



Oracle Communications Interactive Session  
Recorder and Broadsoft Broadworks  
Interoperability Testing

Technical Application Note



## Disclaimer

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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.

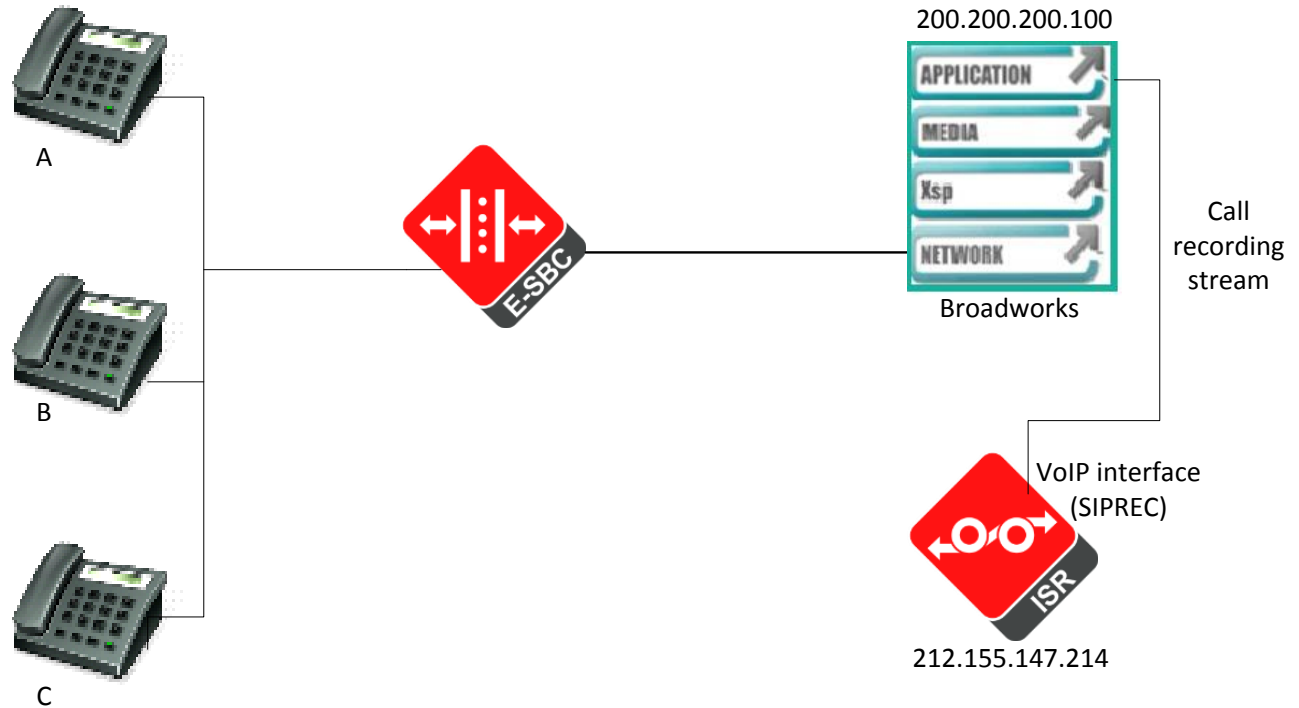
BroadWorks is a VoIP applications platform that enables service providers to deliver basic and enhanced voice services for business and residential end users. ISR 5.2 upgrades its compatibility with Broadworks SIPREC implementation to the required components of the R21 specification, which includes on-demand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

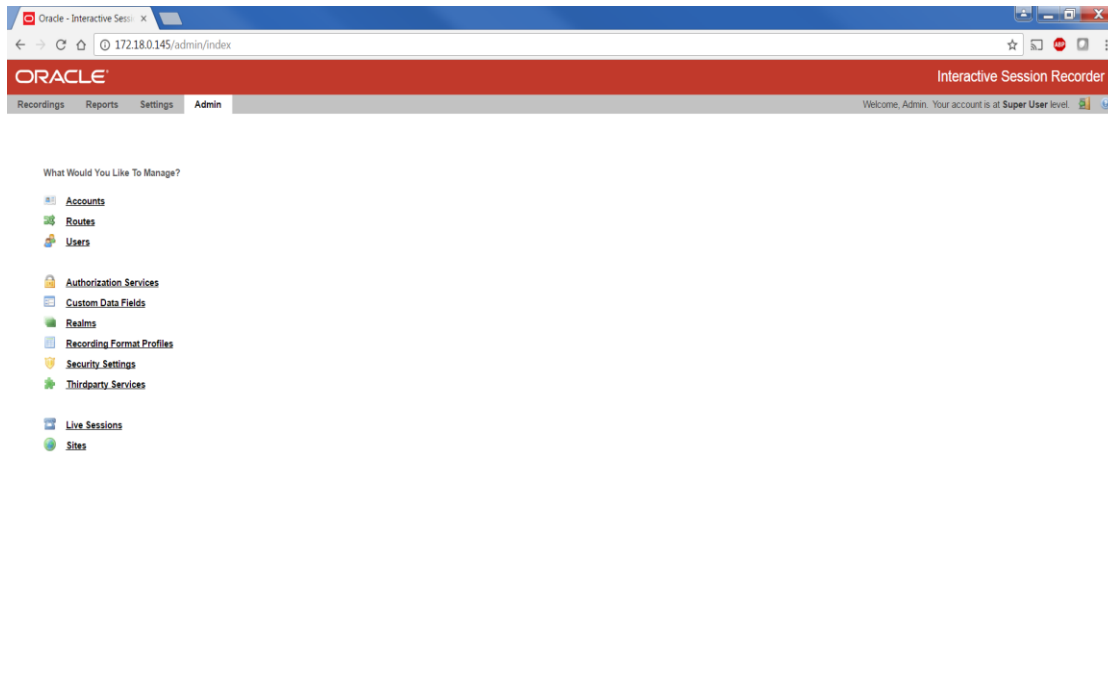
**NOTE:** ESBC is not mandatory element to enable SIPREC recording between Broadsoft AS & Oracle ISR.

# Oracle Communications Interactive Session Recorder Configuration

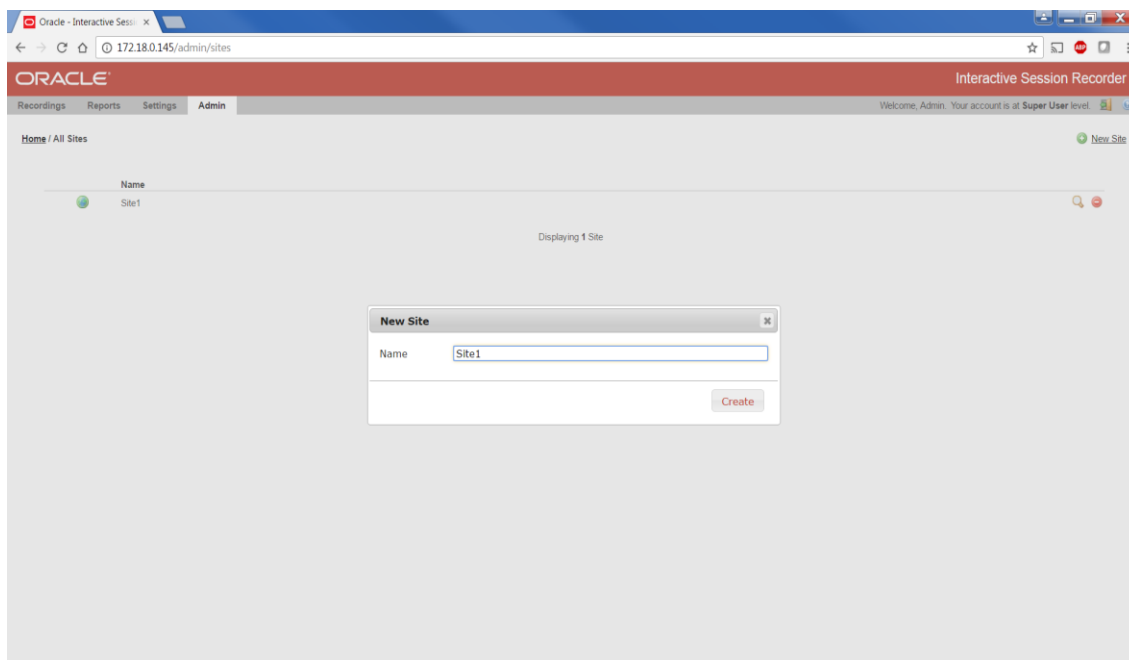
For the installation of the Oracle ISR, please refer to [Oracle Communications ISR User Guide](#). The following steps are to be executed after the installation of the ISR.

## 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.

Oracle - Interactive Sessi x  
172.18.0.145/admin/site/1

ORACLE

Recordings Reports Settings Admin

Home / Sites / Viewing Site 'Site1'

- RSS (1)**
  - Running: 0
  - Running with errors: 0
  - Offline: 1
  - Current Sessions: 0
  - Total Sessions Capacity: 0
- Locations (2)**
  - Disk Usage - All Locations: N/A
- Archivers (0)**
  - Enabled (0)
  - Disabled (0)
- Session Agents (0)**
  - Enabled (0)
  - Failed (0)
  - Disabled (0)
  - Max Failure Count: 5
  - Max Failure Seconds: 30
  - Seconds Before Retry: 0
- Web Appliances (0)**
  - Enabled (0)
  - Disabled (0)

Oracle - Interactive Sessi x  
172.18.0.145/

ORACLE Interactive Session Recorder

Recordings Reports Settings Admin Welcome, Admin. Your account is at Super User level.

Home / Sites / Site - Site1 / All RSS New RSS

Name	IP Address	SIP Traffic Port	Status	Uptime	Current Sessions	Sessions Capacity
RSS1	212.155.147.214		Offline		0	0

Displaying 1 recorder

**RSS**

Name:

IP Address:

RSS XMLRPC Port:



## 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.

The screenshot shows the Oracle Interactive Session Recorder Admin interface. The breadcrumb navigation is "Home / All Routes". A dropdown menu is set to "All". A table displays the default route configuration:

Account	Type	Pattern	Virtual Pattern	Record	Percent to Record
System	To	%	%DNIS%	Record (Green Checkmark)	100

Below the table, it says "Displaying 1 Route config".

## View the Recording

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

The screenshot shows the Oracle Interactive Session Recorder Recordings page. The breadcrumb navigation is "Recordings". A search bar is present with a "From" dropdown and a "Search" button. Below the search bar is an "advanced search" link. The main content is a table listing recordings with columns for RSS Ingress Call ID, Time, From, To, and Duration. Each row includes interactive icons for search, refresh, and delete.

RSS Ingress Call ID	Time	From	To	Duration
9e9e078b10efa8b9a2501889d7577df	2017-02-01 04:36:56 am	101	9011441618188963	382.3s
2070862b2eecd4bac3a116b129c5d111	2017-02-01 04:37:48 am	101	+441158881468	382.3s
1d54d27144448a1388b29bd4545052615	2017-02-01 04:37:44 am	101	00441158881468	382.3s
4a4b3a5120187d95fc533e06ce8e8f49	2017-02-01 04:37:42 am	101	011441618188963	382.3s
896981e18e32925b6dd9e5cc3ba9472	2017-01-27 01:40:05 am	101	9011441158881468	382.7s
adff668c35e69693dd0c91140096d5	2017-01-27 01:39:51 am	101	011441158881468	382.7s
da0b29f339afaf954b1682177a4578f	2017-01-27 01:39:42 am	101	+441158881468	382.7s
BW145558638230117530381286@199.19.193.10	2017-01-23 09:53:31 am	+18882221001	1002	11.0s
BW144230355230117-1632610374@199.19.193.10	2017-01-23 09:40:01 am	+18882221001	1002	17.6s
BW144025124230117-1346983608@199.19.193.10	2017-01-23 09:37:57 am	+18882221001	1002	21.0s
BW143915919230117-1173383705@199.19.193.10	2017-01-23 09:36:47 am	+18882221001	+12404980032	3.5s
BW1438588312301171061408837@199.19.193.10	2017-01-23 09:36:28 am	1002	+18882221001	22.4s
BW141216688230117255809198@199.19.193.10	2017-01-23 09:09:47 am	+12404980821	0823	158.8s
BW155528600100117-872152675@199.19.193.10	2017-01-10 10:52:35 am	0824	+12404980821	144.8s
BW15510886100117-286227572@199.19.193.10	2017-01-10 10:48:17 am	+12404980821	0823	58.2s
BW154923473100117-1840174771@199.19.193.10	2017-01-10 10:46:30 am	0823	+12404980821	29.4s
BW154528081100117316979718@199.19.193.10	2017-01-10 10:42:35 am	0823	+12404980821	25.0s
BW150037012100117-29663236@199.19.193.10	2017-01-10 09:57:44 am	0823	+12404980821	50.4s
BW14514960010011717777705026810010101010	2017-01-10 09:49:55 am	+12404980821	0824	26.6s

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](http://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**.

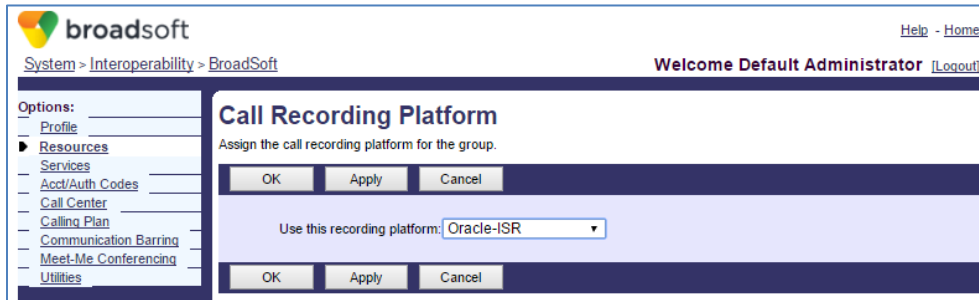


Figure 1 Configure Group Call Recording Platform

### 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.

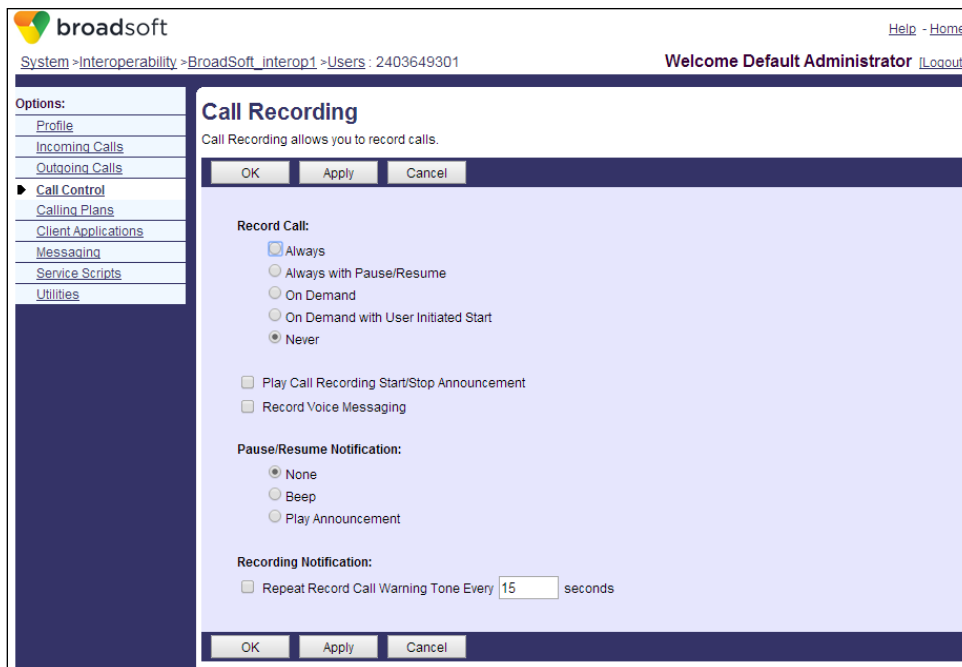


Figure 2 Configure Call Recording User Service

# 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
<b>Basic Package</b>						
<b>Basic – Recording Modes</b>						
<b>Recording Mode: Always</b>						
1 Record Originator	P0	X				
2 Record Terminator	P0	X				
3 Record Originator and Terminator	P0	X				
<b>Recording Mode: Always with Pause/Resume</b>						
4 Record Originator	P0	X				
5 Record Terminator	P0	X				
<b>Recording Mode: On Demand</b>						
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				
<b>Recording Mode: On Demand with User Initiated Start</b>						
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				
<b>Basic – Session Audit</b>						
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
<b>Call Control Services Package</b>						
<b>Call Control Services – Call Hold</b>						
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				
<b>Call Control Services – Call Waiting</b>						
24 Record Call Waiting User; Recording Mode Always	P0	X				
25 Record Call Waiting User; Recording Mode On Demand	P0	X				
<b>Call Control Services – Blind Transfer</b>						
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				
<b>Call Control Services – Attended Transfer</b>						
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				
<b>Call Control Services – Local Three-Way Call</b>						
34 Record Conferencing Party; Recording Mode Always	P0	X				
35 Record Conferencing Party; Recording Mode On Demand	P0	X				
<b>Call Control Services – Network Three-Way Call</b>						
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				
<b>Call Control Services – Network N-Way Call</b>						
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				
<b>Call Control Services – Call Park</b>						
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				
<b>Call Control Services – Directed Call Pickup with Barge-in</b>						

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				
<b>Virtual Subscriber Services</b>						
<b>Virtual Subscriber Services – Auto Attendant</b>						
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				
<b>Virtual Subscriber Services – Voice Messaging</b>						
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				
<b>Virtual Subscriber Services – Call Center</b>						
54 Record Call Center; Record Mode Always	P0	X				
55 Record Call Center, Originator, and Agent; Record Mode Always	P0	X				
<b>Miscellaneous Services Package</b>						
<b>Miscellaneous Services – Security Classification</b>						
56 Record Originator and Terminator; Record Mode Always	P0	X				
<b>Failover Package</b>						
<b>Failover – Application Server</b>						
57 Recording Mode Always: Record Originator and Terminator	P1	X				
58 Recording Mode On Demand: Record Terminator; Trigger During Call	P1	X				
<b>Failover – Media Server</b>						
59 Recording Mode Always: Record Originator and Terminator	P1	X				
<b>Failover – Call Recording Application</b>						
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.	<ol style="list-style-type: none"><li>1. Make sure your ISR is on and ready to accept calls.</li><li>2. Ensure that you are not over the port capacity limit for your route.</li></ol>
I can't get ISR to answer the call	<ol style="list-style-type: none"><li>1. Double check your ISR settings in the vmgConfig.xml file. Is the IP address correct? Is the SIP Port correct?</li><li>2. Ensure that your 800 number is configured on the network.</li></ol>

### 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

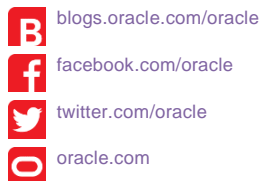
The directory that contains the installation files on the ISR is located at: /cxc/ Legacy RSS API Commands. This directory is the default directory for all installation files. It also contains the default vmgConfig.xml file, which includes all current configuration settings. If you change parameters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



Oracle Corporation, World Headquarters  
500 Oracle Parkway  
Redwood Shores, CA 94065, USA

Worldwide Inquiries  
Phone: +1.650.506.7000  
Fax: +1.650.506.7200

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