

**Configuration Guide for
Google CCAI Call Recording
Using Oracle E-SBC Acme
Packet 3900 SCZ9.3.0 GA
(Build 46)**



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1 Audience

This document is intended for the SIP Trunk customer's technical staff and Value-Added Reseller (VAR) having installation and operational responsibilities.

1.1 Introduction

This configuration guide describes configuration steps for **Google CCAI Call Recording** using **Oracle Enterprise Session Border Controller Acme Packet 3900 SCZ9.3.0 GA (Build 46)**

1.1.1 TekVizion Labs

TekVizion Labs™ is an independent testing and verification facility offered by TekVizion, Inc. TekVizion Labs offers several types of testing services including:

- Remote Testing – provides secure, remote access to certain products in TekVizion Labs for pre-Verification and ad hoc testing.
- Verification Testing – Verification of interoperability performed on-site at TekVizion Labs between two products or in a multi-vendor configuration.
- Product Assessment – independent assessment and verification of product functionality, interface usability, assessment of differentiating features as well as suggestions for added functionality, stress, and performance testing, etc.

TekVizion is a systems integrator specifically dedicated to the telecommunications industry. Our core services include consulting/solution design, interoperability/Verification testing, integration, custom software development and solution support services. Our services help service providers achieve a smooth transition to packet-voice networks, speeding delivery of integrated services. While we have expertise covering a wide range of technologies, we have extensive experience surrounding our practice areas which include SIP Trunking, Packet Voice, Service Delivery, and Integrated Services.

The TekVizion team brings together experience from the leading service providers and vendors in telecom. Our unique expertise includes legacy switching services and platforms, and unparalleled product knowledge, interoperability, and integration experience on a vast array of VoIP and other next-generation products. We rely on this combined experience to do what we do best: help our clients advance the rollout of services that excite customers and result in new revenues for the bottom line. TekVizion leverages this real-world, multi-vendor integration and test experience and proven processes to offer services to vendors, network operators, enhanced service providers, large enterprises and other professional services firms. TekVizion's headquarters, along with a state-of-the-art test lab and Executive Briefing Center, is located in Plano, Texas.

For more information on TekVizion and its practice areas, please visit [TekVizion Labs website](#).

2 SIP Trunking Network Components

The network for the SIP Trunk reference configuration is illustrated below and is representative of Google CCAI Call Recording with Oracle Enterprise Session Border Controller (E-SBC) Acme Packet 3900 configuration.

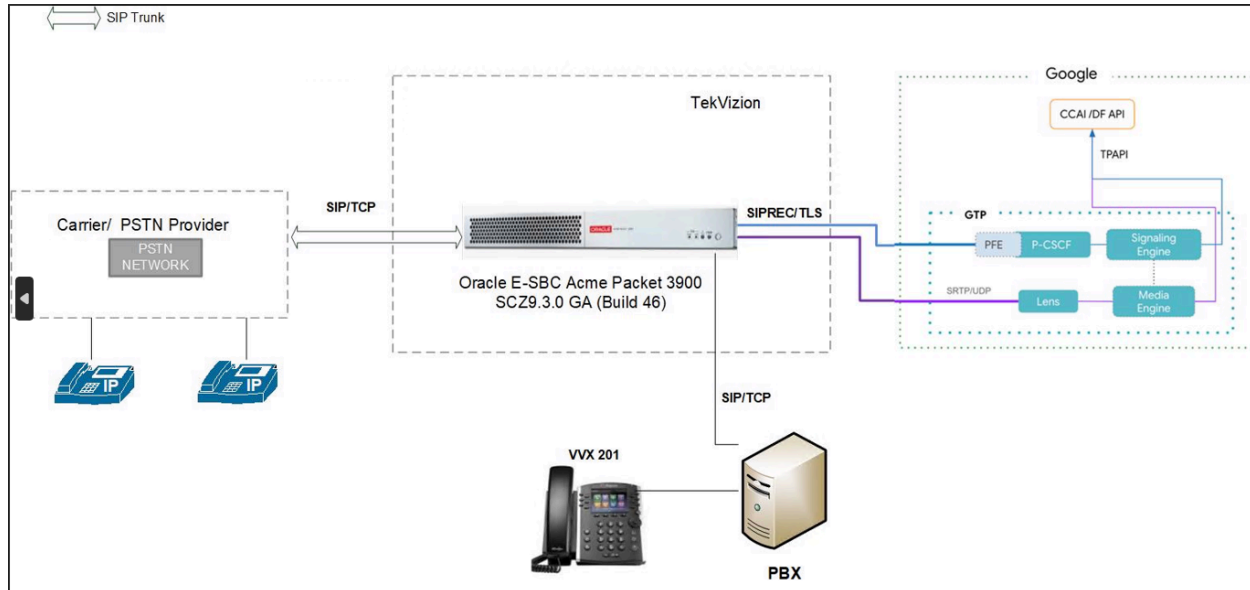


Figure 1: SIP Trunk Lab Reference Network.

The lab network consists of the following components.

- Google CCAI cloud Environment
- Oracle E-SBC Acme Packet 3900
- OnPrem PBX

3 Hardware Components

- Oracle E-SBC Acme Packet 3900

4 Software Requirements

- Oracle E-SBC Acme Packet 3900 SC9.3.0 GA (Build46)

5 Features

5.1 Features tested for Google CCAI Call Recording

- Basic Inbound calls
- Call Hold and Resume
- Call Transfer
- Conference

5.2 Features Not tested for Google CCAI Call Recording

- None

5.3 Caveats and Limitations

DTLS	DTLS towards Google CCAI is not tested
------	--

6 Configuration

6.1 Configuration Checklist

Below are the steps that are required to configure Oracle E-SBC.

Table 1 – Oracle E-SBC Configuration Steps

Step	Description	Reference
Step 1	Media Manager	Section 6.4.1
Step 2	Physical Interface	Section 6.4.2
Step 3	Network Interface	Section 6.4.3
Step 4	SIP Config	Section 6.4.4
Step 5	System-Config	Section 6.4.5
Step 6	SIP Monitoring	Section 6.4.6
Step 7	HTTP Server	Section 6.4.7
Step 8	Codec Policy	Section 6.4.8
Step 9	Translation Rules	Section 6.4.9
Step 10	Session Translation	Section 6.4.10
Step 11	Session Recording Server	Section 6.4.11
Step 12	Realm Config	Section 6.4.12
Step 13	Steering Pool	Section 6.4.13
Step 14	SDES Profile	Section 6.4.14
Step 15	Media Sec Policy	Section 6.4.15
Step 16	TLS – Certificate Record	Section 6.4.16
Step 17	TLS – TLS Profile	Section 6.4.17
Step 18	Session Timer	Section 6.4.18
Step 19	SIP Interface	Section 6.4.19
Step 20	Session Agent	Section 6.4.20
Step 21	Local Policy	Section 6.4.21
Step 22	SIP Manipulation	Section 6.4.22

6.2 IP Address Worksheet

The specific values listed in the table below and in subsequent sections are used in the lab configuration described in this document are for **illustrative purposes only**.

Table 3 - IP Address Worksheet

Component	IP Address
Google CCAI	
Signaling	tekvision.telephony.goog:5672
Media	74.125.X.X
OnPrem PBX	
LAN IP Address	172.16.29.18
Oracle E-SBC	
LAN IP Address	10.80.X.X
WAN IP Address	192.65.X.X

6.3 Google CCAI API Configuration

Below link can be referred to configure Google CCAI API configuration for Call recording.

-----Link to be provided by Google team-----

6.4 Oracle E-SBC Configuration

The following is the example configuration of Oracle E-SBC for Google CCAI Call Recording.

6.4.1 Media Manager

- Media-Manager handles the media stack required for SIP sessions on the E-SBC. Media Manager is configured as shown below
- Navigate to **Configuration** ☐ **media-manager** ☐ **media-manager**

The screenshot displays the 'Configuration' page of the Oracle E-SBC. On the left, a sidebar lists various configuration categories: 'media-manager' (highlighted with a red box), 'codec-policy', 'media-policy', 'realm-config', 'steering-pool', 'security', 'session-router', and 'system'. The main area is titled 'Modify Media Manager'. It contains several configuration fields:

Property	Value	Range/Options
State	<input checked="" type="checkbox"/> enable	
Flow Time Limit	86400	(Range: 0..999999999)
Initial Guard Timer	300	(Range: 0..999999999)
Subsq Guard Timer	300	(Range: 0..999999999)
TCP Flow Time Limit	86400	(Range: 0..999999999)
TCP Initial Guard Timer	300	(Range: 0..999999999)
TCP Subsq Guard Timer	300	(Range: 0..999999999)
Hnt Rtcp	<input type="checkbox"/> enable	
Algd Log Level	NOTICE	
Mbcd Log Level	NOTICE	
Options	audio-allow-asymmetric-pt x	

Figure 2: Media Manager Configuration.

Configuration

View Configuration

Q

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Media Manager

Red Sync Start Time

5000

(Range: 0..65535)

Red Sync Comp Time

1000

(Range: 0..4294967295)

Media Policing

☒ enable

Max Arp Rate

10

(Range: 0..100)

Max Signaling Packets

0

(Range: 0..4294967295)

Max Untrusted Signaling

100

(Range: 0..100)

Min Untrusted Signaling

30

(Range: 0..100)

Dos Guard Window

5

(Range: 1..30)

Untrusted Minor Threshold

0

(Range: 0..100)

Untrusted Major Threshold

0

(Range: 0..100)

Untrusted Critical Threshold

0

(Range: 0..100)

Trusted Minor Threshold

0

(Range: 0..100)

Untrusted Drop Threshold

0

(Range: 0..100)

Trusted Drop Threshold

0

(Range: 0..100)

Acl Monitor Window

30

(Range: 5..3600)

Trap On Demote To Deny

☐ enable

Trap On Demote To Untrusted

☐ enable

Syslog On Demote To Deny

☐ enable

Syslog On Demote To Untrusted

☐ enable

Anonymous Sdp

☐ enable

Reactive Transcoding

☐ enable

Translate Non Rfc2833 Event

☐ enable

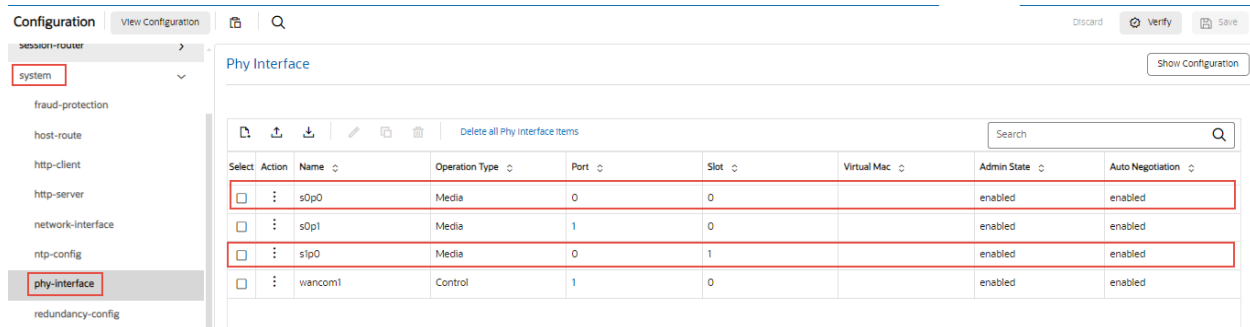
Xcode Fax Max Rate

14400

Figure 3: Media Manager Configuration Cont.

6.4.2 Physical Interface

- Navigate to **Configuration** ☐ **system** ☐ **phy-interface**.
- Configure Physical interface towards Google CCAI, OnPrem PBX and PSTN Gateway as shown below.

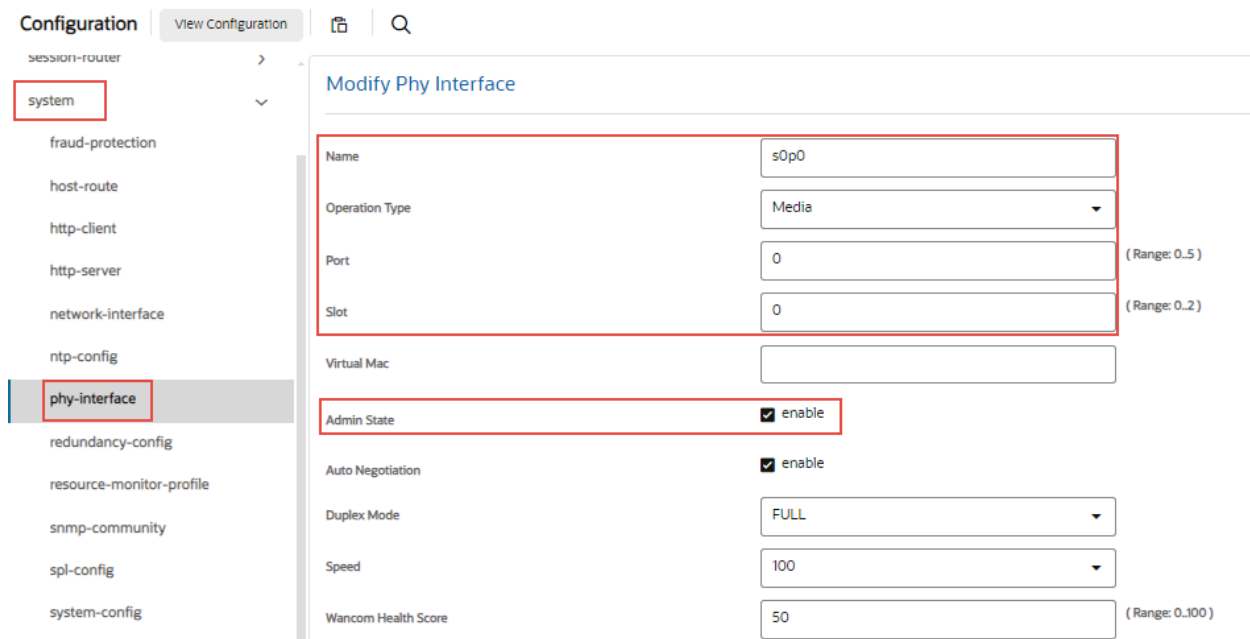


The screenshot shows the 'Configuration' page with the 'system' and 'phy-interface' sections highlighted in the left sidebar. The main area displays a table titled 'Phy Interface' with the following data:

Select	Action	Name	Operation Type	Port	Slot	Virtual Mac	Admin State	Auto Negotiation
<input type="checkbox"/>	:	s0p0	Media	0	0		enabled	enabled
<input type="checkbox"/>	:	s0p1	Media	1	0		enabled	enabled
<input type="checkbox"/>	:	slp0	Media	0	1		enabled	enabled
<input type="checkbox"/>	:	wancom1	Control	1	0		enabled	enabled

Figure 4: Physical Interfaces.

- The interface designated towards Google CCAI is named as s0p0 (Slot 0, port 0).



The screenshot shows the 'Modify Phy Interface' configuration page for the 's0p0' interface. The 'system' and 'phy-interface' sections are highlighted in the left sidebar. The configuration fields are as follows:

Name	s0p0
Operation Type	Media
Port	0 (Range: 0.5)
Slot	0 (Range: 0.2)
Virtual Mac	
Admin State	<input checked="" type="checkbox"/> enable
Auto Negotiation	<input checked="" type="checkbox"/> enable
Duplex Mode	FULL
Speed	100
Wancom Health Score	50 (Range: 0.100)

Figure 5: Physical Interface towards Google CCAI.

- The interface designated towards PSTN Gateway and OnPrem PBX are named as s1p0 (Slot 1, port 0).

Configuration View Configuration

media-manager >
security >
session-router >
system >
fraud-protection
host-route
http-client
http-server
network-interface
ntp-config
phy-interface
redundancy-config
resource-monitor-profile
snmp-community

Modify Phy Interface

Name	s1p0
Operation Type	Media
Port	0 (Range: 0..5)
Slot	1 (Range: 0..2)
Virtual Mac	
Admin State	<input checked="" type="checkbox"/> enable
Auto Negotiation	<input checked="" type="checkbox"/> enable
Duplex Mode	FULL
Speed	100
Wancom Health Score	50 (Range: 0..100)

Figure 6: Physical Interface towards PSTN Gateway and OnPrem PBX.

6.4.3 Network Interface

- Navigate to **Configuration** > **system** > **network-interface**.
- Configure network interface towards Google CCAI, OnPrem PBX and PSTN Gateway as shown below

ORACLE Enterprise Session Border Controller

AP9900-IPC 10.70.59.140 SC29.3.0 GA (Build 46) Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

system >
capture-receiver
fraud-protection
host-route
http-client
http-server
ipt-config
memory-leak-tracker
network-interface

Network Interface

Show Configuration

Select	Action	Name	Sub Port Id	Description	Hostname	IP Address	Pri Utility Addr
<input type="checkbox"/>	:	s0p0	0	Google CC Interface	sbc10.	192.65.	
<input type="checkbox"/>	:	s1p0	0	PSTN_GoogleCC		10.80.11.21	

Figure 7: Network Interfaces.

- Configure Network interface towards Google CCAI as shown below.

ORACLE Enterprise Session Border Controller

AP9900-IPC 10.70.59140 SC29.3.0 GA (Build 46)

Dashboard Configuration Monitor and Trace Widgets System

Configuration View Configuration

system

capture-receiver

fraud-protection

host-route

http-client

http-server

ipt-config

memory-leak-tracker

network-interface

network-parameters

ntp-config

phy-interface

redundancy-config

resource-monitor-profile

resource-monitor-profile

Modify Network Interface

Show Advanced Show Configuration

Name s0p0

Sub Port Id 0 (Range: 0..4095)

Description Google CC Interface

Hostname stc10.

IP Address 192.65.

Pri Utility Addr

Sec Utility Addr

Netmask 255.255.255.128

Gateway 192.65.

Figure 8: Network Interface towards Google CCAI.

Configuration View Configuration

system

capture-receiver

fraud-protection

host-route

http-client

http-server

ipt-config

memory-leak-tracker

network-interface

network-parameters

ntp-config

phy-interface

redundancy-config

resource-monitor-profile

resource-monitor-profile

Modify Network Interface

Show Advanced Show Configuration

Gw Heartbeat

State enable

Heartbeat 10 (Range: 0..65535)

Retry Count 3 (Range: 0..65535)

Retry Timeout 3 (Range: 1..65535)

Health Score 0 (Range: 0..100)

Bfd Config

State enable

Health Score 0 (Range: 0..100)

Options

Bfd Session

DNS IP Primary 8.8.8.8

DNS IP Backup1

DNS IP Backup2

DNS Domain .com

DNS Timeout 11 (Range: 1..999999999)

DNS Max Ttl 86400 (Range: 30..2073600)

Signaling Mtu 0 (Range: 0..4096)

HIP IP List

ICMP Address

SSH Address

Figure 9: Network Interface towards Google CCAI Cont.

- Configure the Network interface towards OnPrem PBX and PSTN Gateway as shown below.

The figure consists of three screenshots of the Oracle Enterprise Session Border Controller configuration interface, showing the 'Modify Network Interface' settings for the 'slp0' interface. The interface is divided into a left sidebar with a tree view of configuration categories and a main content area with various input fields and checkboxes.

Top Screenshot: Shows the 'Modify Network Interface' form with the following fields:

- Name: slp0
- Sub Port Id: 0 (Range: 0..4095)
- Description: PSTN_GoogleCC
- IP Address: 10.80.11.21
- Netmask: 255.255.255.0
- Gateway: 10.80.11.1

Middle Screenshot: Shows the 'Modify Network Interface' form with the following fields:

- State: ☒ enable
- Heartbeat: 10 (Range: 0..65535)
- Retry Count: 3 (Range: 0..65535)
- Retry Timeout: 3 (Range: 1..65535)
- Health Score: 0 (Range: 0..100)
- Bfd Config:
 - State: ☐ enable
 - Health Score: 0 (Range: 0..100)
 - Options: (empty field)
- Bfd Session: No bfd session to display. Please add. (Add button)

Bottom Screenshot: Shows the 'Modify Network Interface' form with the following fields:

- DNS IP Backup2: (empty field)
- DNS Domain: (empty field)
- DNS Timeout: 11 (Range: 1..999999999)
- DNS Max Ttl: 86400 (Range: 30..2073600)
- Signaling Mtu: 0 (Range: 0..4096)
- HIP IP List: 10.80.11.21 x
- ICMP Address: 10.80.11.21 x
- SSH Address: (empty field)
- Tunnel Config: No tunnel config to display. Please add. (Add button)

Figure 10: Network Interface towards OnPrem PBX and PSTN Gateway.

Note: ICMP IP and HIP IP addresses need to be disabled in the production environment.

6.4.4 SIP Config

- Navigate to **Configuration** ☐ **session-router** ☐ **sip-config** for SIP configuration as shown below.

The figure displays three sequential screenshots of the Oracle Enterprise Session Border Controller (ESBC) configuration interface, specifically the 'Modify SIP Config' page. The interface is divided into a left sidebar with a configuration tree and a main content area for configuration parameters.

Screenshot 1 (Top): Shows the 'session-router' configuration page. The 'sip-config' option is highlighted in the left sidebar. The main area displays the 'Modify SIP Config' form with the following visible fields:

- State: ☒ enable
- Dialog Transparency: ☒ enable
- Home Realm ID: GoogleeCC
- Egress Realm ID: (empty)
- Nat Mode: None
- Registrar Domain: *
- Registrar Host: *
- Registrar Port: 5060 (Range: 0.0.0.0-65535)
- Init Timer: 500 (Range: 0.999999999)
- Max Timer: 4000 (Range: 0.999999999)
- Trans Expire: 32 (Range: 0.2147475)

Screenshot 2 (Middle): Shows the 'Modify SIP Config' form with the following visible fields:

- Initial Inv Trans Expire: 0 (Range: 0.2147475)
- Invite Expire: 180 (Range: 0.999999999)
- Session Max Life Limit: 0
- Enforcement Profile: (empty)
- Emergency Discp Profile: (empty)
- Red Max Trans: 10000 (Range: 0.50000)
- Options: max-udp-length=0 x
- SPL Options: (empty)
- SIP Message Len: 65535 (Range: 0.65535)
- Enum Sag Match: ☐ enable
- Extra Method Stats: ☐ enable

Screenshot 3 (Bottom): Shows the 'Modify SIP Config' form with the following visible fields:

- Extra Enum Stats: ☐ enable
- Registration Cache Limit: 0 (Range: 0.999999999)
- Register Use To For Lp: ☐ enable
- Refer Src Routing: ☐ enable
- Atcf Sln Sr: (empty)
- Atcf Pln Dn: (empty)
- Atcf Route To Scas: ☐ enable
- Eatf Sln Sr: (empty)
- Sag Lookup On Redirect: ☐ enable
- Set Disconnect Time On Bye: ☐ enable
- Refer Reinvite No Sdp: ☐ enable

Figure 11: SIP-Config.
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Page 16

Configuration

View Configuration

Q

Discard

Verify

Save

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

Modify SIP Config

Show Advanced

Show Configuration

Transcoding Realm

Transcoding Agents

Create Dynamic Sa

Node Functionality

Match SIP Instance

Sa Routes Stats

Sa Routes Traps

Rx SIP Reason Mapping

Add Ue Location In Para

Hold Emergency Calls For Loc Info

Retry After Upon Offline

☐ enable

P-CSCF

☐ enable

☐ enable

☐ enable

inherit

0

0

(Range: 0.4294967295)

(Range: 0.999999999)

Configuration

View Configuration

Q

Discard

Verify

Save

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

Modify SIP Config

Show Advanced

Show Configuration

Reg Reject Response Upon Offline

Hold Invite Calls For Loc Info

Cache Loc Info Expire

Max Hold For Loc Info

Np1i Upon Register

Start Hold Timer Event

Hist To Div For Cause 380

Anonymize History For Untrusted

Asymm Preconditions Evs Swb Support

Sms Report Timeout

User Agent

503

0

32

0

inherit

AAR

inherit

☐ enable

☐ enable

32

(Range: 0.4294967295)

(Range: 0.4294967295)

(Range: 0.30)

(Range: 1.100000)

Configuration

View Configuration

Q

Discard

Verify

Save

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

Modify SIP Config

Show Advanced

Show Configuration

Start Hold Timer Event

Hist To Div For Cause 380

Anonymize History For Untrusted

Asymm Preconditions Evs Swb Support

Sms Report Timeout

User Agent

Precondition Enhancement

Precondition Med Enhancement

Internal 503 Threshold

Internal 503 Lower Threshold

503 Alarm Monitoring Time

AAR

inherit

☐ enable

☐ enable

32

(Range: 1.100000)

☐ enable

☐ enable

0

40

15

(Range: 0.100)

(Range: 1.95)

(Range: 5.600)

OK

Delete

Figure 12: SIP-Config Cont.

6.4.5 System-Config

- Navigate to **Configuration** > **system** > **system-config** for system configuration as shown below.

The screenshot displays the Oracle Enterprise Session Border Controller configuration interface. The top navigation bar includes the Oracle logo, version information (AP3900-IPC 10.70.59140 SC29.3.0 GA (Build 46)), and tabs for Dashboard, Configuration, Monitor and Trace, Widgets, and System. The 'Configuration' tab is active, and the left sidebar shows the navigation tree with 'system' > 'system-config' selected. The main content area is titled 'Modify System Config' and contains several sections for configuring system parameters.

System Configuration Fields:

- Hostname: Oracle
- Description: SBC connecting PSTN SIP trunk to Google SIP Voice
- Location: Plano, TX
- Mib System Contact:
- Mib System Name:
- Mib System Location:
- Acp TLS Profile:
- Disable Garp Out Of Subnet: ☐ enable
- SNMP Enabled: ☒ enable
- Enable SNMP Auth Traps: ☐ enable

SNMP Configuration:

- Enable SNMP Syslog Notify: ☐ enable
- Enable SNMP Monitor Traps: ☐ enable
- Enable SNMP TLS Srp Traps: ☐ enable
- Enable Env Monitor Traps: ☐ enable
- Enable Mib_tracking: ☐ enable
- Enable L2 Miss Report: ☒ enable

Syslog Servers:

No syslog server to display. Please add.

System Log Level: CRITICAL

Process Log Level: CRITICAL

Collect Section:

- Sample Interval: 5 (Range: 1,120)
- Push Interval: 15 (Range: 1,120)
- Boot State: ☐ enable
- Push Receiver: No push receiver to display. Please add.

Group Settings:

No group settings to display. Please add.

Schedule Backup:

- Admin State: ☐ enable

Figure 13: System-Config.
Property of TekVizion Labs
Page 18

Configuration

View Configuration

Q

Discard

Verify

Save

session-router

>

system

>

fraud-protection

host-route

http-client

http-server

network-interface

ntp-config

phy-interface

redundancy-config

resource-monitor-profile

snmp-community

spl-config

system-config

tdm-config

Modify System Config

Show Advanced

Show Configuration

Config Backup

Admin State

☐ enable

Interval

weekly

(Range: 5..30)

Retry Interval

5

(Range: 5..30)

Retry Count

5

(Range: 2..10)

Push Failure Alarm

☒ enable

Push Receiver

No push receiver to display. Please add.

Add

Comm Monitor

State

☐ enable

Configuration

View Configuration

Q

Discard

Verify

Save

session-router

>

system

>

fraud-protection

host-route

http-client

http-server

network-interface

ntp-config

phy-interface

redundancy-config

resource-monitor-profile

snmp-community

spl-config

system-config

tdm-config

Modify System Config

Show Advanced

Show Configuration

Sbc Grp Id

0

(Range: 0..999999999)

TLS Profile

QoS Enable

☒ enable

Interim QoS Update

☐ enable

Monitor Collector

No monitor collector to display. Please add.

Add

Options

Call Trace

☐ enable

Default Gateway

10.70.59.1

Restart

☒ enable

Configuration

View Configuration

Q

Discard

Verify

Save

session-router

>

system

>

fraud-protection

host-route

http-client

http-server

network-interface

ntp-config

phy-interface

redundancy-config

resource-monitor-profile

snmp-community

spl-config

system-config

tdm-config

Modify System Config

Show Advanced

Show Configuration

Telnet Timeout

0

(Range: 0..65535)

Console Timeout

0

(Range: 0..65535)

HTTP Timeout

5

(Range: 0..20)

Reserved Nsep Session Capacity

0

(Range: 0..100)

Alarm Threshold

No alarm threshold to display. Please add.

Add

Source Routing

☐ enable

Debug Timeout

0

(Range: 0..65535)

Ecc Chk Pkt

☐ enable

Log TLS Key

☐ enable

Figure 14: System-Config Cont.

Configuration View Configuration

session-router

system

fraud-protection

host-route

http-client

http-server

network-interface

ntp-config

phy-interface

redundancy-config

resource-monitor-profile

snmp-community

spl-config

system-config

tdm-config

trap-receiver

Show All

Modify System Config

IPv6 Signaling Mtu: 1500 (Range: 1280..4096)

IPv4 Signaling Mtu: 1500 (Range: 576..4096)

Directory Cleanup

No directory cleanup to display. Please add or upload directory cleanup.

Add Upload

SNMP Rate Limit: 0 (Range: 0..9999)

HttpClient Max Total Conn: 500 (Range: 0..2147483647)

HttpClient Max Cpu Load: 70 (Range: 30..90)

HttpClient Cache Size Multiplier: 16 (Range: 4..50)

HTTP ClearDead Conn Timer: 0 (Range: 0..86400)

Resource Monitoring: ☐ enable

OK Delete

Figure 15: System-Config Cont.

6.4.6 SIP Monitoring

- Navigate to **Configuration** **session-router** **sip-monitoring** and configure SIP monitoring for capturing trace as shown below.

ORACLE Enterprise Session Border Controller

AP3900-IPC 1070.59140 SCZ9.3.0 GA (Build 46)

Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

system

Show All

Modify SIP Monitoring

Match Any Filter: ☒ enable

State: ☒ enable

Short Session Duration: 0 (Range: 0..999999999)

Monitoring Filters: * x

Interesting Events

No interesting event to display. Please add.

Add

Trigger Window: 30 (Range: 0..999999999)

OK Delete

Figure 16: SIP Monitoring.

6.4.7 HTTP Server

- Navigate to **Configuration** > **system** > **http-server** and configure HTTP Server for GUI access to Oracle SBC as shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar lists various configuration categories, with 'system' and 'http-server' highlighted. The main panel is titled 'Modify HTTP Server'. It contains several fields: 'Name' (wancom0), 'State' (checked 'enable'), 'Realm' (empty), 'IP Address' (empty), 'HTTP State' (checked 'enable'), 'HTTP Port' (80, range 1-65535), 'HTTP Strict Transport Security Policy' (unchecked 'enable'), 'HTTPS State' (unchecked 'enable'), 'HTTPS Port' (443, range 1-65535), 'HTTP Interface List' (REST x, GUI x), and 'HTTP File Upload Size' (0, range 0-999). There are 'OK' and 'Back' buttons at the bottom.

Figure 17: HTTP Server.

6.4.8 Codec Policy

- Navigate to **Configuration** > **media-manager** > **codec-policy** and configure codec policy for Google CCAI as shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar lists various configuration categories, with 'media-manager' and 'codec-policy' highlighted. The main panel is titled 'Modify Codec Policy Entries'. It contains several fields: 'Name' (GoogleCC), 'Allow Codes' (PCMU x), 'Add Codes On Egress' (empty), 'Order Codes' (empty), 'Packetization Time' (20), 'Force Ptme' (unchecked 'enable'), 'Secure Dtmf Cancellation' (unchecked 'enable'), 'Dtmf In Audio' (disabled), 'Tone Detection' (empty), 'Tone Detect Renegotiate Timer' (500, range 50-32000), and 'Reverse Fax Tone Detection Reinvite' (unchecked 'enable'). There are 'OK' and 'Back' buttons at the bottom.

Figure 18: Codec Policy for Google CCAI.

6.4.9 Translation Rules

- Navigate to **Configuration** ☐ **session-router** ☐ **translation-rules** and **configure translation rules** for Google CCAI as shown below.
- Translation rule is created to send E.164 number format towards Google CCAI.

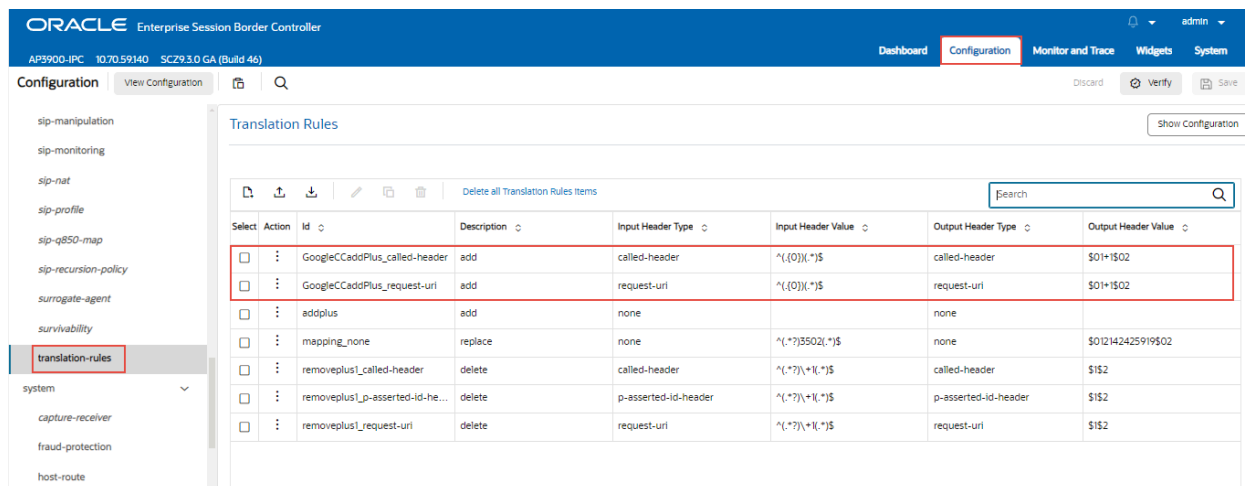


Figure 19: Translation Rule to add send E.164 towards Google CCAI.

6.4.10 Session Translation

- Navigate to **Configuration** ☐ **session-router** ☐ **session-translation**. The translation rules configured in [Section 6.4.9](#) is mapped to Google CCAI is shown below.

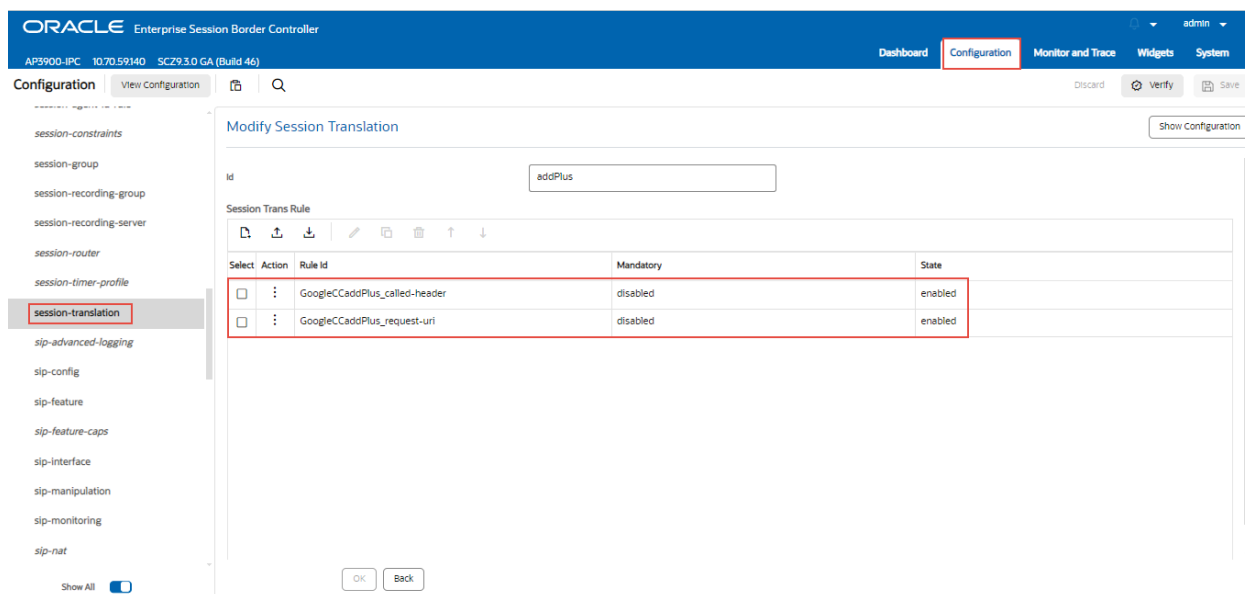


Figure 20: Session Translation towards Google CCAI.

6.4.11 Session Recording Server

- Navigate to **Configuration** ☐ **session-router** ☐ **session-recording-server** and select the destination as Google FQDN
- SIPREC profile for Google CCAI is created using the Session Recording Server

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar lists various configuration categories, with 'session-recording-server' highlighted. The main area displays the 'Modify Session Recording Server' form. The form contains the following fields:

Field	Value
Name	GoogleCCAI
Description	GoogleCCAI
Realm	GoogleCC
Mode	selective
Destination	tekvision.telephony.goog
Port	5672
Transport Method	StaticTLS
Force Parity	<input type="checkbox"/> enable
Ping Method	OPTIONS
Ping Interval	60

Figure 21: Session Recording Server towards Google CCAI.

6.4.12 Realm Config

- Navigate to **Configuration** ☐ **media-manager** ☐ **realm-config**.
- Realm Config towards Google CCAI is shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar lists various configuration categories, with 'realm-config' highlighted. The main area displays the 'Modify Realm Config' form. The form contains the following fields:

Field	Value
Identifier	GoogleCC
Description	GoogleCC
Addr Prefix	0.0.0.0
Network Interfaces	s0p0:0.4 x
Media Realm List	
Mm In Realm	<input checked="" type="checkbox"/> enable
Mm In Network	<input checked="" type="checkbox"/> enable
Mm Same Ip	<input checked="" type="checkbox"/> enable
QoS Enable	<input checked="" type="checkbox"/> enable
Max Bandwidth	0

Figure 22: Realm Config towards Google CCAI.

media-manager
codecs-policy
media-manager
media-policy
realm-config
steering-pool
security
session-router
system

Modify Realm Config

Show Advanced ☒ Show Configuration

Max Priority Bandwidth
0
(Range: 0.999999999)

Parent Realm

DNS Realm

Media Policy

Nsep Media Policy

Media Sec Policy
SRTP

RTCP Mux
☐ enable

Ice Profile

Teams Fqdn

Teams Fqdn In Uri
☐ enable

SDP Inactive Only
☐ enable

DTLS Srtp Profile

media-manager
codecs-policy
media-manager
media-policy
realm-config
steering-pool
security
session-router
system

Modify Realm Config

Show Advanced ☒ Show Configuration

SDP Inactive Only
☐ enable

DTLS Srtp Profile

Srtp Mm Passthrough
☐ enable

Class Profile

In Session Translations

No in session translation list to display. Please add.

Add

Out Session Translations

Select	Action	Out Session Translation Id	State
<input type="checkbox"/>	addPlus		enabled

Configuration
View Configuration
Discard
verify
Save

media-manager
codecs-policy
media-manager
media-policy
realm-config
steering-pool
security
session-router
system

Modify Realm Config

Show Advanced ☒ Show Configuration

Displaying 1 - 1 of 1

In ManipulationId

Out ManipulationId
GoogleCCAI

Average Rate Limit
0
(Range: 0.4294967295)

Access Control Trust Level
high

Max Inbound Per Session Burst Rate
30
(Range: 1.999999999)

Burst Rate Window Per Session
1
(Range: 1.999999999)

Dos Action At Session
none

Invalid Signal Threshold
0
(Range: 0.4294967295)

Maximum Signal Threshold
0
(Range: 0.4294967295)

Untrusted Signal Threshold
0
(Range: 0.4294967295)

Nat Trust Threshold
0
(Range: 0.65535)

Figure 23: Realm Config towards Google CCAI Cont.

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

Max Endpoints Per Nat	0	(Range: 0..65535)
Nat Invalid Message Threshold	0	(Range: 0..65535)
Wait Time For Invalid Register	0	(Range: 0.4..300)
Deny Period	30	(Range: 0.4294967295)
Session Max Life Limit	0	
Untrust Cac Failure Threshold	0	(Range: 0.4294967295)
Subscription Id Type	END_USER_NONE	
Trunk Context		
Early Media Allow		
Enforcement Profile		
Additional Prefixes		

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

Restricted Latching	none	
Options		
SPL Options		
Delay Media Update	<input type="checkbox"/> enable	
Refer Call Transfer	disabled	
Hold Refer Reinvite	<input type="checkbox"/> enable	
Refer Notify Provisional	none	
Dyn Refer Term	<input type="checkbox"/> enable	
Codec Policy	GoogleCC	
Codec ManIP In Realm	<input type="checkbox"/> enable	
Codec ManIP In Network	<input checked="" type="checkbox"/> enable	
RTCP Policy		

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

Constraint Name		
Session Recording Server		
Session Recording Required	<input type="checkbox"/> enable	
SIP Profile		
Flow Time Limit	-1	(Range: -1.2147483647)
Initial Guard Timer	-1	(Range: -1.2147483647)
Subsq Guard Timer	-1	(Range: -1.2147483647)
TCP Flow Time Limit	-1	(Range: -1.2147483647)
TCP Initial Guard Timer	-1	(Range: -1.2147483647)
TCP Subsq Guard Timer	-1	(Range: -1.2147483647)
SIP Isup Profile		

Figure 24: Realm Config towards Google CCAI Cont.

Configuration View Configuration Discard Verify Save

media-manager ▼
 codec-policy
 media-manager
 media-policy
realm-config
 steering-pool
 security >
 session-router >
 system >

Modify Realm Config Show Advanced Show Configuration

No auth attributes to display. Please add.
Add

Fqdn Hostname
 Fqdn Hostname In Header
 P Asserted Identity
 P Asserted Identity For
 Steering Pool Threshold (Range: 0.100)
 Steering Pool Lower Threshold (Range: 1.95)
 Steering Pool Alarm Monitoring Time (Range: 5.600)
 Suppress Hold Resume Reinvite ☐ enable
 SNMP Sipmethod Stats ☐ enable

OK Back

Show All ☐

Figure 25: Realm Config towards Google CCAI Cont.

- Realm Config towards OnPrem PBX and PSTN Gateway is shown below.

Configuration View Configuration Discard Verify Save

media-manager ▼
 codec-policy
 media-manager
 media-policy
realm-config
 steering-pool
 security >
 session-router >
 system >

Modify Realm Config Show Advanced Show Configuration

Identifer
 Description
 Addr Prefix
 Network Interfaces
 Media Realm List
 Mm In Realm ☒ enable
 Mm In Network ☒ enable
 Mm Same Ip ☒ enable
 QoS Enable ☒ enable
 Max Bandwidth (Range: 0.999999999)

Configuration View Configuration Discard Verify Save

media-manager ▼
 codec-policy
 media-manager
 media-policy
realm-config
 steering-pool
 security >
 session-router >
 system >

Modify Realm Config Show Advanced Show Configuration

Parent Realm
 DNS Realm
 Media Policy
 Nsep Media Policy
 Media Sec Policy
 RTCP Mux ☐ enable
 Ice Profile
 Teams Fqdn
 Teams Fqdn In Uri ☐ enable
 SDP Inactive Only ☐ enable
 DTLS Srp Profile

Figure 26: Realm Config towards OnPrem PBX and PSTN Gateway.

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

In ManipulationId		
Out ManipulationId		
Average Rate Limit	0	(Range: 0.4294967295)
Access Control Trust Level	none	
Max Inbound Per Session Burst Rate	30	(Range: 1.999999999)
Burst Rate Window Per Session	1	(Range: 1.999999999)
Dos Action At Session	none	
Invalid Signal Threshold	0	(Range: 0.4294967295)
Maximum Signal Threshold	0	(Range: 0.4294967295)
Untrusted Signal Threshold	0	(Range: 0.4294967295)
Nat Trust Threshold	0	(Range: 0.65535)

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

Wait Time For Invalid Register	0	(Range: 0.4.300)
Deny Period	30	(Range: 0.4294967295)
Session Max Life Limit	0	
Untrust Cac Failure Threshold	0	(Range: 0.4294967295)
Subscription Id Type	END_USER_NONE	
Trunk Context		
Early Media Allow		
Enforcement Profile		
Additional Prefixes		
Restricted Latching	none	
Options		

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

Options	
SPL Options	
Delay Media Update	<input type="checkbox"/> enable
Refer Call Transfer	disabled
Hold Refer Reinvite	<input type="checkbox"/> enable
Refer Notify Provisional	none
Dyn Refer Term	<input type="checkbox"/> enable
Codec Policy	GoogleCC
Codec ManIP In Realm	<input type="checkbox"/> enable
Codec ManIP In Network	<input checked="" type="checkbox"/> enable
RTCP Policy	

Figure 27: Realm Config towards OnPrem PBX and PSTN Gateway Cont.

Configuration

View Configuration

Q

Discard

verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

RTCP Policy

Constraint Name

Session Recording Server

GoogleCCAI x

Session Recording Required

enable

SIP Profile

Flow Time Limit

-1

(Range: -1,2147483647)

Initial Guard Timer

-1

(Range: -1,2147483647)

Subsq Guard Timer

-1

(Range: -1,2147483647)

TCP Flow Time Limit

-1

(Range: -1,2147483647)

TCP Initial Guard Timer

-1

(Range: -1,2147483647)

TCP Subsq Guard Timer

-1

(Range: -1,2147483647)

Configuration

View Configuration

Q

Discard

verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

SIP Sup Profile

QoS Constraint

Hide Egress Media Update

enable

TCP Media Profile

Monitoring Filters

Node Functionality

Default Location String

Alt Family Realm

Pref Addr Type

none

Sm Icsi Match For Invite

Sm Icsi Match For Message

Configuration

View Configuration

Q

Discard

verify

Save

media-manager

codecs-policy

media-manager

media-policy

realm-config

steering-pool

security

session-router

system

Modify Realm Config

Show Advanced

Show Configuration

No auth attributes to display. Please add.

Add

Fqdn Hostname

Fqdn Hostname In Header

P Asserted Identity

P Asserted Identity For

Steering Pool Threshold

0

(Range: 0,300)

Steering Pool Lower Threshold

70

(Range: 1,95)

Steering Pool Alarm Monitoring Time

15

(Range: 5,600)

Suppress Hold Resume Reinvite

enable

SNMP Sipmethod Stats

enable

OK

Back

Figure 29: Realm Config towards OnPrem PBX and PSTN Gateway Cont.

6.4.13 Steering Pool

- Navigate to **Configuration** > **media-manager** > **steering-pool**.
- Steering pool allows configuration to assign IP address, ports, and a realm.
- Steering Pool Configuration towards OnPrem PBX and PSTN Gateway are shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The 'Configuration' tab is selected, and the 'steering-pool' configuration is being modified. The configuration details are as follows:

Field	Value	Range
IP Address	10.80.11.21	
Start Port	50000	(Range: 0.65535)
End Port	59999	(Range: 0.65535)
Realm ID	PSTN_GoogleCC	
Network Interface	slp0:0.4	
Port Allocation Strategy	mixed	

Figure 30: Steering Pool towards PSTN Gateway and OnPrem PBX.

- Steering Pool Configuration towards Google CCAI is shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The 'Configuration' tab is selected, and the 'steering-pool' configuration is being modified. The configuration details are as follows:

Field	Value	Range
IP Address	192.65.1.1	
Start Port	20000	(Range: 0.65535)
End Port	39999	(Range: 0.65535)
Realm ID	GoogleCC	
Network Interface	sOp0:0.4	
Port Allocation Strategy	mixed	

Figure 31: Steering Pool towards Google CCAI.

6.4.14 SDES Profile

- Navigate to **Configuration** > **Security** > **media-security** > **sdes-profile** and configure SDES profile as shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar contains a tree view with the following items: security, admin-security, auth-params, authentication, authentication-profile, cert-status-profile, certificate-record, factory-accounts, ike, ipsec, local-accounts, media-security, dtls-srtp-profile, media-sec-policy, and sdes-profile. The 'media-security' and 'sdes-profile' items are highlighted with red boxes. The main panel is titled 'Modify Sdes Profile' and contains the following fields: Name (SDES), Crypto List (AES_CM_128_HMAC_SHA1_80), Srtp Auth (enable), Srtp Encrypt (enable), Srtp TCP Encrypt (enable), Mki (enable), Egress Offer Format (same-as-Ingress), Use Ingress Session Params, Options, Key, and Salt. The 'Show Advanced' toggle is turned on, and the 'Show Configuration' button is visible.

Figure 32: SDES Profile for TLS.

6.4.15 Media Sec Policy

- Navigate to **Configuration** > **security** > **media-security** > **media-sec-policy** and configure media security policy as shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar contains a tree view with the following items: security, admin-security, auth-params, authentication, authentication-profile, cert-status-profile, certificate-record, factory-accounts, ike, ipsec, local-accounts, media-security, dtls-srtp-profile, media-sec-policy, and sdes-profile. The 'media-security' and 'media-sec-policy' items are highlighted with red boxes. The main panel is titled 'Modify Media Sec Policy Entries' and contains the following fields: Name (RTP), Pass Through (enable), Options, Inbound (Profile, Mode, Protocol), Hide Egress Media Update (enable), Outbound (Profile, Mode). The 'Show Advanced' toggle is turned on, and the 'Show Configuration' button is visible.

Figure 33: Media Security Policy for RTP.

- SDES profile created in [Section 6.4.14](#) is associated with Media Security Policy for SRTP is shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar has a tree view with 'security' expanded, and 'media-security' > 'media-sec-policy' selected. The main panel is titled 'Modify Media Sec Policy Entries'. It contains two sections: 'Inbound' and 'Outbound'. In the 'Inbound' section, the 'Name' is 'SRTP', 'Pass Through' is 'enable', and 'Options' is empty. The 'Profile' is 'SDES', 'Mode' is 'srtp', and 'Protocol' is 'sdes'. In the 'Outbound' section, the 'Profile' is 'SDES', 'Mode' is 'srtp', and 'Protocol' is 'sdes'. There are 'OK' and 'Back' buttons at the bottom.

Figure 34: Media Security Policy for SRTP.

6.4.16 TLS – Certificate Record

- Certificate Record are configuration elements on Oracle SBC which captures information for a TLS certificate such as common-name, key-size etc.
- Navigate to **Configuration** > **security** > **certificate-record**.
- Create a certificate record for GTS Root R1 for Google CCAI as shown below.

The screenshot shows the Oracle Enterprise Session Border Controller configuration interface. The left sidebar has a tree view with 'security' expanded, and 'certificate-record' selected. The main panel is titled 'Modify Certificate Record'. It contains fields for 'Name' (GTS-Root-R1), 'Country' (US), 'State' (MA), 'Locality' (Burlington), and 'Organization' (Engineering). There are also fields for 'Unit', 'Common Name' (GTS Root R1), and 'Key Size' (2048). The 'Alternate Name' field is empty. The 'Trusted' checkbox is checked, and the 'Key Usage List' is set to 'digitalSignature' and 'keyEncipherment'.

Figure 35: Create Certificate Record for Google CCAI ROOT CA – GTS Root R1.

Configuration View Configuration

media-manager >
security >
authentication-profile >
certificate-record
tls-global
tls-profile
session-router >
system >

Modify Certificate Record

Common Name: GTS Root R1
Key Size: 2048
Alternate Name:
Trusted: ☒ enable
Key Usage List: digitalSignature x keyEncipherment x
Extended Key Usage List: serverAuth x
Key Algorithm: rsa
Digest Algorithm: sha256
Ecdsa Key Size: p256
Cert Status Profile List:
Options:
OK Back Show Advanced Show Configuration

Figure 36: Create Certificate Record for Google CCAI ROOT CA – GTS Root R1 cont.

- Right click on the Certificate Record and Click Import. Import the root certificate stored in the local machine and click Import as shown below.

ORACLE Enterprise Session Border Controller
AP3900-IPC 10.70.59140 SCZ9.3.0 GA (Build 46)

Configuration View Configuration

media-manager >
security >
authentication-profile >
certificate-record
tls-global
tls-profile
session-router >
system >

Certificate Record

PKCS12

Select	Action	Name	Cour
<input type="checkbox"/>	:	BaltimoreRoot	US
<input checked="" type="checkbox"/>	:	GTS-Root-R1	US
<input type="checkbox"/>	:	GTSCA1C3	Edit
<input type="checkbox"/>	:	GlobalSignRoot	Copy
<input type="checkbox"/>	:	GoDaddyClass2	Delete
<input type="checkbox"/>	:	GoDaddyRootC	Generate
<input type="checkbox"/>	:	GoDaddySecur	Import
<input type="checkbox"/>	:	sbcl0	Sort
<input type="checkbox"/>	:	tekvroot	

Figure 37: Import Google CCAI Root Certificate.

Import Certificate

Format: try-all

Import Method: ☒ File ☐ Paste

Certificate File: No file selected.

Figure 37: Import Google CCAI Root Certificate Cont.

- Create a certificate record for GTS CA 1C3 for Google CCAI as shown below. Import the Root certificate for GTS CA 1C3

ORACLE Enterprise Session Border Controller

AP9900-IPC 10.70.59.140 SC29.3.0 GA (Build 46)

Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

media-manager security authentication-profile **certificate-record** tls-global tls-profile session-router system

Modify Certificate Record

Name: GTSCA1C3

Country: US

State: MA

Locality: Burlington

Organization: Engineering

Unit:

Common Name: GTS CA 1C3

Key Size: 2048

Alternate Name:

Trusted: ☒ enable

Key Usage List: digitalSignature x keyEncipherment x

Key Algor: rsa

Digest Algor: sha256

Ecdsa Key Size: p256

Cert Status Profile List:

Options:

Show All ☐ OK Back

Figure 38: Create Certificate Record for Google CCAI – GTS CA 1C3.

Create a certificate record for Oracle E-SBC as shown below.

1. Select the Certificate record and Click **Generate icon** to generate CSR.
2. Get the CSR signed and click **Import** to import the signed certificate.

Figure 39: Create Certificate Record for Oracle E-SBC.

- Similarly create other certificate records for Google CCAI and SBC Root CAs and import the certificates as shown below. The following certificate-records are required on the Oracle SBC to connect with Google CCAI

Select	Action	Name	Country	State	Locality	Organization	Unit	Common Name
<input type="checkbox"/>		BaltimoreRoot	US	TX	Plano	Engineering		Baltimore CyberTrustRoot
<input checked="" type="checkbox"/>		GTS-Root-R1	US	MA	Burlington	Engineering		GTS Root R1
<input checked="" type="checkbox"/>		GTS-CA1C3	US	MA	Burlington	Engineering		GTS CA 1C3
<input type="checkbox"/>		GoDaddyClass2Certificate...	US	Texas	Plano	sbci0 Labs	sbci0	Go Daddy Class 2 Certific...
<input type="checkbox"/>		GoDaddyRootCertificate	US	Texas	Plano	sbci0 Labs	sbci0	Go Daddy Root Certificate...
<input type="checkbox"/>		GoDaddySecureCertificate...	US	Texas	Plano	sbci0 Labs	sbci0	Go Daddy Secure Certific...
<input type="checkbox"/>		sbci0	US	Texas	Plano	sbci0 Labs	sbci0	sbci0: Labs.com

Figure 40: Certificate Records.

6.4.17 TLS – TLS Profile

- A TLS profile configuration on the SBC allows for specific certificates to be assigned.
- Navigate to **Configuration** > **security** > **tls-profile**
- Create a TLS profile for Google CCAI as shown below

ORACLE Enterprise Session Border Controller

AP3900-IPC 10.70.59140 SCZ93.0 GA (Build 46)

Dashboard Configuration Monitor and Trace Widgets System

Configuration View Configuration

media-manager

security

authentication-profile

certificate-record

tls-global

tls-profile

session-router

system

Modify TLS Profile

Show Advanced Show Configuration

Name GoogleCAI

End Entity Certificate sbci0

Trusted Ca Certificates GTS-Root-R1 x GlobalSignRootCA x GTSCAIC3 x

Cipher List TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 x TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 x

Verify Depth 10 (Range: 0..10)

Mutual Authenticate enable

TLS Version tlsv12

Options

Show All

OK Back

Figure 41: TLS Profile.

6.4.18 Session Timer

- Navigate to **Configuration** > **session-router** > **session-timer-profile**.
- Configure session timer for Google CCAI as shown below.

ORACLE Enterprise Session Border Controller

AP3900-IPC 10.70.59140 SCZ93.0 GA (Build 46)

Dashboard Configuration Monitor and Trace Widgets System

Configuration View Configuration

service-health

session-agent

session-agent-id-rule

session-constraints

session-group

session-recording-group

session-recording-server

session-router

session-timer-profile

session-translation

sip-advanced-logging

Modify Session Timer Profile

Show Advanced Show Configuration

Name SessionTimer

Session Expires 900 (Range: 64..999999999)

Min Se 90 (Range: 64..999999999)

Force Reinvite enable

Request Refresher uac

Response Refresher uas

Show All

Figure 42: Session Timer.

6.4.19 SIP Interface

- Navigate to **Configuration** **session-router** **sip-interface**.
- Create SIP interface towards PSTN Gateway and OnPrem PBX by adding SIP Ports as shown below

The figure consists of three screenshots of the Oracle Enterprise Session Border Controller configuration interface, specifically the 'Modify SIP Interface' page. The interface is divided into a left sidebar with a navigation menu and a main content area.

Screenshot 1 (Top): Shows the 'Modify SIP Interface' page with the 'sip-interface' selected in the sidebar. The 'State' is set to 'enable'. The 'Realm ID' is 'PSTN_GoogleCC' and the 'Description' is 'PSTN_GoogleCC'. The 'SIP Ports' table has one entry: 10.80.11.21 on port 5060 using TCP, with 'agents-only' allowed.

Select	Action	Address	Port	Transport Protocol	TLS Profile	Allow Anonymous	Multi Home Addr
<input type="checkbox"/>		10.80.11.21	5060	TCP		agents-only	

Screenshot 2 (Middle): Shows the 'Modify SIP Interface' page with the 'Secured Network' section expanded. The 'SIP Dynamic Hnt' is set to 'enable'. The 'TCP Max Nat Interval' is 3600, 'TCP Nat Int Increment' is 10, and 'TCP Nat Test Increment' is 30.

Screenshot 3 (Bottom): Shows the 'Modify SIP Interface' page with the 'SIP Dynamic Hnt' section expanded. The 'SIP Dynamic Hnt' is set to 'enable'. The 'Port Map Start' is 0, 'Port Map End' is 0, 'In Manipulationid' is 0, 'Out Manipulationid' is 0, 'SIP Atcl Feature' is 'enable', 'Rfc2833 Payload' is 101, 'Rfc2833 Mode' is 'transparent', 'Response Map' is 0, and 'Local Response Map' is 0.

Figure 43: SIP Interface for OnPrem PBX and PSTN.

Figure 44: SIP Interface for OnPrem PBX and PSTN Cont.

- Create SIP interface towards Google CCAI by adding SIP Ports by adding SIP Ports as shown below

The figure consists of three screenshots of the Oracle Enterprise Session Border Controller configuration interface, specifically the 'Modify SIP Interface' page for Google CCAI.

Screenshot 1 (Top): Shows the 'SIP Ports' table. The 'State' is set to 'enable'. The 'Realm ID' is 'GoogleCC' and the 'Description' is 'Google CCAI'. The 'SIP Ports' table has one entry with 'Address' '192.65', 'Port' '5061', 'Transport Protocol' 'TLS', 'TLS Profile' 'GoogleCCAI', and 'Allow Anonymous' 'agents-only'.

Screenshot 2 (Middle): Shows the 'Modify SIP Interface' page with various settings. The 'Initial Inv Trans Expire' is '0' (Range: 0.2147473). The 'Session Max Life Limit' is '0'. The 'Proxy Mode' is set to 'Redirect Action'. The 'Nat Traversal' is set to 'always'. The 'Nat Interval' is '3600' (Range: 1.999999999). The 'TCP Nat Interval' is '90' (Range: 0.999999999). The 'Registration Caching' is set to 'enable'. The 'Min Reg Expire' is '300' (Range: 0.999999999). The 'Registration Interval' is '3600' (Range: 1.999999999). The 'Route To Registrar' is set to 'enable'.

Screenshot 3 (Bottom): Shows the 'Modify SIP Interface' page with various settings. The 'Secured Network' is set to 'enable'. The 'URI Fqdn Domain' is empty. The 'Options' is empty. The 'SPL Options' is empty. The 'Trust Mode' is set to 'all'. The 'Max Nat Interval' is '3600' (Range: 0.999999999). The 'Nat Int Increment' is '10' (Range: 0.999999999). The 'Nat Test Increment' is '30' (Range: 0.999999999). The 'SIP Dynamic Hnt' is set to 'enable'. The 'TCP Max Nat Interval' is '3600' (Range: 0.999999999). The 'TCP Nat Int Increment' is '10' (Range: 0.999999999). The 'TCP Nat Test Increment' is '30' (Range: 0.999999999).

Figure 45: SIP Interface for Google CCAI.

Configuration

View Configuration

Q

Discard

Verify

Save

rsap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

Modify SIP Interface

Show Advanced

Show Configuration

TCP SIP Dynamic Hint

☐ enable

Stop Recurse

401,407

(Range: 0,1025..65535)

Port Map Start

0

(Range: 0,1025..65535)

Port Map End

0

(Range: 0,1025..65535)

In ManipulationId

Out ManipulationId

SIP Atcf Feature

☐ enable

Rfc2833 Payload

101

(Range: 96..127)

Rfc2833 Mode

transparent

Response Map

Local Response Map

Configuration

View Configuration

Q

Discard

Verify

Save

rsap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

Modify SIP Interface

Show Advanced

Show Configuration

Sec Agree Feature

☐ enable

Enforcement Profile

Emergency Discp Profile

TCP Keepalive

enabled

Add SDP Invite

disabled

Add SDP In Msg

P Early Media Header

disabled

P Early Media Direction

Add SDP Profiles

Add SDP Profiles In Msg

SIP Profile

Configuration

View Configuration

Q

Discard

Verify

Save

rsap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

Modify SIP Interface

Show Advanced

Show Configuration

SIP Isup Profile

TCP Conn Dereg

0

(Range: 0..999999999)

Kpml Interworking

☐ enable

Kpml2833 Inl On Hairpin

☐ enable

Masp Delay Egress Bye

☐ enable

Send 380 Response

Pcsd Restoration

Session Timer Profile

Session Recording Server

Session Recording Required

☐ enable

Service Tag

Figure 46: SIP Interface for Google CCAI cont.

Configuration

View Configuration

roap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

slip-config

slip-feature

slip-interface

slip-manipulation

slip-monitoring

translation-rules

evcham

Discard

Verify

Save

Modify SIP Interface

Show Advanced

Show Configuration

Reg Cache Route

☐ enable

Diversion Info Mapping Mode

none

Atcf Icsi Match

SIP Recursion Policy

Asymmetric Preconditions

☐ enable

Asymmetric Preconditions Mode

send-with-nodelay

Sm Icsi Match For Invite

Sm Icsi Match For Message

S8hr Profile

Ringback Trigger

none

Ringback File

Discard

Verify

Save

Configuration

View Configuration

roap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

slip-config

slip-feature

slip-interface

slip-manipulation

slip-monitoring

translation-rules

system

Discard

Verify

Save

Modify SIP Interface

Show Advanced

Show Configuration

Asymmetric Preconditions Mode

send-with-nodelay

Sm Icsi Match For Invite

Sm Icsi Match For Message

S8hr Profile

Ringback Trigger

none

Ringback File

Fax Continue Session

none

Npli Profile

Hist To Div For Cause 380

inherit

User Agent

Allow Diff2835 Clock Rate Mode

disabled

OK

Back

Figure 47: SIP Interface for Google CCAI Cont.

6.4.20 Session Agent

- Session-agents are config elements which are trusted agents which can send/receive traffic from the SBC with direct access to trusted data path.
- Navigate to **Configuration** **session-router** **session-agent**.
- Configure Session Agent for Google CCAI as shown below

The screenshot displays the Oracle Enterprise Session Border Controller configuration interface. The top navigation bar includes 'Dashboard', 'Configuration' (highlighted), 'Monitor and Trace', 'Widgets', and 'System'. The left sidebar lists various configuration categories, with 'session-agent' highlighted. The main content area shows the 'Modify Session Agent' form for 'GoogleCC'. The form includes fields for Hostname (tekvizion.telephony.goog), IP Address, Port (5672), State (enable), App Protocol (SIP), App Type, Transport Method (StaticTLS), and Realm ID (GoogleCC). Below the form, there is a 'Match Identifier' section with an 'Add' button, and an 'Associated Agents' section. The bottom section contains various constraints and limits, such as Max Sessions, Max Inbound Sessions, Max Outbound Sessions, Max Burst Rate, Max Inbound Burst Rate, Max Outbound Burst Rate, and Max Sustain Rate, each with a value of 0 and a range of 0.999999999.

ORACLE Enterprise Session Border Controller

AP5900-IPC 10.70.59140 SC29.3.0 GA (Build 46)

Dashboard Configuration Monitor and Trace Widgets System

Configuration View Configuration

session-agent

Modify Session Agent

Show Advanced Show Configuration

Hostname tekvizion.telephony.goog

IP Address

Port 5672 (Range: 0.025.65535)

State ☒ enable

App Protocol SIP

App Type

Transport Method StaticTLS

Realm ID GoogleCC

Egress Realm ID

Description

configuration View Configuration

Match Identifier

No match identifier to display. Please add.

Add

Associated Agents

Constraints ☐ enable

Max Sessions 0 (Range: 0.999999999)

Max Inbound Sessions 0 (Range: 0.999999999)

Max Outbound Sessions 0 (Range: 0.999999999)

Max Burst Rate 0 (Range: 0.999999999)

Max Inbound Burst Rate 0 (Range: 0.999999999)

Max Outbound Burst Rate 0 (Range: 0.999999999)

Max Sustain Rate 0 (Range: 0.999999999)

Figure 48: Session Agent for Google CCAI.

Configuration

View Configuration

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

kin-conn

Discard

Verify

Save

Modify Session Agent

Show Advanced

Show Configuration

Max Outbound Sustain Rate

0

(Range: 0.999999999)

Min Asr

0

(Range: 0.300)

Cac Trap Threshold

0

(Range: 0.99)

Session Max Life Limit

0

Time To Resume

0

(Range: 0.999999999)

In Service Period

0

(Range: 0.999999999)

Burst Rate Window

0

(Range: 0.999999999)

Sustain Rate Window

0

(Range: 0.999999999)

Max Inbound Per Session Burst Rate

30

(Range: 1.999999999)

Burst Rate Window Per Session

1

(Range: 1.999999999)

Dos Action At Session

inherit

Prosv Mode

Configuration

View Configuration

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Discard

Verify

Save

Modify Session Agent

Show Advanced

Show Configuration

Redirect Action

Loose Routing

☒ enable

Response Map

Ping Method

OPTIONS

Ping Interval

300

(Range: 0.999999999)

Ping Send Mode

keep-alive

Ping All Addresses

☐ enable

Ping In Service Response Codes

Load Balance DNS Query

hunt

Options

SPL Options

Configuration

View Configuration

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

Discard

Verify

Save

Modify Session Agent

Show Advanced

Show Configuration

SPL Options

Media Profiles

In Session Translations

No in session translation list to display. Please add.

Add

Out Session Translations

Select

Action

Out Session Translation Id

State

☐

:

addPlus

enabled

Figure 49: Session Agent for Google CCAI cont.

Configuration View Configuration Discard Verify Save

media-manager >
security >
session-router >
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation

Modify Session Agent

Session Recording Server

Session Recording Required ☐ enable

Hold Refer Reinvite ☐ enable

Send TCP Fin ☐ enable

SIP Recursion Policy

Sm Ical Match For Invite

Sm Ical Match For Message

Ringback Trigger none

Ringback File

Fax Servers

Trigger Oss Alarm ☐ enable

Show Advanced ☒ Show Configuration

Figure 51: Session Agent for Google CCAI Cont.

- Configure the Session Agent for OnPrem PBX as shown below

ORACLE Enterprise Session Border Controller
AP9900-IPC 10.70.59140 SC29.3.0 GA (Build 46) Dashboard Configuration Monitor and Trace Widgets System

Configuration View Configuration Discard Verify Save

roap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config
sip-feature
sip-interface
sip-manipulation
sip-monitoring

Modify Session Agent

Hostname 172.16.2918

IP Address 172.16.2918

Port 5060 (Range: 0,025..65535)

State ☒ enable

App Protocol SIP

App Type

Transport Method StaticTCP

Realm ID PSTN_GoogleCC

Egress Realm ID

Description

No match identifier to display. Please add.
Add

Associated Agents

Constraints ☐ enable

Max Sessions 0 (Range: 0..999999999)

Max Inbound Sessions 0 (Range: 0..999999999)

Max Outbound Sessions 0 (Range: 0..999999999)

Max Burst Rate 0 (Range: 0..999999999)

Max Inbound Burst Rate 0 (Range: 0..999999999)

Max Outbound Burst Rate 0 (Range: 0..999999999)

Max Sustain Rate 0 (Range: 0..999999999)

session-agent

session-group
session-recording-group
session-recording-server
session-translation
sip-config
sip-feature
sip-interface
sip-manipulation
sip-monitoring
translation-rules
system

Figure 52: Session Agent for OnPrem PBX.

Configuration

View Configuration

Q

Discard

Verify

Save

rsap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

Modify Session Agent

Show Advanced

Show Configuration

Max Inbound Sustain Rate	0	(Range: 0.999999999)
Max Outbound Sustain Rate	0	(Range: 0.999999999)
Min Asr	0	(Range: 0.100)
Cac Trap Threshold	0	(Range: 0.99)
Session Max Life Limit	0	
Time To Resume	0	(Range: 0.999999999)
In Service Period	0	(Range: 0.999999999)
Burst Rate Window	0	(Range: 0.999999999)
Sustain Rate Window	0	(Range: 0.999999999)
Max Inbound Per Session Burst Rate	30	(Range: 1.999999999)
Burst Rate Window Per Session	1	(Range: 1.999999999)

Configuration

View Configuration

Q

Discard

Verify

Save

rsap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

Modify Session Agent

Show Advanced

Show Configuration

Max Inbound Sustain Rate	0	(Range: 0.999999999)
Max Outbound Sustain Rate	0	(Range: 0.999999999)
Min Asr	0	(Range: 0.100)
Cac Trap Threshold	0	(Range: 0.99)
Session Max Life Limit	0	
Time To Resume	0	(Range: 0.999999999)
In Service Period	0	(Range: 0.999999999)
Burst Rate Window	0	(Range: 0.999999999)
Sustain Rate Window	0	(Range: 0.999999999)
Max Inbound Per Session Burst Rate	30	(Range: 1.999999999)
Burst Rate Window Per Session	1	(Range: 1.999999999)
Dos Action At Session	Inherit	

Configuration

View Configuration

Q

Discard

Verify

Save

rsap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

sip-config

sip-feature

sip-interface

sip-manipulation

sip-monitoring

translation-rules

Modify Session Agent

Show Advanced

Show Configuration

Proxy Mode	
Redirect Action	
Loose Routing	<input checked="" type="checkbox"/> enable
Response Map	
Ping Method	OPTIONS
Ping Interval	300 (Range: 0.999999999)
Ping Send Mode	keep-alive
Ping All Addresses	<input type="checkbox"/> enable
Ping In Service Response Codes	
Load Balance DNS Query	hunt
Options	

Figure 53: Session Agent for OnPrem PBX Cont.

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Modify Session Agent

Show Advanced

Show Configuration

SPL Options

Media Profiles

In Session Translations

No in session translation list to display. Please add.

Add

Out Session Translations

No out session translation list to display. Please add.

Add

Trust Me

enable

Stop Recurse

Local Response Map

Ping Response

enable

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Modify Session Agent

Show Advanced

Show Configuration

In ManipulationId

Out ManipulationId

Manipulation String

Manipulation Pattern

Trunk Group

Max Register Sustain Rate

0

(Range: 0.999999999)

Invalidate Registrations

enable

Rfc2833 Mode

none

Rfc2833 Payload

0

(Range: 0.96.127)

Codec Policy

GoogleCC

Emergency Discp Profile

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Modify Session Agent

Show Advanced

Show Configuration

Refer Notify Provisional

none

Reuse Connections

NONE

TCP Keepalive

none

TCP Reconn Interval

0

(Range: 0.2.300)

Max Register Burst Rate

0

(Range: 0.999999999)

Rate Constraints

No rate constraints to display. Please add.

Add

SIP Profile

SIP Isup Profile

Kpm1 Interworking

inherit

Kpm12833 Isrf On Hairpin

inherit

Figure 54: Session Agent for OnPrem PBX Cont.

Configuration View Configuration

media-manager >
security >
session-router >
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation

Modify Session Agent Show Advanced Show Configuration

Monitoring Filters

Auth Attribute

No auth attributes to display. Please add.

Add

Session Recording Server

Session Recording Required ☐ enable

Hold Refer Reinvite ☐ enable

Send TCP Fin ☐ enable

SIP Recursion Policy

Sm Icsi Match For Invite

Sm Icsi Match For Message

Figure 55: Session Agent for OnPrem PBX Cont.

- Configure the Session agent for PSTN Gateway as shown below

ORACLE Enterprise Session Border Controller

AP5900-IPC 10.70.59140 SC29.3.0 GA (Build 46) Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

media-manager >
security >
session-router
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server

Modify Session Agent Show Advanced Show Configuration

Hostname 10.64.172

IP Address 10.64.172

Port 5060 (Range: 0,1025..65535)

State ☒ enable

App Protocol SIP

App Type

Transport Method StaticTCP

Realm ID PSTN_GoogleCC

Egress Realm ID PSTN_GoogleCC

Description

Configuration View Configuration

media-manager >
security >
session-router >
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation

Modify Session Agent Show Advanced Show Configuration

Match Identifier

No match identifier to display. Please add.

Add

Associated Agents

Constraints ☐ enable

Max Sessions 0 (Range: 0..999999999)

Max Inbound Sessions 0 (Range: 0..999999999)

Max Outbound Sessions 0 (Range: 0..999999999)

Max Burst Rate 0 (Range: 0..999999999)

Max Inbound Burst Rate 0 (Range: 0..999999999)

Max Outbound Burst Rate 0 (Range: 0..999999999)

Figure 56: Session Agent for PSTN Gateway.

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

>

security

>

session-router

▼

access-control

>

account-config

>

filter-config

>

ldap-config

>

local-policy

>

local-routing-config

>

media-profile

>

session-agent

>

session-group

>

session-recording-group

>

session-recording-server

>

session-translation

>

Modify Session Agent

Show Advanced

Show Configuration

Max Sustain Rate

0

(Range: 0.999999999)

Max Inbound Sustain Rate

0

(Range: 0.999999999)

Max Outbound Sustain Rate

0

(Range: 0.999999999)

Min Asr

0

(Range: 0.100)

Cac Trap Threshold

0

(Range: 0.99)

Session Max Life Limit

0

(Range: 0.999999999)

Time To Resume

0

(Range: 0.999999999)

In Service Period

0

(Range: 0.999999999)

Burst Rate Window

0

(Range: 0.999999999)

Sustain Rate Window

0

(Range: 0.999999999)

Max Inbound Per Session Burst Rate

30

(Range: 1.999999999)

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

>

security

>

session-router

▼

access-control

>

account-config

>

filter-config

>

ldap-config

>

local-policy

>

local-routing-config

>

media-profile

>

session-agent

>

session-group

>

session-recording-group

>

session-recording-server

>

session-translation

>

Modify Session Agent

Show Advanced

Show Configuration

Burst Rate Window Per Session

1

(Range: 1.999999999)

Dos Action At Session

inherit

Proxy Mode

Redirect Action

Loose Routing

☒ enable

Response Map

Ping Method

OPTIONS

Ping Interval

30

(Range: 0.999999999)

Ping Send Mode

keep-alive

Ping All Addresses

☒ enable

Ping In Service Response Codes

Configuration

View Configuration

Q

Discard

Verify

Save

media-manager

>

security

>

session-router

▼

access-control

>

account-config

>

filter-config

>

ldap-config

>

local-policy

>

local-routing-config

>

media-profile

>

session-agent

>

session-group

>

session-recording-group

>

session-recording-server

>

session-translation

>

Modify Session Agent

Show Advanced

Show Configuration

SPL Options

Media Profiles

In Session Translations

No in session translation list to display. Please add.

Add

Out Session Translations

No out session translation list to display. Please add.

Add

Trust Me

☐ enable

Stop Recurse

Local Response Map

Figure 57: Session Agent for PSTN Gateway Cont.

Configuration

View Configuration

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Modify Session Agent

Show Advanced

Show Configuration

Out ManipulationId

Manipulation String

Manipulation Pattern

Trunk Group

Max Register Sustain Rate

Invalidate Registrations

Rfc2833 Mode

Rfc2833 Payload

Codec Policy

Emergency Dscp Profile

Refer Call Transfer

Discard

Verify

Save

Configuration

View Configuration

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Modify Session Agent

Show Advanced

Show Configuration

Heter Notify Provisional

Reuse Connections

TCP Keepalive

TCP Reconn Interval

Max Register Burst Rate

Rate Constraints

SIP Profile

SIP Isup Profile

Kpml Interworking

Kpml2833 Iwf On Halpin

Discard

Verify

Save

Configuration

View Configuration

media-manager

security

session-router

access-control

account-config

filter-config

ldap-config

local-policy

local-routing-config

media-profile

session-agent

session-group

session-recording-group

session-recording-server

session-translation

Modify Session Agent

Show Advanced

Show Configuration

Monitoring Filters

Auth Attribute

Session Recording Server

Session Recording Required

Hold Refer Reinvite

Send TCP Fin

SIP Recursion Policy

Sm Ical Match For Invite

Sm Ical Match For Message

Blind Park Transfer

Discard

Verify

Save

Figure 58: Session Agent for PSTN Gateway Cont.

6.4.21 Local Policy

- Local policy config allows for the SBC to route calls from one end of the network to the other based on routing criteria.
- Navigate to **Configuration** ▢ **session-router** ▢ **local-policy**.
- Configure local policy for Google CCAI, OnPrem PBX and PSTN Gateway as shown below.
- Below Local Policy is used to route calls from OnPrem PBX to PSTN Gateway.

Oracle Enterprise Session Border Controller

AP3900-IPC 10.70.59140 SC29.3.0 GA (Build 46)

Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

media-manager >
security >
session-router ▾
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config
Show All

Modify Local Policy Entries

Show Advanced ☒ Show Configuration

From Address * x
To Address 214 x +1214 x
Source Realm PSTN_GoogleCC x
Description PBX User To PSTN
State ☒ enable
Parallel Forking ☐ enable
Policy Priority none

Policy Attributes

Select	Action	Next Hop	Realm	Action	Terminate Recursion	Cost	State	App Protocol	Lookup	Next Key	Auth User Lookup
<input type="checkbox"/>		10.64.172	PSTN_GoogleCC	none	disabled	0	enabled	SIP	single		

OK Back

Oracle Enterprise Session Border Controller

AP3900-IPC 10.70.59140 SC29.3.0 GA (Build 46)

Dashboard Configuration **Monitor and Trace** Widgets System

Configuration View Configuration

media-manager >
security >
session-router ▾
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config
Show All

Modify Local Policy / policy attribute

Show Advanced ☒ Show Configuration

Next Hop 10.64.172
Realm PSTN_GoogleCC
Action none
Terminate Recursion ☐ enable
Cost 0 (Range: 0.999999999)
State ☒ enable
App Protocol SIP
Lookup single
Next Key
Auth User Lookup

OK Back

Figure 59: Local Policy towards PSTN Gateway.

- Below Local Policy is used to route calls from PSTN Gateway to OnPrem PBX.

Oracle Enterprise Session Border Controller

AP3900-IPC 10.70.59140 SC29.3.0 GA (Build 46) Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

media-manager >
security >
session-router >
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config

Modify Local Policy Entries Show Advanced Show Configuration

From Address * x
To Address 972 x
Source Realm PSTN_GoogleCC x
Description
State ☒ enable
Parallel Forking ☐ enable
Policy Priority none

Policy Attributes

Select	Action	Next Hop	Realm	Action	Terminate Recursion	Cost	State	App Protocol	Lookup	Next Key	Auth User Lookup
<input type="checkbox"/>	:	172.16.29.18	PSTN_GoogleCC	none	disabled	0	enabled		single		

OK Back

Oracle Enterprise Session Border Controller

AP3900-IPC 10.70.59140 SC29.3.0 GA (Build 46) Dashboard **Configuration** Monitor and Trace Widgets System

Configuration View Configuration

media-manager >
security >
session-router >
access-control
account-config
filter-config
ldap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config

Modify Local policy / policy attribute Show Advanced Show Configuration

Next Hop 172.16.29.18
Realm PSTN_GoogleCC
Action none
Terminate Recursion ☐ enable
Cost 0 (Range: 0.999999999)
State ☒ enable
App Protocol
Lookup single
Next Key
Auth User Lookup

OK Back

Figure 60: Local Policy towards OnPrem PBX.

6.4.22 SIP Manipulation

- Navigate to **Configuration** ☐ **session-router** ☐ **sip-manipulation**.
- Configure SIP manipulation towards Google CCAI as shown below.

The screenshot displays the Oracle Enterprise Session Border Controller configuration interface. The top navigation bar includes the Oracle logo, version information (AP9900-IPC 10.70.59140 SC29.3.0 GA (Build 46)), and tabs for Dashboard, Configuration, Monitor and Trace, Widgets, and System. The Configuration tab is active, and the left sidebar shows various configuration categories, with 'sip-manipulation' highlighted. The main panel is titled 'Modify SIP Manipulation' and contains the following fields:

- Name:** GoogleCCAI
- Description:** Manipulations for Google CCAI
- Split Headers:** (empty field)
- Join Headers:** (empty field)
- CfgRules:** A table with columns 'Action', 'Name', and 'Element Type'.

Action	Name	Element Type
⋮	changeReqUri	header-rule
⋮	changeFromIP	header-rule
⋮	changeToURihost	header-rule
⋮	AddCallInfoHeader	header-rule

Below the main panel, there is a 'Join Headers' field and a 'CfgRules' section with an 'Add' button and a table of rules:

Element Type	Rule Name
header-rule	Uri
header-rule	mime-rule
header-rule	mime-isup-rule
header-rule	mime-sdp-rule
header-rule	Header

Figure 61: SIP Manipulation towards Google CCAI.

- Below header rule is created to change Request-URI host and user parts towards Google CCAI to **tekvision.telephony.goog:5672** and **+1833449XXXX**.

Configuration View Configuration

Modify Sip manipulation / header rule

Name: changeReqUri

Header Name: Request-URI

Action: manipulate

Comparison Type: pattern-rule

Msg Type: any

Methods: INVITE x OPTIONS x

Match Value:

New Value:

CfgRules

Action	Name	Element Type
:	ReqURI	element-rule
:	AddURI	element-rule

OK Back

Figure 62: SIP Manipulation towards Google CCAI – To change Request URI-host.

Configuration View Configuration

Modify Sip manipulation / header rule / element rule

Name: AddURI

Parameter Name: Request-URI

Type: uri-user

Action: replace

Match Val Type: any

Comparison Type: pattern-rule

Match Value:

New Value: *+1833449XXXX

CfgRules

Action	Name	Element Type
:	ReqURI	element-rule
:	AddURI	element-rule

OK Back

Figure 63: SIP Manipulation towards Google CCAI – Change Request URI-user.

- Below header rule is created to change FROM header IP address towards Google CCAI to IP address of Oracle SBC.

Configuration View Configuration [Icons] [Search]

Discard Verify Save

Show Configuration

Modify Sip manipulation / header rule

Name: changeFromIP

Header Name: From

Action: manipulate

Comparison Type: pattern-rule

Match Type: any

Methods: INVITE x OPTIONS x

Match Value:

New Value:

CfgRules

Action	Name	Element Type
:	changeIP	element-rule
:	changetoforsiprec	element-rule

OK Back

Figure 64: SIP Manipulation towards Google CCAI – Change FROM header.

Configuration View Configuration [Icons] [Search]

Discard Verify Save

Show Configuration

Modify Sip manipulation / header rule / element rule

Name: changeIP

Parameter Name:

Type: uri-host

Action: replace

Match Val Type: any

Comparison Type: pattern-rule

Match Value:

New Value: \$LOCAL_IP

OK Back

Figure 65: SIP Manipulation towards Google CCAI – Change FROM header uri-host.

Configuration View Configuration

Modify Sip manipulation / header rule / element rule

Show Configuration

Name: changetoforsiprec

Parameter Name:

Type: uri-user

Action: replace

Match Val Type: any

Comparison Type: case-sensitive

Match Value: To: <sips:trunk.sip.voice.google.com:5672;transport=

New Value: To: <sips:+18...@tekvizion.telephony.goog:

Figure 66: SIP Manipulation towards Google CCAI – Change FROM header uri-user.

- Below header rule is created to change TO header host part towards Google CCAI to IP address of Google CCAI and user part with Google CCAI DID

Configuration View Configuration

Modify Sip manipulation / header rule

Show Configuration

Name: changeToURIhost

Header Name: To

Action: manipulate

Comparison Type: pattern-rule

Match Type: any

Methods: INVITE x, OPTIONS x

Match Value:

New Value:

Rules

Action	Name	Element Type
:	changeURIhost	element-rule
:	changeToURIhost	element-rule

OK Back

Figure 67: SIP Manipulation towards Google CCAI – Change TO header.

Configuration View Configuration

Modify Sip manipulation / header rule / element rule

Show Configuration

Name: changeURIhost

Parameter Name:

Type: uri-host

Action: replace

Match Val Type: any

Comparison Type: pattern-rule

Match Value:

New Value: "tekvizion.telephony.goog"

Figure 68: SIP Manipulation towards Google CCAI – Change TO header uri-host.

Configuration View Configuration Discard Verify Save

Modify Sip manipulation / header rule / element rule Show Configuration

Name	changeToUrihost
Parameter Name	To
Type	uri-user
Action	replace
Match Val Type	any
Comparison Type	case-sensitive
Match Value	
New Value	*+183

OK Back

Figure 69: SIP Manipulation towards Google CCAI – Change TO header uri-user.

- Below header rule is created to add Call-Info header towards Google CCAI with the Dialog Flow API request along with the Conversation ID.
- Conversation on the Fly** is set to True in Google CCAI using REST API. Conversation ID is randomly generated by Oracle SBC for each call.
- New Value is set to **"<http://dialogflow.googleapis.com/v2beta1/projects/ccai-389811/conversations/R e_+"\$CALL_ID.\$0+";purpose=Goog-ContactCenter-Conversation"**

Configuration View Configuration Discard Verify Save

Modify Sip manipulation / header rule Show Configuration

Name	AddCallInfoHeader
Header Name	Call-Info
Action	add
Comparison Type	case-sensitive
Msg Type	any
Methods	INVITE
Match Value	
New Value	*http://dialogflow.googleapis.com/v2beta1/projec

CFgRules

Figure 70: SIP Manipulation towards Google CCAI – Add Call-Info.

- Below header rule is created to update the Google CCAI FQDN generated by Oracle SBC during the creation of Conversation ID (this rule is applied only when Conversation on the Fly is set to True in Google CCAI).

Configuration View Configuration

local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config
sip-feature
sip-interface
sip-manipulation
sip-monitoring

Show All

Add Sip manipulation / header rule

Name: update_CallInfo

Header Name: Call-Info

Action: find-replace-all

Comparison Type: pattern-rule

Msg Type: any

Methods: INVITE x

Match Value: ^(<http://.*>(@tekvizion.telephony.goog)(.*)\$

New Value: \$1+\$3

OK Back

Figure 71: SIP Manipulation towards Google CCAI – Update Call-Info host FQDN.

Notes:

- By default, Oracle SBC generates Call-ID along with destination FQDN in the host part. In this case, it is the Google CCAI FQDN. E.g.
Call-ID:7f217f29dxxxxxxxxxxx@tekvizion.telephony.goog
- While generating the Call-Info header for Google CCAI, the Call-ID is copied and added to the Call-Info header (Refer Figure 70). E.g. Call-Info:
<http://dialogflow.googleapis.com/v2beta1/projects/ccai-38XXX/conversations/Re_7f217xxxxxxxxxxxxxxxxxxx@tekvizion.telephony.goog
>;purpose=Goog-ContactCenter-Conversation
- Google CCAI does not accept the host part with “@tekvizion.telephony.goog” in the Call-Info header. Hence the manipulation rule named update_CallInfo is created to match the expression with “@tekvizion.telephony.goog” in the Call-Info header and create a new value with
<http://dialogflow.googleapis.com/v2beta1/projects/ccai-38XXX/conversations/Re_7f217xxxxxxxxxxxxxxxxxxx>;purpose=Goog-ContactCenter-Conversation towards Google CCAI.
- Match Value: ^(<http://.*>(@tekvizion.telephony.goog)(.*)\$, where \$1 = (<http://.*>), \$2 = (@tekvizion.telephony.goog), \$3 = (.*)
- New Value: \$1+\$3, where \$1 concatenates the \$3 value while removing the \$2 value which is “@tekvizion.telephony.goog”

- Below header rule is created to change the port number in the Request URI towards Google CCAI

The screenshot shows the 'Modify Sip manipulation / header rule' configuration page. The left sidebar lists various configuration categories, with 'sip-manipulation' selected. The main form contains the following fields:

- Name:** changelocalport
- Header Name:** Request-URI
- Action:** manipulate
- Comparison Type:** case-sensitive
- Msg Type:** any
- Methods:** (empty)
- Match Value:** (empty)
- New Value:** (empty)

Below the form is a table for 'CfgRules' with one entry:

Action	Name	Element Type
:	changetransportnumber	element-rule

Figure 72: SIP Manipulation towards Google CCAI – Change Request URI Port number.

The screenshot shows the 'Modify Sip manipulation / header rule / element rule' configuration page. The left sidebar is the same as in Figure 72. The main form contains the following fields:

- Name:** changetransportnumber
- Parameter Name:** (empty)
- Type:** uri-port
- Action:** replace
- Match Val Type:** any
- Comparison Type:** case-sensitive
- Match Value:** (empty)
- New Value:** \$REMOTE_PORT

Figure 73: SIP Manipulation towards Google CCAI – Change Request URI Port number.

- Below header rule is created to delete the transport parameter in the Request URI towards Google CCAI



The screenshot shows the 'Modify Sip manipulation / header rule' configuration page. The left sidebar is the same as in Figure 72. The main form contains the following fields:

- Name:** deltransport
- Header Name:** Request-URI
- Action:** manipulate
- Comparison Type:** case-sensitive
- Msg Type:** any
- Methods:** INVITE x
- Match Value:** (empty)
- New Value:** (empty)

Below the form is a table for 'CfgRules' with one entry:

Action	Name	Element Type
:	delparam	element-rule

Figure 74: SIP Manipulation towards Google CCAI – Delete Transport parameter.

Configuration View Configuration   Discard Verify Save

soap-config
local-policy
local-routing-config
media-profile
session-agent
session-group
session-recording-group
session-recording-server
session-translation
sip-config
sip-feature
sip-interface
sip-manipulation

Modify Sip manipulation / header rule / element rule Show Configuration

Name	delparam
Parameter Name	transport
Type	uri-param
Action	delete-element
Match Val Type	any
Comparison Type	case-sensitive
Match Value	
New Value	

Figure 75: SIP Manipulation towards Google CCAI Cont. – Delete Transport parameter.

7 Oracle E-SBC Running configuration

Attached is the Oracle E-SBC running configuration.



Oracle ESBC Running
config.txt

8 Summary of Tests and Results

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
SBC Configuration Verification					
1	SBC Configuration Verification	TLS connection setup. SBC initiates TLS connection with CCAI	Successful 4way handshake with Google CCAI. Validate the right certificates are being negotiated. SBC should be loaded with GTSR1 cert for Google. SBC should also send the certificate chain when sending its cert.	PASSED	TLS handshake is verified
2	SBC Configuration Verification	TCP Keep Alive. SBC will perform monitoring checks by attempting TCP Keep Alive to ensure Network Connectivity	Successful 3way handshake and thereafter termination	PASSED	
3	SBC Configuration Verification	TCP link is persistent. Establish call, send multiple calls that should all use the same TCP transport connection	Persistent TCP connection, we should establish a single connection and multiplex all calls over that connection.	PASSED	
4	SBC Configuration Verification	Session Timer support. SBC should be initiator for the Session Refresh timer using Update or Re-Invite	every 900 secs the SBC should refresh the SIP session.	PASSED	Re-INVITE is sent for Session refresh

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
5	SBC Configuration Verification	SIP Header Manipulation (call-info header)	Validate if the Google requested header manipulation is present in the SIP INVITE. Ensure every SDP media has a label.	PASSED	
6	SBC Configuration Verification	*SBCs may need further Header manipulations based on SIP stack constraints. Verify required manipulation are added in SBC to support Google CCAI Example: FROM, TO header manipulations HOST part change in headers etc.,	All signaling in e.164 format	PASSED	
7	SBC Configuration Verification	SDES for SRTP. Configure the SDES parameters for crypto negotiation for the BYOT trunk	Validate the crypto is successfully negotiated and media is encrypted. All SBCs should support SDES for media encryption.	PASSED	
8	SBC Configuration Verification	DTLS for Media Encryption. Configure the DTLS parameters for crypto negotiation for the BYOT trunk, certificate for DTLS must be self-signed by the SBC.	Validate the crypto is successfully negotiated and media is encrypted. DTLS is not supported by Oracle and can be skipped.	NOT SUPPORTED	
Inbound					

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
9	Inbound	SIP OPTIONS. SBC send SIP options every 60 seconds	Verify SBC sends SIP OPTIONS every 60 seconds and responded with 200 OK	PASSED	
10	Inbound	Inbound call: Calling Party disconnects the call. Inbound siprec call, ensure recording are present, disconnect call from calling party and confirm proper disconnect	Verify Call is established with audio and transcripts from both participants Verify call is disconnected properly	PASSED	
11	Inbound	Inbound call: Called Party disconnects the call. Inbound siprec call, ensure recording are present, disconnect call from called party and confirm proper disconnect	Verify Call is established with audio and transcripts from both participants Verify call is disconnected properly	PASSED	

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
12	Inbound	Long duration call-Outbound Call- 1 hour max. Long duration siprec call	Ensure siprec calls stay up for an hour, confirm transcripts are present for entire duration	PASSED	
13	Inbound	Long duration hold and resume (wait until session audit\session refresh occurs from DUT). Long duration siprec call, have the call placed on hold by agent, have call resume. Have customer place on hold then have call resume.	Call is connected, we have two active streams, confirm once a stream goes on hold, we receive corresponding signaling events, and that we no longer record transcripts for the participant on hold.	PASSED	
14	Inbound	Handling Error codes 603 decline. User A Calls PSTN A PSTN A rejects the incoming call	Verify SBC handles Call rejected properly	PASSED	
15	Inbound	Inbound call hold scenarios. Call starts out inactive for both participants, session moves to active	Validate if media is present when expected, confirm signaling events modify sdp properly, once call is move to active validate media and transcripts	PASSED	Call recording is deactivated using API command. Audio during the inactive state is not recorded.

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
16	Inbound	Inbound call hold scenarios. call starts out as active for both participants, session move to inactive, and transitions back to active	Validate if media is present when expected, confirm signaling events modify sdp properly, once call is moved to active validate media and transcripts	PASSED	<p>This test case is tested with Skype for Business (SFB) as PBX to simulate sending of media attribute "sendonly" during Hold from SFB. When SFB user puts the call on hold, it sends "sendonly", PSTN hears MOH, MOH is recorded.</p> <p>When PSTN user puts the call on hold, SFB user hears MOH. PSTN does not send sendonly, hence MOH along with the SFB user conversation is recorded.</p>
17	Inbound	Update. Validate that update sent prior to call establishment do not contain SDP	Validate that update prior to call establishment do not contain SDP as expected	NOT APPLICABLE	No UPDATE is sent

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
18	Inbound	Update. Validate that updates post call establishment contain SDP to modify session	If SBC uses update to modify session, ensure SDP is included	NOT APPLICABLE	No UPDATE with SDP is sent
19	Inbound	re-invites. Ensure re-invites that modify session include SDP	Ensure re-invites that modify session include SDP	PASSED	Re-INVITE is sent to Google CCAI as part of session refresh, hold scenarios
20	Inbound	Codec negotiation. Ensure that g711 u-law is preferred codec	Ensure we can prioritize g711 as preferred codec, note where SBC configures preferred codec	PASSED	
21	Inbound	3 way conference. Determine requirements, record all leg.	Determine requirements, record all legs	PASSED	
22	Inbound	CCAI cloud project setup. Establish CCAI cloud project, provision the project with a GTP phone number for access (Create conversations/participants on the fly through SIP headers)	Verify project is setup, functional test to confirm you can connect to the GTP access phone number	PASSED	

ID	Title	Description	Expected Results	Status (Passed or Failed etc)	Observations
23	Inbound	CCAI cloud project setup. Establish CCAI cloud project, provision the project with a GTP phone number for access (Pre-creation of conversations/participants)	Verify project is setup, functional test to confirm you can connect to the GTP access phone number	NOT APPLICABLE	This test case is not applicable for call recording
24	Inbound	Consultative transfer. Consultative transfer from 1. PSTN > User1 > User2 2. PSTN > User1 > PSTN user2		PASSED	
25	Inbound	Blind transfer. Blind transfer from 1. PSTN > User1 > User2 2. PSTN > User1 > PSTN user2		PASSED	