AVAYA

Avaya Breeze® platform Release Notes

Release 3.7.0.2 GA
Issue 1
July 2021

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Table of Contents

Change history

Issue	Date	Description
1	July 20, 2021	GA release of Avaya Breeze® platform 3.7.0.2

Issues fixed in this release

1.	**Resolved Problem:**	Idle HTTP session is never removed by Breeze WebSphere and stay forever if the user closes the Salesforce Web Session after 1 hour.
	Reference:	ZEPHYR-69372
	Keywords:	Platform
2.	**Resolved Problem:**	Breeze reconfigure does not properly test for null or empty variable
	Reference:	ZEPHYR-69499
	Keywords:	Configuration
3.	**Resolved Problem:**	Platform does not always connect to GigaSpaces
	Reference:	ZEPHYR-69506
	Keywords:	Platform
4.	**Resolved Problem:**	One way video when High Profile enabled
	Reference:	ZEPHYR-69661
	Keywords:	WebRTC Call
5.	**Resolved Problem:**	RHEL 7 : sudo (RHSA-2021:0221) (tcp)
	Reference:	ZEPHYR-69673
	Keywords:	RHEL
6.	**Resolved Problem:**	No video on both ends of WebRTC call seen when processing reInvite.
	Reference:	ZEPHYR-69682
	Keywords:	WebRTC Call

Known issues and workarounds

1.	**Problem:**	Additional procedures are required to upgrade Avaya Breeze® platform in a Dual System Manager configuration.
	Workaround:	For assistance in upgrading Avaya Breeze® platform in a Dual System Manager configuration, contact Avaya Support.
	Keywords:	Dual System Manager
2.	**Problem:**	OPTIONs pings failed from WAS toward ASSET after upgrade. Any SIP operation with outbound OOD (INVITE and REFER) that are going toward Session Manager fail.
	Workaround:	Restart WebSphere by executing "restart WebSphere".
	Reference:	Zephyr-58959

	Keywords:	WebSphere, SIP, MakeCall
3.	Problem:	Demo Certificates not supported with CRL.
	Workaround:	Avaya strongly discourages the use of the deprecated Demo Certificates. If for some reason these are required, they will not work with the Certificate Revocation List (CRL) functionality, and so CRL checking should be disabled.
	Reference:	Zephyr-58182
	Keywords:	CRL, Demo Certificates
4.	Problem:	While trying to login to Kibana UI with username and password using the Cluster FQDN/IP, login fails with javascript error.
	Workaround:	Two workarounds can be tried: • Use the Avaya Breeze® platform asset FQDN/IP instead of the cluster FQDN/IP. • Reinstall the CentralizedLoggingService Snap-in.
	Reference:	Zephyr-65401
	Keywords:	Centralized logging, Kibana
5.	Problem:	Cluster DB not reachable.
	Workaround:	This could happen only when the cluster DB process starts before eth0 interface is up and is a race condition. Reboot the node (or cluster if required by your application) and if the issue does not resolve, contact Avaya support.
	Reference:	ZEPHYR-67579
	Keywords:	Cluster DB, Cluster DB maintenance test fails
6.	Problem:	WARN messages cause flooding the asm.log when running traffic flow using HelloWorld snap-in. For each call you may receive multiple messages.
	Workaround:	Contact Avaya support if the rate of errors is too high or you notice display update issues.
	Reference:	ZEPHYR-68286
	Keywords:	Traffic runs, Logs
7.	Problem:	Lambda expressions don't work well with Breeze 3.7.
	Workaround:	No workaround. Don't use Lambda expressions and use anonymous class equivalents instead.
	Reference:	Zephyr-68025
	Keywords:	Java 8, Lambda Expressions, CallListener not initialized
8.	Problem:	Avaya Real Time Speech not supported in Breeze 3.7
	Workaround:	The Avaya Real Time Speech (RTS) Snap-in went end of sale July 31, 2018 and is no longer supported in Avaya Breeze 3.7. The Avaya Breeze 3.7 Javadoc has marked the speech search functionality as deprecated. Refer to the RTS end of sale notice for additional details. https://support.avaya.com/css/P8/documents/101051723
	Reference:	Zephyr-68367
	Keywords:	Real Time Speech
9.	Problem:	JDBC Source: Underscore is not allowed in Database name in the URL

	Workaround:	Use only letters, digits and special characters . - : / @ ; & % = # ?
	Reference:	Zephyr-68981
	Keywords:	JDBC, Database, URL
10.	**Problem:**	Port numbers for two ports for the same service cannot be swapped. An error message of the following type displays: *'Entered port number value for port A is already in use on cluster X.* *Entered port number value for port B is already in use on cluster X.'*
	Workaround:	For example, if the administrator needs to swap ports with port A=1100 and B=1200, do the following: 1. Update Port 1100 to 1108 (1108 is just a placeholder. Ensure port 1108 is unused) - then commit. 2. Update Port 1200 to 1100 - then commit. 3. Update Port 1108 to 1200 - then commit.
	Reference:	Zephyr-3988
	Keywords:	Update Port numbers

Avaya Breeze® platform 3.7.0.2 GA load components

Component	Version
Avaya Breeze® platform OVA, ISO, AWS and KVM	3.7.0.2.370202.ova
Avaya Breeze® platform Patch	Check the Avaya support site (support.avaya.com) for the latest recommended patch for 3.7.0.x
System Manager	Latest SMGR 8.1.2 GA version + latest GA SMGR Hotfix Latest SMGR 8.1.3 GA version + latest GA SMGR Hotfix
Avaya Breeze® 3.8.0.2 Element Manager Package (for use with System Manager 8.1.2 and System Manager 8.1.3)	3.8.0.2.380204
Avaya Aura Media Server	8.0.2.127 (Avaya Aura® 8.1.2) 8.0.2.184 (Avaya Aura® 8.1.3)
SDK	3.7.0.2.370202
WebRTC	3.7.0.2.370202
Avaya WebRTC SDK	3.7.0.2.370202
Authorization	3.7.0.1.370105
External Authorization Client SDK	3.7.0.1.370105
Reliable Event Streaming Adapter	3.7.0.1.370105
Centralized Logging (Used with Oceana)	3.7.0.2.370202
Zang Call Connector	3.7.0.1.370105
Zang SMS Connector	3.7.0.1.370105

System Manager interoperability

Avaya Aura® System Manager Release 8.1.2 or 8.1.3 with the latest SMGR HotFix is supported with the Avaya Breeze® platform 3.7.0.2 GA load. For more information, see the **Breeze 3.8** Deploying Avaya Breeze® platform document at https://downloads.avaya.com/css/P8/documents/101070661 (chapter 4 *Running the upgradeSolution script for System Manager Release 8.0.1.2 or 8.1.2)*. NOTE: The same instructions can be used to apply the Avaya Breeze® 3.8.0.2 Element Manager Package to the 8.1.3 System Manager release.

Note: Please be aware that the current 3.7.0.1 pre-loaded snap-ins available (such as the connectors and Authorization service) with the Avaya Breeze® 3.8.0.2 Element Manager will be used with Avaya Breeze® 3.7.0.2. See the Avaya Breeze® platform 3.7.0.2 GA load components above for additional clarification.

Note: System Manager may release additional Integrated Patches, Hot Fixes etc. that may need to be applied additionally on this GA version.

Avaya Breeze® platform can be deployed with System Manager:
- Release 8.1.2 by installing the Avaya Breeze® platform 3.8.0.2 Element Manager using the new upgradeSolution utility provided in the latest hot fix release of System Manager.
- Release 8.1.3 by installing the Avaya Breeze® platform 3.8.0.2 Element Manager using the new upgradeSolution utility provided in the 8.1.3 release of System Manager

If you are running System Manager Release 8.1.2, you must update your system to Release 8.1.2 with the latest published hot fix from https://support.avaya.com. If you are running an earlier version of System Manager, you must update to System Manager 8.1.3.

Deployment of Avaya Breeze® platform Release 3.7.0.2 with System Manager Release 8.1.2 or 8.1.3 allows you to avoid a full System Manager upgrade. Instead, this deployment requires that you run a special script to install the Avaya Breeze® platform 3.8.0.2 Element Manager with the older

System Manager.

Important:
> When you have applied the Avaya Breeze® platform Release 3.8.0.2 Element Manager to System Manager Release 8.1.2 or 8.1.3, subsequent integrated patches and hot fixes will leave the patched 3.8.0.2 Element Manager intact and no further action is required to work with Avaya Breeze® platform 3.7.0.2.

Session Manager interoperability

Avaya Breeze® platform 3.3 or later is required if Session Manager 7.1 IPv6 features are to be enabled. Failure to ensure this will result in Avaya Breeze® platform nodes becoming unusable in this environment.

Note: Avaya Breeze® 3.6 or later is required if Session Manager 8.0.1 Routing Enhancements are to be enabled. Failure to ensure this will result in Avaya Breeze® platform nodes becoming unusable.

Refer to Session Manager documentation for complete information and implications of enabling these routing enhancements.

Upgrade compatibility and sequence

When installing updates to the Avaya Aura solution, it is important that the different components are upgraded in the correct order to ensure platform stability and manageability of the network as part of the upgrade process. Refer to Avaya Aura component release notes for the proper upgrade order. Avaya Breeze® platform can be upgraded at any time after Avaya Aura System Manager and Avaya Aura Media Server (if used) are upgraded. Please consult: https://secureservices.avaya.com/compatibility-matrix/menus/product.xhtml for the specific versions of products supported with this release of Avaya Breeze® platform.

Avaya Breeze® platform Release 3.7.0.2 is compatible with Avaya Aura Media Server Release 8.0.2.x

Avaya Breeze® platform Release 3.7.0.2 is compatible with Authorization Service 3.7.x. Older versions of the Authorization Service for Breeze will no longer be compatible with Breeze platform release 3.7 and higher due to a version update of a dependent software component on the Breeze platform. Therefore, if currently using Authorization Service 3.6.0.3 or older, all nodes in the impacted Avaya Breeze® cluster should be upgraded simultaneously with the cluster in Deny New Service, refer to Method 2 in *Upgrading Avaya Breeze® platform*, https://downloads.avaya.com/css/P8/documents/101062804. After the platform upgrade but prior to placing the cluster into Accept New Service, upgrade the Authorization service to Release 3.7 or higher.

If upgrading from Release 7.0 Avaya Aura ® System Manager to Release 8.1.x, be aware that if the data stored within the Avaya Breeze® platform cluster database for R3.2.x is to be retained, the cluster database backup operation <u>must</u> be performed prior to upgrade of the Avaya Aura ® System Manager to Release 8.1.x. See "Backing up a Cluster", Chapter 3, in *Administering Avaya Breeze® platform* for information on how to complete this operation.

If you are coming from Release 7.0 Avaya Aura ® System Manager and have already upgraded the Avaya Aura ® System Manager to Release 8.1.x prior to taking the cluster database backup, or if a significant amount of time has elapsed since the prior backup was taken on Avaya Aura® System Manager 7.0.x (data in prior archive is now stale and undesired), and the operational environment is now running the Avaya Aura® System Manager Release 8.1.x, contact Avaya Support for additional assistance.

Note: If one of the methods that you used to upgrade (see upgrade documentation for applicable uprade instructions) was via OVA or SDM and your snap-in relies on the data stored in the cluster database, you must restore the cluster database.

Disk Alarm notes

The System Overload Monitor has been enhanced to monitor the status of disks on an Avaya Breeze® platform server in addition to the current monitoring of CPU and memory. The monitored disks are the root directory disk /, /var, and /data. If any of these disks reaches a 90% usage level the system is placed in Overload, as it is when memory or CPU reaches a threshold of 80%. This condition causes an alarm OVERLOAD_100001 to be raised with the parameter disk, and the server is placed into Deny New Service state. If the disk reaches 95% of capacity, the node is placed in Extended Overload and alarm OVERLOAD_100003 is raised. Services identified to be associated with a high number of SIP sessions will be removed from service. When the disk is cleaned (manual clearing of files may be required) down to 75% of capacity (and CPU and memory are below the clearing threshold of 60%) the alarms are cleared and the system is placed back in Accept New Service.

New Alarm (Hung Thread) Details

A new alarm is introduced in Avaya Breeze® platform 3.6.1. The alarm is raised when a WebSphere container managed thread has been running for a prolonged period of time (>3 minutes). This is generally an unexpected situation which can indicate an issue ranging from the application logic to the platform itself. The alarm is cleared when the thread is no longer active, which happens when it finishes its work. Note that in case of a deadlock or in otherwise problematic logic the thread may never finish and the alarm is not cleared.

The alarm details follow:

```
RAISE HUNG THREAD ALARM!
========================
New Alarm: YES
OID: .1.3.6.1.4.1.6889.2.63.0.4001
Platform / CEEM: Platform
AlarmName: HUNGTHREAD
EventCode: HUNGTHREADERROR
KB Article Exist: NO
KB Article Scope:
CAS: Needs Avaya support
Alarm Text:

SAMPLE OUTPUT --
<107>Dec  6 09:53:09 vf-zr60.dr.avaya.com AusManagement[29524]: -07:00
2018 005 1 com.avaya.asm | 2 com.avaya.zephyr.mgmt.util HUNGTHREADERROR
"[WSVR0605W: Thread \"SipContainerPool : 1\" (000000e4) has been active
for 294,121 milliseconds and may be hung.  There is/are 2 thread(s) in
total in the server that may be hung.
```

Description: Hung Thread(s) Detected on WebSphere

Alarm Rate and Frequency: Every 60 minutes

Steps to Generate: Deploy a snap-in which blocks the thread with a sleep(10 minutes). The alarm will be raised after a few minutes, then cleared after 10 minutes.

Severity: Major

Release: 3.7

Troubleshooting Guide:

When a thread has run for longer than 90 seconds, a stack trace
is logged in WebSphere log. The WebSphere logs are available in
/var/log/Avaya/sm/TextLog*.log. They can also be accessed by executing 'ce
logv'.
Look for the stack trace around the time the alarm was generated. The
stack trace provides context as to what the thread was working on when
it was deemed to have run for too long. Depending on what is learned
from looking at the stack trace, the following logs can help further
with troubleshooting efforts:

If the issue appears to be in the platform, look at the platform
logs. They are available in /var/log/Avaya/sm/asm*.log. They can
also be accessed by executing 'ce dlogv'. Look for WARN and ERROR
messages at the time of the issue.

If the issue appears to be in the application (aka service, snap-in), look at the application
logs. They are available in /var/log/Avaya/services/<snapin-name>/<snapin-name>.log They can
also be accessed by executing 'ce dlogv <snapin-name>'.

Problem Clarification: Hung Thread(s) Detected on WebSphere
Causes: There are many reasons a thread runs for a long time. They
include deadlock situations, blocking on I/O, and poorly written code
to mention a few.
The logic causing the problem may reside in the application, the
platform or in a 3rd party application which either of the above make
use of.

Resolution: Determine why the thread is reported hung. Correct and
replace the component which is causing the problem.

```
CLEAR HUNG THREAD ALARM!
========================
New Alarm: YES
OID: .1.3.6.1.4.1.6889.2.63.0.4002
Platform / CEEM              : Platform
AlarmName: HUNGTHREAD_CLR
EventCode: HUNGTHREADCLR
KB Article Exist: NO
KB Article Scope
CAS: Needs Avaya support
Alarm Text: N/A
Description: Hung Thread Cleared on WebSphere
Alarm Rate and Frequency: Every 60 minutes
Steps to Generate: Deploy a snap-in which blocks the thread with a
sleep(10 minutes).  The alarm will be raised after a few minutes, then
cleared after 10 minutes.
```

```
Severity: Major
Release: 3.7
Troubleshooting Guide: N/A
Problem Clarification: N/A
Causes: N/A
Resolution: N/A
```

Logging API

A new method is introduced in the Logger API. Details as shown below.

public void logEventAlways(final String eventId, final Object... arguments)

This method is used to log events/alarms even when the node is in Deny New State.

Cluster Database notes

If use of the cluster database is required on an Avaya Breeze® platform cluster, it is recommended, in most cases, that deployment profile 2 or higher is used for fresh installations. For pre-existing deployments, it is recommended, in most cases, to increase your physical memory to 8GB or higher. Consult your snap-in documentation for disk sizing recommendations.

System memory on the Active Cluster Database node can go into swap on traffic when using the cluster database. When the cluster database is enabled, it consumes system memory depending upon the usage. It takes a minimum of 300 MB when no traffic is present. The overall memory consumption by the cluster database depends upon: the number of connections made from the snap-in; the number of nodes in the cluster; traffic rate; and database schema. The sustainable traffic rate also depends on the RAM size of the Avaya Breeze® platform nodes in the cluster. It is recommended to reduce the load on nodes hosting the cluster database. To accomplish this, make the following adjustments to the cluster. First assign the active cluster database to the same node as the active load balancer (if applicable). During upgrade, the active cluster database may need to move temporarily, but steps should be taken to adjust the roles of the cluster database post platform upgrade to follow this recommendation. Second, use the following table to determine the SIP load balancing weight to assign to each server in the cluster. This requires additional administration on the Local Hostname Resolution form for Session Manager. See High Availability Administration, in *Deploying Avaya Breeze® platform* for details about the administration required.

Number of servers in the cluster	2	3	4	5
Initial primary database server	50	25	16	12
Initial backup database server	50	25	16	13
Server 3		50	34	25
Server 4			34	25
Server 5				25

The exact memory requirements for the cluster database varies by snap-in. Consult your snap-in deployment guide for further details on their specific memory needs.

Media Operations notes

This scenario is specific to call scenarios where the party that answers a call may differ from the party that was originally called. For example, if the called party is a Vector Directory Number (VDN) on Communication Manager, where the associated vector destination does a redirect of the call to another party. Depending on how the vector is defined, the answering party reported to a snap-in may be different than the called party.

In Collaboration Environment 3.0 the distinction between the called party and answering party was

ambiguous. This resulted in behavior where a media operation invoked on the called party was applied to the answering party, even if the answering party differs from the called party.

In Avaya Breeze® platform 3.1 and later, this distinction was refined so that media operations invoked on the called party are ineffective if the answering party differs from the called party.

Snap-ins that invoke media operations (e.g. play announcement, prompt and collect, speech search) on the called party may then encounter failures if the answering party is not the called party.

The desired behavior can be achieved by invoking media operations on the answering party.

WebRTC notes

The shared string for the authorization token is "Avaya Authorization Token." Refer to the documentation for "How to use authorization token" and to the WebRTC sample application in the WebRTC SDK for details.

Whitelist Snap-in notes

On Breeze 3.4 and later, older versions of the Whitelist Sample Snap-in are no longer supported.

Zang SMS Connector Snap-in notes

In the Avaya Breeze® 3.5.x and prior, the Zang Outbound-only SMS Connector Snap-in was bundled with Avaya Breeze® platform. Going forward the Zang SMS Connector Snap-in supporting inbound and outbound SMS is available post GA as a separate PLDS download.

Flow control

It is important to avoid traffic congestion for a service that sends a burst of voice announcement requests through Avaya Breeze® platform. The current recommendation is no more than 375 phone numbers to be included per single request to this type of service. Each request must be staggered by 15 seconds or more between subsequent requests to the same service on the same Avaya Breeze® platform instance. Empirical testing has shown that a reliable minimum delay for 10,000 requests using one Avaya Breeze® platform is 15 seconds. A lower delay value is not recommended because it increases the probability of encountering performance-related problems.

Additional consideration should be given when the sum of requests targeted for the voice announcements exceeds the maximum port allocation for a single instance of the Avaya Aura Media Server. The Avaya Aura Media Server virtual machine bundled with Avaya Breeze® platform is maximum rated at 1100 ports. A single Avaya Aura Media Server would be expected to service 1,000 announcements over a period of five minutes and therefore 2,000 announcements would be serviced over 10 minutes. Given this guideline, five Avaya Aura Media Server instances will be required at a traffic level of 10,000 voice announcement requests serviced over a ten minute time period. The same traffic distribution guidelines as discussed above apply here as well.

If the phone numbers specified in the voice announcement request contain non-SIP devices such as H.323 endpoints or non-SIP trunk resources, be sure to verify this configuration to ensure you have the needed Digital Signal Processors (DSP) resources required to support a simultaneous voice announcement request to this set of users.

The following formula can be used to estimate the number of Avaya Aura Media Server instances required to support a particular burst application.

MaxSimultaneousRequiredLicenses = (((AnncLength + MaxDelayToAnswer)/FCDelay) * (CollectionSize))*NumberOfLicensesPerCall)

TotalAMSInstances*=ceiling((MaxSimultaneousRequiredLicenses)/(AMSMaxLicenseThreshold))

AnncLength = full length of the recorded announcement in seconds.
MaxDelayToAnswer = anticipated max ringback delay prior to answer in seconds.

FCDelay = Flow Control Delay, which is the time between simultaneous collection bursts to an Avaya Breeze® platform instance in seconds (current recommendation is 15 seconds or more).

CollectionSize = For an outcalling burst application this number represents the total number of users defined within a single simultaneous request for voice announcements to an Avaya Breeze® platform instance.

AMSMaxLicenseThreshold = the default threshold is 825 (75% of current session maximum).

NumberOfLicensesPerCall = 2 (number of active sessions per call; each session uses 1 license).

*In summary, the **TotalAMSInstances** is the "rounded up" value of the total number of simultaneous licenses required, divided by the license threshold administered on a single Avaya Media Server virtual machine. See the example below for further clarification.

For example:

Using the sample service, MultiChannel Broadcast, send 10,000 voice 45-second announcements to individual phone numbers within or off enterprise. In this type of example, assume it will take no more than 15 seconds for any user to answer the calls generated from this application and a single request includes 250 phone numbers, therefore 40 requests are required to reach 10,000 phone numbers in total.

AnncLength=45 seconds

MaxDelayToAnswer=15 seconds

FCDelay = 15 seconds

CollectionSize= 250

MaxSimultaneousRequiredLicenses = $(((45+15)/15)*250)*2 = 2000$

TotalAMSInstances = ceiling $(2000/825) = 3$

request1=[phone1…phone250]; request2=[phone251…phone500], …,
request40=[phone9750…phone10000]

Each request per Avaya Breeze® platform instance would still need to be staggered by 15 seconds.

In this example, a total of three Avaya Aura Media Servers and one Avaya Breeze® platform instance could service the request for 10,000 voice announcements within 10 minutes. Note: a larger collection, longer answer delay, and/or announcement length requires additional Avaya Aura Media Server resources.

Callbacks for Media Operations

Some behaviors have changed related to media callback listener methods to improve consistency in the media portions of the API (including voice XML and speech search). The original and changed behaviors are:

1. Invoking stop on a prompt and collect media operation.

    ORIGINAL BEHAVIOR: Two invocations of MediaListener methods are made, one to the playCompleted callback method with a cause of STOPPED, and one to the digitsCollected callback method with a cause of STOPPED.

    NEW BEHAVIOR: A single invocation is made to the digitsCollected method with a cause of STOPPED. This new behavior aligns better with the behavior that occurs when a prompt and collect operation ends after playing prompt and collecting digits.

2. Invoking stop on a send digits operation.

ORIGINAL BEHAVIOR: The invocation of stop has no effect, and the send digits operation continues to completion as if stop were NOT invoked. Upon completion no invocation of the MediaListener's sendDigitsCompleted method occurs.

NEW BEHAVIOR: The invocation of stop still has no effect. However, upon completion of the send digits operation, the sendDigitsCompleted method is invoked with a cause of COMPLETE. This new behavior better reflects what has actually taken place.

3. A party drops/is dropped from a call under the following circumstances:

   a. The call termination policy is set to NO_PARTICIPANT_REMAINS.

   b. A media operation is active on the dropped party.

ORIGINAL BEHAVIOR: An invocation of the appropriate MediaListener callback method occurs for the operations play, prompt and collect, collect, and record. For other media operations, no listener callback methods are invoked. NOTE: The listener interface that is implemented by a snap-in for most media operations is MediaListener. For voice XML and speech search, the listener interfaces are VoiceXMLDialogListener and SpeechSearchListener, respectively.

NEW BEHAVIOR: An invocation of the recordCompleted method occurs for an active record operation. No invocation of callback methods occurs for other media operations. This new behavior better matches the behavior that occurs when a call ends.

General Operational Changes/Frequently Asked Questions

1. **Java API change** behavior from 3.2 -> 3.3
   The return value from the Java API InetAddress.getHostName() on an Avaya Breeze® platform node has changed from returning an FQDN (e.g., myhost.example.com) to returning the host's name (myhost). If the FQDN is desired, use InetAddress.getCanonicalName()."

2. **Authorization service** behaviour – The Avaya Breeze® platform Authorization Service does not support SAML Single Logout.
   The Avaya Breeze® platform Authorization Service acts as an SAML Service Provider when trying to authenticate end-users against an Identity Provider. Authentication is initiated by using an SP initiated SSO exchange. The Authorization Service then optionally creates a session for the user, and redirects the user back to the Client snap-in with an "authorization code". For the current release, SP initiated Single Logout is not supported.

3. **Authorization service** behaviour – After authenticating the user, the following error is seen on the browser: Client authentication failed. Session validation failed.
   Resolution:
   - On System Manager click **Elements> Avaya Breeze®> Cluster Administration.**
   - Select the Cluster where Authorization Service has been installed.
   - Select the "Certificate Management" tab.
   - Click on "Update/Install Identity Certificate (Authorization Service)"

Avaya Breeze® platform 3.7.0.2 port changes

There are no notable changes to port usage in Avaya Breeze® platform 3.7.0.2.

Avaya Breeze® platform traceMessage message tracer tool

Prior to release 3.3, individual execution of traceHTTP, traceBus and traceSIP were required. With traceMessage, the ability to trace and view multiple protocols within the same tool is now supported.

New with traceMessage is the ability to enable and show installed snap-in logs as well as trace AAMS media control messages over HTTPs.
NOTE: Although media server messages are HTTP messages, the trace tool generally treats media server messages separately from other HTTP tracing messages. Media server tracing is generally most useful when combined with SIP tracing. The SIP messages provide the context within which the media server messages are generated for a given call.

As with the previous trace tools, traceMessage can be performance impacting depending on the current traffic levels on the Avaya Breeze® platform server.

The Filter options can take a regular expression. Filters are also available by pressing 'f' in the application.

WARNING: traceMessage may use high CPU and memory in a busy Avaya Breeze® platform server. The trace will stop displaying packets after capturing 10000 messages.

Usage examples:
- To start a new capture, run 'traceMessage' without arguments and then press 's':
  $ traceMessage
- To filter messages from/to 1.1.1.1 and 2.2.2.2:
  $ traceMessage -i "1.1.1.1|2.2.2.2"
- To analyze previously captured files for SIP, HTTP, AAMS and the call processing logs:
  $ traceMessage call_proc.log tracer_asset.log mediaServer_http.log niginx_http.log
- To filter SIP messages containing 'Avaya' in the 'User-Agent' header field:
  $ traceMessage -g "User-Agent=Avaya"
- To filter SIP sessions that got a '487 Request Terminated' response:
  $ traceMessage -o "487 Request Terminated"

New Avaya Breeze® platform External Authorization SDK

With the introduction of Avaya Breeze® platform Authorization Service support with Oceana 3.3 / Avaya Breeze® platform Client SDK 3.2 role based authorization used by Avaya Breeze® platform Client SDK's Identity Management Services Package was removed and this package was marked obsolete. This created a solution gap for 3rd party developers wishing to create Oceana based applications. The new External Authorization SDK bridges this gap with the support of:

Authorization Code Grant Type
- Both the Application and the user are authenticated. It is a redirect-based flow.
- Application does not handle the user's credentials. It redirects the user's browser to the Avaya Breeze® platform Authorization Service (AS) for validation of credentials.
- Once validated by the Authorization Services it redirects the browser back to the application with an authorization code, which the application can then exchanges for an access token.

Authorization Code Grant Type can enable SAML-based authentication, which could include Multi-Factor Authentication (MFA).

The External Authorization SDK can be used with Avaya Breeze® platform Authorization Services release 3.3, 3.4,3.4 SP or 3.5, 3.5 SP, 3.6, 3.7, 3.7 SP

Security -- Spectre/Meltdown

For more information on Spectre/Meltdown mitigation refer to PSN020346u.

- To mitigate the Meltdown and Spectre vulnerabilities, the processor manufacturers and operating system developers must provide software patches to their products. These are patches to the

processors and operating systems, not to Avaya products.

- When these patches are received by Avaya, Avaya will test these patches with the applicable Avaya products to determine what, if any, impact these patches will have on the performance of the Avaya product.
- Avaya is reliant on our Suppliers to validate the effectiveness of their respective Meltdown and Spectre vulnerability patches.
- Avaya's test effort is targeted towards reaffirming product/solution functionality and performance associated with the deployment of these patches.
- The customer is responsible for implementing, and the results obtained from, such patches.
- Although Avaya Breeze® platform performance impact is negligible, customers should be aware that implementing these patches may result in performance degradation.

Enhanced Security with LDAPs Connections

Issue: Avaya Breeze® platform applications that were previously able to successfully connect via LDAP over a secure connection may no longer be able to do so.

Background: Beginning with Avaya Breeze® platform 3.6.0.0, endpoint identification has been enabled on LDAP secure TLS connections. This may necessitate the need to generate a new identity certificate for the LDAP server that includes the server's Fully Qualified Domain Name (FQDN) or IP Address.

How to identify:

1. In the Avaya Breeze® platform application log for Authorization (/var/log/Avaya/services/AuthorizationService/AuthorizationService.log), check for the following exception:

> [Root exception is javax.net.ssl.SSLHandshakeException: java.security.cert.CertificateException: No subject alternative names present]
> Caused by: java.security.cert.CertificateException: No subject alternative names present
> at com.ibm.jsse2.util.b.b(b.java:104)
> at com.ibm.jsse2.util.b.a(b.java:88)
> at com.ibm.jsse2.aD.a(aD.java:165)
> at com.ibm.jsse2.aD.a(aD.java:168)
> at com.ibm.jsse2.aD.a(aD.java:211)

Recommended Solution:

1. First, inspect the current identity certificate on the LDAP server using one of the following mechanisms:
   a. System Manager Trusted Certificates provisioning
      1. On System Manager navigate to **Services > Inventory > Manage Elements**.
      2. Select the Avaya Breeze® platform node and choose **More Actions> Manage Trusted Certificates.**
      3. Choose Add, then Import using TLS.
      4. Enter the IP address or FQDN of the LDAP server, and port 636.
      5. Push **Retrieve**.
      6. Inspect the certificate details.
   b. OpenSSL command line tool.
   c. Login to an Avaya Breeze® platform server using the cust login, or to any other machine that has the OpenSSL tools installed:
      1. Run the following command, substituting your actual LDAP FQDN or IP address for MY_LDAP_FQDN_OR_IP:

echo | openssl s_client -showcerts -servername *<MY_LDAP_FQDN_OR_IP>* -connect *<MY_LDAP_FQDN_OR_IP>*:636 2>/dev/null | openssl x509 -inform pem -noout -text

    2. Inspect the certificate details.

2. Check the certificate for the presence of the LDAP server's FQDN in the CN or in the Subject Alternative Name (SAN) fields. The LDAP server name or IP address must match what is in the CN or SAN. Additionally, if FQDN was used, DNS must be setup with this FQDN and corresponding IP.
3. If there is not a valid FQDN or IP address in the certificate, generate a new certificate with valid FQDN or IP address (FQDN recommended) in the CN or SAN filed and provision it on your LDAP server.
4. Navigate to **Users> Directory Synchronization > Sync Users** and check the datasource. It must be configured with the exact FQDN or IP address used in the certificate.
5. If required, import either the LDAP server's certificate or the Certificate Authority (CA) certificate (recommended) as a trusted certificate for Avaya Breeze® platform by completing the process specified in 1a above. If the new certificate is signed by the same CA as had signed the previously used certificate, and if that CA certificate was previously provisioned as trusted by Avaya Breeze® platform, this step should not be required.

Refer to https://developer.ibm.com/answers/questions/475181/how-to-fix-this-ldap-ssl-error-javasecuritycertcer.html and https://www.oracle.com/technetwork/java/javase/8u181-relnotes-4479407.html?printOnly=1 for more detail on this enhanced security setting.

Authorization Service SAML authentication support matrix

Authorization Service v 3.6

Authentication Mechanism	Windows 2012 Domain Controller	Windows 2016 Domain Controller
LDAP	Yes	Yes
SAML - Password Protected Transport	Yes	Yes
SAML - Kerberos	**No**	**Yes**

Authorization Service v 3.7+

Authentication Mechanism	Windows 2012 Domain Controller	Windows 2016 Domain Controller
LDAP	Yes	Yes
SAML - Password Protected Transport	Yes	Yes
SAML – Integrated Windows Authentication	Yes	Yes
SAML - Kerberos	**No**	**Yes**