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

TekVizion

Table of Contents

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 SCZ9.3.0 GA(Build46) configuration.

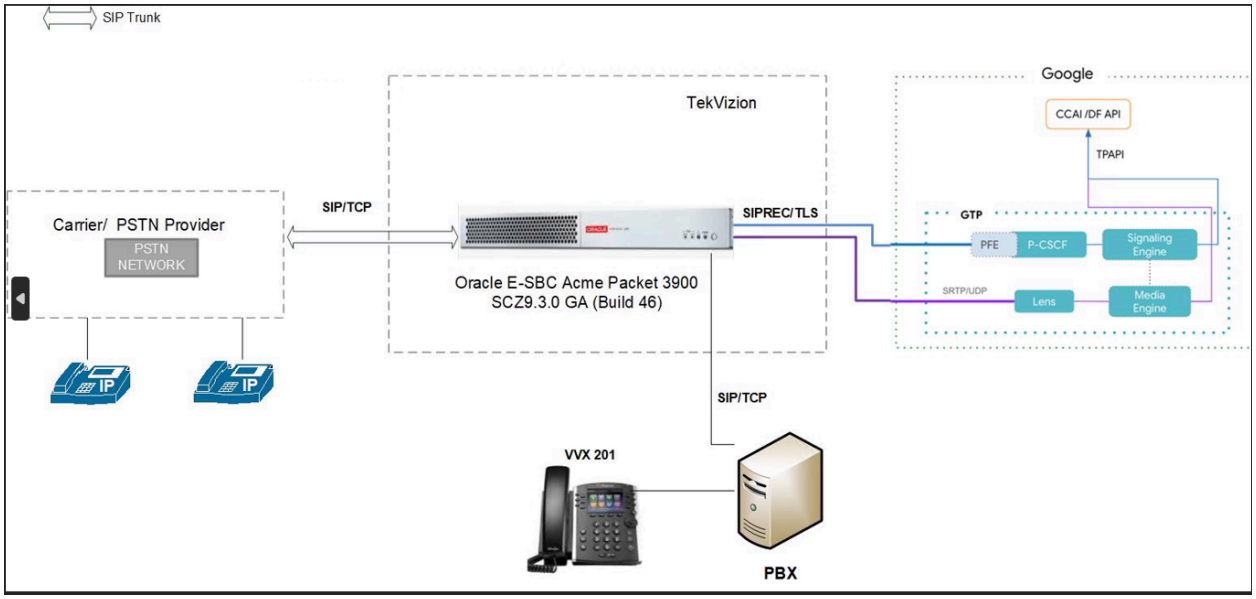

Figure 1: SIP Trunk Lab Reference Network.

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	tekvizion.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**

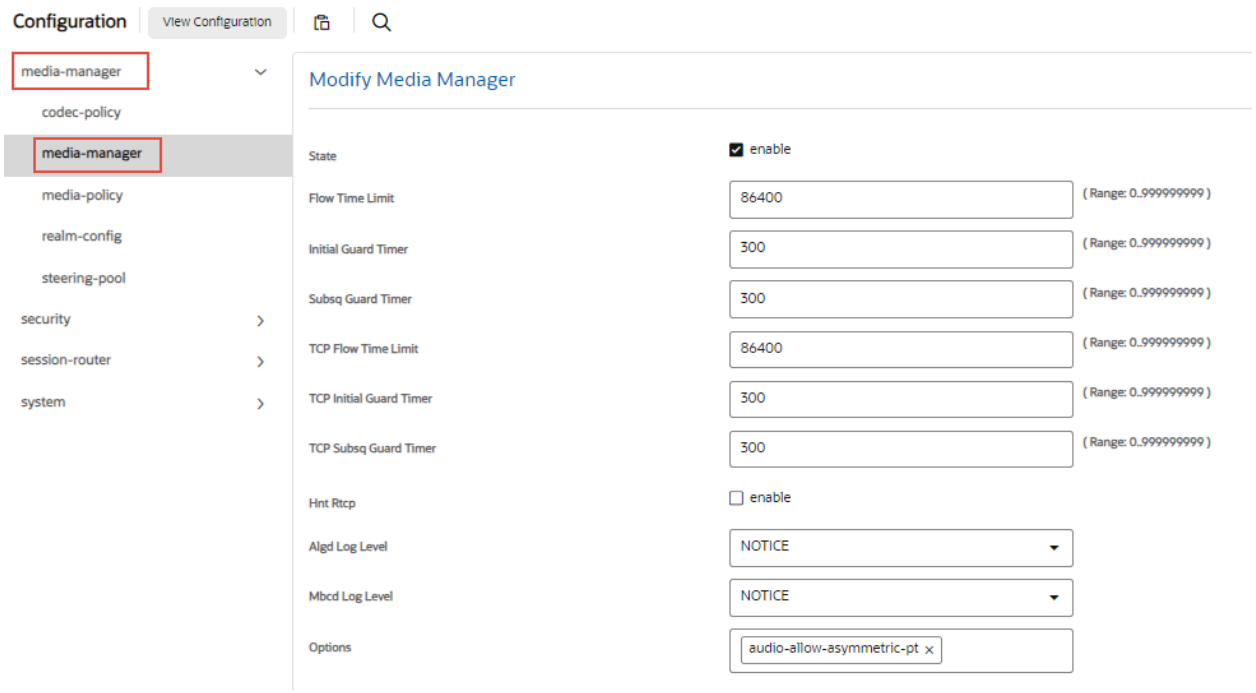

Figure 2: Media Manager Configuration.

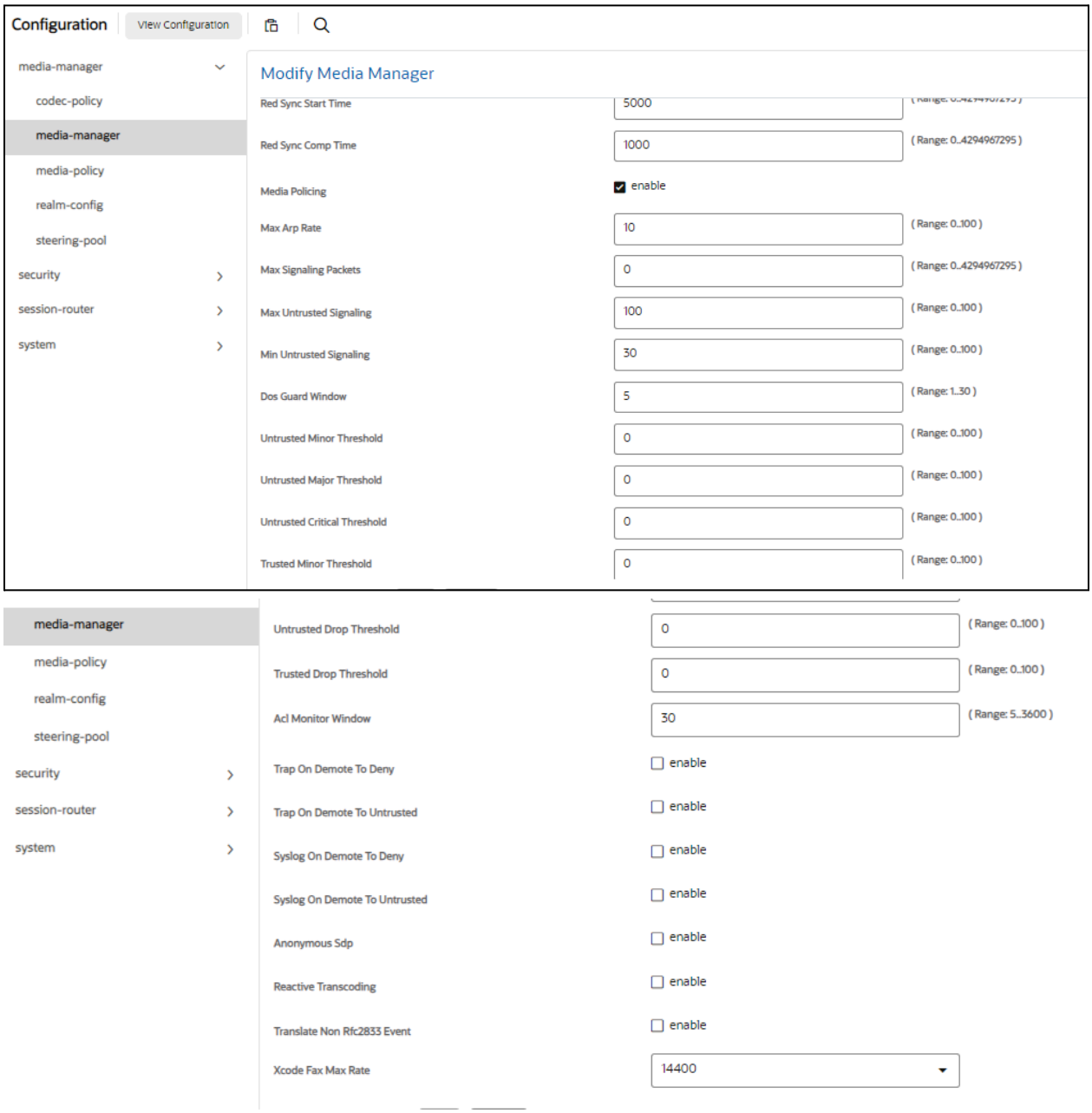

Figure 3: Media Manager Configuration Cont.

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.

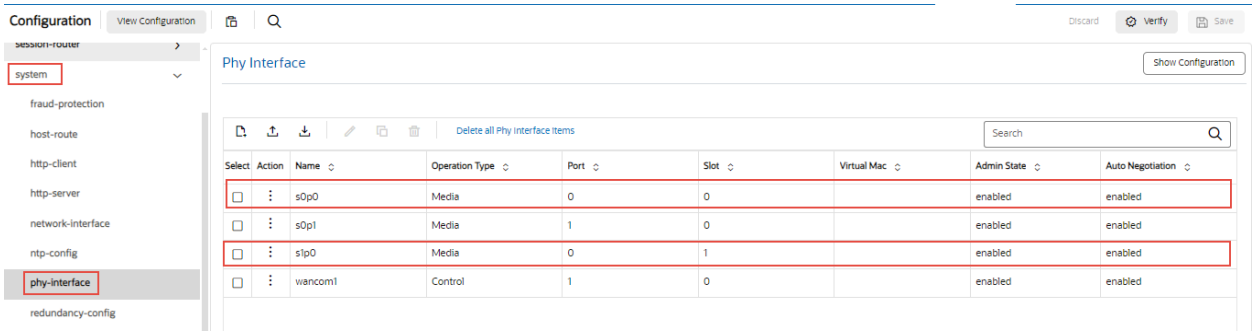

Figure 4: Physical Interfaces.

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

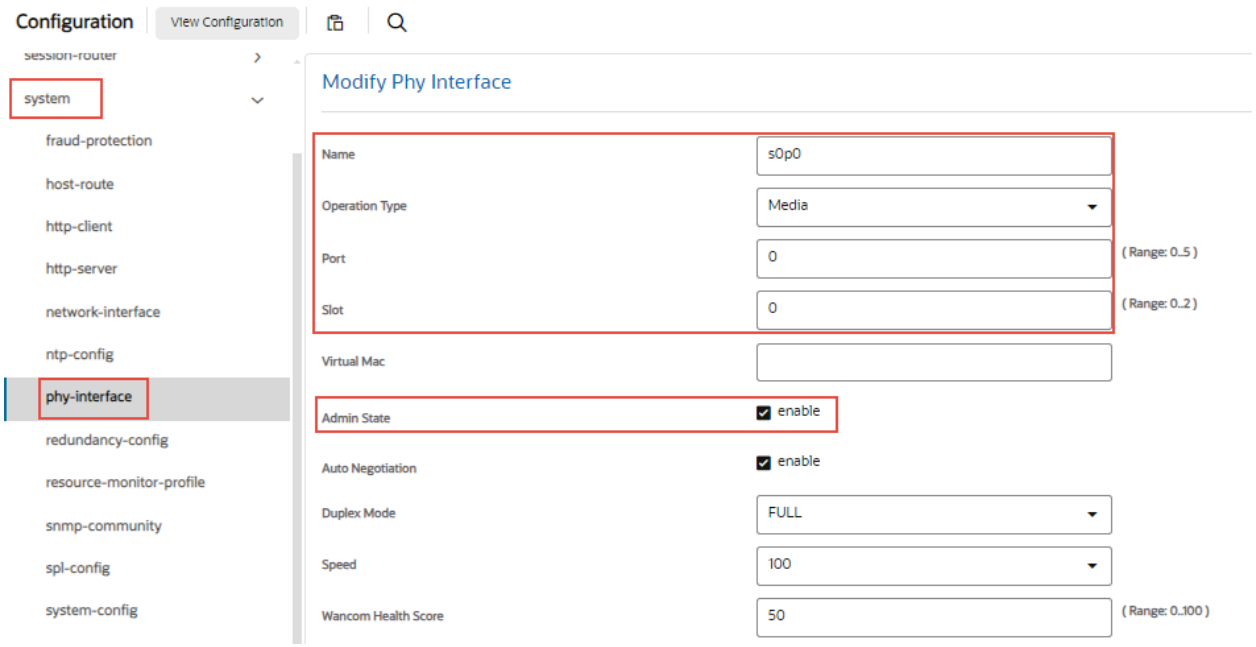

Figure 5: Physical Interface towards Google CCAI.

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

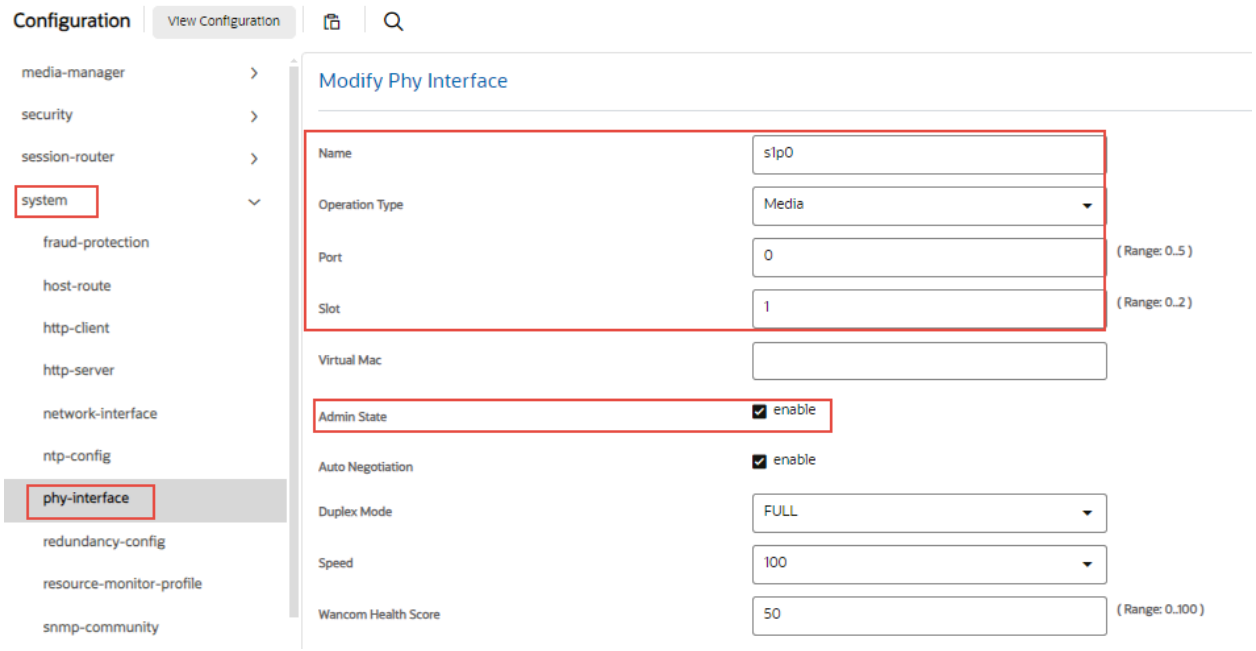

Figure 6: Physical Interface towards PSTN Gateway and OnPrem PBX.

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

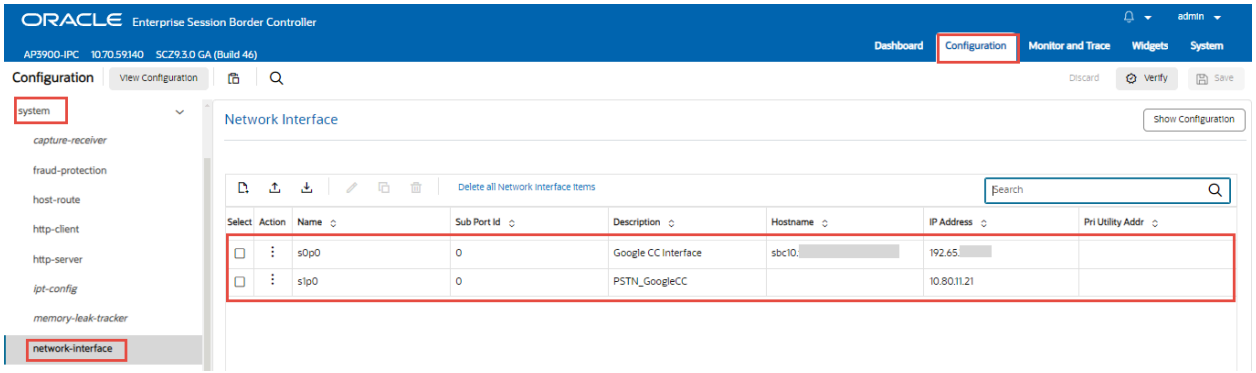

Figure 7: Network Interfaces.

- Configure Network interface towards Google CCAI as shown below.

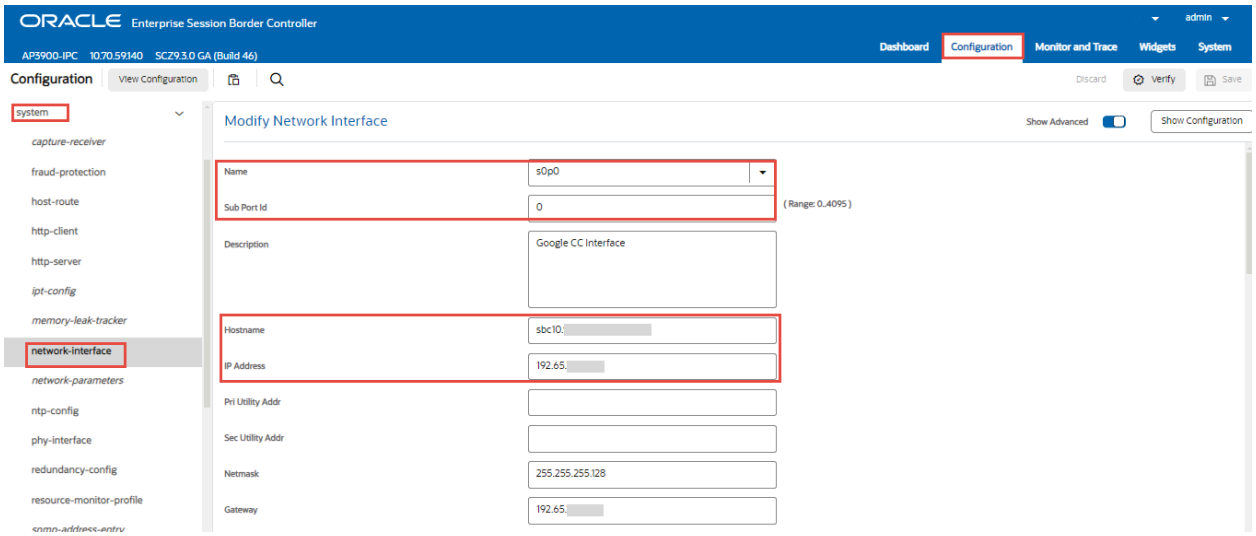

Figure 8: Network Interface towards Google CCAI.

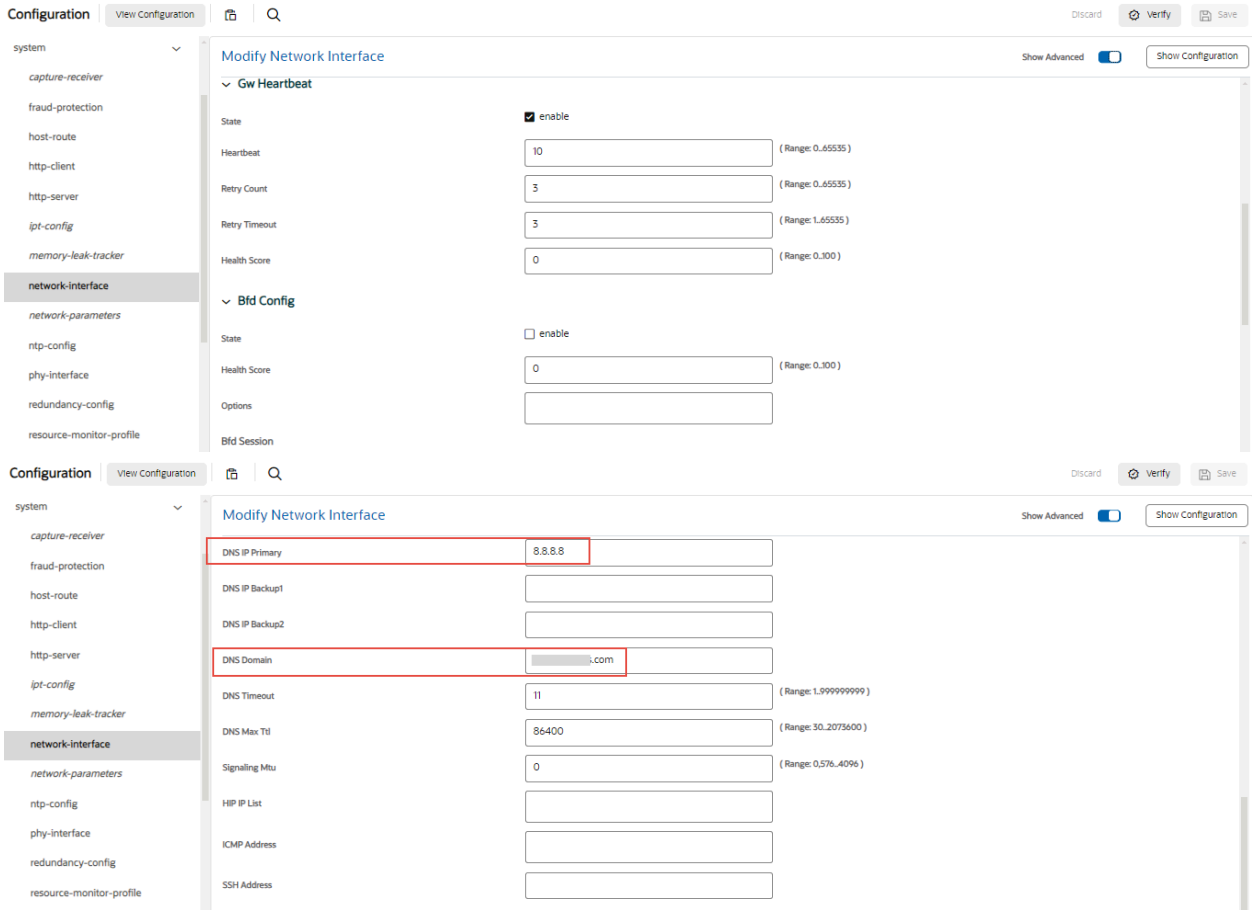

Figure 9: Network Interface towards Google CCAI Cont.

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

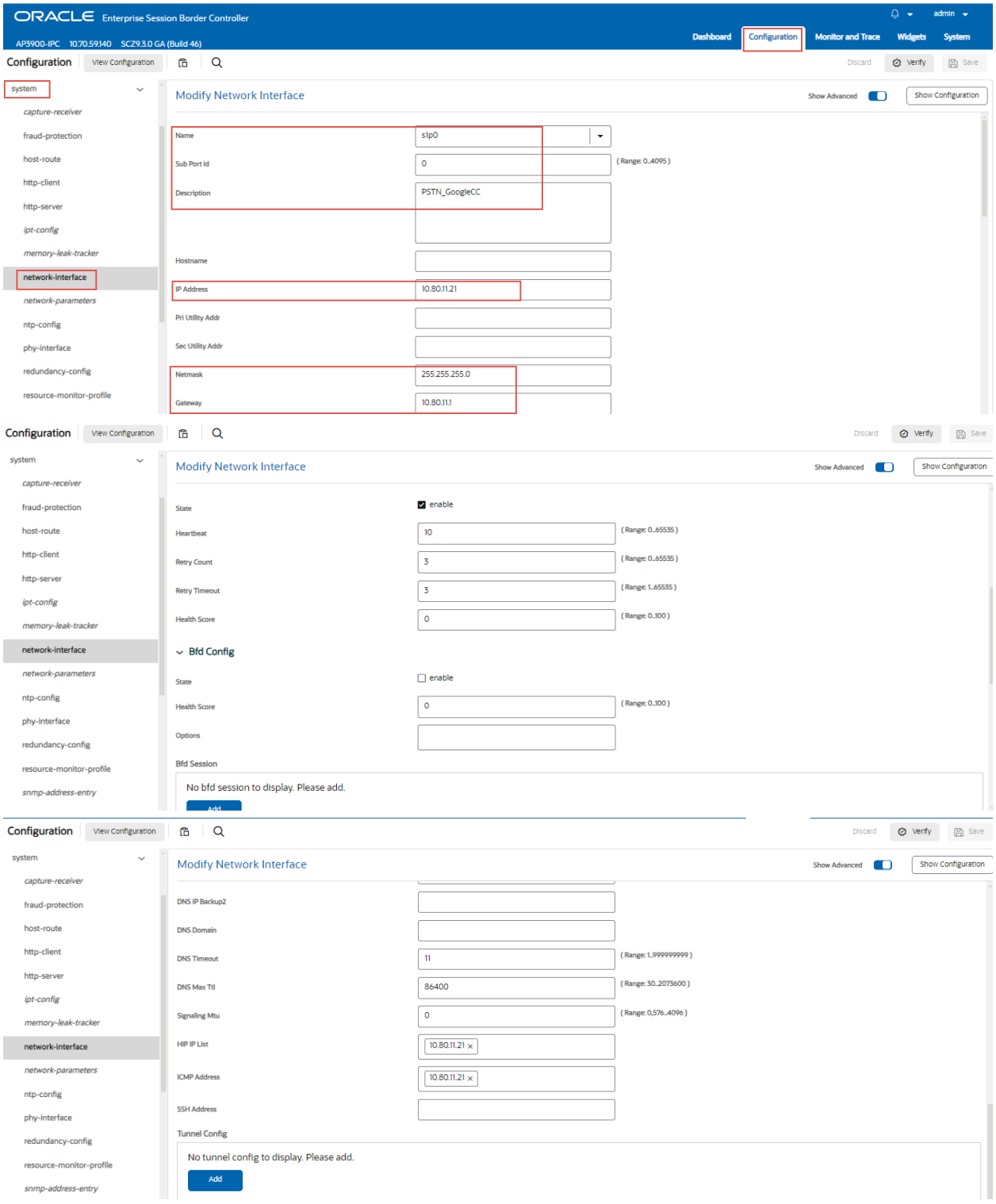

Figure 10: Network Interface towards OnPrem PBX and PSTN Gateway.

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.

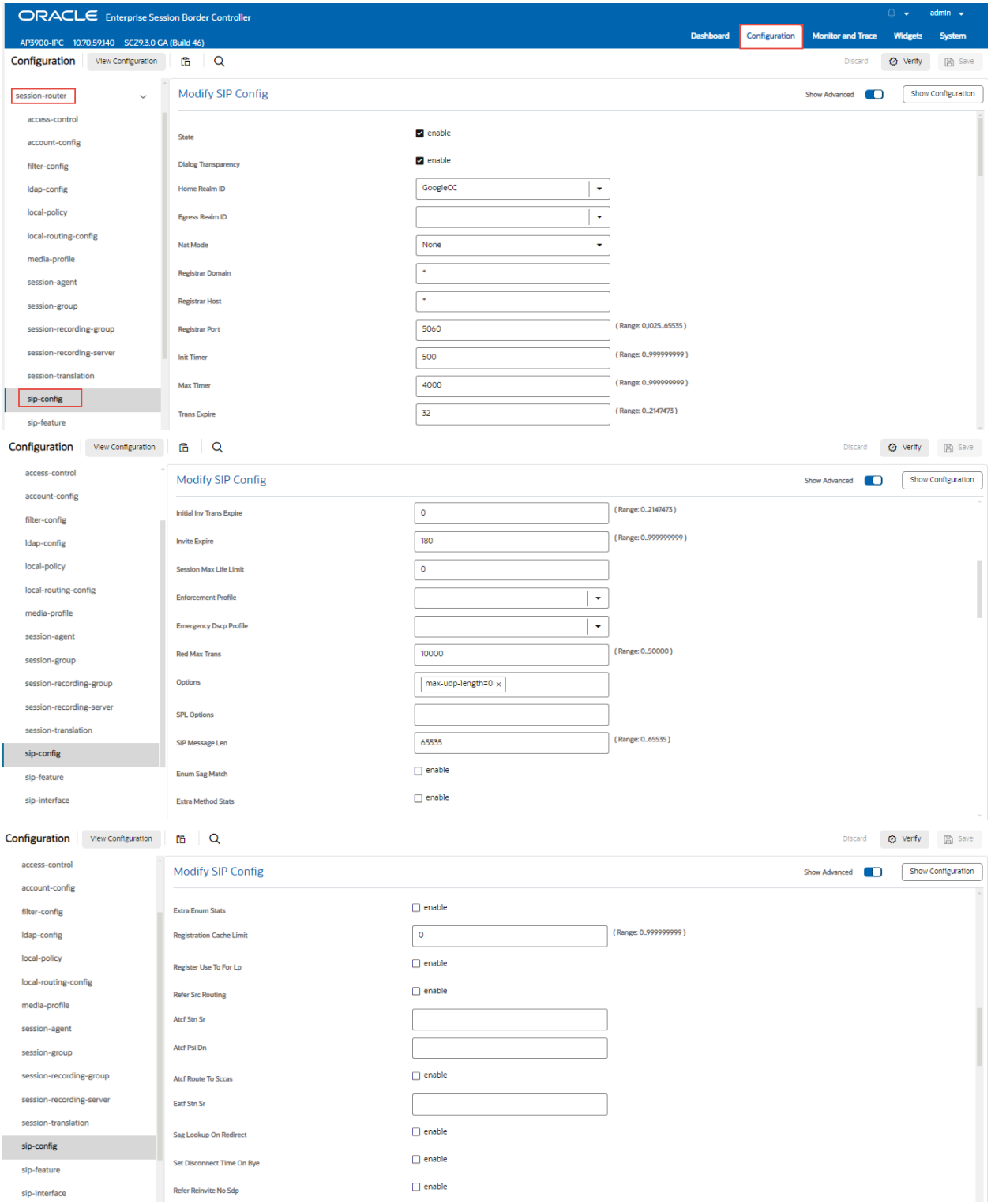

Figure 11: SIP-Config.

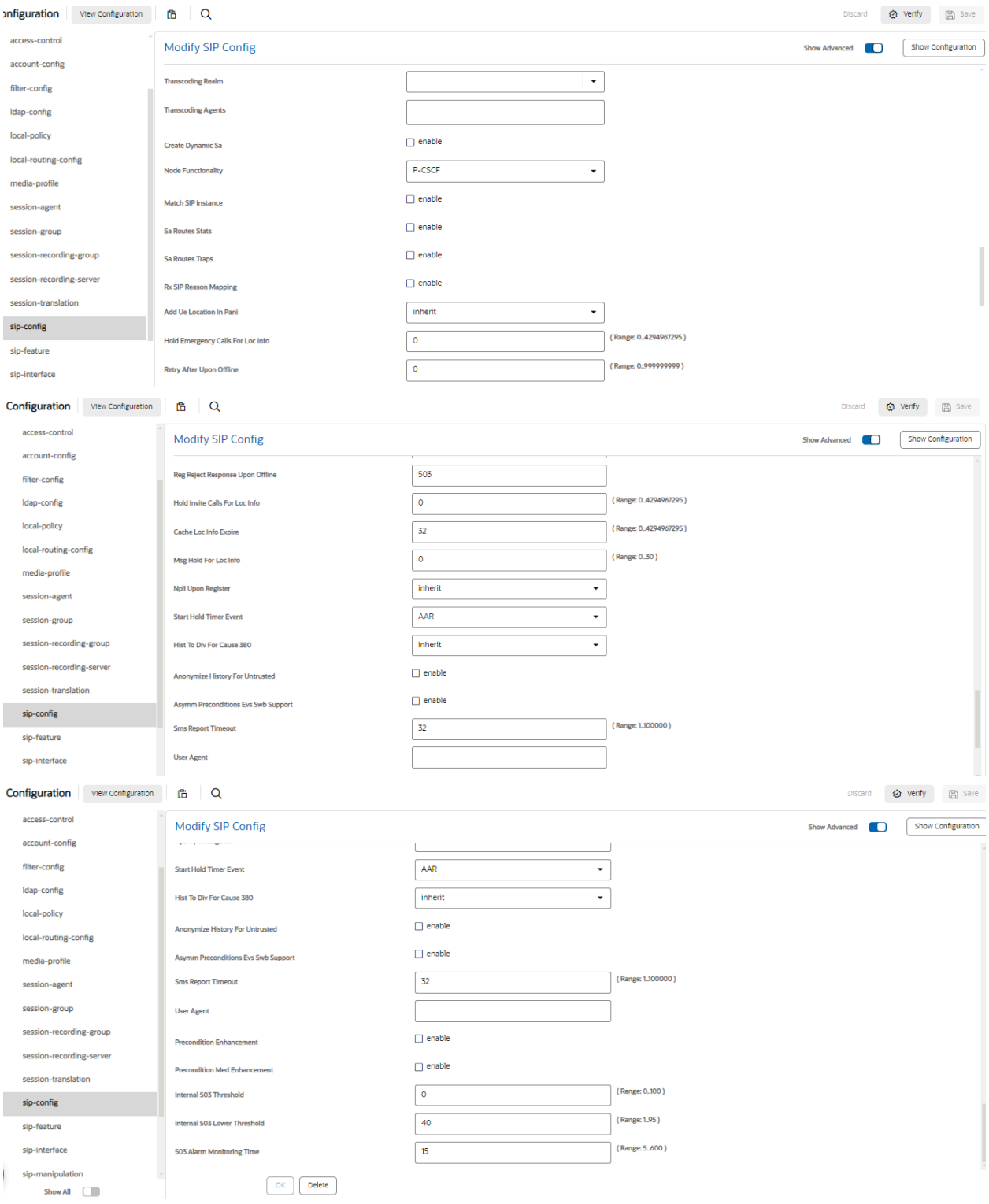

Figure 12: SIP-Config Cont.

6.4.5 System-Config

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

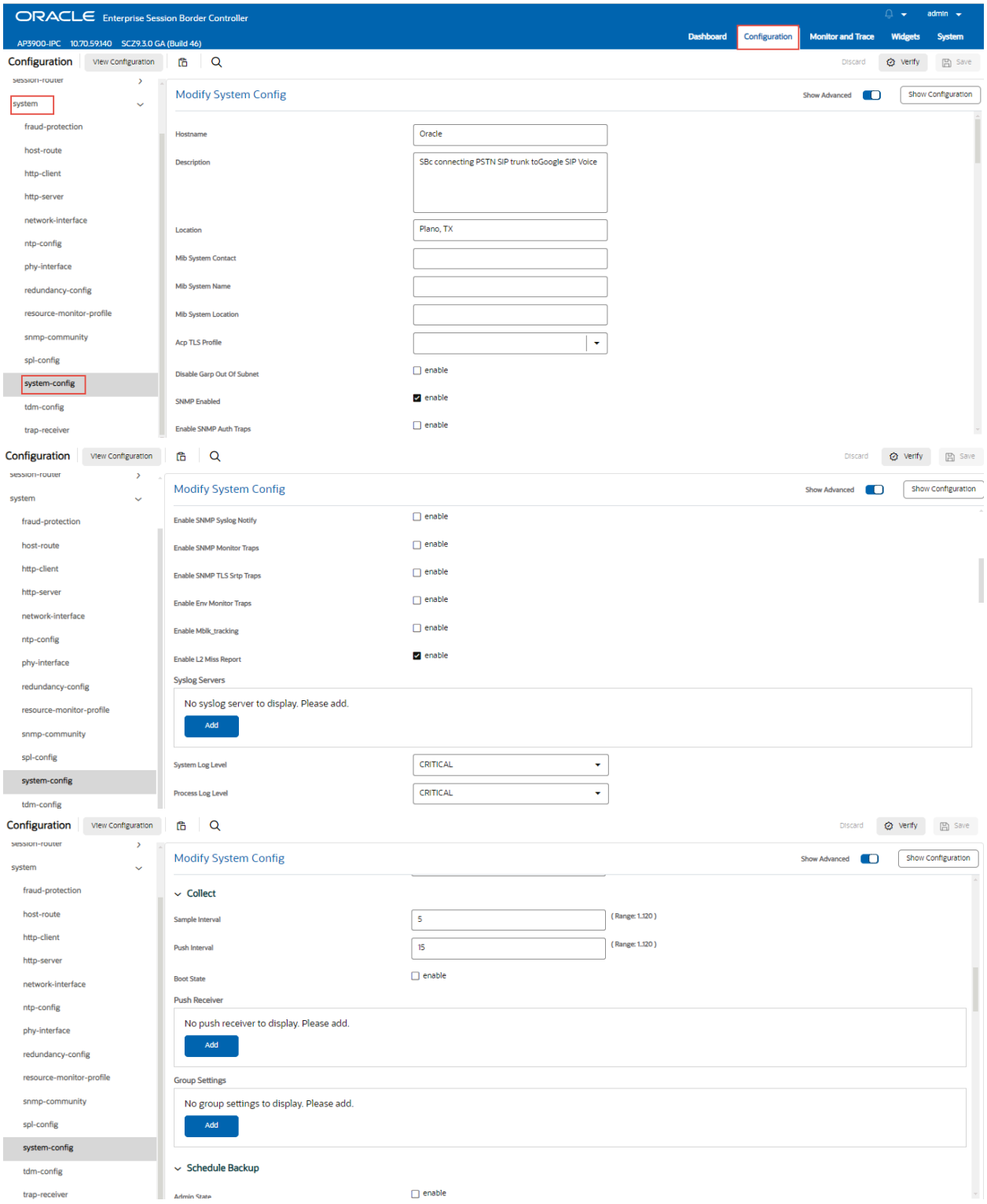

Figure 13: System-Config.

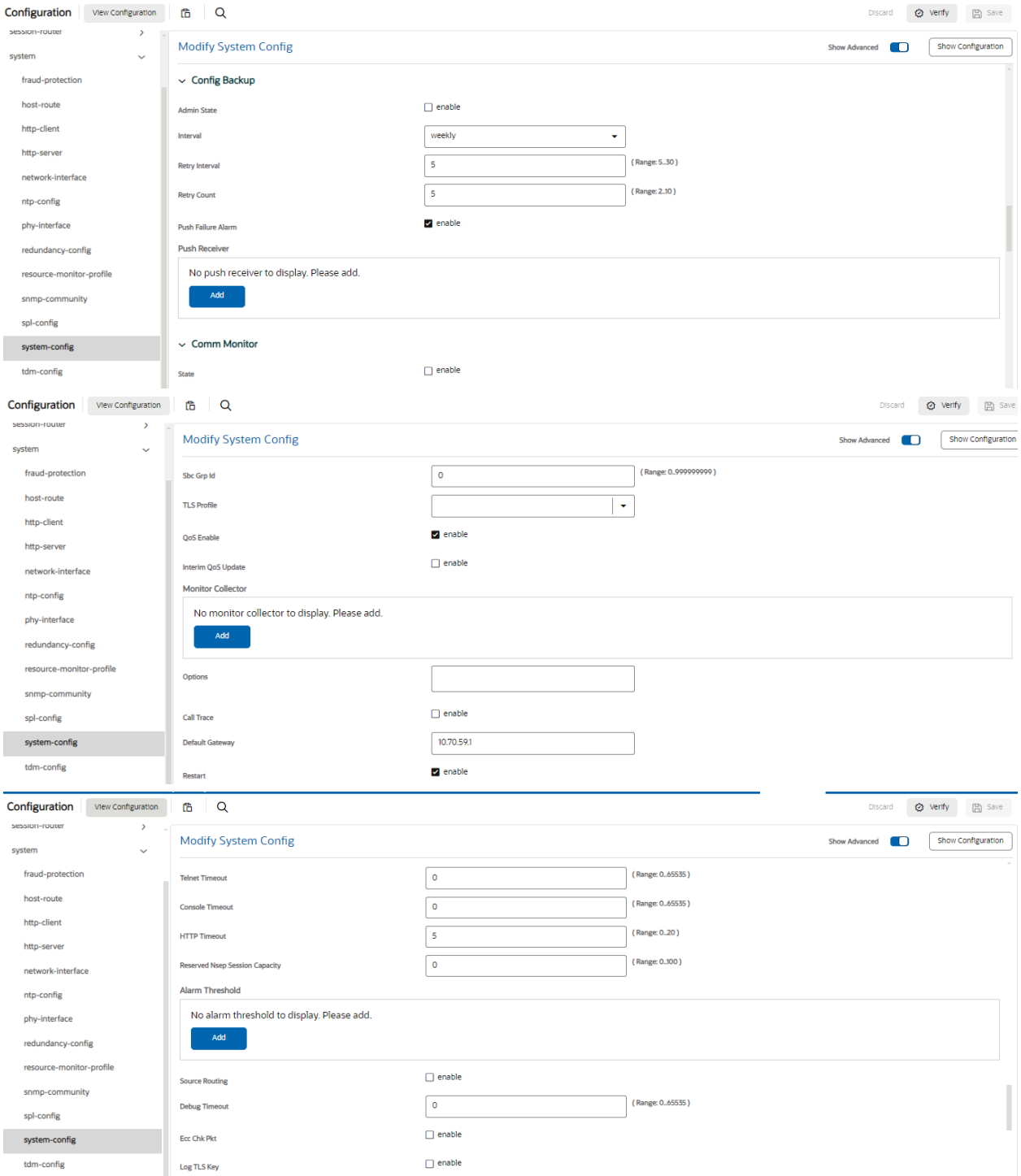

Figure 14: System-Config Cont.

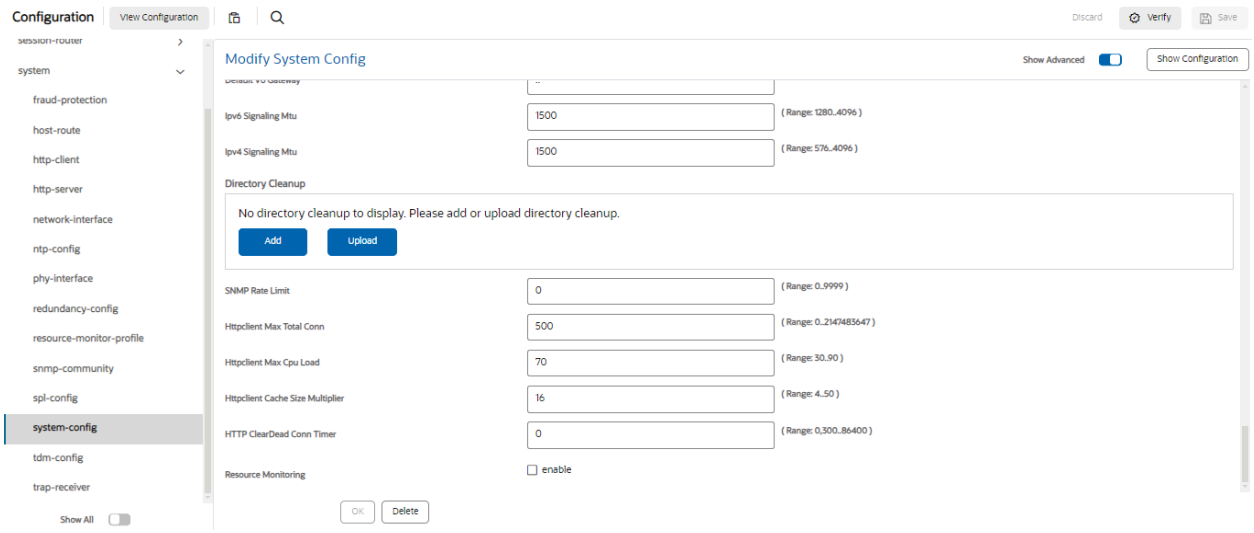

Figure 15: System-Config Cont.

6.4.6 SIP Monitoring

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

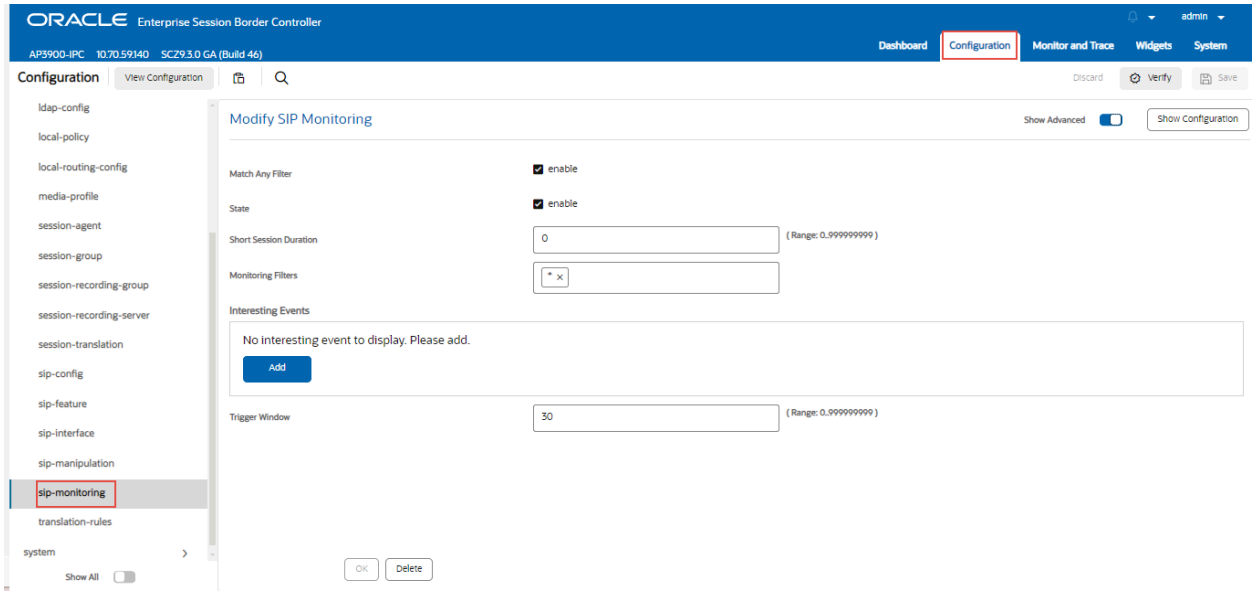

Figure 16: SIP Monitoring.

6.4.7 HTTP Server

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

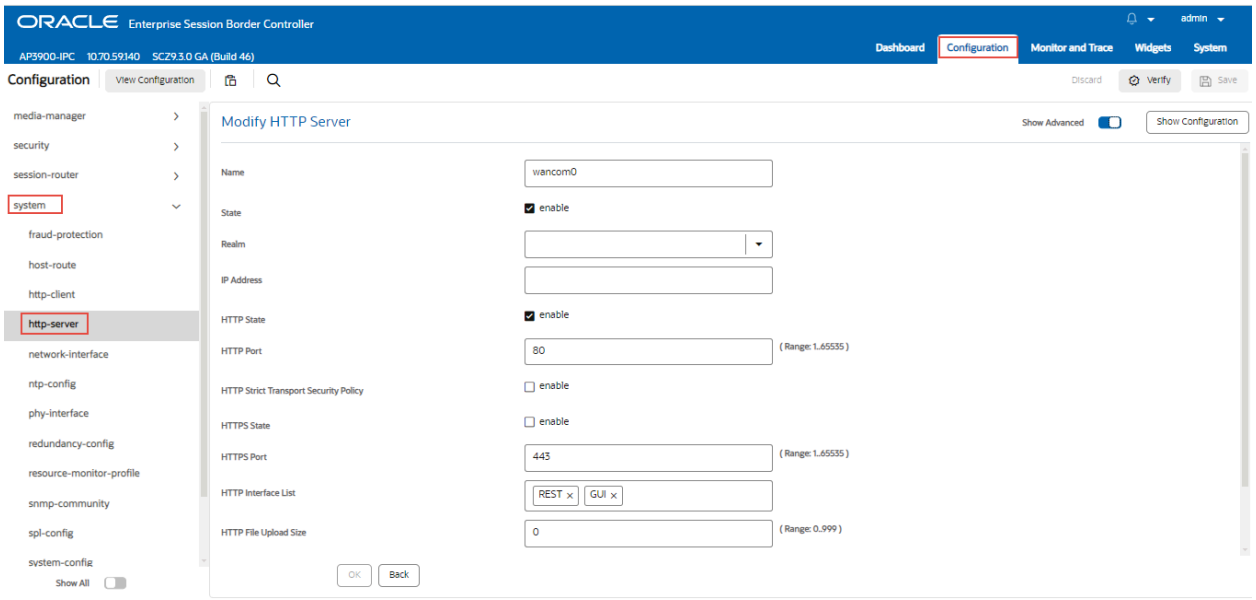

Figure 17: HTTP Server.

6.4.8 Codec Policy

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

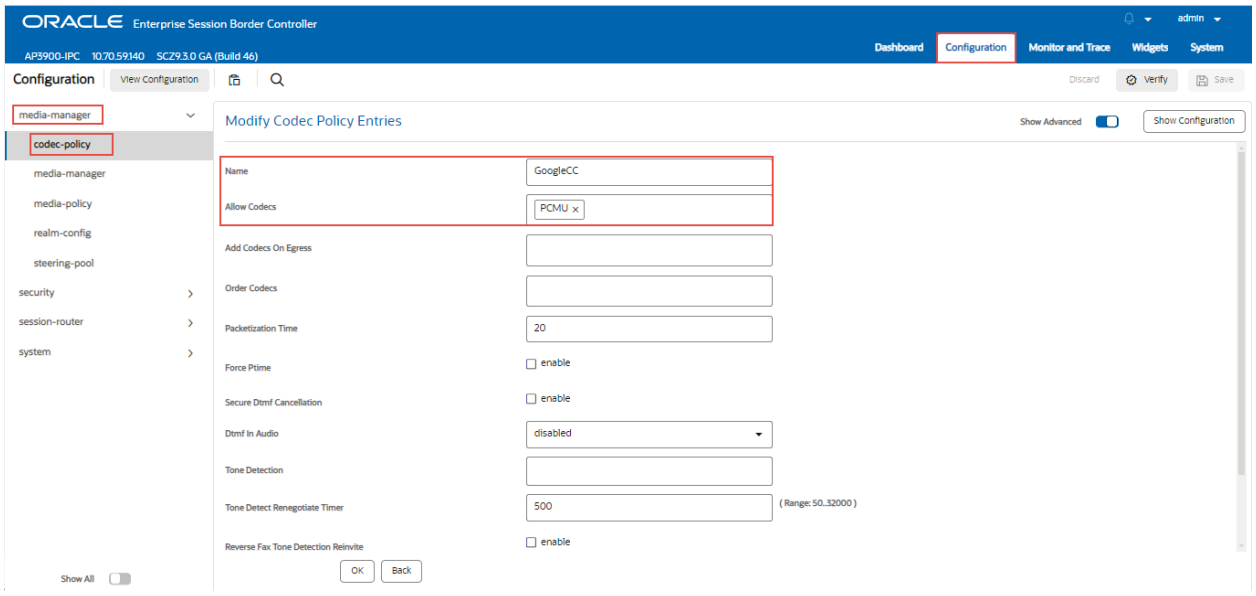

Figure 18: Codec Policy for Google CCAI.

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.

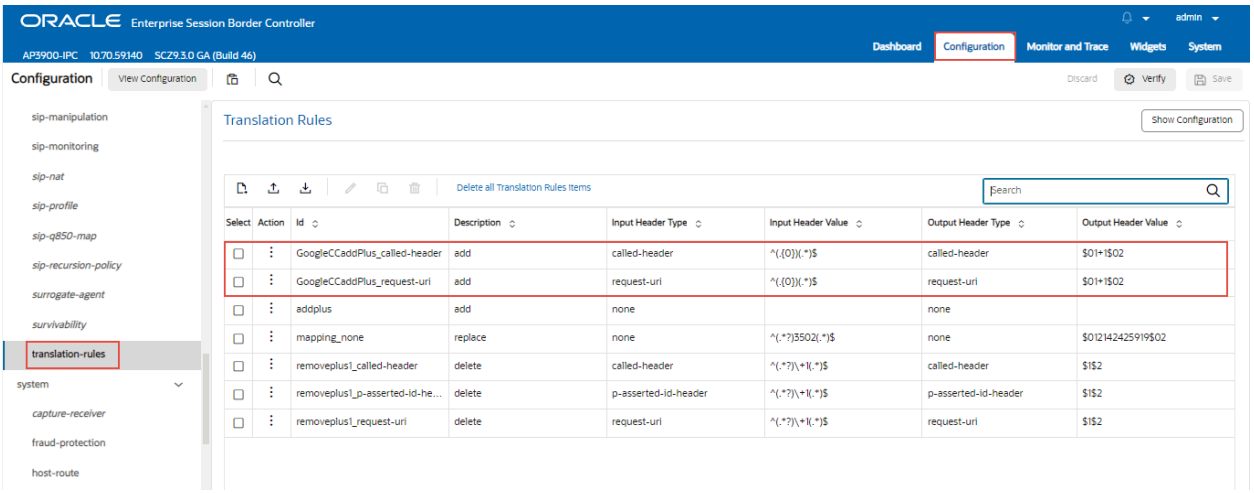

Figure 19: Translation Rule to add send E.164 towards Google CCAI.

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.

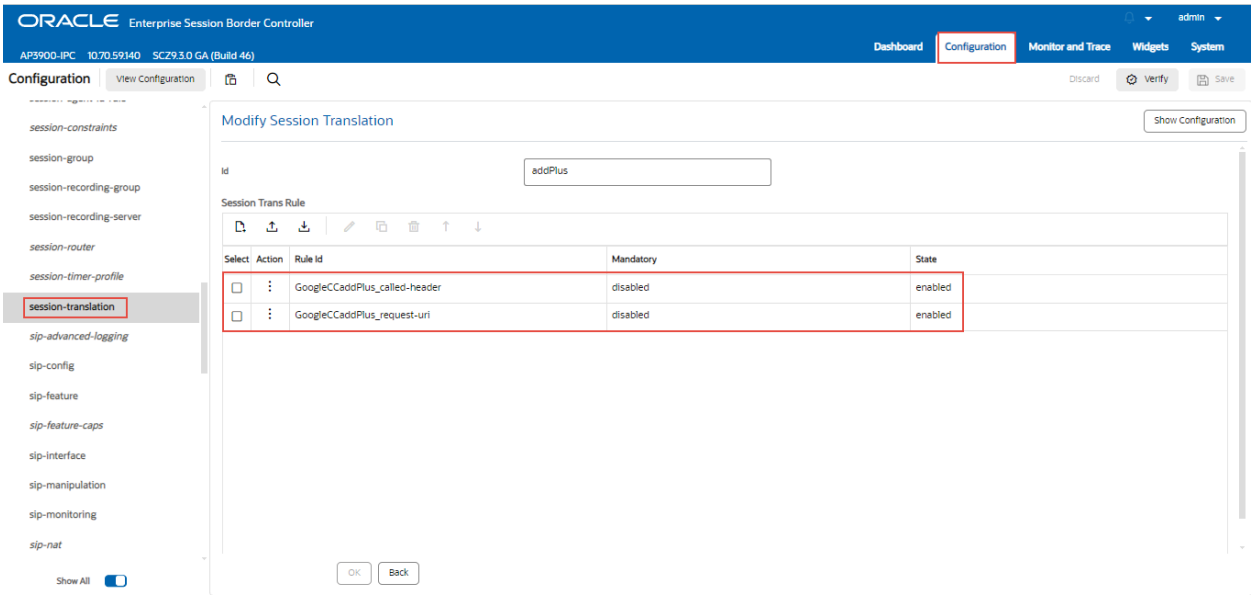

Figure 20: Session Translation towards Google CCAI.

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

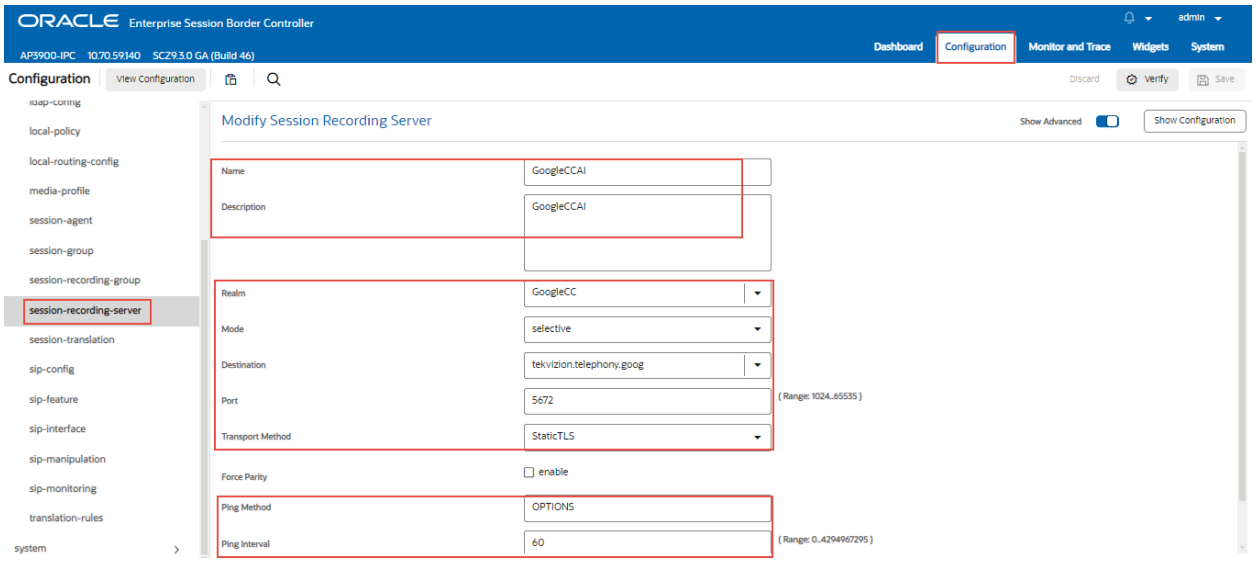

Figure 21: Session Recording Server towards Google CCAI.

6.4.12 Realm Config

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

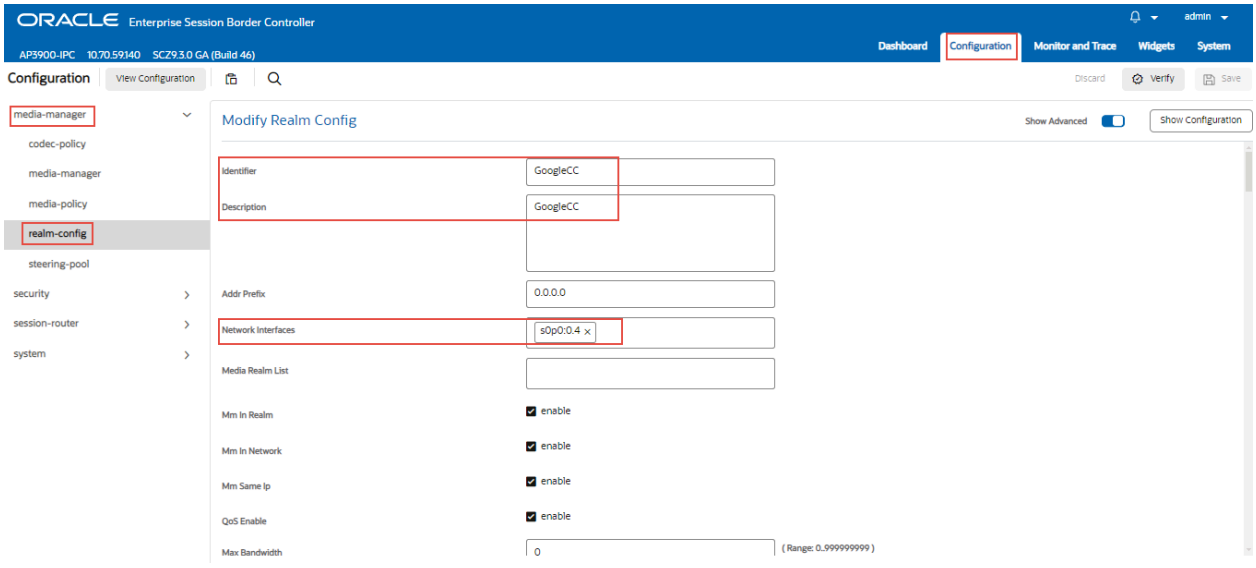

Figure 22: Realm Config towards Google CCAI.

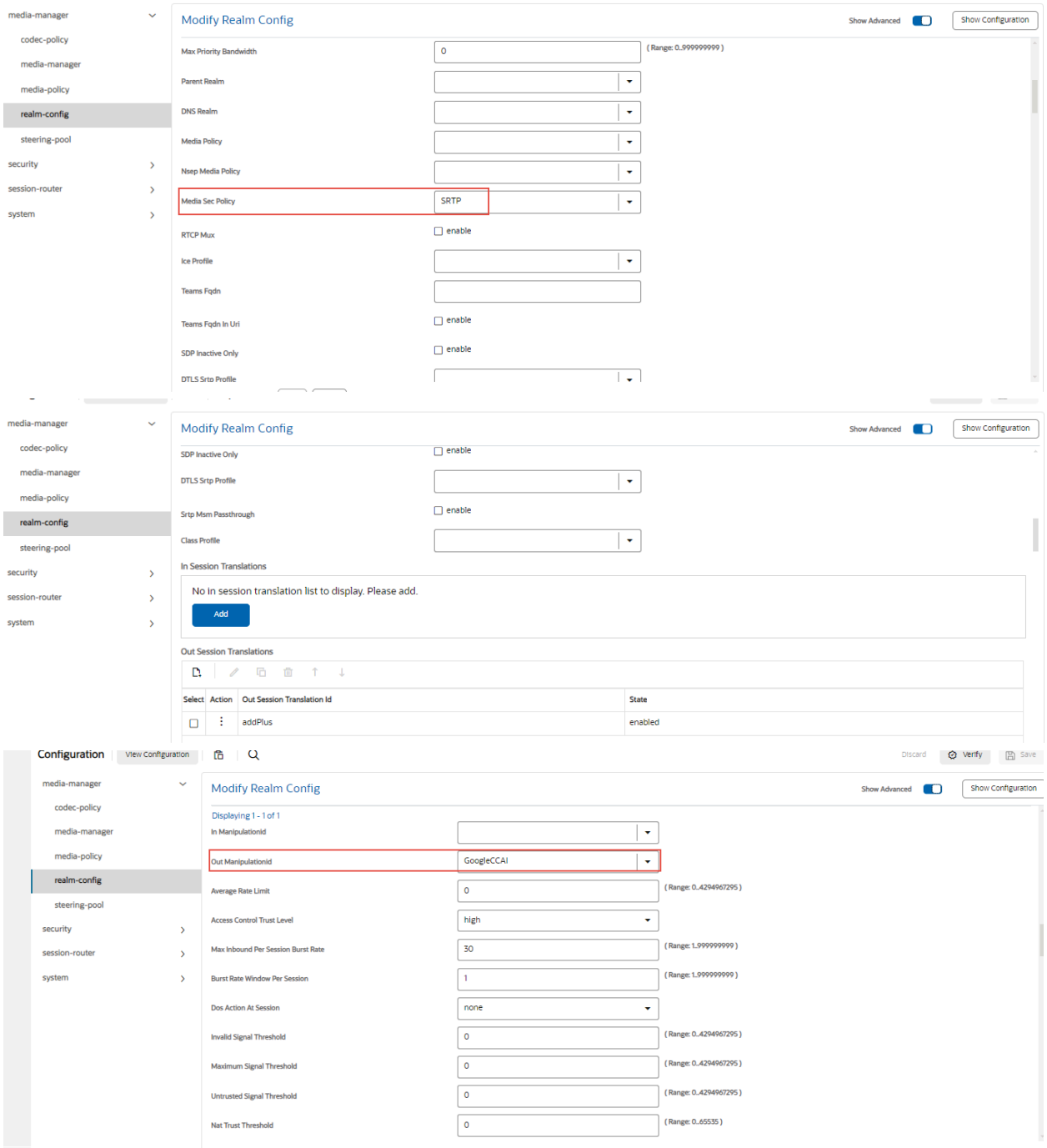

Figure 23: Realm Config towards Google CCAI Cont.

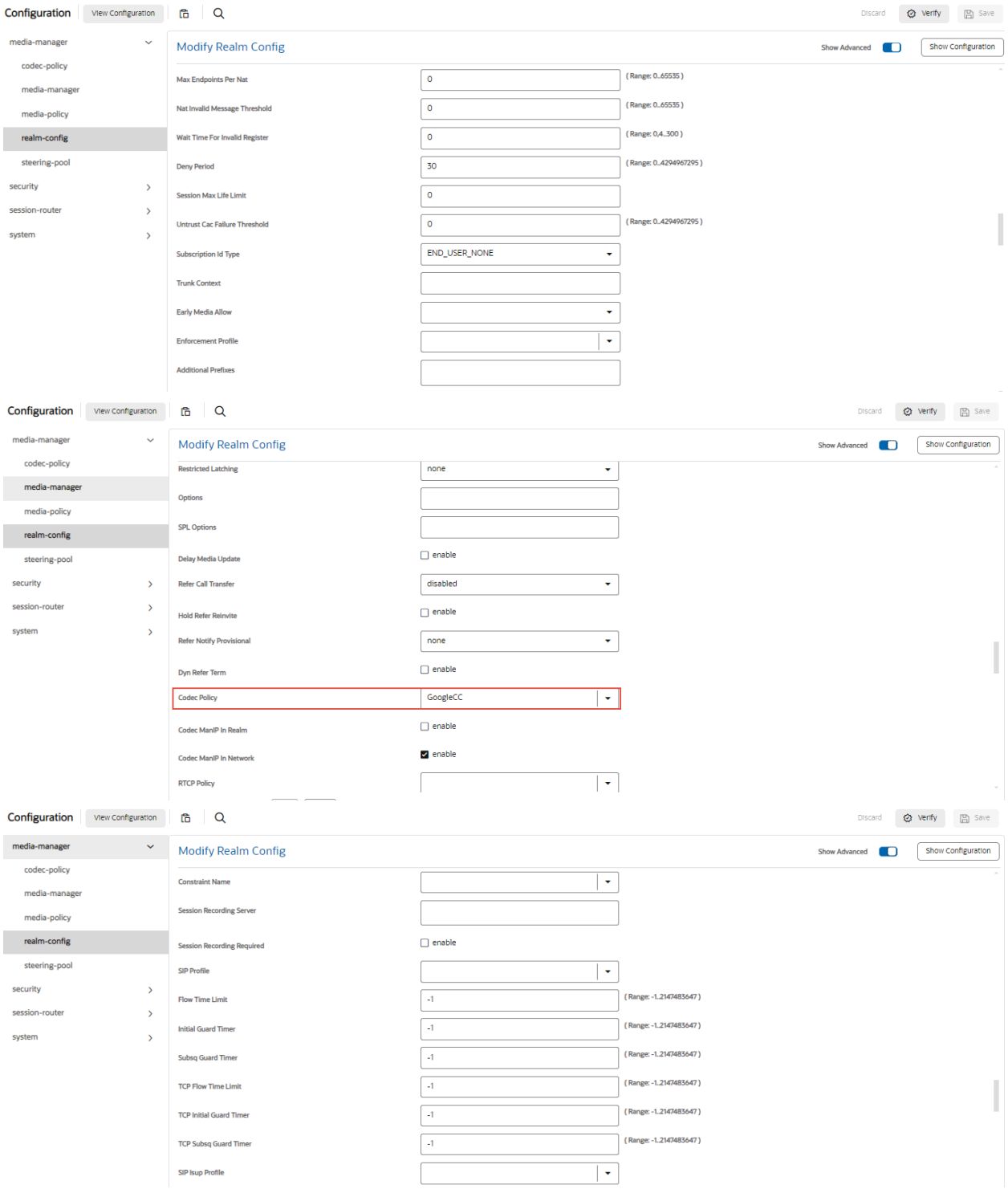

Figure 24: Realm Config towards Google CCAI Cont.

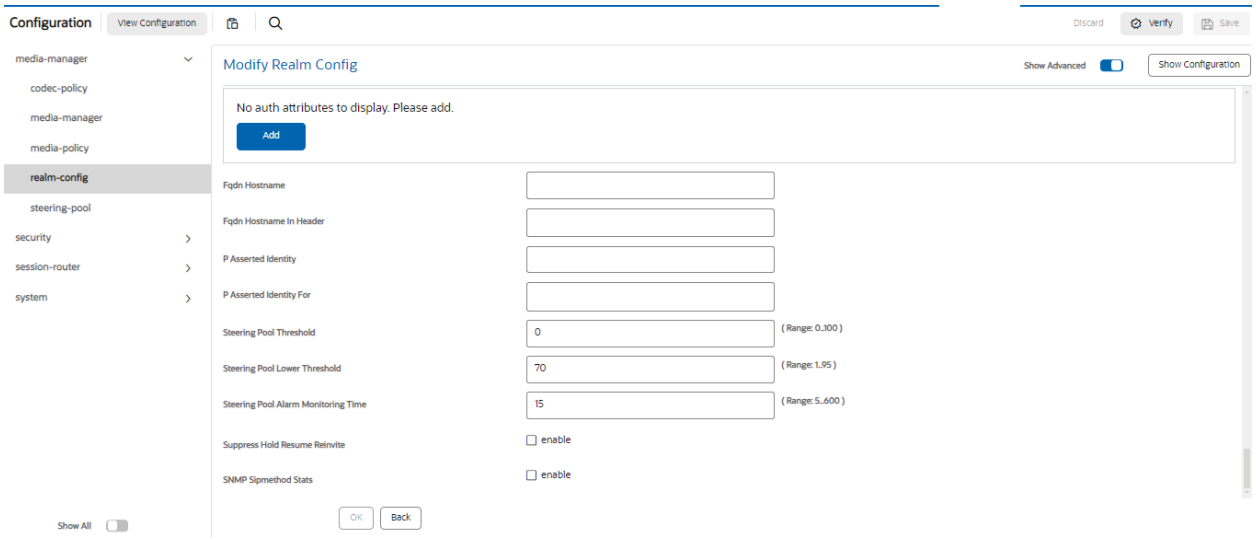

Figure 25: Realm Config towards Google CCAI Cont.

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

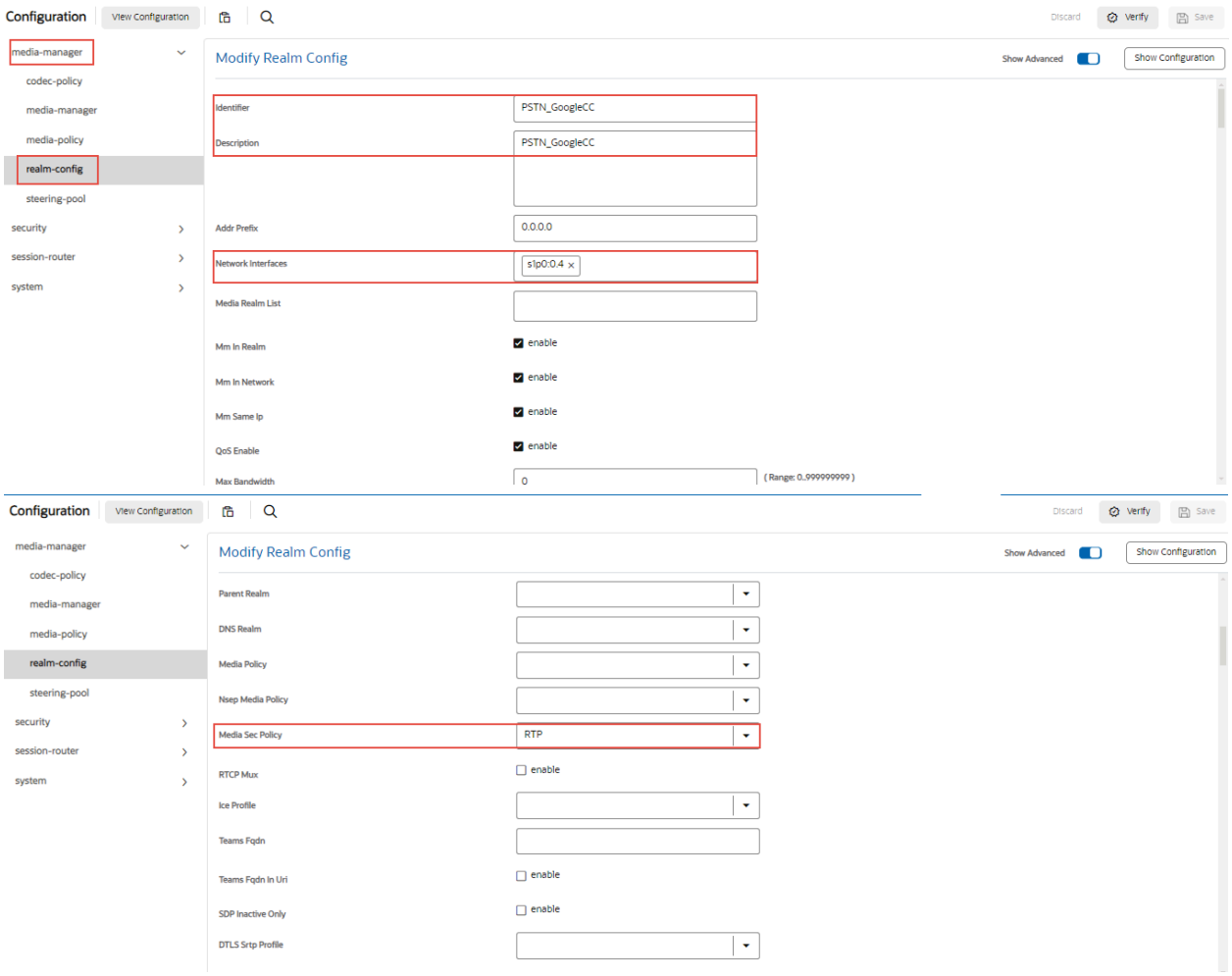

Figure 26: Realm Config towards OnPrem PBX and PSTN Gateway.

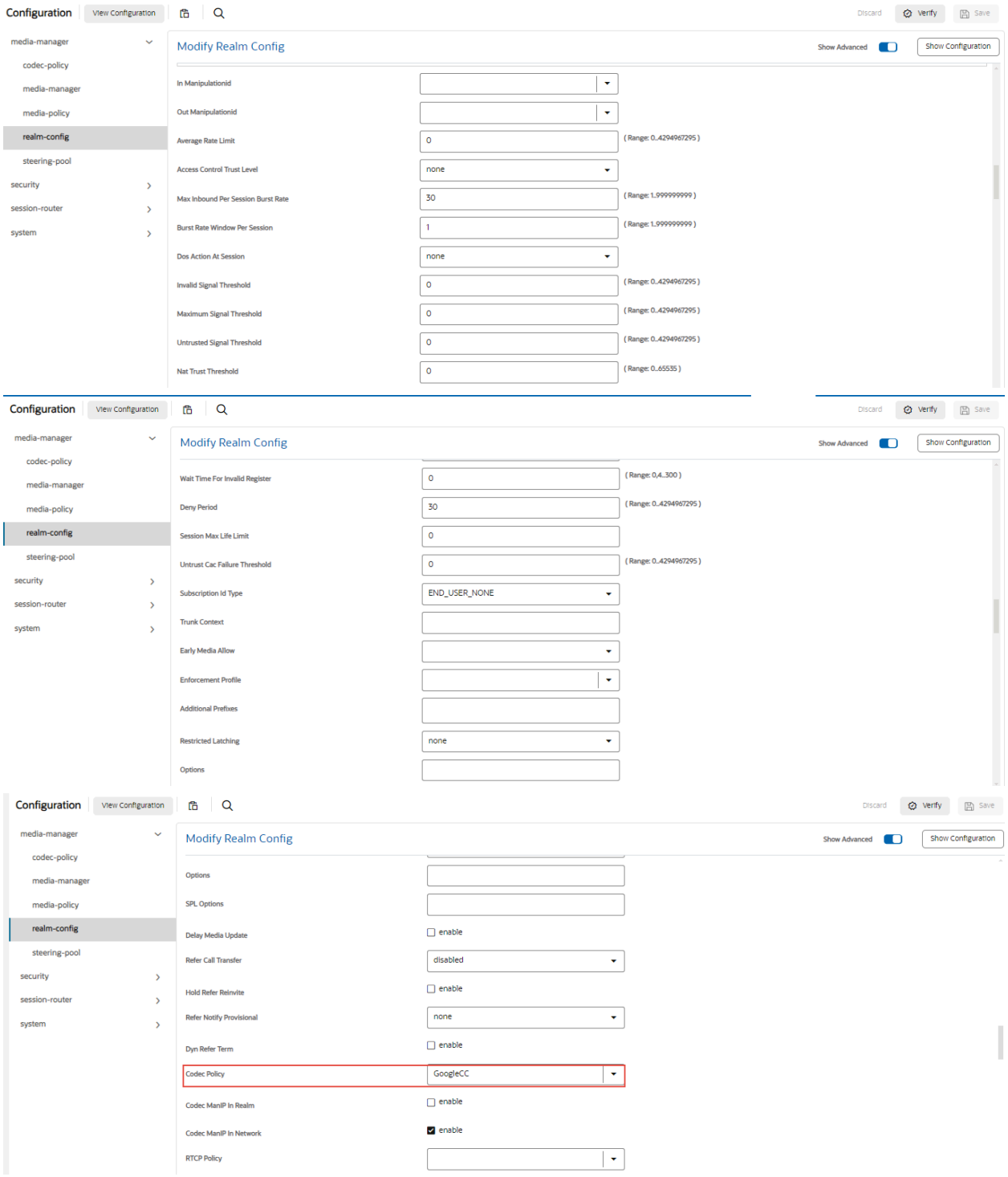

Figure 27: Realm Config towards OnPrem PBX and PSTN Gateway Cont.

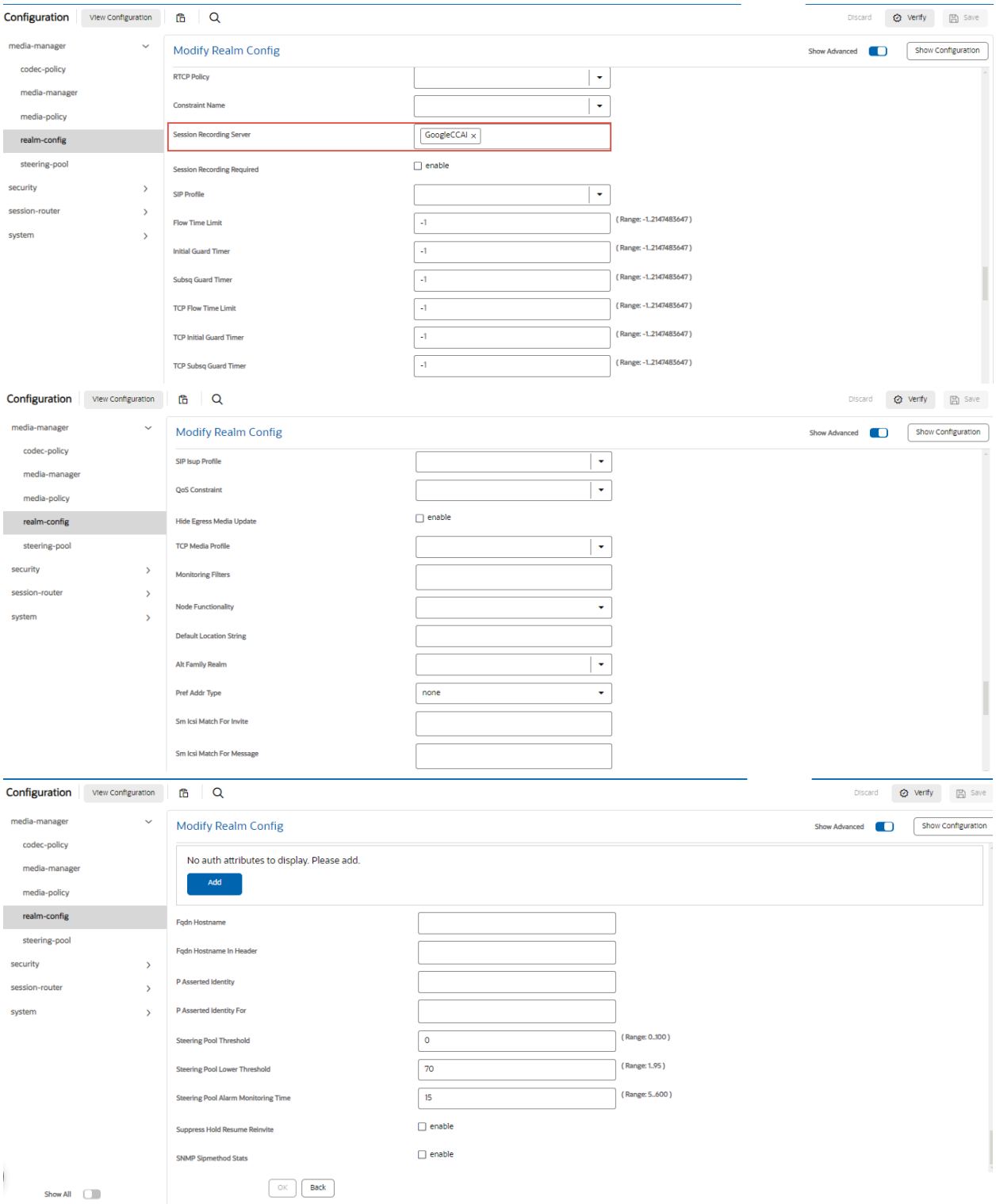

Figure 29: Realm Config towards OnPrem PBX and PSTN Gateway Cont.

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.

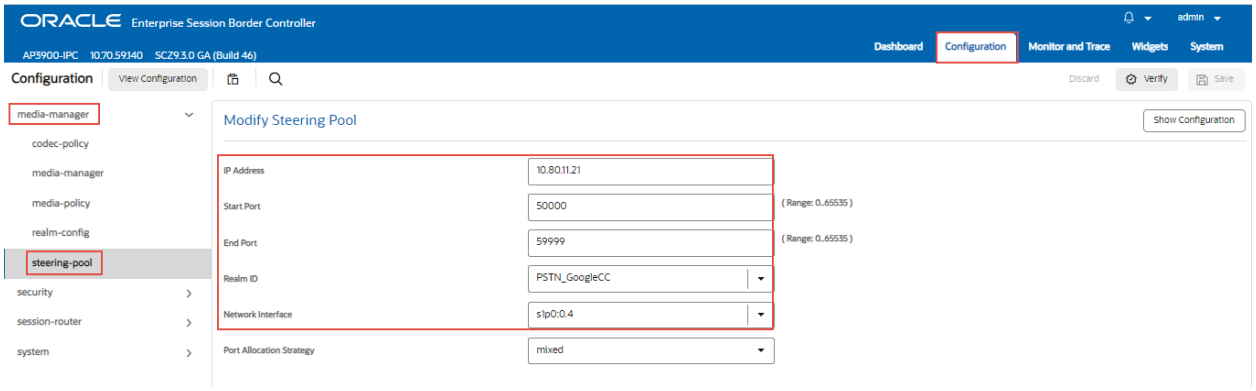

Figure 30: Steering Pool towards PSTN Gateway and OnPrem PBX.

- Steering Pool Configuration towards Google CCAI is shown below.

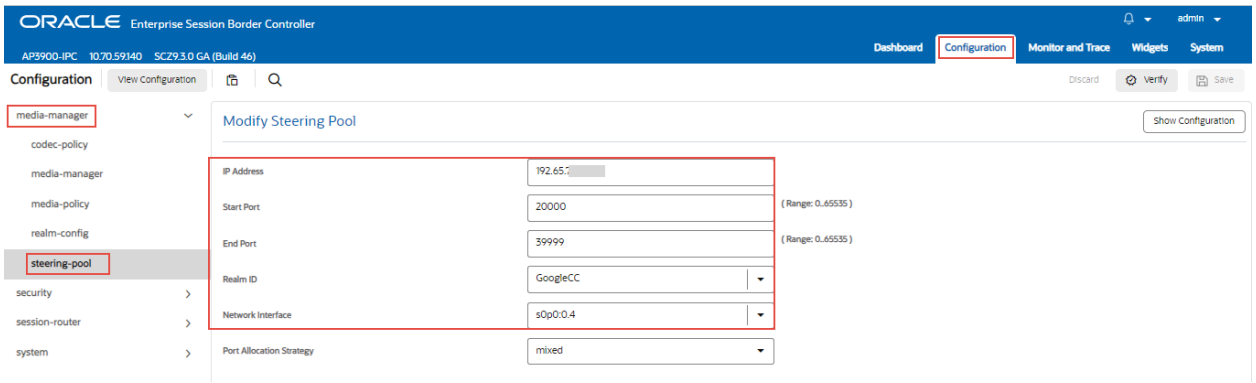

Figure 31: Steering Pool towards Google CCAI.

6.4.14 SDES Profile

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

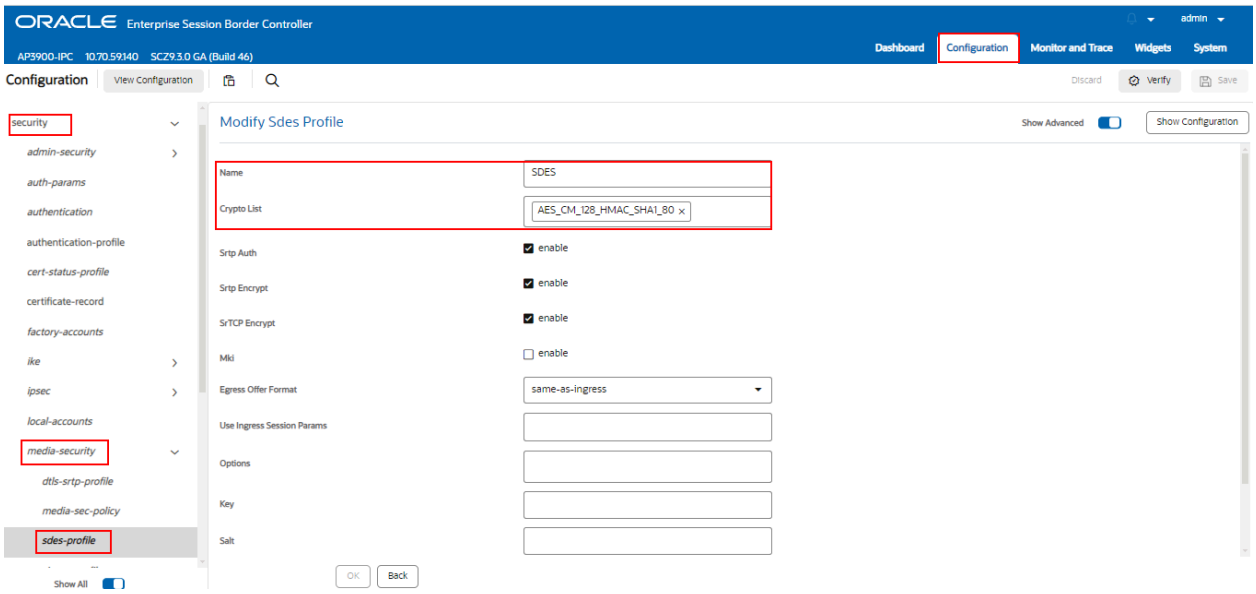

Figure 32: SDES Profile for TLS.

6.4.15 Media Sec Policy

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

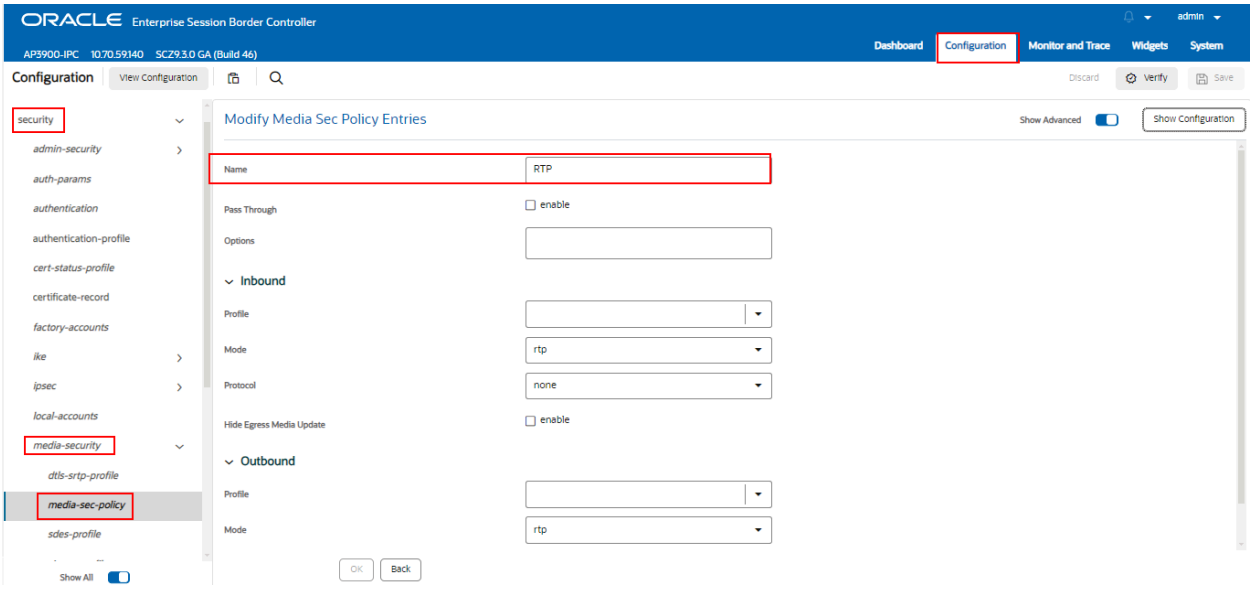

Figure 33: Media Security Policy for RTP.

- SDES profile created in Section 6.4.14 is associated with Media Security Policy for SRTP is shown below.

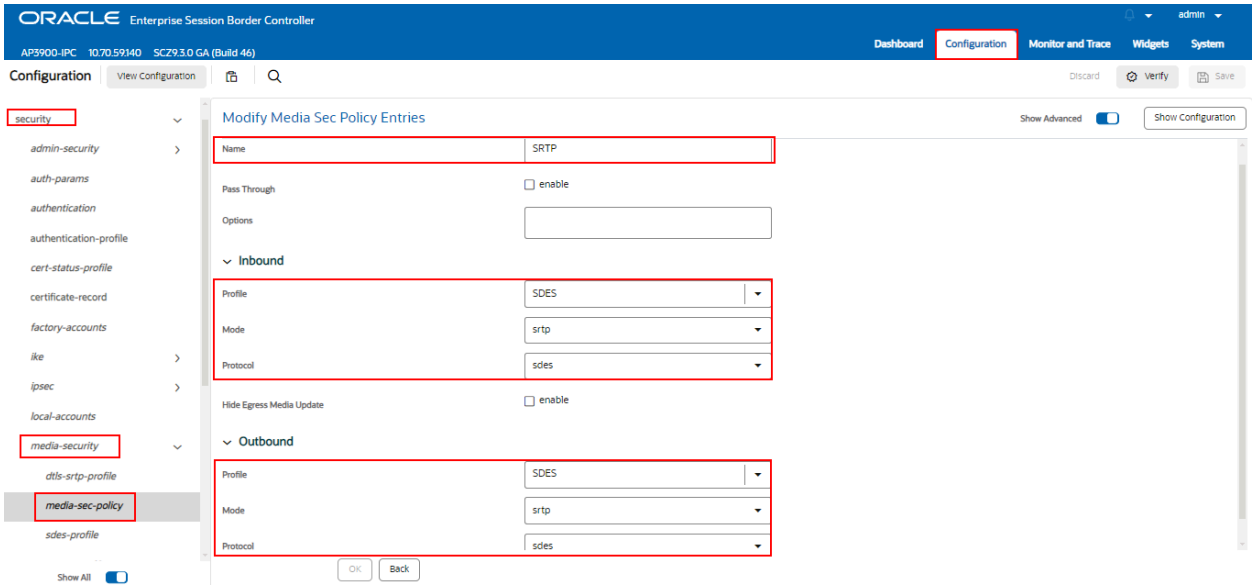

Figure 34: Media Security Policy for SRTP.

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.

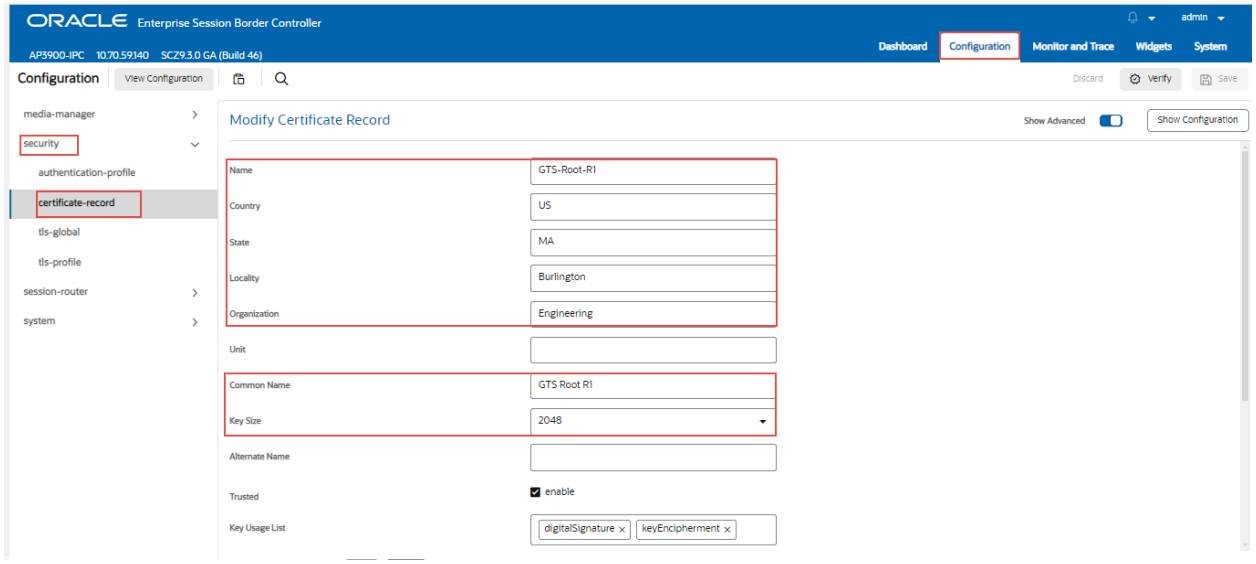

Figure 35: Create Certificate Record for Google CCAI ROOT CA – GTS Root R1.

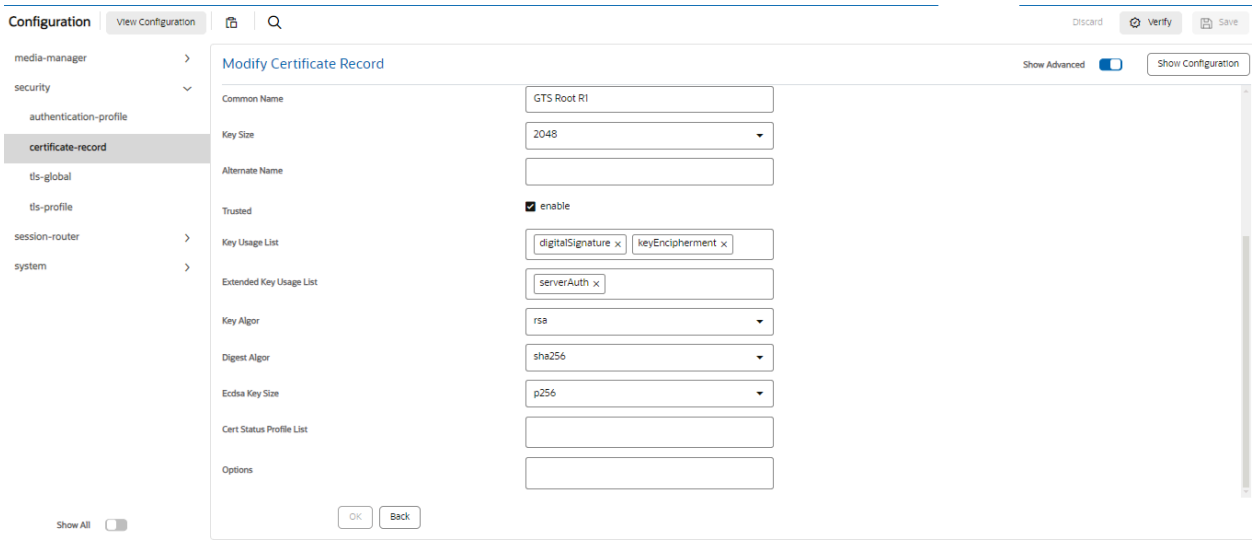

Figure 36: Create Certificate Record for Google CCAI ROOT CA – GTS Root R1 cont.

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

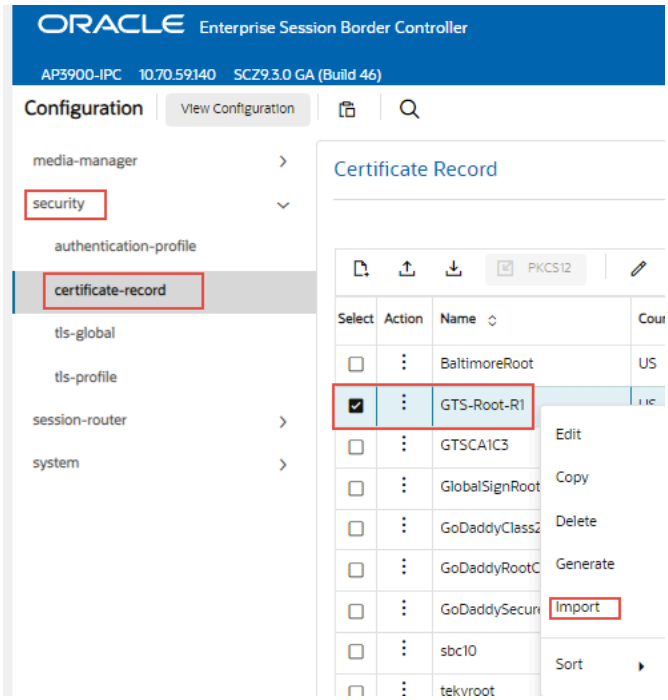

Figure 37: Import Google CCAI Root Certificate.

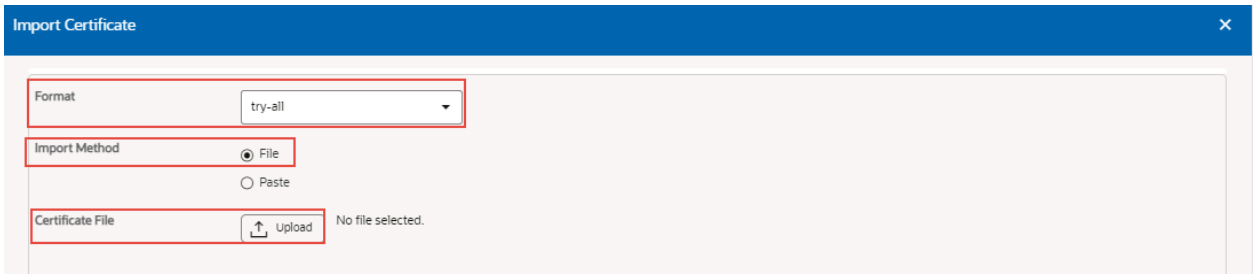

Figure 37: Import Google CCAI Root Certificate Cont.

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

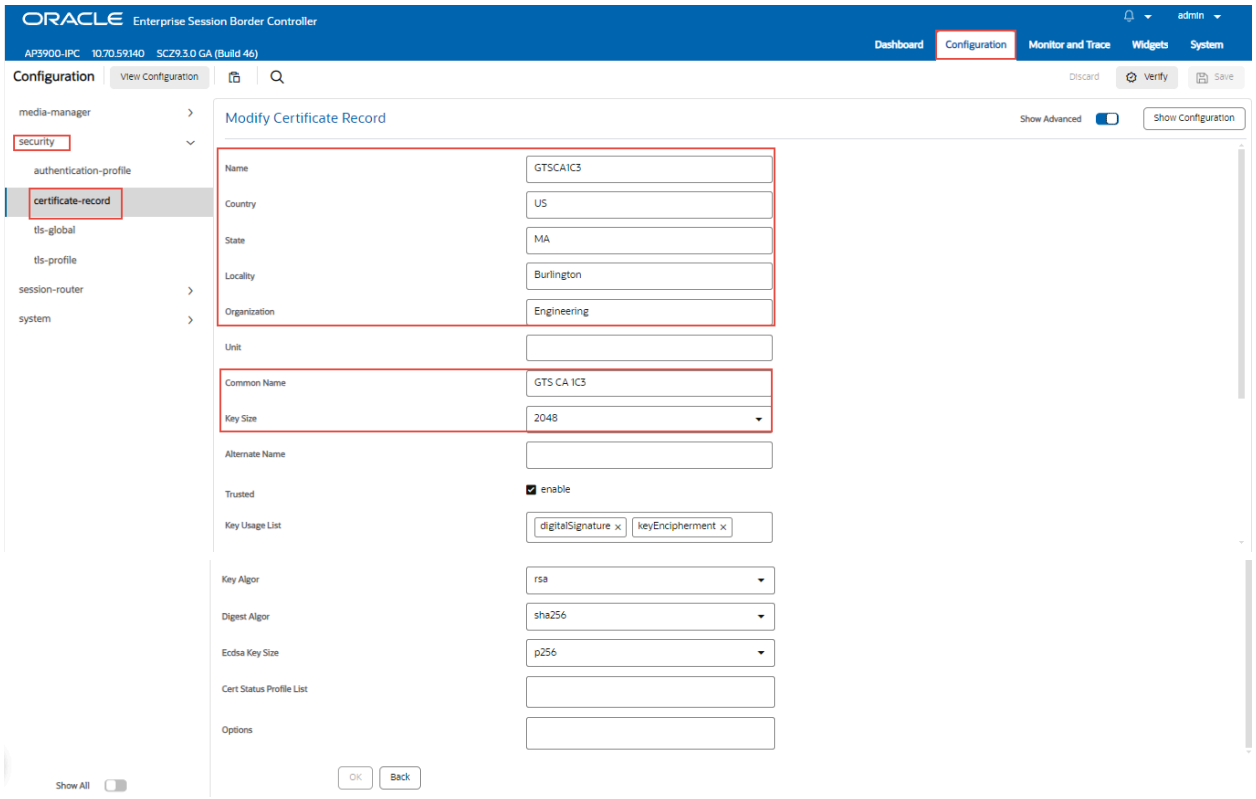

Figure 38: Create Certificate Record for Google CCAI – GTS CA 1C3.

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.

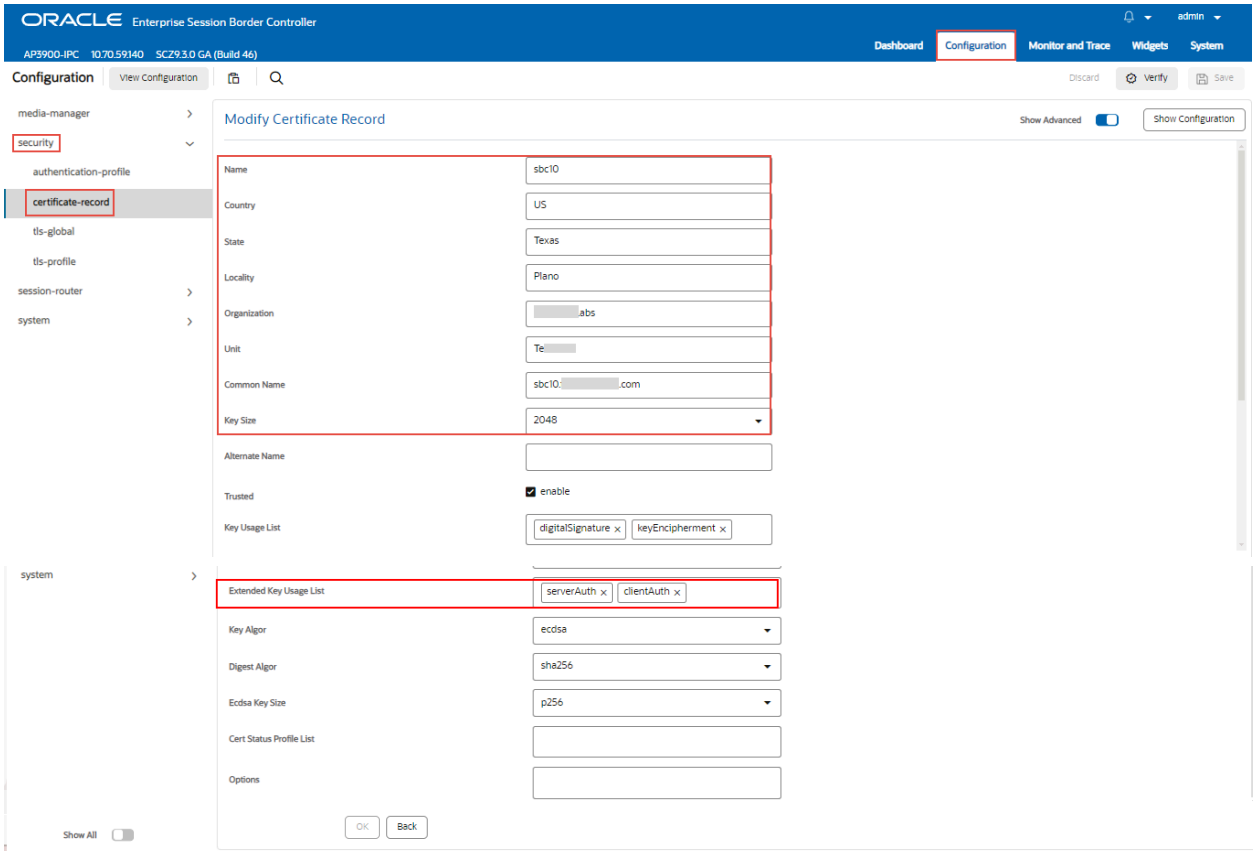

Figure 39: Create Certificate Record for Oracle E-SBC.

- 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

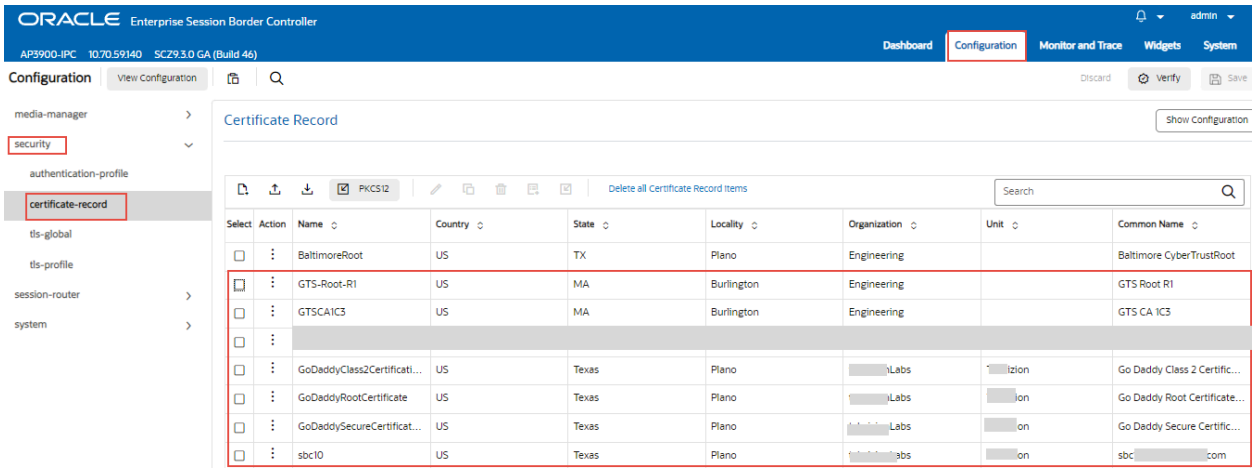

Figure 40: Certificate Records.

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

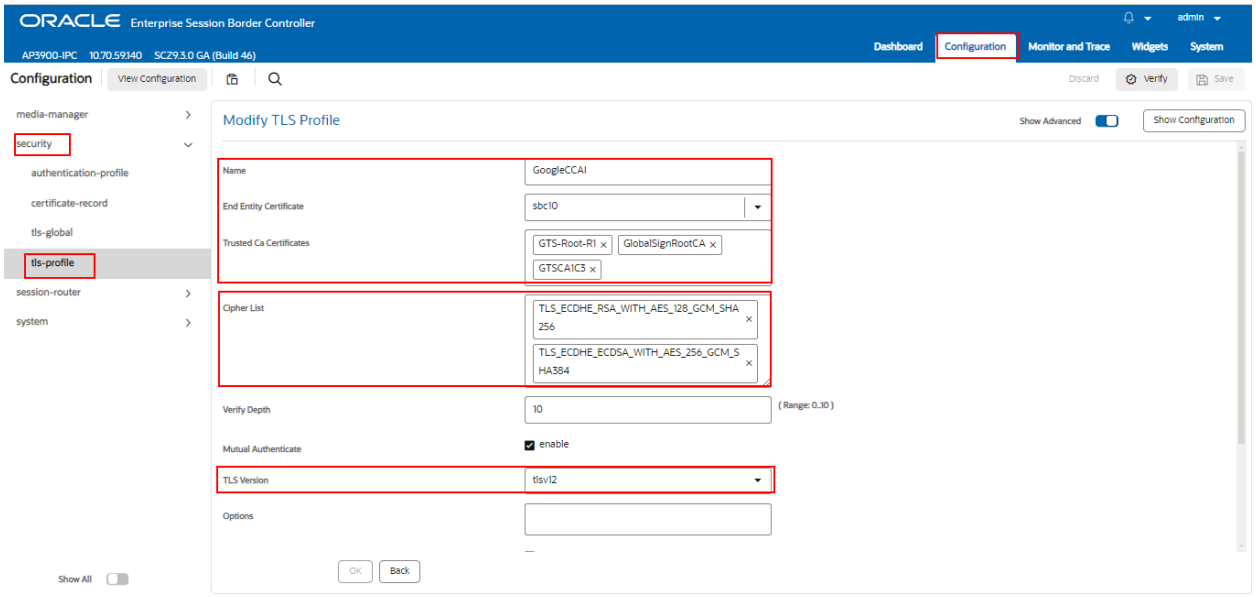

Figure 41: TLS Profile.

6.4.18 Session Timer

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

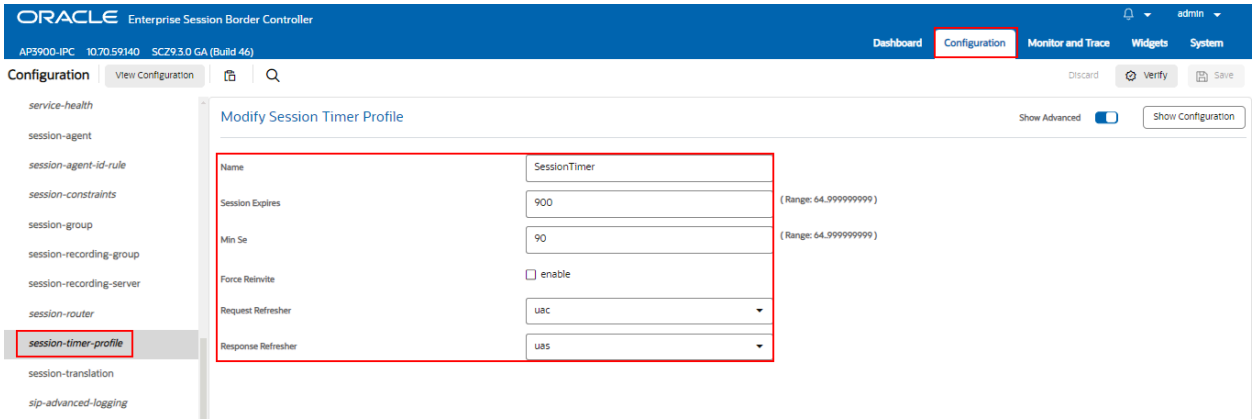

Figure 42: Session Timer.

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

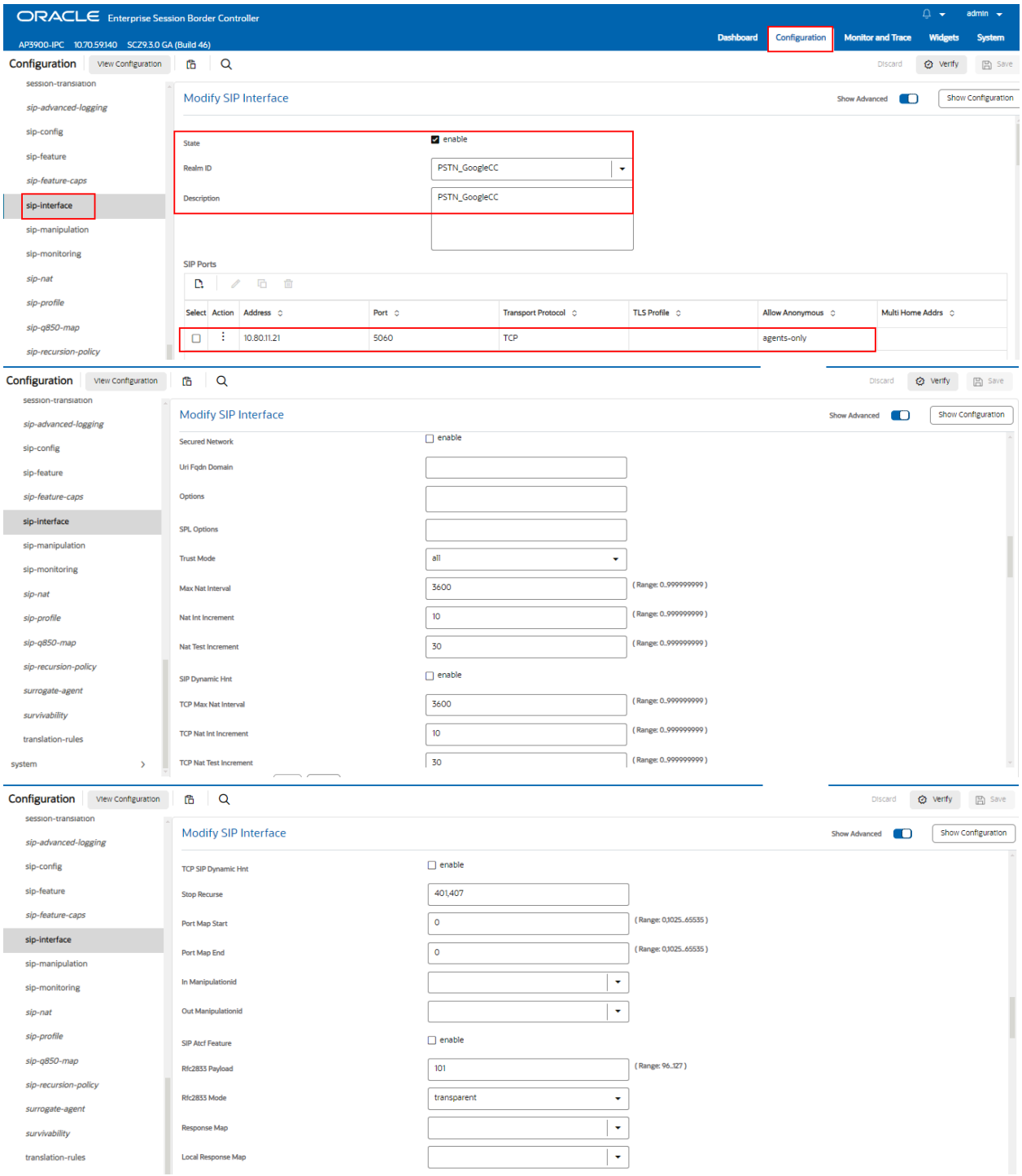

Figure 43: SIP Interface for OnPrem PBX and PSTN.

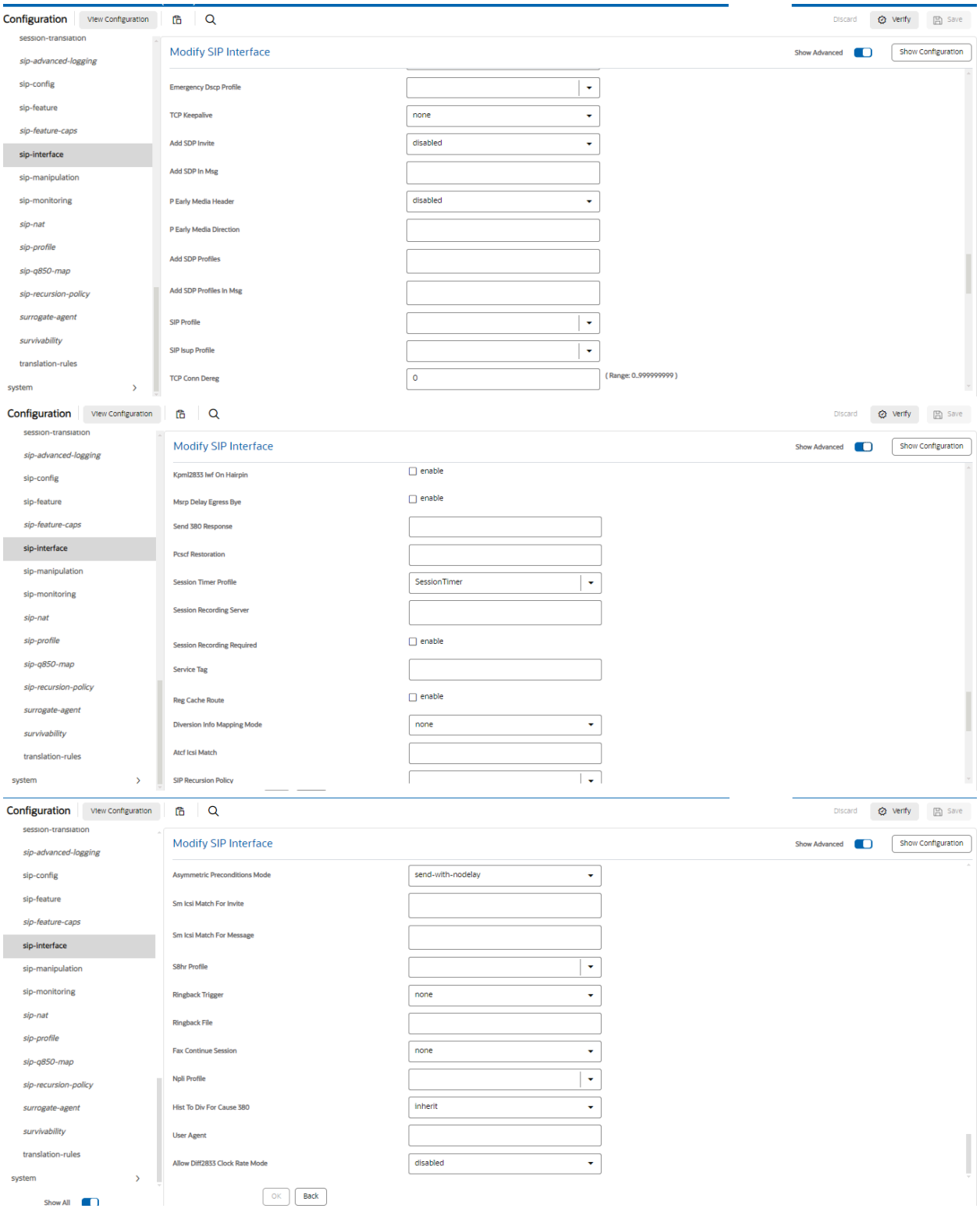

Figure 44: SIP Interface for OnPrem PBX and PSTN Cont.

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

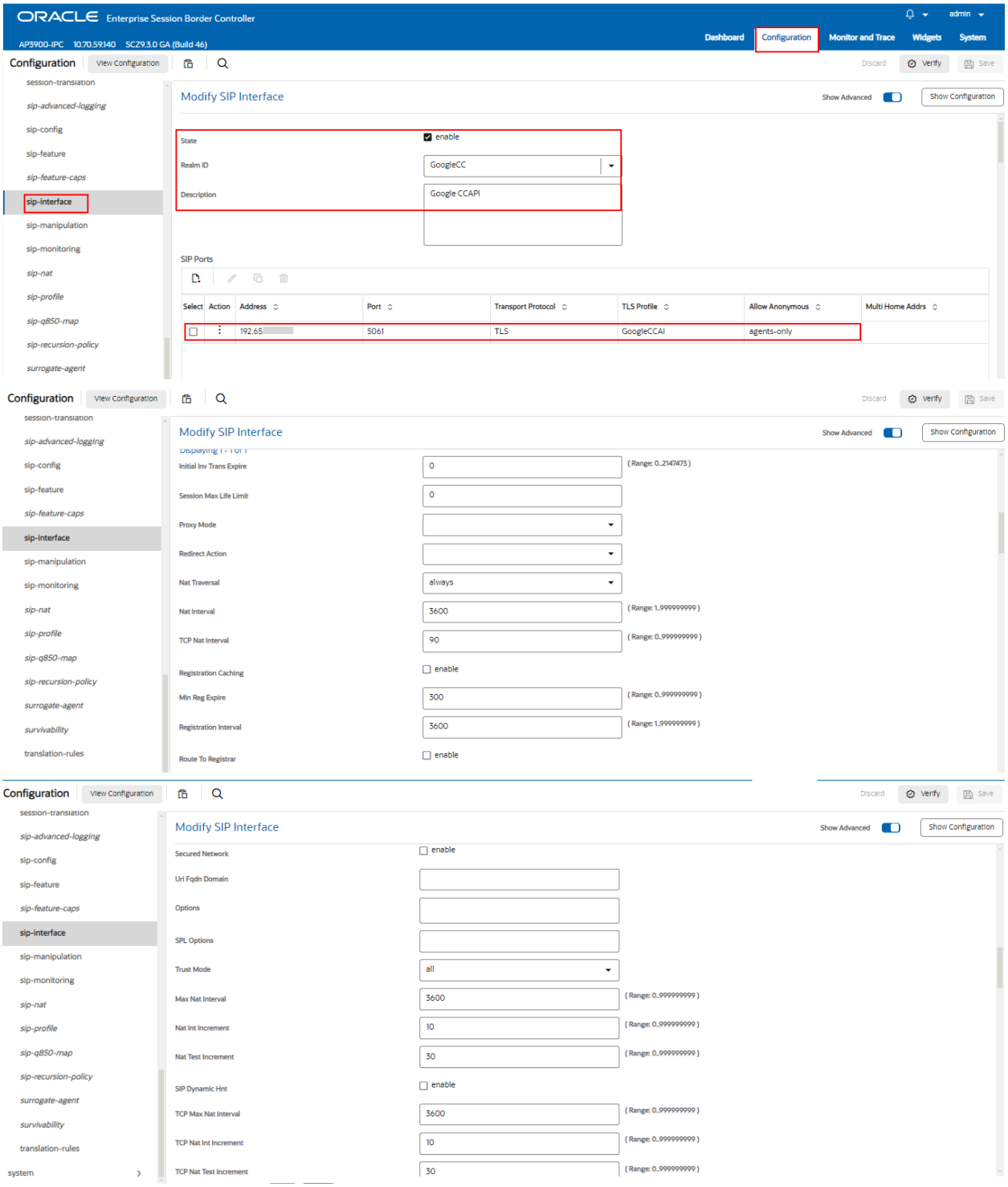

Figure 45: SIP Interface for Google CCAI.

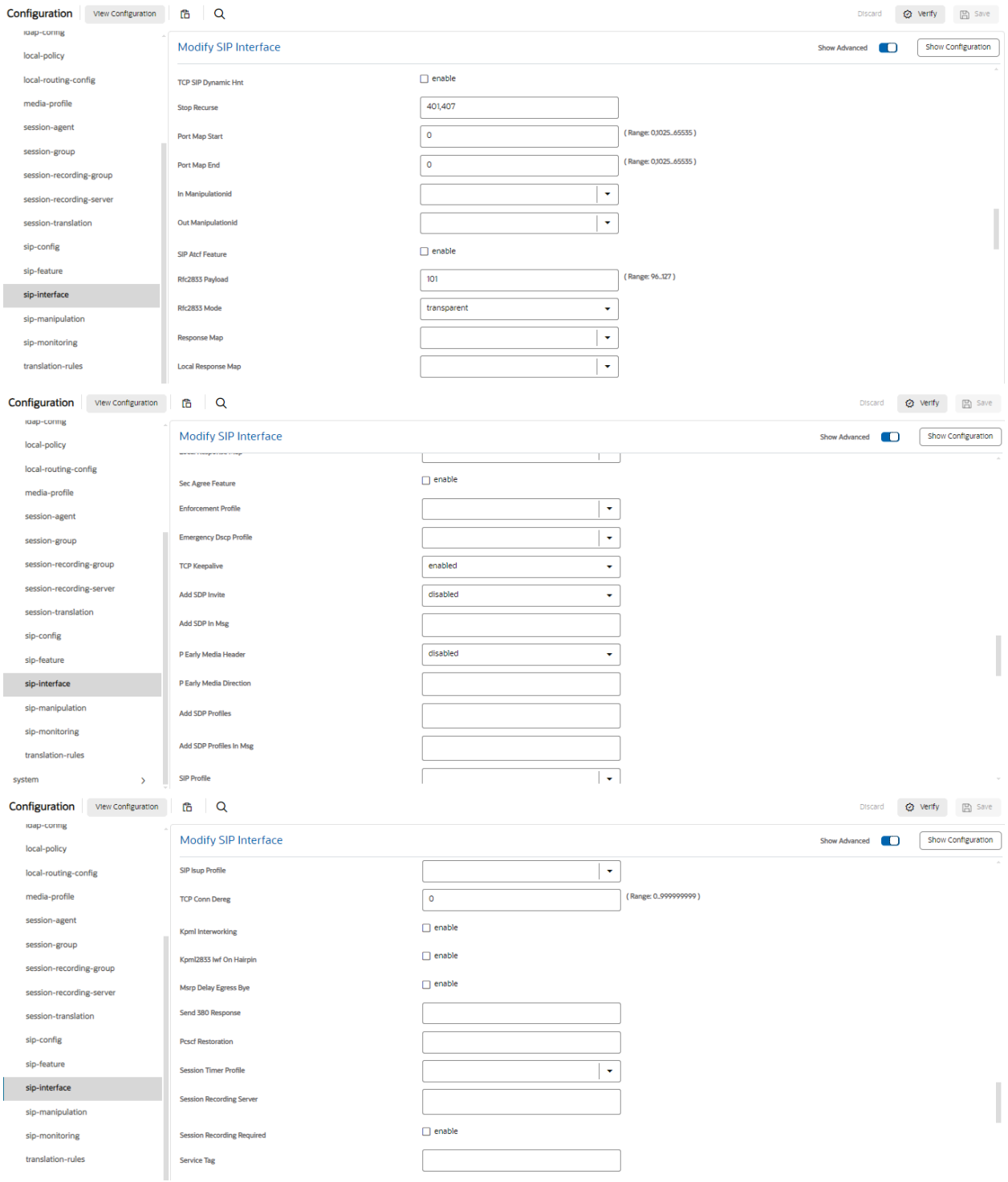

Figure 46: SIP Interface for Google CCAI cont.

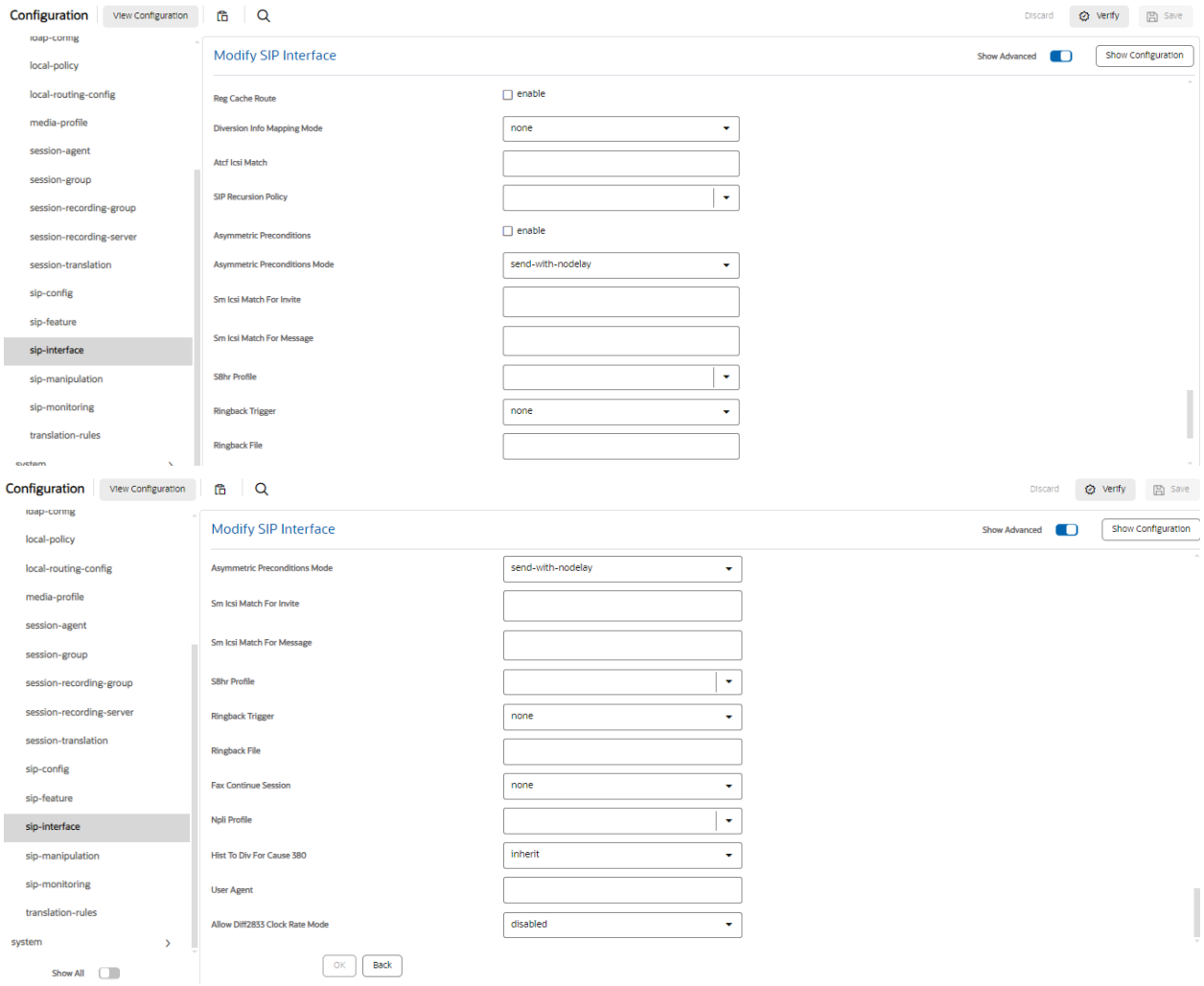

Figure 47: SIP Interface for Google CCAI Cont.

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

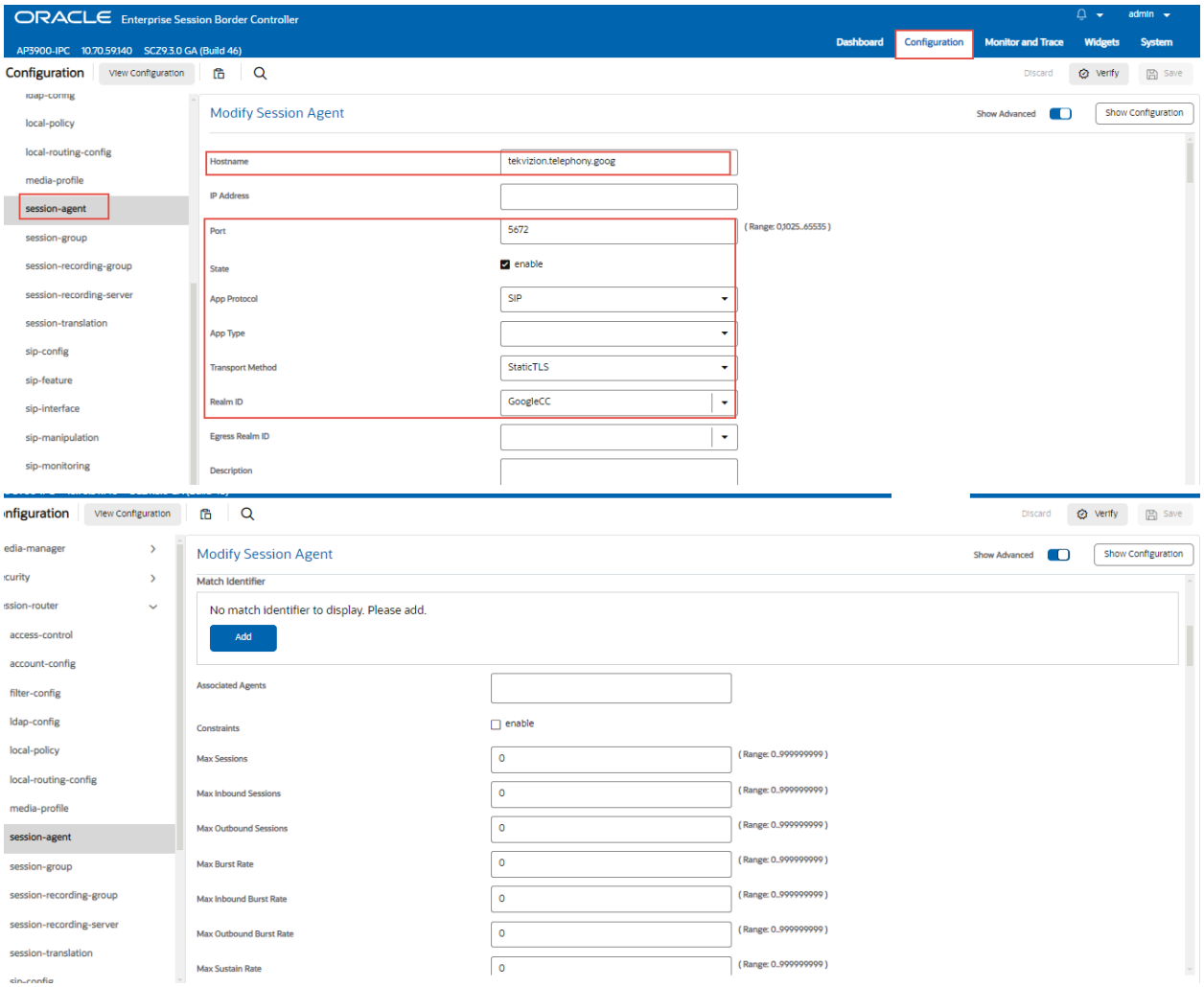

Figure 48: Session Agent for Google CCAI.

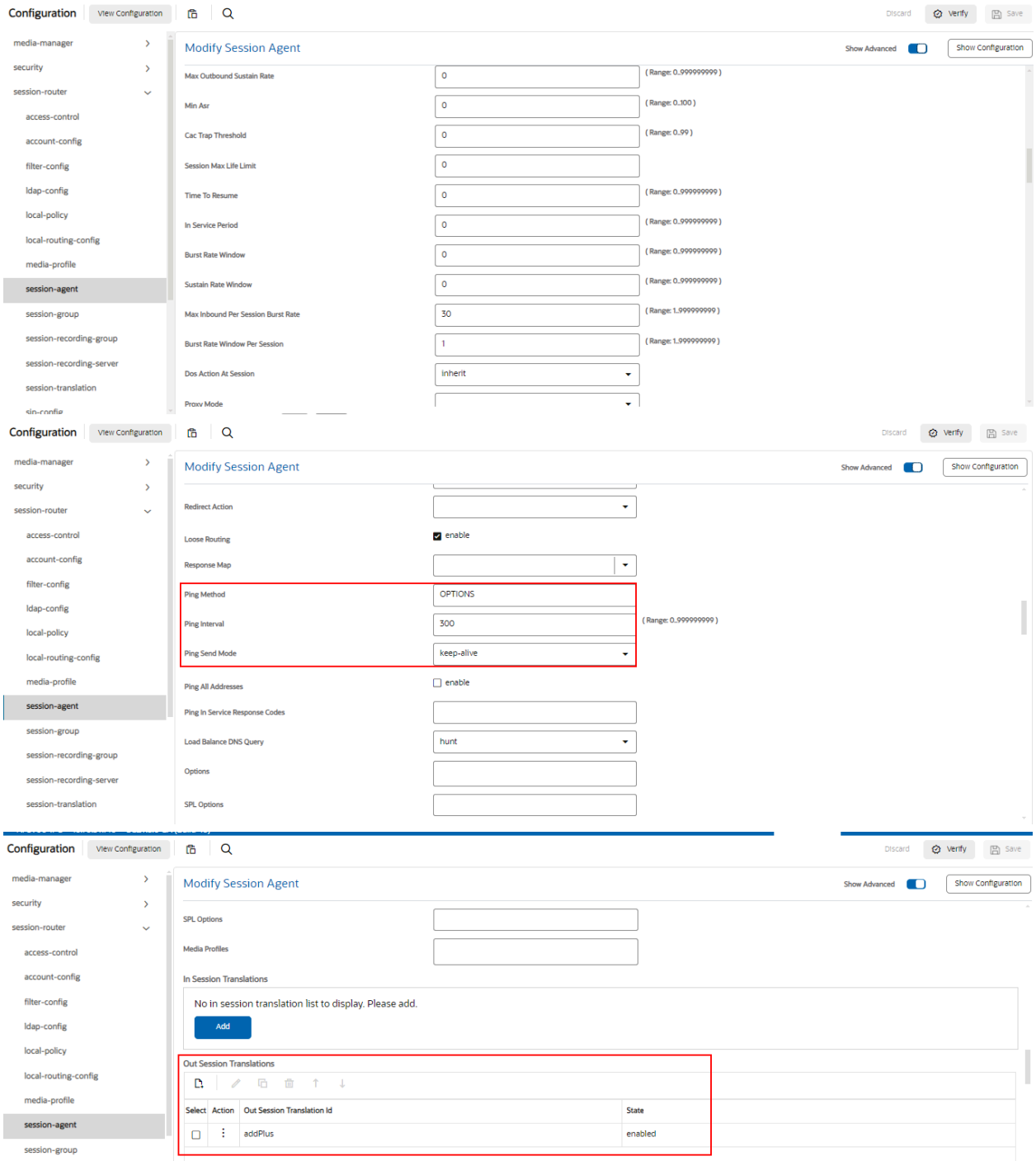

Figure 49: Session Agent for Google CCAI cont.

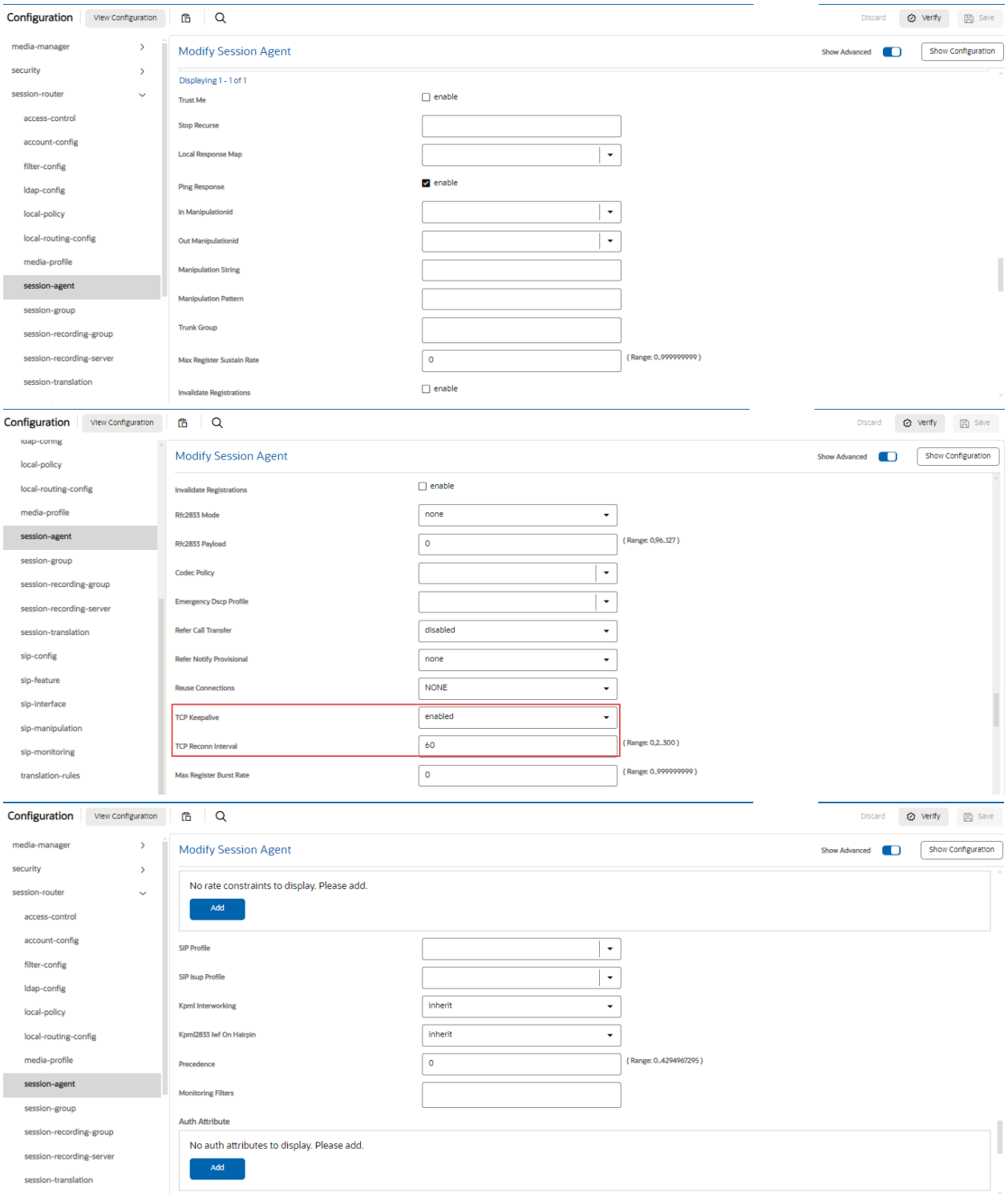

Figure 50: Session Agent for Google CCAI Cont.

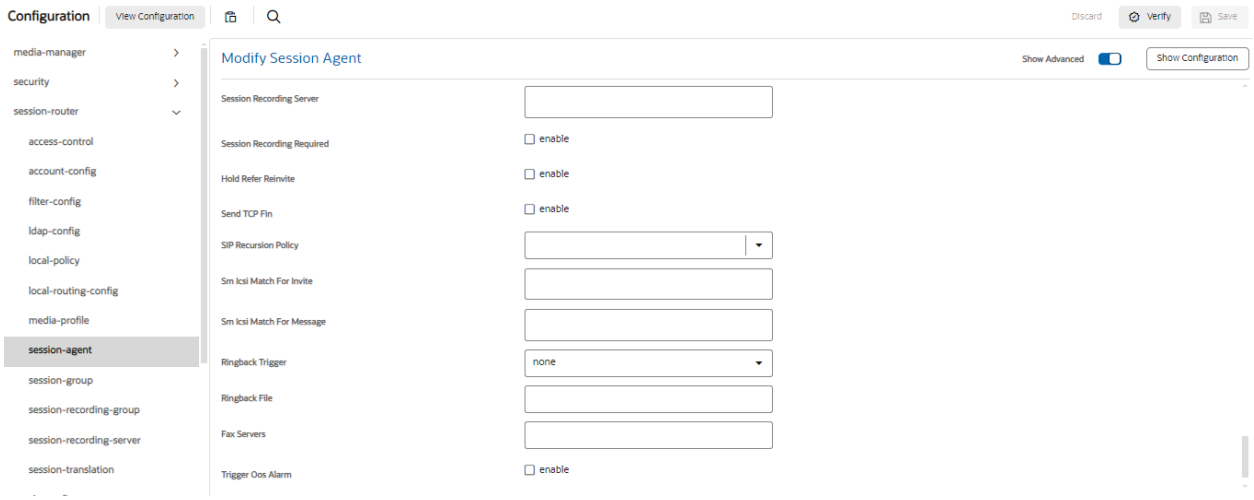

Figure 51: Session Agent for Google CCAI Cont.

- Configure the Session Agent for OnPrem PBX as shown below

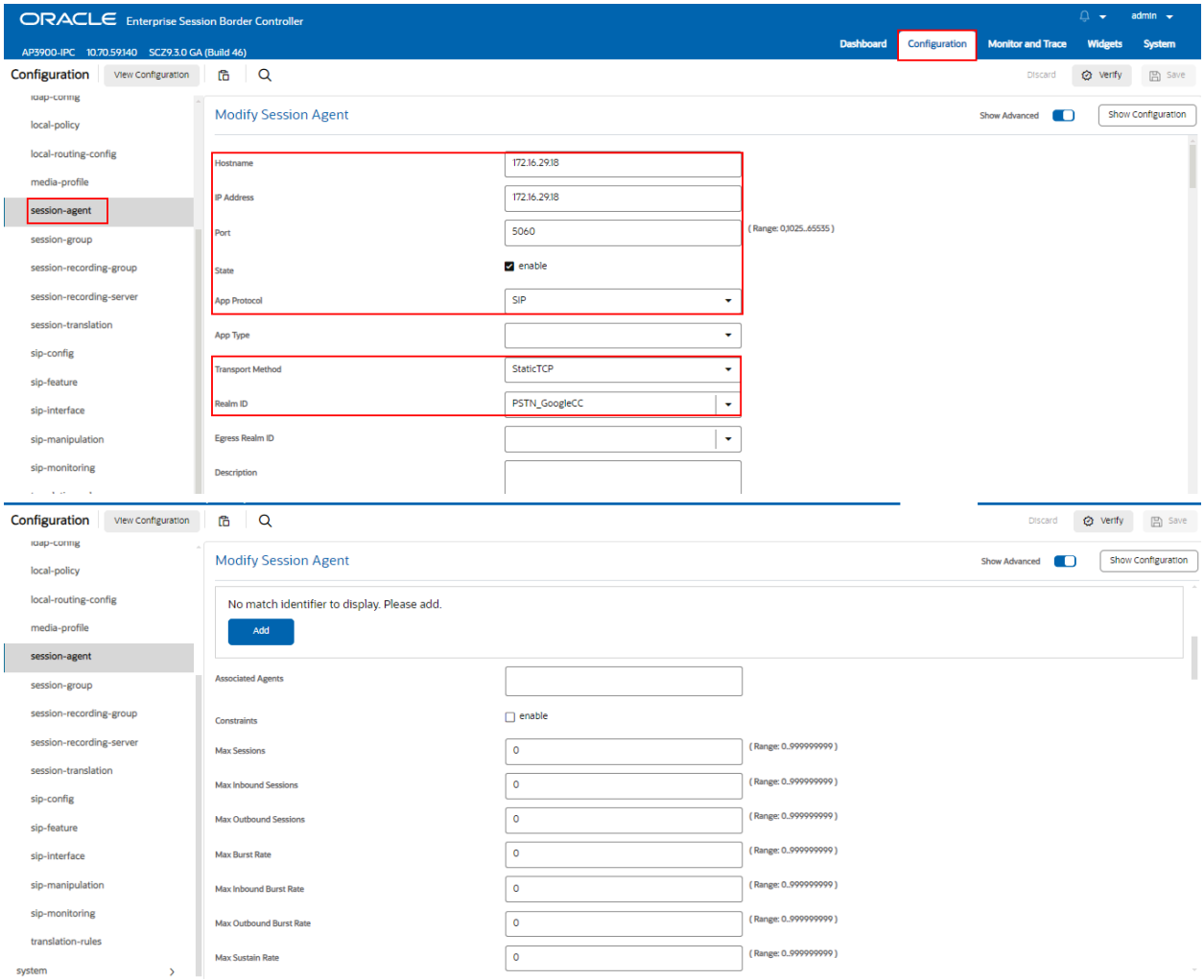

Figure 52: Session Agent for OnPrem PBX.

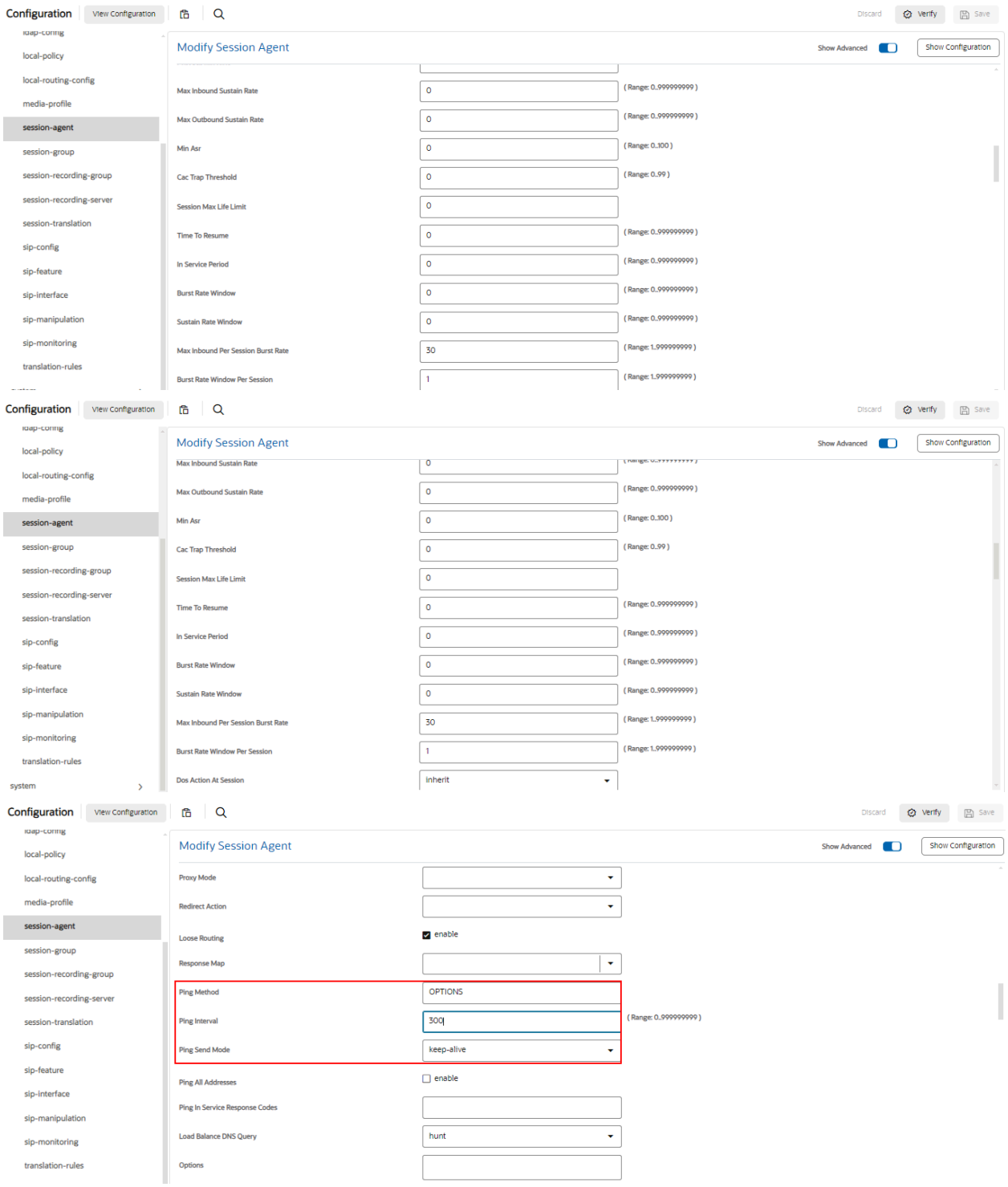

Figure 53: Session Agent for OnPrem PBX Cont.

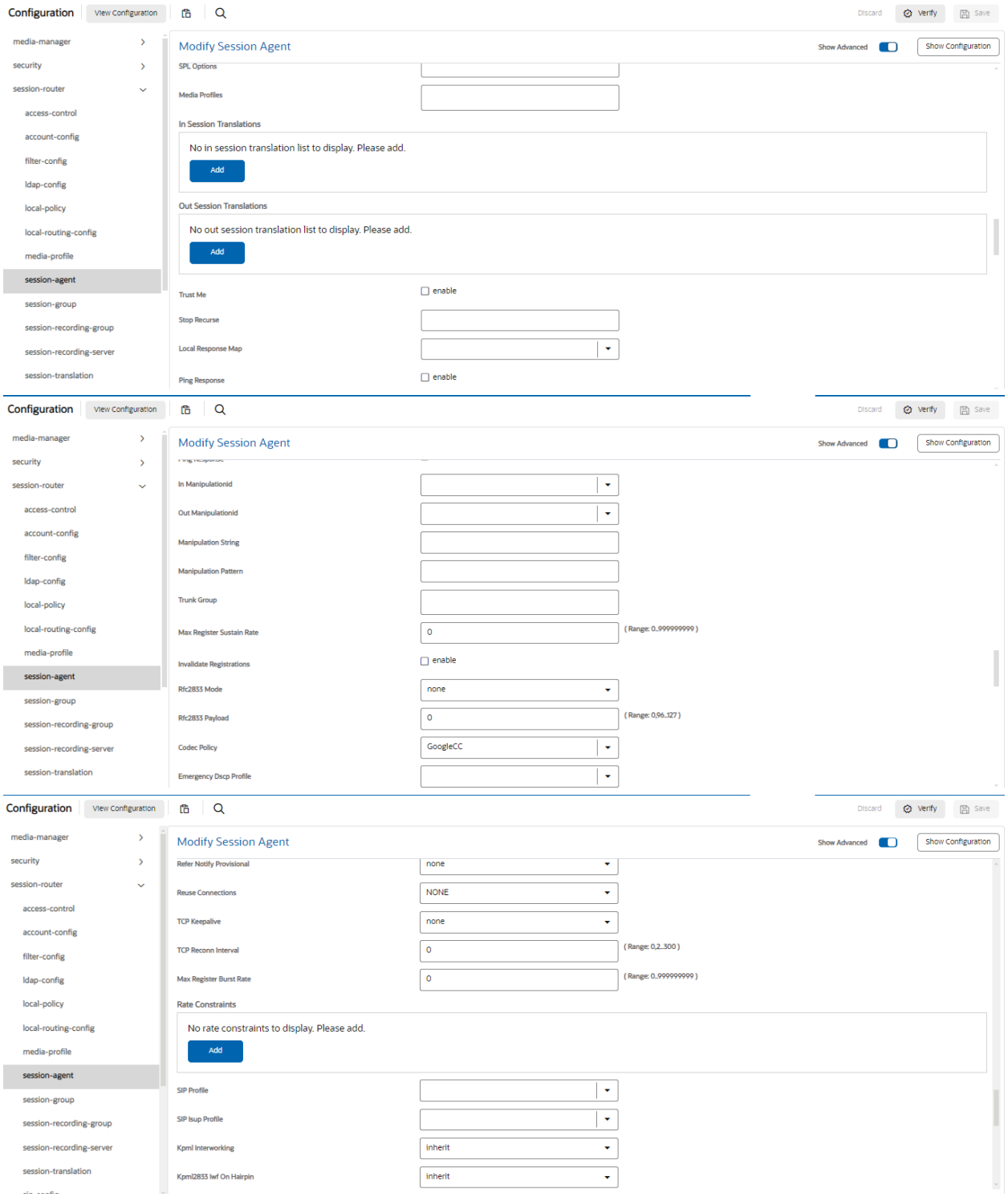

Figure 54: Session Agent for OnPrem PBX Cont.

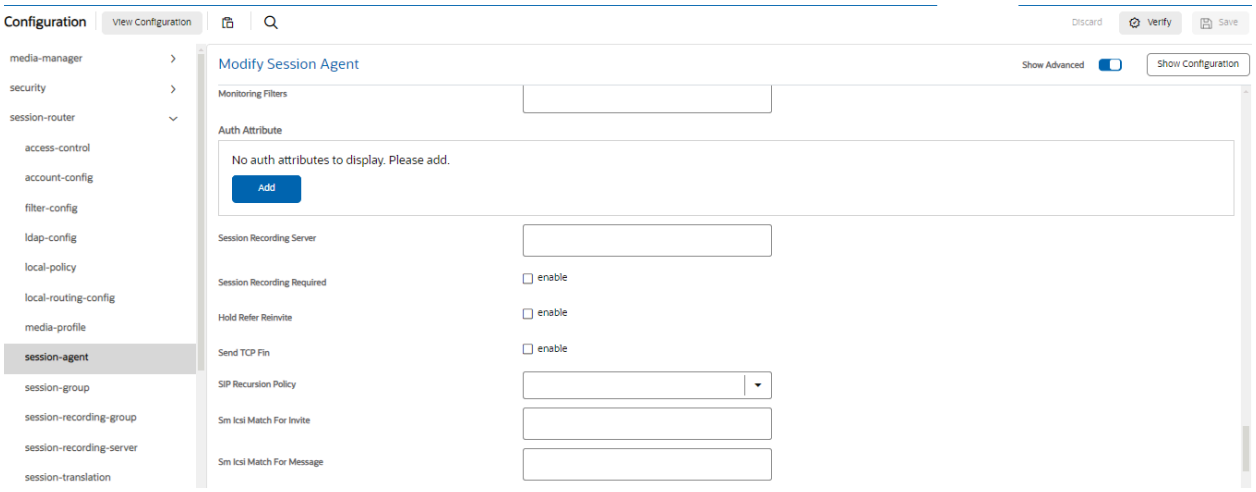

Figure 55: Session Agent for OnPrem PBX Cont.

- Configure the Session agent for PSTN Gateway as shown below

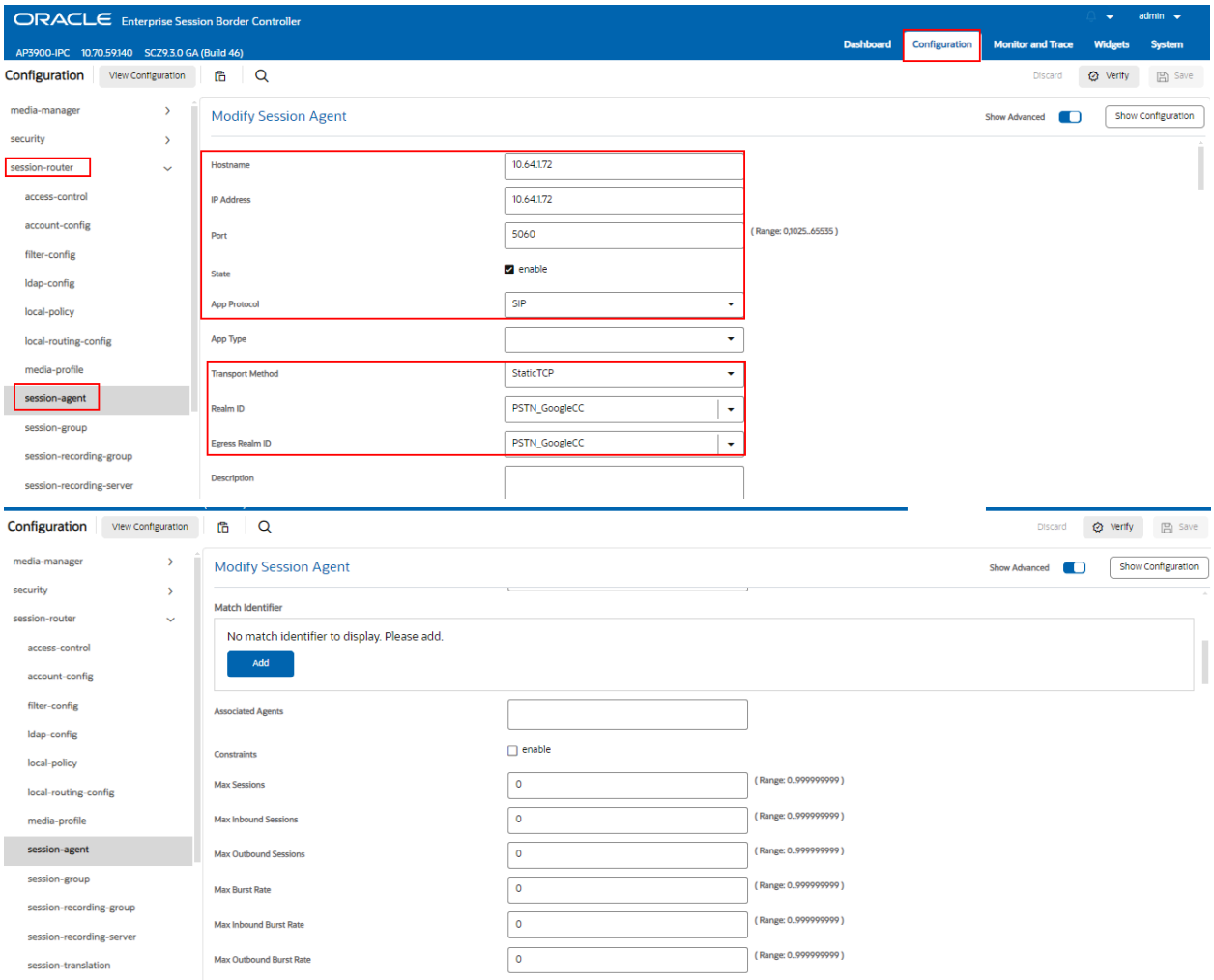

Figure 56: Session Agent for PSTN Gateway.

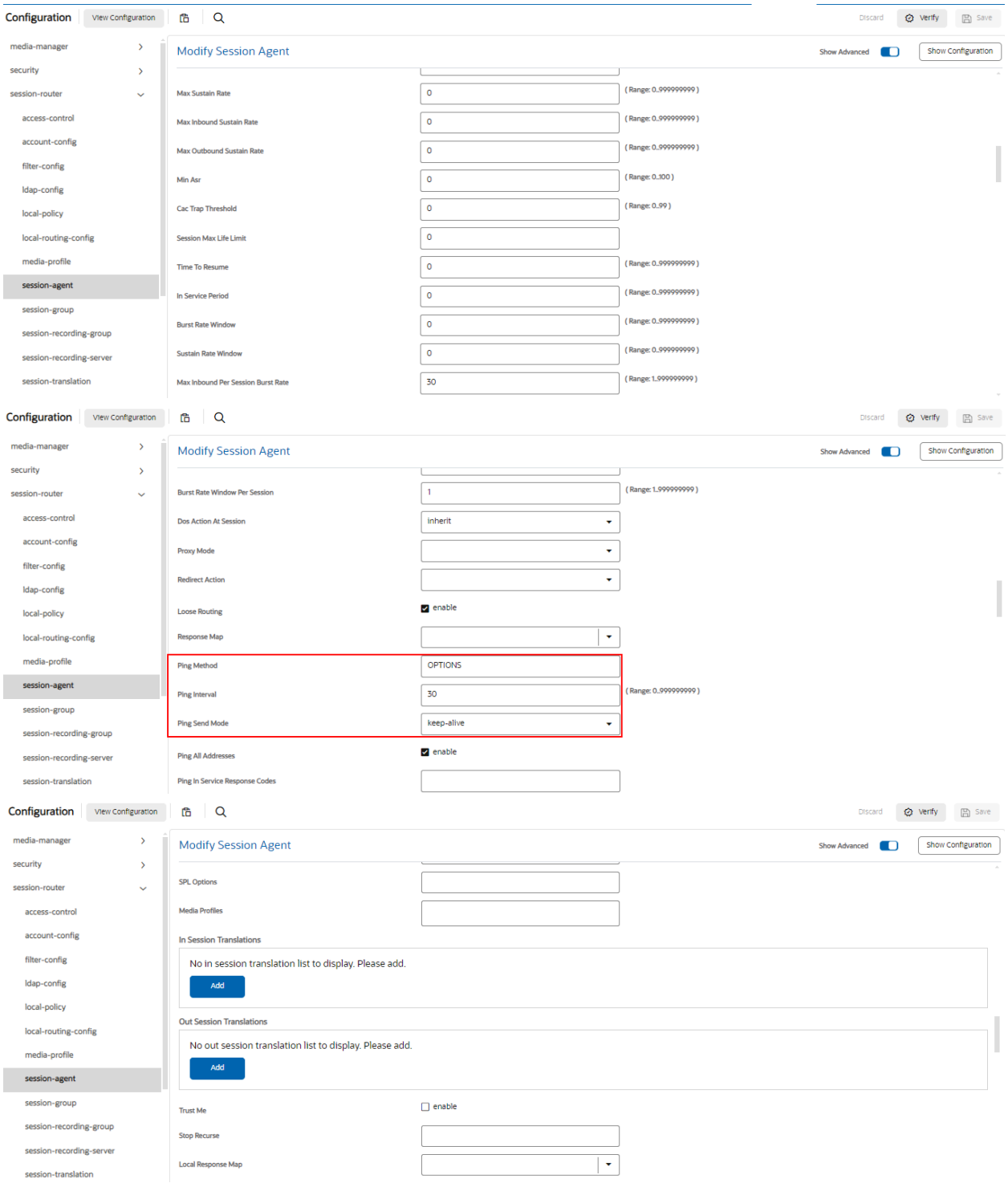

Figure 57: Session Agent for PSTN Gateway Cont.

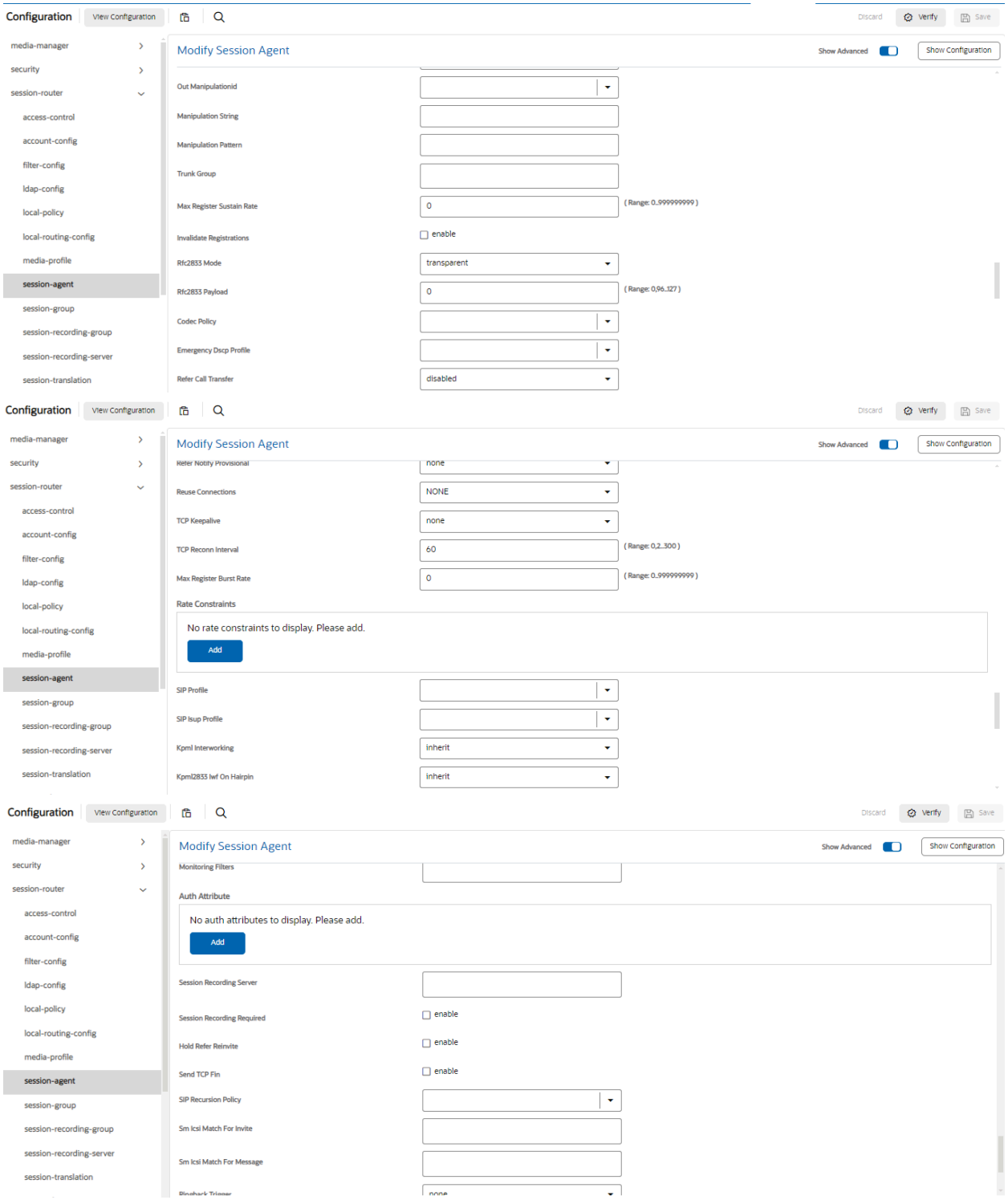

Figure 58: Session Agent for PSTN Gateway Cont.

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.

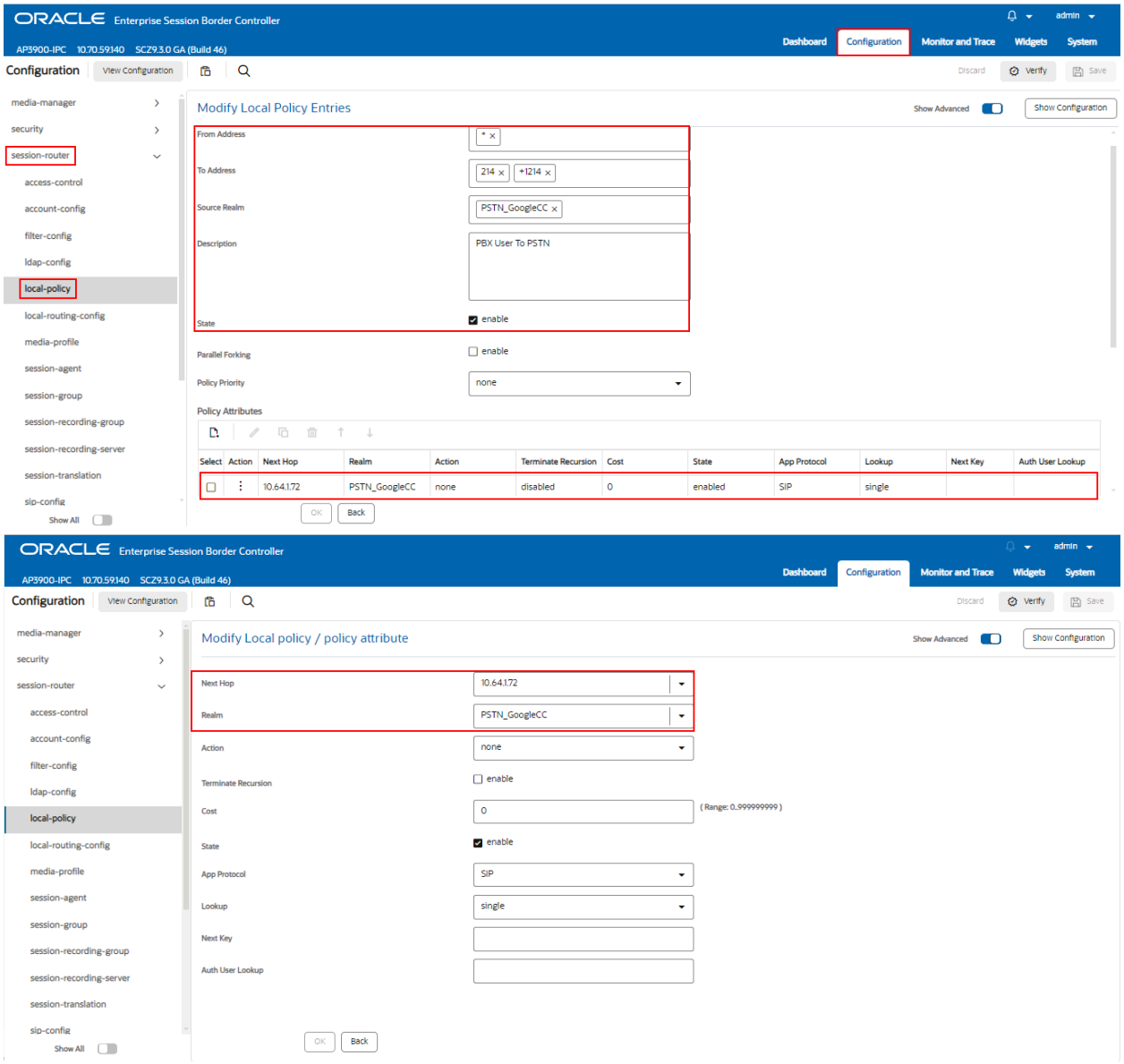

Figure 59: Local Policy towards PSTN Gateway.

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

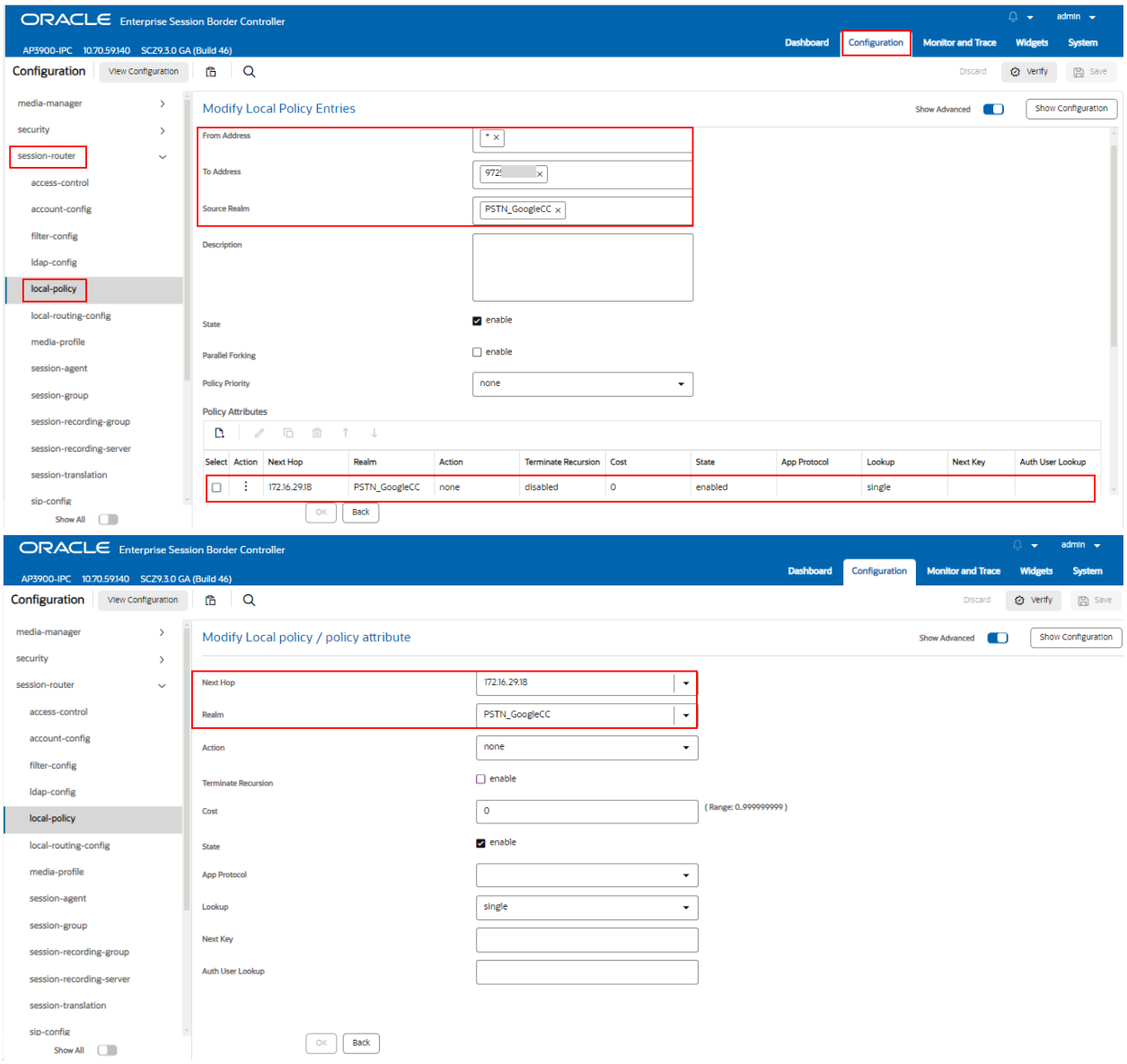

Figure 60: Local Policy towards OnPrem PBX.

6.4.22 SIP Manipulation

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

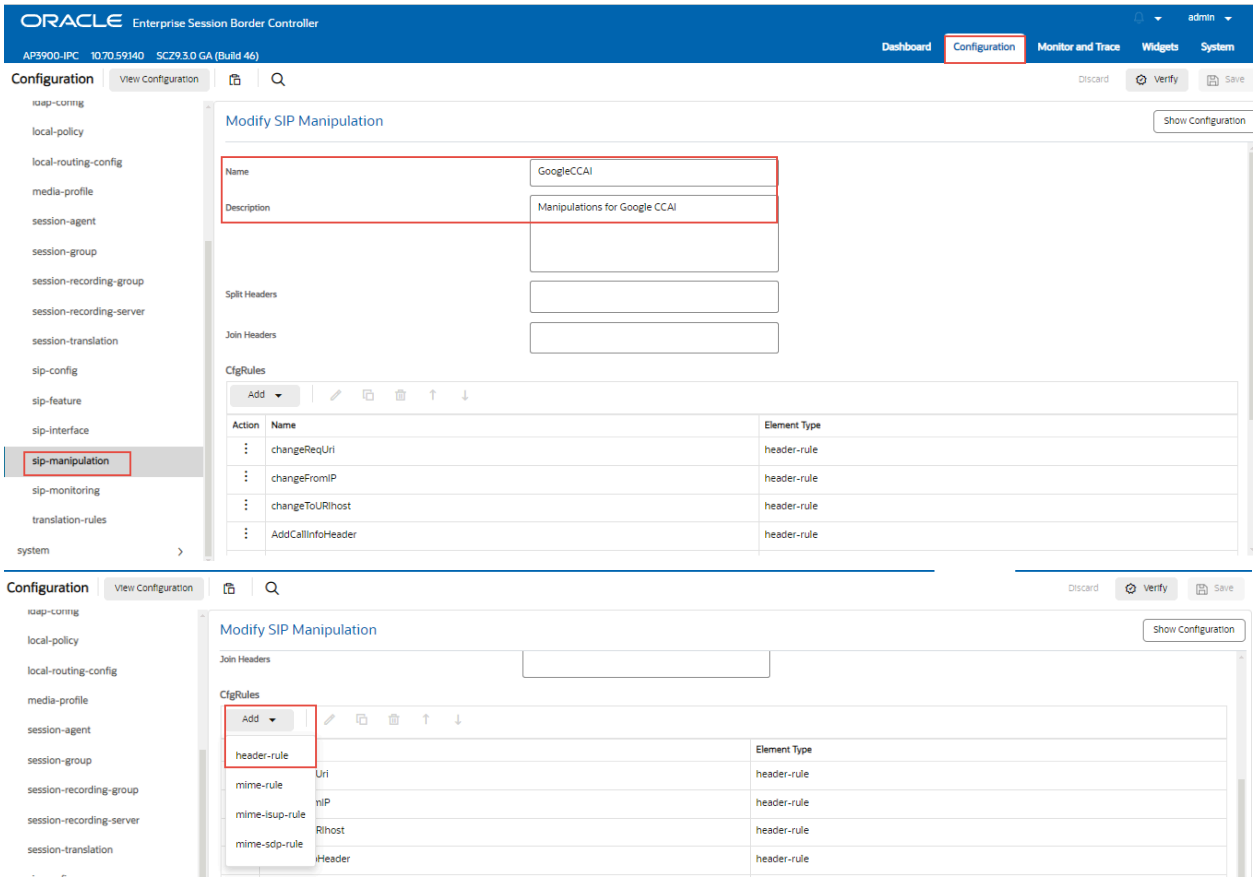

Figure 61: SIP Manipulation towards Google CCAI.

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

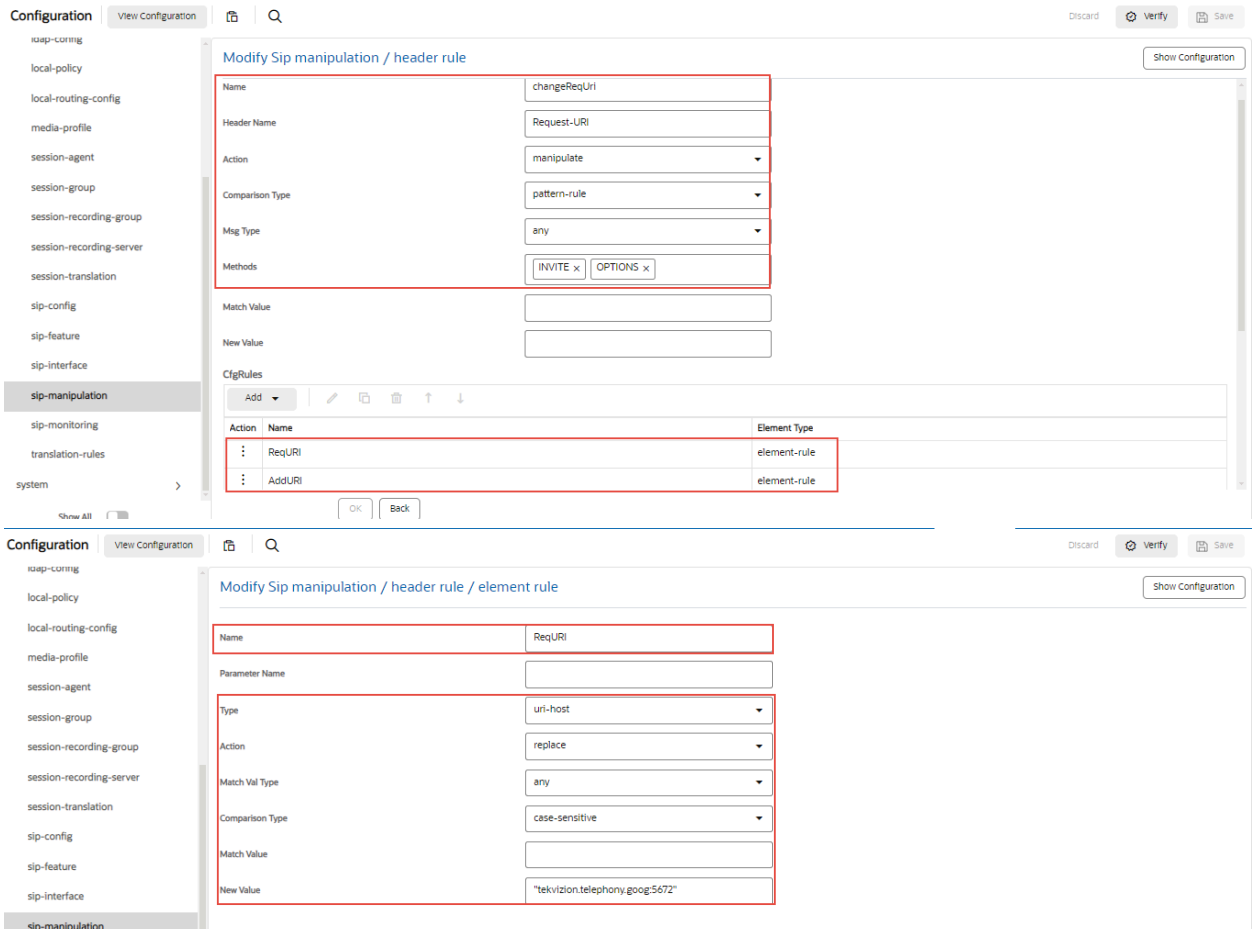

Figure 62: SIP Manipulation towards Google CCAI – To change Request URI-host.

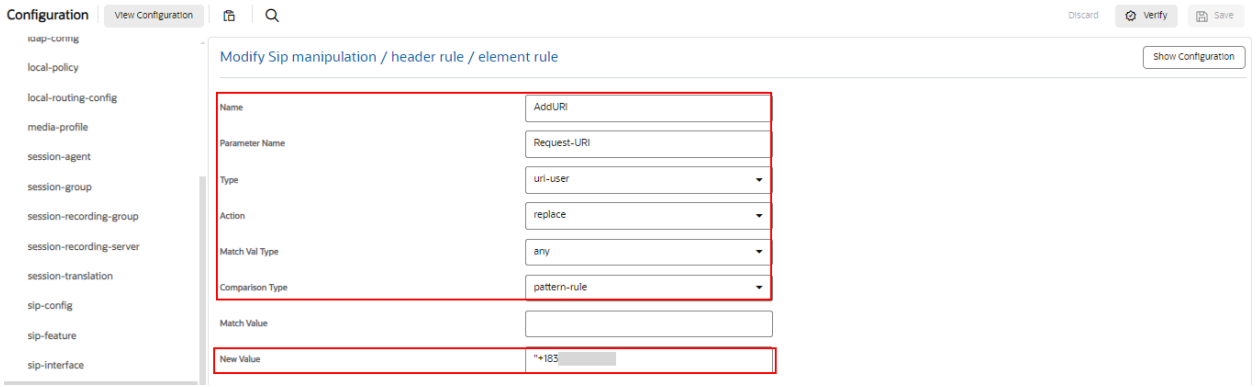

Figure 63: SIP Manipulation towards Google CCAI – Change Request URI-user.

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

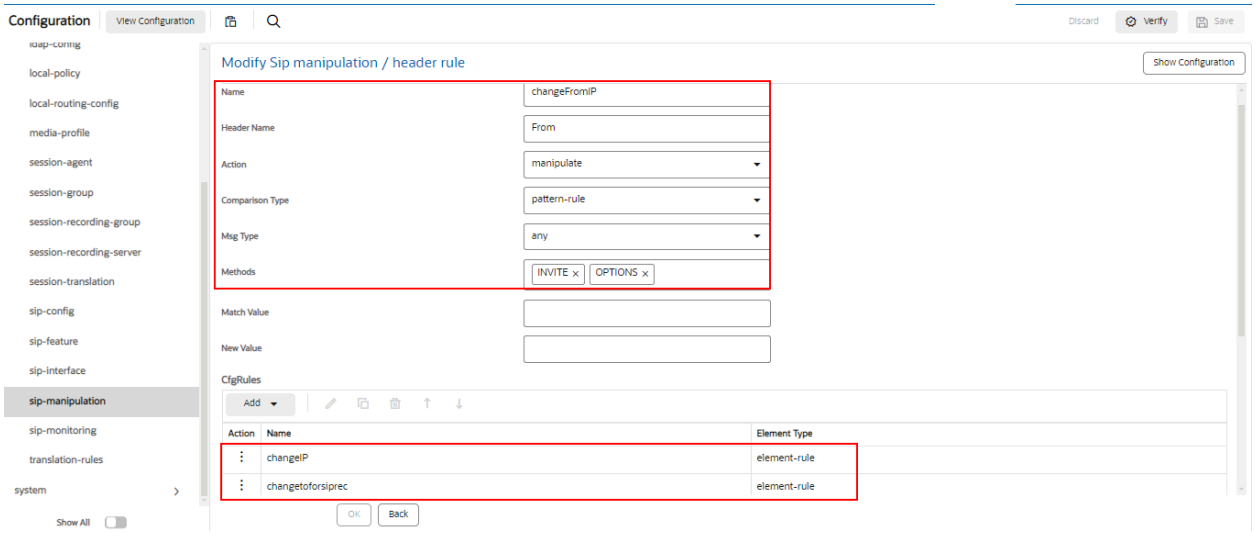

Figure 64: SIP Manipulation towards Google CCAI – Change FROM header.

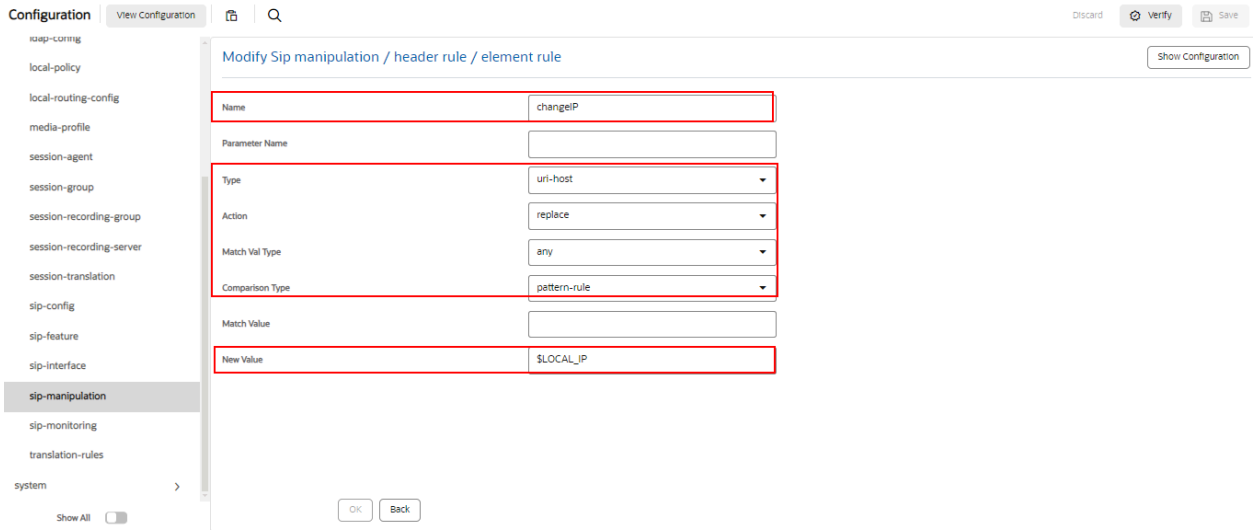

Figure 65: SIP Manipulation towards Google CCAI – Change FROM header uri-host.

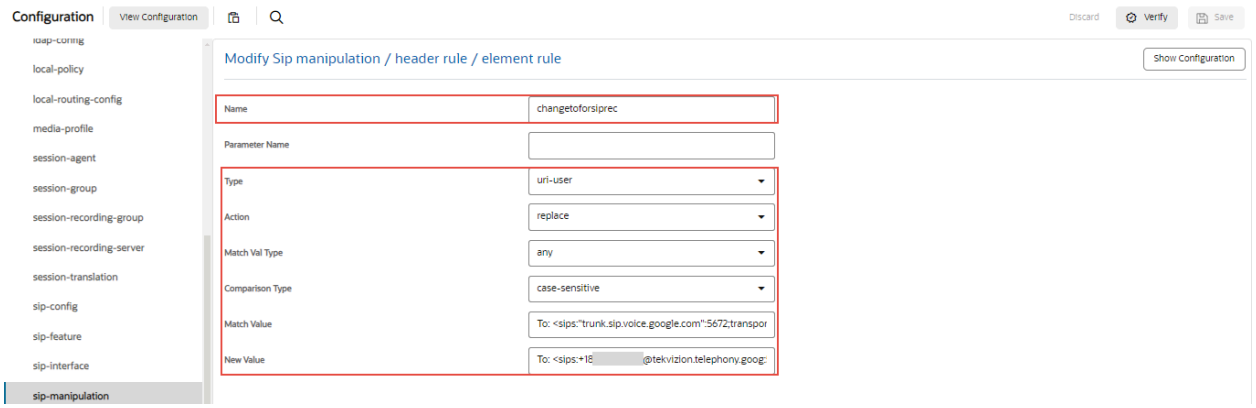

Figure 66: SIP Manipulation towards Google CCAI – Change FROM header uri-user.

- 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

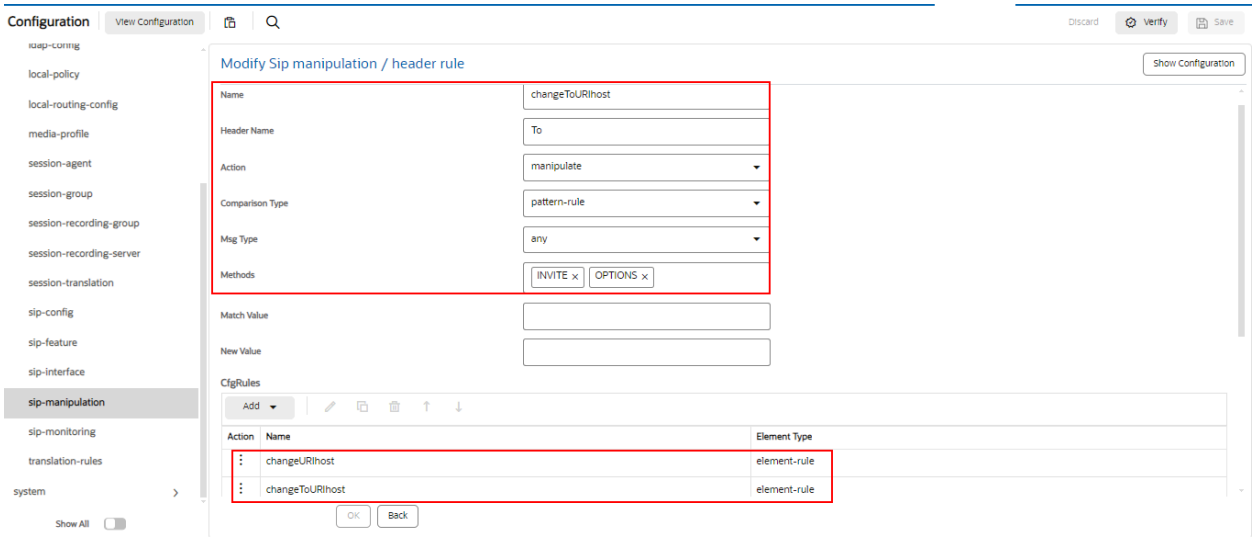

Figure 67: SIP Manipulation towards Google CCAI – Change TO header.

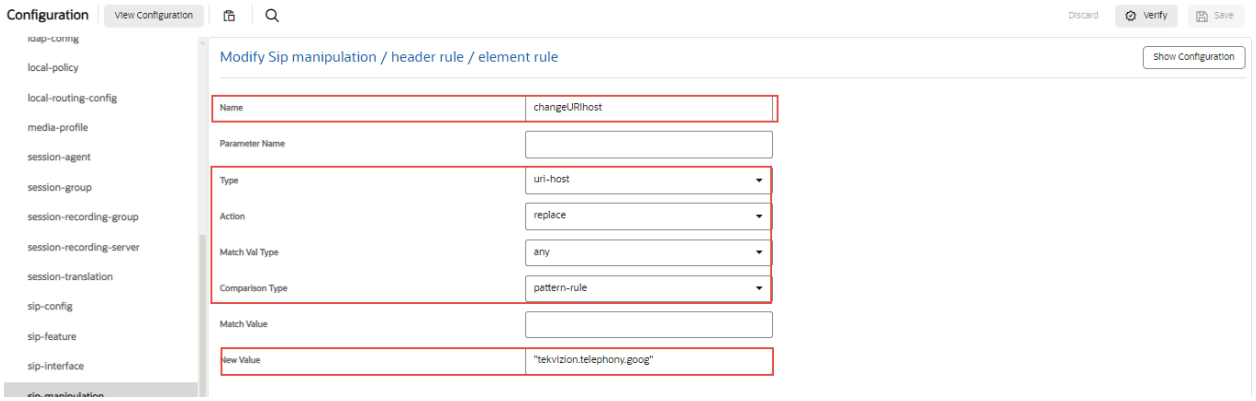

Figure 68: SIP Manipulation towards Google CCAI – Change TO header uri-host.

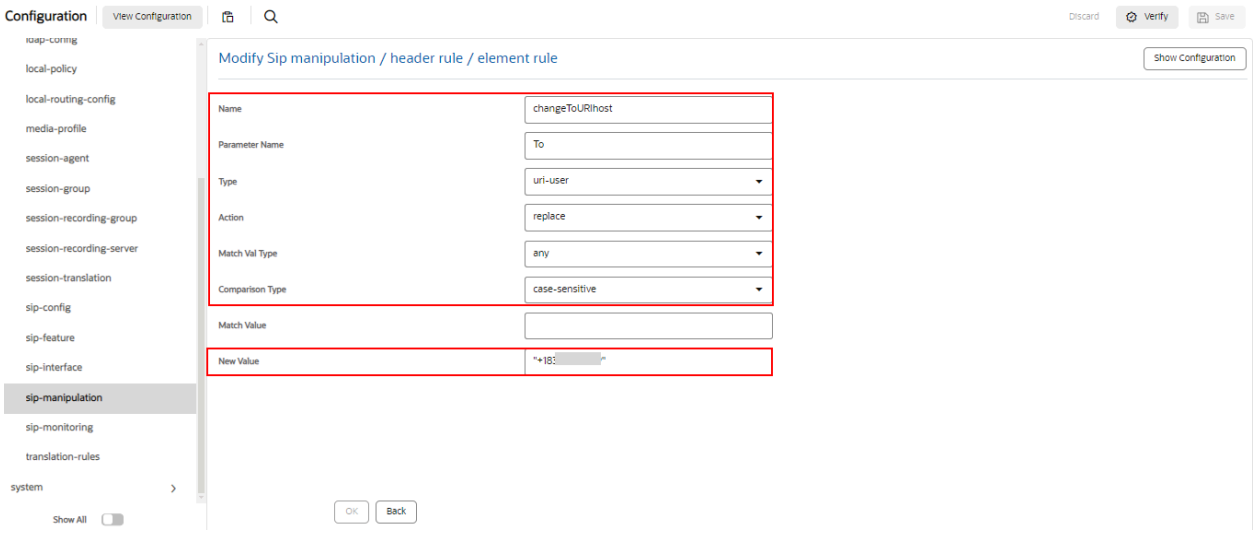

Figure 69: SIP Manipulation towards Google CCAI – Change TO header uri-user.

- 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/Re_"+$CALL_ID.$0+">;purpose=Goog-ContactCenter-Conversation"**

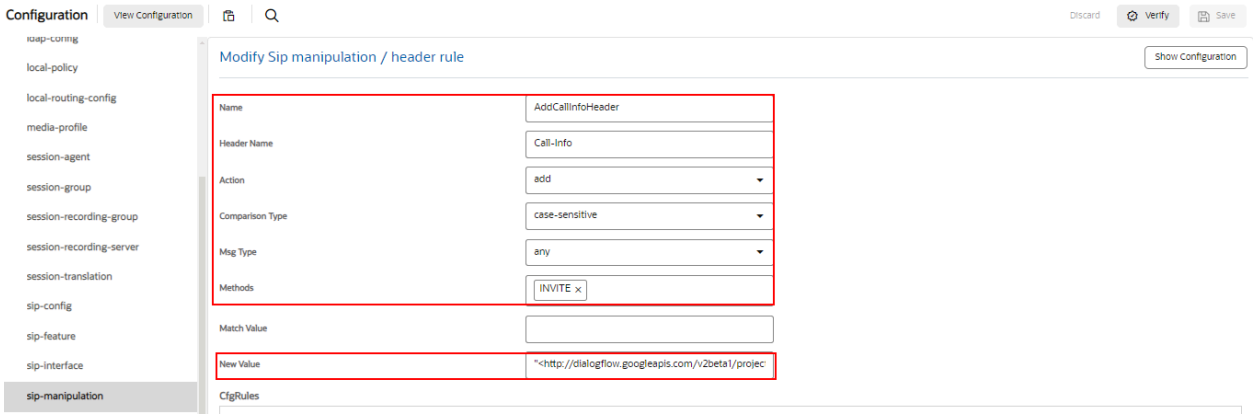

Figure 70: SIP Manipulation towards Google CCAI – Add Call-Info.

- 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).

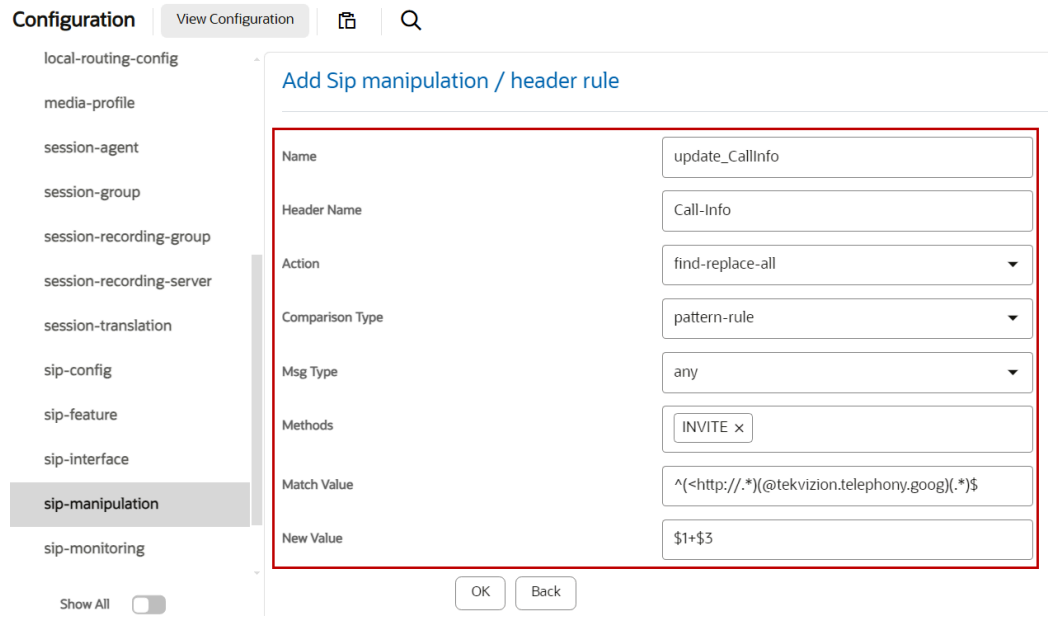

Figure 71: SIP Manipulation towards Google CCAI – Update Call-Info host FQDN.

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:7f217f29dxxxxxxxxxx@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_7f217xxxxxxxxxxxxxxxx@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_7f217xxxxxxxxxxxxxxxx>;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

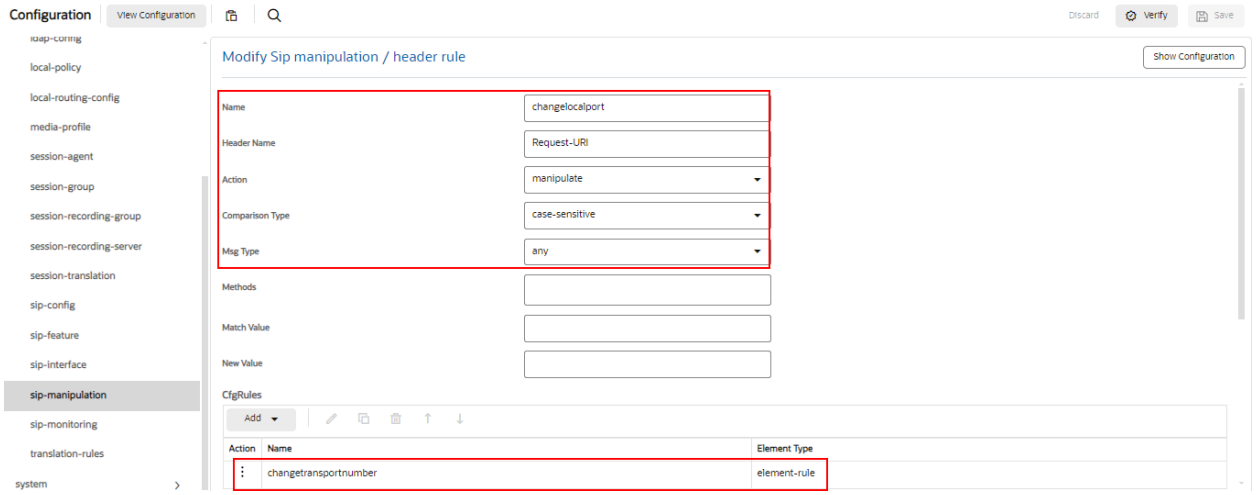

Figure 72: SIP Manipulation towards Google CCAI – Change Request URI Port number.

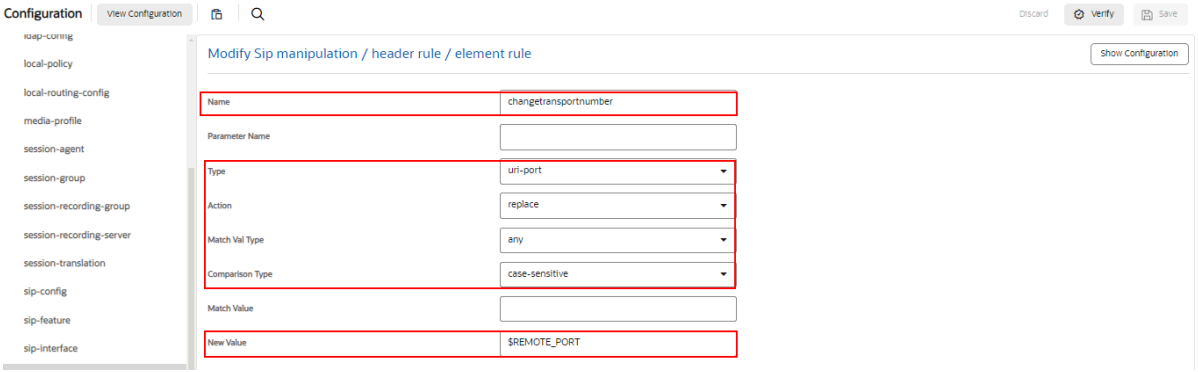

Figure 73: SIP Manipulation towards Google CCAI – Change Request URI Port number.

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

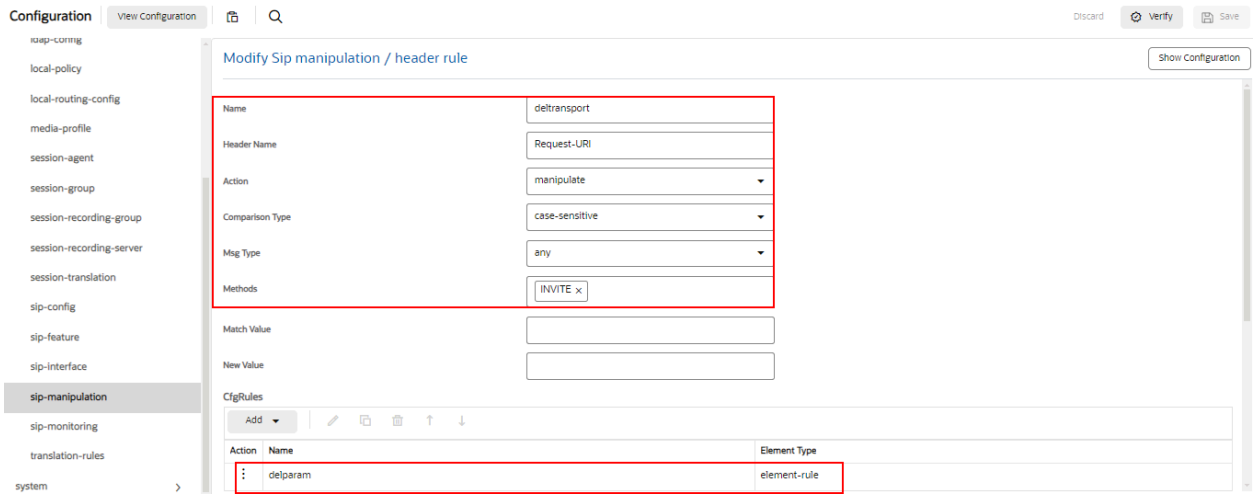

Figure 74: SIP Manipulation towards Google CCAI – Delete Transport parameter.

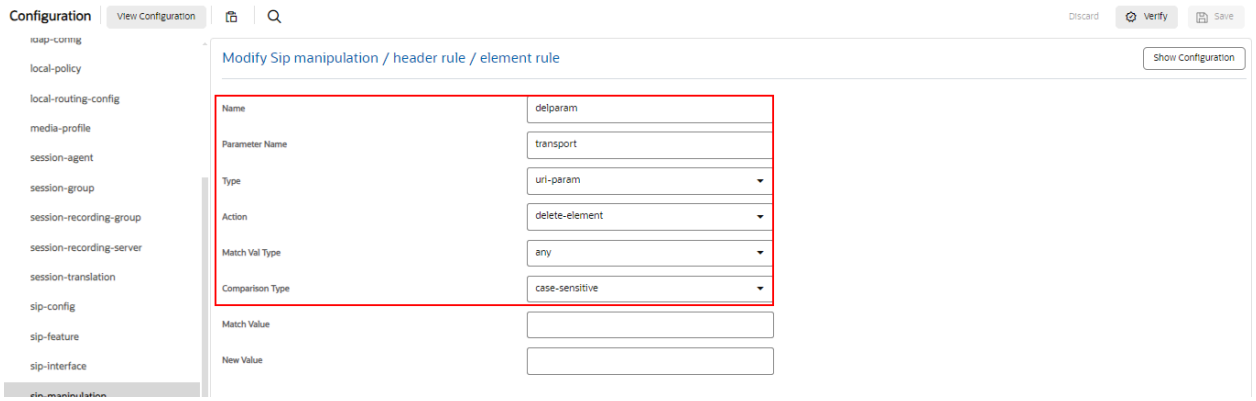

Figure 75: SIP Manipulation towards Google CCAI Cont. – Delete Transport parameter.

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	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. 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.
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	