number         : 0
host name                :
file name                : /tffs0/nnSCX620.gz
inet on ethernet (e)     : 10.0.3.11:ffff0000
inet on backplane (b)    :
host inet (h)            : 10.0.3.100
gateway inet (g)         : 10.0.0.1
user (u)                 : anonymous
ftp password (pw) (blank = rsh)      : anonymous
flags (f)                : 0x8
target name (tn)         : MCS14-IOT-SD
startup script (s)       :
other (o)
```

The ntp-sync branch provides access to ntp server configuration commands for synchronizing the SBC time and date.

The security branch provides access to security configuration.

The system branch provides access to basic configuration elements as system-config, snmp-community, redundancy, physical interfaces, network interfaces, etc.

The session-router branch provides access to signaling and routing related elements, including H323-config, sip-config, iwf-config, local-policy, sip-manipulation, session-agent, etc.

The media-manager branch provides access to media-related elements, including realms, steering pools, dns-config, media-manager, and so forth.

You will use media-manager, session-router, and system branches for most of your working configuration.

Configuration Elements

The configuration branches contain the configuration elements. Each configurable object is referred to as an element. Each element consists of a number of configurable parameters.

Some elements are single-instance elements, meaning that there is only one of that type of the element - for example, the global system configuration and redundancy configuration.

Some elements are multiple-instance elements. There may be one or more of the elements of any given type. For example, physical and network interfaces.

Some elements (both single and multiple instance) have sub-elements. For example:

- SIP-ports - are children of the sip-interface element
- peers – are children of the redundancy element
- destinations – are children of the peer element

Creating an Element

1. To create a single-instance element, you go to the appropriate level in the ACLI path and enter its parameters. There is no need to specify a unique identifier property because a single-instance element is a global element and there is only one instance of this element.
2. When creating a multiple-instance element, you must specify a unique identifier for each instance of the element.
3. It is important to check the parameters of the element you are configuring before committing the changes. You do this by issuing the **`show`** command before issuing the **`done`** command. The parameters that you did not configure are filled with either default values or left empty.
4. On completion, you must issue the **`done`** command. The done command causes the configuration to be echoed to the screen and commits the changes to the volatile memory. It is a good idea to review this output to ensure that your configurations are correct.
5. Issue the **`exit`** command to exit the selected element.

Note that the configurations at this point are not permanently saved yet. If the SBC reboots, your configurations will be lost.

Editing an Element

The procedure of editing an element is similar to creating an element, except that you must select the element that you will edit before editing it.

1. Enter the element that you will edit at the correct level of the ACLI path.
2. Select the element that you will edit, and view it before editing it.
   The **`select`** command loads the element to the volatile memory for editing. The **`show`** command allows you to view the element to ensure that it is the right one that you want to edit.
3. Once you are sure that the element you selected is the right one for editing, edit the parameter one by one. The new value you provide will overwrite the old value.
4. It is important to check the properties of the element you are configuring before committing it to the volatile memory. You do this by issuing the **`show`** command before issuing the **`done`** command.
5. On completion, you must issue the **`done`** command.
6. Issue the **`exit`** command to exit the selected element.

Note that the configurations at this point are not permanently saved yet. If the SBC reboots, your configurations will be lost.

Deleting an Element

The **no** command deletes an element from the configuration in editing.

To delete a single-instance element,

1. Enter the **`no`** command from within the path for that specific element
2. Issue the **`exit`** command.

To delete a multiple-instance element,

1. Enter the **`no`** command from within the path for that particular element.
   The key field prompt, such as <name>:<sub-port-id>, appears.
2. Use the <Enter> key to display a list of the existing configured elements.
3. Enter the number corresponding to the element you wish to delete.
4. Issue the **`select`** command to view the list of elements to confirm that the element was removed.

Note that the configuration changes at this point are not permanently saved yet. If the SBC reboots, your configurations will be lost.

Configuration Versions

At any time, three versions of the configuration can exist on the SBC: the edited configuration, the saved configuration, and the running configuration.

- The **edited configuration** – this is the version that you are making changes to. This version of the configuration is stored in the SBC's volatile memory and will be lost on a reboot.
  To view the editing configuration, issue the **`show configuration`** command.
- The **saved configuration –** on issuing the **`save-config`** command, the edited configuration is copied into the non-volatile memory on the SBC and becomes the saved configuration. Because the saved configuration has not been activated yet, the changes in the configuration will not take effect. On reboot, the last activated configuration (i.e., the last running configuration) will be loaded, not the saved configuration.
- The **running configuration** is the saved then activated configuration. On issuing the **`activate-config`** command, the saved configuration is copied from the non-volatile memory to the volatile memory. The saved configuration is activated and becomes the running configuration. Although most of the configurations can take effect once being activated without reboot, some configurations require a reboot for the changes to take effect.
  To view the running configuration, issue command show **`running-config`**.

Saving the Configuration

The **`save-config`** command stores the edited configuration persistently.

Because the saved configuration has not been activated yet, changes in configuration will not take effect. On reboot, the last activated configuration (i.e., the last running configuration) will be loaded. At this stage, the saved configuration is different from the running configuration.

Because the saved configuration is stored in non-volatile memory, it can be accessed and activated at later time.

Upon issuing the **`save-config`** command, the SBC displays a reminder on screen stating that you must use the **`activate-config`** command if you want the configurations to be updated.

```
ATT-IPTF # save-config
Save-Config received, processing.
waiting 1200 for request to finish
Request to 'SAVE-CONFIG' has Finished,
Save complete
Currently active and saved configurations do not match!
To sync & activate, run 'activate-config' or 'reboot activate'.
ATT-IPTF #
```

Activating the Configuration

On issuing the **`activate-config`** command, the saved configuration is copied from the non-volatile memory to the volatile memory. The saved configuration is activated and becomes the running configuration.

Some configuration changes are service affecting when activated. For these configurations, the SBC warns that the change could have an impact on service with the configuration elements that will potentially be service affecting. You may decide whether or not to continue with applying these changes immediately or to apply them at a later time.

```
ATT-IPTF# activate-config
Activate-Config received, processing.
waiting 120000 for request to finish
Request to 'ACTIVATE-CONFIG' has Finished,
Activate Complete
ATT-IPTF#
```

Appendix B – SBC configuration

```
PE11-ATT-Trunk# show run
capture-receiver
        state                                   enabled
        address                                 10.232.50.76
        network-interface                       s1p0:0
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-03-20 16:10:02
local-policy
        from-address                            *
        to-address                              *
        source-realm                            core
        description
        activate-time
        deactivate-time
        state                                   enabled
        policy-priority                         none
        policy-attribute
                next-hop                                105.105.105.105
                realm                                   trunk-side
                action                                  none
                terminate-recursion                     disabled
                carrier
                start-time                              0000
                end-time                                2400
                days-of-week                            U-S
                cost                                    0
                state                                   enabled
                app-protocol                            SIP
                methods
                media-profiles
                lookup                                  single
                next-key
                eloc-str-lkup                           disabled
                eloc-str-match
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-04-10 14:27:09
local-policy
        from-address                            *
        to-address                              *
        source-realm                            trunk-side
        description
        activate-time
        deactivate-time
        state                                   enabled
        policy-priority                         none
        policy-attribute
                next-hop                                10.232.50.102
                realm                                   core
                action                                  none
```

```
                terminate-recursion                     disabled
                carrier
                start-time                              0000
                end-time                                2400
                days-of-week                            U-S
                cost                                    0
                state                                   enabled
                app-protocol
                methods
                media-profiles
                lookup                                  single
                next-key
                eloc-str-lkup                           disabled
                eloc-str-match
        last-modified-by                        admin@172.18.0.109
        last-modified-date                      2015-02-10 20:46:01
media-manager
        state                                   enabled
        latching                                enabled
        flow-time-limit                         86400
        initial-guard-timer                     300
        subsq-guard-timer                       300
        tcp-flow-time-limit                     86400
        tcp-initial-guard-timer                 300
        tcp-subsq-guard-timer                   300
        tcp-number-of-ports-per-flow            2
        hnt-rtcp                                disabled
        algd-log-level                          NOTICE
        mbcd-log-level                          NOTICE
        options
        red-flow-port                           1985
        red-mgcp-port                           1986
        red-max-trans                           10000
        red-sync-start-time                     5000
        red-sync-comp-time                      1000
        media-policing                          enabled
        max-signaling-bandwidth                 10000000
        max-untrusted-signaling                 100
        min-untrusted-signaling                 30
        app-signaling-bandwidth                 0
        tolerance-window                        30
        trap-on-demote-to-deny                  disabled
        trap-on-demote-to-untrusted             disabled
        syslog-on-demote-to-deny                disabled
        syslog-on-demote-to-untrusted           disabled
        rtcp-rate-limit                         0
        anonymous-sdp                           disabled
        arp-msg-bandwidth                       32000
        fragment-msg-bandwidth                  0
        rfc2833-timestamp                       disabled
        default-2833-duration                   100
        rfc2833-end-pkts-only-for-non-sig       enabled
        translate-non-rfc2833-event             disabled
```

```
        media-supervision-traps                disabled
        dnsalg-server-failover                 disabled
        syslog-on-call-reject                  disabled
        last-modified-by                       admin@172.18.0.119
        last-modified-date                     2014-06-02 15:58:04
network-interface
        name                                   s0p0
        sub-port-id                            0
        description
        hostname
        ip-address                             200.105.105.105
        pri-utility-addr
        sec-utility-addr
        netmask                                255.255.255.0
        gateway                                200.105.105.1
        sec-gateway
        gw-heartbeat
                state                                  disabled
                heartbeat                              0
                retry-count                            0
                retry-timeout                          1
                health-score                           0
        dns-ip-primary
        dns-ip-backup1
        dns-ip-backup2
        dns-domain
        dns-timeout                            11
        signaling-mtu                          0
        hip-ip-list                            200.105.105.105
        ftp-address
        icmp-address                           200.105.105.105
        snmp-address
        telnet-address
        ssh-address
        last-modified-by                       admin@172.18.0.193
        last-modified-date                     2015-04-08 08:01:28
network-interface
        name                                   s1p0
        sub-port-id                            0
        description
        hostname
        ip-address                             10.232.50.130
        pri-utility-addr
        sec-utility-addr
        netmask                                255.255.255.0
        gateway                                10.232.50.1
        sec-gateway
        gw-heartbeat
                state                                  disabled
                heartbeat                              0
                retry-count                            0
                retry-timeout                          1
                health-score                           0
```

```
        dns-ip-primary
        dns-ip-backup1
        dns-ip-backup2
        dns-domain
        dns-timeout                             11
        signaling-mtu                           0
        hip-ip-list                             10.232.50.130
        ftp-address                             10.232.50.130
        icmp-address                            10.232.50.130
        snmp-address
        telnet-address
        ssh-address                             10.232.50.130
        last-modified-by                        admin@172.18.0.109
        last-modified-date                      2015-02-16 13:19:35
phy-interface
        name                                    s0p0
        operation-type                          Media
        port                                    0
        slot                                    0
        virtual-mac
        admin-state                             enabled
        auto-negotiation                        enabled
        duplex-mode                             FULL
        speed                                   100
        wancom-health-score                     50
        overload-protection                     disabled
        mac-filtering                           disabled
        last-modified-by                        admin@172.18.0.158
        last-modified-date                      2015-04-13 17:07:21
phy-interface
        name                                    s1p0
        operation-type                          Media
        port                                    0
        slot                                    1
        virtual-mac
        admin-state                             enabled
        auto-negotiation                        enabled
        duplex-mode                             FULL
        speed                                   100
        wancom-health-score                     50
        overload-protection                     disabled
        mac-filtering                           disabled
        last-modified-by                        admin@172.18.0.170
        last-modified-date                      2014-05-29 16:00:46
realm-config
        identifier                              core
        description
        addr-prefix                             0.0.0.0
        network-interfaces                      s1p0:0
        mm-in-realm                             disabled
        mm-in-network                           enabled
        mm-same-ip                              enabled
        mm-in-system                            enabled
```

```
        bw-cac-non-mm                          disabled
        msm-release                            disabled
        qos-enable                             disabled
        generate-UDP-checksum                  disabled
        max-bandwidth                          0
        fallback-bandwidth                     0
        max-priority-bandwidth                 0
        max-latency                            0
        max-jitter                             0
        max-packet-loss                        0
        observ-window-size                     0
        parent-realm
        dns-realm
        media-policy
        media-sec-policy
        srtp-msm-passthrough                   disabled
        class-profile
        in-translationid
        out-translationid
        in-manipulationid
        out-manipulationid
        average-rate-limit                     0
        access-control-trust-level             none
        invalid-signal-threshold               0
        maximum-signal-threshold               0
        untrusted-signal-threshold             0
        nat-trust-threshold                    0
        max-endpoints-per-nat                  0
        nat-invalid-message-threshold          0
        wait-time-for-invalid-register         0
        deny-period                            30
        cac-failure-threshold                  0
        untrust-cac-failure-threshold          0
        ext-policy-svr
        diam-e2-address-realm
        subscription-id-type                   END_USER_NONE
        symmetric-latching                     disabled
        pai-strip                              disabled
        trunk-context
        device-id
        early-media-allow
        enforcement-profile
        additional-prefixes
        restricted-latching                    none
        restriction-mask                       32
        user-cac-mode                          none
        user-cac-bandwidth                     0
        user-cac-sessions                      0
        icmp-detect-multiplier                 0
        icmp-advertisement-interval            0
        icmp-target-ip
        monthly-minutes                        0
        options
```

```
        spl-options
        accounting-enable                       enabled
        net-management-control                  disabled
        delay-media-update                      disabled
        refer-call-transfer                     disabled
        hold-refer-reinvite                     disabled
        refer-notify-provisional                none
        dyn-refer-term                          disabled
        codec-policy
        codec-manip-in-realm                    disabled
        codec-manip-in-network                  enabled
        rtcp-policy
        constraint-name
        call-recording-server-id
        session-recording-server
        session-recording-required              disabled
        manipulation-string
        manipulation-pattern
        stun-enable                             disabled
        stun-server-ip                          0.0.0.0
        stun-server-port                        3478
        stun-changed-ip                         0.0.0.0
        stun-changed-port                       3479
        sip-profile
        sip-isup-profile
        match-media-profiles
        qos-constraint
        block-rtcp                              disabled
        hide-egress-media-update                disabled
        tcp-media-profile
        monitoring-filters
        node-functionality
        default-location-string
        alt-family-realm
        pref-addr-type                          none
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2014-06-02 15:55:09
realm-config
        identifier                              trunk-side
        description
        addr-prefix                             0.0.0.0
        network-interfaces                      s0p0:0
        mm-in-realm                             disabled
        mm-in-network                           enabled
        mm-same-ip                              enabled
        mm-in-system                            enabled
        bw-cac-non-mm                           disabled
        msm-release                             disabled
        qos-enable                              disabled
        generate-UDP-checksum                   disabled
        max-bandwidth                           0
        fallback-bandwidth                      0
        max-priority-bandwidth                  0
```

```
        max-latency                                 0
        max-jitter                                  0
        max-packet-loss                             0
        observ-window-size                          0
        parent-realm
        dns-realm
        media-policy
        media-sec-policy
        srtp-msm-passthrough                        disabled
        class-profile
        in-translationid
        out-translationid
        in-manipulationid
        out-manipulationid
        average-rate-limit                          0
        access-control-trust-level                  none
        invalid-signal-threshold                    0
        maximum-signal-threshold                    0
        untrusted-signal-threshold                  0
        nat-trust-threshold                         0
        max-endpoints-per-nat                       0
        nat-invalid-message-threshold               0
        wait-time-for-invalid-register              0
        deny-period                                 30
        cac-failure-threshold                       0
        untrust-cac-failure-threshold               0
        ext-policy-svr
        diam-e2-address-realm
        subscription-id-type                        END_USER_NONE
        symmetric-latching                          disabled
        pai-strip                                   disabled
        trunk-context
        device-id
        early-media-allow
        enforcement-profile
        additional-prefixes
        restricted-latching                         none
        restriction-mask                            32
        user-cac-mode                               none
        user-cac-bandwidth                          0
        user-cac-sessions                           0
        icmp-detect-multiplier                      0
        icmp-advertisement-interval                 0
        icmp-target-ip
        monthly-minutes                             0
        options
        spl-options
        accounting-enable                           enabled
        net-management-control                      disabled
        delay-media-update                          disabled
        refer-call-transfer                         disabled
        hold-refer-reinvite                         disabled
        refer-notify-provisional                    none
```

```
        dyn-refer-term                          disabled
        codec-policy
        codec-manip-in-realm                    disabled
        codec-manip-in-network                  enabled
        rtcp-policy
        constraint-name
        call-recording-server-id
        session-recording-server
        session-recording-required              disabled
        manipulation-string
        manipulation-pattern
        stun-enable                             disabled
        stun-server-ip                          0.0.0.0
        stun-server-port                        3478
        stun-changed-ip                         0.0.0.0
        stun-changed-port                       3479
        sip-profile
        sip-isup-profile
        match-media-profiles
        qos-constraint
        block-rtcp                              disabled
        hide-egress-media-update                disabled
        tcp-media-profile
        monitoring-filters
        node-functionality
        default-location-string
        alt-family-realm
        pref-addr-type                          none
        last-modified-by                        admin@172.18.0.109
        last-modified-date                      2015-02-11 20:50:16
session-agent
        hostname                                10.232.50.102
        ip-address                              10.232.50.102
        port                                    5060
        state                                   enabled
        app-protocol                            SIP
        app-type
        transport-method                        StaticTCP
        realm-id                                core
        egress-realm-id
        description                             Avaya SM
        carriers
        allow-next-hop-lp                       enabled
        constraints                             disabled
        max-sessions                            0
        max-inbound-sessions                    0
        max-outbound-sessions                   0
        max-burst-rate                          0
        max-inbound-burst-rate                  0
        max-outbound-burst-rate                 0
        max-sustain-rate                        0
        max-inbound-sustain-rate                0
        max-outbound-sustain-rate               0
```

```
        min-seizures                    5
        min-asr                         0
        time-to-resume                  0
        ttr-no-response                 0
        in-service-period               0
        burst-rate-window               0
        sustain-rate-window             0
        req-uri-carrier-mode            None
        proxy-mode
        redirect-action
        loose-routing                   enabled
        send-media-session              enabled
        response-map
        ping-method                     OPTIONS;hops=0
        ping-interval                   60
        ping-send-mode                  keep-alive
        ping-all-addresses              disabled
        ping-in-service-response-codes
        out-service-response-codes
        load-balance-dns-query          hunt
        options
        spl-options
        media-profiles
        in-translationid
        out-translationid
        trust-me                        disabled
        request-uri-headers
        stop-recurse
        local-response-map
        ping-to-user-part
        ping-from-user-part
        in-manipulationid
        out-manipulationid
        manipulation-string
        manipulation-pattern
        p-asserted-id
        trunk-group
        max-register-sustain-rate       0
        early-media-allow
        invalidate-registrations        disabled
        rfc2833-mode                    none
        rfc2833-payload                 100
        codec-policy
        enforcement-profile
        refer-call-transfer             disabled
        refer-notify-provisional        none
        reuse-connections               NONE
        tcp-keepalive                   none
        tcp-reconn-interval             0
        max-register-burst-rate         0
        register-burst-window           0
        sip-profile
        sip-isup-profile
```

```
        kpml-interworking                       inherit
        monitoring-filters
        session-recording-server
        session-recording-required              disabled
        hold-refer-reinvite                     disabled
        send-tcp-fin                            disabled
        last-modified-by                        web_admin@172.18.0.143
        last-modified-date                      2015-04-22 11:13:22
session-agent
        hostname                                10.232.50.103
        ip-address                              10.232.50.103
        port                                    5060
        state                                   enabled
        app-protocol                            SIP
        app-type
        transport-method                        StaticTCP
        realm-id                                core
        egress-realm-id
        description                             Direct CM trunk
        carriers
        allow-next-hop-lp                       enabled
        constraints                             disabled
        max-sessions                            0
        max-inbound-sessions                    0
        max-outbound-sessions                   0
        max-burst-rate                          0
        max-inbound-burst-rate                  0
        max-outbound-burst-rate                 0
        max-sustain-rate                        0
        max-inbound-sustain-rate                0
        max-outbound-sustain-rate               0
        min-seizures                            5
        min-asr                                 0
        time-to-resume                          0
        ttr-no-response                         0
        in-service-period                       0
        burst-rate-window                       0
        sustain-rate-window                     0
        req-uri-carrier-mode                    None
        proxy-mode
        redirect-action
        loose-routing                           enabled
        send-media-session                      enabled
        response-map
        ping-method                             OPTIONS;hops=0
        ping-interval                           60
        ping-send-mode                          keep-alive
        ping-all-addresses                      disabled
        ping-in-service-response-codes
        out-service-response-codes
        load-balance-dns-query                  hunt
        options
        spl-options
```

```
        media-profiles
        in-translationid
        out-translationid
        trust-me                                disabled
        request-uri-headers
        stop-recurse
        local-response-map
        ping-to-user-part
        ping-from-user-part
        in-manipulationid
        out-manipulationid
        manipulation-string
        manipulation-pattern
        p-asserted-id
        trunk-group
        max-register-sustain-rate               0
        early-media-allow
        invalidate-registrations                disabled
        rfc2833-mode                            none
        rfc2833-payload                         0
        codec-policy
        enforcement-profile
        refer-call-transfer                     disabled
        refer-notify-provisional                none
        reuse-connections                       NONE
        tcp-keepalive                           none
        tcp-reconn-interval                     0
        max-register-burst-rate                 0
        register-burst-window                   0
        sip-profile
        sip-isup-profile
        kpml-interworking                       inherit
        monitoring-filters
        session-recording-server
        session-recording-required              disabled
        hold-refer-reinvite                     disabled
        send-tcp-fin                            disabled
        last-modified-by                        web_admin@172.18.0.143
        last-modified-date                      2015-04-14 23:01:12
session-agent
        hostname                                105.105.105.105
        ip-address                              105.105.105.105
        port                                    5060
        state                                   enabled
        app-protocol                            SIP
        app-type
        transport-method                        UDP
        realm-id                                trunk-side
        egress-realm-id
        description                             ATT
        carriers
        allow-next-hop-lp                       enabled
        constraints                             disabled
```

```
        max-sessions                            0
        max-inbound-sessions                    0
        max-outbound-sessions                   0
        max-burst-rate                          0
        max-inbound-burst-rate                  0
        max-outbound-burst-rate                 0
        max-sustain-rate                        0
        max-inbound-sustain-rate                0
        max-outbound-sustain-rate               0
        min-seizures                            5
        min-asr                                 0
        time-to-resume                          0
        ttr-no-response                         0
        in-service-period                       0
        burst-rate-window                       0
        sustain-rate-window                     0
        req-uri-carrier-mode                    None
        proxy-mode
        redirect-action
        loose-routing                           enabled
        send-media-session                      enabled
        response-map
        ping-method
        ping-interval                           0
        ping-send-mode                          keep-alive
        ping-all-addresses                      disabled
        ping-in-service-response-codes
        out-service-response-codes
        load-balance-dns-query                  hunt
        options
        spl-options
        media-profiles
        in-translationid
        out-translationid                       strip1
        trust-me                                disabled
        request-uri-headers
        stop-recurse
        local-response-map
        ping-to-user-part
        ping-from-user-part
        in-manipulationid
        out-manipulationid
        manipulation-string
        manipulation-pattern
        p-asserted-id
        trunk-group
        max-register-sustain-rate               0
        early-media-allow
        invalidate-registrations                disabled
        rfc2833-mode                            none
        rfc2833-payload                         100
        codec-policy
        enforcement-profile
```

```
        refer-call-transfer                   disabled
        refer-notify-provisional              none
        reuse-connections                     NONE
        tcp-keepalive                         none
        tcp-reconn-interval                   0
        max-register-burst-rate               0
        register-burst-window                 0
        sip-profile
        sip-isup-profile
        kpml-interworking                     inherit
        monitoring-filters
        session-recording-server
        session-recording-required            disabled
        hold-refer-reinvite                   disabled
        send-tcp-fin                          disabled
        last-modified-by                      web_admin@172.18.0.143
        last-modified-date                    2015-04-22 11:13:07
session-translation
        id                                    strip1
        rules-calling                         strip1
        rules-called                          strip1
        last-modified-by                      admin@172.18.0.119
        last-modified-date                    2015-04-15 13:51:46
sip-config
        state                                 enabled
        operation-mode                        dialog
        dialog-transparency                   enabled
        home-realm-id                         core
        egress-realm-id
        auto-realm-id
        nat-mode                              None
        registrar-domain
        registrar-host
        registrar-port                        0
        register-service-route                always
        init-timer                            500
        max-timer                             4000
        trans-expire                          32
        initial-inv-trans-expire              0
        invite-expire                         180
        inactive-dynamic-conn                 32
        enforcement-profile
        pac-method
        pac-interval                          10
        pac-strategy                          PropDist
        pac-load-weight                       1
        pac-session-weight                    1
        pac-route-weight                      1
        pac-callid-lifetime                   600
        pac-user-lifetime                     3600
        red-sip-port                          1988
        red-max-trans                         10000
        red-sync-start-time                   5000
```

```
        red-sync-comp-time                      1000
        options                                 max-udp-length=0
        add-reason-header                       disabled
        sip-message-len                         6000
        enum-sag-match                          disabled
        extra-method-stats                      disabled
        extra-enum-stats                        disabled
        rph-feature                             disabled
        nsep-user-sessions-rate                 0
        nsep-sa-sessions-rate                   0
        registration-cache-limit                0
        register-use-to-for-lp                  disabled
        refer-src-routing                       disabled
        add-ucid-header                         disabled
        proxy-sub-events
        allow-pani-for-trusted-only             disabled
        atcf-stn-sr
        atcf-psi-dn
        atcf-route-to-sccas                     disabled
        eatf-stn-sr
        pass-gruu-contact                       disabled
        sag-lookup-on-redirect                  disabled
        set-disconnect-time-on-bye              disabled
        msrp-delayed-bye-timer                  15
        transcoding-realm
        transcoding-agents
        create-dynamic-sa                       disabled
        node-functionality                      P-CSCF
        match-sip-instance                      disabled
        sa-routes-stats                         disabled
        sa-routes-traps                         disabled
        rx-sip-reason-mapping                   disabled
        add-ue-location-in-pani                 disabled
        hold-emergency-calls-for-loc-info       0
        last-modified-by                        admin@172.18.0.109
        last-modified-date                      2015-02-12 16:45:04
sip-interface
        state                                   enabled
        realm-id                                core
        description
        sip-port
                address                                 10.232.50.130
                port                                    5060
                transport-protocol                      TCP
                tls-profile
                allow-anonymous                         all
                multi-home-addrs
                ims-aka-profile
        carriers
        trans-expire                            0
        initial-inv-trans-expire                0
        invite-expire                           0
        max-redirect-contacts                   0
```

```
        proxy-mode
        redirect-action
        contact-mode                            none
        nat-traversal                           none
        nat-interval                            30
        tcp-nat-interval                        90
        registration-caching                    disabled
        min-reg-expire                          300
        registration-interval                   3600
        route-to-registrar                      disabled
        secured-network                         disabled
        teluri-scheme                           disabled
        uri-fqdn-domain
        options
        spl-options
        trust-mode                              all
        max-nat-interval                        3600
        nat-int-increment                       10
        nat-test-increment                      30
        sip-dynamic-hnt                         disabled
        stop-recurse                            401,407
        port-map-start                          0
        port-map-end                            0
        in-manipulationid                       Changeptime
        out-manipulationid                      NATtingavaya
        sip-ims-feature                         disabled
        sip-atcf-feature                        disabled
        subscribe-reg-event                     disabled
        operator-identifier
        anonymous-priority                      none
        max-incoming-conns                      0
        per-src-ip-max-incoming-conns           0
        inactive-conn-timeout                   0
        untrusted-conn-timeout                  0
        network-id
        ext-policy-server
        ldap-policy-server
        default-location-string
        term-tgrp-mode                          none
        charging-vector-mode                    pass
        charging-function-address-mode          pass
        ccf-address
        ecf-address
        implicit-service-route                  disabled
        rfc2833-payload                         101
        rfc2833-mode                            transparent
        constraint-name
        response-map
        local-response-map
        sec-agree-feature                       disabled
        sec-agree-pref                          ipsec3gpp
        enforcement-profile
        route-unauthorized-calls
```

```
        tcp-keepalive                           none
        add-sdp-invite                          disabled
        p-early-media-header                    disabled
        p-early-media-direction
        add-sdp-profiles
        manipulation-string
        manipulation-pattern
        sip-profile
        sip-isup-profile
        tcp-conn-dereg                          0
        tunnel-name
        register-keep-alive                     none
        kpml-interworking                       disabled
        msrp-delay-egress-bye                   disabled
        send-380-response
        pcscf-restoration
        session-timer-profile
        session-recording-server
        session-recording-required              disabled
        service-tag
        reg-cache-route                         disabled
        last-modified-by                        web_admin@172.18.0.143
        last-modified-date                      2015-04-14 16:42:50
sip-interface
        state                                   enabled
        realm-id                                trunk-side
        description
        sip-port
                address                                 200.105.105.105
                port                                    5060
                transport-protocol                      UDP
                tls-profile
                allow-anonymous                         agents-only
                multi-home-addrs
                ims-aka-profile
        carriers
        trans-expire                            0
        initial-inv-trans-expire                0
        invite-expire                           0
        max-redirect-contacts                   0
        proxy-mode
        redirect-action
        contact-mode                            none
        nat-traversal                           none
        nat-interval                            30
        tcp-nat-interval                        90
        registration-caching                    disabled
        min-reg-expire                          300
        registration-interval                   3600
        route-to-registrar                      disabled
        secured-network                         disabled
        teluri-scheme                           disabled
        uri-fqdn-domain
```

```
        options
        spl-options
        trust-mode                              all
        max-nat-interval                        3600
        nat-int-increment                       10
        nat-test-increment                      30
        sip-dynamic-hnt                         disabled
        stop-recurse                            401,407
        port-map-start                          0
        port-map-end                            0
        in-manipulationid                       RemoveExtraDigits
        out-manipulationid                      NAT_IP
        sip-ims-feature                         disabled
        sip-atcf-feature                        disabled
        subscribe-reg-event                     disabled
        operator-identifier
        anonymous-priority                      none
        max-incoming-conns                      0
        per-src-ip-max-incoming-conns           0
        inactive-conn-timeout                   0
        untrusted-conn-timeout                  0
        network-id
        ext-policy-server
        ldap-policy-server
        default-location-string
        term-tgrp-mode                          none
        charging-vector-mode                    pass
        charging-function-address-mode          pass
        ccf-address
        ecf-address
        implicit-service-route                  disabled
        rfc2833-payload                         100
        rfc2833-mode                            transparent
        constraint-name
        response-map
        local-response-map
        sec-agree-feature                       disabled
        sec-agree-pref                          ipsec3gpp
        enforcement-profile
        route-unauthorized-calls
        tcp-keepalive                           none
        add-sdp-invite                          disabled
        p-early-media-header                    disabled
        p-early-media-direction
        add-sdp-profiles
        manipulation-string
        manipulation-pattern
        sip-profile
        sip-isup-profile
        tcp-conn-dereg                          0
        tunnel-name
        register-keep-alive                     none
        kpml-interworking                       disabled
```

```
        msrp-delay-egress-bye                   disabled
        send-380-response
        pcscf-restoration
        session-timer-profile
        session-recording-server
        session-recording-required              disabled
        service-tag
        reg-cache-route                         disabled
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-05-19 15:30:42
sip-manipulation
        name                                    Changeptime
        description
        split-headers
        join-headers
        header-rule
                name                                    Checkptimeexists
                header-name                             Content-type
                action                                  store
                comparison-type                         pattern-rule
                msg-type                                any
                methods
                match-value
                new-value
                element-rule
                        name                                    ptimexists
                        parameter-name                          application/sdp
                        type                                    mime
                        action                                  store
                        match-val-type                          any
                        comparison-type                         pattern-rule
                        match-value                             (a=ptime:30)
                        new-value
        header-rule
                name                                    Addptime
                header-name                             Content-type
                action                                  manipulate
                comparison-type                         boolean
                msg-type                                any
                methods
                match-value                            !($Checkptimeexists.$ptimexists)
                new-value
                element-rule
                        name                                    Changesdp
                        parameter-name                          application/sdp
                        type                                    mime
                        action                                  find-replace-all
                        match-val-type                          any
                        comparison-type                         pattern-rule
                        match-value                             (m=audio\,*)
                        new-value                               $1+$CRLF+a=ptime:30
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-04-07 14:03:21
```

```
sip-manipulation
        name                                    NAT_IP
        description
        split-headers
        join-headers
        header-rule
                name                                    From
                header-name                             From
                action                                  manipulate
                comparison-type                         case-sensitive
                msg-type                                any
                methods
                match-value
                new-value
                element-rule
                        name                                    From_header
                        parameter-name
                        type                                    uri-host
                        action                                  replace
                        match-val-type                          any
                        comparison-type                         case-sensitive
                        match-value
                        new-value                               $LOCAL_IP
                element-rule
                        name                                    SourcePort
                        parameter-name
                        type                                    uri-port
                        action                                  replace
                        match-val-type                          any
                        comparison-type                         case-sensitive
                        match-value
                        new-value                               $LOCAL_PORT
        header-rule
                name                                    To
                header-name                             To
                action                                  manipulate
                comparison-type                         case-sensitive
                msg-type                                request
                methods
                match-value
                new-value
                element-rule
                        name                                    To
                        parameter-name
                        type                                    uri-host
                        action                                  replace
                        match-val-type                          any
                        comparison-type                         case-sensitive
                        match-value
                        new-value                               $REMOTE_IP
        header-rule
                name                                    CheckPAIexists
                header-name                             P-Asserted-Identity
```

```
            action                                           store
            comparison-type                                  case-sensitive
            msg-type                                         request
            methods
            match-value
            new-value
    header-rule
            name                                             Add_P_Asserted_ID_new
            header-name                                      P-Asserted-Identity
            action                                           add
            comparison-type                                  boolean
            msg-type                                         request
            methods                                          INVITE
            match-value                                      !$CheckPAIexists
            new-value                                "<sip:"+$FROM_USER.$0+"@"+$LOCAL_IP+">"
    header-rule
            name                                             Changetransport
            header-name                                      From
            action                                           manipulate
            comparison-type                                  case-sensitive
            msg-type                                         any
            methods
            match-value
            new-value
            element-rule
                    name                                             Changetransport
                    parameter-name                                   transport
                    type                                             uri-param
                    action                                           find-replace-all
                    match-val-type                                   any
                    comparison-type                                  case-sensitive
                    match-value                                      Tcp
                    new-value                                        udp
    header-rule
            name                                             StripBline
            header-name                                      Content-type
            action                                           manipulate
            comparison-type                                  pattern-rule
            msg-type                                         any
            methods
            match-value
            new-value
            element-rule
                    name                                             deletebline
                    parameter-name                                   application/sdp
                    type                                             mime
                    action                                           find-replace-all
                    match-val-type                                   any
                    comparison-type                                  case-sensitive
                    match-value                                      (b=AS.*)\r\n
                    new-value
    last-modified-by                                 admin@172.18.0.119
    last-modified-date                               2015-04-15 14:45:53
```

```
sip-manipulation
        name                                    NATtingavaya
        description
        split-headers
        join-headers
        header-rule
                name                                    From
                header-name                             From
                action                                  manipulate
                comparison-type                         case-sensitive
                msg-type                                any
                methods
                match-value
                new-value
                element-rule
                        name                                    From_header
                        parameter-name
                        type                                    uri-host
                        action                                  replace
                        match-val-type                          any
                        comparison-type                         case-sensitive
                        match-value
                        new-value                               aura.com
        header-rule
                name                                    To
                header-name                             To
                action                                  manipulate
                comparison-type                         case-sensitive
                msg-type                                any
                methods
                match-value
                new-value
                element-rule
                        name                                    To
                        parameter-name
                        type                                    uri-host
                        action                                  replace
                        match-val-type                          any
                        comparison-type                         case-sensitive
                        match-value
                        new-value                               aura.com
        header-rule
                name                                    Ruri_hr
                header-name                             Request-URI
                action                                  manipulate
                comparison-type                         case-sensitive
                msg-type                                any
                methods
                match-value
                new-value
                element-rule
                        name                                    er
                        parameter-name
```

```
                type                                        uri-host
                action                                      find-replace-all
                match-val-type                              any
                comparison-type                             case-sensitive
                match-value
                new-value                                   aura.com
        header-rule
                name                                        Pai
                header-name                                 P-Asserted-Identity
                action                                      manipulate
                comparison-type                             case-sensitive
                msg-type                                    any
                methods
                match-value
                new-value
                element-rule
                        name                                Pai_header
                        parameter-name
                        type                                uri-host
                        action                              replace
                        match-val-type                      any
                        comparison-type                     case-sensitive
                        match-value
                        new-value                           aura.com
        last-modified-by                            admin@172.18.0.109
        last-modified-date                          2015-02-13 15:26:31
sip-manipulation
        name                                        RemoveExtraDigits
        description
        split-headers
        join-headers
        header-rule
                name                                        RemovefromReqURI
                header-name                                 Request-URI
                action                                      manipulate
                comparison-type                             case-sensitive
                msg-type                                    request
                methods
                match-value
                new-value
                element-rule
                        name                                Stripdigits
                        parameter-name
                        type                                uri-user
                        action                              find-replace-all
                        match-val-type                      any
                        comparison-type                     case-sensitive
                        match-value                         [0-9]{6,}([0-9]{5,})
                        new-value                           "00000"+$1
        last-modified-by                            admin@172.18.0.119
        last-modified-date                          2015-05-19 15:25:43
steering-pool
        ip-address                                  10.232.50.130
```

```
        start-port                              10500
        end-port                                11000
        realm-id                                core
        network-interface
        last-modified-by                        admin@172.18.0.109
        last-modified-date                      2015-02-10 20:43:31
steering-pool
        ip-address                              200.105.105.105
        start-port                              16384
        end-port                                20000
        realm-id                                trunk-side
        network-interface
        last-modified-by                        admin@172.18.0.170
        last-modified-date                      2014-07-10 14:12:53
system-config
        hostname                                ATT-trunk-IOT
        description
        location
        mib-system-contact
        mib-system-name
        mib-system-location
        snmp-enabled                            enabled
        enable-snmp-auth-traps                  disabled
        enable-snmp-syslog-notify               disabled
        enable-snmp-monitor-traps               disabled
        enable-env-monitor-traps                disabled
        snmp-syslog-his-table-length            1
        snmp-syslog-level                       WARNING
        system-log-level                        WARNING
        process-log-level                       DEBUG
        process-log-ip-address                  0.0.0.0
        process-log-port                        0
        collect
                sample-interval                         5
                push-interval                           15
                boot-state                              disabled
                start-time                              now
                end-time                                never
                red-collect-state                       disabled
                red-max-trans                           1000
                red-sync-start-time                     5000
                red-sync-comp-time                      1000
                push-success-trap-state                 disabled
        comm-monitor
                state                                   disabled
                sbc-grp-id                              0
                tls-profile
                qos-enable                              enabled
        call-trace                              disabled
        internal-trace                          disabled
        log-filter                              all
        default-gateway                         155.212.214.1
        restart                                 enabled
```

```
        exceptions
        telnet-timeout                          0
        console-timeout                         0
        remote-control                          enabled
        cli-audit-trail                         enabled
        link-redundancy-state                   disabled
        source-routing                          disabled
        cli-more                                disabled
        terminal-height                         24
        debug-timeout                           0
        trap-event-lifetime                     0
        ids-syslog-facility                     -1
        options
        default-v6-gateway                      ::
        ipv6-signaling-mtu                      1500
        ipv4-signaling-mtu                      1500
        cleanup-time-of-day                     00:00
        snmp-engine-id-suffix
        snmp-agent-mode                         v1v2
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2014-06-04 11:03:23
translation-rules
        id                                      strip1
        type                                    delete
        add-string
        add-index                               0
        delete-string                           1
        delete-index                            0
        last-modified-by                        admin@172.18.0.119
        last-modified-date                      2015-04-15 13:50:13
```

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