

This release:

- Resolved runtime exceptions by explicitly opening and exporting internal Java modules via JVM arguments.
- Switched the signing certificates for the installer

If you have any ideas for improvement, questions, or issues let us know at [support@radblue.com](mailto:support@radblue.com).

<i>Case</i>	<i>Description</i>
20504	Missing JVM options for Java 21 causes security exceptions
20509	Switch signing certificate for installer
20512	CVT installer copies help files twice

This release:

- Upgrade Java to 21

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<i>Case</i>	<i>Description</i>
20259	Upgrade Java to 21

This release:

- Upgrade Java to 17.0.9.9

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<i>Case</i>	<i>Description</i>
20130	Upgrade Java to 17.0.9.9

This release:

- Upgrade Java to 17
- Replaced JavaScript engine for Java 17

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<i>Case</i>	<i>Description</i>
19429	Replace JavaScript engine with grail.js
19651	Upgrade RLT to Java 17

This release:

- Fixed bugs in handpay processing that would send a handpay record more than once.
- Fixed guest processing of spc commands.
- Fixed a bug in G2S 2.1 schema that marked g2sEM as not available.
- Upgrade java to 1.8.0\_352

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<i>Case</i>	<i>Description</i>
19364	Fixed a bug where the timestamp of the last processed handpay record was being not being set. This meant that handpay records were being sent twice to the host.
19371	Fixed a bug where g2sEM schema was marked as not available in G2S 2.1.
19372	Fixed a bug where the handpaySourceRef had duplicate values for cashable, nonCash, and promo values.
19375	Upgrade Java to 1.8.0_352.
19424	Fixed a bug where spc.getSpcStatus and spc.getSpcLogStatus were not being processed from a guest host.

This release:

- Converted to Log4j2
- Added G2S 2.1 schema for backward testing
- Fixed web socket issues when upgrading RLT
- Fixed database issues when upgrading RLT
- Fixed key-off tiger verb to only consider outstanding handpays

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<i>Case</i>	<i>Description</i>
18839	Fixed a null pointer exception when processing web socket error messages.
18840	Fixed a problem with the protocol type in RLT's database that was causing problems during upgrades.
18843	Install RadBlue's EXI file to prevent an error message about a missing file.
18844	P12 keystore files were not being backed up/restored during upgrades.
18845	Fixed a problem connecting to RLT's database after an install.
18867	Replaced log4j1.x with log4j2 version 2.17.2. In light of security issues associated with CVE-2021-45046, we decided to review log4j1.x usage and replace it with the latest version of log4j2.
18972	Tiger verb to key off EGM should not process committed transactions.
19058	When validating SPC devices while loading SmartEGM configuration, all SPC device are now validated.
19063	Added G2S 2.1 schema to allow customers to perform backward testing.
19071	Added support for remote voucher handpay key off type.
19079	When issuing a large win voucher, the largeWin attribute was not being set to true.
19151	The example ID database was not being copied during installation.

This release:

- Added support for Web Sockets in RLT
- Added support for sending optionList after setOptionChange.
- Added new metrics for time from OPENING state to ONLINE state.

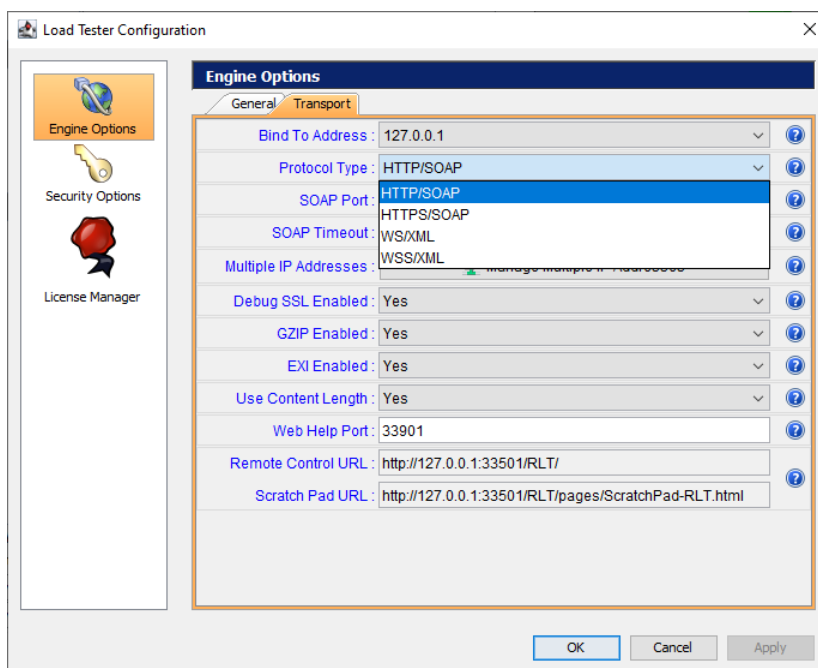
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Case	Description
17162	Add support for Web Sockets in RLT
18595	Added support for sending optionList after the setOptionChange. Sections 9.4.4 and 9.14.1 are BOTH required and are conflicting. Since 9.4.4 is more expansive in terms of requirements, the EGM MUST send the optionList after a setOptionChange.
18812	Add time from commsOnLine to setCommsState (OPENING to ONLINE)

## Changes in User Interface

The RLT is configured to use one protocol at a time. To set the protocol type select from

- HTTP/SOAP – SOAP protocol over HTTP transport.
- HTTPS/SOAP – SOAP protocol over a secure HTTP transport.
- WS/XML – XML protocol over web sockets transport.
- WSS/XML – XML protocol over secure web sockets transport.



### Changes in Metrics

Two sets of metrics were added to the RLT. These metrics can be used to measure the impact of changes to EGM startup algorithms used in your host. The first set of metrics are the min/avg/max EGM times from when the EGM enters the OPENING state (commsOnLine being sent) to the ONLINE state (setCommsState received). The second set of metrics are the min/avg/max RESET EGM times from OPENING to ONLINE. A RESET EGM is when the EGM has all of the commsOnLine flags set to true (e.g., the EGM has been RESET).

DESCRIPTION	NAME	TYPE
EGM - AVERAGE TIME TO ONLINE (IN MILLISECONDS)	com.radblue.loadtester.engine.metric.avgTimeToOnline	AVG
EGM - MAXIMUM TIME TO ONLINE (IN MILLISECONDS)	com.radblue.loadtester.engine.metric.maxTimeToOnline	MAX
EGM - MINIMUM TIME TO ONLINE (IN MILLISECONDS)	com.radblue.loadtester.engine.metric.minTimeToOnline	MIN
RESET EGM - AVERAGE TIME TO ONLINE (IN MILLISECONDS)	com.radblue.loadtester.engine.metric.avgTimeResetToOnline	AVG
RESET EGM - MAXIMUM TIME TO ONLINE (IN MILLISECONDS)	com.radblue.loadtester.engine.metric.maxTimeResetToOnline	MAX
RESET EGM - MINIMUM TIME TO ONLINE (IN MILLISECONDS)	com.radblue.loadtester.engine.metric.minTimeResetToOnline	MIN



This release:

- Ability to set the host URL on a per EGM basis.
- Ability to pause tiger scripts between a start and end time.
- Updated Java to 1.8.0\_275
- Updated JIDE to 3.7.12-pre

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Case	Description
17157	Update Java to 1.8.0_275
17158	Update JIDE to 3.7.12-pre
17183	Ability to modify host URL on a per EGM basis.
17485	Ability to pause tiger scripts between a start and end time.

This release:

- Fixed a bug in progressive class when setting the progDataTable.
- Updated Apache CXF to 3.2.13

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Case	Description
16707	Updated Apache CXF to 3.2.13.
16755	Starting a web server to handle help files to work around a limitation in FireFox.
17149	Fixed a bug where the progDataTable was being appended instead of replaced during setOptionChange.

This release:

- Fixed bugs associated with the SPC class.
- Updated Java to OpenJDK 1.8.0\_242.

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Case	Description
16213	Fixed a bug where SPC option config parameters were not being persisted.
16306	Modified tiger scripts engine to allow SPC devices to be used with Human.playSimpleGameWithProgressiveHit verb.
16318	Pay progressive wins to credit meter if EGM configuration allows it.
16391	<ul style="list-style-type: none"><li>• Fixed a bug where the egmException was being updated after it was previously set.</li><li>• Fixed a bug where wat.commitTransfer commands were being generated after the log record was set to G2S_commitAked.</li></ul>
16392	Updated Java to OpenJDK 1.8.0_242.
16395	Fixed a bug where transport was stuck in a loop when SSL connections fail.
16637	RLT tool icon was not being loaded properly.

This release:

- Upgraded to G2S Schema 3.1
- Added support for spc Class
- Added support for mystery Class

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Case	Description
15569	Implemented g2sRTP extension.
15581	Removed warning about Unknown soapAction: 'http://G2S.gamingstandards.com/SendG2SMessage'
15603	Modified the spcProfile command to display level profiles.
15678	Fixed a bug where the commsOnLine flags were not being reset after the commsOnLineAck was received.
15820	Upgrade G2S schema to 3.1.
15832	Implemented GSATB-151 Master Reset Persistency. The current master reset is saved to the SmartEGM configuration file if the master reset has not taken effect yet.
15833	Implemented GSMP-2025. The SmartEGM will now generate G2S_OCE107 optionConfig Configuration Aborted event along with G2S_OCE110 optionConfig Configuration Change Authorization Timeout event when the authorization times out.
15835	Implemented GSATB-121 Additional Download Error Codes.
16010	Implemented g2sPTB extension.
16037	Implemented spc class.
16041	Fixed a bug where icons were not being found from the installed version.
16118	Implemented mystery class.

This release:

- Retry progressive hits that are not acknowledged.
- Fixed bug that cleared meter values.

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<i>Case</i>	<i>Description</i>
14893	Progressive hits are now retried if they are not acknowledged.
15013	Master reset code was clearing the meter values after all resets. The code should only clear the meter values for a master reset.

This release:

- Updated idReader class to G2S 3.0.
- Bug fixes in the handpay class.
- Bug fixes for masterReset in the cabinet class.
- Bug fix in mediaDisplay class.
- Bug fix in gat class.

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Case	Description
14160	Fixed a bug where the SmartEGM is generating a progressive hit for a zero win.
14161	Fixed a bug where the cashableAmt in sourceRef elements in handpay commands was not the progressive win amount.
14187	Fixed a bug where EGM owned handpay devices was causing the EGM not to start. Note: EGM owned handpay devices is still not supported in the RST.
14188	Fixed a bug where currency meters were not being set to zero during a master reset.
14189	Fixed a bug where GTK_CBX005 Master Reset Not Pending was not being sent when master reset was not pending.
14190	Fixed a bug where GTK_CBE012 Master Reset Time-Out event was not being generated.
14191	Fixed a bug where GTK_CBX004 Invalid Master Reset Request was not being generated. The Smart EGM will generate GTK_CBX004 when the authorizing host is unknown, not registered, or the timeoutData is null or greater than 24 hours.
14192	Fixed a bug where GTK_CBE010, GTK_CBE011, GTK_CBE012 did not have the master reset or authorize status payload.
14194	Fixed a bug where GTK_CBE006 Master Reset Authorized's authorizeStatus was not set to G2S_timeout when the master reset timed out.
14210	<ul style="list-style-type: none"> <li>• AuthorizeMasterReset will return a GTK_CBX005 when there is no pending master reset or the host sends the wrong request ID.</li> <li>• AuthorizeMasterReset will generate GTK_CBX003 if the master reset is already in progress.</li> <li>• AuthorizeMasterReset will generate GTK_CBX005 when for an unknown authorizing host.</li> <li>• CancelMasterReset generates GTK_CBX005 when the master reset is not pending, wrong request ID, or the logEntry is already GTK_inProcess, GTK_cancelled, or GTK_aborted.</li> <li>• masterReset generates GTK_CBX003 if the active master reset is not GTK_aborted or GTK_cancelled.</li> </ul>
14220	Changed the order of checking for owner commands before guest commands. This means G2S_APX010 Command Restricted To Owner will be generated before G2S_APX012 Command Restricted To Owner and Guests.

Case	Description
14230	Fixed a bug where GTK_CBE009 did not contain the master reset status payload.
14272	Fixed a bug where IGT_MDX007 was being generated for an media access token of zero.
14275	Fixed a bug where the Smart EGM was not sending download.scriptStatus command when a package is deleted by a script action.
14282	Fixed a bug where mediaDisplay events were sending the latest transaction instead of the transcription for the specified device ID. IGT_MDE101, IGT_MDE102, and IGT_MDE105 were updated.
14323	Added a warning to the Tiger scripts when processing progressive handpays that the host provided keyOffType will be used instead of the user supplied keyOffType.
14324	Fixed a bug that prevented the EGM from locking the handpay device during a game play cycle. This prevented G2S_CBE210 Device Action Locked EGM from being sent after G2S_JPE101 Handpay Pending.
14328	Fixed a bug where G2S_JPX003 was not being generated for a committed handpay transaction.
14351	Removed handpay processing for mixCreditTypes, requestNonCash and combineCashableOut attributes as specified in G2S 3.0 section 11.1.10.
14352	Deprecated mixCreditTypes, requestNonCash, and combineCashableOut handpay attribute. The handpay profile and option config parameters are now set to the default values and canModRemote=false and canModLocal=false.
14353	<ul style="list-style-type: none"> <li>G2S_JPX001 is generated for a setRemoteKeyOff of G2S_unknow or non-original key off type.</li> <li>G2S_JPX002 is generated for any key off type that is NOT credit or handpay.</li> </ul>
14354	Fixed a double posting of handpay meters during a game play cycle. Modified the game play engine to handle a keyoff type that was not specified by the user in the tiger script.
14364	Fixed a bug where game denom and wager meters were not being set to zero during a master reset.
14365	Deprecated configDate and configComplete in ID Reader device.
14367	Deprecated idEnconding in ID Reader device.
14368	Deprecated lossLimit in ID Reader device.
14375	Added support for illegal door open (g2sAUS).
14381	Added support for illegal door access (g2sAUS).
14384	Add warning while loading a Smart EGM configuration file if the informed player device is defined by the player device is not.
14390	Added support for illegal door access in the note acceptor class (g2sAUS).
14391	Added support for illegal door access in the coin acceptor class (g2sAUS).
14392	Added support for illegal door access in the hopper class (g2sAUS).
14393	Added support for illegal door access in the note dispenser class (g2sAUS).
14419	Added the ability to generate G2S_IDE109 Error Detected While Reading ID.

<i>Case</i>	<i>Description</i>
14486	Fixed a bug when processing two authorizeTransfers from the host for one WAT transaction.
14538	Fixed a bug where the ID reader device was not removing the ID when the device was disabled.
14815	Implemented section 23.10.1.3 in G2S 3.0 for duplicate doVerification commands.
14871	Created a 64-bit Windows RST installer.



This release:

- Rewrite of communications state machine.
- Implemented the Sign class.
- Progressive error handling improvements.

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<i>Case</i>	<i>Description</i>
13518	Updated SCEP code base to use Apache CXF 3.2.1.
13620	Rewrite of the communication state machine to handle error conditions. For example, the SmartEGM was not reconnecting to a host that was a restarted when the communications device was in the sync state.
13875	Fixed a bug where the SmartEGM does not cleanup comms manager threads for deleted hosts.
13877	Fixed a bug where the SmartEGM configuration file was not removing hosts references for deleted hosts.
13881	Restored the ability to reset the command ID before opening communications to a host.
13899	Implemented the Sign class.
13936	Fixed a bug where the SmartEGM would not validate a component when supportsOffset is set to false and no endOffset was sent in the XML payload.
13952	Fixed a bug where the SmartEGM would not respond to mediaDisplay.getMediaDisplayStatus from a guest host.
14018	Fixed a transcript bug that miscalculated the command summary when a comment was placed before the document's root element.
14045	The SmartEGM will now recover when the host prematurely closes the network connection. When the host closes the network connection before the GSA defined 5 minutes keep alive value, the SmartEGM was left in a half-open socket state. The next message from the EGM would cause a network connection error which was not resent. The SmartEGM will now resend the command.
14092	Fixed a bug where the SmartEGM was not handling the case where the progressive host rejects the progressive hit with error code G2S_PG006. The SmartEGM will now commit the transaction with a zero amount and lock up in a handpay.
14110	Fixed a bug where the player cashable amount meter was not incremented properly during a progressive win. The SmartEGM was not including the initial win in calculating the new player cashable amount value.
14115	Added the ability to check to see if the progressive win is greater than the max credit limit.
14125	The SmartEGM will not transition to the closed state when a network error occurs on a non-SSL socket error. The GSA protocols could be interrupted to mandate

<i>Case</i>	<i>Description</i>
	that the EGM must transition to the closing state on a network error. However, there is language that allows the EGM to retry message.

This release:

- Fixed CRC-16 and CRC-32 calculations when hashing streams longer than 1024 bytes.
- Updated SmartEGM's option config parameter details to properly report minIncl, maxIncl, minLen, and maxLen values.
- Upgraded Java to 1.8.0\_152.

NOTE: The updates to the SmartEGM's option config parameters MAY cause old SmartEGM templates not to load in the RLT. Please send the templates to [support@radblue.com](mailto:support@radblue.com) and we'll make the necessary changes.

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<i>Case</i>	<i>Description</i>
12938	Fixed a problem with CRC-16 and CRC-32 calculation when hashing stream longer than 1024 bytes.
12904	Updated Java to 1.8.0_152
12965	Fixed a problem where Next/Find Previous was not working in the SmartEGM template viewer.
12966	Moved the log4j.properties file to the RLT/conf directory. This allows customers to modify the log levels.
13189	Fixed a bug in the download packageCmdStatus that set scriptStatus to G2S_error even though scriptException was set to zero (No exceptions).
13371	Fixed the SmartEGM's option config parameters minIncl, maxIncl, minLen and maxLen values to match the underlying data model. For example, previously G2S_idReaderTrack maxIncl was set to 12 which is wrong since ipReaderProfile.idReaderTrack has a max include of 4 which is set in the schema file.