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Oracle Communications Interactive Session Recorder and Broadsoft Broadworks Interoperability Testing

Technical Application Note

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Intended Audience

This document is intended for use by Oracle personnel, third party Systems Integrators, and end users of the Oracle Communications Interactive Session Recorder (ISR). It assumes that the reader is familiar with basic operations of the Oracle Communications Interactive Session Recorder. Understanding the basic concepts of TCP/UDP, IP/Routing, and SIP/RTP are also necessary to complete the configuration and for troubleshooting, if necessary.

Document Overview

This document provides an overview of the interoperability testing environment and tests that have been conducted to determine the recommended configuration for the Oracle ISR and the Broadsoft Broadworks Application Server in conformance with the SIPREC recording standard.

Introduction

The Oracle Communications Interactive Session Recorder (ISR) allows any telephony or Interactive Voice Response (IVR) environment to handle full-duplex call recording (both pre- and post-transfer). The ISR reliably records any phone call in carrier, enterprise, or contact center. Supporting enterprise & multi-tenant architectures, the ISR provides ad-hoc (partial call) recording allowing any call to be recorded at any point and for any duration. The ISR can scale from one call to thousands of concurrent calls and is a simple add-on to any SIP telephony network. An affordable software-based solution, the IP Call Recorder runs on standard Intel-based servers in virtual machine or bare-metal environments.

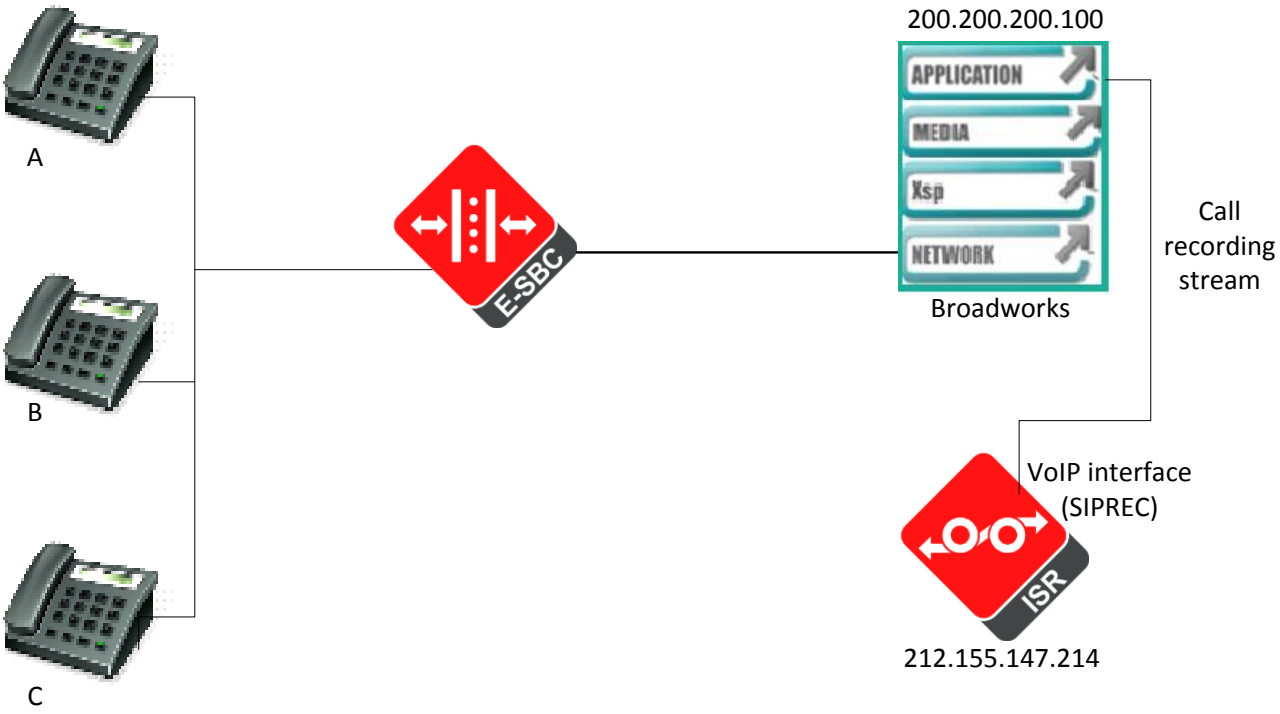
BroadWorks is a VoIP applications platform that enables service providers to deliver basic and enhanced voice services for business and residential end users. ISR 5.2 upgrades its compatibility with Broadworks SIPREC implementation to the required components of the R21 specification, which includes on-demand and user controlled recording.

Requirements

- Fully functioning Broadworks Release 21.sp1
- Fully installed Oracle Enterprise Interactive Session Recorder v5.2. Please note: The configuration running on the ISR is backward/forward compatible with any release in the 5.2 stream
- Fully functional VoIP network including Phones, SBC & networking components.

Lab Configuration

The following diagram illustrates the lab environment created to facilitate interoperability testing between Broadworks and the Oracle ISR.



Phone A, B and C register to Broadworks through the E-SBC

In the network architecture above, users A, B and C are registered to the Broadworks Server through the E-SBC. Oracle ISR integrates with Broadworks Application Server to deliver SIPREC based recording to the customer's existing VoIP environment. The calls between the phones are recorded by the Oracle Communications ISR. For eg. When A calls B, the call is controlled by the Broadworks Application Server(AS). Broadworks AS also establishes a connection with the ISR and forwards the call to ISR for SIPREC recording. Every call going through Broadsoft is recorded by the Oracle ISR, and there is also support for on demand recording.

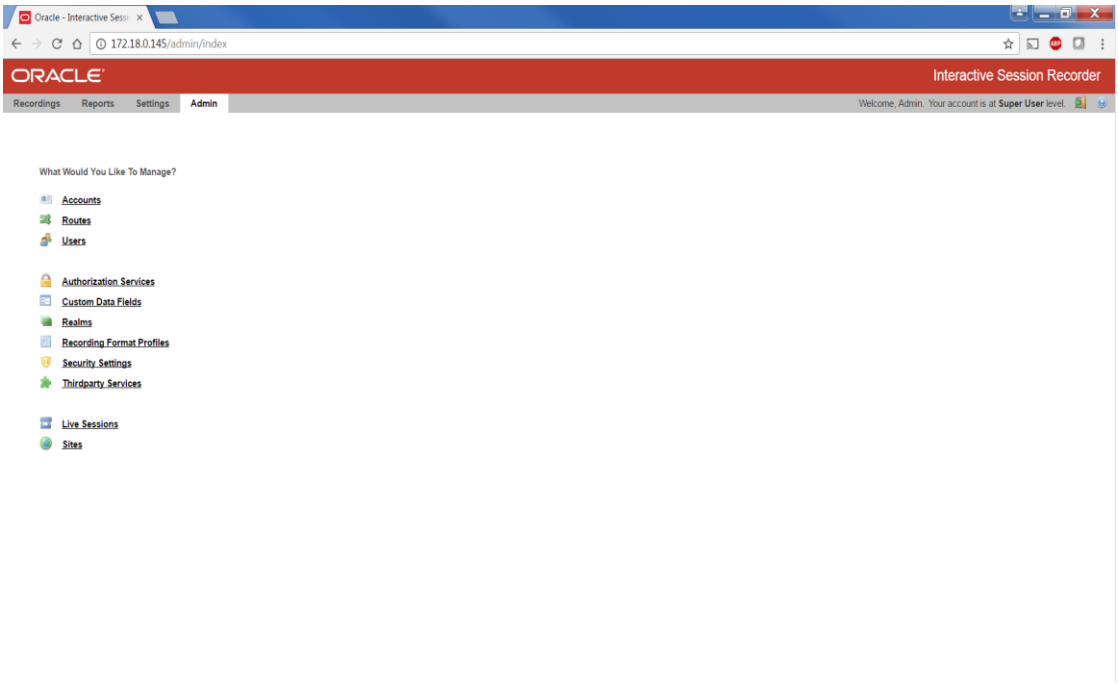
NOTE: *ESBC is not mandatory element to enable SIPREC recording between Broadsoft AS & Oracle ISR.*

Oracle Communications Interactive Session Recorder Configuration

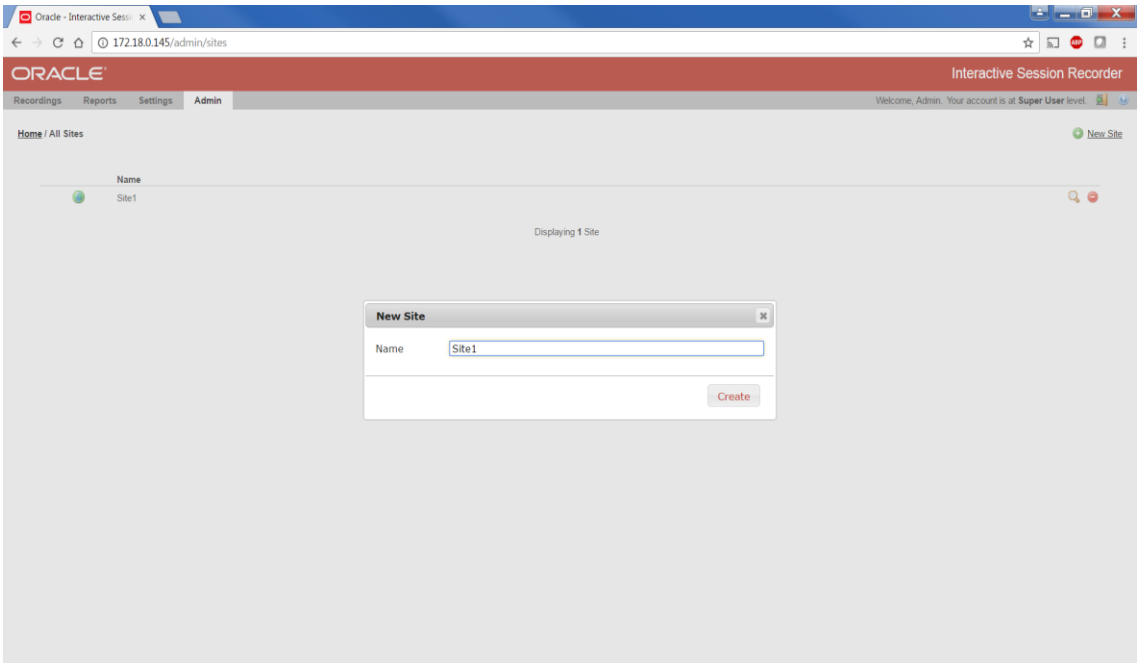
For the installation of the Oracle ISR, please refer to Oracle Communications ISR User Guide. The following steps are to be executed after the installation of the ISR.

Add a new site for the RSS server

After logging into the ISR, go to **Admin → Sites**

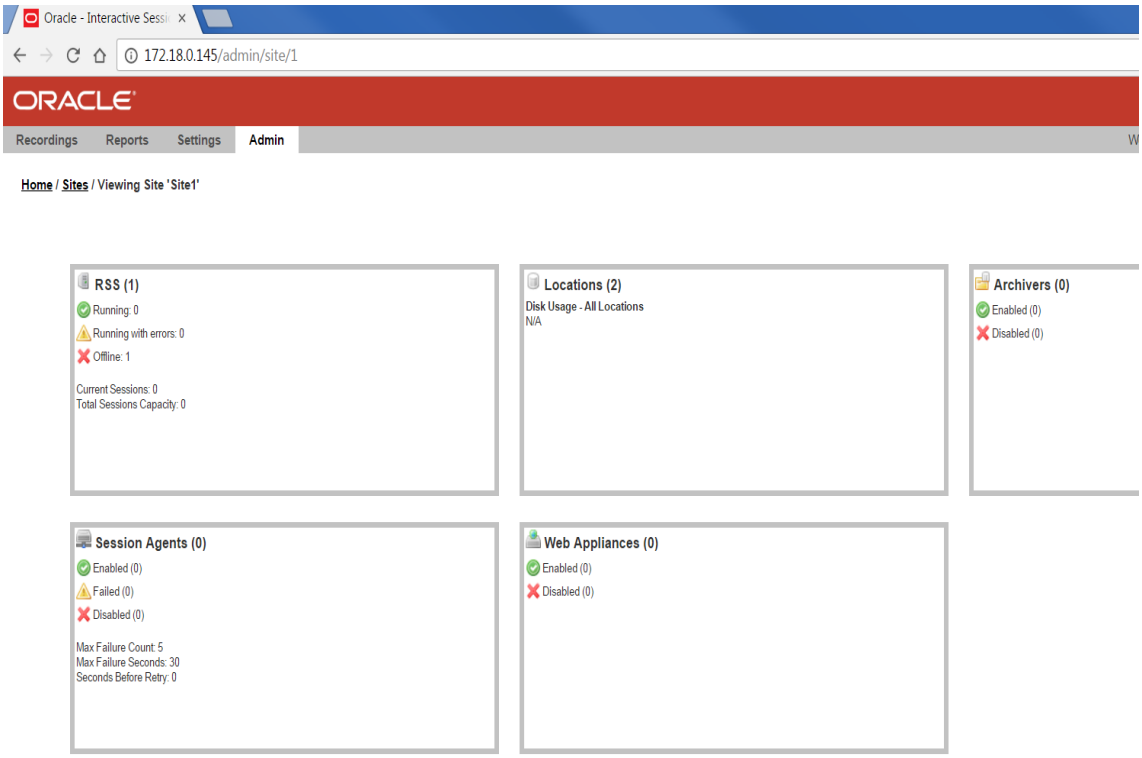


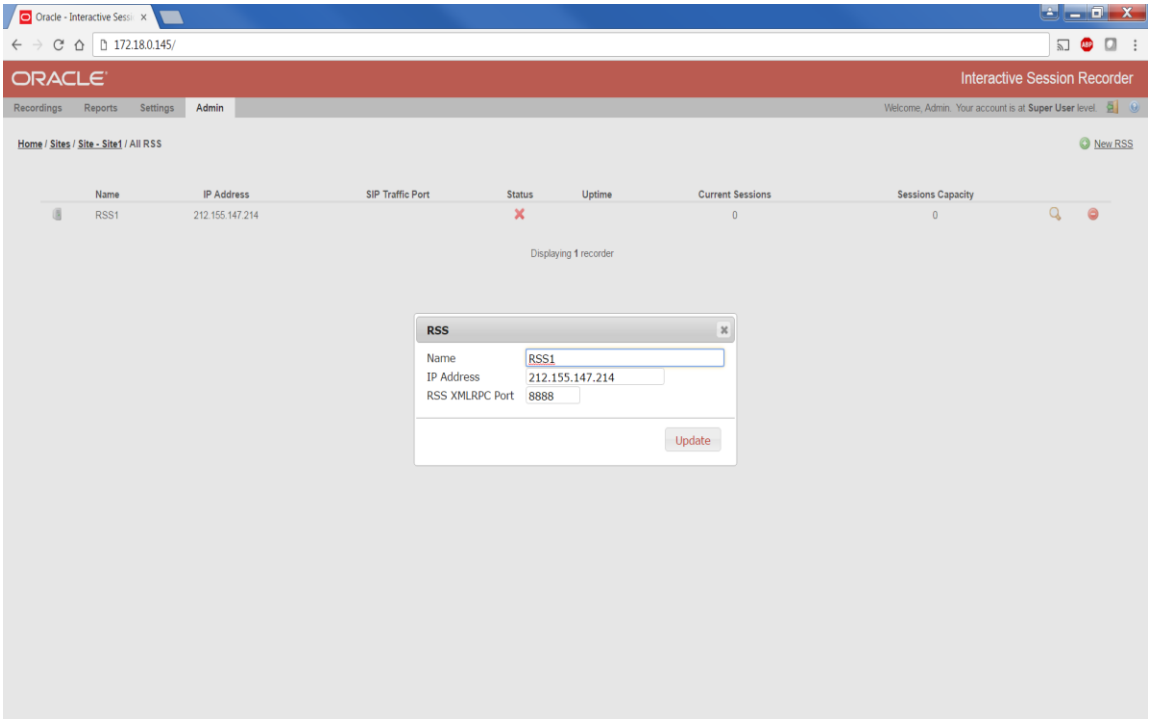
Click on New Site on the right and create a new **Site1**.



Add a new RSS server to the Site

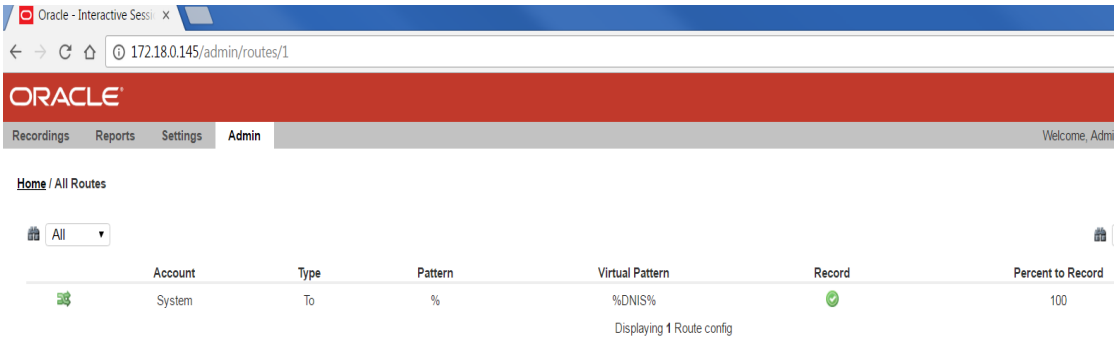
On the All Sites page, click on **Site1** which you just created, then click on RSS and add a **New RSS 212.155.147.214**(ISR IP) as shown below.





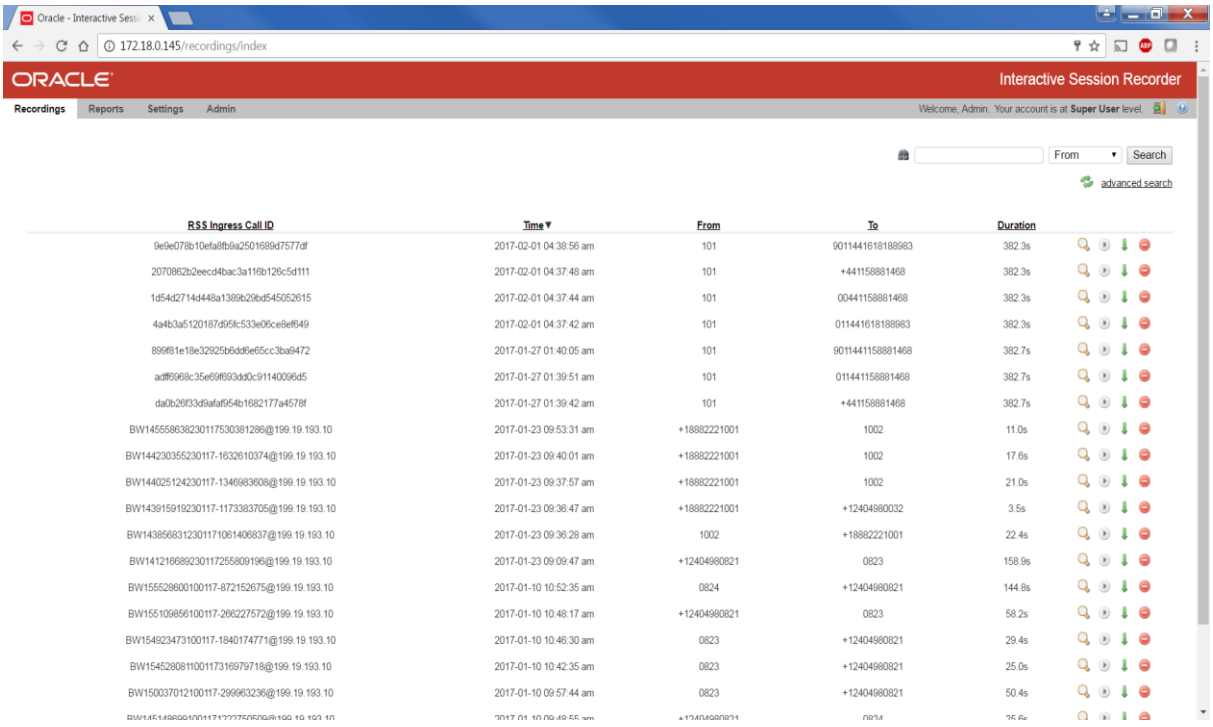
Add a route

A route defines the parameters to evaluate and invoke recording, as well as the recording rules to apply for all calls received by the ISR. Users are given access to recordings based on routes. For the purpose of this testing, no route was required, the default route was adequate to do the routing. Following is the default route configured on the ISR with the install.



View the Recording

To view the recordings on the ISR, click on the **Recordings** tab.



To view details about a recording, click on the particular recording and you can see the details such as Session Metadata, Ingress CallIDs etc. You also have an option to Play, Download or Delete the recording on the right.

Broadworks Configuration

This section describes the general steps required to enable BroadWorks for call recording. For further details, please refer to the BroadWorks Call Recording Interface Guide, Release 2. available from BroadSoft at xchange.broadsoft.com

Configure System Level Call Recording Settings

System level call recording settings are listed as follows.

- *continueCallAfterRecordingFailure*: Set to "true" to enable calls to continue when there is a recording failure.
- *continueCallAfterVideoRecordingFailure*: Set to "true" to enable calls to continue when there is a video recording failure.
- *maxConsecutiveFailures*: Set to "10" to allow issues to occur during testing without making the call recorder "out of service".
- *maxResponseWaitTimeMilliseconds*: Set to default "3000". BroadWorks waits to this maximum time for the call recorder to respond to requests.
- *refreshPeriodSeconds*: Set to default "60". BroadWorks waits this duration before retrying a call recorder marked as "out of service".

```
AS_CLI/Service/CallRecording> get
  continueCallAfterRecordingFailure = true
  maxConsecutiveFailures = 1
  maxResponseWaitTimeMilliseconds = 3000
  refreshPeriodSeconds = 60
  continueCallAfterVideoRecordingFailure = true
```

Provision Call Recording Platform

Add the Oracle call recording platform to the system via the Application Server command line interface (CLI).

- Name: Provide a unique name for the call recording platform.
- Net Address: Provide the call recording platform SIPREC interface IP address or fully qualified domain name.
- Port: Provide the call recording platform SIPREC interface IP port.
- Transport Type: UDP
- Media Stream: dual
- Schema Version: 3.0
- Support Video Recording: false

Example:

```
AS_CLI/Service/CallRecording/Platform> add Oracle-ISR 20.20.34.5 5060 UDP dual 3.0 false
…Done
```

Configure Group Call Recording Platform

Browse to *Group → Resources → Call Recording Platform*. Select the call recording platform added in section "**Provision Call Recording Platform**" and then click **Apply**.

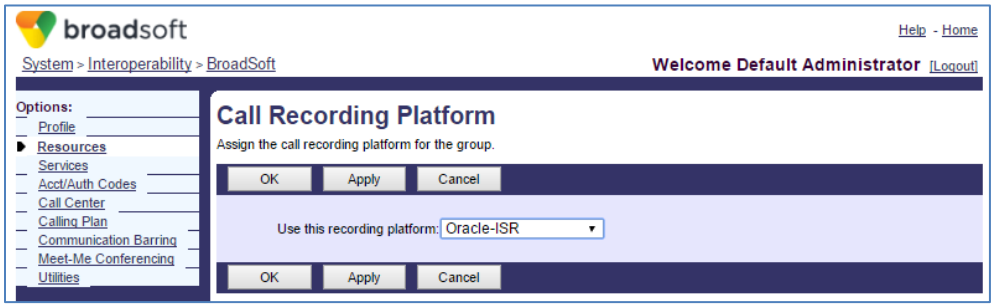


Figure 1 Configure Group Call Recording Platform

Authorize Call Recording User Service to Group

Browse to *Group → Resources → Services*. Make sure that *Call Recording* is selected under *Authorized User Services*.

Assign Call Recording User Service to User

Browse to *Group → Resources → Existing User Services*. Make sure that *Call Recording* is selected under *User Services*. Alternatively, browse to *<user> → Profile → Assign Services* to assign the *Call Recording* service to an individual user.

Configure Call Recording User Service

For each user configured with the Call Recording service, browse to *<user> → Call Control → Call Recording*. Configure the service settings as required.

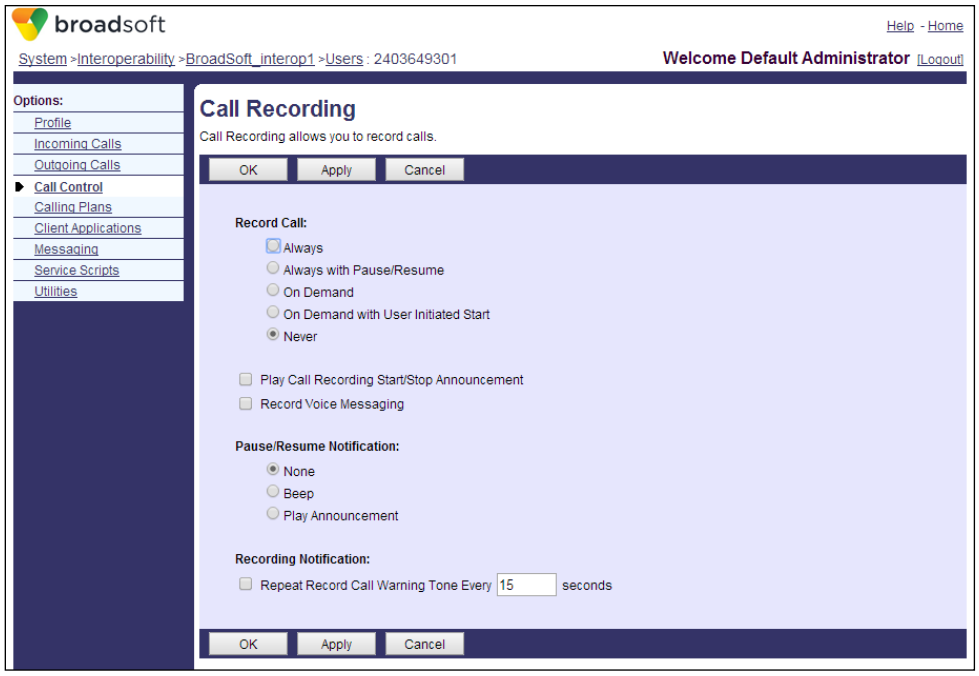


Figure 2 Configure Call Recording User Service

Test Plan Executed

Following is the test plan executed against this setup and results have been documented below. .

Test Case Title	Priority	Pass	Fail	NA	NS	NT
Basic Package						
Basic – Recording Modes						
Recording Mode: Always						
1 Record Originator	**P0**	X				
2 Record Terminator	**P0**	X				
3 Record Originator and Terminator	**P0**	X				
Recording Mode: Always with Pause/Resume						
4 Record Originator	**P0**	X				
5 Record Terminator	**P0**	X				
Recording Mode: On Demand						
6 Record Originator; Trigger Before Call	**P0**	X				
7 Record Originator; No Trigger	**P0**	X				
8 Record Originator; Trigger During Call	**P0**	X				
9 Record Terminator; Trigger During Call	**P0**	X				
10 Record Terminator; Trigger During Call; Pause/Resume	**P0**	X				
Recording Mode: On Demand with User Initiated Start						
11 Record Originator; Start Before Call	**P0**	X				
12 Record Originator; Start During Call	**P0**	X				
13 Record Terminator; Start During Call; Pause/Resume	**P0**	X				
14 Record Terminator; Start During Call; Stop	**P0**	X				
15 Record Terminator; Start During Call; Multiple Start/Stop	**P0**	X				
16 Record Originator and Terminator; Start During Call; Pause/Resume; Multiple Start/Stop	**P0**	X				
Basic – Session Audit						
17 Recording Mode Always; Record Originator	**P0**	X				
18 Recording Mode Always; Record Originator and Terminator	**P0**	X				
19 Recording Mode Always with Pause/Resume; Record Originator Pause/Resume	**P0**	X				
20 Recording Mode On Demand; Record Originator; Trigger During Call	**P0**	X				
21 Recording Mode On Demand; Record Terminator Long Call; Trigger During Call	**P0**	X				

Test Case Title	Priority	Pass	Fail	NA	NS	NT
Call Control Services Package						
Call Control Services – Call Hold						
22 Call Hold by Originator; Record Originator; Recording Mode Always	**P0**	X				
23 Call Hold by Terminator with Music On Hold; Record Originator; Recording Mode On Demand	**P0**	X				
Call Control Services – Call Waiting						
24 Record Call Waiting User; Recording Mode Always	**P0**	X				
25 Record Call Waiting User; Recording Mode On Demand	**P0**	X				
Call Control Services – Blind Transfer						
26 Record Transferor; Recording Mode Always	**P0**	X				
27 Record Transfer-To Party; Recording Mode Always	**P0**	X				
28 Record Transferee; Recording Mode Always	**P0**	X				
29 Record Transferee; Recording Mode On Demand	**P0**	X				
Call Control Services – Attended Transfer						
30 Record Transferor; Recording Mode Always	**P0**	X				
31 Record Transfer-To Party; Recording Mode Always	**P0**	X				
32 Record Transferee; Recording Mode Always	**P0**	X				
33 Record Transferee; Recording Mode On Demand	**P0**	X				
Call Control Services – Local Three-Way Call						
34 Record Conferencing Party; Recording Mode Always	**P0**	X				
35 Record Conferencing Party; Recording Mode On Demand	**P0**	X				
Call Control Services – Network Three-Way Call						
36 Record Conferencing Party; Recording Mode Always	**P0**	X				
37 Record Conferencing Party; Recording Mode On Demand	**P0**	X				
38 Record Conferencing Party; Recording Mode On Demand with User Initiated Start; Conferencing Party Starts Record after Conference is Started	**P0**	X				
Call Control Services – Network N-Way Call						
39 Record Conferencing Party; Recording Mode Always	**P0**	X				
40 Record Conferencing Party; Recording Mode On Demand with User Initiated Start; Conferencing Party Adds Call Being Recorded to Active Conference	**P0**	X				
Call Control Services – Call Park						
41 Record All Parties; Recording Mode Always	**P0**	X				
42 Record Parked Party; Recording Mode On Demand	**P0**	X				
43 Call Park Recall; Record All Parties; Recording Mode Always Recall	**P0**	X				
Call Control Services – Directed Call Pickup with Barge-in						

Test Case Title	Priority	Pass	Fail	NA	NS	NT
44 Record All Parties; Recording Mode Always	**P0**	X				
45 Record Barge-In Party; Recording Mode On Demand	**P0**	X				
Virtual Subscriber Services						
Virtual Subscriber Services – Auto Attendant						
46 Record Originator and Auto Attendant; In-band DTMF; Record Mode Always	**P0**	X				
47 Record Originator and Auto Attendant; RFC2833 DTMF; Record Mode Always	**P0**	X				
48 Record Originator and Auto Attendant; In-band DTMF; Record Mode On Demand	**P0**	X				
Virtual Subscriber Services – Voice Messaging						
49 Voice Messaging Deposit; Record Originator; Record Mode Always	**P0**	X				
50 Voice Messaging Retrieval; Record Originator; Record Mode Always	**P0**	X				
51 Voice Messaging Deposit; Record Originator; Record Mode On Demand	**P0**	X				
52 Voice Messaging Deposit; Record Terminator; Record Mode Always	**P0**	X				
53 Voice Messaging Deposit; Record Originator and Terminator; Record Mode Always	**P0**	X				
Virtual Subscriber Services – Call Center						
54 Record Call Center; Record Mode Always	**P0**	X				
55 Record Call Center, Originator, and Agent: Record Mode Always	**P0**	X				
Miscellaneous Services Package						
Miscellaneous Services – Security Classification						
56 Record Originator and Terminator; Record Mode Always	**P0**	X				
Failover Package						
Failover – Application Server						
57 Recording Mode Always: Record Originator and Terminator	**P1**	X				
58 Recording Mode On Demand: Record Terminator; Trigger During Call	**P1**	X				
Failover – Media Server						
59 Recording Mode Always: Record Originator and Terminator	**P1**	X				
Failover – Call Recording Application						
60 Recording Mode Always: Record Originator and Terminator	**P1**	X				

Known Issues

- Re-INVITE is not sent by BroadWorks to update call recording session metadata when call is transferred.

When call recorder does not advertise support of SIP UPDATE method, BroadWorks fails to send call recording metadata to update the call recording session information for the call recorder through re-INVITE.

- Oracle ISR does not respond to INVITE requests with all of the supported audio CODECs in the call answering INVITE.

To reduce potential trans-coding sessions on the BroadWorks media servers; upon receiving call recording INVITE request from BroadWorks, it is expected for the call recorder to provide all supported CODECs. However, ISR only answers the request with the first matching CODEC in its preferred list in the responding 200OK message.

Troubleshooting ISR

This section provides the information required to troubleshoot your ISR if required, after installing and using it in your network.

Common Problems

The following identifies some answers to issues you may encounter after installing and using the ISR.

Issue	Resolution
I get a busy message.	1. Make sure your ISR is on and ready to accept calls. 2. Ensure that you are not over the port capacity limit for your route.
I can't get ISR to answer the call	1. Double check your ISR settings in the vmgConfg.xml file. Is the IP address correct? Is the SIP Port correct? 2. Ensure that your 800 number is configured on the network.

Logs

Within the ISR RSS home directory, are the files:

/cxc_common/logs/recorder
/cxc_common/ISR/ApiLog/

These directories contain all of the logs associated with the operation of the RSS and Legacy APIs. You can access these logs as required to view operational information about the ISR that can be used for troubleshooting purposes.

vmgConfig.xml

The directory that contains the installation files on the ISR is located at: /cxc/ Legacy RSS API Commands.This directory is the default directory for all installation files. It also contains the default vmgConfig.xml file, which includes all current configuration settings. If you change parameters in this file, the ISR service requires a restart for the changes to take effect.

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