



Avaya Breeze® platform Release Notes

**Release 3.8.1.1 GA
Issue 4
March 2023**

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Change history

Issue	Date	Description
1	March 28, 2022	GA Release of Avaya Breeze® platform 3.8.1.1
2	March 31, 2022	Revised to include special instructions for customers using geographically redundant System Manager configurations.
3	June 21, 2022	Revised to include an updated Element Manager for Breeze 3.8.1.1
4	March 3, 2023	Revised to include an update Avaya Breeze® platform 3.8.1.1 OVA for VMware and AWS

Issues fixed in this release

1	Problem Resolved:	A&A: error messages seen in asm.log when SAML is deployed
	Reference:	ZEPHYR-70272
	Keywords:	A&A
2	Problem Resolved:	PCI Vuln - On-prem - 376157 - Apache Log4j Remote Code Execution (RCE) Vulnerability (Log4Shell)
	Reference:	ZEPHYR-70258
	Keywords:	Log4j
3	Problem Resolved:	Can't receive parent call using CallFactory class if a child call comes to another node in the same cluster
	Reference:	ZEPHYR-70256
	Keywords:	CallFactory class
4	Problem:	Mitigation for polkit vulnaribility (CVE-2021-4034) in platform
	Reference:	Zephyr-70244
	Keywords:	Polkit vulnaribility
5	Problem:	WebSphere security update
	Reference:	ZEPHYR-70205
	Keywords:	WebSphere
6	Problem Resolved:	RHSA-2021:4785 - rpm security update
	Reference:	ZEPHYR-70204
	Keywords:	Security Update
7	Problem Resolved:	RHSA-2021:4782 - openssh security update
	Reference:	ZEPHYR-70203
	Keywords:	Security Update
8	Problem Resolved:	RHSA-2021:4788 : krb5 security update
	Reference:	ZEPHYR-70202
	Keywords:	Security Update
9	Problem Resolved:	RHSA-2021:4777 - Kernel security and bug fix update
	Reference:	ZEPHYR-70202
	Keywords:	Security Update
10	Problem Resolved:	Redo logs generated by Gigaspace are not getting cleared leading to disk overload
	Reference:	ZEPHYR-70138

	Keywords:	Gigaspace
11	Problem Resolved:	Gs-agent not started
	Reference:	ZEPHYR-70137
	Keywords:	Gigaspace, Gs-agent
12	Problem Resolved:	Red Hat update for OpenJDK - RHSA-2021:3889
	Reference:	ZEPHYR-70130
	Keywords:	Red Hat update, OpenJDK
13	Problem Resolved:	Intermittent deployment issues for Oceana lab
	Reference:	ZEPHYR-70110
	Keywords:	Deployment, Oceana
14	Problem Resolved:	PCI Vuln - On-prem - 86728 - Web Server Uses Plain-Text Form Based Authentication (tcp)
	Reference:	ZEPHYR-70098
	Keywords:	Web server, PCI Vuln
15	Problem Resolved:	On-prem - 239678 - Red Hat Update for Open Secure Sockets Layer (OpenSSL) (RHSA-2021:3798)
	Reference:	ZEPHYR-70097
	Keywords:	Red Hat update, OpenSSL
16	Problem Resolved:	PCI Vuln - On-prem - 13162 - Session Cookie Does Not Contain the "Secure" Attribute (tcp)
	Reference:	ZEPHYR-70096
	Keywords:	PCI Vuln
17	Problem Resolved:	PCI Vuln - On-prem - 239673 - Red Hat Update for libxml2 (RHSA-2021:3810)
	Reference:	ZEPHYR-70095
	Keywords:	PCI Vuln
18	Problem Resolved:	PCI Vuln - On-prem - 239620 - Red Hat Update for kernel (RHSA-2021:3438)
	Reference:	ZEPHYR-70067
	Keywords:	PCI Vuln
19	Problem Resolved:	Unable to deploy GSC with vmInputArguments set
	Reference:	ZEPHYR-69909
	Keywords:	GSC
20	Problem	Modify Breeze Element Manager (EM) to support Avaya Aura® System Manager

	Resolved:	(SMGR) 8.1.3.5 log4j changes
	Reference:	ZEPHYR-70300
	Keywords:	Log4j, System Manager

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:	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
5.	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
6.	Problem:	Lambda expressions don't work well with Breeze 3.7 and beyond
	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
7.	Problem:	"dasrvstart status all" command shows TPS services being restarted each 10 seconds by Systemd. Manual start of the service from CLI is OK. The Systemd unit file manual "type" defaults to "simple." Since all TPS applications are using

		forking where a parent process exists, Systemd believes the service is dead and tries to restart it.
	Workaround:	Add "Type=forking" to Systemd unit files.
	Reference:	Zephyr-68682
	Keywords:	Systemd, TPS services
8.	Problem:	ADA 8.1.1 (or earlier ADA release) will not work with Breeze 3.7 and beyond
	Workaround:	Revert Breeze to Breeze 3.6 Or Install field version of ADA 8.1.1 as described in Avaya KB Solution: SOLN348058
	Reference:	Zephyr-68688
	Keywords:	ADA
9.	Problem:	ClusterDB: Test Connection leave garbage test files on SMGR in /swlibrary/wildfly_java_tmp
	Workaround:	These files can be safely removed and this will not require root access
	Reference:	ZEPHYR-69692
	Keywords:	ClusterDB
10.	Problem:	During EM patch(3.8.1.0.381005) installation on SMGR servers zem.ear file is getting corrupted on secondary server when it was in standby mode
	Workaround:	Contact Avaya Support to receive a patched version of the Element Manager to use that will fix this issue.
	Reference:	ZEPHYR-70289
	Keywords:	Geo-Redundant SMGR, Element Manager

Avaya Breeze® platform 3.8.1.1 GA load components

Component	Version
Avaya Breeze® platform OVA, AWS and KVM	VMware*: 3.8.1.1.381106 AWS*: 3.8.1.1.381106 KVM: 3.8.1.1.381105
Avaya Breeze® platform ISO	3.8.1.1.381105
Avaya Breeze® platform Patch	N/A
System Manager	Latest SMGR 8.0.1.2 GA version + latest SMGR Hotfix Latest SMGR 8.1.2 GA version + latest SMGR Hotfix Latest SMGR 8.1.3.3 GA version + latest SMGR Hotfix Latest SMGR 8.1.3.4 GA version + latest SMGR Hotfix Latest SMGR 8.1.3.5 GA version + latest SMGR Hotfix Latest SMGR 8.1.11 GA version + latest SMGR Hotfix Latest SMGR 8.1.12 GA version + latest SMGR Hotfix Latest SMGR 10.1.0.0 GA version + latest SMGR Hotfix Latest SMGR 10.1.0.1 GA version + latest SMGR Hotfix
Avaya Breeze® 3.8.1.0 Element Manager Package	3.8.1.0.14381005
Avaya Aura Media Server	8.0.2.218 or higher
SDK	3.8.1.0.381005
WebRTC	3.8.1.0.381005
Avaya WebRTC SDK	3.8.1.0.381005
Authorization	3.8.1.1.381105
External Authorization Client SDK	3.8.1.0.381005
Reliable Event Streaming Adapter	3.8.1.0.381005
Centralized Logging (Used with Oceana)	3.8.1.1.381105
Zang Call Connector	3.8.1.0.381005
Zang SMS Connector	3.8.2.0.139008

* Updated with new AFSA Certificate

System Manager interoperability

Avaya Aura® System Manager release 8.0.1.2, 8.1.2.x, 8.1.3.x, 8.1.11, 8.1.12 or 10.1.0.x with the latest SMGR HotFix is supported with the Avaya Breeze® platform 3.8.1.1 GA load. See *Deploying Avaya Breeze® platform*; <https://downloads.avaya.com/css/P8/documents/101070661> (chapter 4 *Running the upgradeSolution script for System Manager Release*) for more information.

IMPORTANT: If using **Avaya Aura® System Manager in a geographically redundant** configuration, where you have a primary and secondary System Manager, you must contact Avaya Support to receive an updated Breeze Element Manager package before attempting to install the Breeze Element Manager using the upgradeSolution utility. This package is required for upgrades or fresh deployments where the use of upgradeSolution is required to apply the Element Manager. If the version of Avaya Aura® System Manager already contains the required Breeze Element Manager (such as 8.1.3.4 with Hot Fix 1, 10.1 or 10.1.0.1), you can proceed without contacting Avaya Support because the updated Element Manager is not required. All other versions will require the updated Element Manager package. For full details about which versions require using the upgradeSolution utility to apply the Breeze Element Manager, see the following list.

Note: Avaya Aura® 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 Avaya Aura® System Manager:

- Release 8.0.1.2 by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility provided in the latest hot fix release of Avaya Aura® System Manager.

- Release 8.1.2 by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility provided in the latest hot fix release of Avaya Aura® System Manager.
- Release 8.1.3.3 with the Avaya Aura® System Manager Hotfix 2 or later by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility provided in the latest hot fix release of Avaya Aura® System Manager
- Release 8.1.3.4 with the Avaya Aura® System Manager Hotfix 1 or later, by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility provided in the latest hot fix release of Avaya Aura® System Manager
- Release 8.1.3.5 with the Avaya Aura® System Manager which already contains the latest Avaya Breeze® platform 3.8.1.0 Element Manager
- Release 8.1.11 with the Avaya Aura® System Manager by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility
- Release 8.1.12 with the Avaya Aura® System Manager Hotfix 1 or later, by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility
- Release 10.1.0.0 with the Avaya Aura® System Manager Hotfix 1 or later, by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility provided in the latest hot fix release of Avaya Aura® System Manager.
- Release 10.1.0.1 for Avaya Aura® System Manager, by installing the Avaya Breeze® platform 3.8.1.0 Element Manager using the upgradeSolution utility provided in the latest hot fix release of Avaya Aura® System Manager.

If you are running Avaya Aura® System Manager Release 8.0.x, you must update your system to Release 8.0.1.2 with the latest published hot fix from <https://support.avaya.com>. If you are running Avaya Aura® System Manager Release 8.1.x, you must update your system to Release 8.1.2 or 8.1.3.x with the latest published hot fix from <https://support.avaya.com>. If you are running an earlier version of Avaya Aura® System Manager, you must update to Avaya Aura® System Manager 8.1.3.5

Deployment of Avaya Breeze® platform Release 3.8.1.1 with System Manager Release 8.0.1.2, 8.1.2, or 8.1.3.x 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 3.8.1.0 Element Manager with the older System Manager.

Important:

When you have applied the Avaya Breeze® platform Release 3.8.1.0 Element Manager to System Manager Release 8.0.1.2 or 8.1.2 or 8.1.3.x, subsequent integrated patches and hot fixes will leave the 3.8.1.0 Element Manager intact and no further action is required to work with Avaya Breeze® platform 3.8.1.1.

Caution:

When you have applied the Avaya Breeze® platform Release 3.8.1.0 Element Manager to System Manager Release 8.0.1.2, if in the future the System Manager is migrated to 8.1.x with the latest hot fix, you must reapply the Release 3.8.1.0 Element Manager by running the upgradeSolution utility script. The migration will retain all Avaya Breeze® Element Manager Release 3.8.1.0 configuration data.

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 3.8.1.1 is compatible with Avaya Aura Media Server Release 8.0.2.

Avaya Breeze® platform Release 3.8.1.1 requires the platform upgrade to be completed simultaneously, with the cluster in Deny New Service, for all nodes in the impacted Avaya Breeze® cluster. This is referred to as Method 2 in the *Upgrading Avaya Breeze® platform*, <https://downloads.avaya.com/css/P8/documents/101070683>. If upgrading from Avaya Breeze® platform 3.8.1.0, Method 2 or Method 3 may be used in the aforementioned upgrade document. Consult the solution documentation for additional upgrade instructions that may be unique to the services installed on the Avaya Breeze® cluster.

The Avaya Breeze® 3.8.1.1 Authorization Service for use with Avaya Breeze platform Release 3.8.1.1 requires downloading from the Authorization svar from support.avaya.com. This is not typical with Avaya Breeze® releases and is an extra step for the Avaya Breeze® 3.8.1.1 release only. The updated authorization service is recommended for all solutions that utilize this service. After downloading, the Authorization service svar can be manually uploaded on the System Manager via the Breeze Service Management GUI Interface.

Avaya Breeze® platform Release 3.8.1.1 is compatible with Authorization Service 3.8.1.0 and higher. Older versions of the Authorization Service for Breeze will no longer be compatible with Avaya Breeze® platform release 3.8.1 and higher due to a version update of a dependent software component on the Breeze platform. Therefore, if currently using Authorization Service 3.8.0.2 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://support.avaya.com/css/P8/documents/101070683>. The recommendation is to uninstall the prior Authorization service prior to upgrading the platform, then install the Authorization Service 3.8.1.0 (or higher version) after the platform upgrade but prior to placing the cluster into Accept New Service.

If upgrading from Release 7.0 Avaya Aura® System Manager to Release 8.1, 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 must be performed prior to upgrade of the Avaya Aura® System Manager to Release 8.1. 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 upgrade 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 Details

New alarms (related to Authorization Service snap-in) are introduced in Avaya Breeze® platform 3.8. These alarms are raised when LDAP audit has been enabled (via the service attribute). The audit polls external LDAP providers (configured on Avaya System Manager) for connectivity issues and raises alarms if necessary. The new alarms are described below:

Event ID	Severity	Description	Action
GENERR1	Major	Any generic error caused when the Authorization Service tries to connect to an LDAP data source provisioned in SMGR.	Troubleshoot the issue by checking the appended root cause in the alarm description.
CONERR2	Major	A connection error occurred when the Authorization Service tried to connect to an LDAP data source provisioned in SMGR.	Rectify the connectivity between the LDAP source and the Breeze nodes.
SSLERR3	Major	An SSL error occurred when the Authorization Service tried to connect to an LDAP data source provisioned in SMGR.	Verify the LDAP related certificates that are currently deployed. Check if the LDAP CA certificate is properly installed in the cluster. For more information, you can also check the appended root cause in the alarm description.
CLR_GENERR1	Info	A generic error raised previously by the Authorization Service when trying to connect to an LDAP data source provisioned on SMGR, has been cleared.	No action.
CLR_CONERR2	Info	A connection error raised previously by the Authorization Service when trying to connect to an LDAP data source provisioned on SMGR, has been cleared.	No action.
CLR_SSLERR3	Info	An SSL error raised previously by the Authorization Service when trying to connect to an LDAP data source provisioned on SMGR, has	No action.

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 3.8.1.1 port changes

There are no notable changes to port usage in Avaya Breeze® platform 3.8.1.1.

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 nginx_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 exchange 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, 3.8 and 3.8 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 field 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.

Upgrade instructions specific to SMGR 10.1 – UnifiedAgentController, UnifiedAgentContextService and CustomerControllerWeb

Follow the upgrade procedure and post the upgrade If VMs still have snapshot, remove all of them. Please note that customer doc for upgrade procedure include taking snapshot before upgrade, but it should also need to be removed within 48 hours after upgrade completed.

Following are the steps to update JDBC Provider snap-in when SMGR is upgrade to 10.1 from previous version.

1. Create another JDBC Provider snap-in with existing JDBC driver jar.
2. Install new JDBC Provider snap-in on required clusters.
3. Delete existing JDBC data sources, then uninstall older JDBC provider snap-in.
4. Recreate the JDBC data sources using same values like old data sources, using newly installed JDBC Provider snap-in (Created in step #1.)

Authorization Service SAML authentication support matrix

Authorization Service v 3.7.x and 3.8.x

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