ROSS PLATFORM MANAGER

Licensing Monitoring Guide

Version 3.13

Thank You for Choosing Ross

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
    - offer the best product quality and support
2. Make Cool Practical Technology
    - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at *solutions@rossvideo.com*.

David Ross
CEO, Ross Video
dross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

Ross Platform Manager · Licensing Monitoring Guide

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The information contained in this Guide is subject to change without notice or obligation.

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Patents

Patent numbers 4,205,346; 5,115,314; 5,280,346; 5,561,404; 7,034,886; 7,508,455; 7,602,446; 7,834,886; 7,914,332; 8307284, 2039277; 1237518; 1127289 and other patents pending.

Warranty and Repair Policy

Ross Video Limited (Ross) warrants its Ross Platform Manager systems to be free from defects under normal use and service a time period of 15 months from the date of shipment:

If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

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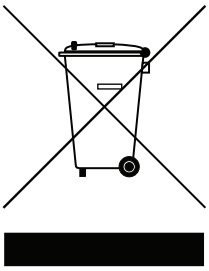
For customers that require a longer warranty period, Ross offers an extended warranty plan to extend the standard warranty period by one year increments. For more information about an extended warranty for your Ross Platform Manager system, contact your regional sales manager.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

Use of Hazardous Substances in Electrical and Electronic Products (China RoHS)

Ross Video Limited has reviewed all components and processes for compliance to:

“Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” also known as China RoHS.

The “Environmentally Friendly Use Period” (EFUP) and Hazardous Substance Tables have been established for all products. We are currently updating all of our Product Manuals.

The Hazardous substances tables are available on our website at:

http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html

电器电子产品中有害物质的使用

Ross Video Limited 按照以下的标准对所有组件和流程进行了审查：

“电器电子产品有害物质限制使用管理办法”也被称为中国RoHS。

所有产品都具有“环保使用期限”（EFUP）和有害物质表。目前，我们正在更新我们所有的产品手册。

有害物质表在我们的网站：

http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html

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Introduction

A Word of Thanks

Thank you for choosing the Ross Platform Manager as your product orchestration solution.

We are committed to providing you with the highest level of customer satisfaction possible. If, for any reason, you have questions or comments, please call Ross Video at +1-613-652-4886 or send us an e-mail at techsupport@rossvideo.com.

We hope that you visit our website www.rossvideo.com to stay up to date with ongoing software releases, join our customer forum and learn more about the complete range of Ross Video products.

Note that software maintenance and extended warranties are available for your system to protect and extend the life of your investment. Our sales team are more than happy to provide further information on the plans available. Members of our sales team promptly respond to e-mails sent to: solutions@rossvideo.com.

Again, thank you for your purchase of Ross Platform Manager from Ross Video. We are confident of your future pleasure with your choice.

Yours Sincerely,

Gabriel Duschinsky
Product Manager - Enterprise Management

gabriel.duschinsky@rossvideo.com

About This Guide

This guide contains the following chapters that cover the installation and configuration of Ross Platform Manager software:

- Chapter 1, "**Introduction**" summarizes the guide and provides important terms, conventions, and features.
- Chapter 2, "**Understanding the Licensing Log**" provides a brief explanation of the licensing log, its role in troubleshooting licensing issues with RPM, and how data masking is used for security purposes.
- Chapter 3,"**Licensing Log Configuration**" provides details on log history configuration, default paths, and startup validation.
- Chapter 4, "**Understanding Log Formats and Codes**" provides details on how to interpret entries in the licensing log by defining each field.
- Chapter 5, "**Licensing Log Codes**" provides details on the different categories and codes found in the licensing log.
- Chapter 6, "**Grafana Installation and Configuration**" provides instructions on how to install and configure the components required for licensing monitoring using Grafana.

If you have questions pertaining to the operation of the Ross Video product, please contact us at the numbers listed in the section "**Contacting Technical Support**" on page 1–3. Our technical staff is always available for consultation, training, or service.

Documentation Conventions

This guide uses special text formats to identify parts of the user interface, text that a user must enter, or a sequence of menus and submenus that a user must follow to reach a particular command.

Interface Elements

Bold text identifies a user interface element such as a dialog box, a menu item, or a button. For example:

In the **Media Manager Client**, click **Channel 1** the **Channels** section.

User Entered Text

Courier text identifies text that a user must enter. For example:

In the **File Name** box, enter **`Channel01.property`**.

Referenced Guides

Italic text identifies the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the section "**Twitter Configuration**" on page 3–6 in the ***Ross Platform Manager User Guide***.

Menu Sequences

Menu arrows identify a sequence of menu items that a user must follow to reach a particular command. For example: if a procedure step contains "**Server** > **Save As**," a user should click the **Server** menu and then click **Save As**.

Important Instructions

Star icons identify important instructions or features. For example:

✶ After installing Ross Platform Manager software, you must obtain Ross Platform Manager feature licenses from Ross Video Technical Support before users can access Ross Platform Manager features.

Getting Help

To access the Ross Platform Manager Online Help system, click the **Help** icon in the main toolbar. For help about the currently open panel, click the **Help** button in a panel title bar to view a help topic about the panel.

The Online Help system contains the following navigation tabs to locate and access Online Help topics:

- **Contents** — table of contents
- **Search** — full text search
- **Favorites** — preferred information storage and access

Contacting Technical Support

Technical Support is staffed by a team of experienced specialists ready to assist you with any question or technical issue.

Ross Video has technical support specialists strategically located around the globe to ensure a prompt response to technical inquiries. Our primary technical support center is located in Ottawa, Ontario, Canada. In addition, we have offices in The United Kingdom (London), Australia (Sydney), and Singapore with satellite locations in New York City, The Netherlands, and China. As we expand our presence globally, we are constantly evaluating other key locations to have a local technical support specialist in order to better service our customers.

North America

Our North America center located in Ottawa, Ontario, Canada and is open Monday to Friday 8:30 a.m. to 6:00 p.m. EST, with 24/7/365 on-call service after hours.

Our telephone number is: +1-613-652-4886

Toll free within North America: +1 844-652-0645

EMEA

Our EMEA center is located in Buckinghamshire, England, United Kingdom and is open Monday to Friday 8:30 a.m. to 5:00 p.m. GMT. After hours support is provided by our North America location.

Our telephone number is: +44 (0)1189502446

International toll free: +800 1005 0100

Emergency After-hours Support

Our telephone number is: +1-613-349-0006

Toll free within North America: +1 844-652-0645

International toll free: +800 1005 0100

Online

E-mail: techsupport@rossvideo.com

Website: use the link http://www.rossvideo.com/support/tech-support.html to open a support request.

Understanding the Licensing Log

This chapter provides a brief explanation of the licensing log, its role in troubleshooting licensing issues with RPM, and how data masking is used for security purposes.

This chapter discusses the following topics:

- What is the Licensing Log
- How is the Licensing Log Used
- Data Masking

What is the Licensing Log

The RPM licensing log is a specific log file dedicated to licensing-related events and details. It is accessible from the RPM Log Explorer, listed in the logs as **`licensing.log`**. Viewing or downloading the log provides the user with the licensing-related information available, all within the log file.

Prior to RPM v3.13, license-related logs were buried within large general-purpose system logs, complicating the process of accessing of the information when needed. Having a dedicated licensing log file now simplifies this process.

How is the Licensing Log Used

The licensing log file (available from the RPM Log Explorer) can be used to better understand licensing-related events that occur, and help the Ross Video technical support team resolve issues faster. Although the logs are human-readable, it is also possible to use the visualization tool Grafana to visualize the log data (**Figure 2.1**), making the analysis and understanding of the licensing log file even easier.

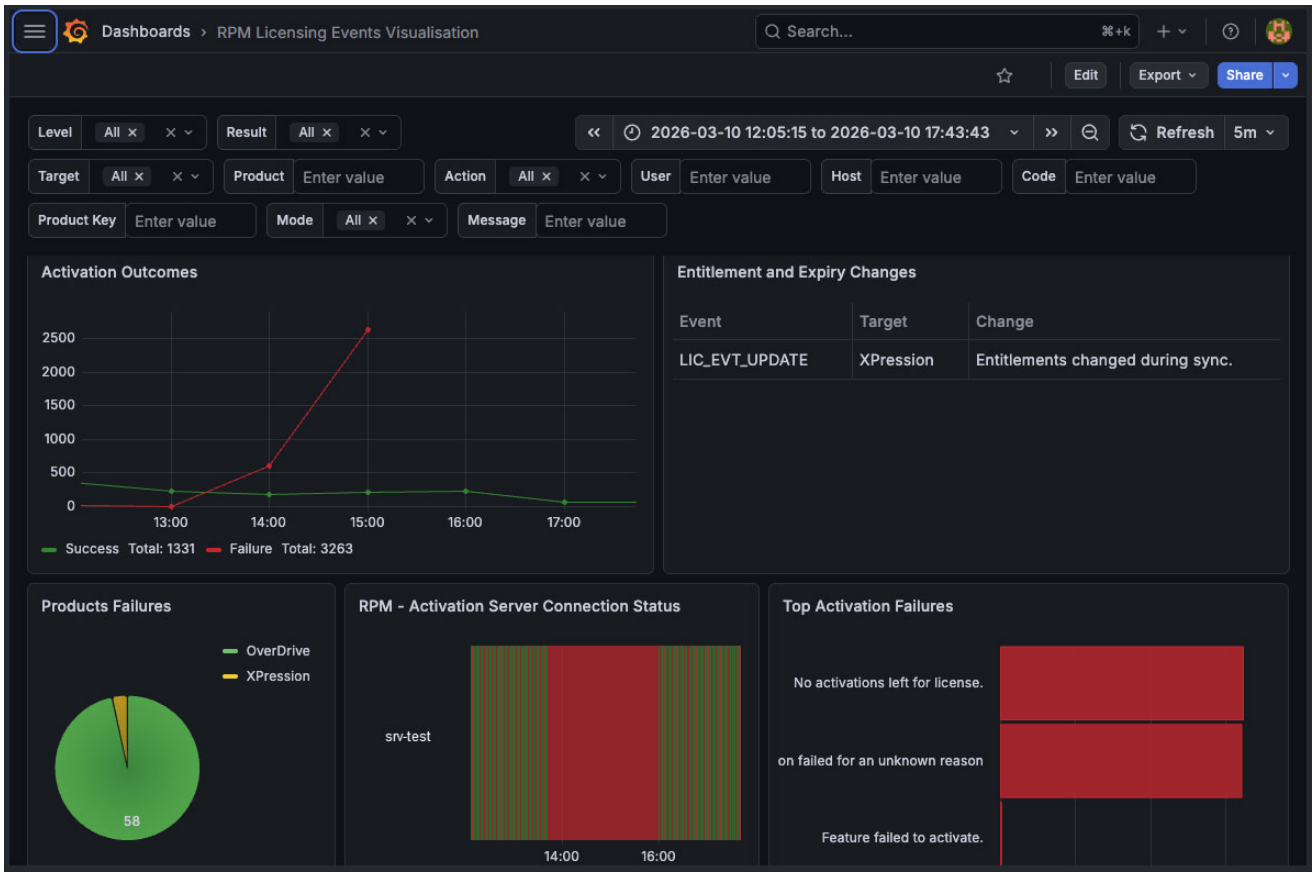

Figure 2.1 Example of Grafana RPM Licensing Events Visualization Dashboard

Data Masking

Data masking is used to protect sensitive information by obscuring portions of the data when displayed. ensuring this information is never exposed to users that do not require complete access. Within the licensing log, data masking is applied to product keys, where the final segment of the key is replaced with asterisks. The first segments of the product key remain visible to allow for identification, without fully disclosing the product key unnecessarily.

Format: **`product_key=XXXXX-XXXXX-*****`

Example: **`product_key=WRSTX-3J1J4-*****`

Licensing Log Configuration

This chapter describes how the licensing log is configured and how it supports monitoring and startup validation in the system.

This chapter discusses the following topics:

- Log History Configuration
- Default Paths
- Startup Validation

Log History Configuration

The licensing log is initialized with a default, hard coded history duration of 30 days. This can be overridden if desired. Table 3.1 below outlines the logged messages for different configuration scenarios.

Table 3.1 Logged Messages for Configuration

Scenario	Logged Message (application.log)	Obs
Default History Duration	LicensingLogger Instance initialized successfully with 30 days history.	This message will appear as many times in the application.log as the number of plugins using it, due to the creation of new instances.
History Duration Overridden	Using custom log history duration of 3 instead of the default 30 days.	N/A
Invalid History Duration Value	Invalid value for system property licensing.log.history: A. Using default of 30 days.	N/A

To override the default history duration

1. Open the file: **`RossPlatformManager\configuration\service.conf`**
2. Add the following line, preferably under the # logging section:

   `wrapper.java.additional.<id>=-Dlicensing.log.history=<value>`

   Replace the id and value fields following these guidelines:

   - **id** — Must be an unused number in the config file
   - **value** — Must be an integer.

Default Paths

The default paths used vary depending on your operating system.Default paths for Windows and Linux systems are as follows:

- **Windows** — **`C:/Program Files/Ross Video/Ross Platform Manager/workspace/.metadata/logs`**
- **Linux** — **`/opt/PlatformManager/workspace/.metadata/logs/`**

Startup Validation

At startup, the system performs validation checks to ensure that licensing logging is configured and operating correctly. The following message will display in the application.log to confirm this:

`LicensingLogger Instance initialized successfully with 30 days history.`

30 days is the default for history duration, but the number displayed in the message will change if that default is overridden, as outlined in the procedure "**To override the default history duration**" on page 3–2.

Understanding Log Formats and Codes

This chapter explains how to interpret entries in the licensing log by defining each field.

This chapter discusses the following topics:

- Licensing Log Fields
- Licensing Code Syntax

Licensing Log Fields

Table 4.1 below outlines the primary licensing log fields.

Table 4.1 Primary Licensing Log Fields

Field	Type	Description	Example
ts	UTC ISO 8601 string	Event timestamp	2025-11-03T15:12:58+0000
level	ENUM(INFO, WARN, ERROR)	Severity	INFO
comp	STRING	Always 'licensing'	licensing
code	STRING	Unique standardized code (see code catalog)	LIC_KEY_ADD
user	STRING (optional)	Username or system role	root
host	STRING	Hostname	l-hostname
product	STRING	Product name	Inception
product_key	STRING	Product Key	TDWTZ**********
action	STRING	Per event verb (Activate, Deactivate, Sync, Fail, etc.)	Activate
mode	STRING (online, offline, grace_period)	Indicates RPM's mode used to handle the action online - Handled by AS offline - Handled by RPM grace_period - Handled by RPM using Grace Period	grace_period
target	STRING	Target of the action	FEATURE
result	ENUM(SUCCESS, FAILURE, INFO)	SUCCESS	SUCCESS
msg	STRING	Human-readable description	activated
meta	JSON object (optional)	Extended context (e.g., file name, error detail)	{"name":"Bob", "Product":"Inception"}

Licensing Code Syntax

The licensing code structure follows the following syntax:

- The first three characters of the **module** (licensing = LIC)
- The first three characters of the **category** (system = SYS)
- The **action** (activate = ACTIVATE

All parts are then converted to uppercase and combined, separated by underscores forming a structure like this:

<**module**>_<**category**>_<**action**>

e.g. LIC_API_ACTIVATE

Licensing Log Codes

This chapter outlines the different categories and codes found in the licensing log.

This chapter discusses the following topics:

- API Actions
- User Actions
- System Actions
- Event Actions
- Event Failures
- Addition Failures
- Deletion Failures
- Activation Failures

API Actions

Table 5.1 below outlines the different licensing related client API initiated actions.

Table 5.1 Client API Initiated Actions

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_API_ACTIVATE	INFO	system	FEATURE	Activation through licensing API	Feature activated successfully.	Feature failed to activate.	**server**=RPM or AS **feature**=<featureName>
LIC_API_REACTIVATE	INFO	system	FEATURE	Activation through licensing API. Internal logic will determine if it is a re-activation.	Feature reactivated successfully.	Feature failed to reactivate.	**server**=RPM or AS **feature**=<featureName>
LIC_API_DEACTIVATE	INFO	system	FEATURE	Deactivation through licensing API. Internal logic will determine if it is a re-activation.	Feature deactivated successfully.	Feature failed to deactivate.	N/A
LIC_API_CHANGE	INFO	system	PRODUCT	Activation through licensing API Internal logic. Recorded software version for the product key was updated.	Product version changed successfully.	See **Activation Failures**	**previousVersion**=<string or null> **newVersion**=<string>

User Actions

Table 5.2 below outlines the different licensing related actions initiated by users through RPM's UI.

Table 5.2 User Initiated Actions

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_USR_CHECKOUT	INFO	user	PRODUCT_KEY	User initiated action of checking out a product key.	Product Key Checked-out successfully.	See **Activation Failures**	N/A
LIC_USR_ADD	INFO	user	PRODUCT_KEY	Add a product key to the product key manager.	Product Key Added successfully.	Added license is expired. Added license is disabled.	N/A
LIC_USR_UPDATE	INFO	user	PRODUCT_KEY	Refresh a Product Key using the Product Key View.	Product Key updated successfully.	N/A	N/A
LIC_USR_DELETE	INFO	user	PRODUCT_KEY	Remove a product key from the product key manager.	Product key removed successfully.	See **Deletion Failures**.	N/A
LIC_USR_DELETE	INFO	user	PRODUCT_KEY	An expired license is removed from the product key manager.	Removed Expired License.	See **Deletion Failures**.	N/A
LIC_USR_GENFILE	INFO	user	PRODUCT_KEY	Click activate of a Product Key in Offline mode.	RPM producted OLA request file.	See **Addition Failures.**	N/A
LIC_USR_GENDEACT	INFO	user	PRODUCT_KEY	Click deactivate of a Product Key in Offline mode.	RPM producted offline deactivation file.	See **Addition Failures.**	N/A
LIC_USR_ APPLY	INFO	user	PRODUCT_KEY	Upload a active/deactive file to RPM.	RPM processed incoming .ola activation file.	See **Addition Failures.**	N/A
LIC_USR_ APPLY	ERROR	user	PRODUCT_KEY	Upload an invalid license file.	File checksum mismatch or outdated signature.	See **Addition Failures.**	N/A

System Actions

Table 5.3 below outlines the different licensing related actions initiated automatically or as a secondary effect by RPM.

Table 5.3 RPM Initiated Actions

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_SYS_RELEASE	INFO	system	FEATURE	Audit job detects that a license has timed out and releases it automatically.	Feature released due to timeout.	See **Activation Failures**	N/A
LIC_SYS_SYNCHRONIZE	INFO	system	PRODUCT_KEY	Product key needs to be synchronized either by consistency checks or requests.	Product key synchronized.	See **Activation Failures**	**detail**="Product Key is checked-out by another system."
LIC_SYS_EXPIRED	WARNING	system	PRODUCT_KEY	Audit job detects the presence of an expired license in the product key manager (logs once a day).	N/A	License key reached expiration date	N/A

Event Actions

Table 5.4 below outlines the different licensing related actions initiated by events in RPM.

Table 5.4 Event Initiated Actions

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_EVT_CONNECT	INFO	system	N/A	RPM connects to the Activation Server after previously being disconnected.	Connected to activation server.	See next entry	N/A
LIC_EVT_CONNECT	WARNING	system	N/A	RPM loses connection to the Activation Server.	Disconnected from activation server.	N/A	N/A
LIC_EVT_UPDATE	INFO	system	LICENSE	The expiration date of a license was altered on the Activation Server.	Expiration date extended or shortened.	See **Event Failures**	N/A
LIC_EVT_UPDATE	INFO	system	LICENSE	The maintenance expiry date of a license was altered on the Activation Server.	Maintenance window changed.	See **Event Failures**	N/A
LIC_EVT_UPDATE	INFO	system	PRODUCT_KEY	The product key was disabled on the Activation Server.	License key has been disabled.	See **Event Failures**	N/A
LIC_EVT_UPDATE	INFO	system	LICENSE	Some entitlements for this license were changed on the Activation Server.	Entitlements changed during sync.	See **Event Failures**	N/A
LIC_EVT_START	WARNING	system	LICENSE	Connection with Activation Server was lost and the license entered grace period.	License entered grace period.	N/A	N/A
LIC_EVT_STOP	WARNING	system	LICENSE	The license grace period expired.	License grace period expired.	N/A	N/A
LIC_EVT_FINISH	INFO	system	LICENSE	Connection with Activation Server was restored and the license exited grace period.	License exited grace period.	N/A	N/A

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_EVT_SYNCHRONIZE	INFO	system	PRODUCT	RPM synchronized its data with the Activation Server for this product (happens when adding or activating a key).	Synchronization completed successfully.	See **Event Failures**	N/A
LIC_EVT_SYNCHRONIZE	INFO	system	PRODUCT_KEY	RPM synchronized its data with the Activation Server for this product key (happens when adding or activating a key).	Synchronization completed successfully.	See **Event Failures**	N/A
LIC_EVT_ROLLBACK	WARNING	system	PRODUCT	An exception occurred while trying to sync data with Activation Server (very unexpected).	Reverted to previous state due to validation failure.	N/A	N/A
LIC_EVT_ROLLBACK	WARNING	system	PRODUCT_KEY	An exception occurred while trying to sync data with Activation Server (very unexpected).	Reverted to previous state due to validation failure.	N/A	N/A
LIC_EVT_GET	INFO	system	N/A	The API endpoint for raw license data was called, used during activation of OverDrive.	Accessing the GetRawLicenseData endpoint.	N/A	N/A

Event Failures

Table 5.5 below outlines the different licensing related event failures.

Table 5.5 Licensing Related Event Failures

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_FAI_SYNCHRONIZE	ERROR	system	PRODUCT	An exception occurred while trying to sync data with Activation Server (very unexpected).	N/A	Synchronization failed due to timeout or connection issue.	N/A
LIC_FAI_SYNCHRONIZE	ERROR	system	PRODUCT_KEY	An exception occurred while trying to sync data with Activation Server (very unexpected).	N/A	Synchronization failed due to timeout or connection issue.	N/A

Addition Failures

Table 5.6 below outlines the different licensing related addition failures.

Table 5.6 Licensing Related Addition Failures

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_FAI_ADD	ERROR	user	PRODUCT_KEY	User attempts to add a key with an invalid code.	N/A	Invalid product key.	N/A
LIC_FAI_ADD	ERROR	user	PRODUCT_KEY	User attempts to add an already existing key to the product key manager.	N/A	A duplicate key was detected.	N/A

Deletion Failures

Table 5.7 below outlines the different licensing related deletion failures.

Table 5.7 Licensing Related Deletion Failures

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_FAI_DELETE	ERROR	user	PRODUCT_KEY	User attempts to delete a key that is in the "activated" state.	N/A	Cannot delete active product key.	N/A
LIC_FAI_DELETE	ERROR	user	PRODUCT_KEY	User attempts to delete a key in the "Activation Request Pending" state.	N/A	Cannot delete product key with activation request pending.	N/A
LIC_FAI_DELETE	ERROR	user	PRODUCT_KEY	User attempts to delete a key that does not exist in the DB.	N/A	Product key does not exist.	N/A

Activation Failures

Table 5.8 below outlines the different licensing related activation failures.

Table 5.8 Licensing Related Activation Failures

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	User attempts to activate a disabled license.	N/A	Product key is disabled.	N/A
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	User attempts to activate a license which has no activations remaining.	N/A	No activations left for license.	N/A
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	User attempts to activate an expired license.	N/A	Cannot activate expired product key.	N/A
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	User inputs an invalid product version when activating a license.	N/A	Invalid version detected.	N/A

Code	Level	User	Target	Trigger	Success Message	Failure Message	Meta
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	Maintenance expiration date passed for activated license.	N/A	Maintenance is expired.	**feature**=feature Name, **version**=version
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	Attempts to upload a response file with no activation request pending.	N/A	No activation request pending for product key.	N/A
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	User attempts to activate a locked product key.	N/A	Cannot activate a locked product key.	N/A
LIC_API_ACTIVATE	ERROR	user	PRODUCT_KEY	An invalid product key is detected during activation.	N/A	An invalid product key was detected.	N/A
LIC_API_ACTIVATE	INFO	user	FEATURE	Generic activation failure (catch-all)	N/A	Feature failed to activate.	**feature**=feature Name, **server**=RPM or AS

Grafana Installation and Configuration

This chapter describes how to install and configure the components required for licensing monitoring using Grafana. This monitoring solution is composed of three main tools:

- Grafana Alloy, which collects and forwards log data
- Grafana Loki, which stores and organizes logs
- Grafana, which visualizes the data through dashboards

This chapter discusses the following topics:

- Installing Alloy
- Installing Loki
- Installing Grafana
- Configuring Loki
- Configuring Alloy
- Configuring Grafana
- Configuring the RPM Licensing Events Visualization Dashboard

Installing Alloy

This section describes how to install Grafana Alloy, which is responsible for collecting licensing log data and forwarding it to the logging backend.

To install Alloy

1. On the RPM server, upgrade the machine using the command:

   ```
   apt update && sudo apt upgrade -y
   ```

   The machine starts the upgrade.

2. When asked **Which services should be restarted?**, enter `22` to select none.

3. Download the Grafana security key using the command:

   ```
   wget -q -0 - https://apt.grafana.com/gpq.key | gpq --dearmor | sudo tee
   /etc/apt/keyrings/grafana.gpq > /dev/null
   ```

4. Add the Grafana security key to the list of sources using the command:

   ```
   echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable
   main" | sudo tee /etc/apt/sources.list.d/grafana.list
   ```

5. Update the package list using the command:

   ```
   sudo apt update
   ```

6. Install Alloy using the command:

   ```
   sudo apt install alloy
   ```

7. Enable Alloy to start on boot using the command:

   ```
   sudo systemctl enable alloy
   ```

8. Start Alloy using the following commands:

   ```
   sudo systemctl daemon-reload
   sudo systemctl start alloy
   ```

9. Check that the endpoint is ready using the command:

   ```
   curl http://localhost:12345/-/ready
   ```

Installing Loki

This section explains how to install Grafana Loki, the service used to store and manage collected log data.

To install Loki

1. On the Grafana server, upgrade the machine using the command:

   ```
   apt update && sudo apt upgrade -y
   ```

   The machine starts the upgrade.

2. Install required dependencies using the command:

   ```
   sudo apt install curl unzip tar -y
   ```

3. Download the Grafana security key using the command:

   ```
   wget -q -0 - https://apt.grafana.com/gpq.key | gpq --dearmor | sudo tee
   /etc/apt/keyrings/grafana.gpq > /dev/null
   ```

4. Add the Grafana security key to the list of sources using the command:

   ```
   echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable
   main" | sudo tee /etc/apt/sources.list.d/grafana.list
   ```

5. Update the package list using the command:

```
sudo apt update
```

6. Install Loki using the command:

```
apt install loki
```

7. Enable Loki to start on boot using the command:

```
systemctl enable loki
```

8. Check that the endpoint is ready using the command:

```
curl http://localhost:3100/ready
```

Installing Grafana

This section outlines how to install Grafana, which provides the user interface for querying and visualizing licensing data.

To install Grafana

1. On the Grafana server, install Grafana using the command:

```
apt install grafana
```

2. When asked about disk space and if you want to continue, enter **Y.**
3. Install firewalld using the command:

```
apt install firewalld
```

4. When asked about disk space and if you want to continue, enter **Y.**
5. Enable firewalld to start on boot using the command:

```
systemctl enable firewalld
```

6. Start firewalld using the command:

```
systemctl start firewalld
```

7. Add Grafana to the firewall list using the command:

```
firewall-cmd --zone=public --add-port=3000/tcp --permanent
```

8. Add Loki to the firewall list using the command:

```
9. firewall-cmd --zone=public --add-port=3100/tcp --permanent
```

10. Reload the firewall list using the command:

```
firewall-cmd --reload
```

11. Reload the systemd daemon to apply configuration changes using the command:

```
systemctl daemon-reload
```

12. Enable Grafana as a server using the command:

```
systemctl enable grafana-server
```

13. Start the Grafana server using the command:

```
systemctl start grafana-server
```

Configuring Loki

This section covers the configuration of Grafana Loki to ensure it correctly receives, indexes, and stores log data for licensing monitoring.

To configure Loki

1. On the Grafana server, go to **`/etc/loki/`** and open the **`config.yml`** file in a text editor.
2. To configure log retention in Loki, add the following to the end of the **`config.yml`** file.

```
compactor:
  working_directory: /data/retention
  retention_enabled: true
  retention_delete_delay: 2h
  retention_delete_worker_count: 150
  delete_request_store: filesystem

limits_config:
  retention_period: 336h  # Global retention (e.g., 2 weeks)
```

3. Save and close the **`config.yml`** file.
4. Open Grafana by going to your Grafana URL in your browser.
5. Log in to Grafana using the following credentials:

   Username — **`admin`**

   Password — **`admin`**

   You are logged in and the Grafana homepage opens.
6. Go to **Connections** > **Data Sources** in the sidebar.

   The Data sources page opens.
7. Click **Add data source**.

   The Add data source page opens.
8. Select **Loki**.

   A new Loki data source page opens.
9. In the **Connection** section, enter the URL **`http://localhost:3100`**.
10. Click **Save & test**.

    A confirmation message appears and Loki is configured.

Configuring Alloy

This section describes how to configure Grafana Alloy to collect relevant licensing logs and forward them to Loki.

To configure Alloy

1. On the RPM server, download both the **rpm-licensing-events-visualization.json** and **rpm_licensing.river** files from **`/opt/PlatformManager/utilities/observability/`**.
2. Place the **rpm_licensing.river** file in **`/etc/alloy/`**.
3. Rename the **rpm_licensing.river** file **`config.alloy`**.
4. Open the **config.alloy** file in a text editor.
5. In line 6 of the **config.alloy** file, edit the URL to contain the IP address of the Grafana server.
6. Save and close the **config.alloy** file.

   Alloy is configured to send logs to Loki.

Configuring Grafana

This section explains how to configure Grafana, including installing the necessary plugin and importing the RPM Log Manager Dashboard.

To configure Grafana

1. On the Grafana server, open Grafana by going to your Grafana URL in your browser.
2. Log in to Grafana using the following credentials:

   Username — `admin`

   Password — `admin`

   You are logged in and the Grafana homepage opens.
3. Install the **Business Forms** plugin by doing the following:
   a. Click **Administration** > **Plugins and data** > **Plugins** in the sidebar.

      The Plugins page opens.

   b. In the **Search bar**, enter `business forms`.

   c. Click the **Business Forms** plugin.

      The Business Forms plugin page opens.

   d. Click **Install** in the top right.

      The Business Forms plugin installs.
4. Import the RPM Licensing Events Visualization Dashboard by doing the following:
   a. Click **Dashboards** in the sidebar.

      The Dashboards page opens.

   b. Click **Create dashboard**.

      The New dashboard page opens.

   c. Click **Import dashboard**.

      The Import dashboard page opens.

   d. Click **Upload dashboard JSON file**.

      The File Upload dialog box opens.

   e. In your Downloads folder, select the **rpm-licensing-events-visualization.json** file downloaded from `/opt/PlatformManager/utilities/observability/`.

      The Options page for the selected JSON file opens.

   f. Under **DS_LOKI**, select the Loki data source to be used.

   g. Click **Import**.

      The RPM Licensing Events Visualization Dashboard is imported.

Configuring the RPM Licensing Events Visualization Dashboard

The procedure below explains how to set up and configure the RPM Licensing Events Visualization Dashboard in Grafana to visualize and monitor licensing activity effectively. Once configured, the dashboard will display any data it has received (**Figure 6.1**).

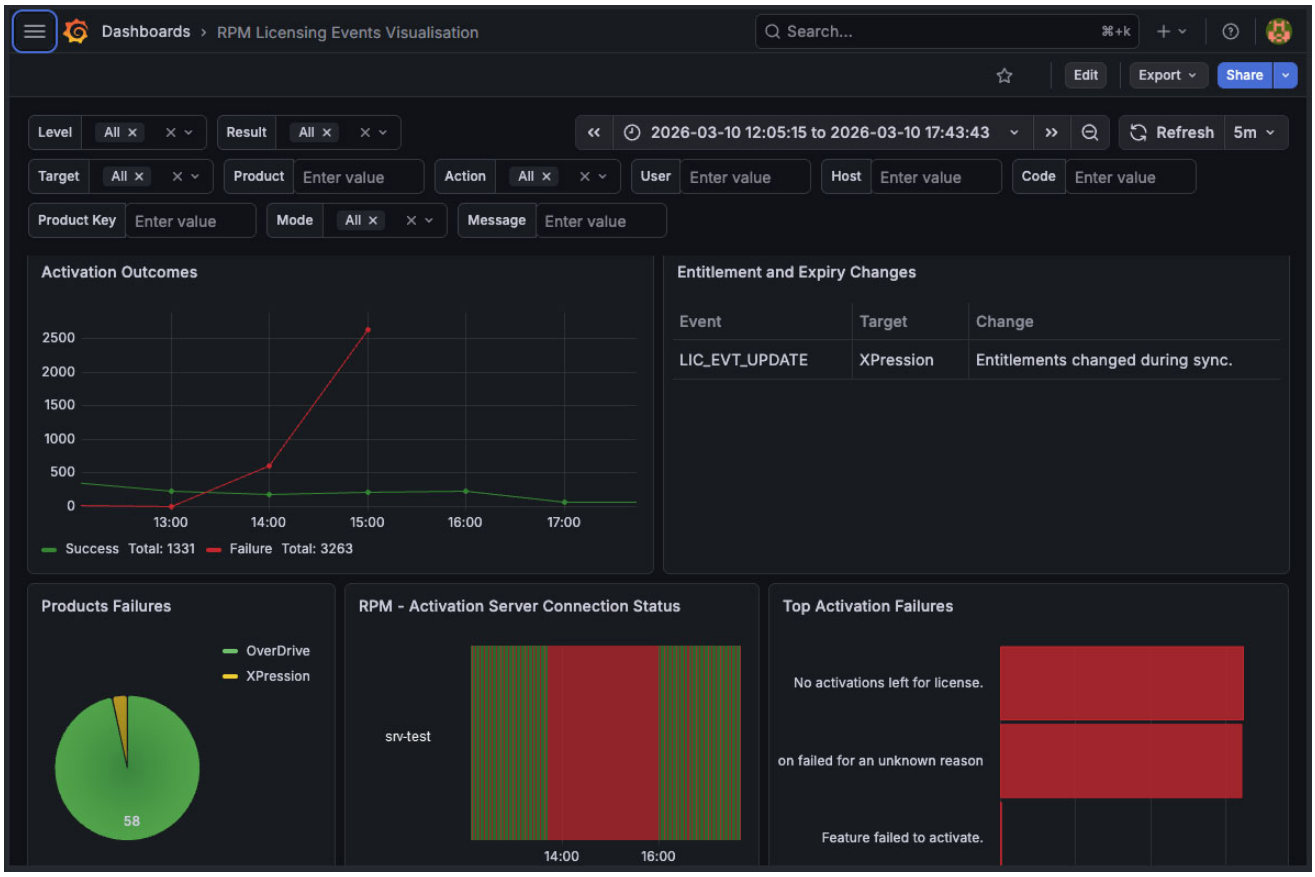

Figure 6.1 Example of Grafana RPM Licensing Events Visualization Dashboard

To configure the RPM Licensing Events Visualization Dashboard

1. Copy the rpm-licensing-events-visualization folder from **`/opt/PlatformManager/utilities/observability/`** to the Grafana public directory. This is usually **`/usr/share/grafana/public`** on Linux devices, or **`C:\Program Files\GrafanaLabs\grafana\public`** on Windows devices.

   The configuration folder is copied to the necessary location, and your RPM Licensing Events Visualization Dashboard has been configured.