radblue

RAS User Guide

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Need help?

At the RadBlue forum you can find the latest release information, report issues, get your questions answered, and submit suggestions for improving our products. Simply log on to: http://radblue.mywowbb.com

Find out more about the GSA protocols

If you want to find out more about the Gaming Standards Association and the work being done in the area of protocol standardization for the gaming industry, we encourage you to visit their website at www.gamingstandards.com.

Contents

About the RAS Installation

RAS is supported on Windows (32- or 64-bit): Windows Vista or Windows 7.

Pre-installation Requirements

1. You must have the RAS license file on your computer prior to installing RAS. If you are using a special version of RAS , you must have a license for that version. If you have not received a RAS license file, contact RadBlue Support.
2. If your computer does not have the latest required version of Java installed, you are prompted to download and run the Java installer, or to navigate to the correct Java version.

Computer Requirements

The minimum requirements for computers running the analysis suite are:

- Operating System (32- or 64-bit): Windows (Vista or 7)
- Memory: 4 GB (minimum)
- Disk Space: 250 MB

Install RAS

Follow these steps to install RAS.

1. Double-click **RAS_x_x_x.exe**.
2. Click **Next**.
3. Review the RadBlue click-through agreement, and select **I accept the agreement** to accept the agreement.
4. Click **Next**.
5. Type the location where you want the RAS application installed, or click **Browse** to navigate to the location.
6. Click **Next**.

   If you have a previous version of the tool installed, you are prompted to remove it before installing the new version. Click **Next** to uninstall the previous version before continuing with the new installation, or click **Back** to install the new version in a different directory.
7. Navigate to the location of the RAS license file, and click **Next**.

   For version 32 and higher, if you install a version of RAS over an existing version, you can choose to use the existing license. If you do not want to use the existing license, you can browse to a new license. Note that this option is only available when you install RAS over a previous installation. All components of the previous installation are removed by the installer except the license file and any backup files.
8. Select the **Start Menu folder** for RGS.

   If you only want to create a shortcut for the current user, clear the **Create shortcuts for all users** checkbox.

   If you do not require a Start Menu folder for RAS, select **Don't create a Start Menu** folder.
9. Click **Finish**.
10. Double-click the **RAS** desktop icon to launch the application.

Uninstall RAS

You can uninstall RAS through the **Uninstall** option (**Start** > **All Programs** > **RadBlue Analysis Suite**) or by running the **uninstall.exe** file in the RGS installation directory.

The following file and configuration options are saved in a backup file, allowing the specified information to be retained between installations:

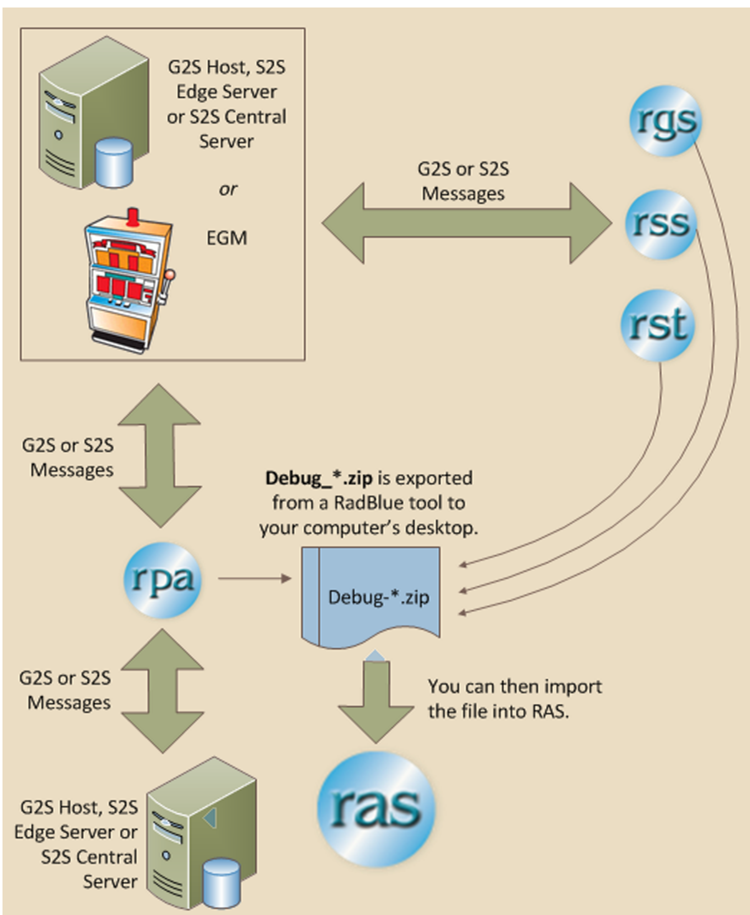
- **RLT.vmoptions** file
- **Start in Full-Screen Mode** parameter (under Desktop Options)
- **Max G2S Transcript Messages** parameter (under Desktop Options)
- **Max Soap Transcript Messages** parameter (under Desktop Options)
- **Test Cases Location** parameter (under Engine Options)
- All **Artifact Analysis Tool Options**
- All **Email Options**

About RAS

The RadBlue Analysis Suite (RAS) lets you do post-event analysis of G2S and S2S messages, using the transcripts, logs and configuration data from:

- the gaming floor or integration center, generated through the RadBlue Protocol Analyzer (RPA)
- the EGM test lab, generated through the RadBlue G2S Simulator (RGS)
- the G2S host test lab, generated through the RadBlue System Tester (RST)
- the S2S test lab, generated through the RadBlue S2S Simulator (RSS)

An Export Data button on the debug log screen in each tool allows you to quickly and easily export data (compressed into a Debug_*.zip file) to your desktop. Then, simply load the file into RAS and start analyzing.



A **Debug_*.zip** file can be easily created to snapshot the debug log and the transcript of G2S or S2S message activity between a RadBlue tool and a target entity (G2S host, S2S server or EGM) or by the RadBlue Protocol Analyzer (RPA) running between two endpoints (for example, a G2S host and an EGM).

Once the debug log is exported to your desktop, simply upload it into RAS. Once loaded, you can explore the various data files through the RAS viewer, transcript screen, and Advanced Transcript Analyzer.

Viewing Transcripts Using RAS

Using the RAS interface, you can:

- import and view contents of debug files generated through RPA, RST and RGS.
- view and analyze transcript data.
- view and export error log data.
- create, delete and modify layouts and desktops.

You can view transcripts through the traditional transcript interface, including the Transcript report. If you are analyzing G2S message data, you can explore transcript data through the Advanced Transcript Analyzer, which compares messages with a set of rules. Once a comparison is complete, you can drill down into messages to view any reported errors in the message XML.

In addition to transcript data, you can view the metadata and error log. The metadata file provides information about the environment in which the data was generated - details from the product, protocol, schema, license and configuration. For version 12 and lower, the available metadata will vary.

The error log displays all informational, warning and critical errors that occurred in the tool prior to exporting the debug file.

Additional Resources

- RAS Release Notes

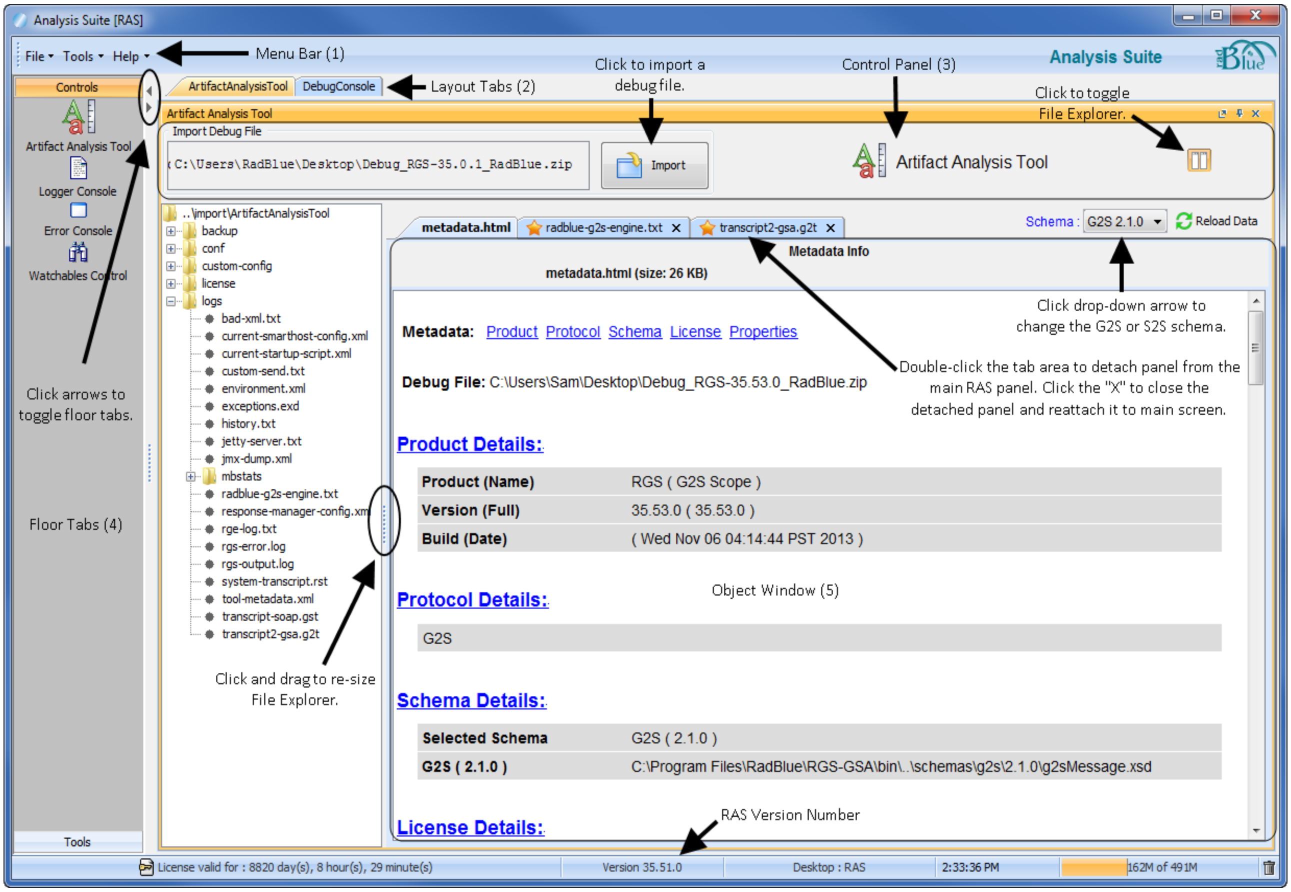
Supported GSA Versions

The following Gaming Standards Association (GSA) protocol versions are supported by RAS:

Protocol	Versions		
G2S	1.1.0	2.1.0	
S2S	1.2.6	1.3.1	1.5.0

The RAS User Interface

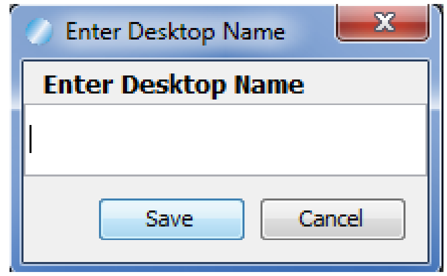
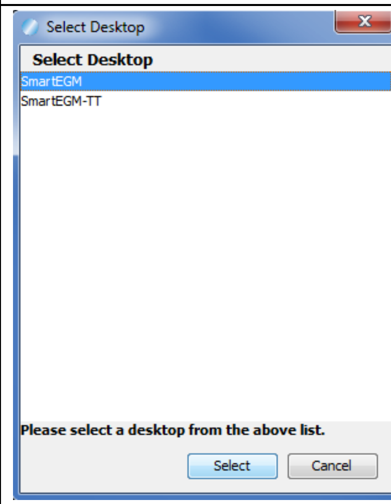
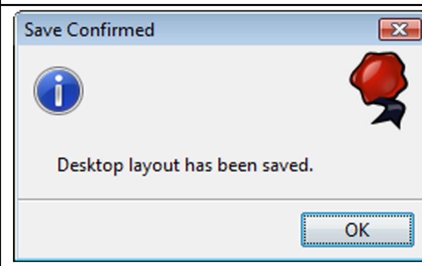
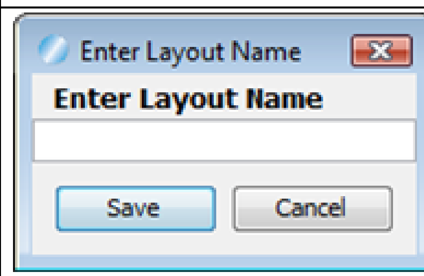
Let's look at the RAS interface.



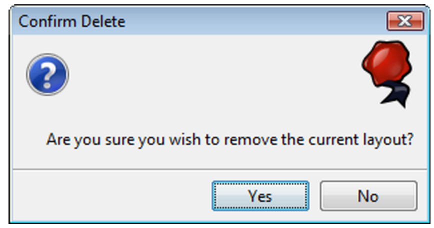
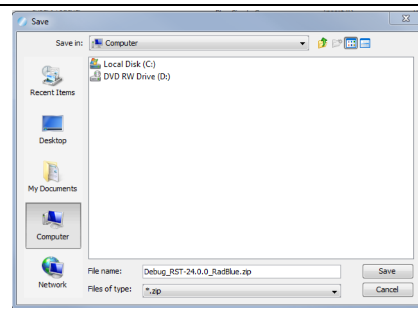
Menu Bar (1)

From the menu bar you can access product options. Click an

File

Option	Description	Screen
New Desktop	Select to create a new desktop. The *desktop* is a collection of objects and tabs that constitute the work area of the tool. Type the name of the new desktop, and click **Save**	
Open Desktop	Select to change the current desktop. When you save a desktop, it becomes available in the Select Desktop list. Highlight the desktop you want to use, and click **Select**.	
Save Desktop	Select to save the current desktop. Once you save a desktop, you can open it at any time by selecting **Open Desktop**. Click **OK**.	
Add Layout	Select to add a new layout. The *layout* is a series of tabs on the desktop, used to organize objects by function. Within each layout, objects can be placed next to each other, or on top of each other (in which case they are accessed by object tabs). Type the name of the new layout, and click **Save**.	

<table>
<tr><th>Option</th><th>Description</th><th>Screen</th></tr>
<tr><td>Remove Layout</td><td>Select to delete the currently displayed layout.

Click Yes to delete the layout.</td><td>
</td></tr>
<tr><td>Export Debug</td><td>Select to create a ZIP file of troubleshooting information that can be sent to RadBlue support or used with the RadBlue Analysis Suite (RAS). Browse to the location where you want to save the ZIP file, and click Save.</td><td>
</td></tr>
<tr><td>Exit</td><td>Select to close the product.</td><td></td></tr>
</table>

Tools

Option	Shortcut	Description
Configure	F2	Select to see configuration options.
Toggle Floor Tab	F3	See *Floor Tabs* below.
GSA Message Validator	F4	Allows you to paste in a sample XML document and see if the message is valid against the selected schema.

Help

Option	Description
RAS Help	Select to launch RAS Help system.
Contact Us	Select to open the contact page of the RadBlue web site.
About RAS	Select to see the copyright, licensing, and verion information.

Layout Tabs (2)

A series of tabs on the desktop, used to organize objects by function. Within each layout, objects can be placed next to each other, or on top of each other (in which case they are accessed by object tabs).

Layout Tabs	Description
Artifact Analysis Tool	Allows you to: import and see debug files generated through the RPA, RST, and RGs view and analyze transcript data
Debug Console	Shows all informational, warning, and critical errors that occur in the tool.

Control Panel (3)

Use this panel to:

- Import debug files.
- Change G2S schema.
- Change the screen layout to see tree-structure file or not.

Floor Tabs (4)

Open/Close - The floor tab displays objects that you can drag and drop onto the *Object Window* when you want to create a custom desktop or layout.

Open this window using the arrows on the interface screen, or by going to **Tools** > **Toggle Floor Tabs**.

This panel contains views that you can see when you click the bars: Controls and Tools.

- When you drag and drop an object from one of these views, the object opens as a tab.
- Click and hold the tab to open it into a floating window.
- When you find a custom layout, save that desktop, go to **File** > **Save Desktop**

About Objects - Objects contain a single function (or group of functions) that you work with in the tool. They are populated from the tool's data model. The data model reflects all of the data that has been captured by the tool and any updates that are received while the tool is running.

When you first start the tool, all of the objects are empty. As messages are received by the tool, the appropriate objects are updated automatically. New objects are updated based on what's in the tool's data model.

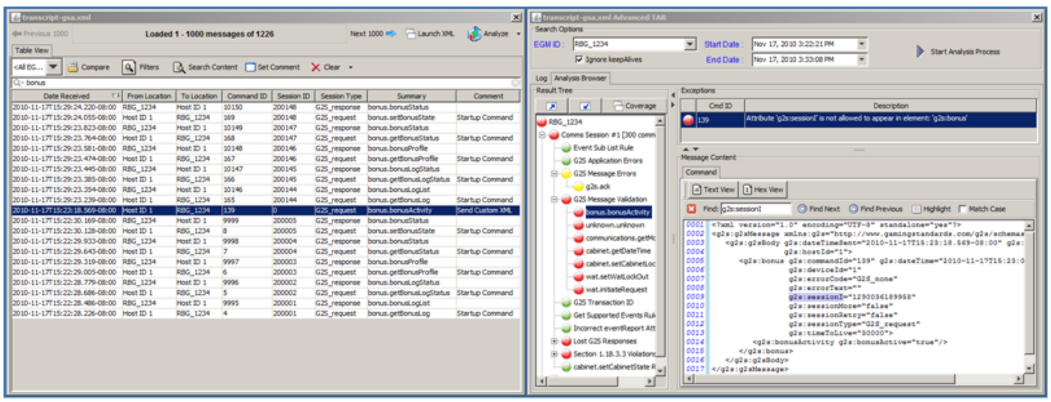
As a result, objects are immediately populated when dragged onto a layout, as long as the tool has been running for a while and has received the applicable command. The same behavior holds true when switching between desktops. If the command is in the data model, the object is automatically populated.

Object Window (5)

The object window displays the content of the selected file. By default, display tabs are created for the metadata, transcript and log files.

- **File Explorer -** Displays the content of the loaded file in a tree structure that you can browse. Click any file to display its content in the display window. You can also drag and drop debug log files into the panel to see them in the display window.
- To disable the automatic display of the transcript and log files, go to **Tools** > **Configure** > **Artifact Analysis Tool Options >** uncheck:
  - **Autoload Log File** and
  - **Autoload Message Transcript File**

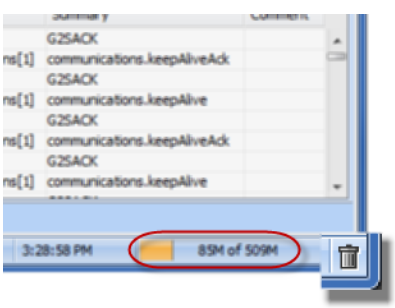
  Double-click file tabs to detach them from the display window. You can use this feature to compare the content of two files. For example:



Here, we're comparing the transcript with the Advanced Transcript Analyzer findings to see errors and the context in which the occurred.

About the Garbage Collector

The Garbage Collector lets you reclaim memory that is no longer in needed in order to improve tool performance. To use the Garbage Collector, click the garbage can ()icon in the lower right corner of the user interface.



RAS Configuration Overview

To get up and running on RAS, follow these steps.

> **Note:** RAS is ready to use upon installation, without any special configuration.
> However, as your work with the tool becomes more advanced, you may want to change the default option settings.
> For detailed information on RAS configuration options, see Customizing RAS.

1. Generate a Debug File in Another RadBlue Tool
2. Load a Debug File into RAS
3. Review Debug File Data

Generate Debug File in Another RadBlue Tool

The RadBlue System Tester (RST), RadBlue Protocol Analyzer (RPA) and RadBlue G2S Scope (RGS) all have an Export Debug option that lets you create a ZIP file containing files to help you troubleshooting G2S and S2S messaging issues.

1. Depending on the product, click the **Debug Log** tab or **G2S Engine** tab.
2. Click **Export Debug**.

   A **Debug-[product-x.x.x].zip** file is exported to your computer's desktop. This file is ready to be imported into RAS.

Load a Debug File into RAS

Once you export a **Debug_*.zip** file from any RadBlue tool, you can load the file into RAS.

By default, the transcript and error log files are displayed automatically. If the tool that generated the ZIP file uses a third-party schema, the RAS license must also support that schema.

If you have the Show Debug File Explorer option selected (**Configure** > **Artifact Analysis Tool Options**), you can view any file by selecting it. Note that files with a .jks extension are encrypted and cannot be viewed.

You can drag and drop individual files into the file explorer window to view them in RAS. Note that these files do not become part of the loaded ZIP file and are retained by RAS when you exit the tool.

1. Go to the **Import Debug File** section of the **Artifact Analysis Tool** layout.
2. Click **Import**.

3. Navigate to the **Debug*.zip** file you want to import.
4. Select the file, and click **Open**.
   A progress bar displays, so you can track the progress of the import.

If the loaded ZIP file was generated by version 13 or later of a RadBlue tool, RAS automatically determines the schema used. For older tool versions (or if you want to change the current schema):

1. Select the **metadata.html** tab.
2. Click the **GSA Schema** drop-down.
3. Select the schema in use when the ZIP file was generated.
4. Click **Reload Data**.

Review Debug File Data

The **Debug_*.zip** file contains logs, transcript and configuration files from the RadBlue tool from which it was exported. RAS lets you view HTML, TXT and XML files. Keystore (JKS) files are encrypted and cannot be viewed in RAS.

While the debug file contains lots of information for you to review, here are the files to start with when analyzing messaging data:

- **MetaData (metadata.html)**
  The metadata file provides information about the environment in which the data was generated - details from the product, protocol, schema, license and configuration. For version 12 and lower, the available metadata will vary.
  The metadata file displays automatically.
- **Transcript (transcript-gsa.g2t)**
  The transcript files show messages sent between two endpoints. Transcript files display in the transcript interface, allowing you to view, sort, and drill down into the message XML.
  From the transcript interface, you can generate the EGM Transcript Analysis report (Analyze > General) for a user-friendly summary of all G2S messages.
  The Advanced Transcript Analyzer can also be accessed through the transcript interface (Analyze > Advanced). This feature compares messages with various rules to ensure that they meet G2S protocol requirements. Messages with rule violation are flagged, and can be reviewed in detail.
- **Error Log (radblue-g2s-engine.txt)**
  The error log displays all informational, warning and critical errors that occurred in the tool prior to exporting the debug file.

About the Advanced Transcript Analyzer

The Advanced Transcript Analyzer lets you easily verify that commands being sent by the EGM are semantically valid. Visual cues let you easily discern which events have errors. You can then quickly drill down to the message content level to view the issue.

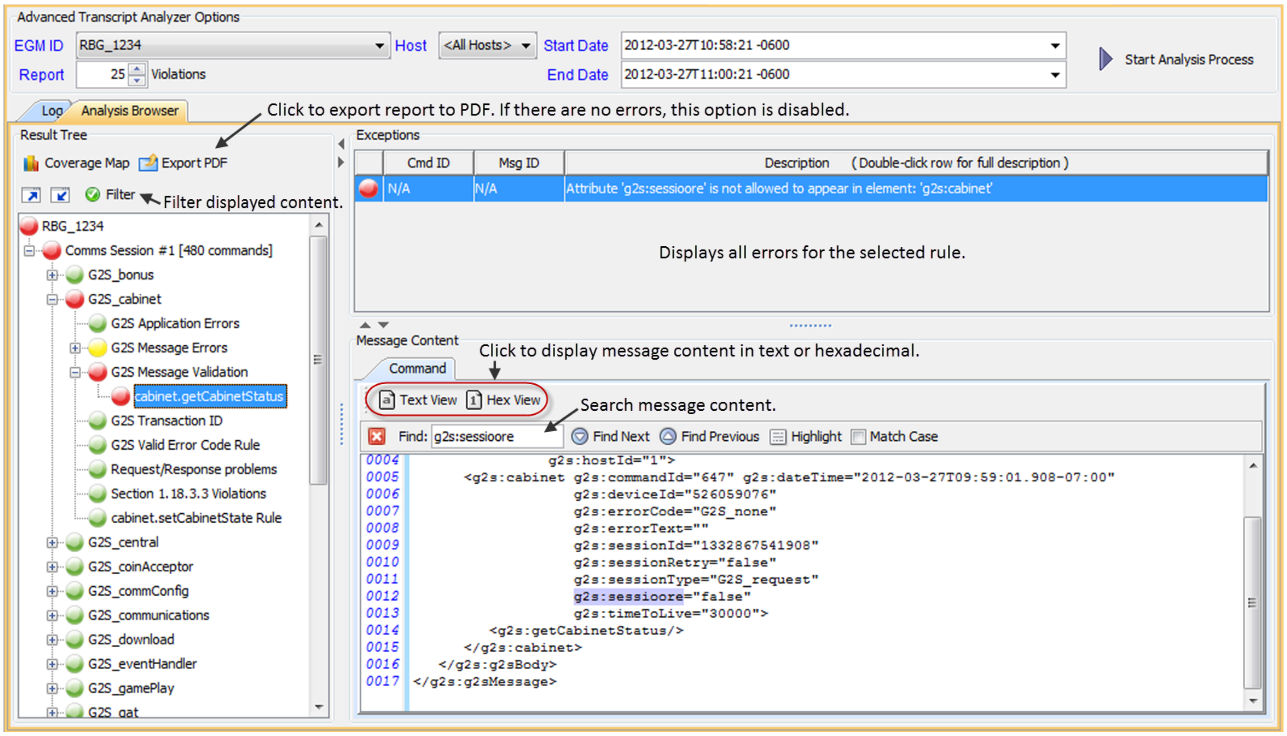
The Advanced Transcript Analyzer validates:

- the event subscription set by the EGM is accurate when compared to the subscription requested by the host.
- every `eventReport` command sent by the EGM to ensure that the EGM has included the associated data agreed upon in the event subscription phase.
- selected attributes in the `eventReport` command to ensure that they properly indicate state transitions as identified by the G2S protocol document.

The Advanced Transcript Analyzer makes it easy for EGM developers and testers to deliver high-quality G2S implementations - and we're continuing to add new areas of investigation (more "rules" to run against your G2S application) to give you the most comprehensive testing possible.

Review the Advanced Transcript Analyzer Layout

The Advanced Transcript Analyzer can be accessed by clicking **Analyze** > **Advanced** on the Transcript layout.



Errors and warnings are displayed in the **Results Tree** on the left-hand side of the screen. Click the plus sign to drill down to warnings and errors. To narrow the displayed results, click the **Filter** option and choose to display warnings and errors only or specific classes only.

When you click on a command with an error or warning, all violations associated with the command are displayed under **Exceptions**. Click an exception to display the message content, with the violation highlighted, in the **Message Content** section. The **Find** option lets you search the message content. Simply click inside the Find field and start typing.

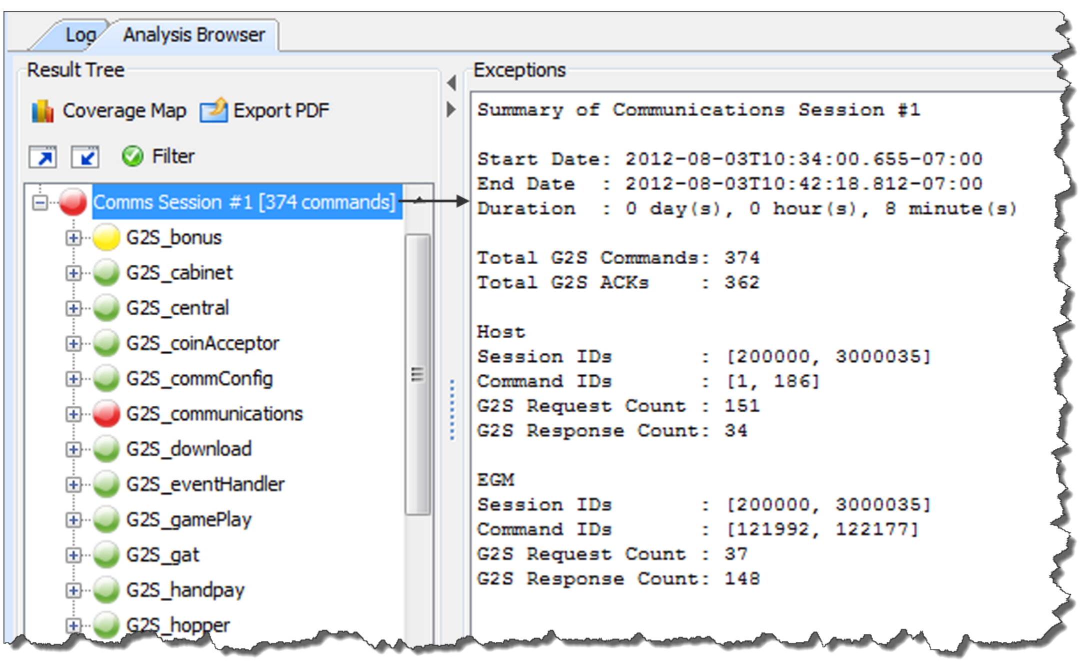
Get Started Analyzing Command Data

From the Transcript layout, click the **Analyze** drop-down arrow, and select **Advanced**.

1. Click the **EGM ID** drop-down arrow, and select the EGM data you want to analyze.
2. Click the Host drop-down arrow, and select the host data you want to analyze or select **All Hosts** to view all host data.
3. Click in the **Report** dialog box, and type or select the number of rule violations you want to view.
4. Select **Ignore keepAlives** if you do not want to include `keepAlive` commands in your analysis.
5. Enter the reporting period date and time in the **Start Date** and **End Date** fields. You can access a calendar to select the date and time by clicking the drop-down arrow. By default, the dates reflect the start and end of the Transcript. If you are using an older version of the Advanced Transcript Analyzer, the default will reflect the current date and time.
6. Click **Start Analysis Process**.

   Errors are organized by communication sessions (**Comms Session**). A Comms Session is the period of time between two `commsOnline` commands. Comms Sessions that do not have any significant data do not appear in the Advanced Transcript Analyzer.

   When you click to highlight a Comms Session, a summary of that Comms Session displays under Exceptions.



Under each **Comms Session**, errors are grouped by class and then by rules.

A colored status icon appears in front of each grouping to let you know if there are any errors in that group. The colors are defined as follows:

- **Green** - No errors or warnings. You're good to go.
- **Yellow** - Warning. One or more issues that are permissible in the schema, but may cause problems in your implementation.
- **Red** - Error. One or more G2S schema violations.

  Look for red and yellow status icons. (If you only see green - Congratulations! Close the tool and take a well-deserved break.)

6. Double-click a red- or yellow-status **Comms Session** to expand it.
7. Double-click a red- or yellow-status class to expand it.

   Note: The same error may appear more than once if it violates more than one rule.

8. Click a command to display those errors in the **Exceptions** section.
9. Resize the Exceptions list as needed by clicking and dragging the sizing bar at the bottom of the list.
10. Click any error in the **Exceptions** section.

    The message in which the error occurs is displayed in the **Message Cotentt** section directly below the Exceptions section. The issue within the message (for example, an invalid attribute value) is highlighted.

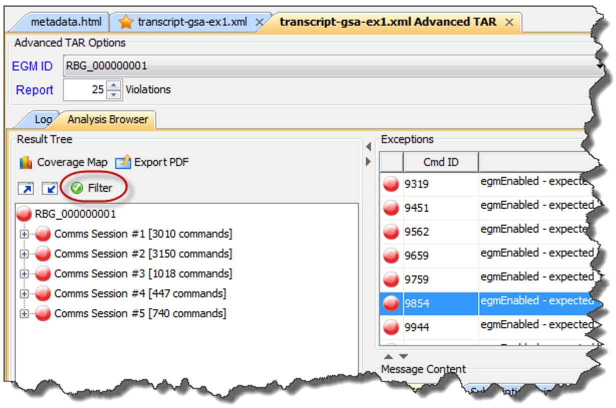
    You can use the **Find** option to search for keywords and character strings in the message content. To use the Find option, click inside the **Find** text box, and start typing. Characters in the first matching instance are highlighted in the message content as you type.

    - Click **Highlight** to highlight all matching characters.
    - Use **Find Next** and **Find Previous** to move from match to match within the message content.
    - Select **Match Case** to view only matches in title case as well as character.

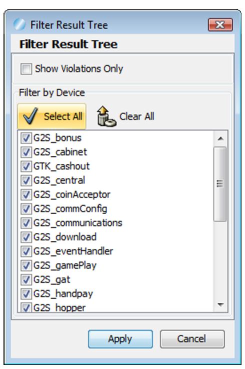
Filter Advanced Transcript Analysis Report

You can filter debug log data from the Advanced Transcript Analysis Report user interface through the Filter option. Choose to view only violations (errors and warnings) or all data for a specific class.

1. From the **transcript-gsa-ex1.xml Advanced TAR** tab, select the **Analysis Browser** tab.



2. Click **Filter**.

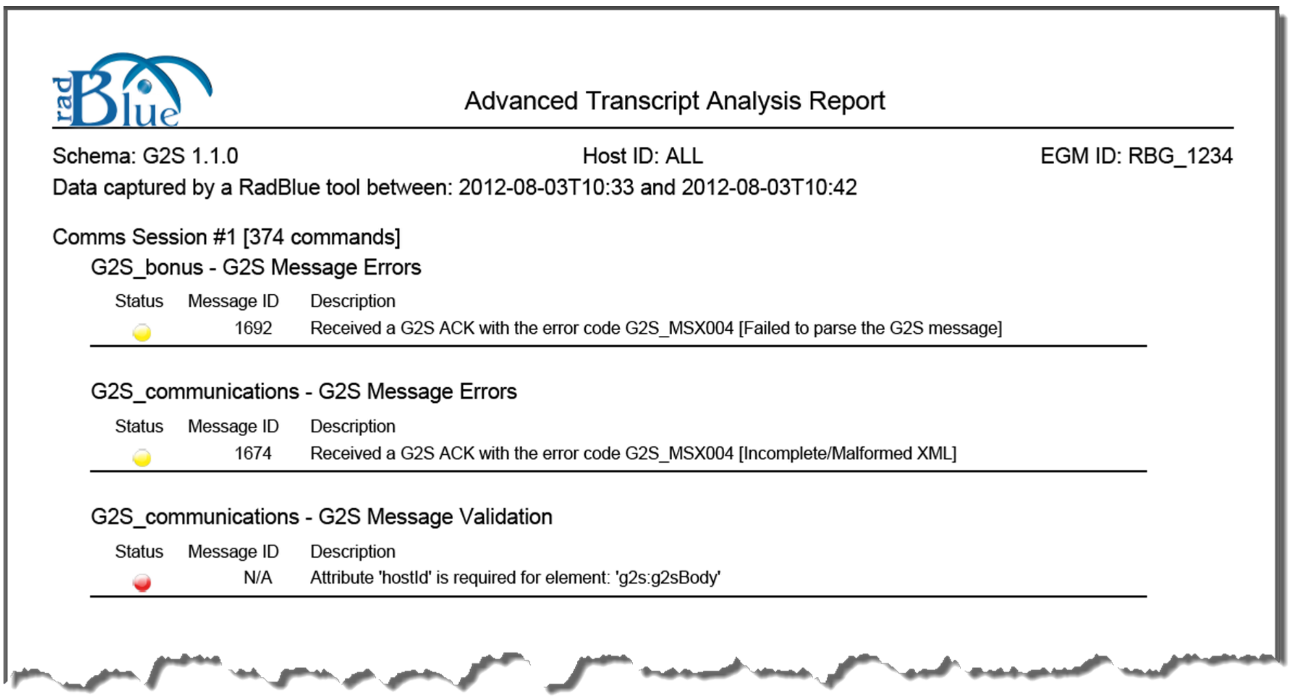


3. Modify the displayed data as required.
   - **Show Violations Only** - Select to display errors and warnings *only*.
   - **Filter by Device** - Select any class to display its data. To omit a class from display, clear its checkbox. By default, all classes are selected. Click **Select All** to select all classes or **Clear All** to clear all classes.
4. Click **Apply** to save and automatically apply your changes.

Generate a PDF of the Advanced Transcript Analysis Report

You can quickly generate a PDF file of all errors and warnings from the currently loaded debug log through the Advanced Transcript Analyzer interface. This option gives you a succinct overview of all issues and allows you to easily share your findings with others. You can choose to generate a report with all errors (complete) or a report that excludes duplicate errors (summary).

Note that any filters you apply to the Advanced Transcript Analyzer interface are reflected in the report.


Advanced Transcript Analysis Report

Schema: G2S 1.1.0 Host ID: ALL EGM ID: RBG_1234

Data captured by a RadBlue tool between: 2012-08-03T10:33 and 2012-08-03T10:42

Comms Session #1 [374 commands]

G2S_bonus - G2S Message Errors

Status	Message ID	Description
	1692	Received a G2S ACK with the error code G2S_MSX004 [Failed to parse the G2S message]

G2S_communications - G2S Message Errors

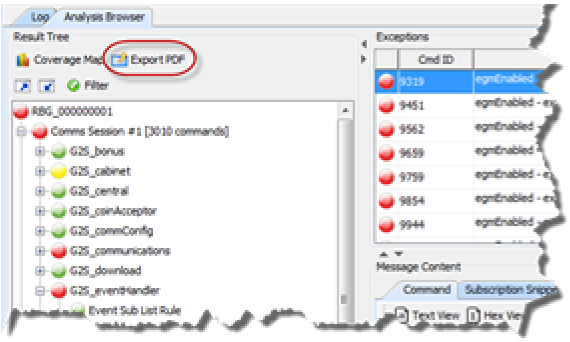
Status	Message ID	Description
	1674	Received a G2S ACK with the error code G2S_MSX004 [Incomplete/Malformed XML]

G2S_communications - G2S Message Validation

Status	Message ID	Description
	N/A	Attribute 'hostId' is required for element: 'g2s:g2sBody'

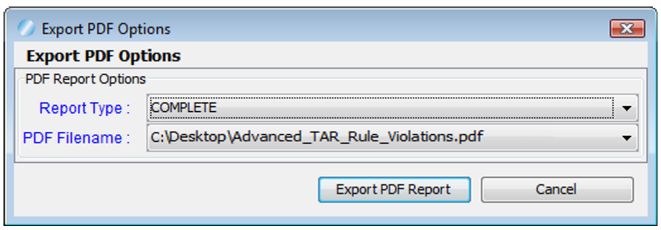
Sample Summary Report

1. From the Advanced Transcript Analyzer screen, select the **Analysis Browser** tab.

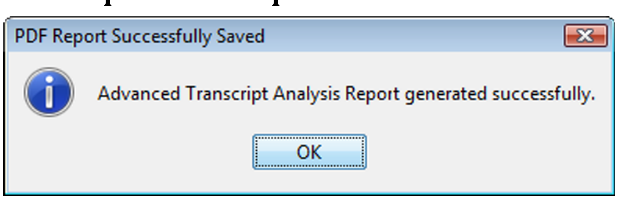


2. Under the **Result Tree**, click **Export PDF**.

   Note: If there are no errors in the imported debug log, the **Export PDF** option is disabled.



3. Click the **Report Type** drop-down arrow, and choose whether to generate all errors, including duplicate errors (**COMPLETE**), or one incident, of each error type, per comms session (**SUMMARY**).
4. Click the **PDF Filename** drop-down arrow.
5. Navigate to the location you want the file output to, and type a new file name as needed.
6. Click **Open**.
7. Click **Export PDF Report**.



8. Click **OK**.

   A PDF file with the name you entered is created in the specified location.

Working with the Message Transcript

The Message Transcript lets you examine individual commands sent from, or received by, the tool. The data displayed is extracted directly from received G2S or S2S messages (depending on the protocol you are using).

Filtering options offer you a variety of ways to view information. Each instance of the transcript within the tool can be filtered differently.

Depending on the version of the product debug.zip file you are importing, you will be able to view the Message Transcript through either the **transcript-gsa.xml** (for older versions) or **transcript2-gsa.g2t** (for newer versions). Note that the **transcript-gsa.xml** file does not support advanced features such as linking to the `g2sAck` message, corresponding request-response pair command or the associated SOAP message when viewing the details of a command.

At the top of the Transcript screen are several options:

- **EGM Selector** - Click the drop-down arrow, and select to view the transcript information for a specific EGM, all EGMs or multiple EGMs (CTRL+click).
- **Host Selector** - Click the drop-down arrow, and select to view the transcript information for a specific host system or all host systems.
- **Compare** - View the details of any two messages side-by-side.
- **Filters** - This control allows you to select which commands are to be included on the display. Make any changes, and then press **OK** to have the tool update the display. This control currently resets when a new data set is loaded.
- **Search Content** - Search through the contents of all displayed messages in this transcript instance for the entered text pattern (case sensitive). Clicking on a row in the returned list gives you access to the HTTP header and message contents of the selected message.
- **Set Comment** - Adds a comment to the Comment column of the selected message.
- **Clear Display** - Clears the displayed messages in this instance of the transcript control.
- **Clear Database** - Clears all records of this type in the database for this instance of the tool.
- **Analyze** - *Available for G2S messaging only*. Provides a user-friendly summary of transcript messages.

The size limit of the Message Transcript file is 1 GB. Once the limit is reached, older records are purged.

A Note on Converting Time in the Message Transcript

If the tool receives a date/time with the seconds parsed greater than milliseconds, the time/date is truncated to milliseconds in the transcripts. For example:

The date/time **`2013-04-30T08:03:46.1234567890-07:00`**

displays as **`2013-04-30T08:03:46.123-07:00`** in the transcript.

You can view the longer date/time format on the **XML** tab of the command object. To access the command object, double-click any message in the transcript.

Transcript Column Headers

The following columns are available in the transcript:

- **Command ID** - Command ID associated with message.
- **Comment** - Information entered by the user about a specific message. This field is *not* part of the actual message. Comments exist *only* in the tool in which they are entered.
- **Date Received** - Date and time message was received by the tool.
- **Device** - Class and identifier of device where the message is being sent to or from.
- **Event Code** - Code for associated event.
- **Event Date/Time** - Date and time that event was sent.
- **Event ID** - Identifier for associated event.
- **Event Text** - Description of associated event.
- **From Location** - Identifier of entity (for example, EGM or host) that sent the message.
- **Message ID** - Unique identifier associated with the message.
- **Session ID** - Session ID associated with message.
- **Session Type** - Indicates how the message should be processed: as a request, response or notification.
- **State** - Message states are: **Standard** (G2S message with no errors), **Error** (G2S message with errors), **Comment** (Comment made in CVT Message Transcript) and **Special Error** (CVT test case error). Sorting the Message Transcript column on State, which you can do by clicking the column header, lets you quickly identify messages with errors and comments.
- **Summary** - Actual G2S or S2S command within the message. If more than one command is sent in a message, only the first command appears in the transcript. However, all commands with the message are displayed in the detail view, which you can access by double-clicking the message.

  For `G2S_GPE112 (Game Ended)` events, the outcome of game play (the *playResult* attribute) is shown in the Summary column in brackets (for example, **eventReport:G2S_GPE112 - Game Ended [Lost]**).

- **To Location -** Identifier of the intended target of the message.

You can slide the columns around to rearrange their order. To move a column header, left-click and hold while you move the column to it's new location. You can also click any column to re-sort it, or use CTRL + left-click to sort on multiple columns.

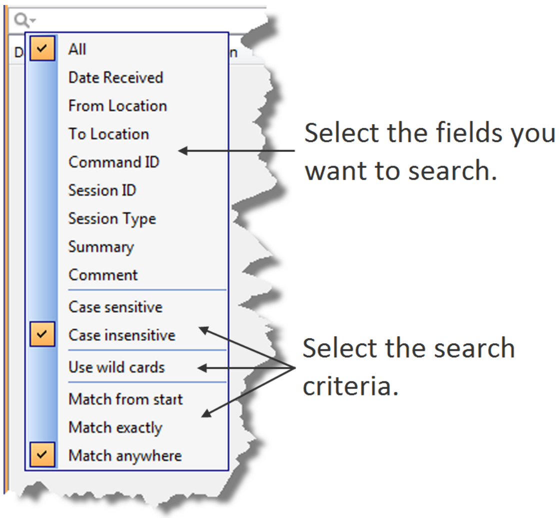
If you right-click on a column header, a menu displays that allows you to automatically resize one or all columns (based on the displayed data in the columns), as well as to indicate which columns you would like to display.

Clicking on any column header causes the data to be sorted using that header. Click once to sort the column in ascending order. Click a again to sort the column in descending order. The third click clears the sort.

If you want to sort on multiple columns, use the CTRL key when clicking the column headers.

Filter Transcript Messages Using the Quick Filter

Just below the Transcript options is a magnifying glass and entry field that allows you to filter messages based on entered data. To filter the displayed data, click inside the entry field and start typing. The displayed data is automatically filtered as you type.



Clicking on the magnifying glass gives you a menu that you can use to provide additional selection criteria.

This powerful tool allows you to immediately view any set of messages that you can imagine, limited only by the data displayed in the columns.

What Are You Looking for in the Transcript?

- *Are the correct commands being sent?*
  For example, is the `commsOnLine` command being sent during startup?
- *Are messages being acknowledged* (for example, with a `g2sAck` as well as a message acknowledgements?
- *Are there correct request-response pairs?*
  For example, if a `communications.getDescriptor` command is sent (outbound), a corresponding `communications.descriptorList` command should be received (inbound). Note that the Session ID is the same for the request and response.

Compare Messages in the Transcript

The Compare option lets you view the details of two messages, side-by-side. You can choose to view the message content in three different formats: in a user-friendly format, XML format, and XML format with the differences between the two messages highlighted in **red**.

The Compare option is available when you view the Event Report as well as in the main Message Transcript.

1. While holding down the CTRL key, click the two messages you want to compare.
2. Click **Compare**.

   The selected messages display side-by-side, allowing you to scroll through the details of each message to compare them.

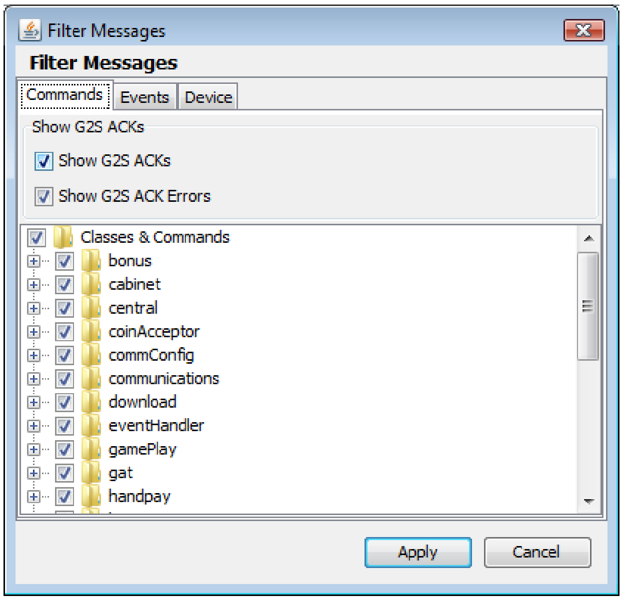
   The **Command** tab displays command information in an easy-to-read format along with any meters.

4. Click **View XML** to view the XML for the messages.
5. Click **Diff** to view the XML with the changes highlighted in red.
6. Click **OK** to close the compare view.

Filter Messages in the Transcript

The Filters option in the Transcript lets you select the commands, events or devices you want to display in the transcript window. Use this option to narrow the transcript view to just the messages that interest you. The excluded data is not deleted from the transcript database; it is just not displayed and can always be included again.

1. Open the **transcript2-gsa.g2t** file (located under **logs** in the file explorer), select the **transcript2-gsa.g2t** tab.
2. Click **Filters**. The Filter Messages screen displays with three tabs: Commands, Events and Device.



3. On each tab, select the check box of the commands, events and devices you want to display in the Transcript, and clear the check box of the commands, events and devices you want to hide.

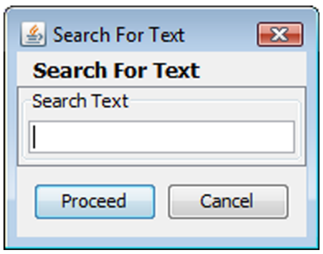
   By default, the `g2sAck` command is cleared (does not display).
4. Click **OK**.

   Your changes take effect immediately.

Search the Content of Transcript Messages

The Search Content option lets you search transcript message content for keywords.

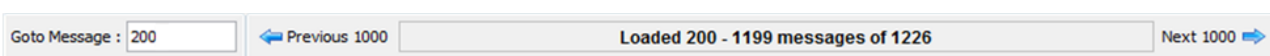
1. Open the **transcript2-gsa.g2t** file (located under **logs** in the file explorer), select the **transcript2-gsa.g2t** tab.
2. Click **Search Content**.



3. Type the keywords for your search, and click **Proceed**.
   The **Transcript Search Results** screen displays all conforming messages.
4. To view the details of a message, double-click the message.
5. Click **Back** to close the Transcript Search Results window.

Scroll Through Transcript Messages in RAS

When using the RadBlue Analysis Suite (RAS), you load large transcript files into the Transcript viewer. You can move quickly through the messages by using the toolbar located at the top of the Transcript viewer.



To scroll forward through loaded Transcript messages, click **Next 1000**. To scroll backward through the messages, click **Previous 1000**.

To jump to a group of messages, type a row number in the **Goto Message** field, and press **Enter**. For example, if you want to view the messages halfway through a 10,000-message Transcript, type **5000** and press **Enter**.

View Command Objects through the Transcript

A command object is a graphical representation of a command (as opposed to viewing the command in XML format). You can view command objects on the message details screen. List information for complex commands displays in tabs to the right of the command attributes. From the message details screen you can link to the `g2sAck` message, corresponding request-response pair command or to the associated SOAP message for any command. Attributes that are deprecated in G2S 2.1 display in a strike-through font (for example, ~~Enable Money Out~~). Comments associated with the message are displayed next to the Command and View XML tabs.

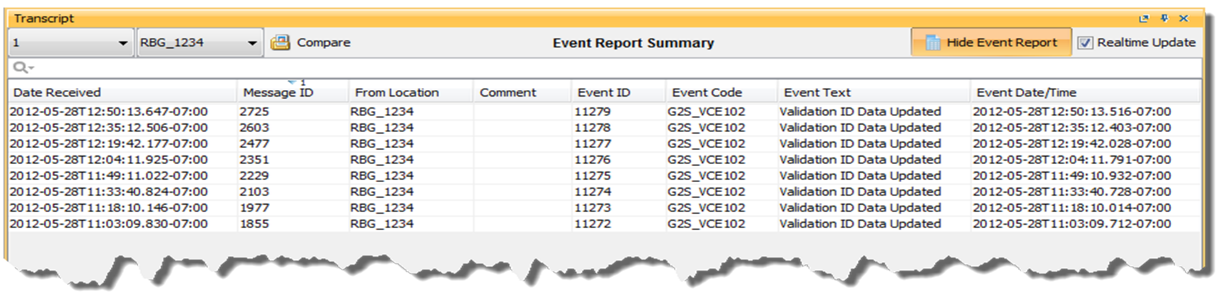
To display a message's command object:

1. Double-click the command you want to view.
2. Click the **Command** tab.
3. Click **Previous** and **Next** to navigate through the transcript list while in the message detail view.
4. Click **g2sAck** to view the corresponding acknowledgment to the selected command.
5. Click **Req-Resp** to view the corresponding command in the request-response pair.
6. Click the **test case identifier** to launch a browser window with information from the *CVT Test Case Encyclopedia* for that test case.
7. Click **OK** to return to the transcript.

View the Event Report

The Event Report displays all events sent and received by the tool. You can toggle between the Transcript view and the event view by clicking **Show/Hide Event Report**. The Compare option lets you compare two event messages.

1. Open the **transcript2-gsa.g2t** file (located under **logs** in the file explorer), select the **transcript2-gsa.g2t** tab.
2. Click **Show Event Report**.



- **Date Received** - Date and time message was received by the tool.
- **Event Code** - Code associated with event (for example, `G2S_VCE102`).
- **Event Date/Time** - Date and time message was received by the tool.
- **Event ID** - Event identifier.
- **Event Text** - Text of associated event code (for example, Validation ID Data Updated).
- **From Location** - Identifier of entity (for example, EGM or host) that sent the event.
- **Message ID** - Message identifier.

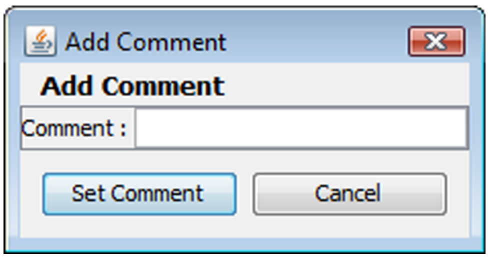
3. Double-click any record to view the details of the message in which the event was sent.
4. Click **OK** to close the message detail screen.
5. Click **Hide Event Report** to return to the Transcript view.

Add a Comment to a Transcript Message

The Set Comment option lets you add a comment to any message in the transcript. Comments are part of the transcript only. Messages are not modified by comments.

> **Note:** Comments associated with a message are displayed next to the Command and View XML tabs when you view the message details.

1. Single-click the message to highlight it.
2. Click **Set Comment**.



3. Type your comment, and click **Set Comment**.

   The message is highlighted in blue, and the comment appears in the Comment field.

Export Transcript Entries

The Export to Transcript File option lets you quickly export all or select Transcript entries for review. This file can then be imported into the RadBlue Analysis Suite (RAS) for further analysis.

This option is useful when an issue has been narrowed down to a limited set of commands. Rather than exporting a large set of troubleshooting data using the Export Debug option on the Debug tab, you can send only the specific command(s) involved in the issue.

You can import the Transcript file directly into RAS by using the Import option.

1. Open the **transcript2-gsa.g2t** file (located under **logs** in the file explorer), select the **transcript2-gsa.g2t** tab.
2. Select the Transcript records you want to export.
   There are several ways to select records:
   a. Click to select a single record.
   b. CTRL+click to select multiple records.
   c. SHIFT+click to select a block of records. Click once on the first record and once on the last record to highlight the entire block.
   d. For another way to select a block of records, right-click and hold on the first row. Then, drag the cursor down the screen, highlighting each row as you go, until you come to the last row you want to export.
   e. CTRL+a to select all Transcript records.
3. Right-click inside the Transcript, and select **Export to Transcript File**.
4. Type a name for the file.
5. Click the Files of Type drop-down arrow, and select either a **S2S Transcript (*.s2t)** or a **G2S Transcript (*.g2)** file extension. Your selection corresponds to the protocol you are using with the tool (either G2S or S2S).
6. Click **Save**.
   A confirmation message displays with the number of records saved in the file.
7. Click **OK**.

Clear the Transcript Display

The Clear Display option lets you clear all transcript messages from the table. This option *does not* remove messages from the transcript database.

Click **Clear > Display** to remove all messages from the current view.

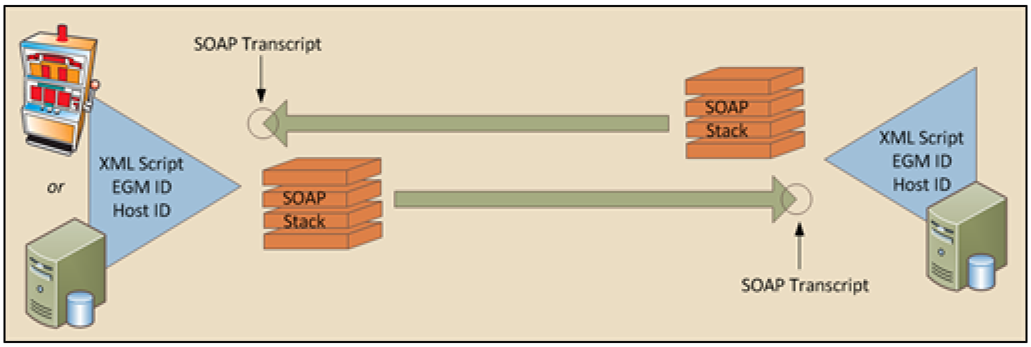
Clear the Transcript Database

The Clear Database option lets you remove all transcript records from the transcript database, clears transcript messages from the table and clears the EGM selector list. Note that this action cannot be undone.

1. Click **Clear > Database**.
2. Click **Yes** to remove all data from the transcript database, or click **No** to return to the transcript without clearing the database.

About SOAP Messages

Simple Object Access Protocol (SOAP) is an XML-based protocol for transporting information in a decentralized, distributed environment. A SOAP message consists of a mandatory SOAP envelope, an optional SOAP header, and a mandatory SOAP body. G2S or S2S message content is contained within the body.



SOAP message flow.

- **Envelope** - Top element of the XML document representing the message.
- **Header** - Generic mechanism for adding features to a SOAP message in a decentralized manner without prior agreement between the communicating parties. SOAP defines a few attributes that can be used to indicate who should deal with a feature and whether it is optional or mandatory.
- **Body** - Container for mandatory information intended for the ultimate recipient of the message. SOAP defines one element for the body, which is the Fault element used for reporting errors.

The SOAP Transcript lets you view SOAP-encapsulated messages as they come off the SOAP stack.

Working with the SOAP Transcript

The SOAP Transcript lets you view inbound SOAP-encapsulated messages as they come off the SOAP stack. Here, you can see details of the SOAP wrapper around the messages plus the messages themselves. Primarily, this transcript shows you how the endpoint (for example, an EGM or host) constructed the SOAP around the message. It is used to debug connection issues at startup. SOAP faults display in the SOAP Transcript and are noted in the Summary column as *SOAP Exceptions*.

The SOAP Transcript has several options that allow you to view SOAP information. Use the detail view to see the SOAP wrapper and the message it contains.

At the top of the SOAP Transcript screen are several options:

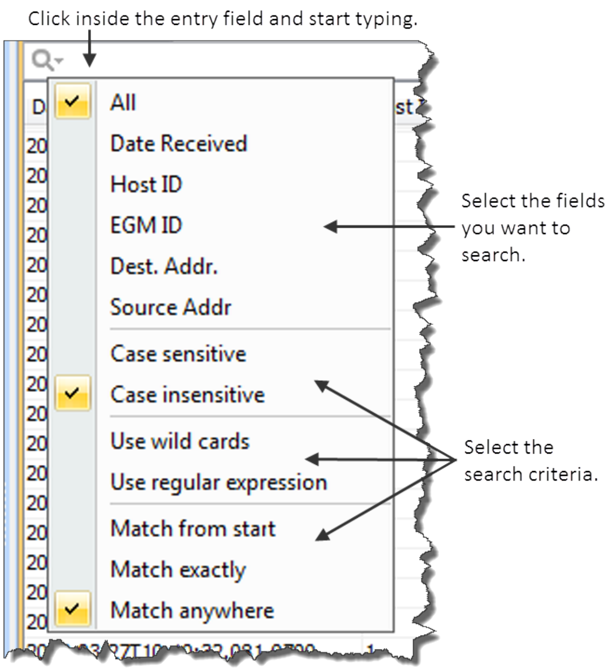
- **Go to Message** - Type the number of the message you want to display. Click **Next** and **Previous** to display SOAP messages, one thousand at a time.
- **View XML** - Click to highlight the message you want to view, and click **View XML**. The message XML is displayed in a browser.
- **Search Content** - Search through the contents of all displayed messages in this transcript instance for the entered text pattern (case sensitive). Clicking on a row in the returned list gives you access to the HTTP header and message contents of the selected message. See Search the Content of a SOAP Message.
- **Clear Display** - Clears the displayed messages in this instance of the Transcript. See Clear the SOAP Transcript Display.
- **Clear DB** - Clears all records of this type in the database for this instance of the tool. See Clear the SOAP Transcript Database.

The size limit of the SOAP Transcript is 4MB. If this limit is reached, messages beyond the limit are not stored in the transcript database, and an informational message displays in the debug log.

For more information on SOAP messages, see About SOAP Messages.

Filter SOAP Transcript Messages Using the Quick Filter

Just below the SOAP Transcript options is a magnifying glass and entry field that allows you to filter messages based on entered data. To filter the displayed data, click inside the entry field and start typing. The displayed data is automatically filtered as you type.



Clicking on the magnifying glass gives you a menu that you can use to provide additional selection criteria.

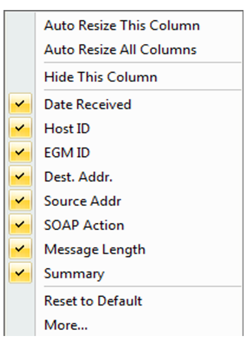
This powerful tool allows you to immediately view any set of messages that you can imagine, limited only by the data displayed in the columns.

SOAP Transcript Column Headers

The following columns are available in the SOAP Transcript:

- **Date Received** - Date and time message was received by the tool.
- **Host ID** - Unique identifier of the host.
- **EGM ID** - Unique identifier of the EGM.
- **Dest. Addr.** - Destination Address. URL of the application that the message is sent to.
- **Source Addr** - Source Address. URL of the application that the message was sent from.
- **SOAP Action** - HTTP header value from the SOAP message. If you are having an issue with the SOAP connection, look at the SOAP Action column and verify that the values are consistent with GSA guidelines.
- **Message Length** - Number of bytes in the SOAP message.
- **Summary** - Actual G2S or S2S command within the SOAP message. If more than one command is sent in a message, only the first command appears in the transcript. However, all commands with the message are displayed in the detail view, which you can access by double-clicking the message.

You can slide the columns around to rearrange their order. To move a column header, left-click and hold while you move the column to it's new location. You can also click any column to re-sort it, or use CTRL + left-click to sort on multiple columns.



If you right-click on a column header, a menu displays that allows you to automatically resize one or all columns (based on the displayed data in the columns), as well as to indicate which columns you would like to display.

Clicking on any column header causes the data to be sorted using that header. Click once to sort the column in ascending order. Click a again to sort the column in descending order. The third click clears the sort.

If you want to sort on multiple columns, use the CTRL key when clicking the column headers.

What Are You Looking for in the SOAP Transcript?

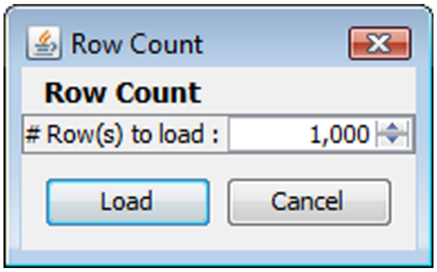
The SOAP Transcript lets you view SOAP-encapsulated messages, as they come off the SOAP stack. Primarily, this transcript shows you how the EGM, Central server or Edge server constructs the SOAP around the message. Use the detail view to see the SOAP wrapper and the message it contains.

Load Messages into the SOAP Transcript

The Load option loads SOAP messages from the tool's database that you can work with in the SOAP Transcript.

If you are using RGS or RPA, be the correct EGM is selected.

1. Click **Load** to load SOAP messages from the database.



2. Enter the number of messages (rows) you want to view by using the arrows or by typing the number into the combo box.
3. Click **Load**.

Receive Real-Time Data in the SOAP Transcript

If you select Realtime Update, the screen updates dynamically as messages are processed by the tool. However, real-time updating may cause application slowdown.

View the Content of a SOAP Message

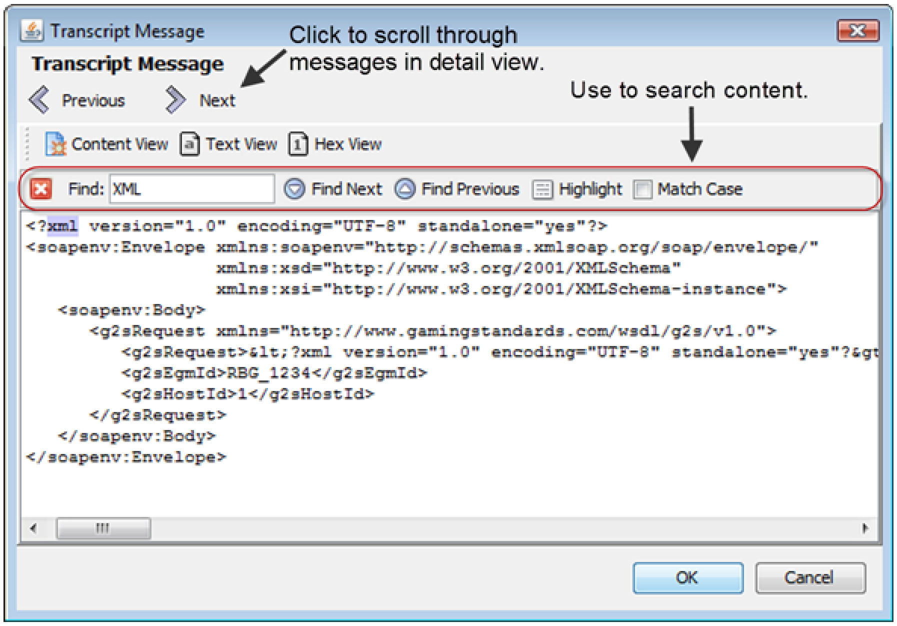
By double-clicking on any row, you can examine the details of the SOAP message. The SOAP message detail view lets you switch between a text view of the SOAP wrapper, a hexadecimal view of the SOAP wrapper and the message's XML content. You can also browse through the SOAP transcript list while in detail view.

The Find option lets you search for text strings and keywords within the message. Simply click in the Find text box and start typing. The tool instantly jumps to the first match of the entered string. This feature becomes very handy when you want to find data in large XML messages.

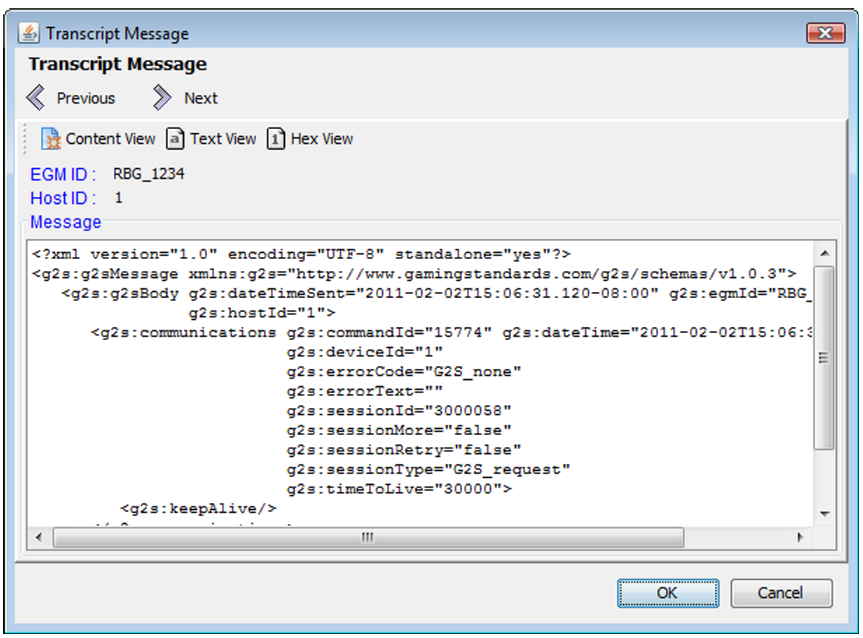
- Use **Find Next** and **Find Previous** to move to the next or previous match of the entered string.
- Click **Highlight** to highlight all instances of the text string or keyword in the message.
- Select **Match Case** if you want to find only a text string or keyword with a specific case (capital or lower case letters).

To view the content of a SOAP message:

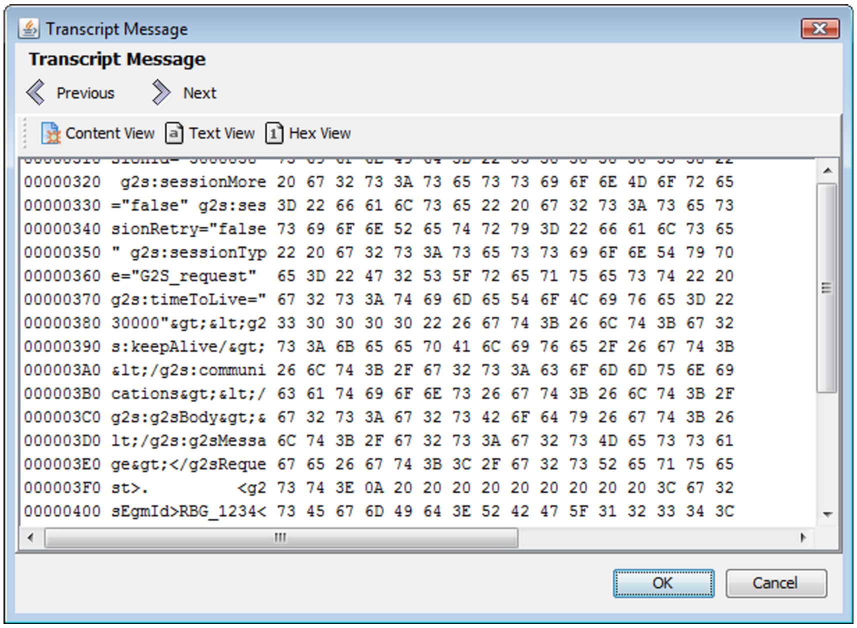
1. Double-click the message you want to view.
2. Click **Text View** to see the SOAP message details as text.



3. Click **Content View** to view the message content.



4. Click **Hex View** to see the SOAP message details as hexadecimal.

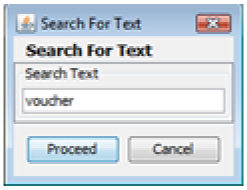


5. Click **OK** to return to the SOAP Transcript. Click **Previous** and **Next** to navigate through the SOAP transcript list while in message detail view.
6. Click **OK** to return to the SOAP transcript.

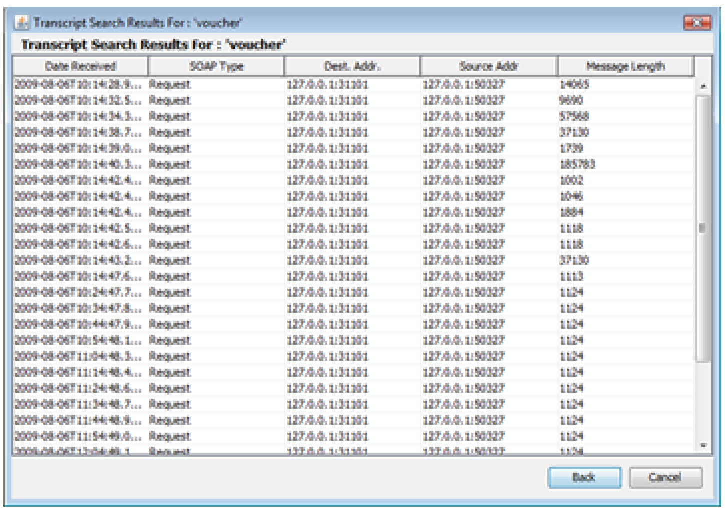
Search the Content of a SOAP Message

The Search Content option lets you search for keywords within all messages currently displayed in the SOAP transcript.

1. Type the information you want to search on.



2. Click **Proceed**, or click **Cancel** to return to the SOAP Transcript. A pop-up window displays all messages containing the text you entered.



3. Click any message to display the SOAP envelope along with the XML message text.
4. Click **Back** to return to the SOAP Transcript.

Clear the SOAP Transcript Display

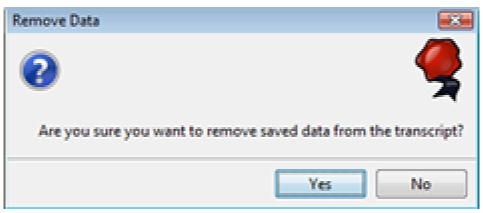
The Clear Display option lets you clear all messages from the SOAP transcript. This option does not remove messages from the SOAP Transcript database.

Click **Clear Display** to remove all messages from the current view.

Clear the SOAP Transcript Database

The Clear DB option lets you remove all messages from the SOAP Transcript database. Note that this action cannot be undone.

1. Click **Clear DB**.



2. Click **Yes** to remove all data from the SOAP Transcript database, or click **No** to return to the Transcript without clearing the database.

Working with the API Transcript

The API Transcript lets you examine individual commands sent from, or received by, the RGE. The data displayed is extracted directly from received G2S messages.

A quick filter option lets you narrow the displayed messages by the typed characters, commands or words. You can clear the Transcript display by clicking the **Clear** option.

Use the EGM Selector to clear any selected EGM ID if you want RGE to stop adding that EGM to the displayed EGMs in the API Transcript.

> **Note:** The EGM Selector affects what is displayed in the RGE user interface *only*. EGMs continue to communicate with RGE whether they are displayed in the user interface or not. Displaying fewer EGMs may improve user interface performance.

The size limit of the API Transcript file is 400 MB. Once that limit is reached, older records are purged.

API Transcript Column Headers

The following columns are available in the transcript:

- **Comment -** Information entered by the user about a specific message. This field is *not* part of the actual message. Comments exist *only* in the tool in which they are entered.
- **Date Received -** Date and time message was received by the tool.
- **EGM ID** - EGM identifier.
- **From -** Identifier of entity (for example, EGM or host) that sent the message.
- **Message ID -** Identifier associated with message.
- **Summary -** Actual G2S or S2S command within the message. If more than one command is sent in a message, only the first command appears in the transcript. However, all commands with the message are displayed in the detail view, which you can access by double-clicking the message.
- **To -** Identifier of the intended target of the message.
- **Transport Info -** Displays the URL for the associated message. For outbound messages, the Transport Info is the RGE sending the message; For inbound messages, it is the URL that RGE received the message on.

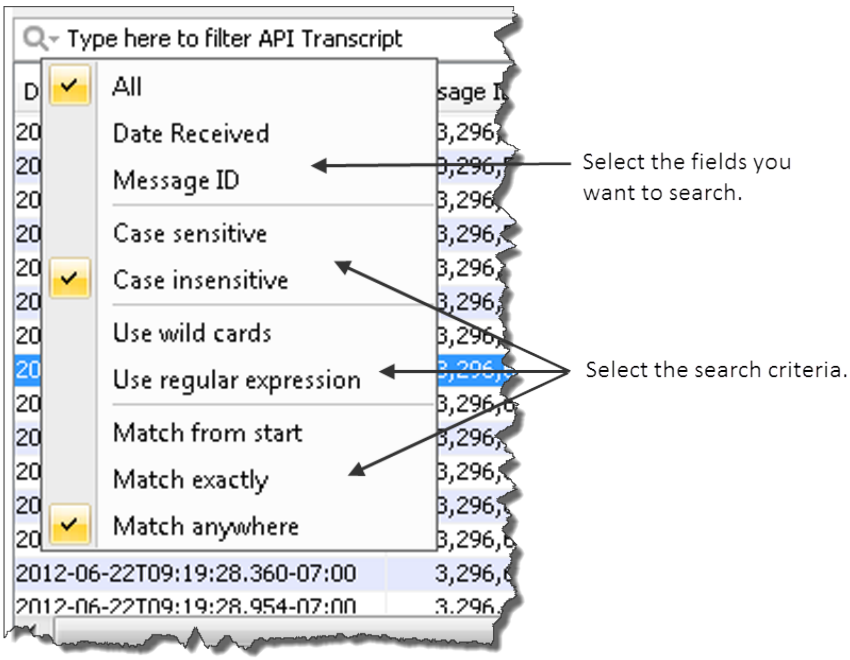
You can slide the columns around to rearrange their order. To move a column header, left-click and hold while you move the column to it's new location. You can also click any column to re-sort it, or use CTRL + left-click to sort on multiple columns.

If you right-click on a column header, a menu displays that allows you to automatically resize one or all columns (based on the displayed data in the columns), as well as to indicate which columns you would like to display.

Clicking on any column header causes the data to be sorted using that header. Click once to sort the column in ascending order. Click a again to sort the column in descending order. The third click clears the sort.

Filter Transcript Messages Using the Quick Filter

Just below the API Transcript options is a magnifying glass and entry field that allows you to filter messages based on entered data. To filter the displayed data, click inside the entry field and start typing. The displayed data is automatically filtered as you type.

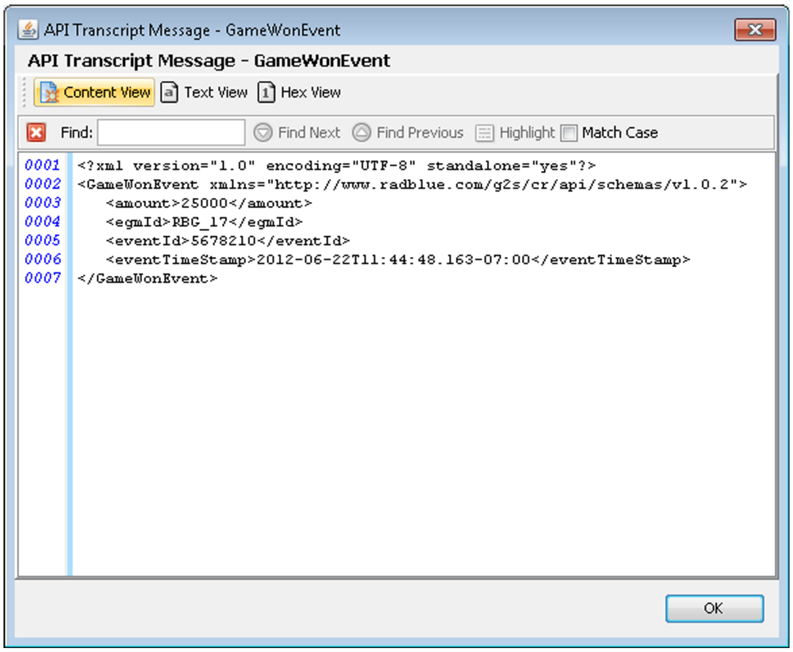


Clicking on the magnifying glass gives you a menu that you can use to provide additional selection criteria.

This powerful tool allows you to immediately view any set of messages that you can imagine, limited only by the data displayed in the columns.

View Message Details

By double-clicking on any row, you can examine the details of the command in that row. The message detail view lets you switch between a content view (*for future use*), a text view and a hexadecimal view.



In text view, you can use the **Find** option to search for specific text strings. As you type, the first instance of the matching character(s) are highlighted in the message text. You then have the following options:

- Click **Find Next** and **Find Previous** to move between instances of matching text.
- Click Highlight to highlight all instances of matching text.
- Select **Match Case** to highlight text that matches *exactly*.

Click **OK** to exit the screen and return to the API Transcript.

Clear the API Transcript Display

The Clear option lets you clear all messages from the transcript. This option *does not* remove messages from the transcript database.

Click **Clear** to remove all messages from the current view.

About RAS Configuration Options

While RAS is configured to work "out of the box," you can use the configuration options to customize it for you specific analysis needs. All configuration options can be accessed by clicking Configure on the menu bar at the top of the main screen.

Configuration options are grouped as follows:

- Desktop Options - Options that affect the amount of information loaded into transcript and log displays, which may affect performance.
- Engine Options - Configure the initial and maximum amount of memory used by RAS for processing data.
- Artifact Analysis Tool Options - Options that affect which information is displayed automatically in the tool when you load a ZIP file.
- License Manager - Displays information about the currently loaded license and allows you to load a new licenses into the tool.

Configuring Desktop Options

Desktop Options define default application views, which are comprised of one or more available objects. This screen also allows you to define the amount of data displayed in specific transcripts and views.

Default Desktop

This section lets you choose the *desktop* loaded at startup (Default Desktop). A desktop is a collection of layouts (for example, the Transcripts layout), with each layout containing one or more objects. Each desktop contains layouts specific to the specified protocol and license features.

To change the desktop:

1. Go to: **Tools** > **Configure** > **Desktop Options**
2. At **Default Desktop** select the desktop you want to use.
3. Click **OK**.
4. Restart the tool.

Start in Full-Screen Mode

This option lets you choose whether you want RAS to start up at full-screen size or a smaller screen size. Clear this option if you do not want RAS to start up at full-screen size. By default, this option is selected.

Transcript and Log Messages Displayed

This section allows you to specify the amount of data used for various transcripts and views. Note that increasing data size increases the memory used by the tool.

- **Max G2S Transcript Messages -** Maximum number of Message Transcript messages displayed.
- **Max Soap Transcript Messages -** Maximum number of SOAP Transcript messages displayed.
- **Max Logger Lines -** Maximum number of lines in the Debug Console stored in the database.
- **Max Watcher Data Versions -** Maximum number of matches for each Watchable stored in the database.

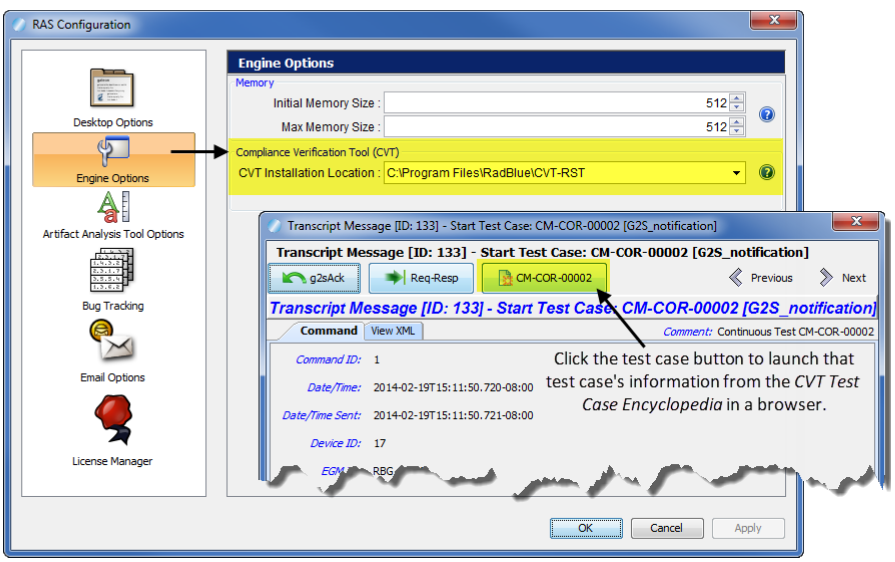
Configuring RAS Engine Options

From Engine Options, you can configure the initial and maximum amount of memory used by RAS for processing data, and edit the CVT network location so you can view CVT test case information.

To configure memory in RAS, simply type or select the amount of memory, in megabytes, that is required for the data you are importing. The default for both fields is **512 megabytes**.

> **Note:** To determine how much memory is required, look at the size of the ZIP files you are importing. For example, if you are importing large amounts of data into RAS, you may want to raise the memory. On the other hand, if you are running RAS on a smaller computer, you may want to lower the memory allocated to RAS.

To configure the network location of the CVT installation, click the **CVT Installation Location** drop-down arrow, and navigate to the CVT installation directory. Once you select the network location and restart RAS, you'll be able to launch test case information from the *CVT Test Case Encyclopedia* from the Message Transcript's message details screen.



Configuring Artifact Analysis Tool Options

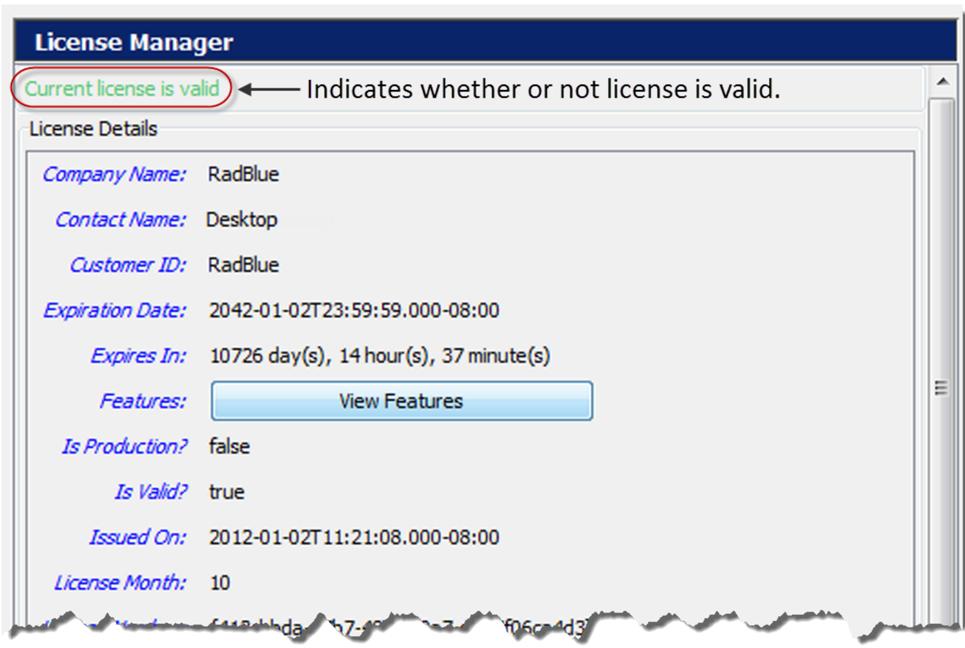
Artifact Analysis Tool Options let you configure what and how information is displayed on the Artifact Analysis Tool tab. You can choose whether to display ZIP file content in a tree structure that you can then browse. You can also choose to automatically display the transcript file and debug log in subtabs for easy viewing.

Note that if all three options are cleared, you will not be able to access the uploaded content.

- **Show Debug File Explorer on Restart -** Select this option to display ZIP file content in a tree structure that you can browse. By default, this option is cleared.
- **Autoload Message Transcript File on Import -** Select this option to automatically display the loaded message transcript file in a subtab on the Artifact Analysis Tool. By default, this option is selected.
- **Autoload SOAP Transcript File on Import -** Select this option to automatically display the loaded SOAP transcript file in a subtab on the Artifact Analysis Tool. By default, this option is *not* selected.
- **Autoload Log File on Import** - Select this option to automatically display the loaded debug log file in a subtab on the Artifact Analysis Tool. By default, this option is selected.
- **Autoload Files on Restart -** Select to autoload the transcript file, SOAP transcript file and log file when the tool restarts. Note that the corresponding **Autoload . . . on Import** option must also be selected for the file to load.
- **Use Database for Processing Transcript Files -** Select this option to improve tool performance when processing large transcript files. By default, this option is *not* selected.

Configure License Manager Options

License Manager displays current licensing information, including the product features available under the license. The New License File option allows you to upload a new license file for the product.



License Details

- **Company Name** - Name of organization that purchased this license.
- **Contact Name** - Name of person license was issued to.
- **Customer ID** - Unique company identifier.
- **Expiration Date** - Date that tool becomes invalid.
- **Expires In** - Time left until license expiration.
- **Features** - Click **View Features** to see which features are enabled for your license.
- **Is Production?** - **True** indicates that the license is a fully licensed version.
- **Is Valid?** - **True** indicates that the license is valid; **False** indicates that the license is invalid.
- **Issued On** - Date of license issuance.
- **License Number** - Unique license identifier.
- **License Month** - Month that license expires.
- **License Year** - Year for which license is valid.
- **Load Message** - Status of license upload.

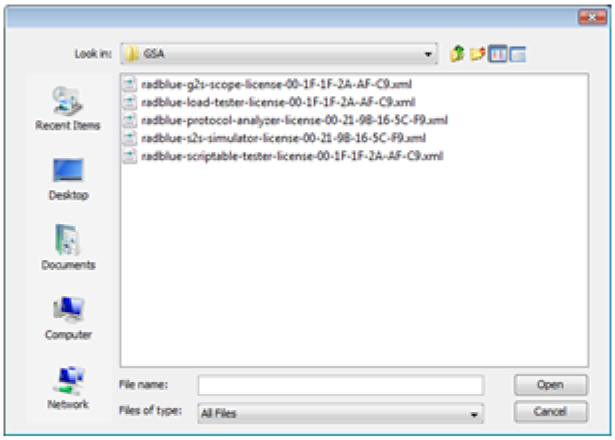
- **Location ID -** Location of purchasing organization.
- **MAC Address** - Physical address of computer on which the tool is installed.
- **Product Line Key -** Unique identifier of installed tool.
- **Product Name -** Name of licensed RadBlue product.

Load a New License File

To use the latest version of the tool, you may periodically need to update your license.

To load a new license:

1. Click the drop-down arrow.



2. Navigate to the new license file.
3. Highlight the new license file, and click **Open**.
4. Click **Apply** or **OK** to install the new license.

About the Debug Console

The Debug Console displays all informational, warning and critical errors that occur in the tool. Any of the following message types may appear in the Debug Console:

- **INFO -** Messages that do not impact the system, but may be useful to know. INFO messages appear in black type.
- **DEBUG -** Fine-grained informational events that are useful in troubleshooting. DEBUG messages appear in black.
- **ERROR -** Messages related to program errors. ERROR messages appear in red.
- **FATAL -** Designates a severe error events that will presumably lead the application to abort. FATAL messages appear in red.
- **UNKNOWN -** Messages that have not been assigned a logging designation. UNKNOWN messages appear in pink.
- **WARN -** Messages that indicate potentially harmful situations. WARN messages appear in blue.

You can clear the debug log and filter the debug log display (selectively display messages by warning level) as needed.

The information displayed in the Debug Console is written to a text file ([**tool name**]**.txt**), located in the tool's logs directory.

You can specify the maximum number of lines included in the log through the Configure option under Tools on the menu bar.

1. Go to: **Tools > Configure** > **Desktop Options** > **Max Logger Lines**
2. Click **Desktop Options**.
3. In the **Max Logger Lines** field, type or select the maximum number of lines in the Debug Console.
4. Click **OK**.

Clear the Debug Log Display

To clear the Debug Console display, click **Clear Log**.

Note that this option clears the display only, and not the text file associated with the Debug Log ([**tool name**]**.txt**, located in the tool's logs directory).

Filter Debug Messages

The Filter option lets you specify the type(s) of messages you want displayed in the Debug Console.

To filter Debug Console messages:

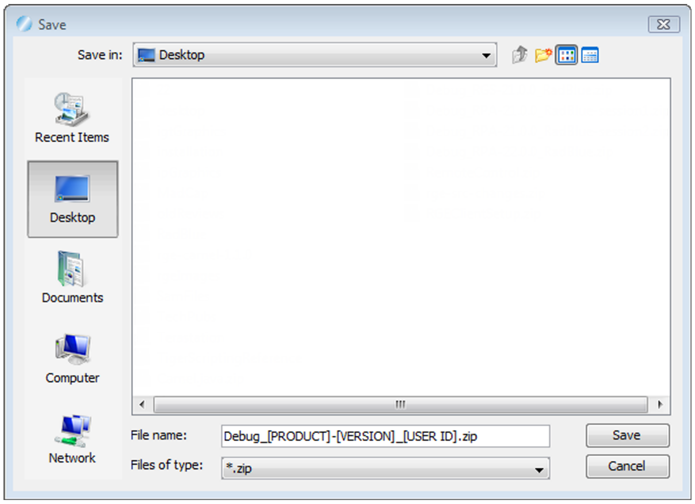
1. From the Debug Console, click **Filter**. The Logging Filter screen appears.
2. Click **Select All** to select all message types.
   or

1. Click **Clear All** to clear all boxes, and select the message types you want to display.
2. Click **Apply** for your changes to take effect, or click **Cancel** to exit the Logging Filter without applying any changes.

What to Do If You Can't Resolve an Error

The Export Debug option lets you create a ZIP file containing all the files that the RadBlue support team needs to troubleshoot product issues or for use in the RadBlue Analysis Suite (RAS). The ZIP file includes data from the time the tool was started to the time you select the Export Debug option.

1. Go to **File** > **Export Debug**.



2. A **Debug-[product-x.x.x]_[user ID].zip** file is exported to your computer's desktop.
3. Attach the ZIP file to an email, along with a description of the issue, and send it to support@radblue.com.

   or

   Go to www.radblue.com/support, complete the support form, attach the ZIP file and send.

   You will be contacted about your support issue within one business day.

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