



# SIPREC for ISR with ESBC Configuration and Troubleshooting Guidelines

## Revision History

<i>Version</i>	<i>Author</i>	<i>Description of Changes</i>	<i>Date Revision Completed</i>
<i>520-0062-00</i>	Soumil Vora	Initial Release	11-02-2012
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## Abstract

The use of the RFC 2119 keywords is an attempt to assign the correct requirement levels ("MUST", "SHOULD", "MAY", etc.).

This document defines a series of recommendations for SIPREC configuration and troubleshooting on the Oracle Corporation Communications ESBC with ISR. They should be used when either (a) deploying a new ESBC and ISR, or (b) updating an existing configuration made before Best Current Practices were in place. When in conflict with Customer requirements or desires, the Customer's preference SHOULD take precedence.

## Applicability

This document is applicable to E-CZ8.1.0 series ESBCs.

## Contents

<b>1 Scope</b> .....	<b>3</b>
1.1 BACKGROUND.....	3
1.2 INTENDED AUDIENCE.....	3
<b>2 Test Bed Diagram</b> .....	<b>4</b>
<b>3 Software/Hardware/Tools</b> .....	<b>5</b>
3.1 TEST BED HARDWARE AND SOFTWARE REQUIREMENTS.....	5
3.2 PROTOCOL REQUIREMENTS.....	5
3.3 TEST TOOL / THIRD PARTY EQUIPMENT USED FOR REQUEST TESTING.....	5
<b>4 Test Configuration</b> .....	<b>6</b>
4.1 ESBC CONFIGURATION .....	6
4.1.1 Session-Recording-Server.....	6
4.1.2 Realm-Config/SIP-Interface/Session-Agent.....	6
4.1.3 Session-recording-group.....	8
4.2 ISR CONFIGURATION .....	9
<b>5 ACLI Commands and Statistical Definitions</b> .....	<b>14</b>
<b>6 Debugging Methodology and Techniques</b> .....	<b>15</b>
<b>7 References</b> .....	<b>16</b>
<b>8 Author's Address</b> .....	<b>17</b>
<b>9 Disclaimer</b> .....	<b>18</b>
<b>10 Full Copyright Statement</b> .....	<b>19</b>
<b>Appendix A: Reference Configuration on ESBC</b> .....	<b>20</b>

## 1 Scope

### 1.1 Background

SIPREC (session recording protocol) is based on a collection of draft standards using SIP RFC3261. It is the interaction between a Session Recording Client (SRC) and a Session Recording Server (SRS) to control the recording of media that has been transmitted in the context of a communication session (CS) between multiple user agents.

In all cases herein, the SRC is the Oracle Corporation ESBC and SRS is an Oracle Corporation Net-Net Interactive Session Recorder (ISR).

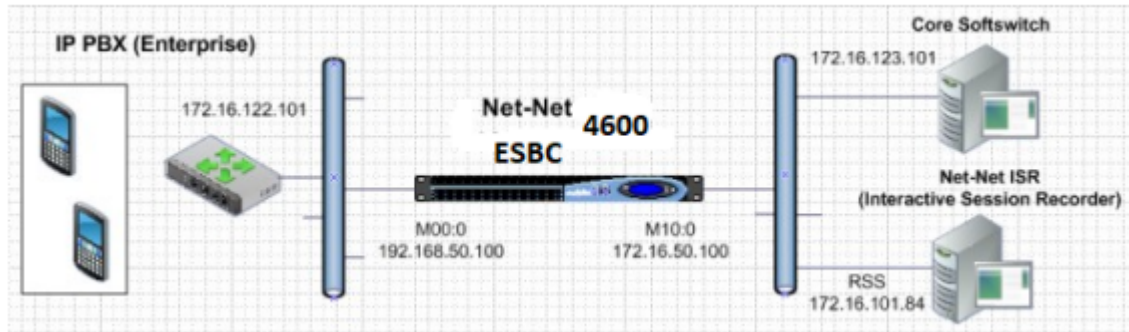
### 1.2 Intended Audience

This document is intended for use by Oracle Corporation HQ and Field Based Engineers. It assumes the reader is familiar with basic operations of the ESBC, and has attended the following training course(s) (or has equivalent experience):

- [https://docs.oracle.com/cd/E95619\\_01/html/esbc\\_ecz810\\_configuration/](https://docs.oracle.com/cd/E95619_01/html/esbc_ecz810_configuration/)

Further, the test plans enclosed assume familiarity with the ESBC's ACLI command line interface, retrieving and reviewing log files generated by the ESBC, standard network analysis tools (Ethereal/tcpdump), and all protocols involved in the activity.

## 2 Test Bed Diagram



The reference configuration presented here has been entered, tested, and verified on a NN4600 ESBC in the lab at Oracle Corporation.

In the example configurations, the Core Softswitch resides in a “trusted” network in the 172.16.123.0/24 subnet, and the ESBC interfaces to this “trusted” network are in the 172.16.50.0/24 subnet.

The Softswitch IP address is 172.16.123.101 and the IP address on the ESBC to which the Softswitch sends its SIP signaling is 172.16.50.100. The ISR RSS is at 172.16.101.84

The far end devices reside on the “untrusted” network in the 172.16.122.0/24 subnet, and the ESBC interface to this untrusted” network is in the 192.168.50.0/24 subnet.

The IP address from which the Net-Net ESBC sends its messages to the SIP trunk is 192.168.50.100. The SIP trunk far end IP address is 172.16.122.101.

### 3 Software/Hardware/Tools

#### 3.1 Test Bed Hardware and Software Requirements

System Platform	Mainboard Rev.	Bootloader	Software Version/Patch
Net-Net 4600	0.1	Acme Packet ECZ8.0.0 Patch	nnECZ810.bz
Net-Net ISR	N.A	N.A	Release 6.2

#### 3.2 Protocol Requirements

Functionalities Under Test	Signaling Protocol	Signaling Transport	Media Protocol	Transcoding Codecs (If Applicable)
Session Recording	SIP	UDP	RTP	N.A

#### 3.3 Test Tool / Third Party Equipment used for Request Testing

Third Party Platform	Software Version/Patch
EXFO	8.9

## 4 Test Configuration

### 4.1 ESBC Configuration

Below is the configuration specific to SIPREC on the **ESBC**.

#### 4.1.1 Session-Recording-Server

The Session-Recording-Server represents the actual session recording server that receives replicated media and recording signaling. In this case the SRS is the RSS component of the NN-ISR. It is given a name which serves as a unique identifier for referencing the object in the session-agent, realm-config, or sip-interface.

Each SRS is associated with a realm-config. The realm specifies the source interface from which the replicated traffic will originate. The destination is an IP:Port parameter (IP address or hostname with an optional port) that defines the SIP address (request URI) of the actual SRS.

```
configure terminal > session-router > session-recording-server
```

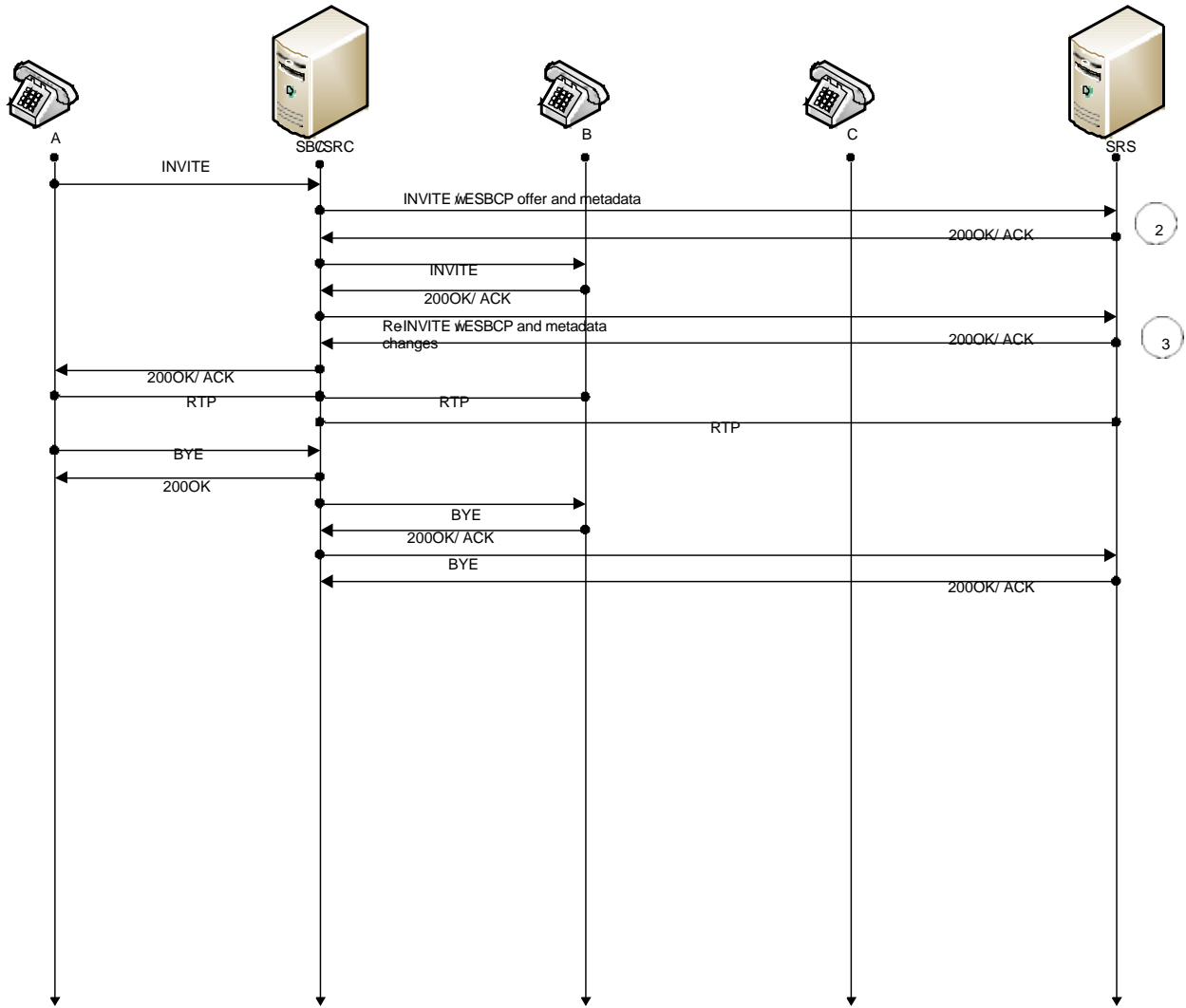
```
session-recording-server
  name                CSEisr
  description         CSE ISR
  realm               Core
  mode                selective
  destination         172.16.101.84
  port                5060
  transport-method    UDP
```

#### 4.1.2 Realm-Config/SIP-Interface/Session-Agent

As mentioned earlier the SRS name serves as a unique identifier for referencing the object in realm-config, sip-interface or session-agent.

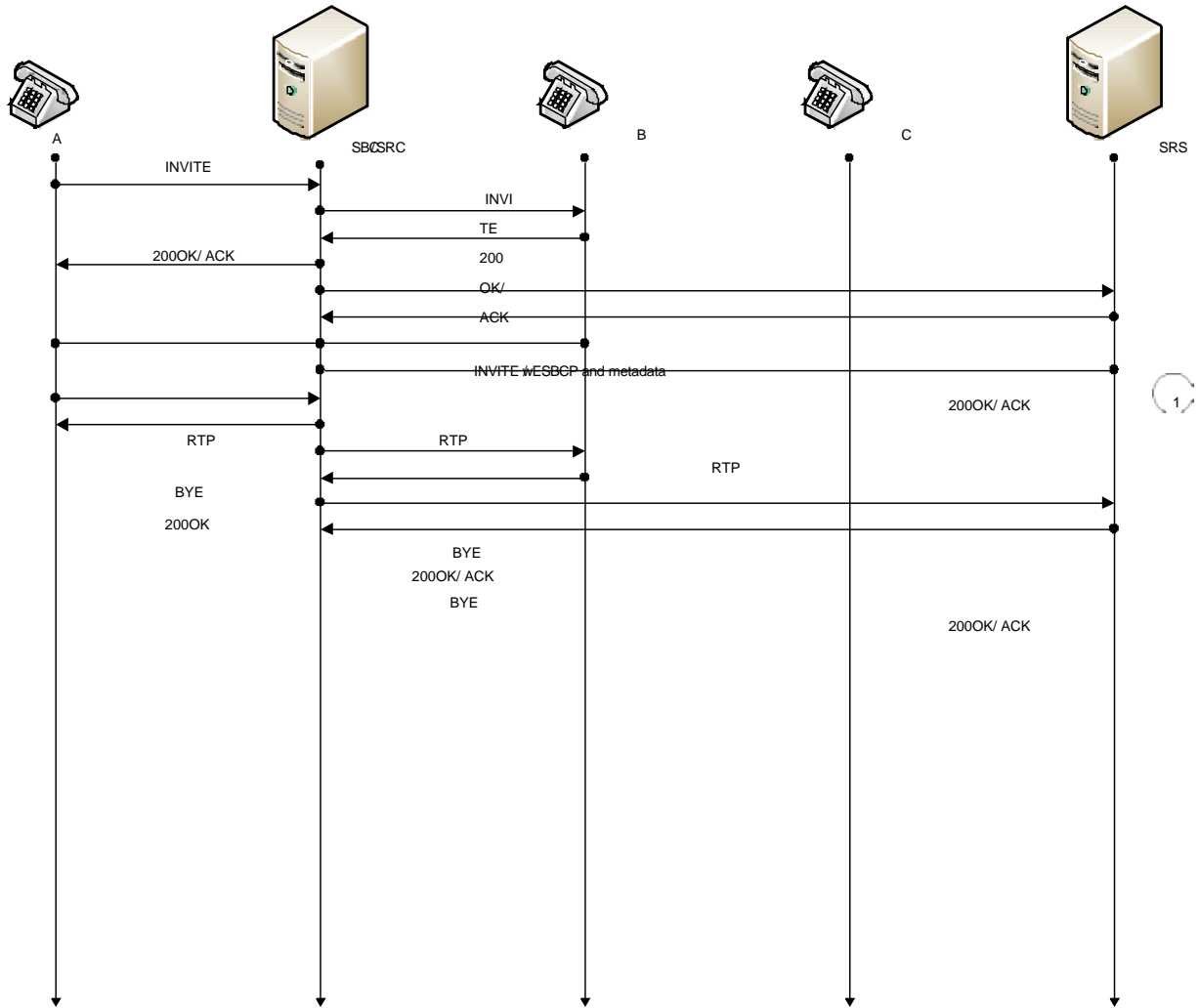
```
session-recording-server    CSEisr
session-recording-required  disabled
```

The session-recording-required is a configuration option associated with a session-agent, realm-config or sip-interface. If this attribute is set to *enabled* the recording dialogue must be established prior to the communication session being established.



SIP INVITE, "recording required", selective recording

If session-recording-required is set to *disabled*, then the communication session between the participants gets set up first, then the dialog between SRC and SRS will be attempted. If the call between SRS and SRC fails, the call between the participants will be unaffected.



SIP INVITE, "Recording not required"

### 4.1.3 Session-recording-group

The session-recording-group is a configuration object that is used to solve problems related to high availability for third party call recorders. It defines a collection of one or more SRSs. Some SRSs may not have the ability to communicate between themselves or do not have a load-balancing device fronting the equipment to distribute the traffic in an intelligent fashion. The ESBC helps solve this problem by utilizing SIP's transport mechanism as well as keeping track of statistics on each SRS.

When multiple SRSs are in a SRG, the ESBC can use heuristics to intelligently route the recording dialog to one or more SRSs utilizing the selection strategy.

```

session-recording-group
  name                CSEisrsgroup
  description
  strategy            Hunt
  simultaneous-recording-servers 1
  session-recording-servers    CSEisr1 CSEisr2
    
```



The configuration option “*simultaneous-recording-servers*” controls the number of simultaneous SIP dialogs that are established to the SRSs in the SRG. For instance, if a SRG contains 3 SRSs and “*simultaneous-recording-servers*” is set to 2, the ESBC shall initiate a SIP INVITE to the next two SRSs based on the SRG strategy. The number of simultaneous recording servers does not dictate the number of Recording Dialogs (SIP dialogs between SRC and SRS) that are required to be active for a communication session. If two SRSs exist in a SRG and “*simultaneous-recording-servers*” is set to 2, so long as at least one recording dialogue to any of the servers completes, the recording session is treated as being established, even if the option for “*session-recording-required*” is enabled. Setting “*session-recording-required*” to “enabled” does not imply that the number of simultaneous-recording-servers in a SRG MUST establish a recording dialogue for the communication session to complete.

As mentioned earlier the SRS is referenced on the session-agent, realm-config or sip-interface. This attribute can also be used to specify the SRG. If a SRG is to be specified instead of a SRS, the SRG group name must be prefixed with “SRG:” followed by the SRG name. This is to distinguish between a SRS being referenced vs. a SRG being referenced. This is implemented the same way as referencing a session-agent or a session-agent-group.

## 4.2 ISR Configuration

Below is the configuration on the **Interactive Session Recorder (ISR)**:-

**Site:-**

Below is the home screen after a successful login into the dashboard GUI:-















The image shows a login form with a light gray background. At the top, it says "Welcome, sign in to your account." Below this, there are two input fields: "Email :" followed by a text box, and "Password :" followed by a text box. To the right of the password field is a "Login" button.

What Do You Want To Do?

-  [Find Recordings](#)
-  [Build A Report](#)
-  [Edit My Settings](#)
-  [Edit System Configurations](#)

Click on Admin in order to build a configuration on the NN-ISR.

What Would You Like To Manage?

-  [Accounts](#)
-  [Realms](#)
-  [Routes](#)
-  [Users](#)
  
-  [Authorization Services](#)
-  [Custom Data Fields](#)
-  [External Event Destinations](#)
-  [Locales](#)
-  [Recording Format Profiles](#)
-  [Security Settings](#)
-  [Template Definitions](#)
-  [Thirdparty Services](#)
  
-  [Live Sessions](#)
-  [Sites](#)

**Accounts:-**

Define Account information using the Manage Accounts link. Enter the Account Name, Description and max sessions limit for that Account. By default System account is configured.



**Routes:-**

The Manage Routes link allows you to link the appropriate Account to the Route Type (From, To, From/To) and Route Pattern used for determining if the call should be recorded or not.

For example in the Route below, all calls originating from prefix 555 within Account System will be recorded.



Within Route there are additional Advanced Configuration elements:-

The screenshot shows the Oracle SIPREC Admin interface. At the top, there are navigation tabs for Recordings, Reports, Settings, and Admin. The user is logged in as Admin. The main content area is titled "Home / Routes" and includes an "Upgrade to Route Group" link. Below this, there are input fields for "Account" (System), "Type" (To), "Pattern" (%), "Virtual Pattern" (%DNIS%), "Label", and "Priority" (1). An "Update" button is located at the bottom right of this section. A red bar labeled "Advanced Configurations" is expanded to show various settings. The "Recording" section includes: Route Mode (Standard (SIPREC)), Recording is (Enabled), Segmentation State (Default To Account), Percent To Record (100), Always Record As Raw RTP (No), Recording Format Profile (Default), and Record DTMF (No). The "Recording Notes and Scoring Permissions" section includes: Allow Editing of Agent ID (Yes), Allow Editing of Rating (Yes), Allow Editing of Completed Transaction (Yes), and Allow Editing of Notes (Yes). The "Video" section includes: Video Recording is (Disabled) and Video Access Permission (Enabled). The "Record and Save Mode" section includes: Record and Save on DTMF (dtmf-pound #). The "Archiving" section includes: Keep Recordings for (5) Days. The "Sessions Capacity" section includes: Session Capacity (200) and Additional Burst Session Capacity (6).

**Sites:-**

A site is where we define the RSS, ESBC and Archiver information.

The screenshot shows the Oracle SIPREC Admin interface for the "Sites" configuration page. The page title is "ORACLE Interactive Session Recorder". The user is logged in as Admin. The main content area is titled "Home / Sites / 'Site1'" and includes a "Change Name" link. Below this, there are three panels: "Recorders (1)", "Locations (2)", and "Archivers (0)". The "Recorders (1)" panel shows: Running: 1, Running with Errors: 0, Offline: 0, Current Sessions in Use: 0, and Total Sessions Capacity: 200. The "Locations (2)" panel shows: Disk Usage (All Locations) N/A. The "Archivers (0)" panel shows: Enabled (0) and Disabled (0).

**RSS:-** Add RSS information (Name, IP Address, port) under RSS.

The screenshot shows the 'Recorder' configuration page in the Interactive Session Recorder Admin interface. The breadcrumb trail is 'Home / Sites / Site1 / Recorders / Recorder'. The recorder is identified as 'Recorder (10.232.50.224) - VoIPMediaGateway v6.2.0M0P0 built on 20180629.162313'. Its status is 'Up', uptime is '7 days', and sessions capacity is '200'. An 'Update' button is visible in the top right.

The 'Advanced Configurations' section includes the following fields:

- Name: Recorder
- VoIP IP: 10.232.50.224
- Admin IP: 172.18.0.60
- Data IP: 172.18.0.61
- Sessions Capacity: 200
- Config Update Interval (In Seconds): 300
- Suppress SIPREC Metadata Updates: No
- Suppress SIPREC Metadata Updates ignore Tag: (empty)
- Maintenance mode: Disabled

The 'Recorder Webservice Configurations' section includes:

- Webservice SSL Enabled?: Yes
- Webservice SSL Certificate File: /opt/issr/security/keys/rss\_cert.pem
- Webservice Port: 9998

A 'Description Configurations' section is partially visible at the bottom.

**Location:-** Define a location for archiving recordings.

The screenshot shows the 'Locations' page in the Interactive Session Recorder Admin interface. The breadcrumb trail is 'Home / Sites / Site1 / Locations'. A 'Create' button is in the top right. The page displays a table with the following data:

Name	Local Recordings Directory	Remote Access URL	Disk Usage
Recorder (172.18.0.61) Primary	/opt/issr/Recordings	https://172.18.0.61:8443/Recordings	N/A
Recorder (172.18.0.61) Secondary	/opt/issr/ArchivedRecordings	https://172.18.0.61:8443/ArchivedRecordings	N/A

Below the table, it says 'Displaying all 2 Locations'.

**Archiver:-** Add Archiver information if there is an archiver setup to archive recordings. For example:- Initially we define a Location (in this case it is a directory on the RSS itself) which is then referenced on the Archiver configuration as the Destination.

The screenshot shows the Oracle Interactive Session Recorder Admin interface. The 'Archivers' tab is active, displaying a table with one archiver configuration. The table has columns for IP Address, Source, Destination, Status, and Mode. Below the table, it says 'Displaying 1 Archiver'.

IP Address	Source	Destination	Status	Mode
172.18.0.61	Recorder (172.18.0.61) Primary	Recorder (172.18.0.61) Secondary	Enabled	Primary

The recordings are stored in the recording tab ,after all the configuration is completed and for each call recorded information is displayed as below.

The screenshot shows the Oracle Interactive Session Recorder Recordings page. It features a search bar and a table of recorded calls. The table has columns for R5S Ingress Call ID, Time, From, To, and Duration. Below the table, there is a 'Download as CSV file' button and an 'Include Details' checkbox.

R5S Ingress Call ID	Time	From	To	Duration
999908ac353ec765c9dc4582942e4c010@10.232.50.224	2019-03-26 02:04:32 pm	+19783559888	+18882126562	5 seconds
ecd0e56110a0b84c218996b8994e2e51020@10.232.50.224	2019-03-26 12:50:51 pm	+19784341227	+18882126562	3 seconds
711684825ce57954d10f485de006b894020@10.232.50.224	2019-03-26 12:08:24 pm	+19784341227	+18882126562	6 seconds
6e10990a37467f09fbf3e3e7a0c57b@10.232.50.224	2019-03-25 04:15:39 pm	+15099694365	+18882126562	1 second
c47db635d91b7d9bac35a77647513593020@10.232.50.224	2019-03-25 01:37:33 pm	+19784341227	+18882126562	15 seconds
604242adc076038b38cb8b9c96f323a3@10.232.50.224	2019-03-25 01:26:34 pm	+19784341227	+18882126562	6 seconds
14530a147708fbaaf84258d8c1c1ec9@10.232.50.224	2019-03-20 02:12:57 pm	9783559888	5555	3 seconds
d9b32d0701d6328d36a4439e2cb4074c000@10.232.50.224	2019-03-20 02:09:30 pm	9783559888	5555	6 seconds
67dd13518eb48402ad1d1047aad00ec010@10.232.50.224	2019-03-20 10:44:54 am	9783559888	5555	14 seconds
cbe5e0843f6da3a5002aae64be2a50b6@10.232.50.224	2019-03-20 10:06:27 am	9783559888	5555	6 seconds

**5 ACLI Commands and Statistical Definitions**

```
SIPREC_ISR# show rec
```

```
17:03:30-2187
```

```
Recording Agent Status      -- Period -- ----- Lifetime -----
                          Active  High  Total      Total  PerMax  High
Rec Sessions                1     1     8           8     8       1
Comm Groups                 0     0     0           0     0       0
Comm Sessions               1     1     8           8     8       1
Media Streams               2     2    13          13    13       2
Participants                2     2    16          16    16       2
```

## 6 Debugging Methodology and Techniques

ISR.log under /cxc\_common/ISR/ISRLogs provides helpful information when troubleshooting call recording on the RSS.

Example log output for a successful call recording:-

```
09/06/2012 09:18:56[ INFO] sipProxy: [Channel 1] SIPREC_EVENT_NEW call back
09/06/2012 09:18:56[ INFO] sipProxy: [Channel 1] Looking up call w/ ANI:
5550000004 DNIS: ACE6660000004
09/06/2012 09:18:56[ INFO]callManager: [Channel 1] Enqueueing SipCall, callId:
alca85bbe864aadf1be0a5338dfc33b5@172.16.101.84
09/06/2012 09:18:56[ INFO]callManager: [Channel 1] Dequeueing SipCall, callId:
alca85bbe864aadf1be0a5338dfc33b5@172.16.101.84, queueSize: 1
09/06/2012 09:18:56[ INFO]callManager: [Channel 1] Looking up call w/ ANI:
5550000004 DNIS: ACE6660000004
09/06/2012 09:18:56[ INFO] RouteMap: Call route with ANI: 5550000004 DNIS:
ACE6660000004 in-realm: Core returned CALL_TYPE_CONFERENCE accountName: System
09/06/2012 09:18:56[ INFO]callManager: [Channel 1] Call type is changed from
CALL_TYPE_CONFERENCE to CALL_TYPE_SIPREC
09/06/2012 09:18:56[ WARN] RouteMap: vDnis contains escape char '%', stripping...
09/06/2012 09:18:56[ INFO] RouteMap: [Channel 1] getRouteInfo returned with
vDnis: 555, inviteIpAddress: 172.16.50.100, isRecordable: true
09/06/2012 09:18:56[ INFO]xmlRpcQueryAgent: XmlRpcQueryAgent::execute: method
addDirectVmgEntry (_connectionState 0).
09/06/2012 09:18:57[ INFO]xmlRpcQueryAgent: XmlRpcQueryAgent::execute: method
addDirectVmgEntry completed.
09/06/2012 09:18:57[ INFO]callManager: [Channel 1] addDirectVmgEntry return with
ACK.
09/06/2012 09:18:57[ INFO]callManager: [Channel 1] addDirectVmgEntry is successful
with ANI: 5550000004 DNIS: ACE6660000004 channelId 1
09/06/2012 09:18:57[ INFO]callManager: [Channel 1] routeId 1 adjusted limit is
490, adjusted burst ports is 10.
09/06/2012 09:18:57[ INFO]callManager: [Channel 1] accountId 1 acct limit is 500.
09/06/2012 09:18:57[ INFO]callManager: [Channel 1] Current route (1) usage: 58,
account (1) usage: 58.
09/06/2012 09:18:57[ INFO] sipProxy: [Channel 1] Call State Transition: Idle ->
Called
09/06/2012 09:18:57[ INFO] sipProxy: [Channel 1] Got rtp port 22000, 22002 for
Caller->Mixer RTP Stream.
09/06/2012 09:18:57[ INFO] sipProxy: [Channel 1] Call State Transition: Called ->
OneWayConnected
09/06/2012 09:18:57[ INFO]negotiator: added payload for type=0 (0 PCMU/8000)
09/06/2012 09:18:57[ INFO]eventQueue: Enqueueing New SIPREC Call event
09/06/2012 09:18:57[NOTICE] sipProxy: [Channel 1] New Call Started,
callId=alca85bbe864aadf1be0a5338dfc33b5@172.16.101.84, callerId=5550000004
09/06/2012 09:18:57[ INFO]eventQueue: Enqueueing New Call event
09/06/2012 09:18:57[ INFO] sipProxy: (SIP Event - ACK received [cid = 1, did =
2])
```

Other helpful log files:-

**Admin VM:-** /var/www/user\_dash/log/production.log

**RSS:-** /cxc\_common/ISR/Archiver/Archiver.log



## 7 References

- [1] “Selective Call Recording using SIPREC Functional Specification #2899”, Oracle Corporation.
- [2] “Interactive Session Recorder Installation Guide, Release 6.1”, Oracle Corporation  
([https://docs.oracle.com/cd/E93040\\_01/doc/isr\\_61\\_installation.pdf](https://docs.oracle.com/cd/E93040_01/doc/isr_61_installation.pdf))
- [3] “Oracle Enterprise Session Boarder Controller Release E-CZ8.1.0  
([https://docs.oracle.com/cd/E95619\\_01/index.htm](https://docs.oracle.com/cd/E95619_01/index.htm))

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## Appendix A: Reference Configuration on Session Director

Below is the reference configuration for SIPREC on a ESBC. Note the configuration highlighted in yellow specific to SIPREC.

```

local-policy
  from-address
    *
  to-address
    *
  source-realm
    access
  description

  activate-time
    N/A
  deactivate-time
    N/A
  state
    enabled
  policy-priority
    none
  last-modified-by
    admin@172.41.1.2
  last-modified-date
    2012-10-12 13:29:32
  policy-attribute
    next-hop
      172.16.123.101
    realm
      core
    action
      none
    terminate-recursion
      enabled
    carrier
    start-time
      0000
    end-time
      2400
    days-of-week
      U-S
    cost
      10
    app-protocol
      SIP
    state
      enabled
    methods
    media-profiles
    lookup
      single
    next-key
    eloc-str-lkup
      disabled
    eloc-str-match

local-policy
  from-address
    *
  to-address
    *
  source-realm
    core
  description

  activate-time
    N/A
  deactivate-time
    N/A
  state
    enabled
  policy-priority
    none
  last-modified-by
    admin@172.41.1.2
  last-modified-date
    2012-04-18 13:29:18
  policy-attribute
    next-hop
      172.16.122.101
    realm
      access
    action
      none
    terminate-recursion
      disabled
    carrier
    start-time
      0000

```

end-time	2400
days-of-week	U-S
cost	0

```

app-protocol
state                               enabled
methods
media-profiles
lookup                               single
next-key
eloc-str-lkup                        disabled
eloc-str-match

media-manager
state                               enabled
latching                            enabled
flow-time-limit                     86400
initial-guard-timer                 300
subsq-guard-timer                   300
tcp-flow-time-limit                 86400
tcp-initial-guard-timer              300
tcp-subsq-guard-timer                300
tcp-number-of-ports-per-flow        2
hnt-rtcp                            disabled
algd-log-level                      NOTICE
mbcd-log-level                      NOTICE
red-flow-port                       1985
red-mgcp-port                       1986
red-max-trans                        10000
red-sync-start-time                 5000
red-sync-comp-time                  1000
media-policing                      enabled
max-signaling-bandwidth              10000000
max-untrusted-signaling              100
min-untrusted-signaling              30
app-signaling-bandwidth              0
tolerance-window                    30
rtcp-rate-limit                     0
trap-on-demote-to-deny               disabled
anonymous-ESBCp                     disabled
arp-msg-bandwidth                   32000
fragment-msg-bandwidth               0
rfc2833-timestamp                    disabled
default-2833-duration                100
rfc2833-end-pkts-only-for-non-sig    enabled
translate-non-rfc2833-event          disabled
media-supervision-traps              disabled
dnsalg-server-failover               disabled
last-modified-by                     admin@console
last-modified-date                   2012-02-08 14:37:41

network-interface
name                                 M00
sub-port-id                          0
description
hostname
ip-address                           192.168.50.100
pri-utility-addr
sec-utility-addr
netmask                              255.255.255.0
gateway                              192.168.50.1
sec-gateway
gw-heartbeat
state                               disabled
heartbeat                            0
retry-count                          0
retry-timeout                        1
health-score                         0

dns-ip-primary
dns-ip-backup1

```

```

dns-ip-backup2
dns-domain
dns-timeout                11
hip-ip-list                 192.168.50.100
ftp-address
icmp-address                192.168.50.100
snmp-address
telnet-address
ssh-address
signaling-mtu              0
last-modified-by           admin@console
last-modified-date         2012-02-08 14:36:54
network-interface
name                        M10
sub-port-id                 0
description
hostname
ip-address                  172.16.50.100
pri-utility-addr
sec-utility-addr
netmask                     255.255.255.0
gateway                     172.16.50.100
sec-gateway
gw-heartbeat
    state                    disabled
    heartbeat                 0
    retry-count               0
    retry-timeout             1
    health-score              0
dns-ip-primary
dns-ip-backup1
dns-ip-backup2
dns-domain
dns-timeout                11
hip-ip-list                 172.16.50.100
ftp-address
icmp-address                172.16.50.100
snmp-address
telnet-address
ssh-address
signaling-mtu              0
last-modified-by           admin@console
last-modified-date         2012-02-08 14:37:22
phy-interface
name                        M00
operation-type              Media
port                        0
slot                        0
virtual-mac
admin-state                 enabled
auto-negotiation            enabled
duplex-mode                 FULL
speed                       100
overload-protection         disabled
last-modified-by           admin@console
last-modified-date         2012-02-08 14:34:46
phy-interface
name                        M10
operation-type              Media
port                        0
slot                        1
virtual-mac
admin-state                 enabled
auto-negotiation            enabled

```



duplex-mode	FULL
speed	100
overload-protection	disabled
last-modified-by	admin@console
last-modified-date	2012-02-08 14:35:00
realm-config	
identifier	access
description	
addr-prefix	0.0.0.0
network-interfaces	
mm-in-realm	M00:0
mm-in-network	enabled
mm-same-ip	enabled
mm-in-system	enabled
bw-cac-non-mm	disabled
msm-release	disabled
qos-enable	disabled
generate-UDP-checksum	disabled
max-bandwidth	0
fallback-bandwidth	0
max-priority-bandwidth	0
max-latency	0
max-jitter	0
max-packet-loss	0
observ-window-size	0
parent-realm	
dns-realm	
media-policy	
media-sec-policy	
srtp-msm-passthrough	disabled
in-translationid	
out-translationid	
in-manipulationid	
out-manipulationid	
manipulation-string	
manipulation-pattern	
class-profile	
average-rate-limit	0
access-control-trust-level	none
invalid-signal-threshold	0
maximum-signal-threshold	0
untrusted-signal-threshold	0
nat-trust-threshold	0
deny-period	30
ext-policy-svr	
diam-e2-address-realm	
symmetric-latching	disabled
pai-strip	disabled
trunk-context	
early-media-allow	
enforcement-profile	
additional-prefixes	
restricted-latching	none
restriction-mask	32
spl-options	
accounting-enable	enabled
user-cac-mode	none
user-cac-bandwidth	0
user-cac-sessions	0
icmp-detect-multiplier	0
icmp-advertisement-interval	0
icmp-target-ip	
monthly-minutes	0

net-management-control	disabled
delay-media-update	disabled
refer-call-transfer	disabled
refer-notify-provisional	none
dyn-refer-term	disabled
codec-policy	
codec-manip-in-realm	disabled
constraint-name	
call-recording-server-id	
xnq-state	xnq-unknown
hairpin-id	0
stun-enable	disabled
stun-server-ip	0.0.0.0
stun-server-port	3478
stun-changed-ip	0.0.0.0
stun-changed-port	3479
match-media-profiles	
qos-constraint	
sip-profile	
sip-isup-profile	
session-recording-server	
session-recording-required	disabled
block-rtcp	disabled
hide-egress-media-update	disabled
monitoring-filters	
last-modified-by	admin@172.41.1.2
last-modified-date	2012-10-12 13:30:56
realm-config	
identifier	core
description	
addr-prefix	0.0.0.0
network-interfaces	
	M10:0
mm-in-realm	enabled
mm-in-network	enabled
mm-same-ip	enabled
mm-in-system	enabled
bw-cac-non-mm	disabled
msm-release	disabled
qos-enable	disabled
generate-UDP-checksum	disabled
max-bandwidth	0
fallback-bandwidth	0
max-priority-bandwidth	0
max-latency	0
max-jitter	0
max-packet-loss	0
observ-window-size	0
parent-realm	
dns-realm	
media-policy	
media-sec-policy	
srtp-msm-passthrough	disabled
in-translationid	
out-translationid	
in-manipulationid	
out-manipulationid	
manipulation-string	
manipulation-pattern	
class-profile	
average-rate-limit	0
access-control-trust-level	none
invalid-signal-threshold	0
maximum-signal-threshold	0

untrusted-signal-threshold	0
nat-trust-threshold	0
deny-period	30
ext-policy-svr	
diam-e2-address-realm	
symmetric-latching	disabled
pai-strip	disabled
trunk-context	
early-media-allow	
enforcement-profile	
additional-prefixes	
restricted-latching	none
restriction-mask	32
spl-options	
accounting-enable	enabled
user-cac-mode	none
user-cac-bandwidth	0
user-cac-sessions	0
icmp-detect-multiplier	0
icmp-advertisement-interval	0
icmp-target-ip	
monthly-minutes	0
net-management-control	disabled
delay-media-update	disabled
refer-call-transfer	disabled
refer-notify-provisional	none
dyn-refer-term	disabled
codec-policy	
codec-manip-in-realm	disabled
constraint-name	
call-recording-server-id	
xnq-state	xnq-unknown
hairpin-id	0
stun-enable	disabled
stun-server-ip	0.0.0.0
stun-server-port	3478
stun-changed-ip	0.0.0.0
stun-changed-port	3479
match-media-profiles	
qos-constraint	
sip-profile	
sip-isup-profile	
session-recording-server	CSEisr
session-recording-required	enabled
block-rtcp	disabled
hide-egress-media-update	disabled
monitoring-filters	
last-modified-by	admin@172.41.1.2
last-modified-date	2012-10-12 13:59:40
session-agent	
hostname	172.16.123.101
ip-address	172.16.123.101
port	5060
state	enabled
app-protocol	SIP
app-type	
transport-method	UDP
realm-id	core
egress-realm-id	
description	
carriers	
allow-next-hop-lp	enabled
constraints	disabled
max-sessions	0

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

```

session-recording-required    disabled
last-modified-by             admin@172.41.1.2
last-modified-date           2012-10-12 13:28:49
session-agent
  hostname                    172.16.122.101
  ip-address                  172.16.122.101
  port                        5060
  state                       enabled
  app-protocol                SIP
  app-type
  transport-method           UDP
  realm-id                    access
  egress-realm-id
  description
  carriers
  allow-next-hop-lp          enabled
  constraints                 disabled
  max-sessions                0
  max-inbound-sessions        0
  max-outbound-sessions       0
  max-burst-rate              0
  max-inbound-burst-rate      0
  max-outbound-burst-rate     0
  max-sustain-rate            0
  max-inbound-sustain-rate    0
  max-outbound-sustain-rate   0
  min-seizures                5
  min-asr                     0
  time-to-resume              0
  ttr-no-response             0
  in-service-period           0
  burst-rate-window           0
  sustain-rate-window         0
  req-uri-carrier-mode        None
  proxy-mode
  redirect-action
  loose-routing               enabled
  send-media-session           enabled
  response-map
  ping-method
  ping-interval               0
  ping-send-mode               keep-alive
  ping-all-addresses          disabled
  ping-in-service-response-codes
  out-service-response-codes
  load-balance-dns-query       hunt
  media-profiles
  spl-options
  in-translationid
  out-translationid
  trust-me                     disabled
  request-uri-headers
  stop-recurse
  local-response-map
  ping-to-user-part
  ping-from-user-part
  li-trust-me                  disabled
  in-manipulationid
  out-manipulationid
  manipulation-string
  manipulation-pattern
  p-asserted-id
  trunk-group
  max-register-sustain-rate    0

```

```

early-media-allow
invalidate-registrations      disabled
rfc2833-mode                  none
rfc2833-payload               0
codec-policy
enforcement-profile
refer-call-transfer           disabled
refer-notify-provisional     none
reuse-connections             NONE
tcp-keepalive                 none
tcp-reconn-interval          0
max-register-burst-rate      0
register-burst-window         0
sip-profile
sip-isup-profile
kpml-interworking             inherit
monitoring-filters
session-recording-server      disabled
session-recording-required
last-modified-by              admin@172.41.1.2
last-modified-date            2012-10-12 13:30:16
session-recording-server
name                           CSEisr
description                     ISR RSS
realm                           core
mode                             selective
destination                     172.16.101.84
port                             5060
transport-method                UDP
last-modified-by                admin@172.41.1.2
last-modified-date              2012-10-12 13:36:39
sip-config
state                           enabled
operation-mode                  dialog
dialog-transparency             enabled
home-realm-id                   core
egress-realm-id
nat-mode                         None
registrar-domain                 *
registrar-host                  *
registrar-port                   5060
register-service-route           always
init-timer                       500
max-timer                        4000
trans-expire                      8
invite-expire                     180
inactive-dynamic-conn           32
enforcement-profile
pac-method
pac-interval                     10
pac-strategy                     PropDist
pac-load-weight                  1
pac-session-weight               1
pac-route-weight                 1
pac-callid-lifetime              600
pac-user-lifetime                3600
red-sip-port                     1988
red-max-trans                     10000
red-sync-start-time              5000
red-sync-comp-time               1000
add-reason-header                disabled
sip-message-len                  4096
enum-sag-match                   disabled
extra-method-stats               disabled

```

rph-feature	disabled
nsep-user-sessions-rate	0
nsep-sa-sessions-rate	0
registration-cache-limit	0
register-use-to-for-lp	disabled
options	max-udp-length=0
refer-src-routing	disabled
add-ucid-header	disabled
proxy-sub-events	
allow-pani-for-trusted-only	disabled
pass-gruu-contact	disabled
sag-lookup-on-redirect	disabled
set-disconnect-time-on-bye	disabled
last-modified-by	admin@172.41.1.2
last-modified-date	2012-03-26 17:44:42
sip-interface	
state	enabled
realm-id	access
description	
sip-port	
address	192.168.50.100
port	5060
transport-protocol	UDP
tls-profile	
multi-home-addr	
allow-anonymous	agents-only
ims-aka-profile	
carriers	
trans-expire	0
invite-expire	0
max-redirect-contacts	0
proxy-mode	
redirect-action	
contact-mode	none
nat-traversal	none
nat-interval	30
tcp-nat-interval	90
registration-caching	enabled
min-reg-expire	300
registration-interval	3600
route-to-registrar	enabled
secured-network	disabled
teluri-scheme	disabled
uri-fqdn-domain	
spl-options	
trust-mode	all
max-nat-interval	3600
nat-int-increment	10
nat-test-increment	30
sip-dynamic-hnt	disabled
stop-recurse	401,407
port-map-start	0
port-map-end	0
in-manipulationid	
out-manipulationid	
manipulation-string	
manipulation-pattern	
sip-ims-feature	disabled
subscribe-reg-event	disabled
operator-identifier	
anonymous-priority	none
max-incoming-conns	0
per-src-ip-max-incoming-conns	0
inactive-conn-timeout	0

```

untrusted-conn-timeout      0
network-id
ext-policy-server
default-location-string
charging-vector-mode        pass
charging-function-address-mode pass
ccf-address
ecf-address
term-tgrp-mode              none
implicit-service-route      disabled
rfc2833-payload             101
rfc2833-mode                 transparent
constraint-name
response-map
local-response-map
ims-aka-feature              disabled
enforcement-profile
route-unauthorized-calls
tcp-keepalive                none
add-ESBCp-invite            disabled
add-ESBCp-profiles
sip-profile
sip-isup-profile
tcp-conn-dereg              0
register-keep-alive          none
kpml-interworking            disabled
tunnel-name
session-recording-server
session-recording-required  disabled
last-modified-by            admin@172.41.1.2
last-modified-date          2012-10-12 13:41:18
sip-interface
state                        enabled
realm-id                     core
description
sip-port
    address                   172.16.50.100
    port                       5060
    transport-protocol         UDP
    tls-profile
    multi-home-addr
    allow-anonymous            agents-only
    ims-aka-profile
carriers
trans-expire                  0
invite-expire                 0
max-redirect-contacts         0
proxy-mode
redirect-action
contact-mode                  none
nat-traversal                 none
nat-interval                  30
tcp-nat-interval              90
registration-caching          disabled
min-reg-expire                300
registration-interval         3600
route-to-registrar            disabled
secured-network               disabled
teluri-scheme                 disabled
uri-fqdn-domain
spl-options
trust-mode                    all
max-nat-interval              3600
nat-int-increment             10

```



nat-test-increment	30
sip-dynamic-hnt	disabled
stop-recurse	401,407
port-map-start	0
port-map-end	0
in-manipulationid	
out-manipulationid	
manipulation-string	
manipulation-pattern	
sip-ims-feature	disabled
subscribe-reg-event	disabled
operator-identifier	
anonymous-priority	none
max-incoming-conns	0
per-src-ip-max-incoming-conns	0
inactive-conn-timeout	0
untrusted-conn-timeout	0
network-id	
ext-policy-server	
default-location-string	
charging-vector-mode	pass
charging-function-address-mode	pass
ccf-address	
ecf-address	
term-tgrp-mode	none
implicit-service-route	disabled
rfc2833-payload	101
rfc2833-mode	transparent
constraint-name	
response-map	
local-response-map	
ims-aka-feature	disabled
enforcement-profile	
route-unauthorized-calls	
tcp-keepalive	none
add-ESBCp-invite	disabled
add-ESBCp-profiles	
sip-profile	
sip-isup-profile	
tcp-conn-dereg	0
register-keep-alive	none
kpml-interworking	disabled
tunnel-name	
session-recording-server	
session-recording-required	disabled last-
modified-by	admin@console
last-modified-date	2012-02-08 14:40:58
steering-pool	
ip-address	192.168.50.100
start-port	49156
end-port	65535
realm-id	access
network-interface	
last-modified-by	admin@console
last-modified-date	2012-02-08 14:38:59
steering-pool	
ip-address	172.16.50.100
start-port	49156
end-port	65535
realm-id	core
network-interface	
last-modified-by	admin@console
last-modified-date	2012-02-08 14:39:18
system-config	

```

hostname
description                SIPREC with ISR Testing
location
mib-system-contact
mib-system-name
mib-system-location
snmp-enabled                enabled
enable-snmp-auth-traps    disabled enable-
snmp-syslog-notify        disabled enable-snmp-
monitor-traps              disabled enable-env-
monitor-traps              disabled snmp-syslog-his-
table-length 1
snmp-syslog-level          WARNING
system-log-level           WARNING
process-log-level          NOTICE
process-log-ip-address     0.0.0.0
process-log-port           0
collect
    sample-interval        5
    push-interval          15
    boot-state              disabled
    start-time              now
    end-time                never
    red-collect-state       disabled
    red-max-trans           1000
    red-sync-start-time    5000
    red-sync-comp-time     1000
    push-success-trap-state disabled
call-trace                  disabled
internal-trace              disabled
log-filter                  all
default-gateway             172.41.0.1
restart                     enabled
exceptions
telnet-timeout              0
console-timeout             0
remote-control              enabled
cli-audit-trail             enabled
link-redundancy-state       disabled
source-routing              disabled
cli-more                    disabled
terminal-height             24
debug-timeout               0
trap-event-lifetime         0
default-v6-gateway          ::
ipv6-signaling-mtu          1500
ipv4-signaling-mtu          1500
cleanup-time-of-day         00:00
snmp-engine-id-suffix
snmp-agent-mode             v1v2
comm-monitor
    state                   disabled
    qos-enable               enabled
    sbc-grp-id               0
    tls-profile
network-interface           wancom0:0
last-modified-by           admin@console
last-modified-date         2012-02-08 14:34:26

```