Oracle® Communications Interactive Session Recorder

Maintenance Release Guide Release 5.2

November 2017



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About This Guide

The 5.2 Maintenance Release Guide provides information about the contents of maintenance releases related to ISR 5.2. This information can be related to defect fixes, to adaptations made to the system software, and to adaptations ported to this release of the ISR from prior releases. When applicable, this guide contains explanations of defect fixes to the software and step-by-step instructions, if any, for how to enables these fixes on your system. This guide contains explanations of adaptations including conceptual information and configuration steps.

Purpose of this Document

Designed as a supplement to the main documentation set supporting 5.2, this document informs you of changes made to the ISR software in the maintenance releases of 5.2. Consult this document for content specific to maintenance releases. For information about general ISR features, configuration, and maintenance, consult the Related Documentation (iv) listed in the section below and then refer to the applicable document.

Organization

The ISR 5.2 Maintenance Release Guide is organized chronologically by maintenance release number, started with the oldest available maintenance release and ending with the most recently available maintenance release.

This document contains a Maintenance Release Availability Matrix, showing when and if given maintenance releases have been issued and the date of issue. Each available maintenance release constitutes one chapter of this guide.

In certain cases, a maintenance release will not have been made generally available. These cases are noted in the Maintenance Release Availability Matrix.

Maintenance Release Availability Matrix

The table below lists the availability for version 5.2 maintenance releases.

Mainenance release number	Availability Notes
5.2M1	October 31, 2013
5.2M2	March 31, 2014
5.2M3	May 16, 2014
5.2M4	August 29, 2014
5.2M5	January 5, 2015
5.2M6	January 8, 2016

Related Documentation

The following table lists the members that comprise the documentation set for this release:

Document Name	Document Description
ISR Release Notes	Contains information about new ISR features, fixes, and known issues.
ISR Installation Guide	Provides an overview of the ISR, hardware/software requirements and recommendations, storage considerations, pre-installation information,

About This Guide

Document Name	Document Description	
	installation procedures, post-install verification procedures, making the first call, and additional advanced topics about the ISR.	
ISR User Guide	Contains information about using the ISR Dashboard for all levels of users. Provides information about viewing, playing, deleting recordings, running reports, and managing user profiles.	
ISR Administrator Guide	Contains information about using the ISR Dashboard for the Administrator level user (Super User, Account Administrator, Tenant Administrator). Provides information about creating and managing accounts, routes, and users. Also provides information about configuring the ISR, running reports, viewing active calls, and securing the ISR deployment.	
ISR API Reference Guide	Contains information about ISR FACE, VoiceXML Commands, legacy application programming interfaces (APIs), Recording File Types/Formats Supported, Return Codes, sendIPCRCommand.jsp Subdialog, Advanced Options, and Troubleshooting.	
ISR Monitoring Guide	Contains information about installing and configuring the ISR Monitor, the Monitor database schema, and the Monitor MIB.	

Revision History

Date	Description		
November 26, 2013	Updates "Known Problems and Restrictions in 5.1M1".		
March 31, 2014	Updates the document to include 5.1M2 adaptations.		
May 16, 2014	 Updates the document to include 5.1M3 adaptations. The "Upgrading the ISR" section has been updated and has become its own chapter. 		
August 29, 2014	 Updates the document to include 5.1M4 adaptations. Removes blank lines from the REST API setNeverExpire table. 		
October 3, 2014	Adds three issues to "Known Problems and Restrictions in 5.1M4".		
October 31, 2014	Adds an issue to "Known Problems and Restrictions in 5.1M4".		
January 5, 2015	Updates the document to include 5.1M5 adaptations.		
October 22, 2015	Adds issue to "Known Problems and Restrictions in 5.1M4" and "Known Problems and Restrictions in 5.1M5".		
January 8, 2016	Updates the document to include 5.1M6 adaptations.		
January 28, 2016	Adds a new entry to the "Known Problems and Restrictions in 5.1M6".		
June 24, 2016	Adds three issues to "Known Problems and Restrictions in 5.1M6".		
January 10, 2017	Adds three issues to "Known Problems and Restrictions in 5.1M6".		

- November 30, 2017 Adds "ISR Application Monitor is Deprecated" to "New Features".
 - Adds a fix to "Issues Fixed in 5.2M1" regarding the conversion of RPDD recordings during upgrade scenarios.

Release 5.2M1

This section describes all of the new adaptations added to the ISR in release 5.2M1.

New Features

- Data and Configuration Backup Option
- Configurable Packet Reassembly Enhancement
- "collectLogs.sh" Script for Troubleshooting and Support
- ISR Application Monitor is Deprecated
- Upgrading to 5.2M1

Data and Configuration Backup Option

The ISR upgrade includes a backup step that copies an exhaustive set of existing data, security keys, certificates, keystores, configuration files, and logs related to applications and platforms associated with all of the ISR components. For a detailed list of these files, contact your Oracle account representative.

You may execute the backup step at any time through the configIsr.sh script by choosing option \mathbf{b} on any of the component hosts. Upon upgrade, each of the ISR components automatically executes the backup option by default.



Note: When backing up files, ensure you consider disk space limits and follow the script's instructions carefully.

By default, the backup files are generated in the following locations for each component and you can change them during the backup process

Dashboard

- /opt/isr-backups/dash-configs.tgz
- /opt/isr-backups/dash-data.tgz

FACE

- /opt/isr-backups/face-configs.tgz
- /opt/isr-backups/face-data.tgz

Index

- /opt/isr-backups/index-configs
- /opt/isr-backups/index-data.tgz

Remote Archival

- /opt/isr-backups/raws-configs.tgz
- /opt/isr-backups/raws-data.tgz

RSS

- /opt/isr-backups/rss-configs.tgz
- /opt/isr-backups/rss-data.tgz

Recorder Process Packet Reassembly Option

Release 5.2M1 introduces a new configuration parameter, allowing you to disable the media packet realigning functionality of the RSS Recorder process. Because ISR recordings are often used in advanced analytics applications, the default system behavior was to reorder packets upon receipt to provide potentially better audio quality. This enhancement allows you to choose to disable that realignment and write the packets to disk as they are received, even if they are received out of sequence.

By default, media is realigned.



Note: You must restart the RSS Recorder for this functionality to take effect.

Disabling Media Realigning

To disable the media realigning process:

- 1. Open the /opt/isr/rss/vmgConfig.xml file on the RSS.
- **2.** Add the following parameter and value under the "<Recording>" section:

```
<DisableAudioRealign>true</DisableAudioRealign>
```

3. Save the vmgConfig.xml file and restart the Recorder process with the following command:

```
systemctl restart recorderd
```

Enabling Media Realigning

To enable the media realigning process:

- 1. Open the /opt/isr/rss/vmgConfig.xml file on the RSS.
- **2.** Add the following parameter and value under the "<Recording>" section:

```
<DisableAudioRealign>false/DisableAudioRealign>
```

3. Save the vmgConfig.xml file and restart the Recorder process with the following command:

```
systemctl restart recorderd
```

collectLogs.sh Script for Troubleshooting and Support

The collectLogs.sh is a script that gathers critical details about application, host resource, and OS configuration and bundles them into a compressed file, helpful for troubleshooting and submitting service requests. To run the script, execute the **sudo /opt/isr/collectLogs.sh** command on the component host(s).

The following list outlines the files that are gathered for each component host, along with the path of the compressed file:

Index:

```
/opt/isr/Index_5_2_m1_logs.tgz
/var/log/mysqld.log
/var/lib/mysql/mysql/general_log.CSM
/var/lib/mysql/mysql/general_log.CSV
/var/lib/mysql/mysql/general_log.frm
```

```
/var/lib/mysql/mysql/slow_log.CSM
/var/lib/mysql/mysql/slow_log.CSV
/var/lib/mysql/mysql/slow_log.frm
/tmp/system_df.log
/tmp/system_dmesg.log
/tmp/system_ip.log
/tmp/system_ps.log
/tmp/system_top.log
```

Dashboard:

```
/opt/isr/Dashboard_5_2_m1_logs.tgz

/opt/isr/logs/dashboard/production.log*
/var/log/puma/puma.log*
/tmp/system_df.log
/tmp/system_dmesg.log
/tmp/system_ip.log
/tmp/system_ps.log
/tmp/system_top.log
```

RSS:

```
/opt/isr/RSS 5 2 m1 logs.tgz
/var/log/tomcat/catalina.*
/var/log/tomcat/host-manager.*
/var/log/tomcat/localhost.*
/var/log/tomcat/localhost access log.*
/opt/isr/logs/watcher/ServiceWatcherService.log*
/opt/isr/logs/watcher/watcherd.log*
/opt/isr/logs/watcher/watcher.log*
/opt/isr/logs/recorder/ISRService.log*
/opt/isr/logs/recorder/recorder.log*
/opt/isr/logs/converter/converter.log*
/opt/isr/logs/converter/converterService.log*
/opt/isr/logs/api/apievent.log*
/opt/isr/logs/api/api.log*
/opt/isr/logs/archiver/archiver.log*
/tmp/system df.log
/tmp/system dmesg.log
/tmp/system ip.log
/tmp/system_ps.log
/tmp/system_top.log
```

FACE:

```
/opt/isr/Face_5_2_m1_logs.tgz

/opt/isr/logs/face/event.log*
/opt/isr/logs/face/face.log*
/var/log/tomcat/catalina.*
/var/log/tomcat/catalina.out*
/var/log/tomcat/host-manager.*
/var/log/tomcat/localhost.*
/var/log/tomcat/localhost_access_log.*
/var/log/tomcat/manager.*
/tmp/system_df.log
/tmp/system_dmesg.log
/tmp/system_ip.log
/tmp/system_top.log
/tmp/system_top.log
```

RAWS:

```
/opt/isr/RemoteArchival 5 2 m1 logs.tgz
/var/log/tomcat/catalina.*
/var/log/tomcat/catalina.out
/var/log/tomcat/host-manager.*
/var/log/tomcat/localhost.*
/var/log/tomcat/localhost access log.*
/var/log/tomcat/manager.*
/opt/isr/logs/remotearchiver/archiverservice.log*
/opt/isr/logs/remotearchiver/webservice.log*
/opt/isr/logs/api/apievent.log*
/opt/isr/logs/api/api.log*
/tmp/system df.log
/tmp/system_dmesg.log
/tmp/system ip.log
/tmp/system ps.log
/tmp/system_top.log
```

ISR Application Monitor is Deprecated

As of ISR Release 5.2M1, the ISR Application Monitor has been deprecated, replaced with functionality available in the Linux standard NET-SNMP tool suite. For more information, see the *Interactive Session Recorder 5.2 Monitoring Guide* and the *Interactive Session Recorder 6.0 Monitoring Guide*.

Upgrading the ISR to 5.2Mx

The ISR 5.2M1 release includes a "yum-style" approach to upgrading all ISR applications on each ISR component host.



Note: The upgrade feature is limited to upgrades within the 5.2Mx release set (5.2M1 and higher as upgrading is not supported in 5.2M0), and an upgrade process from release 5.1 or earlier is not currently available. Contact your Oracle account representative with any questions.

For the full set of upgrading instructions, see the Oracle Communications Interactive Session Recorder Installation Guide.

Issues Fixed in 5.2M1

This section describes the issues fixed in each component of the ISR in release 5.2M1.

ISR API

- X-ISR-UCID enhancements from the 5.1M6 ISR release impacted behavior in SRC/SBC configurations using both the "AvayaCiscoUCID64" and the "SipHeaderExtensionMetadata.1.2" SPL. In 5.2M1, an adjustment has been made so that, when the SRC/SBC is configured for both the "AvayaCiscoUCID64" and the "SipHeaderExtensionMetadata.1.2.spl" SPL, the ISR's UCID is now populated in the following order of precedence:
 - X-ISR-UCID (or any other field name configured in the "<Sip><IsrUcidHeaderField>" tag of the RSS configuration file /cxc/vmgConfig.xml), for example:

```
<participant
id="hq18GJs3TtJdhjPsfPNV8A=="session="BYiC7uSZQGN3VQdzWI1HWw==">
<nameID aor="sip:sipp@192.168.10.1">
...
<extensiondata xmlns:apkt="http://acmepacket.com/siprec/extensiondata">
...
<apkt:header label="X-ISR-UCID">
<value>X-ISR-UCID-1-150323161627-1979582260@0a0af9f9</value>
</apkt:header></apkt:header>
```

```
...
</extensiondata>
```

• Third-party UCID, for example:

```
<session id="/Bo3JDljRnZluCz1VhPHeg==">
<associate-time>2016-03-15T01:33:46</associate-time>
<extensiondata xmlns:apkt="http:/acmepacket.com/siprec/extensiondata">
<apkt:ucid>00FA080200000F56E7667A;encoding=hex</apkt:ucid>
<apkt:callerOrig>true</apkt:callerOrig>
```

• Note that Call-ID no longer populates X-ISR-UCID automatically, better reflecting behavior in versions prior to 5.1M6. If you prefer to populate the X-ISR-UCID with the Call-ID value, you can edit the /opt/isr/rss/vmgConfig.xml file in the following way:

The following is an example value of Call-ID:

```
<participant
id="hq18GJs3TtJdhjPsfPNV8A=="session="BYiC7uSZQGN3VQdzWI1HWw==">
<nameID aor="sip:sipp@192.168.10.1">
...
<nameID aor="sip:sipp@192.168.10.1">
...
<extensiondata xmlns:apkt="http://acmepacket.com/siprec/extensiondata">
...
<apkt:header label="Call-ID">
<value>1-150323161627-1979582260@0a0af9f9</value>
</apkt:header>
</apkt:header>
</extensiondata>
```

ISR Dashboard

• As browser compatibility with playback codecs evolves, some adjustments have been made to the Recording Format Profiles available through the ISR Dashboard, most notably the default playback codec for the g.729 transmission codec.

The following is a comprehensive list of changes made to the Recording Format Profiles in release 5.2M1.

- Best Quality
 - g.711 alaw from WAVE ADPCM (4-bit 8kHz) to WAVE alaw (8-bit 8kHz)
- Default
 - g.722 from WAVE PCM (16-bit 16kHz) to WAVE PCM (8-bit 8kHz)
 - g.729 from WAVE ADPCM (4-bit 8kHz) to WAVE ulaw (8-bit 8kHz)
- Small
 - unchanged
- Smallest
 - unchanged
- Firefox Compatible
 - unchanged
- The location description when creating an RSS has been adjusted to reflect the proper new path, /opt/isr/Recordings.

- Calls requiring conversion are recorded in .wav format, instead of RPDD, for recordings associated with newly created routes and accounts. The default codec_profile value is updated to fix new recordings in all accounts and routes, and a Dashboard condition to manage the default value with respect to changed codec_profile values has been included.
- Java has been included in the ISR Dashboard install yum list to address MySQL user creation errors with password encryption.
- Dashboard can now properly delete multiple Account entries.
- Users may now be disabled properly in the Dashboard.
- Route configuration of 0% recording is correctly explained in the pop-up display.
- Remote Archival clients are updated without an error page.

ISR RSS

- A condition was applied to fix a scenario where RTP was being sent out from the RSS host after a re-INVITE with no codec change.
- An RSS configuration option was created to turn off audio realigning process in vmgConfig.xml.
- A race condition of Mixer worker threads for RecordStart event and New_Call Event, where sessions were being improperly recorded and unavailable, has been fixed.
- A race condition, leading to the RSS intermittently not recording sessions when codec renegotiation occurred early during call setup, has been fixed.
- Oracle Linux 7.2 enables the kernel network process reverse path filtering mechanism by default, blocking traffic from a new IP. The resulting behavior is that RTP from a separate media server host is not written in ISR's recorded file, yielding recordings with no media, or "blank" recordings. A sysctl parameter has been created to handle this situation in the 5.2M1 release.
- Conversion metadata has been added to the RPDD recordings to reflect formatting changes between versions.
- A fix has been issued to address certain situations where Re-INVITEs with RTP port "re-shuffling" led to unwritten RTP packets and lost audio.

ISR Installation

- A key password, different from the keystore password, may not be set properly in the web server's
 application configuration, causing Java applications such as the RAWS and FACE to fail when
 connecting to the database. To resolve this issue, set both key and keystore passwords to the same new
 value, or contact your Oracle account representative for further support.
- Backward-compatibility is fixed in the Converter process so that upgrade scenarios where not all RPDDs have been converted are handled properly. Once an ISR deployment has reached release 5.2, there is no risk of loss of RPDD recordings when upgrading to 5.2M1.

Known Problems and Restrictions in Release 5.2M1

FirewalId Performance Disclaimer

The Oracle Linux 7.2 firewalld services, enabled by default on all ISR component hosts, have demonstrated a performance impact (of as much as 25%), using Oracle hardware. When considering the balance of security vs. performance, see the Oracle Communications Interactive Session Controller Security guide for more information on the configuration options of firewalld services and their benefits.

ISR Index Component Time Zone

Oracle recommends you configure the ISR Index component time zone to be set to UTC. To do this, upon installation the configIsr.sh script prompts the user for permission to configure the system time zone to UTC. You can configure all other ISR components' time zone as needed.



Note: Remember that your component time zones affect the time stamps in component logs.

MySQL User Passwords

You can have only one MySQL user password for all users. For example, if multiple RSSs are configured to use the same 'israpi' MySQL user name, the password must be the same for every RSS.

Required Recording Format Conversion For FACE

All g.729 and g.722 recordings in RPDD format cannot be downloaded in FACE without off-line Remote Archival conversion.

Deprecated 4.x Passwords

If an account has not updated the security of its password from ISR version 4.x, the Administrator must reset the password.

ISR Recording Playback Errors For Some Web Browsers

ISR recording playback errors have been reported for the following web browsers:

- Firefox—Firefox is not supporting playback of the 8-bit/8 kHz audio format set in the "Default Recording Format Profile" for the g711 transmission codec (historically the most popular transmission codec). Most commonly, the Dashboard's playback controls appear only briefly before becoming unavailable. To work around this issue, for routes using the "Default Recording Format Profile", change the setting to the Firefox Supported Recording Format Profile, where the g711 transmission codec is converted to the PCM 16-bit/16 kHz recording format.
- Internet Explorer—You must use the Windows Media Player plugin to play recorded wave files via Internet Explorer. Without the plugin, an "Invalid Source" error appears in the player popup. This browser support issue impacts ObserveIT Screen Recording integrations with ISR, where the Chrome or Firefox browsers must be used for playback instead of Internet Explorer.
- Chrome—Displays some inconsistent behavior wiht playback of long recordings in internal tests, where the browser stops playback prematurely Playback in another browser rectifies the problem.



Note:

Playback failures may also occur with the Quicktime plug-in version 7.7.7. If you encounter these issues, downgrade to version Quicktime 7.7.4.

Index Upgrade Errors and Warnings During Backup Process

• In the detailed output of the backup process of the upgrade, you can ignore the following error:

```
cp: cannot stat ¿/opt/isr/security/keys//*¿: No such file or directory
```

After this error, the ISR logs the configuration backup and displays the following message:

```
The backup of ISR configs was successful
```

The following error copying MySQL server's log file is expected in the Index data backup process.

```
Error Backing up file, unable to write backup file: /var/log/mysqld.log to /opt/isr-backups. ***
```

This is followed by warnings that an error has occurred and a prompt asking if you want to continue. If the mysql.log is important to you, you may choose to stop the upgrade or backup the process to copy and compress the file. Ignore this error in any subsequent upgrades or backup runs. If the mysql.log is not important to you, you may type **continue** to ignore the error.

• During the data backup process, the output "tar: ./var/lib/mysql.sock: socket ignored" error may be ignored.

RSS Upgrade Error from 5.2M0 During Backup Process

The ISR 5.2M0 was missing a configuration file for formatting the output of the CDR log file. Because of this, RSS upgrades from 5.2M0 display the following error:

```
Error Backing up file, file to backup (/opt/isr/rss/CDRLog.properties) not
present. ***
```

This followed by a configuration backup log error and a prompt during the RSS VM upgrading asking whether you wish to continue. You may ignore these errors and enter **continue** to complete the upgrade.

On bare-metal RSSs the upgrade does not continue without a successful backup step, so you must quit the upgrade and work around the problem. The simplest way to work around the backup error is to execute a touch /opt/isr/rss/CDRLog.properties command so that the file exists before the backup and upgrade.

ISR Dashboard Support Tab Inaccuracy

The Help page's Dashboard Support tab improperly lists the log file names and paths. The proper paths are as follows:

- Core Recorder (On RSS Host): /opt/isr/logs/recorder/recorder.log
- Routing API (On RSS Host): /opt/isr/logs/api/api.log
- Recording Dashboard (On Dashboard VM Host): /opt/isr/logs/dashboard/production.log

FACE Import of the RSS Certificate

While FACE communicates securely with the RSS for status and control functions, currently the FACE configIsr.sh script does not automatically import the certificate created during RSS provisioning with its configIsr.sh script. You must manually import the RSS certificate for FACE API control of the RSS.

To import the certificate, execute the following steps:

- Copy the RSS(s) generated certificate(s) from the path established when the RSS configIsr.sh script was
 executed /opt/isr/security/keys/rss_cert.pem to the FACE host (for example, the /opt/
 isr/ directory.
- 2. on the FACE host, from the Java keytool, execute a command similar to the following example:

```
./keytool -import -noprompt -trustcacerts -alias isr_alias -file /opt/isr/rss_cert.pem -keystore /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.91-0.b14.e17_2.x86_64/jre/lib/security/cacerts -storepass changeit
```



Note: The above command is an example only and it is likely that the **alias**, **file**, and **storepath** parameter values in your environment will be different.

RAWS Client Implementations

In accommodating new features in 5.2 the Remote Archival Webservice (RASW) WSDL has changed, and the changes are likely to impact RAWS client implementations. A new development-only client has been updated and is available for request by contacting your Oracle account representative.

RSS Advanced Configuration Via the Dashboard

Advanced configuration, via the Dashboard, for each RSS is not possible due to a communication error between the Dashboard and the RSS. Any advanced RSS configurations must be set in the vmgConfig.xml file on the RSS host.

Using NFS Shares to Backup ISR Configurations and Data

To use NFS shares to backup ISR configurations and data you must meet the following prerequisites:

Configured ISR host (with networking access to NFS share on the remote host)

NFS share with no_root_squash option and writable by root user on the client

To store ISR configuration and data backups on a remote host via NFS:

- **1.** Set up and export the remote share. For more information, see the *Oracle Communications Interactive Session Recorder Installation Guide*.
- **2.** Configure and test the client on the ISR host.
- **3.** Ensure that the "isradm" user (or other configured non-root user) can connect, read, and write files from the share.
- **4.** Backup ISR configuration and data files using the **b** menu option in the configIsr.sh file and use the local path to the remote share to the location to store configuration and data backups.
- 5. Verify the contents of the data and configuration backups using the tar tzf /backup/path/ <isr_component>-data.tgz or tar tzf /backup/path/<isr_component>-configs.tgz commands (replacing <isr_component> with the specific component data and backup filenames.

Key and Keystore Passwords

A key password, different from the keystore password, may not be set properly in the application configuration in the web server, causing Java applications such as the RAWS and FACE to fail when connecting to the database. To resolve this issue, set both key and keystore passwords to the same new value or contact your Oracle account representative.

RSS Upgrades From 5.2M0 to 5.2M1

In RSS upgrades from 5.2M0 to 5.2M1, the Recorder processes should now communicate over the VoIP network in the "trusted" firewall zone instead of the DMZ zone. However, an RSS upgrade defect leaves these applications in DMZ, impacting Recorder process performance. You must move the VoIP interface and the Recorder applications to the "trusted" network.

To set the recorder processes to the "trusted" zone:

```
$ sudo firewall-cmd --zone=dmz --remove-service recorder_voip
$ sudo firewall-cmd --zone=dmz --remove-service recorder_voip --permanent
$ sudo firewall-cmd --zone=trusted --add-service recorder_voip
$ sudo firewall-cmd --zone=trusted --add-service recorder_voip
```

To set the VoIP network to the "trusted" zone edit the connection profile (for example, /etc/sysconfig/network-scripts/ifcfg-ens34) and change the following line:

```
ZONE=dmz
```

To the following:

```
ZONE=trusted
```

And restart the firewall by executing the following command:

```
systemctl restart firewalld
```

RSS's VoIP Network Missing From Dashboard Network Configuration

The RSS host is designed to look up its configuration using the VoIP network IP that matches the RSS IP set in the Dashboard. The Dashboard uses this same IP to communicate with the RSS host for status and advanced configuration. Some confusion may occur when the Dashboard network configuration does not include the RSS's VoIP network, making the RSS unreachable by the Dashboard and leading to misrepresentation that the RSS host is offline even though its successfully recording over the VoIP network.