ALTAIR

ONLY FORWARD

Altair Monitor 2025.1.2

Getting Started Guide

Contents

Getting Started Guide

1

This manual describes the web user interface and provides instructions on common uses and best practices for users. It also provides the basic setup, installation and management practices for administrators. For both administrators and users, it functions as a getting started guide.

This chapter covers the following:

Altair Monitor is a software license monitoring tool, which enables you to manage licenses, optimize your license mix and increase usage efficiency, all of which greatly reduce your licensing costs.

The primary interface for Monitor is the web interface. The home page provides an overview of current license activity and queued licenses and shows a series of tabs, which can be used to navigate, generate reports of both current and historical usage, and perform administrative Monitor tasks.

For administrators, Monitor also includes a Command Line Interface (CLI), as well as a TLC-based application programming interface (API). The CLI can be used to obtain license availability and usage reports and to create and execute batch-mode reports; both of those reports can also be generated using the web interface. You can also configure Monitor through the CLI.

With Monitor, the user can determine when to run a job, explore why a job isn't running, and generate reports that help answer those questions. The administrator can set up the system, manage multiple license servers, monitor use and make determinations about the number of needed licenses.

Document Organization

This manual describes the web user interface and provides instructions on common uses and best practices for users. It also provides the basic setup, installation and management practices for administrators. For both administrators and users, it functions as a getting started guide.

This document introduces the tool, its installation and its foundational applications. Since using the web interface is the most efficient way to use Monitor, this guide explains how to use the interface to manage your licenses and generate reports. It indicates when a task is specific to admin users. Much of the setup process requires admin permissions, for example. But all users should understand Monitor's system functionality and features. We recommend that both administrators and users read the introduction, the installation instruction set that applies your system, first steps to familiarize yourself with the GUI and common questions and basic uses. Then read according to your needs. This guide is organized in the following manner (click on the link to learn more):

- Introduction: This section provides the product information, the document organization, the theory of operations, a system diagram and a description of components.
- Installation: This section describes the system requirements and the installation steps for four different types of installations: Windows Single & Bundled and Linux Single & Bundled.
- First Steps: After you've installed Monitor, this section covers what to do next. This applies both to administrators and users, who may be playing dual roles at this point.
- Common Questions and Basic Uses: This section addresses common questions and points you to applicable instructions, as needed.
- Using the Graphical User Interface: This section describes the seven tabs on the Monitor user interface and their usage.
- Basic Operations and Setup (Admin Only): This section reviews general tasks for admins.
- Troubleshooting: The section outlines common problems and provides known solutions.

Theory of Operation

Monitor monitors tools with licenses using live sampling and debug logs for denials, and it monitors tools with no licenses using wrapper scrips and a monitoring agent.

Live Sampling

For monitoring live license servers, data collection jobs are executed periodically. The default is every 30 seconds; this is because most daemons update the license usage every 30 seconds, but this is a configurable time frame. When a checkout is detected in the data collection job output, it is stored in the Monitor server memory. The checkout remains active if it is detected in the subsequent samples that are taken. Once the checkout disappears from the job output, it is considered checked-in by the server and is written to a checkouts data file for the current day. As new data is written to the data file, it is loaded into the database to use for historical reporting.

Debug Logs for Denials

For debug log parsing, parsing jobs are executed periodically. The default is every 12 hours, but this is a configurable time frame. (It can take a lot of time to parse the debug logs, especially if they are not rotated, so we recommend that you keep the existing time frame.) A denial is an instance in which a license application has been denied by the vendor daemon. The denial data is extracted and written to a denials data file for the current day, organized in a `tag/daemon/server` directory structure. Optionally, checkout data can also be obtained from the debug log, which will be stored in the checkouts data directory (`licmon.swd/data/checkouts`) and organized in a `tag/daemon/server` directory structure.

> **Note:** This debug log data retrieval is not nearly as accurate as live sampling. We recommend you use live sampling, because the data used by Monitor will be inaccurate otherwise. This debug log data can be used to fill the gap if the sampling data is missing due to network or other issue.

Monitoring Tools with No License

With Monitor, you can also monitor applications and tools with no licenses.

There are two different methods for doing this. The first method uses a wrapper script or binary to perform license counting and restriction. The second method uses a monitoring agent running on every machine that may execute the unlicensed tool. The agent sends information about the processes running on the machine, which is used to detect running tools that have been configured to be monitored.

Operational Flow Graphic

The following graph provides an overview of the Monitor System.

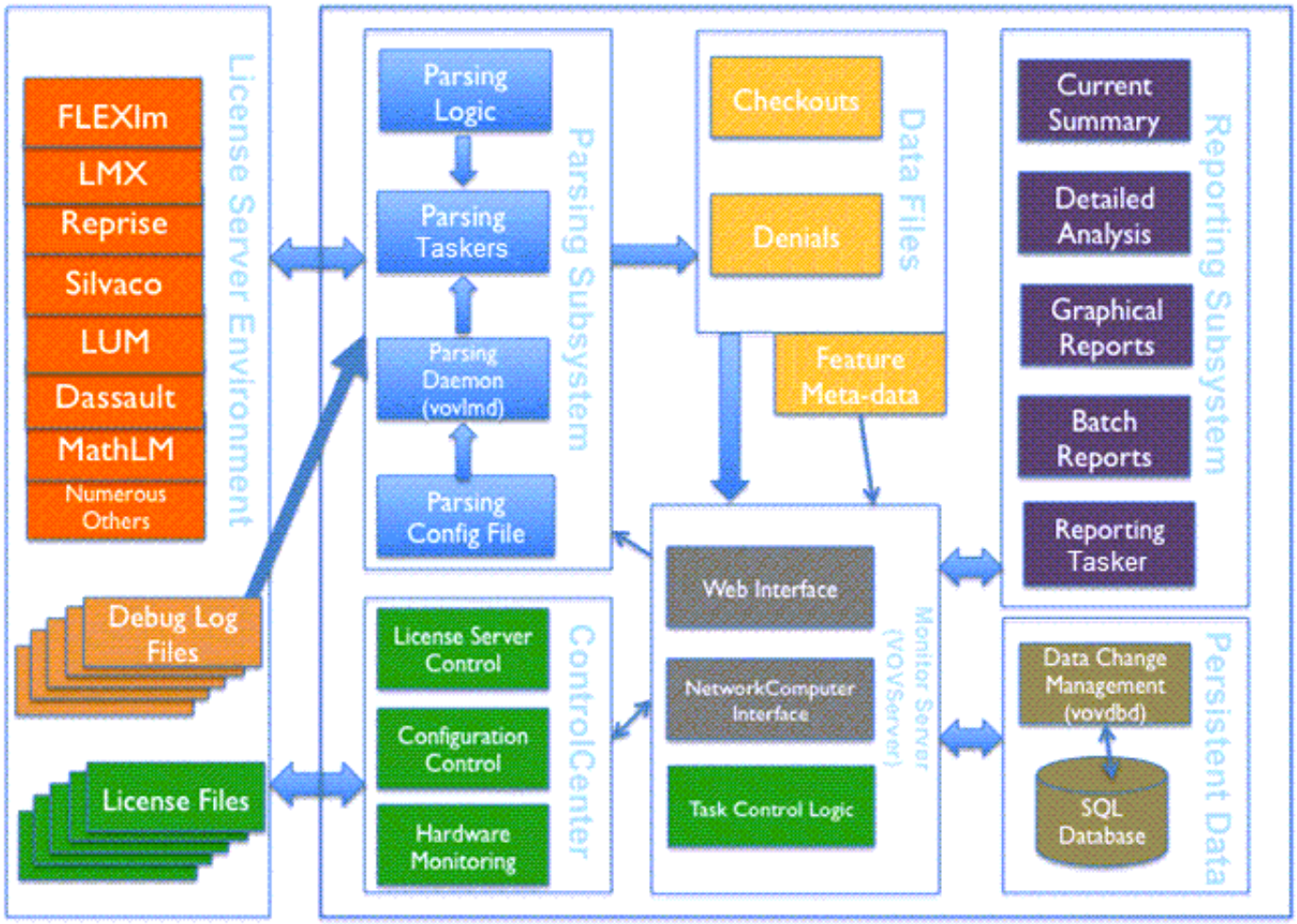


Figure 1: System Diagram

Components

All Altair Accelerator software products are based on a client/server architecture and have three main components: a server, daemons and taskers.

Vovserver Definition

The server component of Monitor architecture is called the vovserver, and it provides the Monitor server functionality by running a VOV project named `licmon`. The server makes use of a Server Working Directory (SWD) to store its configuration, state and output files. The server component is licensed.

Daemons Used

In addition to the server, Monitor primarily employs five daemons. They perform the following functions:

- `vovlmd`: This daemon creates data collection jobs that are managed by the job scheduler based on the configuration entered by the administrator.
- `vovnotifyd`: This daemon runs system health checks and e-mails the administrator, and in certain cases, notifies users who trigger events and provides notification of events to users.
- `vovdbd`: This daemon is responsible for monitoring Altair Accelerator product data files for changes and loading them into the database.
- `vovnginxd`: This daemon is responsible for handling secure client connections and forwarding traffic to the vovserver. In Monitor, this daemon is on by default.
- `vovresourced`: This daemon is the main agent that defines the resources of the vovserver. The configuration file is `resources.tcl`.

Taskers Used

Taskers execute jobs for the Monitor job scheduler. To minimize latency issues, the workload is distributed among multiple vovtaskers. There are two types of taskers:

- Periodic Jobs: These are scheduled tasker jobs that are responsible for automating tasks. These jobs can be configured to run at a specific interval and/or a certain day/time, similar to UNIX cron.
- Agents: These taskers are agents that add functionality to Monitor, including the license server management facility, license file management, editing, and version tracking and monitoring of license server hosts and host processes.

By default, Monitor launches the following taskers on the primary host:

- Batch reporter: This tasker is responsible for completing any background reporting tasks.
- Log parser: This tasker reads debug logs from license daemons.
- Maintainer: This tasker completes various tasks as assigned by the vovserver.
- Parser: This tasker runs the status on defined license daemons and collects feature, expiration, capacity, checkouts and denial information. Additional parser taskers can be added on a remote host to increase the scalability of the implementation.

Installation

There are four different types of installations available for Monitor.

You will either install with a Single File Distributable (use this if you are ONLY installing Monitor and no other products), or install with Multiple File Bundles, (use this if you are installing several Altair Accelerator products at once). Further, you will install the product according to your operating system, Windows or Linux.

Platform	Single File	Multiple File
Windows CLI Based	lm-win64-cli.exe	win64_bundle.zip
Windows GUI Based	lm-win64.exe	
Linux	lm-linux64	linux64.tar, common.tar

The CLI-based SFD can be used to enable an automated method to push out and execute programs on remote Windows machines. The intent is that a Windows admin would do this and run the SFD with the options required to install it as a Windows service.

To install multiple file bundles, see the Installation Guide.

If an upgrade is required, see *Special Considerations for Monitor* in the Installation Guide.

2025.1.2 Supported Platforms

Supported Operating Systems

x86_64 Architecture

Operating System	Version
RHEL and equivalents	8.x, 9.x
SLES	15.0 SP 4+
Ubuntu	20.04, 22.04
Windows	10
Windows Server	2016, 2019, 2022

> **Note:** On Windows, only the following are supported: FlowTracer, Monitor, and Accelerator (taskers only).

ARM64 Architecture

Operating System	Version
RHEL and equivalents	8.x, 9.x

> **Note:** On ARM64, only Accelerator execution hosts and submit hosts are supported.

Supported Browsers

Table 1:

Browser	Supported
Safari	Yes
Chrome	Yes
Edge	Yes

Recommended Monitor Hardware Setup

Depending on your system and the number of expected checkouts, your hardware setup will vary. There are many factors; please review the following information and if you have further questions, contact customer support for a comprehensive explanation.

Resource	Checkouts		
	100,000	**1,000,000**	**>1,000,000**
CPU (x86, e.g. Intel Xeon)	Dual Core Server Class	Quad Core Server Class	Quad Core Server Class
Memory	1 GB	8 GB	16 GB

Resource	Checkouts		
	100,000	**1,000,000**	**>1,000,000**
Disk	5 GB	50 GB	200 GB
Server Working Directory	NFS or Local	NFS or Local	NFS or Local
Database	Local Disk	Local Disk	Local Disk

Expected System Environment

The Altair Accelerator products are built to run on a well-conditioned network. This outline gives an overview of what is expected to be in place.

- All participating hosts are networked.
- The host clocks are well-synchronized (e.g. via NTP).
- Naming services are functional and fast
  - User/Group account names and UIDs are uniform on all machines
  - Resolution of *hostname* works (DNS or NIS).
  - Reverse DNS lookup works (get host name from IP address).
- There is a remote-shell capability for at least the product administrator's account to all participating machines. If not available, use the example `.bat` files as a guide to create a script, and place it in the appropriate directory. Example startup files are provided in `$VOVDIR/etc/boot`. Choose the one that best fits your scenario.
- There are networked file systems on which to place shared files, so that they can be accessed from each machine, using a local path enabled by the NFS. The shared files include:
  - Installed Altair Accelerator software, including at least one branch that must be writable (the *local* directory).
  - The Server Working Directory (.swd)
  - The users' home directories.
  - Work area for each project.
- Standard directories, binaries and libraries are available, including the following:
  - `/tmp` exists
  - `/usr/tmp` exists
  - gcc libs are installed (libstdc++, libfcc_s)
  - libXScrnSaver RPM, which installs library “libXss.so.1” should be available on Linux in order for `vovxidle` to work appropriately.
  - libXft-devel

Register and Log In

If you are a new user, you must register and login to begin the installation.

> **Note:** To download the product and proceed, you must have a customer account. Altair will need to approve your account to allow you to download any software.

1. To begin the installation process, register and login on the Altair web site.
2. Fill out the form and submit it.
   You will receive a confirmation email.
3. Click on the link in the email and verify your address.
4. Log in to the website.

Download Monitor

1. Go to the Downloads page.
2. Click **General_Availability**.
3. Select the most up-to-date version from the list.
4. Choose the appropriate version of Monitor for your machine.

   > **Note:** Multiple file bundles are located in the `<version>_ga directory`, while single file bundles are in the `SFDs` directory.

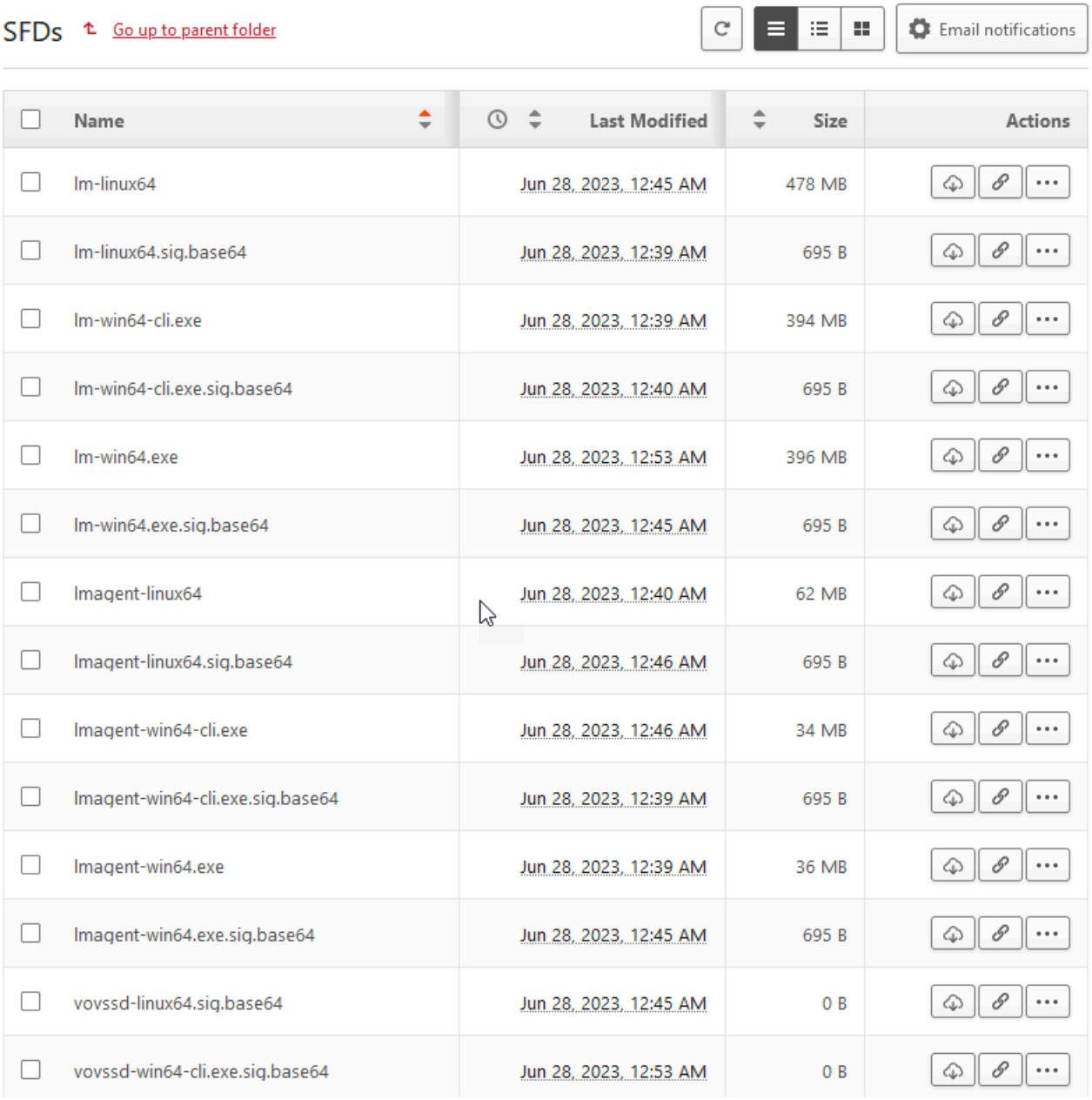


Figure 2: Download List for Monitor

5. If installing an SFD, choose the appropriate file for your machine.

lm-*	Self-extracting archive of Altair Monitor product.
lmagent-*	Self-extracting archive of Altair Monitor multi-purpose agent (used for both process monitoring and remote license server management). See Add and Configure an Agent for more information on adding the agent SFD.

Extract a CLI-based SFD Executable

1. On Windows:

   To extract the SFD using the CLI, you should have selected `lm-win64-cli.exe`. This is a self-extracting installation of the Monitor product. The software components will be extracted into the directory specified by the CLI argument and the product will run from within that directory. This directory will be overwritten upon each start of this executable in order to facilitate simple upgrades of the product.

   a) At the command line, navigate to the directory where the SFD was downloaded.

   b) Run `lm-win64-cli`.

   The software will automatically use the defaults during extraction. You can change any of the parameters using the fields as shown below:

```
CLI Usage (Windows):
lm-win64-cli [-dir <DIR>] [-swd <DIR>] [-local <DIR>]
             [-port <PORT>] [-webport <PORT>] [-roport <PORT>]
             [-instance <NAME>] [-alm <PORT@HOST>] [-extract-only 0|1]
             [-nogui 0|1]

Required arguments for CLI mode:

-dir      DIR   -- Directory in which the LM software files should be
 extracted.
                   Use forward slash (/) for path separator on Windows. The
                   directory path must not contain spaces
                   (default Unix: /opt/altair/lm, Windows: c:/altair/lm).
-swd      DIR   -- Directory in which the LM configuration files will reside.
                   THIS DIRECTORY SHOULD NEVER BE DELETED.
                   Use forward slash (/) for path separator on Windows. The
                   directory path must not contain spaces
                   (default Unix: /opt/altair/swd, Windows: c:/altair/swd).
-local    DIR   -- Directory in which the Altair registry and other version-
                   agnostic configuration files will reside.
                   THIS DIRECTORY SHOULD NEVER BE DELETED.
                   Use forward slash (/) for path separator on Windows. The
                   directory path must not contain spaces
                   (default Unix: /opt/altair/local, Windows: c:/altair/
local).
-port     PORT  -- Port number for LM server (default: 5557).
-webport  PORT  -- Web UI port (default: 5555).
-roport   PORT  -- Guest access port number for LM server (default: 5556).
-instance NAME  -- Name of LM instance (default: licmon).

Optional arguments for CLI mode:

-h                -- Show this help message.
-alm PORT@HOST    -- If Monitor is licensed via the Altair License
                     Manager (ALM) and not an Altair license key file,
 specify
                     the location in port@host format.
-nogui            -- For Unix-based platforms, suppress the GUI.
-extract-only     -- Extract only, do not run.
-start-only       -- Start only, do not extract. A previous extraction must
                     exist.
-noblock          -- Return to the shell/command prompt after startup.

Optional arguments for CLI mode on Windows (ignored on Unix-based platforms):
```

```
-install-service   -- Install service. The service will point to this
                      executable, so ensure it is in a path that is accessible
                      in a service environment. Requires both the account and
                      password arguments to be passed in addition to the
                      required arguments listed above.
-start-service     -- Start service. Requires no other arguments.
-stop-service      -- Stop service. Requires no other arguments.
-uninstall-service -- Uninstall service. Requires no other arguments.
-account           -- Account to use for service installation. Pass "system"
 to
                      install the service to run under the system user.
-password          -- Password to use for service installation. Pass "system"
 to
                      install the service to run under the system user.

Examples:

% lm-linux64
% lm-linux64 -webport 7777 -roport 7778 -instance mylm
% lm-macosx -dir /Applications/altair/lm -nogui
% lm-win64-cli -install-service -account joe -password secret
% lm-win64-cli -install-service -account system -password system -start-
service
% lm-win64-cli -alm 7070@lmsrv
% lm-win64-cli -swd c:/altair/lm/swd
% lm-win64-cli -stop-service -uninstall-service
```

2. On Linux:

To extract the SFD using the CLI, you should have selected `lm-linux64`. This is a self-extracting installation of the Monitor product. The software components will be extracted into the directory specified by the CLI argument and the product will run from within that directory. This directory will be overwritten upon each start of this executable in order to facilitate simple upgrades of the product.

a) At the command line, navigate to the directory where the SFD was downloaded.

b) Run `lm-linux64`.

The software will automatically use the defaults during extraction. You can change any of the parameters using the fields as shown below:

```
CLI Usage (Unix-based platforms):
lm-<VOVARCH> [-dir <DIR>] [-swd <DIR>] [-local <DIR>]
             [-port <PORT>] [-webport <PORT>] [-roport <PORT>]
             [-instance <NAME>] [-alm <PORT@HOST>] [-extract-only 0|1]
             [-nogui 0|1]

Required arguments for CLI mode:

-dir      DIR   -- Directory in which the LM software files should be
 extracted.
                   Use forward slash (/) for path separator on Windows. The
                   directory path must not contain spaces
                   (default Unix: /opt/altair/lm, Windows: c:/altair/lm).
-swd      DIR   -- Directory in which the LM configuration files will
 reside.
                   THIS DIRECTORY SHOULD NEVER BE DELETED.
                   Use forward slash (/) for path separator on Windows. The
                   directory path must not contain spaces
                   (default Unix: /opt/altair/swd, Windows: c:/altair/swd).
-local    DIR   -- Directory in which the Altair registry and other version-
```

```
                    agnostic configuration files will reside.
                    THIS DIRECTORY SHOULD NEVER BE DELETED.
                    Use forward slash (/) for path separator on Windows. The
                    directory path must not contain spaces
                    (default Unix: /opt/altair/local, Windows: c:/altair/
local).
-port     PORT  -- Port number for LM server (default: 5557).
-webport  PORT  -- Web UI port (default: 5555).
-roport   PORT  -- Guest access port number for LM server (default: 5556).
-instance NAME  -- Name of LM instance (default: licmon).

Optional arguments for CLI mode:

-h                  -- Show this help message.
-alm PORT@HOST      -- If Monitor is licensed via the Altair License
                       Manager (ALM) and not an Altair license key file,
 specify
                       the location in port@host format.
-nogui              -- For Unix-based platforms, suppress the GUI.
-extract-only       -- Extract only, do not run.
-start-only         -- Start only, do not extract. A previous extraction must
                       exist.
-noblock            -- Return to the shell/command prompt after startup.

Optional arguments for CLI mode on Windows (ignored on Unix-based
 platforms):

-install-service    -- Install service. The service will point to this
                       executable, so ensure it is in a path that is
 accessible
                       in a service environment. Requires both the account
 and
                       password arguments to be passed in addition to the
                       required arguments listed above.
-start-service      -- Start service. Requires no other arguments.
-stop-service       -- Stop service. Requires no other arguments.
-uninstall-service -- Uninstall service. Requires no other arguments.
-account            -- Account to use for service installation. Pass "system"
 to
                       install the service to run under the system user.
-password           -- Password to use for service installation. Pass
 "system" to
                       install the service to run under the system user.

Examples:

% lm-linux64
% lm-linux64 -webport 7777 -roport 7778 -instance mylm
% lm-macosx -dir /Applications/altair/lm -nogui
% lm-win64-cli -install-service -account joe -password secret
% lm-win64-cli -install-service -account system -password system -start-
service
% lm-win64-cli -alm 7070@lmsrv
% lm-win64-cli -swd c:/altair/lm/swd
% lm-win64-cli -stop-service -uninstall-service
```

Extract a GUI-Based SFD Executable

To install Monitor via the GUI, you should have selected either `lm-win64.exe` or `lm-linux64`.

1. After downloading Monitor, right-click on the executable file and select **Run as administrator**. The following window will display:

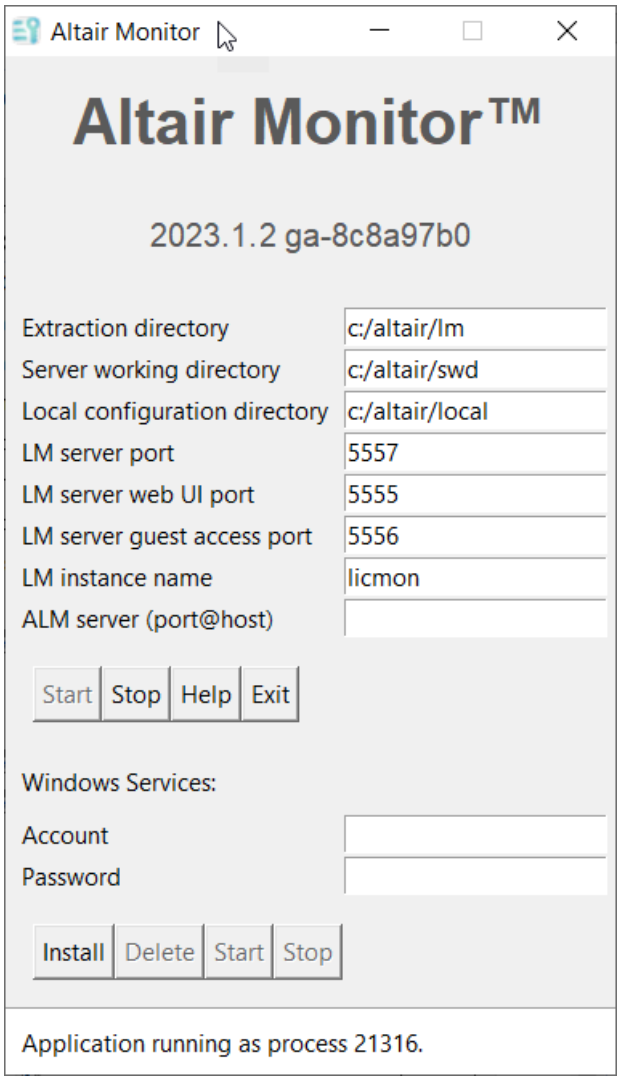


Figure 3: Altair Monitor Windows

2. Make changes to the directories as desired.

> **Note:** Windows users, be sure to use forward slashes and NOT back slashes.

3. When done, click **Start**.
   The extraction may take time some time. When Monitor is started, you will see "Altair Monitor running as process …" at the bottom of the window.
4. With Monitor running, open a web browser and go to **http://localhost:5555** and login. Use the same login you use on your computer.
5. Continue with the setup process.

Set Up Monitor

1. Go to the **Admin** menu. Click on the **System** option, and select **Database Information**.

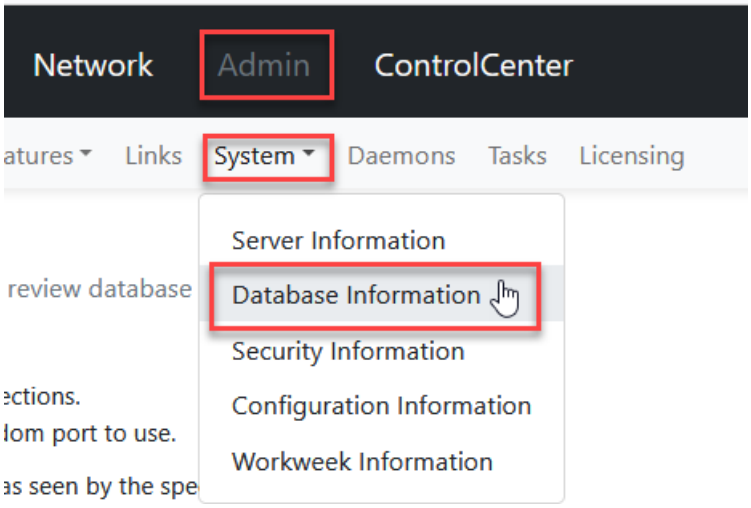


Figure 4: Admin Menu

2. Choose a location where the database should reside (keep in mind, this will be permanent and cannot be changed later) and click **Save Location**.
3. Under **Database Control**, click and drag the slider from left to right until the icon shows green.

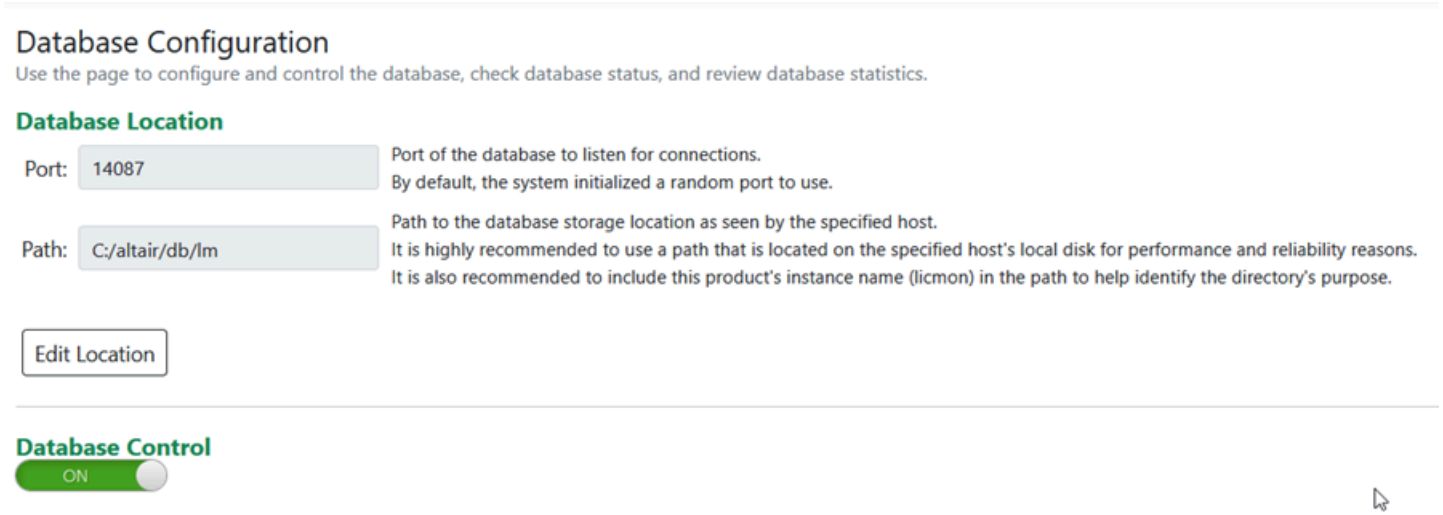


Figure 5: Database Control

4. To add a license monitor, go to the **Admin** tab, and select **Monitors** from the menu bar.

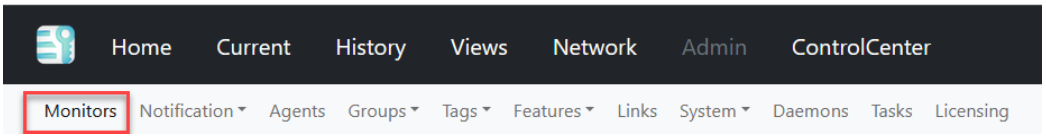


Figure 6:

A new page appears.

5. Enter details for (at least) the following sections.
   a) Select monitor type.
   b) Specify a unique tag name.
   c) Enter license file locations.
   d) Enter full path to status command.

> **Note:** You may copy a version, preferably a recent one, of the FlexNet Publisher `lmutil` utility into the `$VOVDIR/bin` directory (such as, `c:/altair/lm/win64/bin`), named as `lmstat`. It's recommended to copy all "lm" utilities (e.g., `lmreread`, `lmremove`, …) over to this area. You could just enter `lmstat` if the utility program has been copied over to `$VOVDIR/bin` directory.

6. Click **Add New Monitor**.
7. Click **Home** menu option.
   The current checkouts should be populating shortly, within 30 seconds. For Windows users, we recommend setting up Monitor as a service. See Set Up Monitor as a Service – Windows Only for more information.

Set Up Monitor as a Service – Windows Only

Once the Monitor system is set up and installed, it is recommended that Windows users set up a Monitor as a service. This enables you to more efficiently manage Monitor and to log in from your local host easily.

1. Stop Monitor from running by clicking **Stop**.

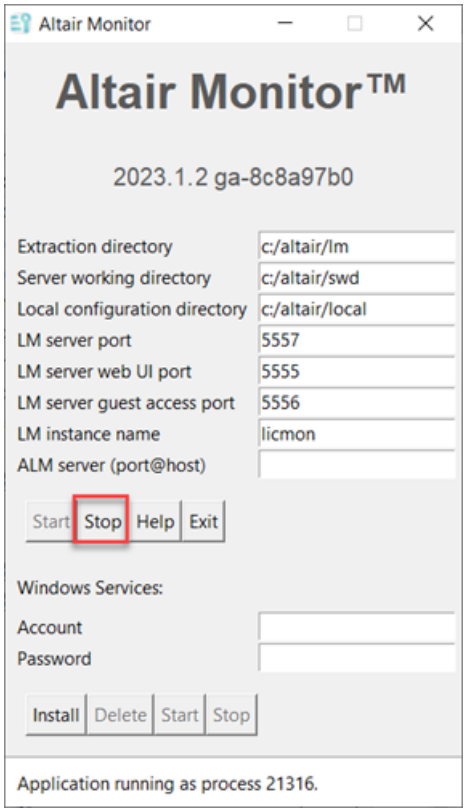


Figure 7:

2. Under Windows Services, enter in your account and password.
   The service account name is generated from your company, as is the password.
3. Click **Install**.
4. When finished installing, click **Start** from the Windows Services area.
   You can log in from the local host from this point forward.

Request a License File

After setting up the system, you should request a license file.

Complete the following steps.

1. In the web interface, click **Admin** > **Licensing**.

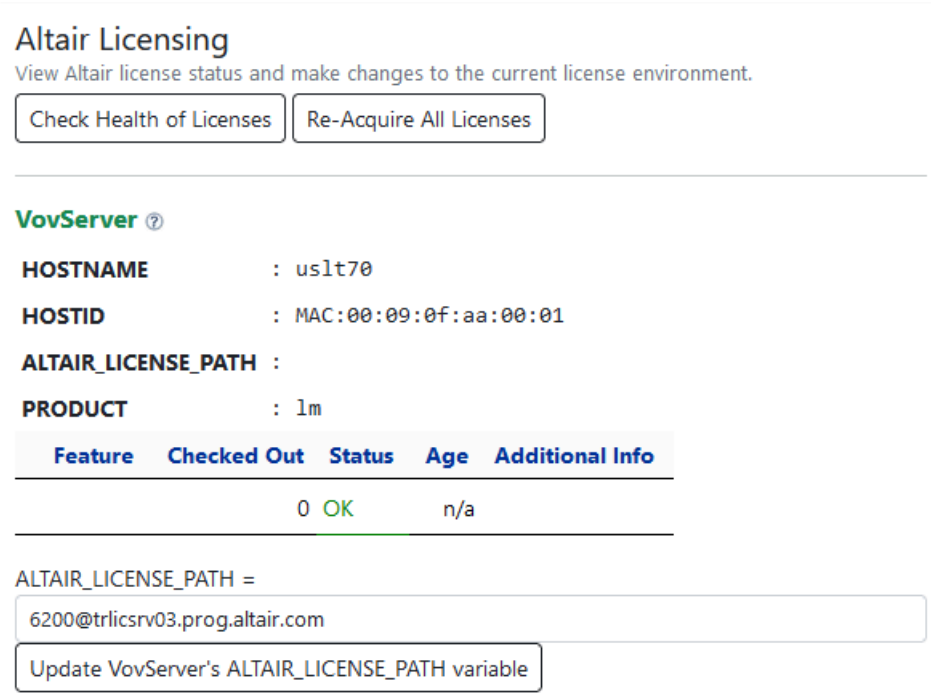


Figure 8: Licensing Page

2. Scroll down to **Request a License for This Host**. Follow the instructions to request a license or contact your sales rep. The license will be mailed to you as a text file.
3. Open the file. Save the license file under the `licmon.swd` directory, (`c:/altair/swd`) which can be found in the executable window under the Working Server Directory.
4. Rename the license file to `license.key`. If a prompt comes up asking you to confirm the change in file type to key, confirm the change.
5. Go back to the web interface and click **Admin** > **Licensing**.
6. Click **Re-Acquire all Licenses**.

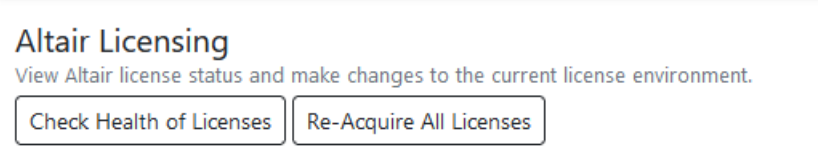


Figure 9: License Status

First Steps

We suggest as first steps that you check Monitor to be sure it's running properly and then perform a few basic tasks to get a feel for the system.

Check your Monitor System (Admin Only)

1. Log in to Monitor.
2. Go to the **Admin** menu and select the **Tasks** option.

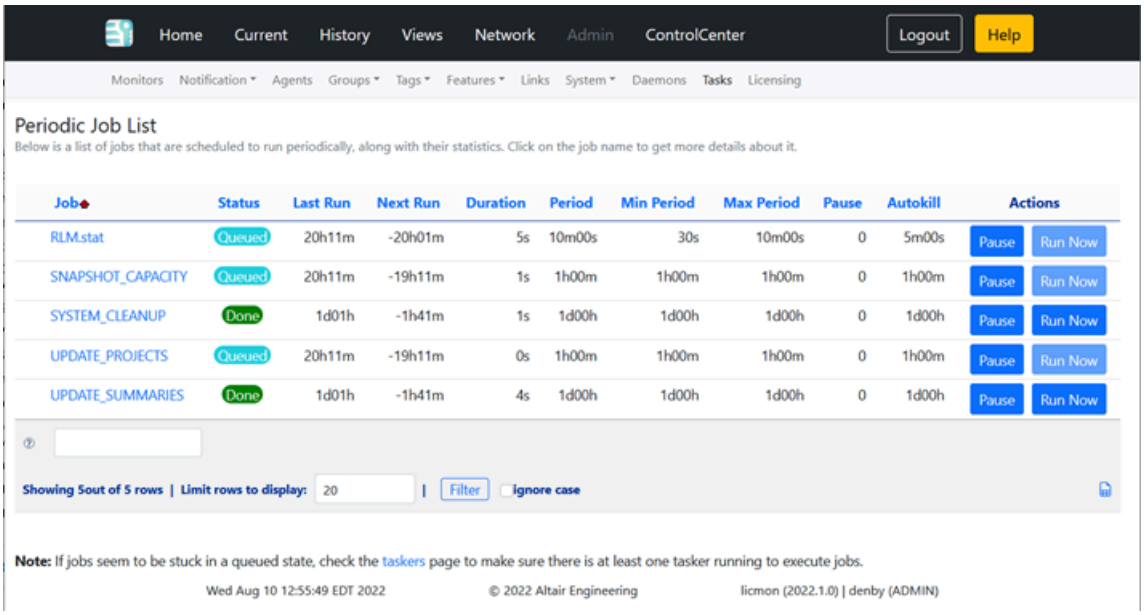


Figure 10: Job Status List

3. Check the job status.
   - If it shows green, it's done running.
   - If it shows waiting, reload Monitor in 30 seconds.
   - If job status shows red (failed), click on the job name, and scroll down to **explanation of why this job is failed**.
4. Check to see if your home page shows checkouts.
   - If it doesn't show checkouts, wait 30 seconds. Reload.
   - If you still don't see checkouts, see No Historical Data is Being Displayed.

Generate a Report

There are three general types of reports that you can generate with Monitor: a usage report, a denials report and a batch report, each with its own subset of reports:

Usage Report	Shows license utilization. There are eleven types of these reports.
Denials Report	Shows statistical information about denial events. This can be used to determine if you have too many or too few licenses.
Batch Report	Enables you to combine data and create static reports. The content is dynamic but you can set the parameters. This is useful when the report period is long or you want to see more than one report. Batch reports are persistent; the data they display reflects the time that they are built, and it remains available until the report files are deleted from the disk. They can be exported in HTML or .CVS files. Admin permissions are required to generate a batch report.

In the following examples, report generation is explained.

Generate a Usage Report

License utilization report.

1. Go to the **History** tab and click on the **Usage** drop down menu.

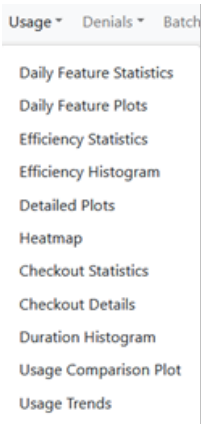


Figure 11: History Page

From the Usage option, you can generate the following 11 types of web GUI reports:

Daily Feature Statistics	An overview of availability and utilization statistics for a time frame.

Daily Feature Plots	A graph of the metrics shown on the Feature Statistics page for a specific tag/feature combination.
Efficiency Statistics	A table showing the metrics associated with efficient license usage.
Efficiency Histogram	A graph that shows license availability. It can show both licensing bottlenecks and waste.
Detailed Plots	A group of graphs, which shows availability and utilization statistics.
Heatmap	A report, which shows a time period, represented as a 24x7 clock view.
Checkout Statistics	A report that can show pin-pointed data about license utilization.
Checkout Details	A report that shows the actual checkouts shown in the Statistics view.
Duration Histogram	A graph that shows the distribution of checkouts based on duration.
Usage Comparison Plot	A graph, which accompanies the checkout statistics page, and allows for complex report-by and filter options.
Usage Trends	A report on one or more features over a specified time frame.

2. In this example, you will generate a daily feature statistics report. To do so, select **Daily Feature Statistics** from the drop-down list. The first time you pull up a report, it will be blank.

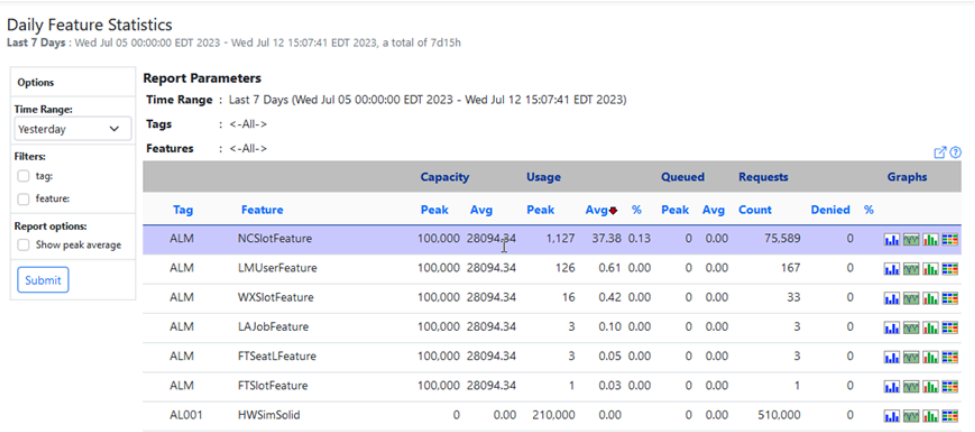


Figure 12: Daily Feature Statistics

3. Enter a time range from the drop-down list.
4. Click on a **Tag** or a **Feature**, and narrow the search by a Tag or Feature, as desired. You can also enter a wild card search.

5. Click **Submit**.
   The report will refresh with your new terms.
6. Optional: You can convert this report to a batch report, by clicking **Convert to a Batch Report**, which is located beneath the Submit button. It's in small blue print. This saves your report, and you can rerun it, without having to enter report parameters again.
   After clicking on the link, you will advance to the **Batch Report** page.
7. Enter a name for your report, and click **Create Reports** at the bottom of the page. When you log in, your report will be available from the Batch Report page until you delete it.

Generate a Denials Report

Statistical information about denial events.

Denials reports show statistical information about denial events detected because of a license request being denied. These reports can be used to determine if you have too many or too few licenses.

> **Note:** The admin must have set up the system so you can generate this report.

1. Go to the **History** tab and click the **Denials** drop down menu.

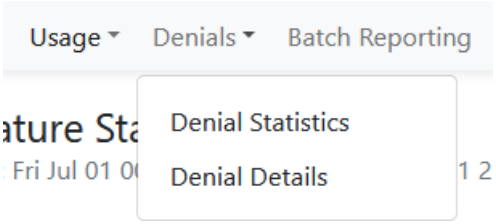


Figure 13: Denials Selection

2. Select **Denials Statistics** from the drop-down list.
3. Select a Time Range, a Filter and Report by, and click **Submit**.
   A report will show all existing Denials.
4. To further refine that Report, go to the **Denial Details** selection. This view shows the information that is normally found in a debug log denial record. You can narrow down the results using the same filter method used in the statistics view. The Denial Details page also displays columns for custom group types. Learn how to set up custom groups (users or hosts that you wish to monitor) by clicking on Add a License Monitor.

Configure a Batch Report

Combine data and create static reports.

While only administrators can configure a batch report, regular users can generate a simple batch report from the History tab, as previously described. Batch reports, configured by an administrator, can be used to compare different data sets such utilization plots and denials, which provide insight into license activity.

These instructions describe how to configure a batch report as an administrator.

1. To create a batch report, go to the **History** menu and select **Batch Reporting**.

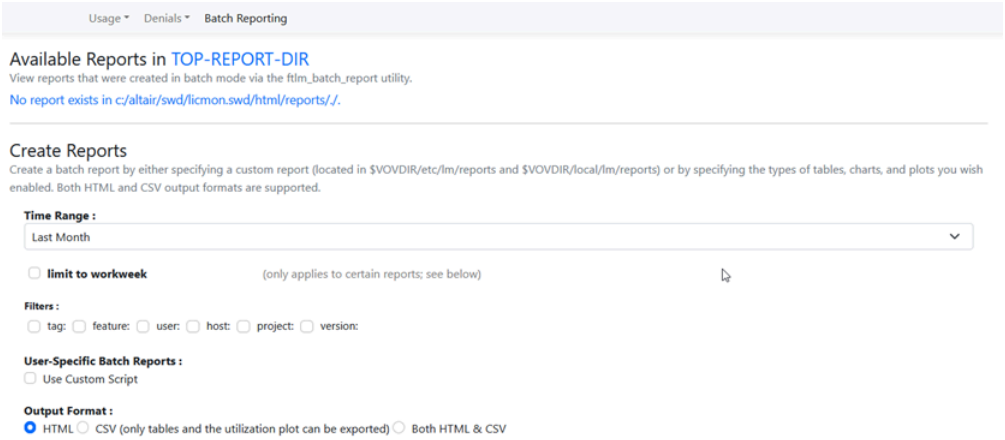


Figure 14: Create a Batch Report - Admin View

2. Select from the following options:

Time Range	Specify the time range of the report.
Filters	Select types of filters you wish applied to the report. Current tag, feature, user, host, project, and version filters are available. User groups will also show up as filters.
User-Specific Batch Reports	If this option is selected, choose from the list of known scripts. If no scripts are shown, contact customer support.
Output Format	Choose between generating an HTML or CSV report, or both. If CSV is selected, only tabular report components will be available.
Report Components	Select multiple reports if you want to compare data. For example, you might want to compare company checkout statistics with denial statistics.
Table Row Limit	Specify the max number of table rows to display for statistics report components.
Features Options	Specify whether to break down results by feature.
Data Source	Specify whether data comes from Monitor stats samples, debug logs or from both.
Report File Options	Specify whether report output should be placed into a single file, or whether it should be split up by tags and placed in multiple files (per tag).
Report File Name	Specify name of report output file.

Static Images for Plots	Contains reference to static images which were created in the working directory.

3. When done, click **Create Reports**.
   Your reports will automatically be generated when you click on the Batch Reporting option.
4. Refresh the page to get updated status of the report generation.
5. To generate CVS file from the report, view the report and click **CVS** at the bottom of the table.

View a Current Features Report

If everything has been set up properly, the current features report will be automatically generated.

Click on the **Current** menu to view the current state of your licenses.

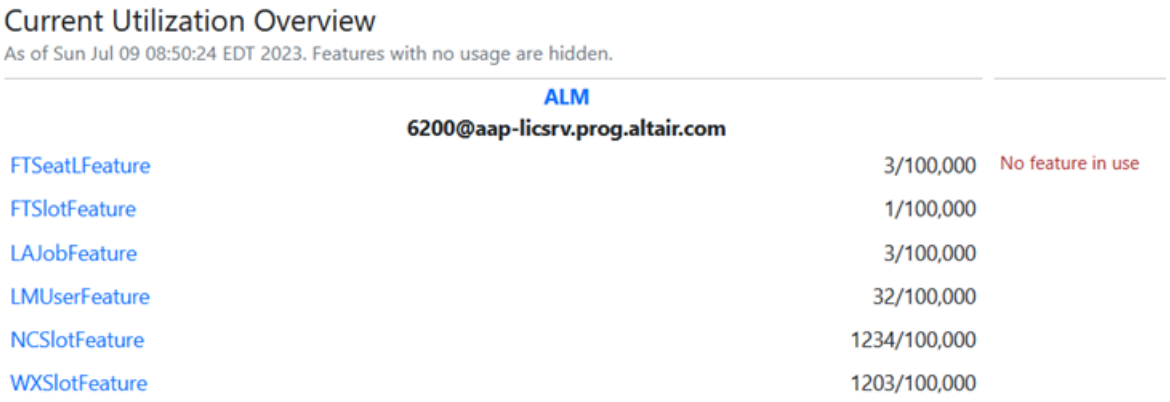


Figure 15: Current Features Overview

At a glance, this page shows you the status of your system and if any licenses are saturated. The blue colors indicate a license that is not over-utilized. The red colors indicate license features which are saturated. You can drill down further by clicking on the feature to learn more.

Set Up Views

When you set up views in Monitor, you are setting up your default Home page, so that when you log in you will see reports and data that you've decided are important to track.

Set Up My Views

To set up your own view, perform the following steps:

1. From the **Views** tab, select the **My View** option.

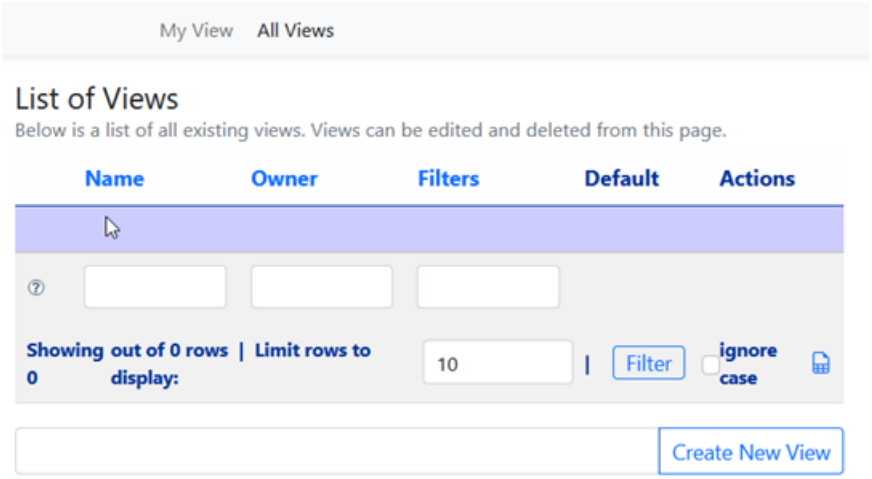


Figure 16: My View

2. Enter a name for your view and click **Create New View**.
3. Enter a filter name and then select from **Tags** or **Features** list.
   For example:
   - **Filter Name**: Enter a filter name.
   - **Tags**: Enter an actual tag name, such as BUILT_IN or a tag pattern (or a tag pattern match).
   - **Features**: Enter a feature, such as AEMv8_RAVEN. For pattern matches, both the ? (single character match) and * (multiple character match) wild card characters are supported.
4. Repeat this process until you have defined as many filters as you like.
5. When done, click **Finished Editing**.
   You will then see the **All View** page.
6. To set your new view as the default view, click **Set as Default**.

Set a Default View from Existing Views

If there is no default view specified and others have set up views, you can set up an existing view, as the default view. To do so, perform the following steps:

1. Go to the **Views** tab and select the **All Views** option.
   This shows a list of all views that have been created, and by whom.
2. Select a View and in the Actions Column, click **Set as default**.
3. Return to the **Home** tab.
   The default view you have chosen will display.

Common Questions and Basic Uses

This section explains how to use Monitor to answer common questions. In most cases, there isn't one answer to a question. Some investigation is required.

Why Isn't My Job Running? (User)

Check the Home Page and Current Utilization

There are many ways to check your Monitor system to see why your job isn't running, but the easiest is to check the home page to see if current utilization is high. Monitor automatically defaults to this view.

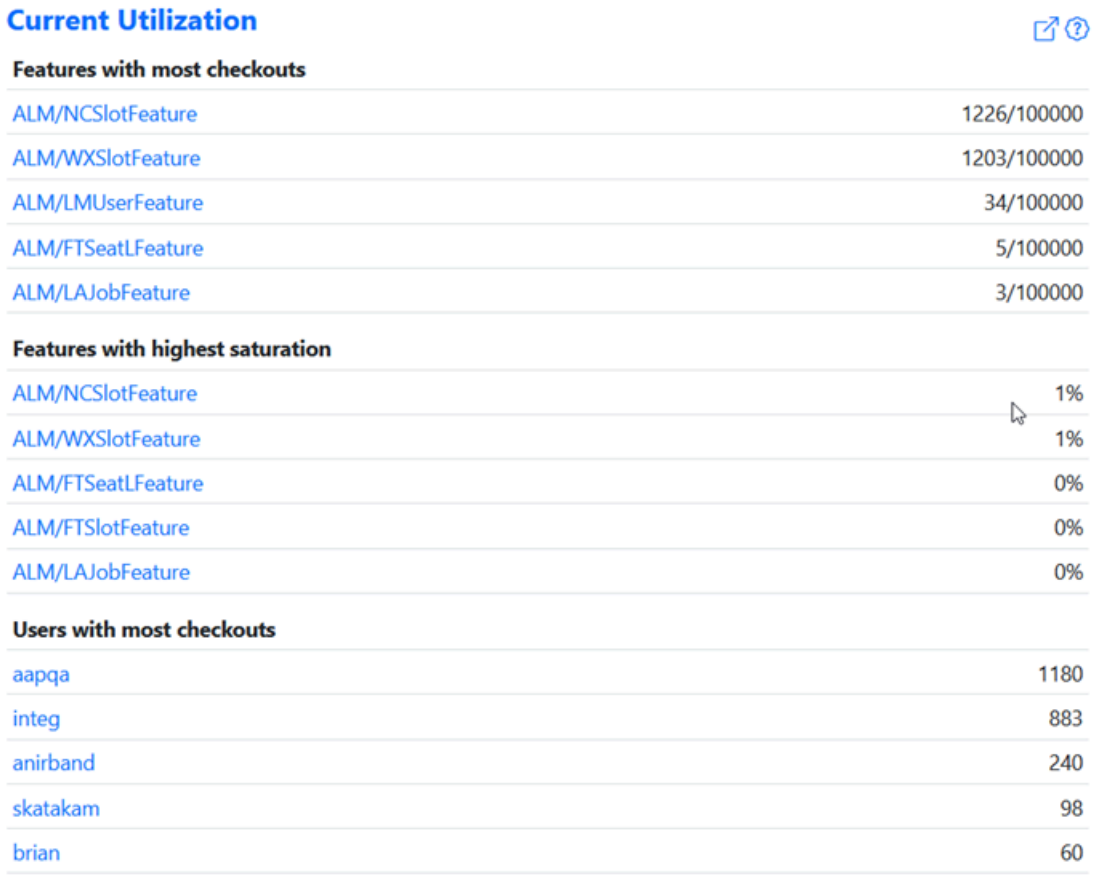


Figure 17: Current Features Page (Home)

Check Heat Maps

Your next step might be to look at heatmaps to check usage data, heat maps show busy and slow times of the day and the week.

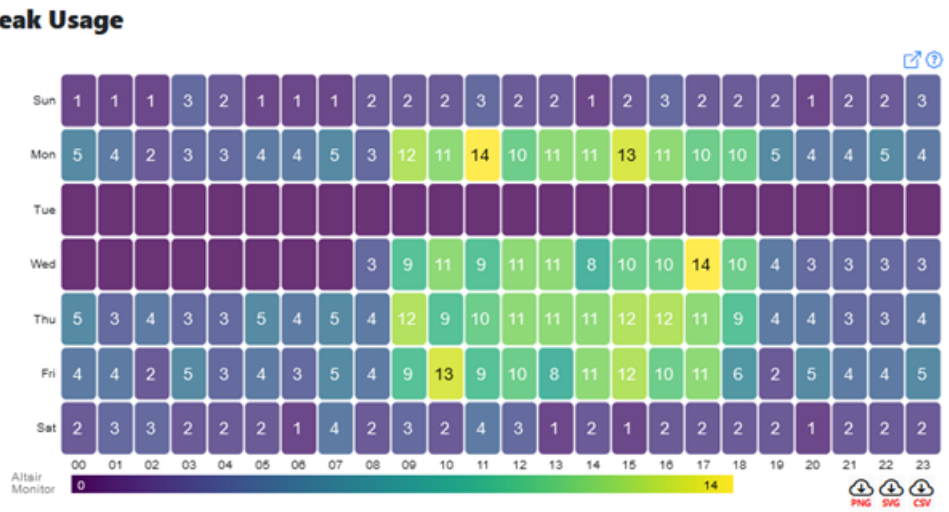


Figure 18: Heat Maps

The yellow and green shows busy times of day, and blue and purple show less busy times. In this example, the system is busy between 9 a.m. and 5 p.m. (working hours). If you can run your job in off hours or schedule it to run then, then choose the times that show blue and green. That said, you can't always run jobs in off hours. If so, send a note to your admin, who may adjust the system, so you can run your job.

Check Existing License Reservations

On the Home page, look for long checkouts of certain features. On occasion, there could be too many license reservations (at the vendor level). If you have 10 licenses for Matlab and you have 4 reserved licenses, then only 6 are available for use. See if those license reservations can be used temporarily. The reserved quantity will be shown in the third value as in_used/capacity/reserved.

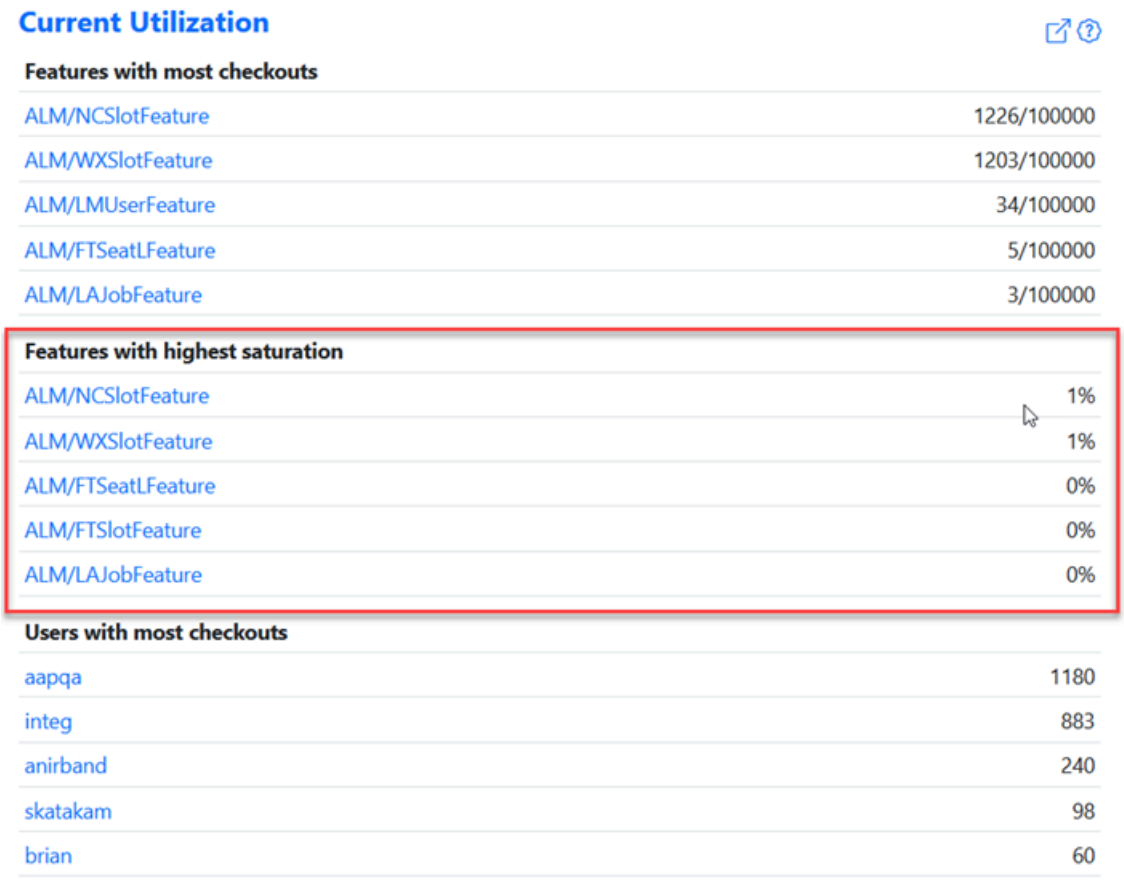


Figure 19: Saturated Licenses

Note: There are other options to dig further into the details, these are just a few basic approaches to answering this question.

When is the Best Time to Run a Job? (User)

Before running a job, check both heatmaps and current usage views, to determine a light use day and a light use time of that day, and then run your job accordingly.

How do I Know if I Have Too Many or Too Few Licenses? (Admin)

Monitor helps you determine whether your company has too few or too many licenses and helps you determine the proper course of action, but you must evaluate the reports within context of your company's current needs and plans. Here are few starting points.

Check the Home Page & Current Utilization

On the Home page, you can easily view current waits and heavy users. Then you should follow up by evaluating who is using the system and when they are using it.

Generate or View a Denials Report

You might also generate or view a Denials Report, which lists all the license requests that have been denied. If you are getting lots of denials, you many need more licenses. You can learn more about Denials Reports in Generate a Denials Report. Perhaps, on that Denials Report page, you will see no denials or just a few. (Requests can get queued up, depending on the vendor's license server.) If there are no denials, you might then conclude that you have too many licenses. On the other hand, if there are many denials, you might initially conclude that you have too few licenses, because requests are continually being denied. But it could be that one user or a set of users is overloading the system at a certain time. Investigate further.

View Heatmaps

Your next logical step might be to view a heatmap. The heatmap provides a 24-hour colored clock view of license activity for each day. For each hour in the view, a color-coded box represents the amount of activity for the license feature. The heatmap report page contains four heatmaps: one for peak concurrent usage, one for checkouts, one for check-ins and one for denials.

From a heatmap, you can see if there many denials on a particular day or even a particular time of the day, and you can determine whether your best move would be to allocate resources differently or to simply buy more licenses.

You might also look more closely at a particular user. See the following instructions for more on this.

How do I Know if a User is Hogging All the Licenses? (Admin)

Check the Home Page & Current Utilization

Go to the **Current** tab and review the utilization statistics. This report shows features, which are being used and which may be saturated. Saturated features are shown in red.

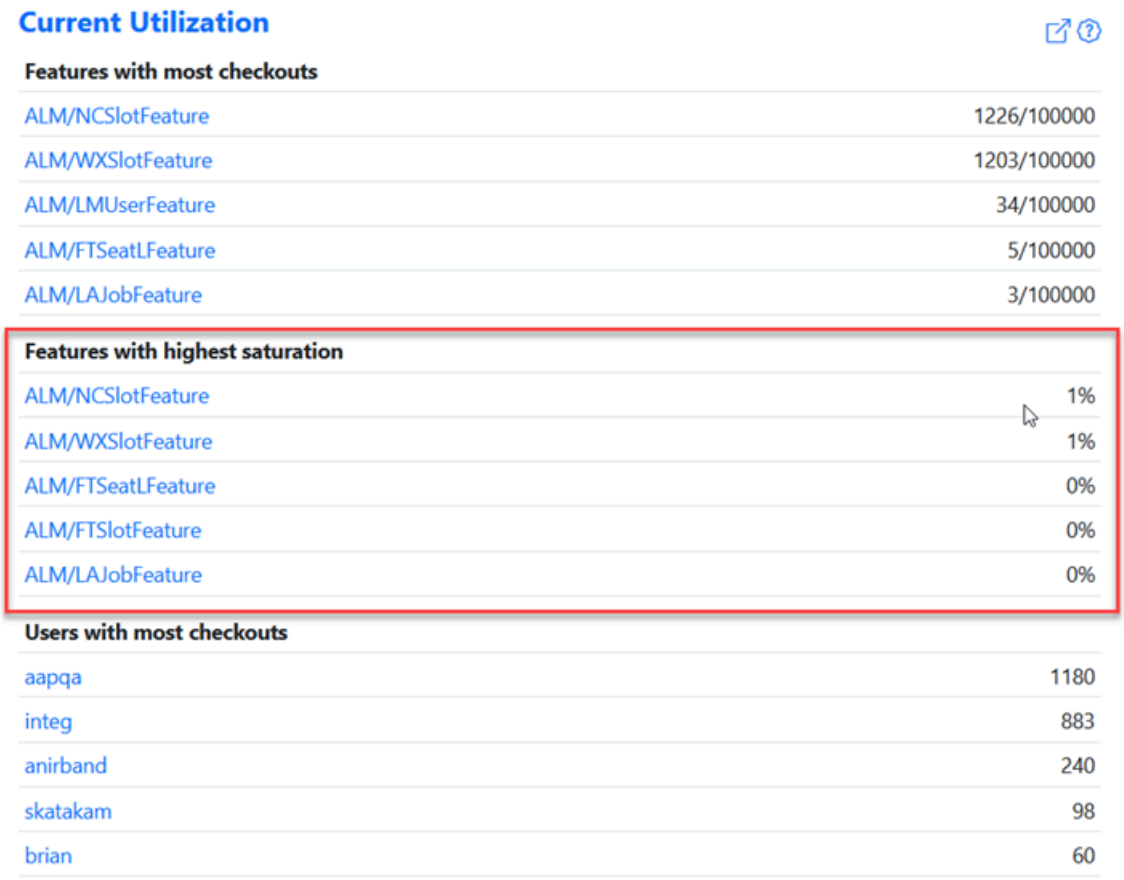


Figure 20: Saturated Licenses

Click on any of the features, which will open the **Current Checkouts** page, which shows who is using that feature and for how long.

Check the Current Checkouts Page

Check to see if a user is dominating the license feature. In this case integ is using most of the licenses. You can email that user by clicking on the email icon.

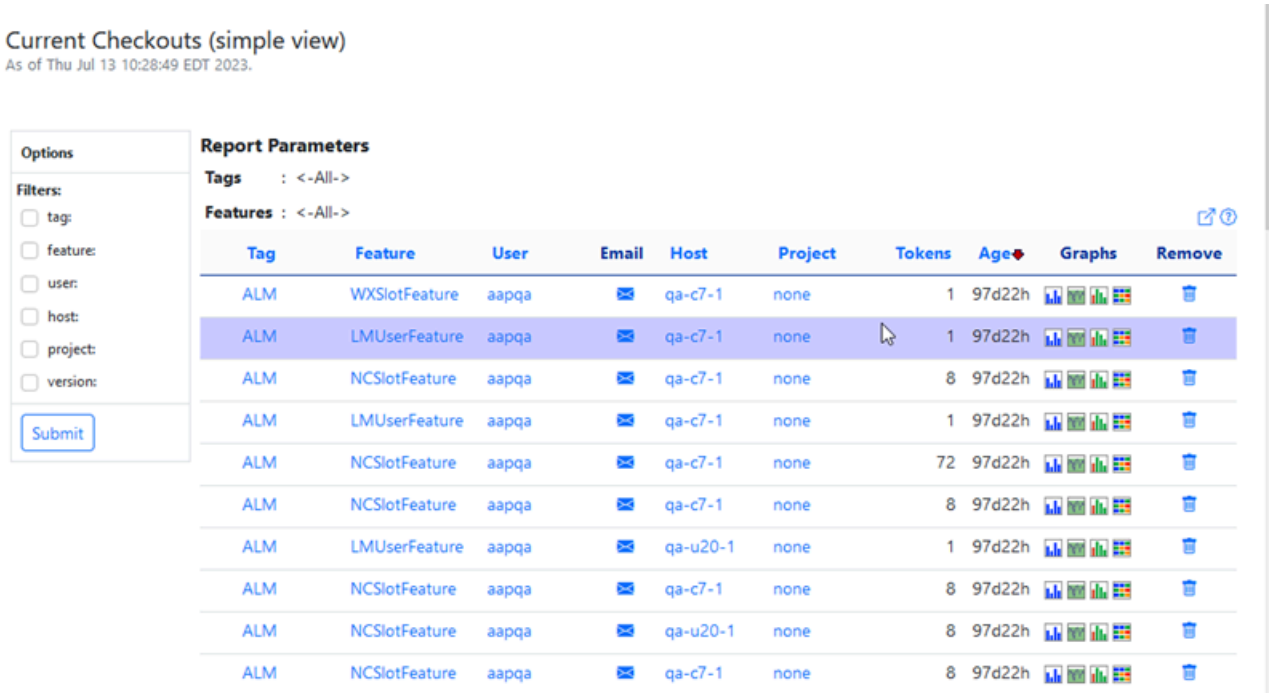


Figure 21: Current Checkouts

Check the History Page and View a Checkout Statistics Report

To look more closely at a user, go the **History** menu and view a **Checkout Statistics Report**. That report shows who has historically used a license. You can sort the report by a user by making a selection in the **User** filter. Or you can generate a new report by selecting a user or license feature and clicking **Apply** and then clicking **Submit**.

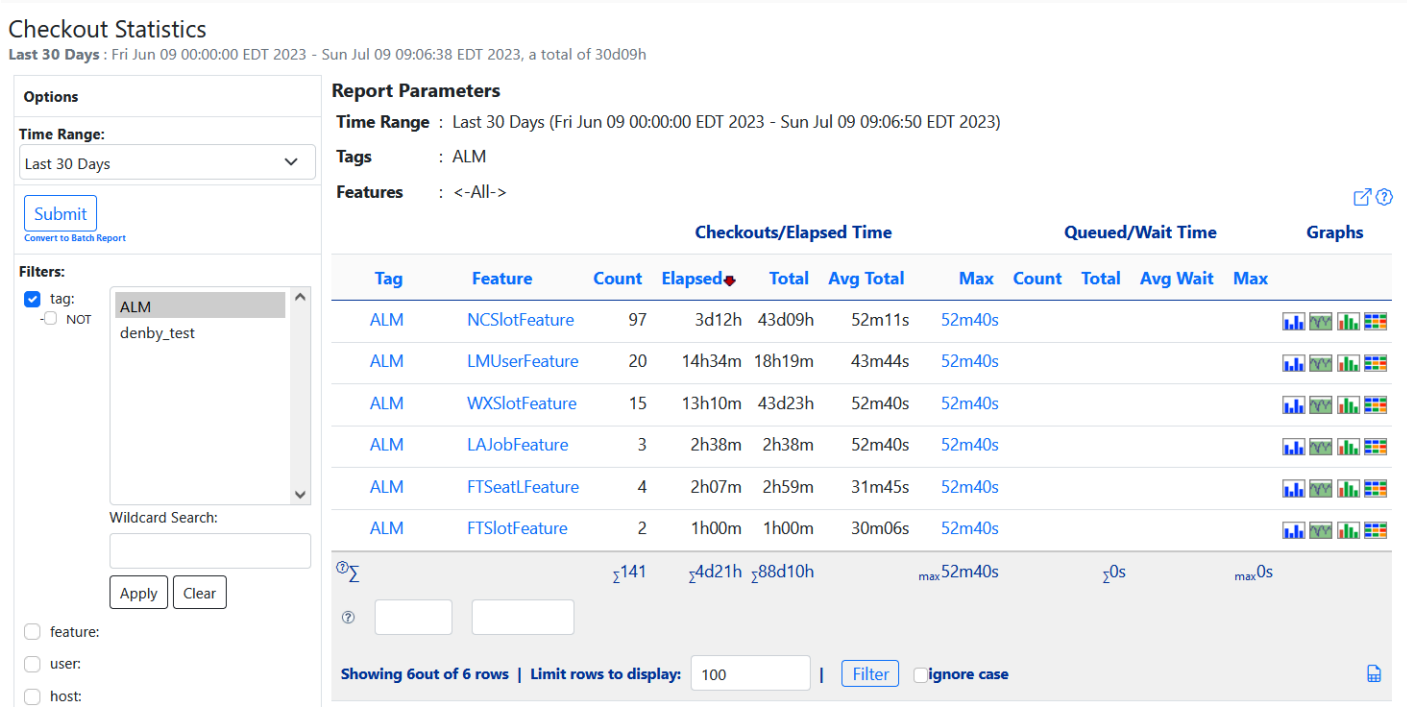


Figure 22: Current Checkout Statistics Report

How do I Make a Forecast and Plan for the Next Quarter? (Admin)

From the **History** menu, click the **Usage** drop down menu and select **Efficiency Statistics** and/or Detailed Plots, so you can evaluate usage over time. You can extrapolate data from these reports on your current use and make predictions. In the following example, you can view the historical use of a feature.

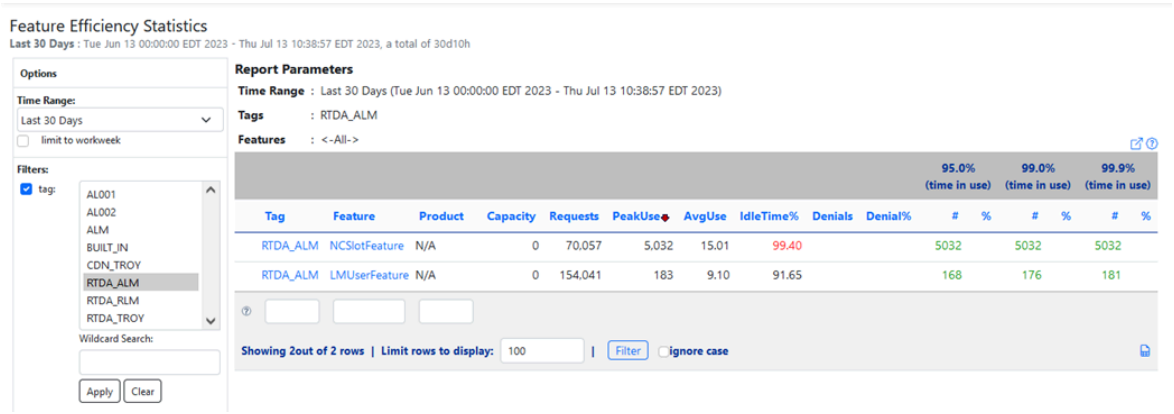


Figure 23: Feature Efficiency Statistics

You can also create reports, which return useful information and help with monitoring and planning. You might create a group (which is a selection of users) and track a project (which is selection of users that you track). Projects take time to yield useful information. When you set these up, you can see the department/site/group/team and the resources used.

How do I Manage My Licenses and License Servers? (Admin)

Set up Agents. Agents centralize management. You can update, maintain and add and subtract licenses from a central point. Monitor can be configured to monitor hardware and process information if agents are configured on the machines you wish to monitor. Agents can be configured and controlled remotely from the Monitor server if certain conditions are met. In most cases, you will configure an agent to run remotely. You can learn more about how to set up agents by clicking on Agents.

How can I Keep Track of My Servers and Anticipate Trouble? (Admin)

You can track server status and health by setting up email notifications. These notifications can alert you of downed servers, downed license servers and bottlenecks.

Using the Graphical User Interface

Monitor has many views and reports, and this section details all of them. It is designed as a reference, so when you generate a report, you will understand all its parameters.

Depending on your user permissions, you will see either the user or administrator interface. There are five pages available on the user interface and seven pages shown on the administrator interface. This section explains every page, its purpose and its options, in the order of its appearance.

The following list provides a short summary of each page and its capabilities:

Home Page

Primary page for viewing the status of your licenses and views.

The Monitor home page is intended to provide a current, high-level overview of the license environment being monitored. This includes a section for some basic utilization and wait time statistics, a customized view section, and a section that shows the status of the most active license servers. Clicking on the headers takes you to each header's respective page.

Current Status

The first section on the home page shows some high-level utilization and wait time statistics for the moment of time at which the home page was loaded. The statistics are divided into two categories: "Current Utilization" and "Current Wait":

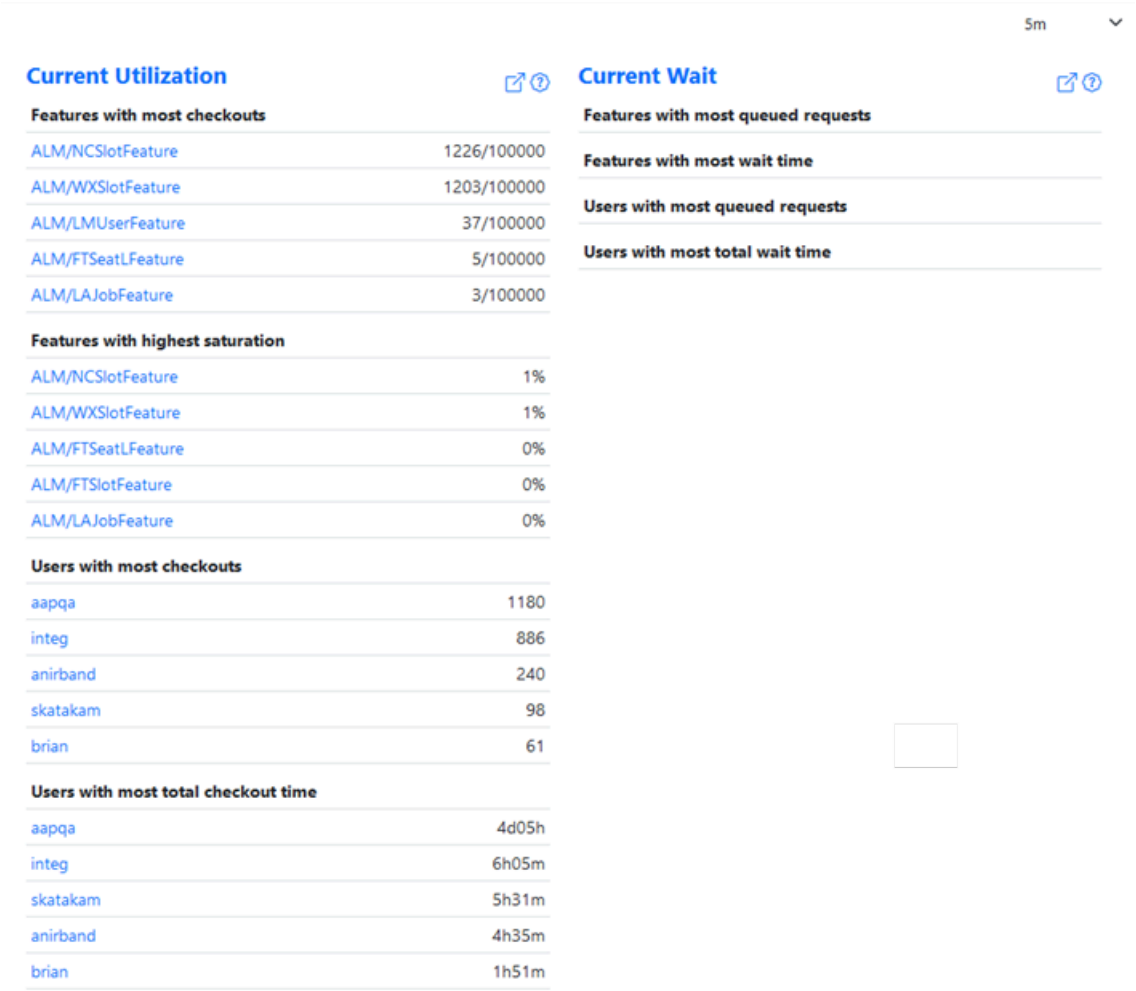


Figure 24: Home Page: Statistics Section

Each category is further broken down into a collection of top metrics. This allows you to see the most used features, the most active users, and the features that are the largest bottlenecks. The features and users that show up in these sections are links, which can be clicked on to obtain details about the statistic.

My View Section

The My View section shows the configured default view for the current authenticated user. A *view* is a pre-configured collection of tag and/or feature filters that are presented in a table for convenience. Views can be created and/or edited in the Views tab. Clicking on **My View** navigates to this page.

License Server Section

The final section shown on the home page is the license servers section. This section shows the most active license servers, their status, and some basic statistics about the server such as the number of features served by the server, the number of checkouts that are currently active on the server, and the last time the server was sampled by Monitor for data collection.

Figure 25: License Servers

Alerts

Monitor includes an alert system that provides visibility to anomalies that occur within the licensing environment or the Monitor product itself.

Each alert has a severity level that indicates how serious the alert should be considered. The four severity levels are:

- INFO - For informational purposes, no cause for concern.
- WARNING - May be of concern, but should not impact operations.
- ERROR - Action should be taken or operations may be impacted.
- URGENT - Action must be taken or operations will be impacted.

View Alerts

The Alerts menu shows all alerts that have been recently triggered (alerts that are over 24 hours old without a repeat occurrence are discarded). Alerts are shown with their respective severity level, the Monitor system module from which the alert was generated, the title and details of the alert, occurrence statistics, and administrative controls for deleting or acknowledging the alert:

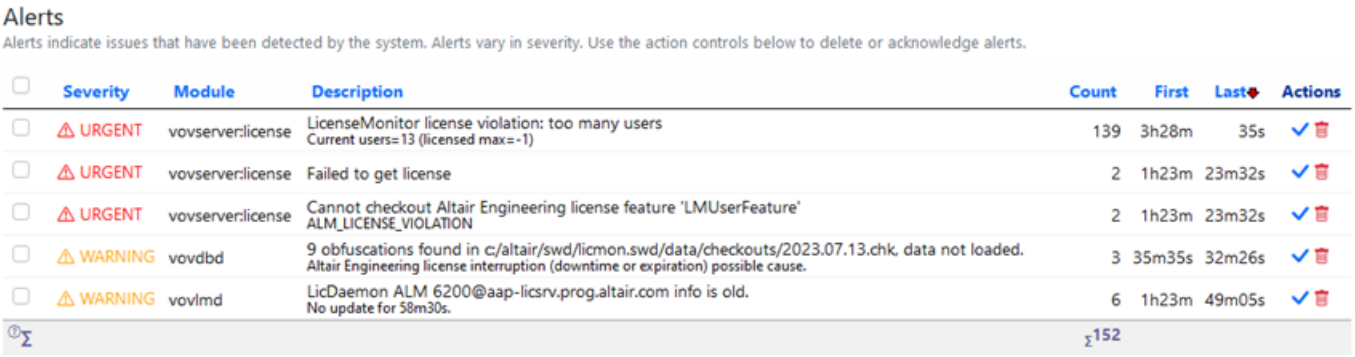


Figure 26: Alerts Page

Administrative Controls

Alerts may be either deleted or acknowledged. Deleting an alert clears it from the system memory. If the alert reoccurs, it will reappear in the alert list. Acknowledging an alert leaves it in the system

memory, but it is shown as grayed out in the alert list and it no longer counts as the highest level of alert that is present in the system. Re-occurrences are still counted and shown in the occurrence statistics for the alert.

Links

By default, no links will show until you have configured them. You can add links to your Home tab to more efficiently manage your system, and we recommend you do that once you have configured the system.

You must have Admin permissions to perform this task.

1. To add a link, go to the **Admin** menu and select the **Links** option.

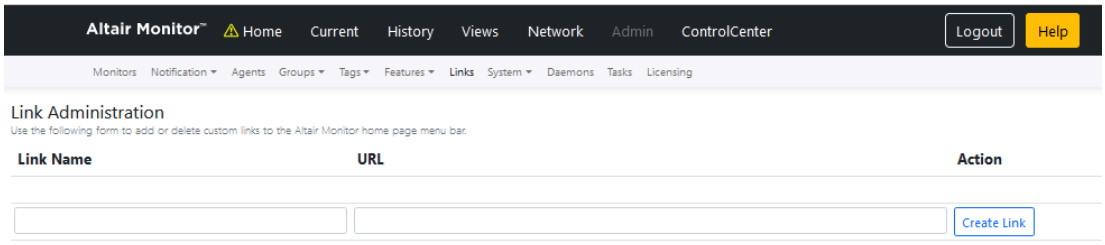


Figure 27: Add a Link

2. Type in the link name and add a URL.
3. Click **Create Link**.
   When you return to the Home tab, **Links** will show this as option.
4. To delete the link, return to the **Admin** tab and select the **Links** option.

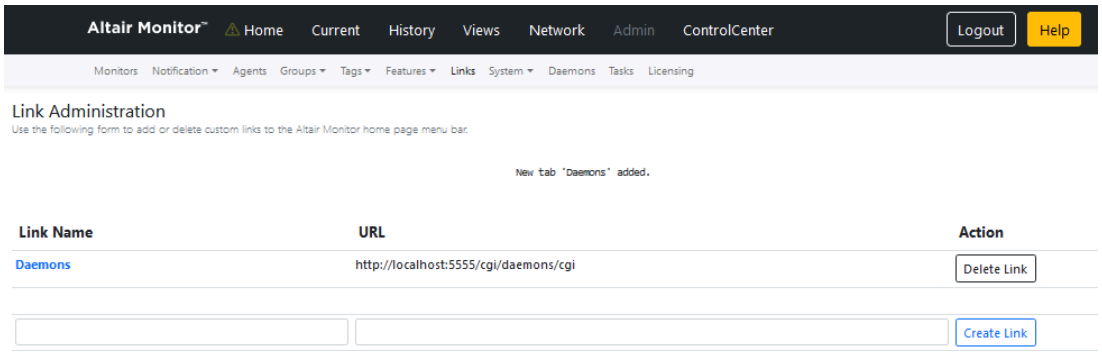


Figure 28: Delete a Link

Current Tab

A summary of features with active checkouts.

The Current tab shows a summary of features with active checkouts the moment the page is loaded. By hiding the features that have no usage, this page shows the location of the license activity.

The following views are available:

Overview	Current utilization overview for features, jobs and daemons.
Servers	List of all license servers that are configured to be monitored.
Features	Availability and utilization details of the features.
Checkouts	Checkouts for all tags and features at the time the page was loaded.
Expirations	Upcoming license feature expirations.
Raw Data	Raw output of the status command for its most recent execution.

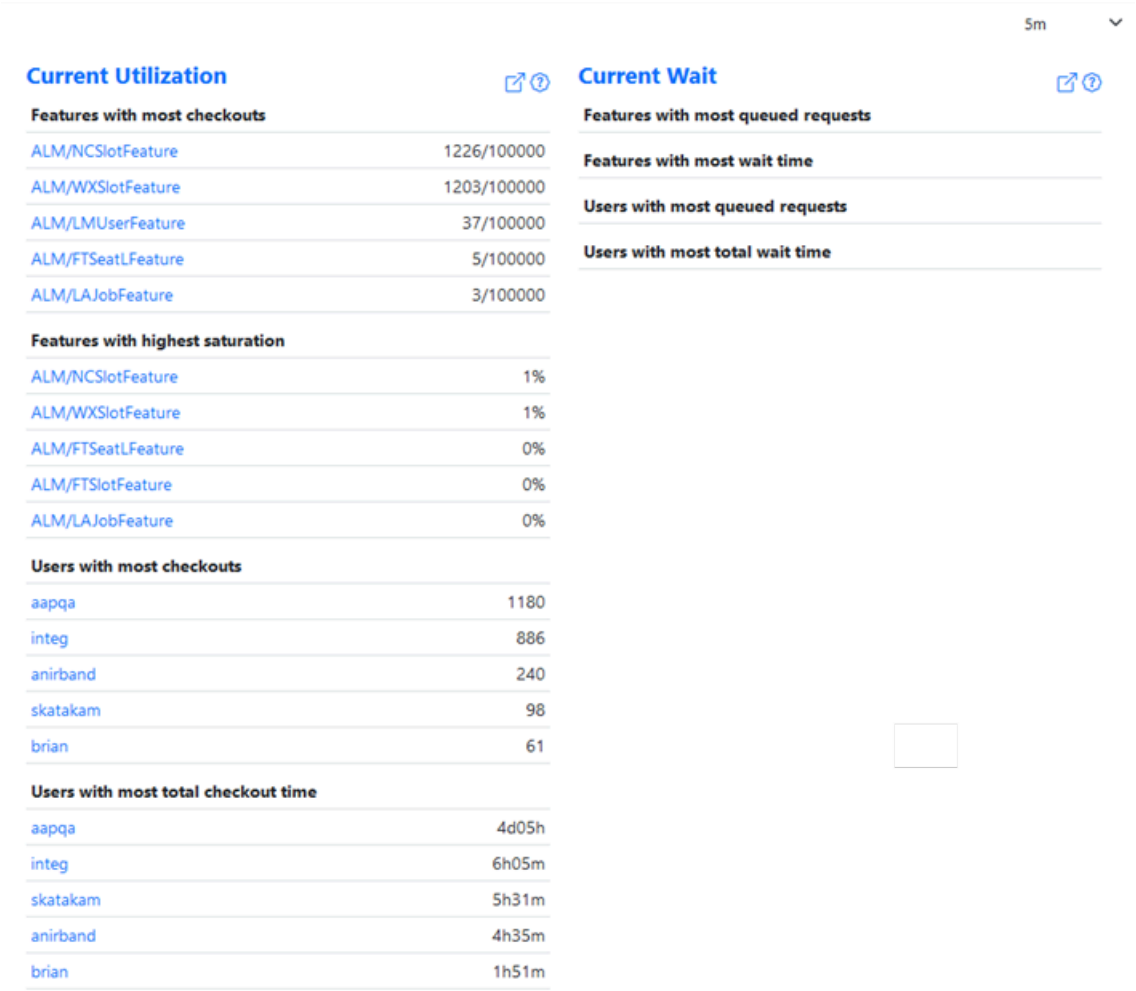


Figure 29: Home Page: Statistics Section

Current Utilization

The **Current Utilization Overview** page is a summary of the features that have active checkouts at the moment that page is loaded.

By hiding the features that have no usage, this page can easily show where the license activity is. The simple metric shown is in the format of "in use" or "available". The features that are saturated (100% utilized) are highlighted in red text.

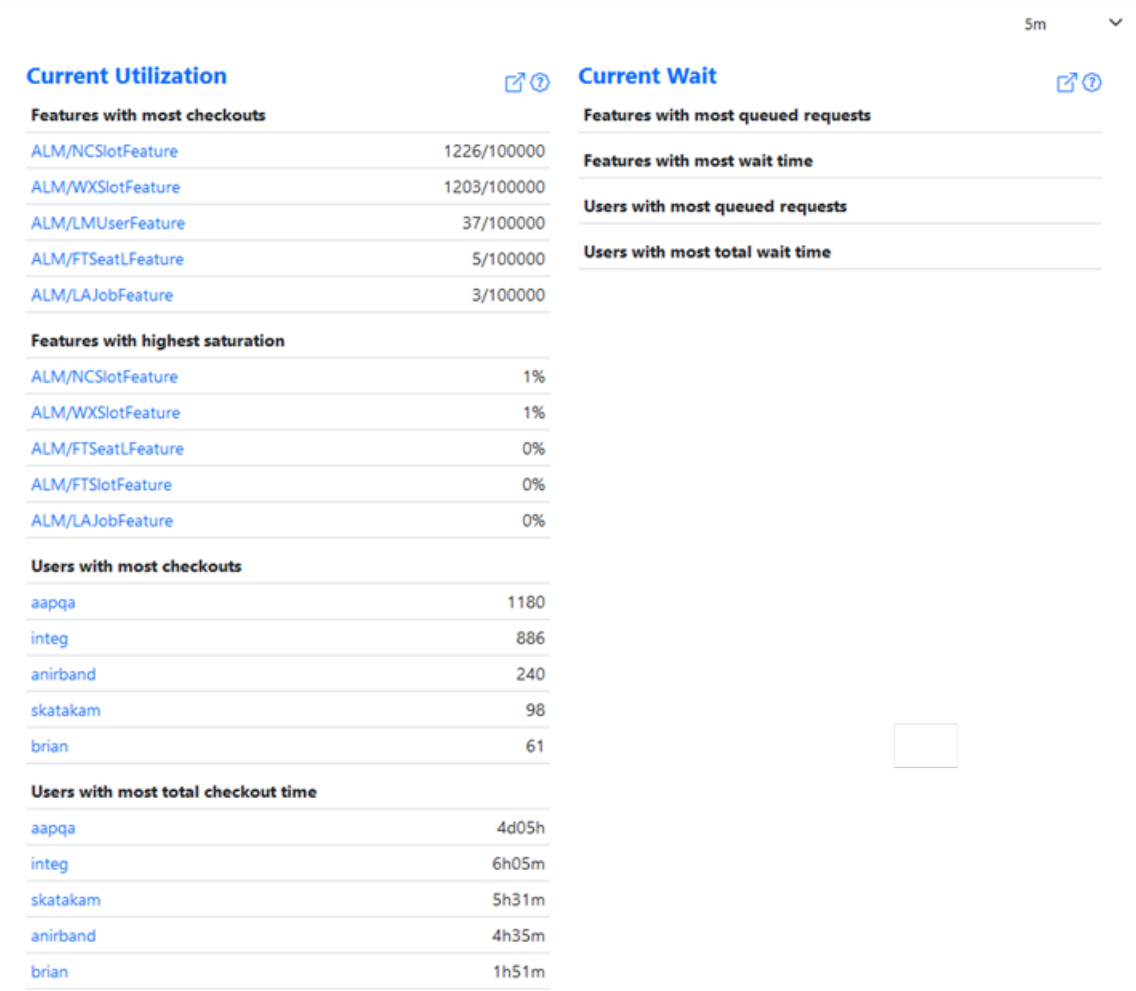


Figure 30: Home Page: Statistics Section

Servers Page

The **License Server** page shows a list of all license servers that are configured to be monitored, along with the status and basic availability and utilization statistics.

License servers that are running with files that contain more than one daemon will result in multiple rows being shown for the server, one row for each daemon.

Figure 31: License Servers

The table shows the following details for each license server being monitored:

Tag	A unique identifier for the license server assigned by the Monitor administrator
Type	The license server type (that is, FlexNet Publisher, Reprise, etc.).
Server	The port@host or license file specification of the license server.
Status	One of a green check mark (running normally), a red X (error), a yellow exclamation point (running but with problems), or an image that depicts that a sample is currently being taken. Clicking on the status image navigates to the raw data page for the license server, which can be used to get more details on the status.
Features	The number of features being served by the daemon.
Checkouts	The number of checkouts checkouts at the time the page was loaded.
Last Update	The amount of time that has elapsed since the last sample was taken.

FlexNet Publisher Unused Daemon

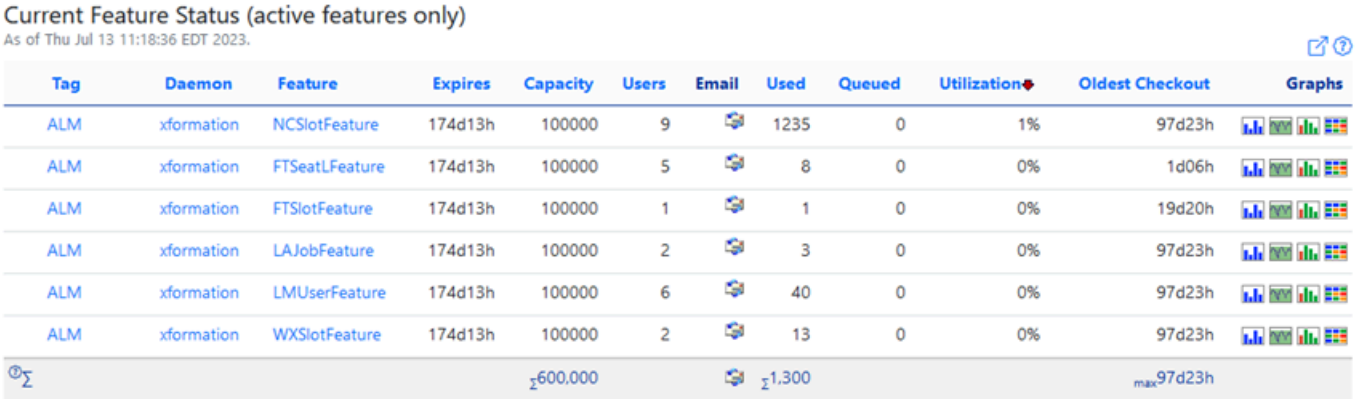
Every FlexNet Publisher license server being monitored includes a default artificial daemon called "unused". All features will be assigned to this daemon until the INFO parsing job runs (which gathers daemon, version, and expiration information for features from the license server every 12 hours by default) or until usage is detected each feature (at which point the daemon is also known). This is necessary because of how the STAT parsing job (which gathers the feature list and users) does not show the actual daemon until there is usage. Once an actual daemon has been assigned to all features found in the tag, the "unused" daemon will be removed from the system. If Monitor is restarted, the process will be repeated.

Features Page

The **Current Feature Status** page shows the availability and utilization details of the features.

By default, only active features are shown in the table. The Features View option has four different views:

Active	Availability and utilization details of active license features.
All	Availability and utilization details of all features, including idle license features.
Time-based	Availability and utilization details of time-based features.
Perpetual	Availability and utilization details of perpetual features.


Current Feature Status (active features only)
As of Thu Jul 13 11:18:36 EDT 2023.

Tag	Daemon	Feature	Expires	Capacity	Users	Email	Used	Queued	Utilization	Oldest Checkout	Graphs
ALM	xformation	NCSlotFeature	174d13h	100000	9		1235	0	1%	97d23h	
ALM	xformation	FTSeatLFeature	174d13h	100000	5		8	0	0%	1d06h	
ALM	xformation	FTSlotFeature	174d13h	100000	1		1	0	0%	19d20h	
ALM	xformation	LAJobFeature	174d13h	100000	2		3	0	0%	97d23h	
ALM	xformation	LMUserFeature	174d13h	100000	6		40	0	0%	97d23h	
ALM	xformation	WXSlotFeature	174d13h	100000	2		13	0	0%	97d23h	
				Σ600,000			Σ1,300			max97d23h	

Figure 32: Current Feature Status Page

In the table, a row is displayed for each feature found in each tag. By default, the table is sorted by the utilization percentage in descending order. The following information is displayed in the table:

Tag	The tag representing the license server.
Daemon	The vendor daemon that is serving out the license server.
Feature	The license feature name. If the feature name begins with "T:", the feature is a subfeature, which is activated when certain token-based features are checked out. Note that subfeatures are supported on an inclusive basis only. See below for details.
Expires	The time left until the license feature expires. If there are multiple instances of the same feature being served by the daemon, the earliest expiration is used.
Capacity	The total number of tokens of the feature that are available.
Users	Total number of unique users that have the feature checked out.

Email	The email icon is a mailto link that can be used to send an email to all users of the feature using the client machine's configured email client. The client must be capable of handling mailto links.
Used	The number of tokens of the feature consumed by all users.
Queued	The number of token request currently being queued.
Utilization	The percentage of tokens currently being used.
Oldest Checkout	The age of the longest-held checkout of the feature. This is useful for finding features held by abandoned or neglected tool sessions.
Graphs	Contains shortcut icons for generating plots and heatmaps.

Token-Based Subfeatures

Some vendors provide licenses that are token-based. Multiple tools can check out this type of license, with varying token counts. For example, a compiler may check out 1 token-based license, whereas a simulator may check out 2 of that license. To perform the token-based feature tracking (FlexNet Publisher only at this time), Monitor relies on an optional field in the lmstat output that is referred to as the "subfeature" field. This field is located between the display and version fields of the lmstat output. The following is an example of this field, which is highlighted in bold:

```
"Virtuoso_Multi_mode_Simulation" v9999.999, vendor: cdslmd
floating license
bob lnxws1 :0.0 Spectre (v7.000) (licsrv/1797 3031), start Fri 6/20 12:34
```

In this example, the user `bob` has checked out 1 multi-mode simulation license token, and that 1 token is activating the "Spectre" product. In the Monitor reports, if the administrator has enabled subfeature tracking in the monitor configuration for this particular tag, the subfeature will show up as "T:Spectre" to help determine how token-based licenses are being used.

> **Note:** Not all vendors/tools support the subfeature field. In fact, some vendors/tools use this field for other data that is completely unrelated. For this reason, Monitor's FlexNet Publisher parser is designed to support subfeature values on an inclusive basis only. Altair will add support for subfeatures as they are reported to the support team.

Checkouts Page

The **Current Checkouts** page shows all checkouts for all tags and features at the time the page was loaded. The checkouts are sorted by their age in descending order by default. This order helps to identify problematic checkouts that may require attention.

Simple View

Each row in the table shows one license checkout.

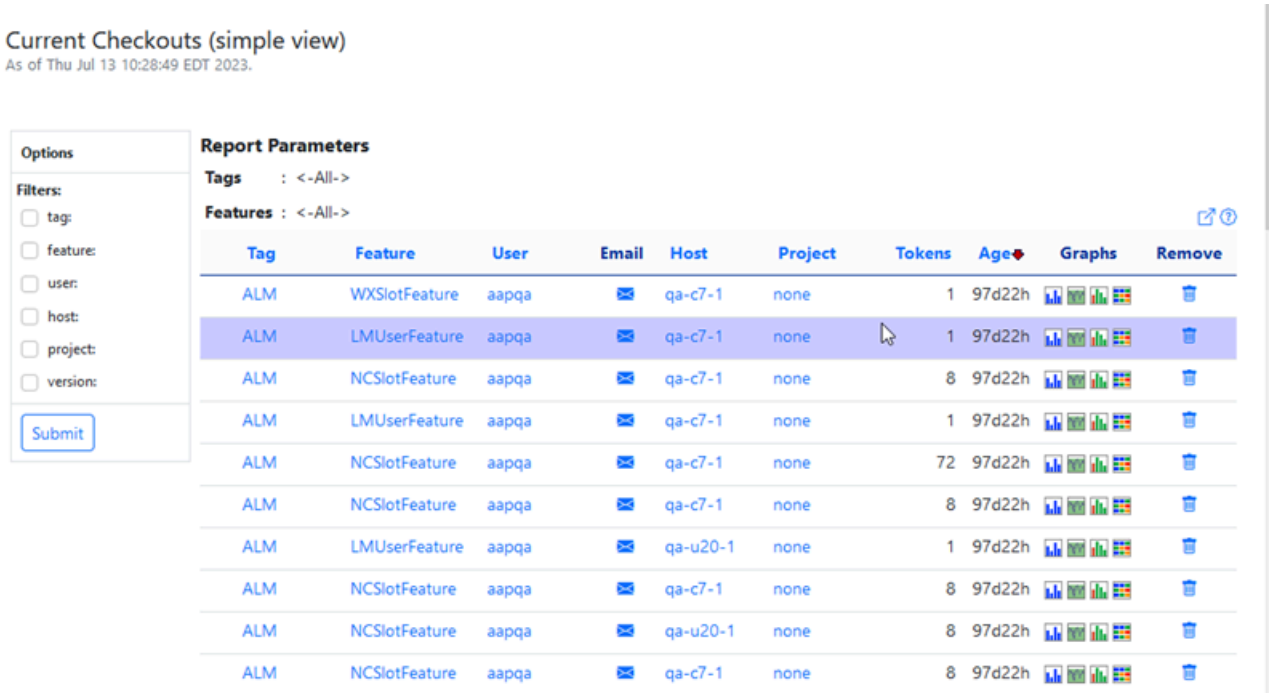


Figure 33: Current Checkouts

The following information is displayed:

Tag	The tag representing the license server.
Feature	The license feature name. If the feature name begins with "T:", the feature is a subfeature, which is activated when certain token-based features are checked out. Note that subfeatures are supported on an inclusive basis only. See the Features Page for details.
User	The user holding the checkout. If the user begins with "r:", a license reservation is in effect for the user or group indicated.
Email	The email icon is a mailto link that can be used to send an email to all users of the feature using the client machine's configured email client. The client must be capable of handling mailto links.
Host	The host on which the job holding the feature is running.
Project	The project assignment for the current checkout.
Tokens	The actual number of licenses.
Age	The age of the checkout. This is useful for finding features held by abandoned or neglected tool sessions. For FlexNet Publisher, the age used in this column is the age reported by `lmstat`. For the observed age, which is the age at which Monitor first detected the checkout, use the "Complete View".

Graphs	Contains shortcut icons for generating plots and heatmaps.
Remove	If the user that is logged in matches that of the checkout, or the user has an administrator security principle, the trash can icon can be used to perform the removal of the checkout. Removal of checkouts can only occur once the age of the checkout is at least two minutes.

Complete View

For more details on the checkouts, click the **Complete View** link in the drop-down page menu. This will enable the following columns in the table.

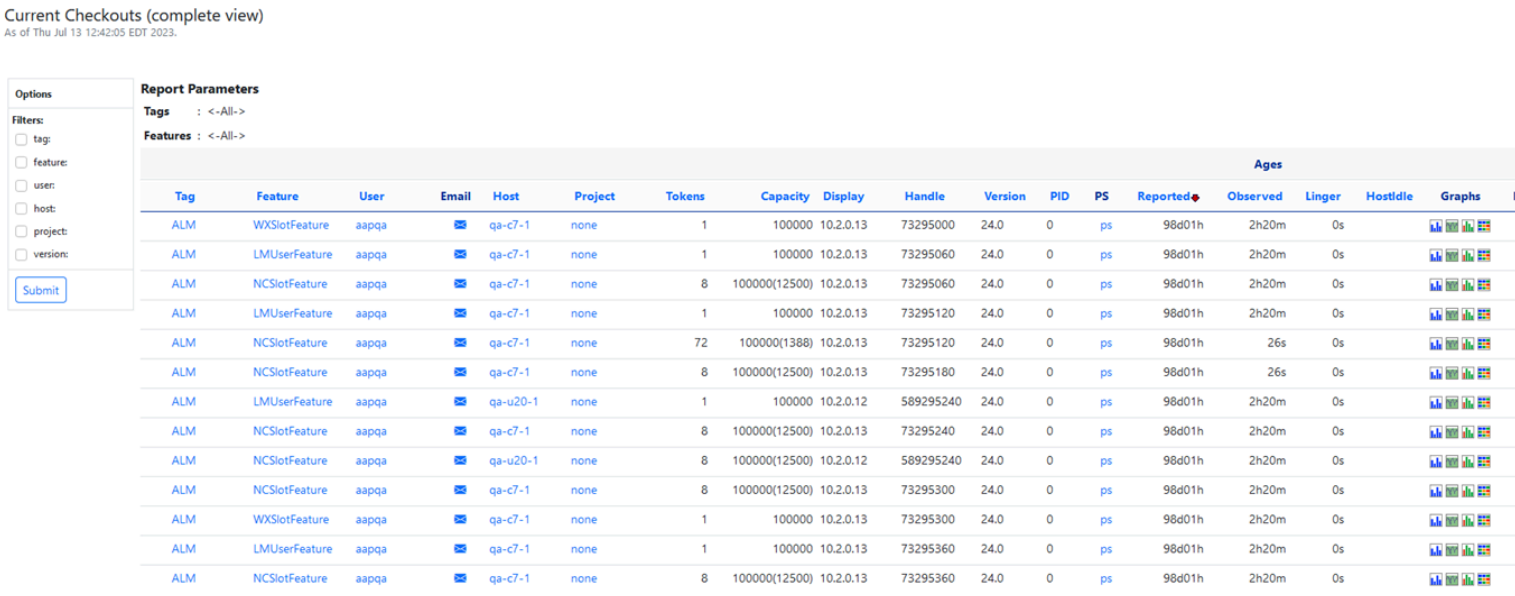


Figure 34: Checkouts Complete View

Capacity	The capacity of the feature that is checked out. If the capacity shown includes a number inside of parentheses, the checkout is one that utilizes multiple tokens and the enclosed number represents the calculated capacity based upon the number of tokens checked out. For example, if a feature has 100 tokens available and the checkout is using 10 tokens, the calculated capacity would also be 10 (100/10=10).
Display	Shows either the value of the display field from the license server status command.
Handle	The license manager handle for the checkout.
Version	The version reported by the tool that has been checked out.

PID	The PID of the process which has that token checked out. This is currenly only supported for Cadence and Synopsis.
PS	A link to get process statistics for the host where the checkout is held. This functionality requires the network monitoring capability of Monitor to be configured for the host for which the license checkout exists.
Reported	The time which has passed since the first checkout was reported by `lmstat`.
Observed	The age at which `Monitor` first detected the checkout. This is helpful in cases where FlexNet Publisher's `lmstat` utility reports false checkout times. This is the age that is stored in the Monitor database and used for historical reporting.
Linger	This indicates the time that the checkout will be checked in unless the tool renews it.
HostIdle	Some users want to use the information about keyboard and mouse activity on a host to determine the status of the license handles checked-out on that host. Specifically, if the keyboard and mouse are idle, then the handles are also to be considered idle, and they can possibly be removed. In Monitor, this capability is enabled for Windows. For other hosts, such as Linux compute servers, the notion of "idle keyboard" is not meaningful.
Graphs	Links to graphical representations of the data.

My Checkouts Page

The **My Checkouts** page is a pop-up page that displays active checkout information for a user. You can export the table to CVS format.

This page automatically refreshes every one minute.

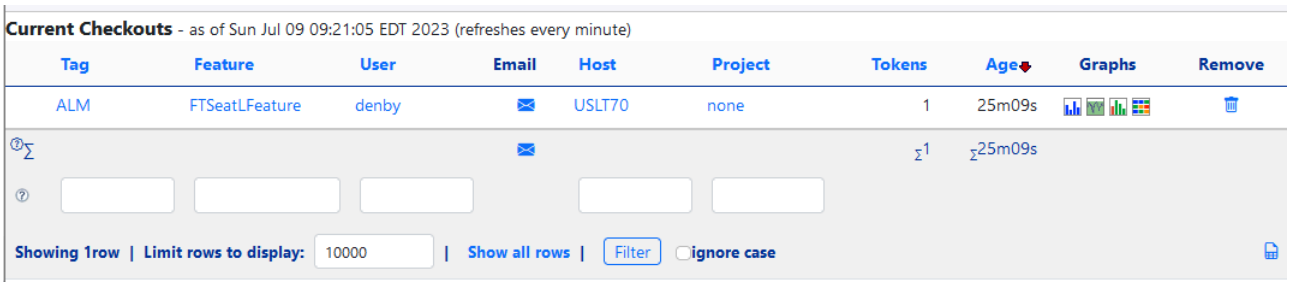


Figure 35:

The page defaults the user filter to be equal to the user who is logged in to the Monitor interface at the time. This page provides an unobtrusive window of continuous checkout monitoring.

Expirations

The **Expirations** page provides an overview of upcoming license feature expirations that have been detected in the licensing environment.

A drop-down menu is provided to select the time frame to consider when viewing expirations. By default, the view is collapsed to the tag level. The view can be expanded to the feature level by click on the expand/collapse (+/-) icons next to the tag name. This view shows all the features that have an upcoming expiration detected, as well as the number of features that are expiring, the time left until expiration, the expiration date, and the total number of tokens that will be expiring:

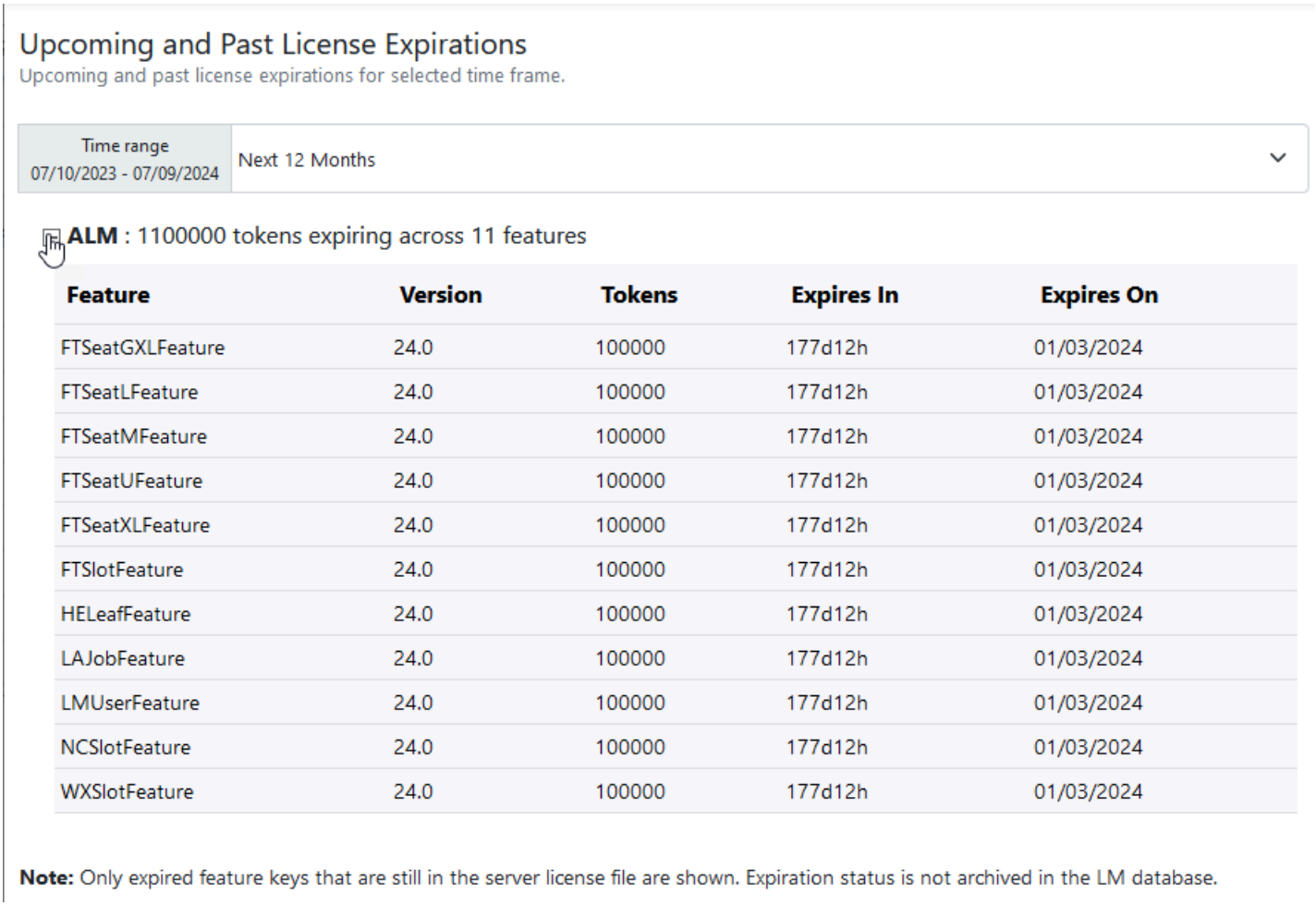


Figure 36: Expirations Page

Raw Data

The **Raw Data** page can be used to view the raw output of the status command for its most recent execution.

This can be useful to debug why a license server is marked as having problems by Monitor. The page includes a drop-down menu at the top of the page to select the raw output per tag.

Figure 37: Raw Data Page

Raw Data URLs

Altair Monitor provides three pages that show the raw data in tabular format, with no user interface. Links to these pages are displayed at the top of the raw data page. These pages can be utilized programmatically via a command-line URL parsing utility such as `wget`. The three pages that are provided, with their respective data shown are:

/raw/daemons

- Output: daemonId, type, tag, daemon, version, server, port, licenseFile, lastUpdateTs, status (-1=error, 0=updating, 1=up)
- Arguments: none

/raw/features

- Output: featureId, daemonId, tag, daemon, feature, expirationTs, capacity, inUse, version
- Arguments:

- ?maxage=X - show features only for daemons that have been updated under the specified maximum age, in seconds (default is 900, i.e. 15 minutes)
- ?tag=X - show features only for the specified tag; default is to show all tags
- ?feature=X - show specified feature only; default is to show all features
- ?reservations=X - if set to 0, do not show reservations; default is 1

/raw/checkouts

- Output: featureId, tag, feature, account, user, host, handle, display, tokens, pid, requestTs, observerdCheckoutTs, checkintTs, reportedCheckoutTs
- Arguments:
  - ?format=X - specify the format string for the output. This string is a space separated list of tokens from the following set:

    ID FEATUREID TAG FEATURE ACCOUNT USER HOST HANDLE TTY VERSION TOKENS PID QTS COTS CITS CO2TS LINGER,

    and the default value is

    "FEATUREID TAG FEATURE ACCOUNT USER HOST HANDLE TTY TOKENS PID QTS COTS CITS CO2TS"

    Remember that in URL the space is expressed by a "+" sign. Examples:

    ```
    /raw/checkouts?format=ID+TAG+FEATURE+USER
    /raw/checkouts?format=TAG+FEATURE+USER+VERSION+HOST
    ```

  - ?maxage=X - show checkouts only for daemons that have been updated under the specified maximum age
  - ?tag=X - show checkouts only for the specified tag
  - ?feature=X - show checkouts only for the specified feature
  - ?user=X - show checkouts only for the specified user

Historical Reports

Generate and view three types of reports.

From the History menu, there are three general types of reports that you can generate: a usage report, a denials report and batch report.

- A **Usage Report** shows license utilization, and there are 11 types of these reports.
- A **Denials Report** shows statistical information about denial events. This can be used to determine if you have too many or too few licenses.
- A **Batch Report** can combine multiple reports and show multiple data points. They are also persistent and static; the data they display is accurate as of the time they are built, and that data remains available until the report files are deleted from the disk.

Each report has its own benefit, which is explained in this section. Keep in mind, when you view reports, they can be configured with your own settings and columns; the reports shown here have a variety of configurations.

Usage Reports

License utilization report.

From the Usage selection, you can generate the following 11 types of web GUI reports.

In the following section, we will explain each report, and describe the variable elements and their use in providing information, which may aid in decision-making.

See the following pages for more information:

Daily Feature Statistics

An overview of availability and utilization statistics for a time frame.

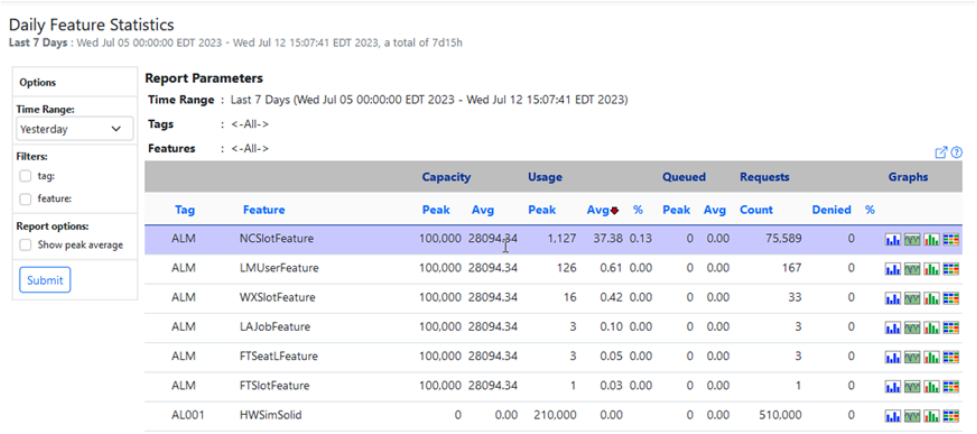


Figure 38: Daily Feature Statistics

The Daily Feature Statistics Report includes the following columns:

Tag	The tag representing the license server.
Feature	The license feature name.
Capacity Peak	The peak capacity of the feature.
Capacity Avg	The average capacity of the future
Usage Peak	The peak usage of the feature.
Usage Avg	The average usage of the future.
Usage %	The average usage divided by the peak for that day.
Queued Peak	The peak tokens that were waited on.

Queued Avg	The average tokens that were waited on.
Requests Count	The number of times the feature was requested.
Requests Denied:	The number of times that the request was denied.
Request Percent	The number of denied requests divided by the number of requests that day.
Graphs	The "Graphs" column contains icons that link to graphical reports for the selected feature. The  icon links to the Daily Feature Plots page. The  icon links to the Feature Detailed Plots page. The  icon links to the Efficiency Histogram page. The  icon links to the Feature Heatmap report.

The report is controlled via the time range selector, and the optional tag and feature selectors that are provided to narrow down the number of features shown in the report. The data shown in this report includes peak, average, and percentage statistics for capacity, utilization, queued requests, and denial instances.

Feature Daily Plots

A graph of the metrics shown on the Feature Statistics page for a specific tag/feature combination.

The information in these graphs is based off daily averages. The data is obtained from a summary table in the Altair Monitor database that is populated once per night with these daily averages. For new instances of Altair Monitor, this report will not show data. Additionally, if viewing a report that includes the current day, the report will only show data that was calculated up to the point the summary table was updated, which occurs during the night by default.

The daily feature plots page shows the averages on the Feature Statistics page for a specific tag/feature combination. Three plots are displayed in this report: Usage and Capacity, Queued Requests, and Requests and Denials. These plots are explained in the following sections.

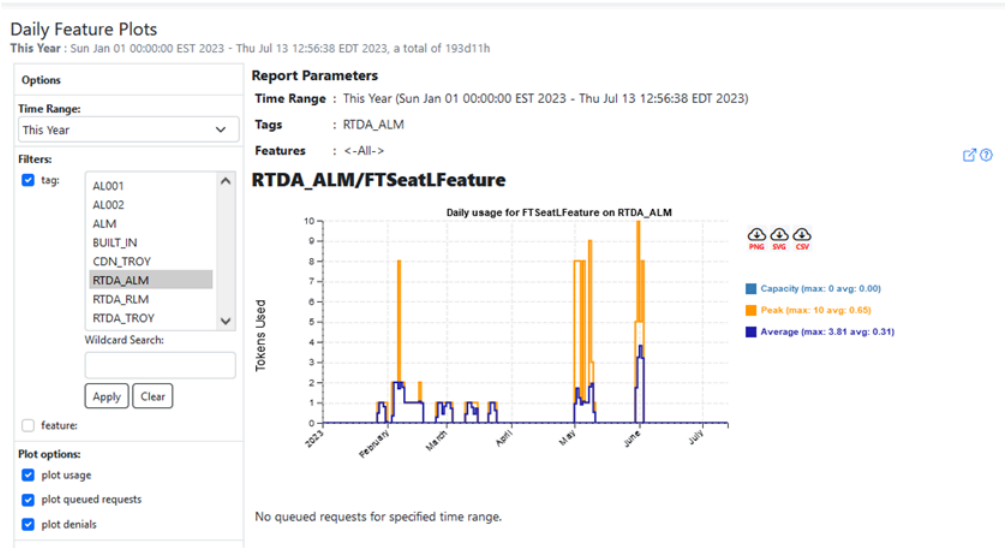


Figure 39: Feature Daily Plots Page: Reports

Usage and Capacity

Capacity is shown as a green background, average utilization per day is shown as blue bars, and peak utilization is show as purple lines for each day.

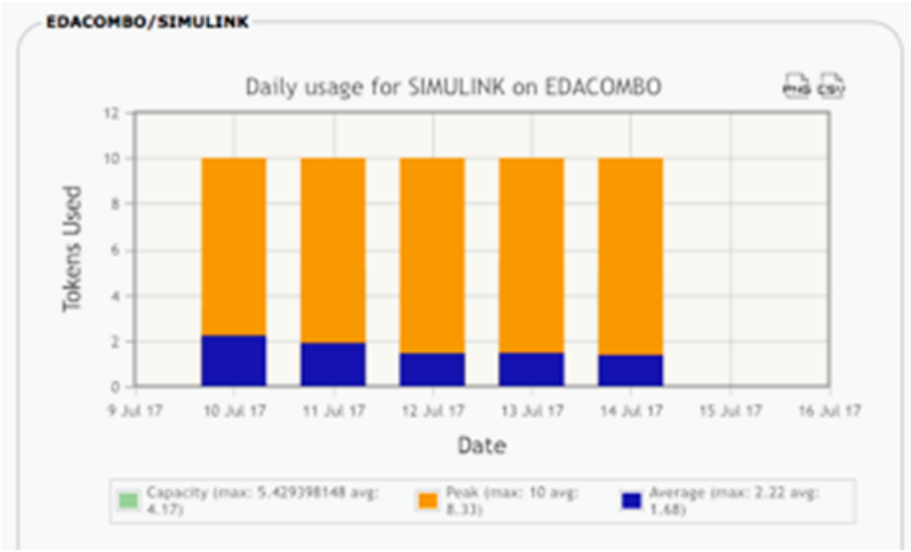


Figure 40: Usage and Capacity Graph

Queued Requests

This provides a visual cue for the number of times a license or feature is requested and put in queue (when the user is waiting in line to use a feature). This indicates when and where you might balance the work load via shifting work times or adding licenses.

Average queued requests per day is shown as teal bars and peak queued requests are shown as teal lines for each day. If there are no queued requests, Monitor will not show a graph. This also depends on if tool vendors support license queuing.

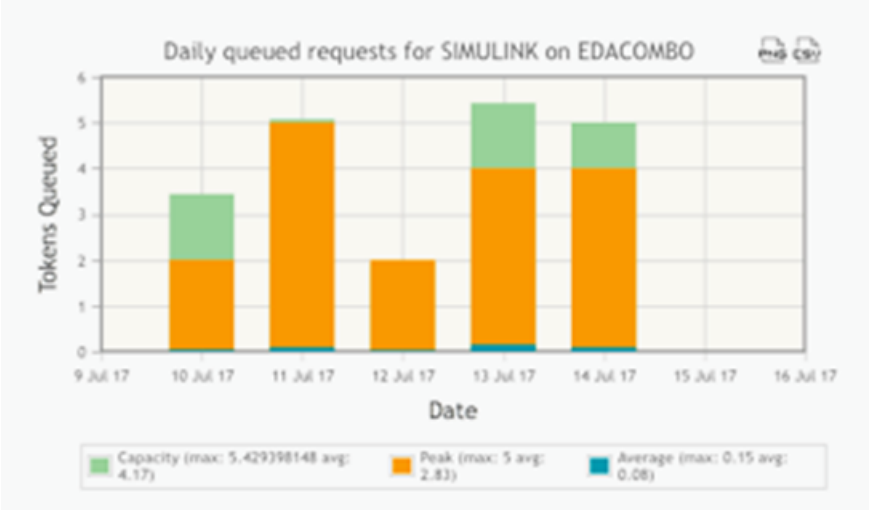


Figure 41: Queued Requests

Requests and Denials

This provides a visual cue for the number of requests versus denials, and it's yet another way to gain insight about your license usage. Many denials indicate that you may need to increase licenses. However, you may want to further verify the reason of license denial.

This graph shows capacity, utilization and peak utilization.

- Blue indicates requests.
- Red indicates denials.

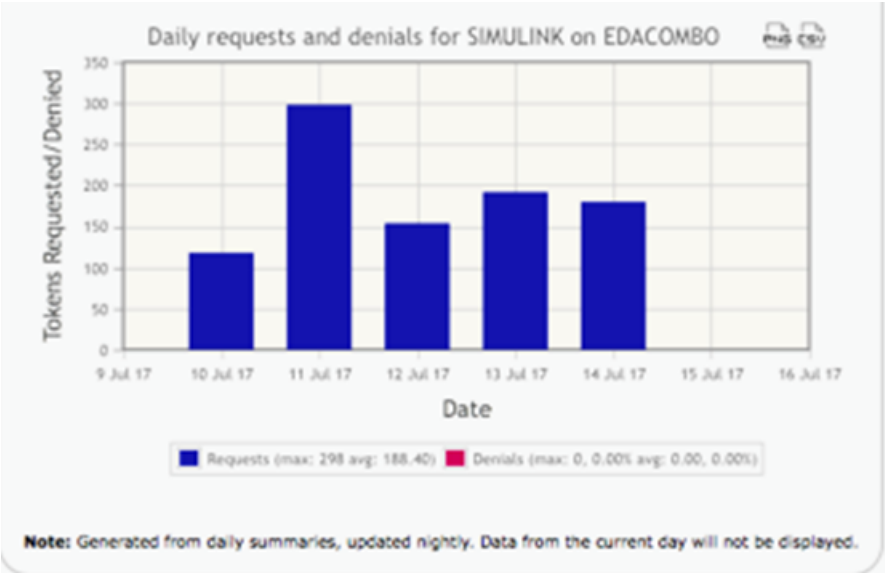


Figure 42: Requests and Denials

Intelligent Denial Scaling

Typically, there are many more requests than denials in a given time frame. Because of this, the scaling of the denials line in the Requests and Denials plot are dynamically adjusted. A multiplier will be shown

in the plot legend that indicates the ratio: the value to multiply the value shown in the denial line to obtain the actual value of the denial.

Data Population

The information in this report is based off of daily averages of various pieces of data. The data is obtained from a summary table in the Monitor database that is populated once per night with these daily averages. For new instances of Monitor, this report will not show data. Additionally, if viewing a report that includes the current day, the report will only show data that was calculated up to the point the summary table was updated, which occurs during the night by default. However, the summary tables can be updated manually by the administrator if needed by visiting the Configuration Information page and running the summary update task.

Feature Efficiency Statistics

A table showing the metrics associated with efficient licenses usage.

This table shows you the licenses that have been idle too long – and provides a breakdown of recommended license numbers based on historical data. The percentages provide valuable insight into their usage over time. This table shows the metrics associated with efficient license usage.

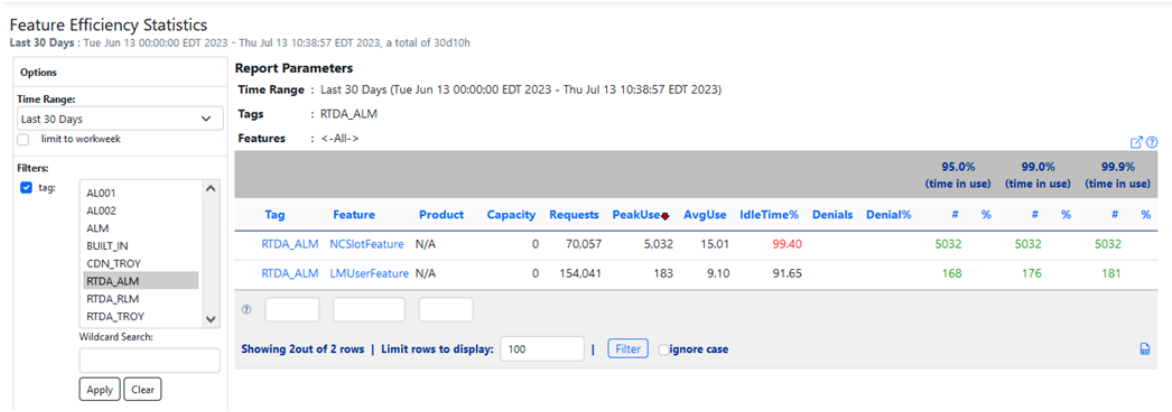


Figure 43: Feature Efficiency Statistics

Information in this report includes:

Tag	Name of the tag.
Feature	Name of the feature.
Product	Name of the product, if the administrator has configured product view.
Capacity	The total number of licenses available for the feature for the specified time range.
Requests	The total number of requests for the feature for the specified time range.

PeakUse	The peak number of concurrent checkouts detected for the feature for the specified time range.
AvgUse	The average number of concurrent checkouts for the feature for the specified time.
Idle Time%	The percentage of overall time that the license had no usage.
Denials	The total number of denials for the feature for the specified time range.
Denial%	The percentage of requests that result in denials for the feature for the specified time range.
Use 95.0% #	The number and percentage of capacity that is required to meet demand 95.0% of the time.
Use 95.0% %	The percentage of capacity that is required to meet demand 95% of the time.
Use 99.0% #	The number and percentage of capacity that is required to meet demand 99.0% of the time.
Use 99.0% %	The percentage of capacity that is required to meet demand 99% of the time.

Feature Efficiency Histogram

A graph that shows license availability. It can show both licensing bottlenecks and waste.

The data provided by this report can be used to identify both licensing bottlenecks and waste.

> **Note:** The scaling of this report is based on the number of licenses available. For example, if 10 licenses are available, 10 rows will appear, one for each license. If 1000 are licenses available, 10 rows will appear - each row with a range of 100 licenses.

Examples

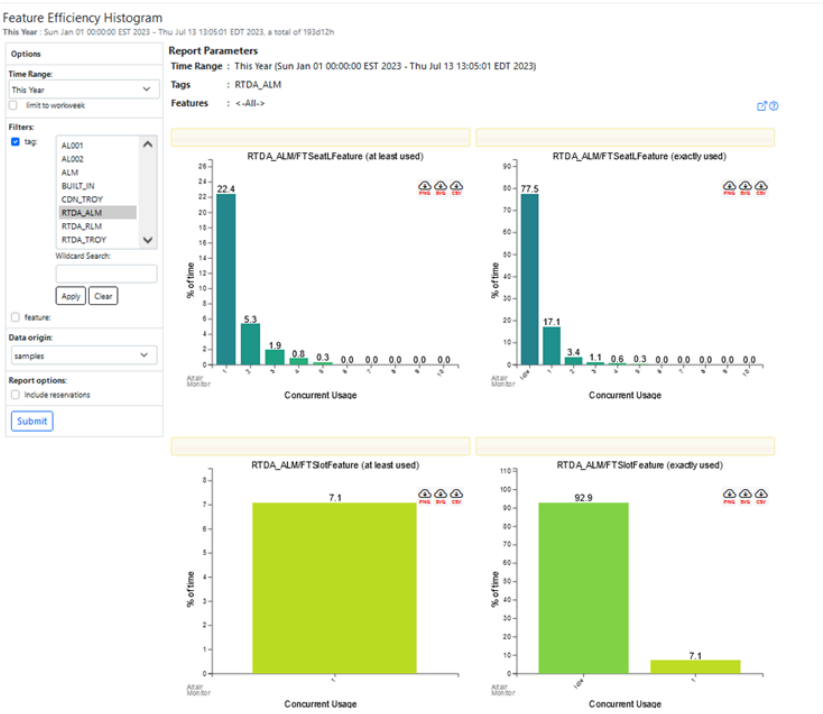


Figure 44: Feature Efficiency Histogram Page

Using the example above, from an "overall time" perspective, no licenses checked out 1.83% of the time, **at least** one license checked out 98.17% of the time, and so on. From a "when used" perspective, **exactly** 1 license is used 1.49% of the time, 2 licenses are used 4.43% of the time, and so on. The scaling of this report is based on the number of licenses available. For example, if 10 licenses are available, 10 rows will appear, one for each license. If 1000 are licenses available, 10 rows will appear, each row with a range of 100 licenses.

Feature Detailed Plots

A group of graphs, which shows availability and utilization statistics.

Feature Detailed graphs show availability and utilization statistics. They are controlled using the options box on the left-hand side of the page. Specifically, they show three graphs:

- **Checkout Count and Duration**: This shows a breakdown of the utilization of the specified feature(s) per user, host, project or custom group.
- **Detailed:** This shows the capacity of the specified feature, usage details and the usage average.
- **Denials:** If denials exist for the specified feature, they will be shown in the denial plot.

Figure 46: Feature Detailed Plots Page

Checkout Count and Duration Graphs

This pie chart provides a visual cue for the number of checkouts and the duration.

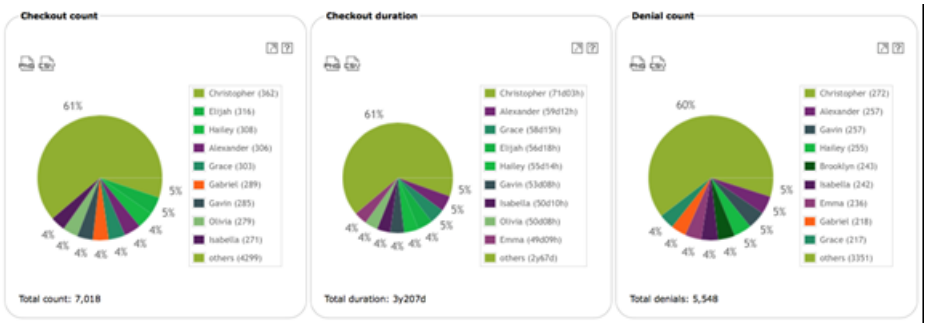


Figure 47: Feature Detailed Pie Charts – Checkout Count & Checkout Duration

- **Checkout count**: This shows the percent of checkouts per user or per host for the group.
- **Checkout duration**: This shows the duration of checkouts per user or per host for the group.
- **Denial count**: This shows the percent of the denials per user or per host for the group.

In this example, the pie charts show that "Christopher" used most of these two features, and he is responsible for most of the duration and the denial count. Christopher might be a super user, or he might represent a generic account that is used by many people. This presents an opportunity for further investigation.

Feature Detailed Plot

This graph provides a visual cue for determining whether you need more or fewer licenses.

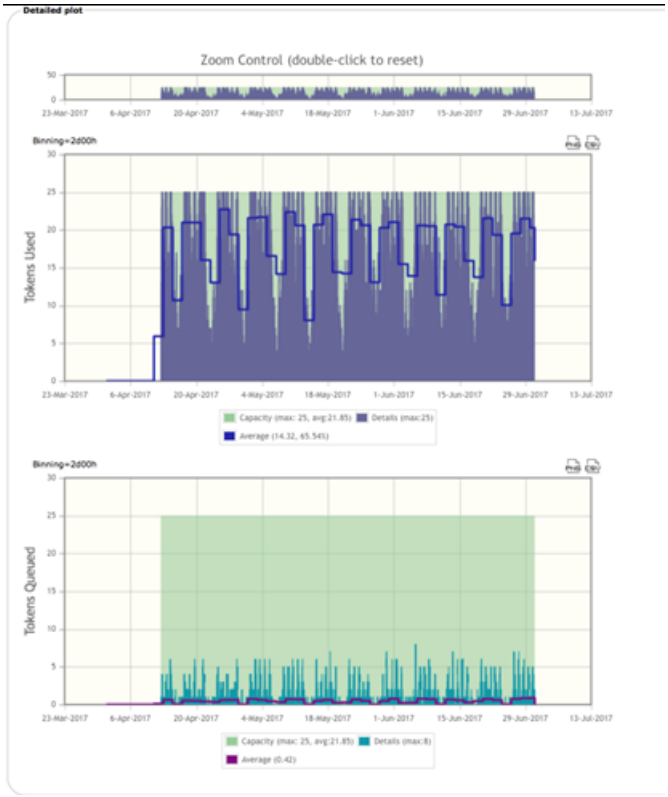


Figure 48: Detailed Plot – Tokens Used

Tokens Used are transposed with your maximum capacity and the average capacity daily.

This shows the usage for the give time frame for each breakdown.

- Dark blue is utilized
- Light blue is how much is exactly used, capacity.

This example shows a proper balance of tokens used and tokens queued.

Denials Plot

If denials exist for the specified feature(s), they will be shown at the bottom of the page in the denial plot. The plot shows a thin red bar that indicates the number of denials detected for each second throughout the specified time period.

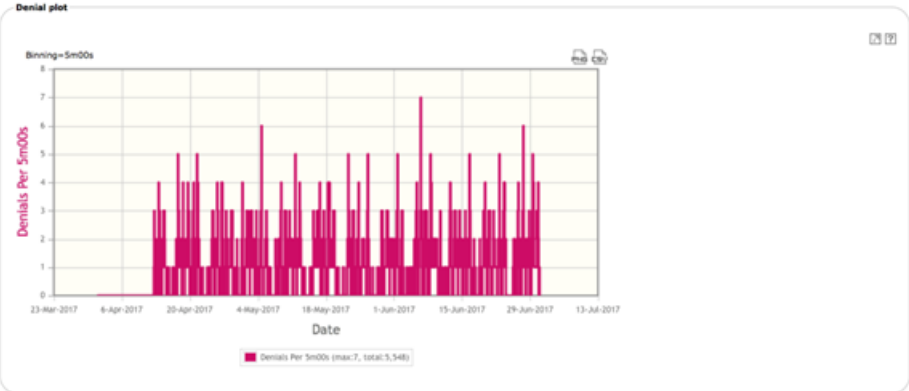


Figure 49: Denials Plot

You can limit the scope of the reports on the page to specific tags, features, users, hosts, and projects.

In this example, each vertical bar represents five minutes, (this can be set to a different time parameter). This plot covers the second quarter. It shows 7 to 8 denials as the maximum, which is not too many. If there were no denials, you might be wasting money. But in this case, there is neither too many more too few denials; this is a sweet spot.

Usage Comparison Plot

This graph simplifies the complex reports generated by checkout statistics page.

Figure 50:

This graph accompanies the checkout statistics page, which has complex report-by and filter options. This plot compares the utilization average over time, broken down by the selected option. You can choose different teams, departments, tags, users or groups. It shows which is used the most and which is used the least, and this gives you an idea of how to distribute resources and when to distribute them.

This example plot specifically shows the overall usage of the two features – MATLAB and Calibre – MATLAB gets more use than Calibre, during the second quarter of the year.

As a general rule, the stacked view option can be used when a graphical view of the total usage is desired. For example, in an environment where there are two different synthesis tools available and a report is needed that shows the total synthesis usage while also showing how each tool's usage varies over time, the stacked view would be useful. If a simple comparison of the usage of each tool is desired, the default unstacked view should be used. When using the stacked view, the total usage statistics are also shown at the bottom of the legend.

The report defaults to showing the top five objects that are reported by a group - in this example, reported by users. All other objects, if applicable, are combined into an "others" group.

The report uses a dynamically calculated averaging interval (referred to as the "binning" interval), based on the specified report period. For example, a 1-week report would result in a 4-hour interval, whereas a 1-month report period would result in a 1-day averaging interval.

The options box on the left side of the page provides controls to setup any desired filters, the report-by option, the smoothing basis, and plot customization parameters.

The report can be driven by usage data that has been smoothed according to the peak usage (default) or the average usage. If using the peak, the plot will visualize the usage considering the peak usage, and the statistics in the legend will contain both the peak and average of all peaks found across all of the binned intervals. If using the average usage, the plot will visualize the average usage over time, and the legend statistics will include the peak and average of all averages found across all of the binned intervals. Note that when using the average usage, peaks will be obscured based on the averaging interval. For example, a peak of 30 minutes will not show up in a 1-week report because that usage will be factored into the average.

Custom Groups

If custom groups have been configured in Monitor, they will be available in the filter and pie chart report by sections of the options box. This is not only where "filter by" options are specified, but also where the specific custom group is selected for Reservation Overdraft Analysis.

Reservation Overdraft Analysis

Reservation Overdraft Analysis is a way of visualizing how FlexNet Publisher license reservation pools are utilized, and how much excess member usage is hitting the general pool. Paired with the "include reservations" capability, this is an effective tool for identifying waste and tuning how tokens are used. In order for this plot to function correctly, some preparation is required:

- You must be utilizing the license reservation mechanism in FlexNet Publisher options file, otherwise Overdraft Analysis is irrelevant.
- Reservation tracking must be enabled in the FLEXlm monitor page of the tag for which Overdraft Analysis will be done (or if you are using a manual configuration, it will require the -trackreservations option).
- The specific license options file for the tag must be manually parsed at the command line to create a custom group and group types that correspond to your reservation pools. This custom group type will then show up as a checkbox in the left margin in the options box. The user must generate Custom Group Types/Custom Groups using the desired FlexNet Publisher options file as input. This is the options file that should contain reservations you are interested in analyzing. The groups are generated at a vovproject-enabled shell with the following command:

  ```
  ftlm_accounts loadfromoptions /path/to/options/file   GROUP_TYPE   all
  ```

  For example:

  ```
  ftlm_accounts loadfromoptions /path/to/options/smpsd.opt Synopsys_Reservations
   all
  ```

- When the Detailed Plots report is refreshed, a new Synopsys_Reservations checkbox will be available. A new "overdraft analysis" plot will also show up, which can be disabled with a checkbox.
- Overdraft analysis may be enabled by selecting the checkbox on the left margin in the options area (below "include reservations").

Heatmaps

A report that shows the time period specified, represented as a 24x7 clock view.

The table provides a 24-hour colored clock view of license activity for each day. A heatmap is a unique report for visualizing license activity.

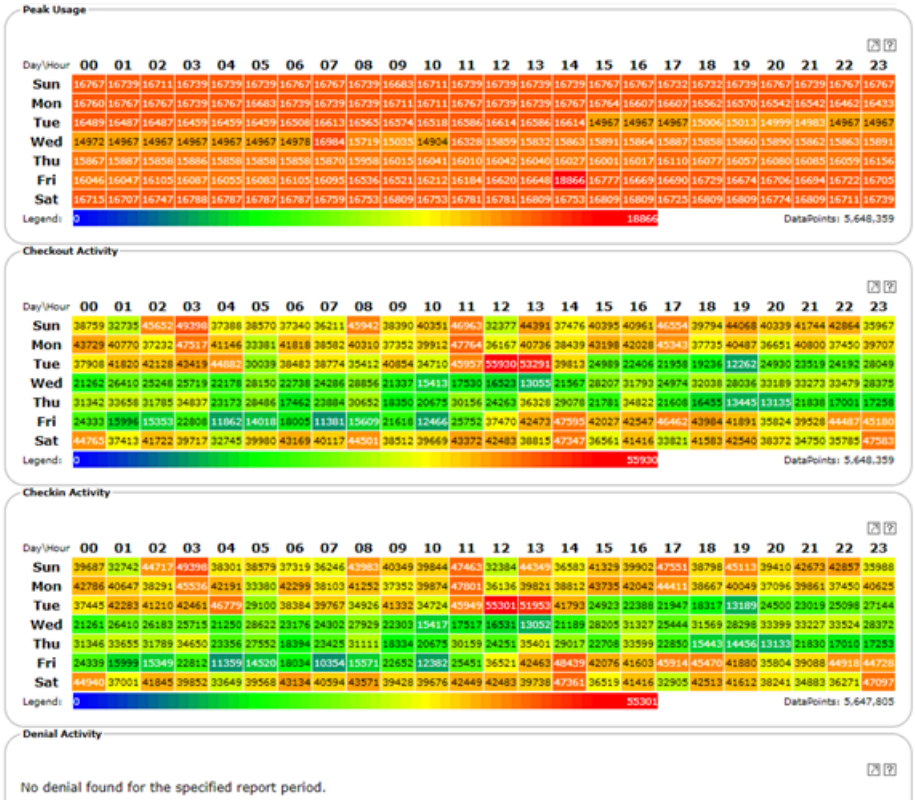


Figure 51:

For each hour in the view, a color-coded box represents the amount of activity for the license feature. The heatmap report page contains four heatmaps: one for peak concurrent usage, one for checkouts, one for check-ins and one for denials.

- **Dark Blue**: No activity
- **Green**: Medium activity
- **Orange**: Medium high
- **Red**: High activity

Checkout Statistics

A report that can show pin-pointed data about license utilization.

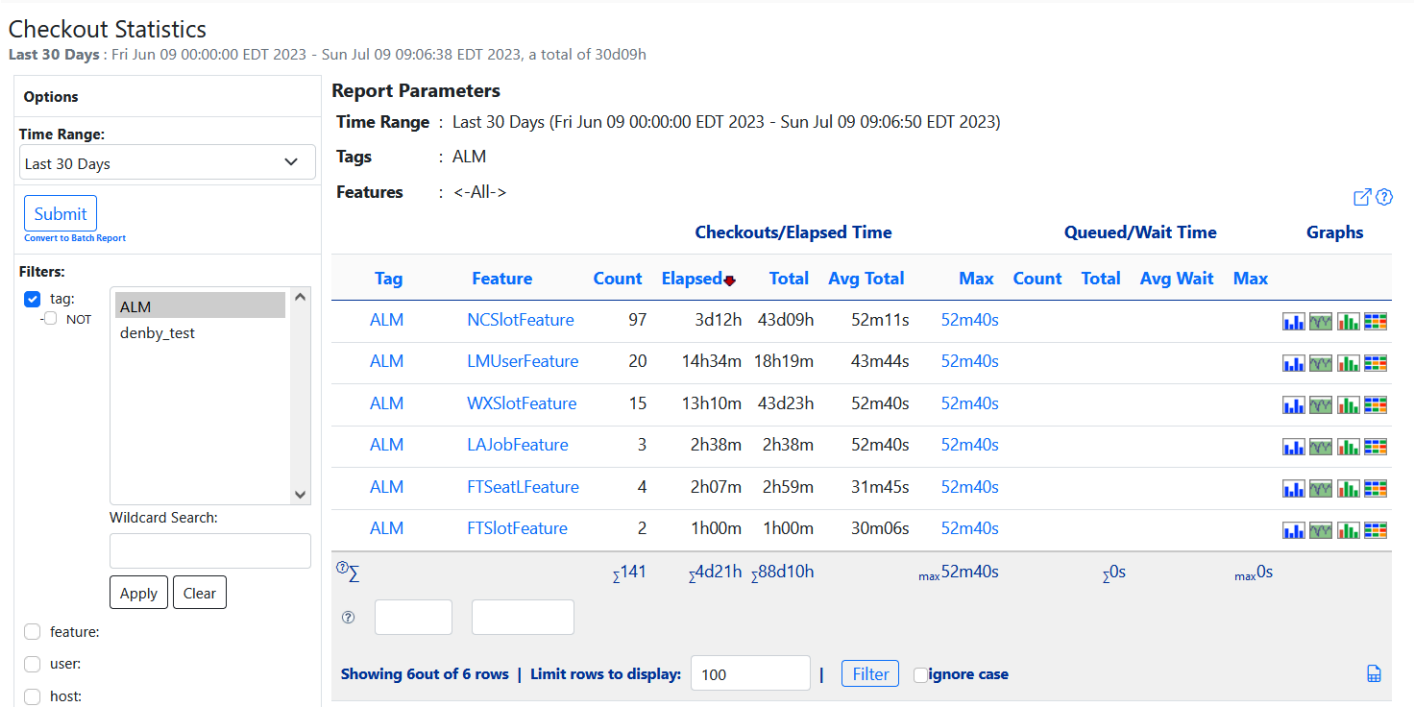


Figure 52: Current Checkout Statistics Report

The report shows checkout and elapsed time statistics and queued/wait time statistics, and provides links to the graphs.

Use the filters on the left side of the page to determine how much information the report will display. In addition to viewing by tag, feature, you have the ability to assign each named license feature an hourly, per-token cost value that will be shown in the Checkout Statistics report if the "show cost" option is selected. The cost can be specified via the **Admin** > **Features** > **Database** page, or via the `ftlm_feature_admin` utility, which also provides the ability to delete and rename features.

The Checkout Statistics Report includes the following columns:

Tag	The tag representing the license server.
Feature	The license feature name.
Count	The number of checkouts.
Checkouts/Elapsed	The amount of elapsed time since the feature was checked out.
Checkouts/Total	The elapsed time normalized for the number of tokens checked out. This provides a cumulative value for multi-token features.
Checkouts/Avg Total	The elapsed time divided by the number of checkouts.
Checkouts/Max	The maximum number of checkouts.

Cost	Displays the hourly, per-token cost value, as set in the **Admin** > **Features** > **Database** page.
Queued Count	The number of times the feature was requested.
Queued Total	The elapsed time divided by the number of queues.
Queued Avg Wait	The average elapsed time before a queue becomes a checkout.
Queued Wait Max	The max elapsed time before a queue becomes a checkout.
Graphs	Links to the detailed plot, statistical plot, efficiency histogram and activity heatmap. This report shows the actual checkouts shown in the Statistics view. This view shows most of the information that is normally found in a license manager status command.

Checkout Details

A report that shows the actual checkouts shown in the Statistics view.

This report can be used to narrow down the results using the same filter methodology utilized in the statistics view.

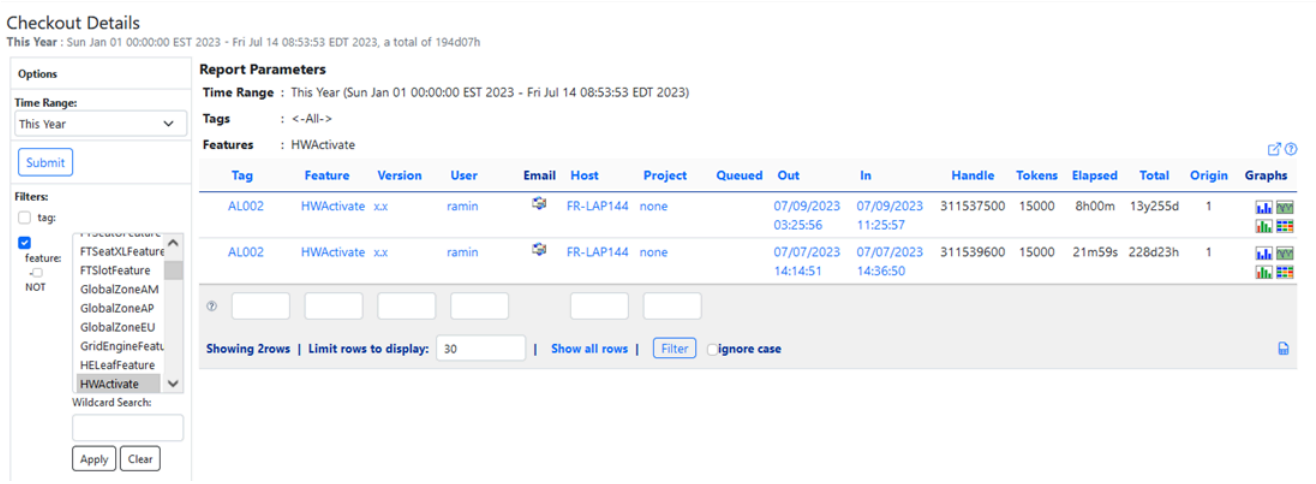


Figure 53: Checkout Details Report

The Checkout Details Report includes the following columns:

Tag	The tag representing the license server.
Feature	The license feature name.
Version	The version of the license for the checkout feature.
User	The user holding the checkout.

LDAP	If clicked and configured, the folder icon will show user pre-configured attributes from LDAP such as their phone number, department or location.
Email	The mailto link to all users of the feature using the client machine's configured e-mail client.
Host	The host on which the job is running.
Project	The project assignment for the current checkout.
Queued	The elapsed time before the queue request becomes a checkout.
OUT	The time the checkout occurred.
IN	The time the checkout ended.
Handle	The license manager’s handle for the checkout.
Tokens	The actual number of licenses.
Elapsed	The age of the checkout.
Total	The elapsed time normalized for the number of tokens checked out. This provides a cumulative value for multi-token checkout.
Origin	Usage data source from lmstat-driven sampling (1) or from parsing debug log (2).
Graphs	Icons for generating plots and heatmaps.

Note: You can generate additional columns by going to the **Admin** page and selecting **Groups**, and then choosing from the options: Projects, Custom Groups Types and Custom Groups.

Duration Histogram

A graph that shows the distribution of checkouts based on duration.

The various durations are calculated and divided into equal-length buckets, which are represented as vertical bars. You may hover over to a specific vertical bar to view further explanation.

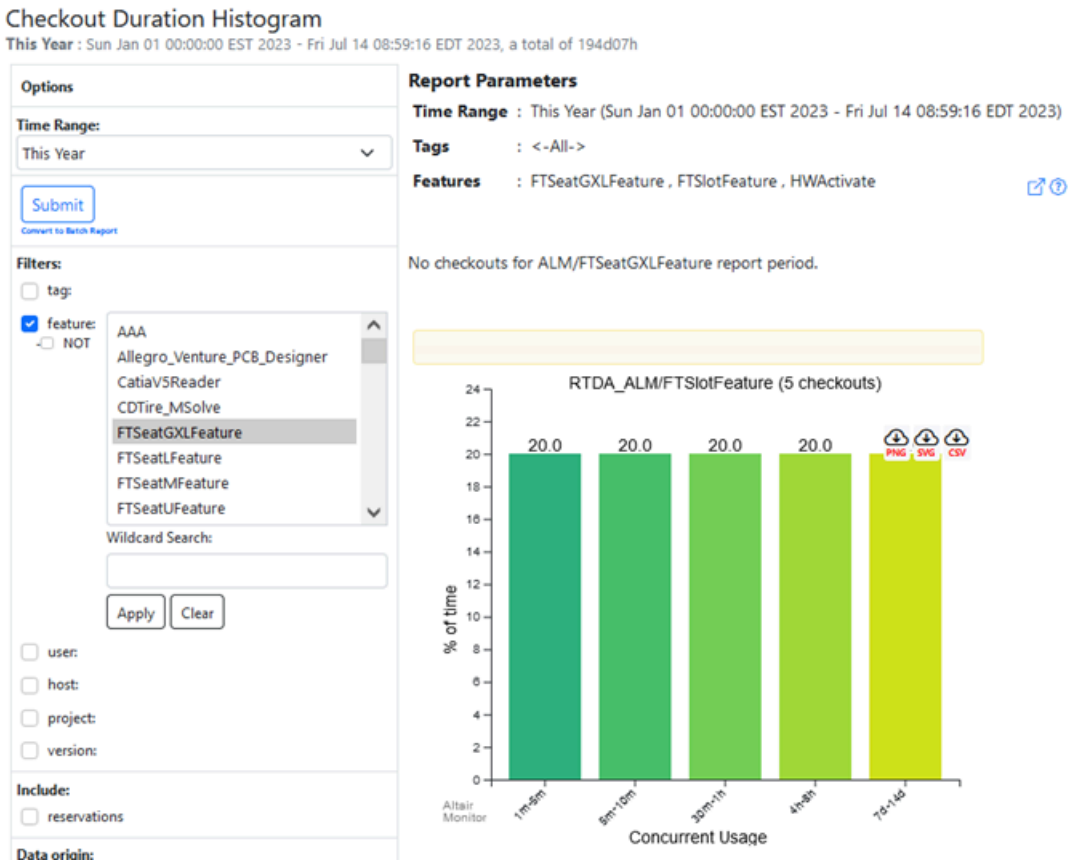


Figure 54: Duration Histogram

Usage Comparison Plot

The Usage Comparison Plot page is a graphical accompaniment to the checkout statistics page, which allows for complex report-by and filter options.

This graph simplifies the complex reports generated by checkout statistics page.

Figure 55: Usage Comparison Plot

This graph accompanies the checkout statistics page, which has complex report-by and filter options. This plot compares the utilization average over time, broken down by the selected option. You can choose different teams, departments, tags, users or groups. It shows which is used the most and which is used the least, and this gives you an idea of how to distribute resources and when to distribute them.

This example plot specifically shows the overall usage of the two features – MATLAB and Calibre – MATLAB gets more use than Calibre, during the second quarter of the year.

As a general rule, the stacked view option can be used when a graphical view of the total usage is desired. For example, in an environment where there are two different synthesis tools available and a report is needed that shows the total synthesis usage while also showing how each tool's usage varies over time, the stacked view would be useful. If a simple comparison of the usage of each tool is desired, the default unstacked view should be used. When using the stacked view, the total usage statistics are also shown at the bottom of the legend.

The report defaults to showing the top five objects that are reported by a group - in this example, reported by users. All other objects, if applicable, are combined into an "others" group.

The report uses a dynamically calculated averaging interval (referred to as the "binning" interval), based on the specified report period. For example, a 1-week report would result in a 4-hour interval, whereas a 1-month report period would result in a 1-day averaging interval.

The options box on the left side of the page provides controls to setup any desired filters, the report-by option, the smoothing basis, and plot customization parameters.

The report can be driven by usage data that has been smoothed according to the peak usage (default) or the average usage. If using the peak, the plot will visualize the usage considering the peak usage, and the statistics in the legend will contain both the peak and average of all peaks found across all of the binned intervals. If using the average usage, the plot will visualize the average usage over time, and the legend statistics will include the peak and average of all averages found across all of the binned intervals. Note that when using the average usage, peaks will be obscured based on the averaging interval. For example, a peak of 30 minutes will not show up in a 1-week report because that usage will be factored into the average.

Usage Trends

The Usage Trends page provides the ability to report on one or more features over a specified time frame while breaking the time frame into smaller segments, each with their own average and peak usage statistics.

For example, a report spanning a quarter can be broken down to also show the individual numbers of each month or each week. The report can also be pivoted, similar to the checkout statistics report, to show the usage per user, host, project, or custom group basis as well.

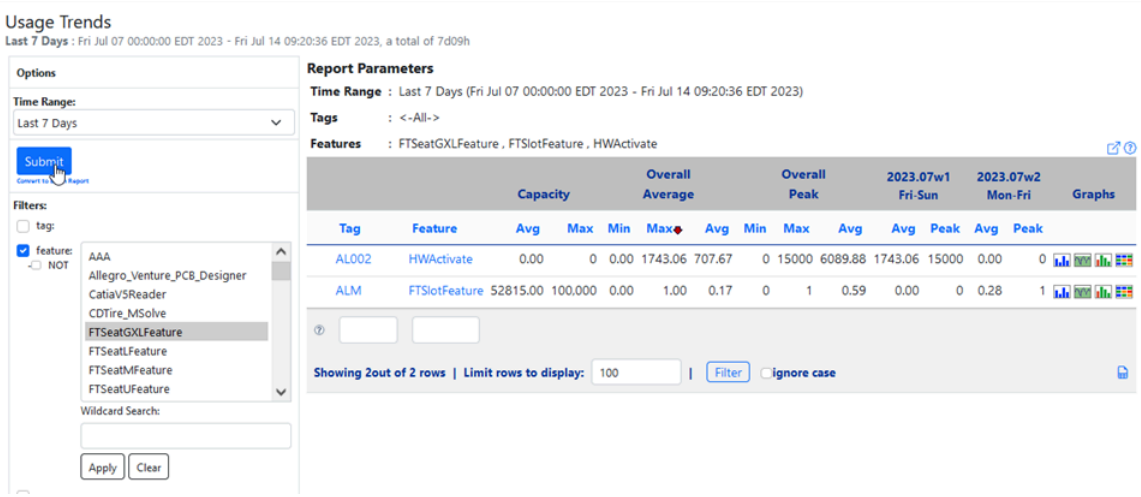


Figure 56: Usage Trends Page

In this example, the table shows weekly usage, but it can also be set to hourly, weekly, monthly, semi-monthly and quarterly time frames. The advantage of this table is that you can see specifics on usage. In this case, the average and capacity in alignment, so no changes are necessary.

The supported time break down intervals are:

- Quarterly
- Monthly
- Semi-monthly (first segment includes month days 1-15 and all remaining month days are placed into the second segment)

- Biweekly (if report interval is for a month, the first segment will begin on the first day of the month)
- Weekly (if report interval is for a month, the first segment will begin on the first day of the month)
- Daily
- Hourly

The Usage Trends Report includes the following columns:

Tag	The tag representing the license server.
Feature	The license feature name.
Capacity Avg	The average capacity.
Capacity Max	The maximum capacity.
Overall Average Min	The overall minimum average feature usage.
Overall Average Max	The overall maximum average feature usage.
Overall Average Avg	The overall average feature usage.
Overall Peak Min	The peak minimum average feature usage.
Overall Peak Max	The peak maximum average feature usage.
Overall Peak Avg	The peak overall average feature usage.

Options are also provided to hide certain types of statistics from the report as well as whether to include reservation checkouts.

Denial Reports

Monitor tracks denials, as reported by the license manager. A denial is essentially a license request, which is denied.

The same filters and report by options are available in this page to help find the information desired, with the exception of project and version support. Project support is not available because the debug log contains historical data of its own; currently there is no historical mapping for projects in Monitor. Version support is not available because the debug log does not contain version information for denial events.

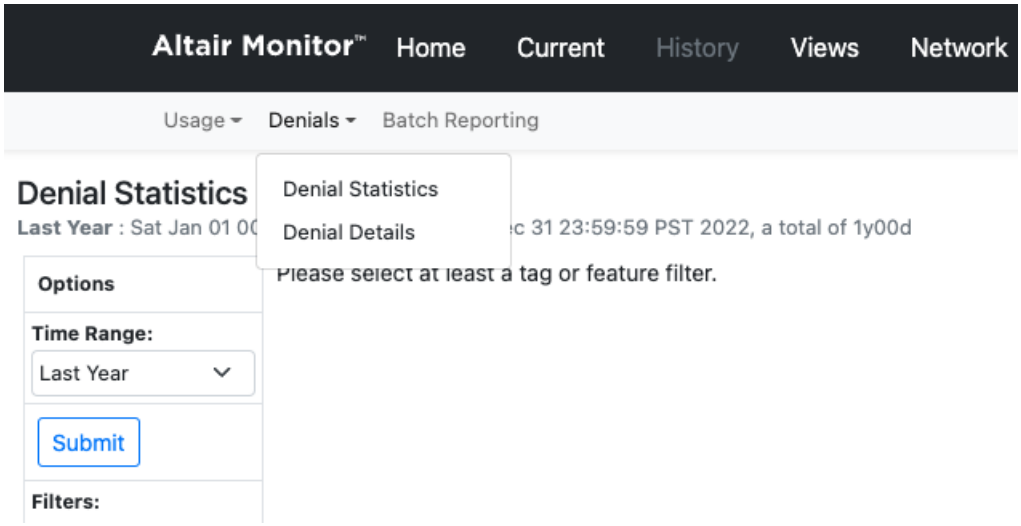


Figure 57:

Denial Statistics

This provides a snapshot of denials. If it shows a high number of denial you may need to add more licenses; if there are no denials you may have too many.

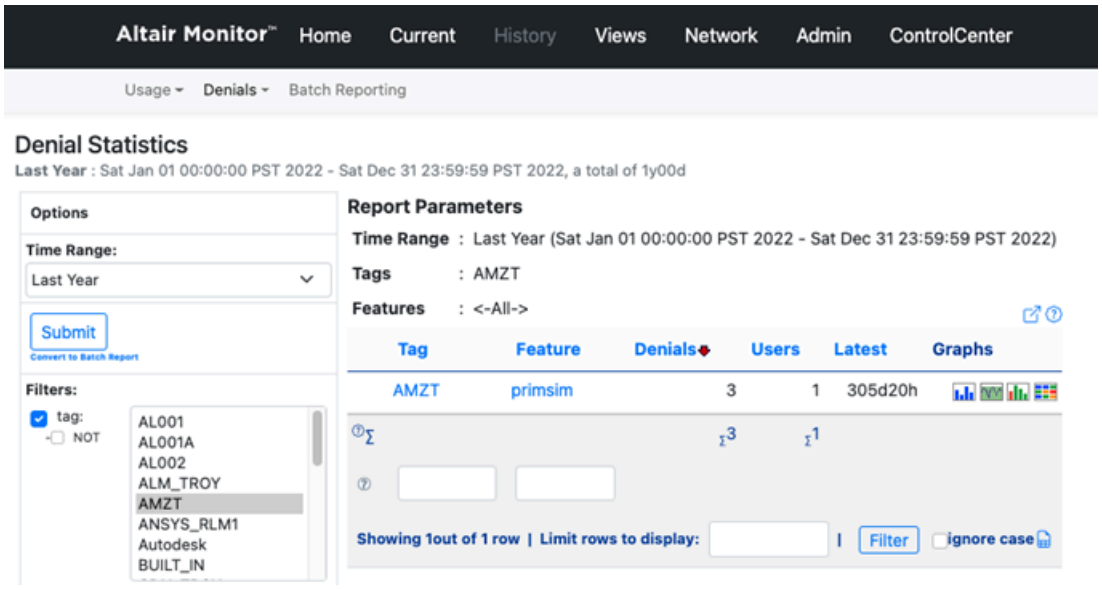


Figure 58:

The Denial Statistics page is identical to the Checkout Statistics page with the exception that it shows statistical information about denial events. The same filters and report-by options are available to help you find the desired information, with the exception of project and version support. Project support is not available because the debug log contains historical data of its own; currently there is no historical mapping for projects in Altair Monitor. Version support is not available because the debug log does not contain version information for denial events. The Denial Statistics report shows the number of denials detected and the number of unique users that experienced denials, the timing of the latest denial, and

provides links to the plot and heatmap pages for visualization of the report. The Denial Statistics Report includes the following columns:

The Denial Statistics Report includes the following columns:

Tag	The tag representing the license server.
Feature	The license feature name.
Denials	The number of denials.
Users	The number of users.
Latest	The last recorded time of a denial.
Graphs	The links to the detailed plot page, the statistical plot page, the efficiency histogram page, and the activity heatmap report.

Detailed View

This table shows the reason for denials, which enables you gain insight about your license management utilization.

Reasons are taken exactly as they are found from the data source. If no reason is provided, the reason will be unknown. The reason can be used to filter the denial reports to determine the root cause of denials. For example, a denial that is caused by a lack of capacity will most likely hold a different weight than a denial that is caused by a self-imposed limit that is defined in the license manager options file.

In this example, the reason was “timeout from vendor queuing” that means the request took too long. You would need to evaluate that and determine your actions based on your unique license needs.

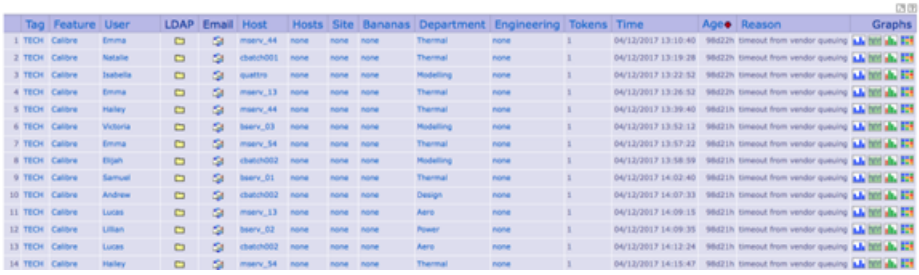


Figure 59: Denial Details Report

The Denial Details Report shows the actual denials that are the basis of the statistics shown in the statistics view. This report shows all the information that is normally found in a debug log denial record. The denial details report also displays columns for custom group types that have been configured. The group shown indicated the group that the user was a member of at the time of the denial.

The report can be sorted using the same filtering techniques available in the statistics view.

About Denial Reasons

Monitor tracks the reasons for denials, as reported by the license manager, if applicable. Currently, only FlexNet Publisher provides denial reasons via the debug log. Reasons are taken exactly as they are found in from the data source. If no reason is provided, the reason will be "unknown".

The reason can be used to filter the denial reports to determine the root cause of denials. For example, a denial that is caused by a lack of capacity will most likely hold a different weight than a denial that is caused by a self-imposed limit that is defined in the license manager options file.

Batch Reporting

Batch reporting is available through the `ftlm_batch_report` command. Batch reporting is useful when the report period is long or there is a desire to have more than one report shown on the web page.

Batch reports are persistent and static: the data they display is accurate as of the time they are built, and remain available until the report files are deleted from the disk.

You can create a batch report by either specifying a custom report or by specifying the types of tables, charts, and plots you wish to enable.

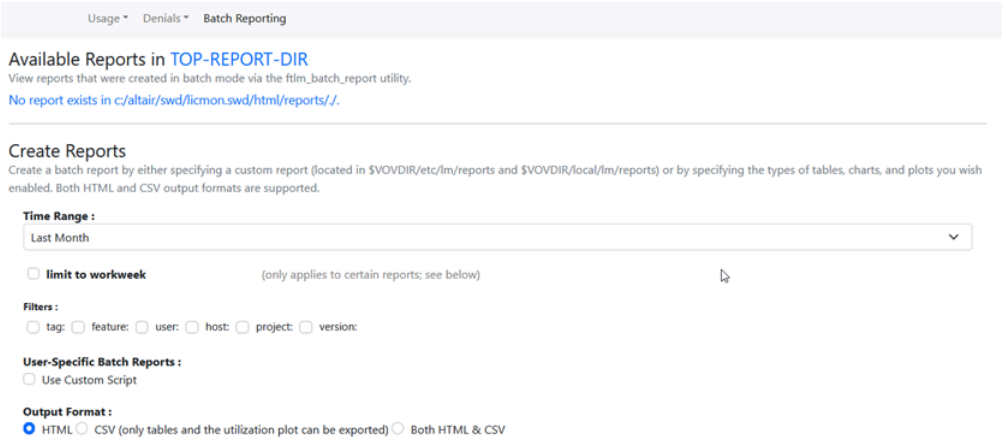


Figure 60: Create a Batch Report - Admin View

You may use batch reporting to configure a complex report with HTML format which includes the corresponding `ftlm_batch_report` commands, then incorporate such command (with proper modification) in a cron job (UNIX) to automate and schedule the report generation.

> **Note:** For `ftlm_batch_report` to be able to extract static images, the machine that runs the utility must have access to Node v14 or higher.

Views Tab

Create tables and reports that show the items you're interested in viewing and tracking.

The Views functionality of Altair Monitor allows an authenticated user to create a high-level table-based status report that shows only the items desired by the user.

My Views

Each user can create one or more views as well as set one view as the default view, which appears in **My View** page, as well as the My View section on the home page. A user can view, as well as set as default, any view created by any user, but cannot edit other users' views. Clicking on the **Views** tab navigates the user to the **My View** page:

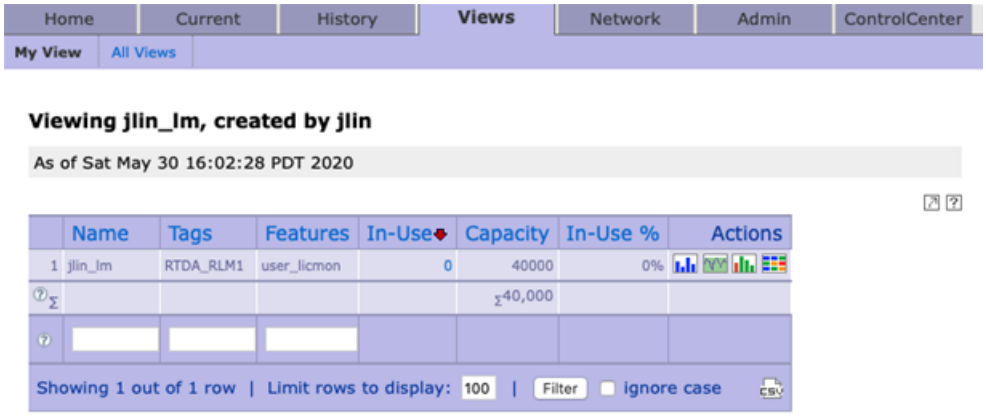


Figure 61: My View Page

You cannot add or remove columns.

The following columns are shown on My View table:

Name	The name of the configured view.
Tags	The name of the tag name, such as BUILT_IN or a tag pattern (or a tag pattern match).
Features	The name of license feature being monitored.
In-Use	The number of license features in use.
Capacity	The number of licenses you have the capacity to use.
In-Use %	The percent of time the license feature is in use.
Actions	The four graphs, which show more detail. This includes the daily plot, the detailed plot, the efficiency histogram, and the heatmap.

All Views

This shows all configured views and enables you to set the default views and share your views with others, working from this list. The All Views option shows all existing views. Views can be edited and deleted from this page.

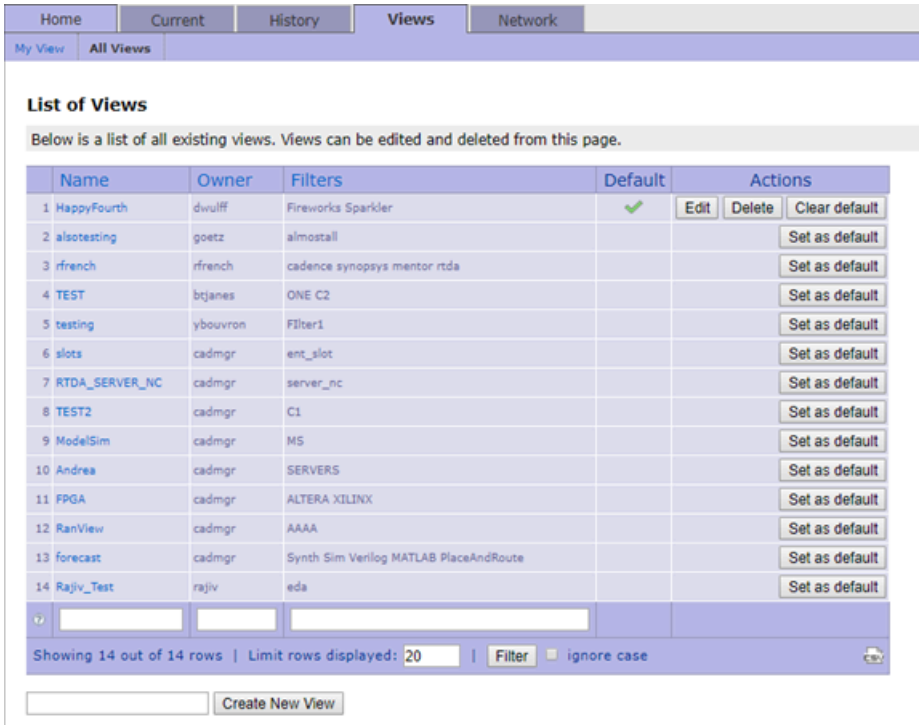


Figure 62: All Views

The following columns are shown on the List of Views table:

Name	The name of the configured view.
Owner	The user who created the view.
Filters	The name of the filter.
Default	The selected default view.
Actions	The options available to the user: Edit, Delete, Clear default and Set as default.

To view one of the views in the list, click on its name. To create a new view, enter a view name at the bottom of the page and click the **Create New View** button. This will bring up the View Editor:

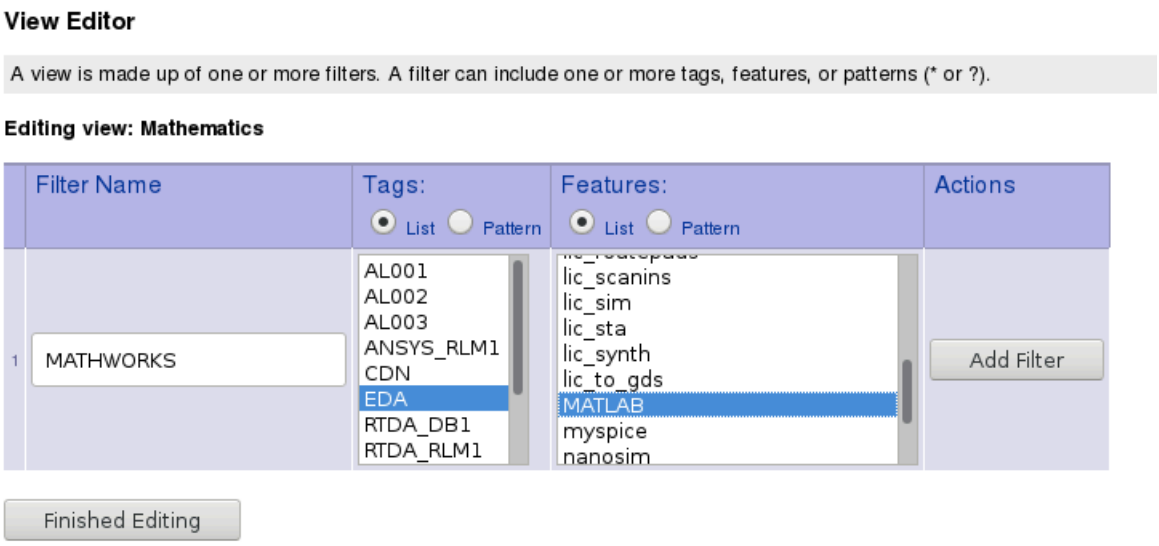


Figure 63: Edit View Page

A view is comprised of one or more filters. Each filter requires a name and a definition that may include one or more of the following:

Feature	An actual license feature name, such as "MATLAB"
Feature pattern	A license feature pattern match, such as "MAT*"
Tag	An actual tag name, such as "MATHWORKS"
Tag pattern	A tag pattern match, such as "MATHWORKS_*".

For pattern matches, both the ? (single character match) and * (multiple character match) wildcard characters are supported.

Once all filter definitions have been specified for the view being edited, click **Finished Editing** to save the view. This will navigate the user back to the **All Views** page, which can then be used to set the new view as the default view, if desired.

Network Tab

Displays information on hosts and file systems on which agents are running.

The Network tab shows information on hosts and file systems on which agents are running. Agents are programs configured to monitor remote machines.

There are four options available from Network tab.

Host Monitoring

The **Hosts List** page shows information about each host on which an agent is running:

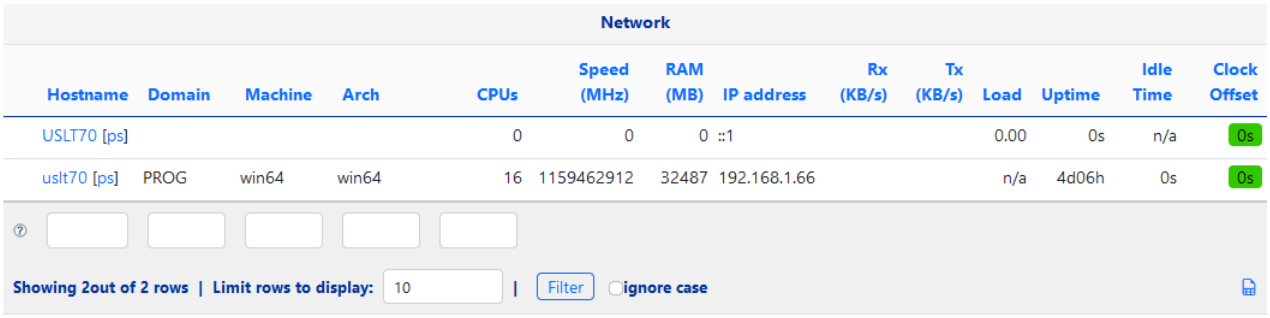


Figure 64: Host List Page: Network Information

The following columns are shown on the Host List table:

Hostname	The host file name.
Domain	The domain name.
Machine	The type of the machine.
Arch	This is the architecture, the machine's platform.
CPUs	The number of CPUs running on your machine.
Speed (MHz)	Processing speed.
RAM (MB)	Read access memory.
IP address	The IP Address of your machine.
Rx (KB/s)	Received from the server being monitored in Kilobytes per second.
Tx (KB/s)	Transmitted from this server being monitored in Kilobytes per second.
Load	The Machine Load.
Uptime	The time that your machine has been up and running.
Idle Time	The time the machine is running operations and applications.
Clock Offset	This shows if your machine and your system clock are in sync.

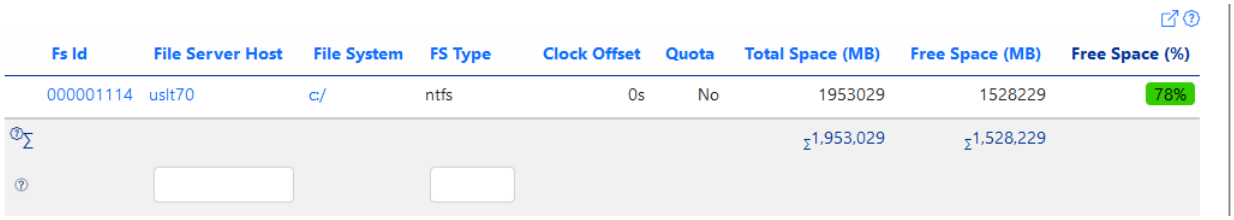
You can update the table by clicking **Update** in the bottom right corner of the page. As with the process list, it may take several seconds for new statistics to be transmitted and processed by the Monitor server.

Note: Network Rx/Tx information is only available on Linux hosts that are being monitored.

File System Monitoring

Similar to the **Hosts List** page, the **File System** page shows information about the various file systems that are present across all of the hosts that are being monitored.

This can be useful in identifying file systems that are low on available disk space. This page color-codes file systems, which provides easy to use file system identifiers that requires little disk space.



Fs Id	File Server Host	File System	FS Type	Clock Offset	Quota	Total Space (MB)	Free Space (MB)	Free Space (%)
000001114	uslt70	c:/	ntfs	0s	No	1953029	1528229	78%
Σ						Σ1,953,029	Σ1,528,229	

Figure 65: File Systems Page: Host Information

The following columns are available on this table:

Fs Id	The file server ID.
File Server Host	The file server host name.
File System	The type of file system.
FS Type	The file server type.
Clock Offset	The difference between your machine's clock time and the file server's clock time.
Quota	The disk quota is a limit set by a system administrator that restricts certain aspects of file system usage on modern operating systems. The function of using disk quotas is to allocate limited disk space in a reasonable way. If it shows "no," then no quotas are set on your machine.
Total Space (MB)	Total available space on the file system.
Free Space (MB)	Total space available left for use.
Free Space (%)	Percent of available space on the file system.

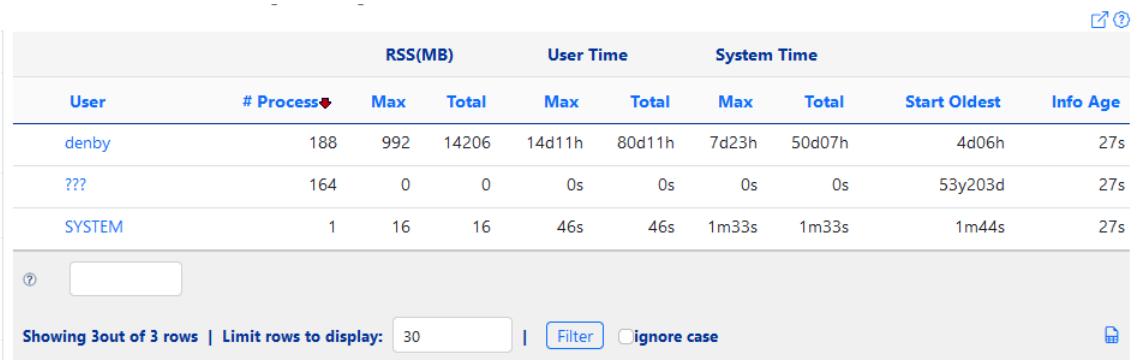
Process Monitoring

Monitor can be configured to monitor processes on remote machines, provided that an agent program is installed and running on the hosts to be monitored.

Once this has been configured, processes can be viewed and managed on the remote hosts. The Processes option shows a summary of processes that are reported for all machines which have monitor agents running. There are two viewing options: Summary and Details

Summary

The Summary viewing option shows a summary of processes that are reported for all machines that have monitor agents running.



		RSS(MB)		User Time		System Time			
User	# Process	Max	Total	Max	Total	Max	Total	Start Oldest	Info Age
denby	188	992	14206	14d11h	80d11h	7d23h	50d07h	4d06h	27s
???	164	0	0	0s	0s	0s	0s	53y203d	27s
SYSTEM	1	16	16	46s	46s	1m33s	1m33s	1m44s	27s

Showing 3out of 3 rows | Limit rows to display: 30 | Filter ignore case

Figure 66:

User	The user currently logged in and using the machine.
# Process	The number of processes running by the user.
RSS (MB) Max	The maximum amount of non-swapped physical memory the process used in MB.
RSS (MB) Total	The total amount of non-swapped physical memory the process used in MB.
User Time Max	The maximum time spent by processes running as that user.
User Time Total	The total time by processes running as that user.
System Time Max	The maximum time spent by the OS on behalf of a user.
System Time Total	The total time spent by the OS on behalf of a user.
Start Oldest	How long ago the oldest process was started.
Info Age	The age of the information viewed (last updated).

Details

The Details viewing option shows a snapshot captured at approximately the same time on all monitored hosts. To refresh the data, use the **Update** button at the bottom right of the page. In most cases, the

update will be finished in less than 20 seconds, but if hosts are extremely busy, it may take longer. The jobs that gather the process information are automatically killed if they run for longer than 20 seconds. Clicking on a single process ID filters the process list down to the specific process chosen, and displays all its children and its parent process, if applicable.

Machine Load Monitoring

The **Machine Load** page provides historical reporting capability for viewing the utilization of the machines being monitored over a specified time period.

The plots shown on this page display the CPU capacity (number of processors or cores) and the 1, 5, and 15-minute load averages for the machine.

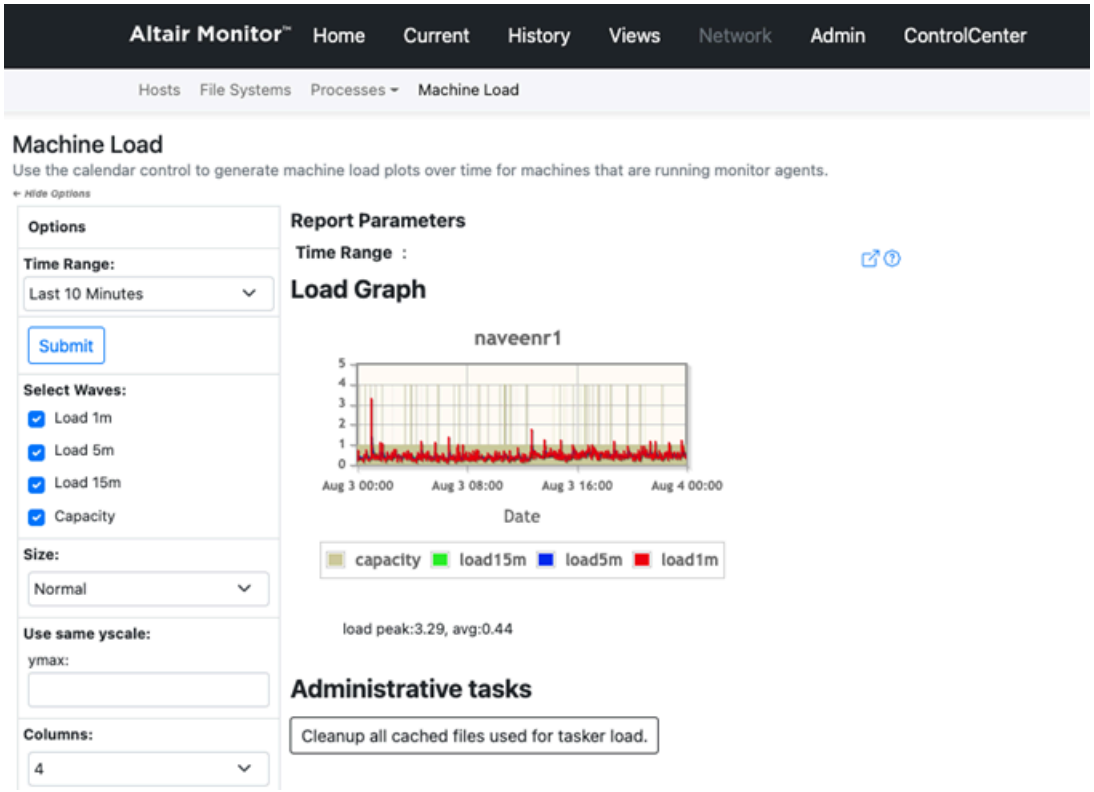


Figure 67:

To adjust machine load plots, you adjust the following parameters:

Time Range	The machine selected time period.
Select Waves	These are flow waves for 1, 5, 15 minutes or capacity for that machine load.
Size	The size of the graph – the options are huge, large, normal and small.

Ymax	The maximum value along the y access, which is the maximum machine load displayed.
Columns	The number of columns to displayed.
Sort By	You can sort by Host, Peak Load, Average Load, Capacity or Jobs
Aggregations	NA - This not currently a working option.
Host List	The current host, the database host, or the aggregation grouped the data together (aggregated is not currently a working option).

The calendar-based report period selector on the left hand side of the page can be used to specify how far back in history to look at for the load metrics.

Admin Tab (Admin Only)

Manage and monitor agents and users, and configure reports.

The Admin tab has eleven options available for managing license monitors. This section reviews each one of them. Below is a basic description of each option with a reference to a more detailed description:

Monitors

This option enables you to add an existing monitor or edit and delete and existing monitors.

Use this form to add, edit or delete existing license monitors.

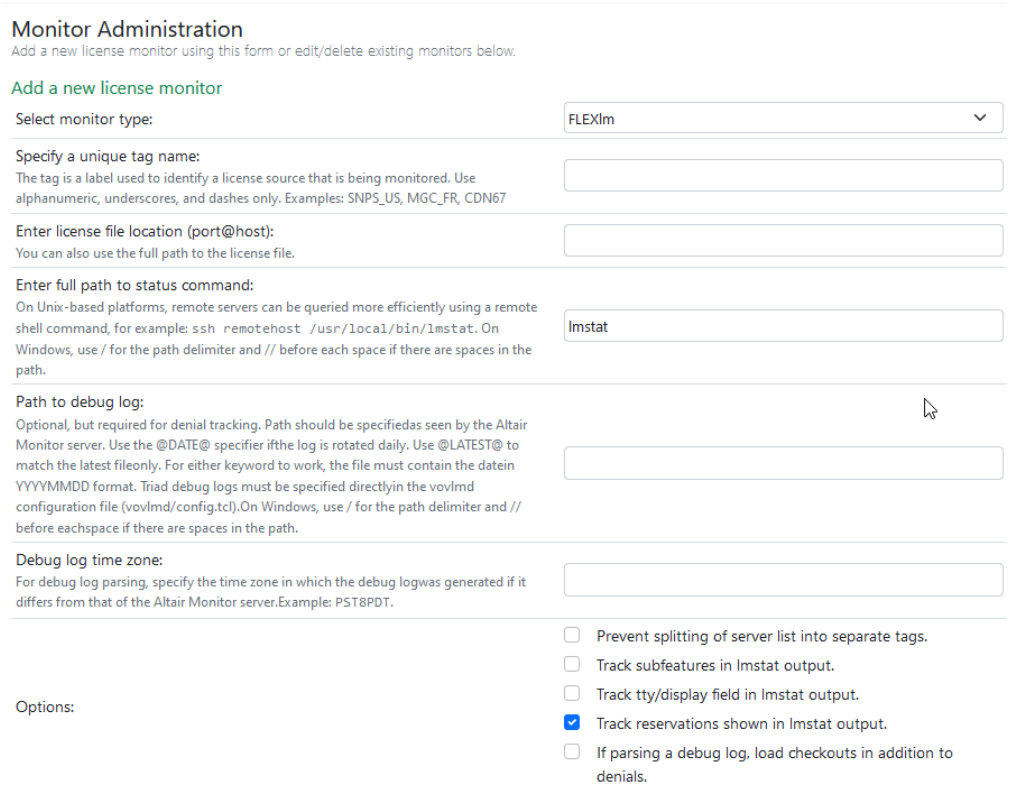


Figure 68: Add a Monitor

Notifications

This option enables you to configure notifications for health checks and SMTP configurations and manage who receives notification emails.

The notification option provides three pages:

Health Checks	This shows a list of the various health checks that will be performed which can trigger notification e-mails. The actions column allows for enabling/disabling or editing these checks.
SMTP Configuration	Configure the SMTP notification system.
Email Maps	Use this form to define alternative email addresses, so that the email for a user will be sent to the configured corresponding email address.

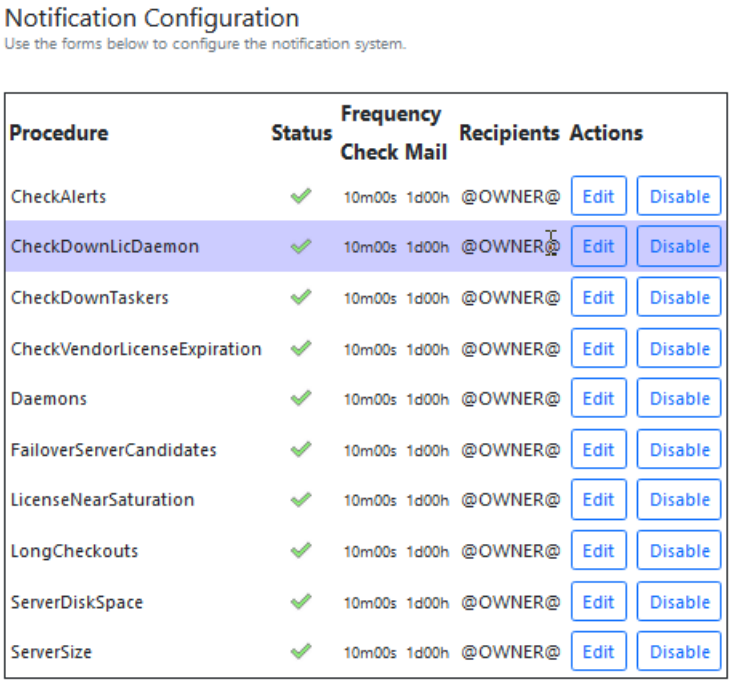


Figure 69: Admin Tab - Notification

Agents

This option enables you to add, manage and run agents on remote machines.

An agent is required on every machine that is to be monitored for process and network information, or for performing remote license server administration tasks.

- If the Altair Accelerator installation and remote connectivity (ssh, rsh, or vovtsd) to the remote machine are both available, you can use the form on this page to add agents.
- If the Altair Accelerator installation or remote connectivity is not available, you need to set up agents locally on the remote machine

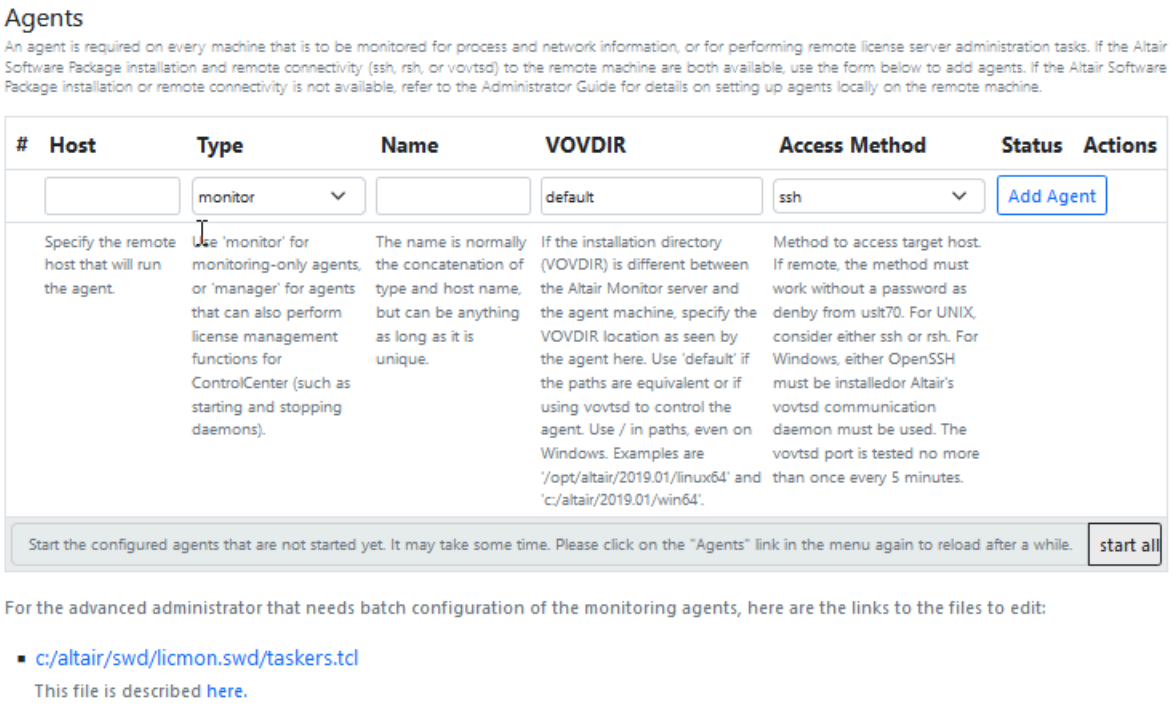


Figure 70: Agents Options

From this page, you can also start all agents and manage existing ones.

- To learn how to set up an agent via the web interface, go to Add and Configure an Agent using the Web GUI.
- To set an agent up with the CLI, go to Add an Agent – File-Based Configuration.

Groups

This option enables you to keep track of projects, departments or other organizational units and to create custom groups.

The Groups option enables you to group users or hosts for reporting purposes, define accounts, and keep track of activity by department, location and more.

On the **Group Management** page, you can edit, delete or rename groups.

On the **Projects** page, you can name the project, add member and identify associated UNIX groups.

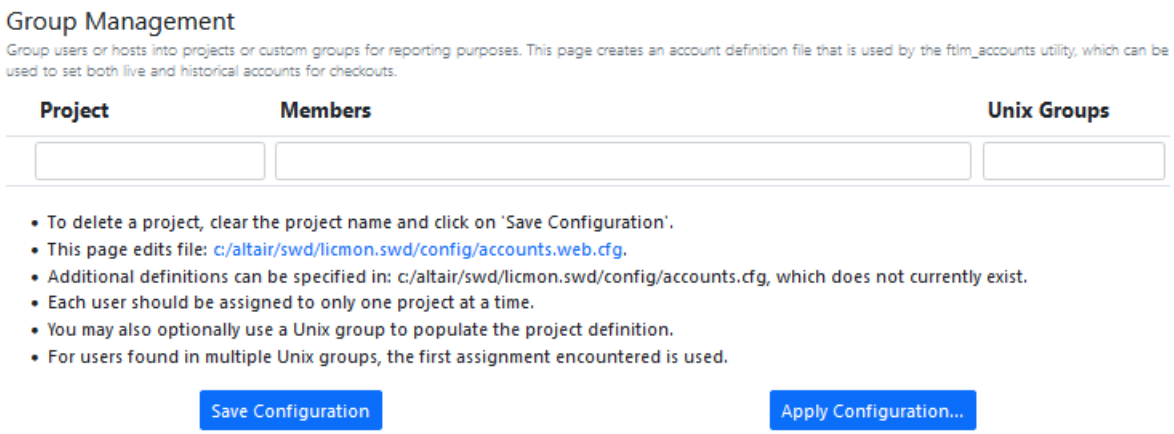


Figure 71: Groups - Project

On the **Custom Group Types** page, you can define the type of group either user-based or host-based, and you can delete and rename types.

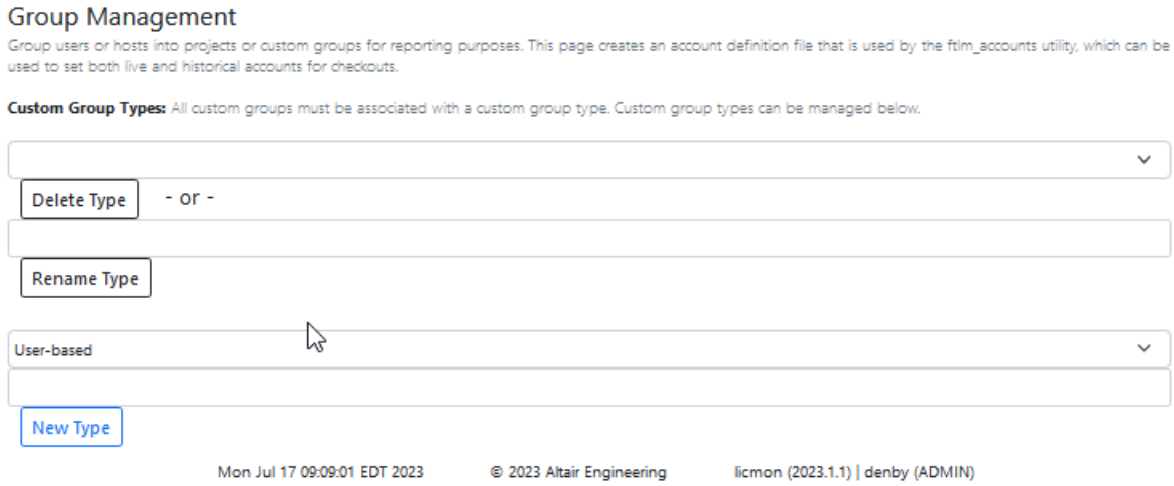


Figure 72: Groups - Custom Group Types

Tags

Tags enable you to manage tags and tag data found in the server and in the database.

On the Tags – Server page, you can view the Tags begin tracked in the Server memory. You can delete tags here as well as view active tags.

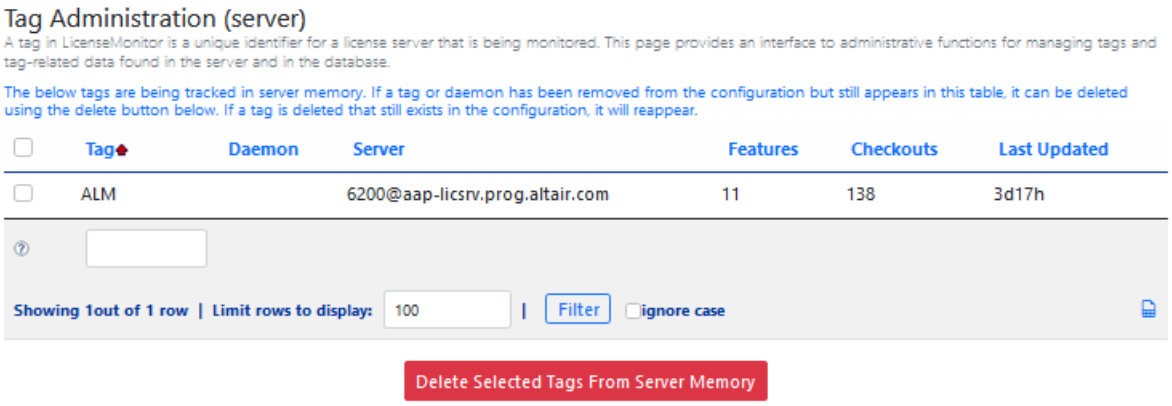


Figure 73: Tags - Server

The Tags Database page has an upper and lower half. The top half shows the tags in the database, and you can delete them, as needed. The lower half of the page enables you to rename a tag and associate it with a specific host site and the tag modification history.

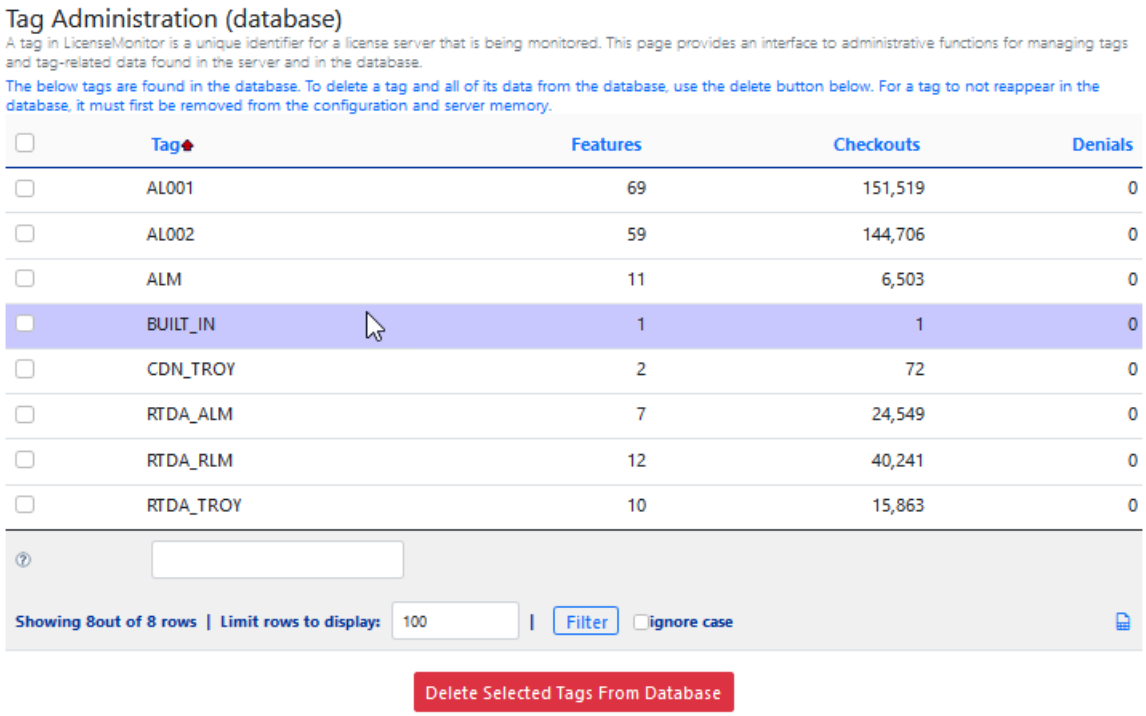


Figure 74: Tags Administration Database - Upper

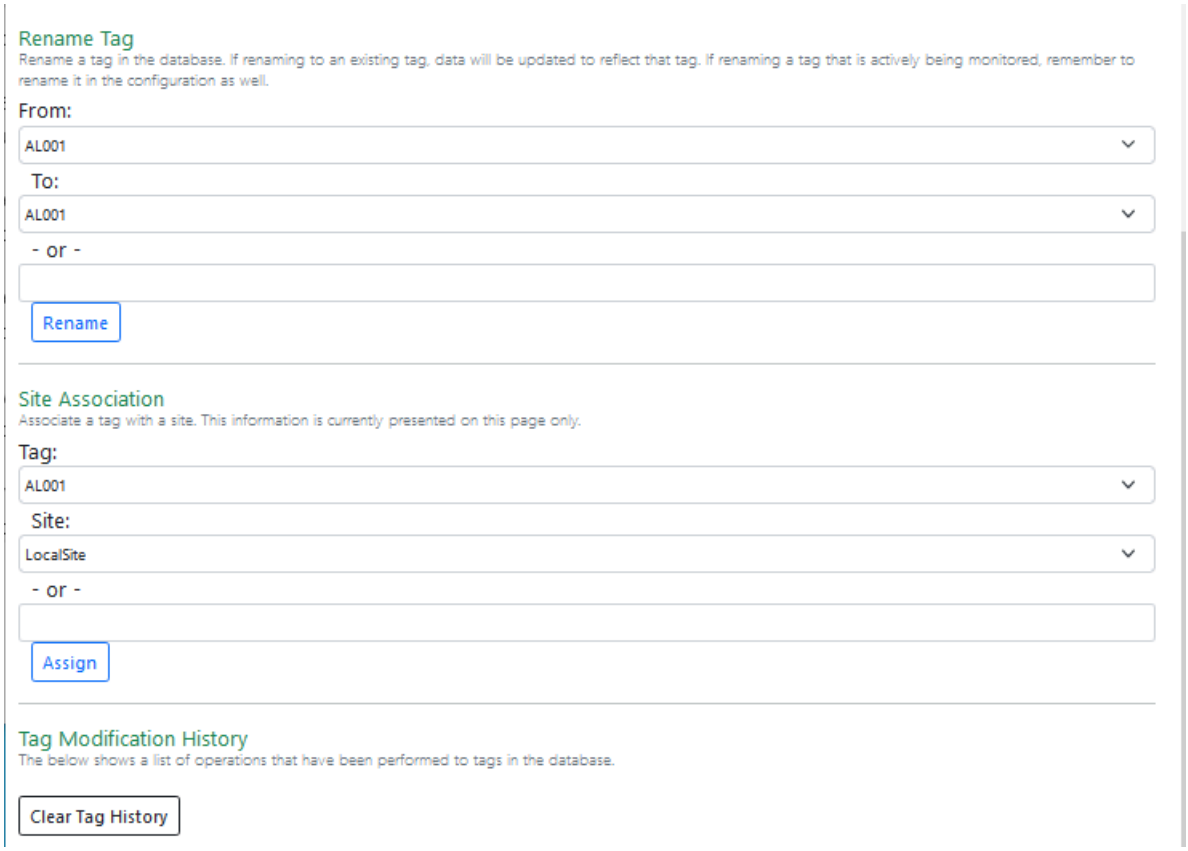


Figure 75: Tags Administration Database - Lower

Features

This option enables you to manage features and feature-related data found in the server and in the database.

The tracked features are shown on this page. You can delete features being monitored and view the status of existing features. There are two options: Server and Database features.

Feature Administration (database)

A feature in Monitor is obtained from a license server that is being monitored or a debug log that has been parsed. This page provides an interface to administrative functions for managing features and feature-related data found in the server and in the database.

The **Feature Administration Server** page shows features that are checked out and their current status.These features have a start and an end time.

To delete a feature and all of its data from the database, use the delete button. For a feature to not reappear in the database, it must first be removed from its license file, as well as the server memory.

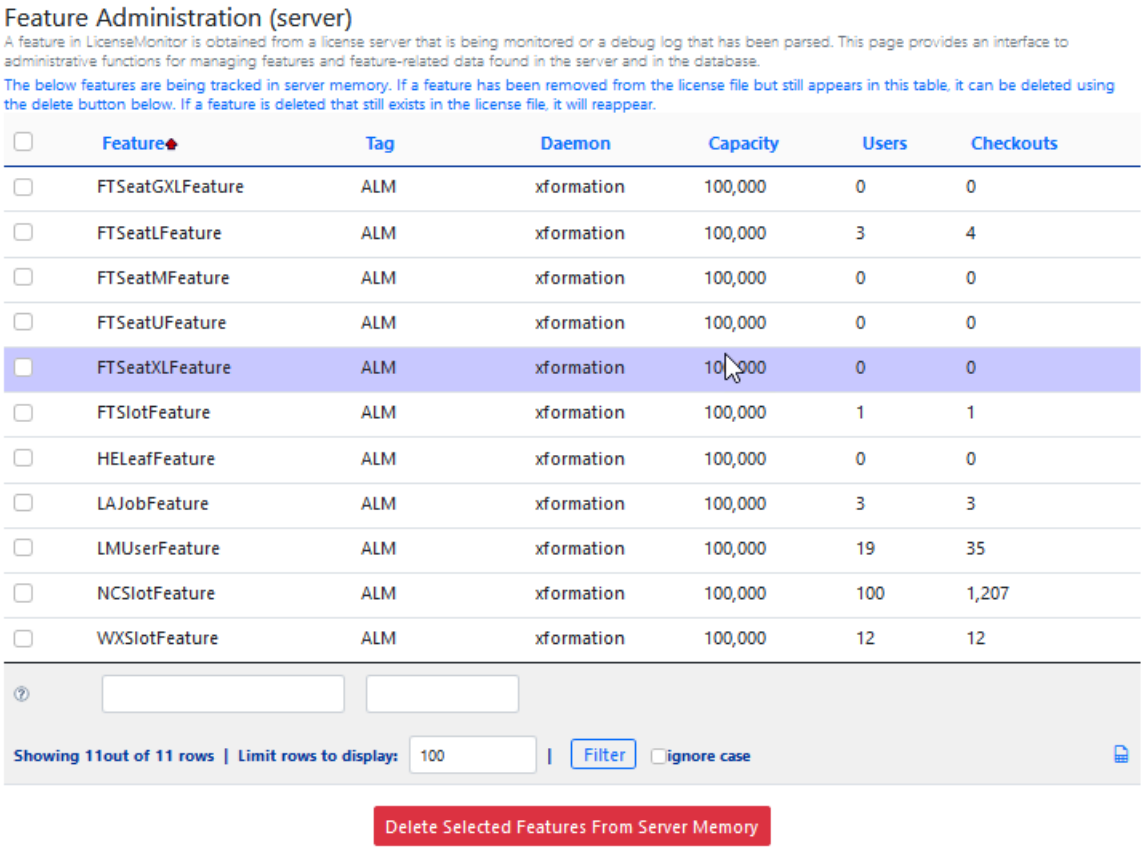


Figure 76:

The Feature Administration (database) is shown below:

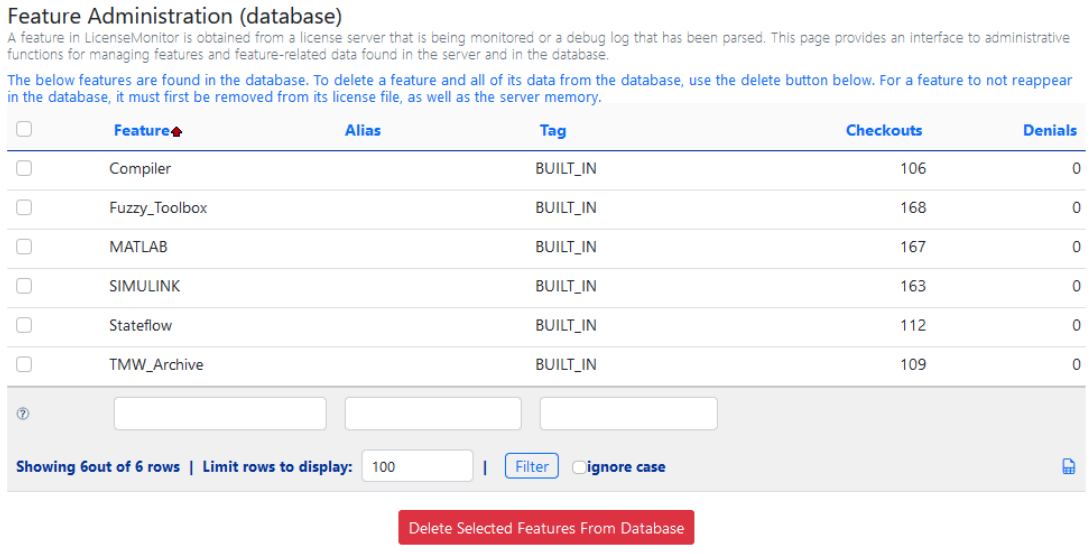


Figure 77:

Rename Feature

Use the drop down menus to rename any features as necessary. If renaming to an existing feature, data will be updated to reflect that feature. Features can not be moved between tags, so all renaming will be contained in the same tag.

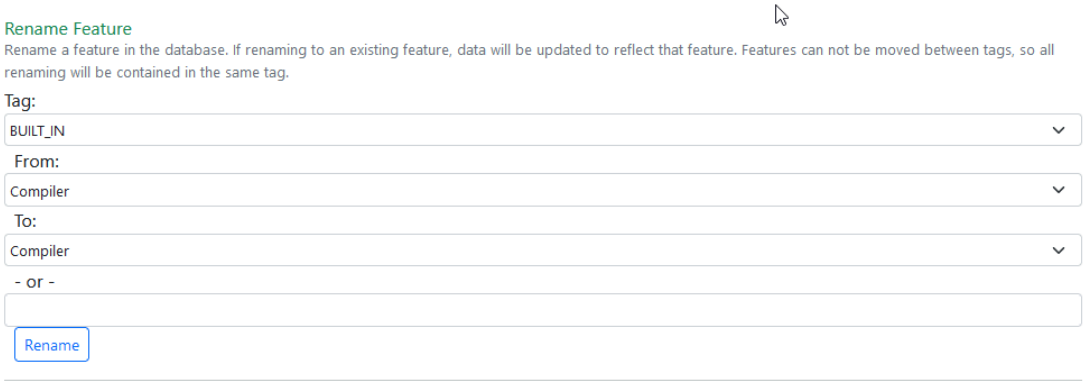


Figure 78:

Assign Feature Alias

This section enables you to create an alias for a license feature. This is useful to establish user-friendly names for complex or lengthy feature names found in the license file.

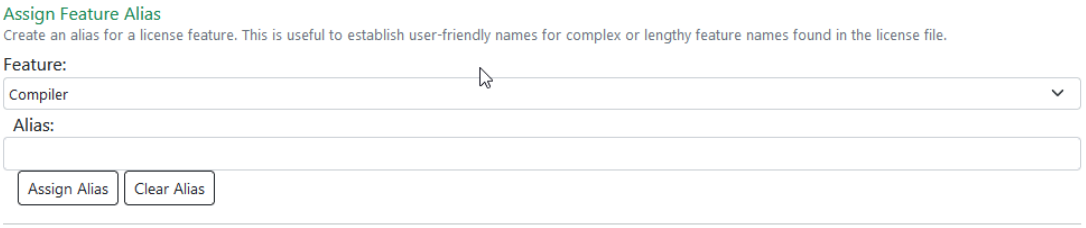


Figure 79:

Assign Feature Cost

Assign each named license feature an hourly, per-token cost value. This can be displayed in the the Checkout Statistics report if the Cost filter is selected. The cost can be specified here, or via the `ftlm_feature_admin` utility, which also provides the ability to delete and rename features.

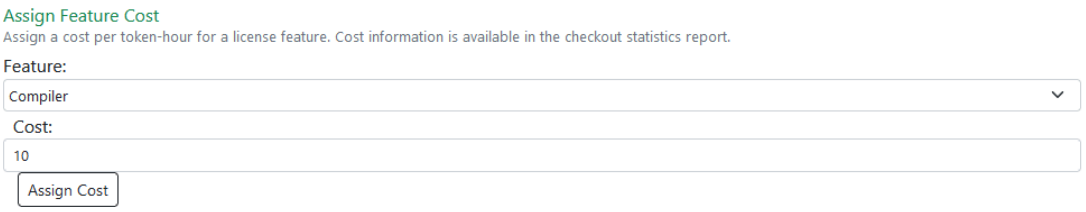


Figure 80:

Links

This option enables you to add and create links that will appear on the home page.

With the Links option, you can create a link. Enter the link name and the URL and click the **Create Link** button. This will create a link, which will appear on your Home tab.

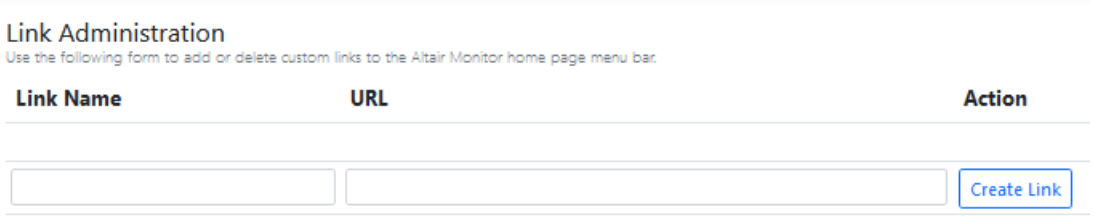


Figure 81: Link Administration

System

This option enables you to view system, database, security, configuration and workweek information.

From the System option on the Admin tab, you can view the status of the Monitor system. You can select from the following five pages:

Server Information	This shows the details about the Monitor system and enables you to reset and rerun internal daemons.
Database Information	This enables you to configure and control the database, check database status and review database statistics.
Security Information	This shows a list of the tags and ISV daemons that are currently in server memory, along with their security status.
Configuration Information	This shows scheduled maintenance tasks, which can be configured and existing configuration files, which can be edited.
Workweek Information	This shows you the work week definition, which can be edited.

Server Information

You can reread configuration files and restart Monitor's internal daemons, with the reset button.

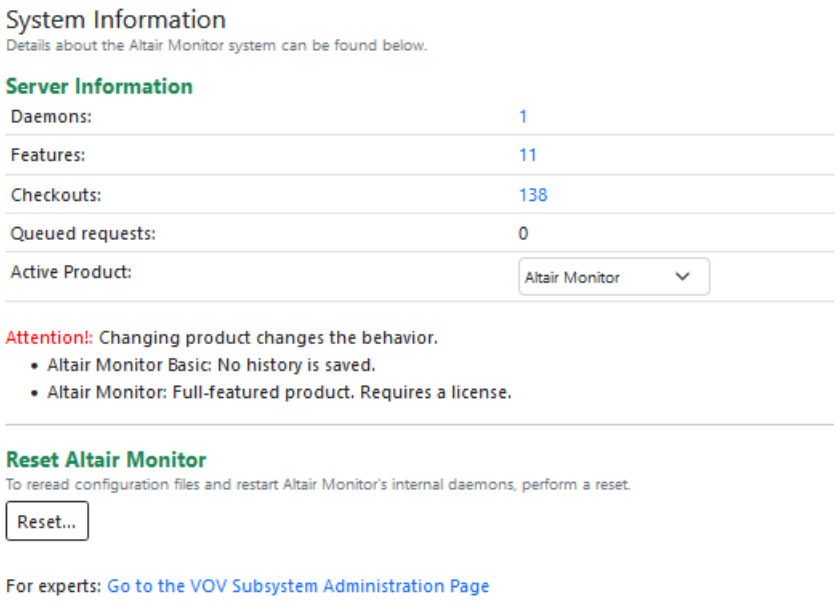


Figure 82: System Server Information

Database Information

You can use the **System** page to configure and control the database, check database status and review statistics.

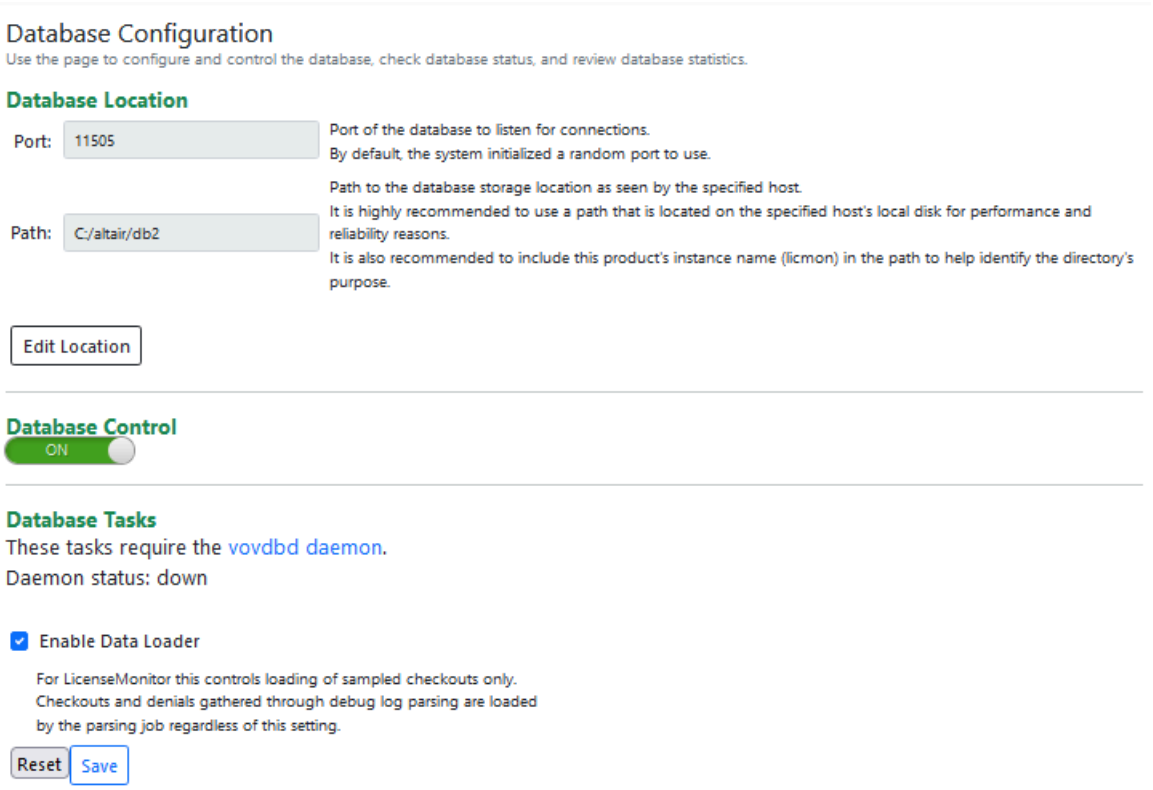


Figure 83: System Database Configuration

You can edit the path to the database storage location as seen by the specified host.

We highly recommend that you use a path that is located on the specified host's local disk for performance and reliability reasons.

We also recommend that you include this product's instance name in the path to help identify the directory's purpose.

Database Tasks Configuration

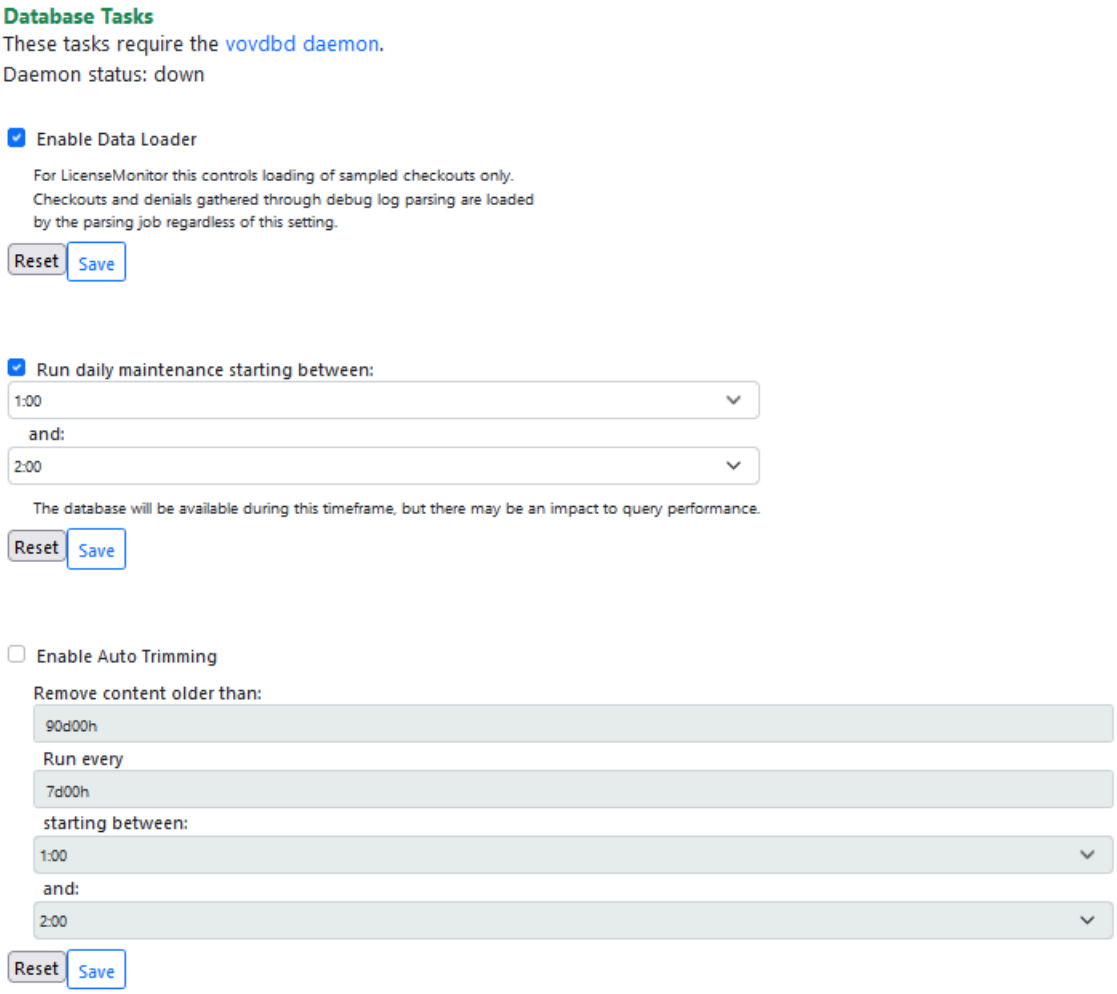


Figure 84: Database Tasks Configuration

These tasks require the `vovdbd` daemon to be running. You can perform the following tasks:

- Control loading of sampled checkouts only. Checkouts and denials gathered through debug log parsing are loaded by the parsing job regardless of this setting.
- Change the times to run daily maintenance tasks.
- Change the backup storage location as seen by the database host. Network storage is acceptable for database backups.

When you enter a date and click on **Trim Database**, it will trim the data to that date you selected, but in the database only. The checkout files will not be deleted or touched.

System Database Information

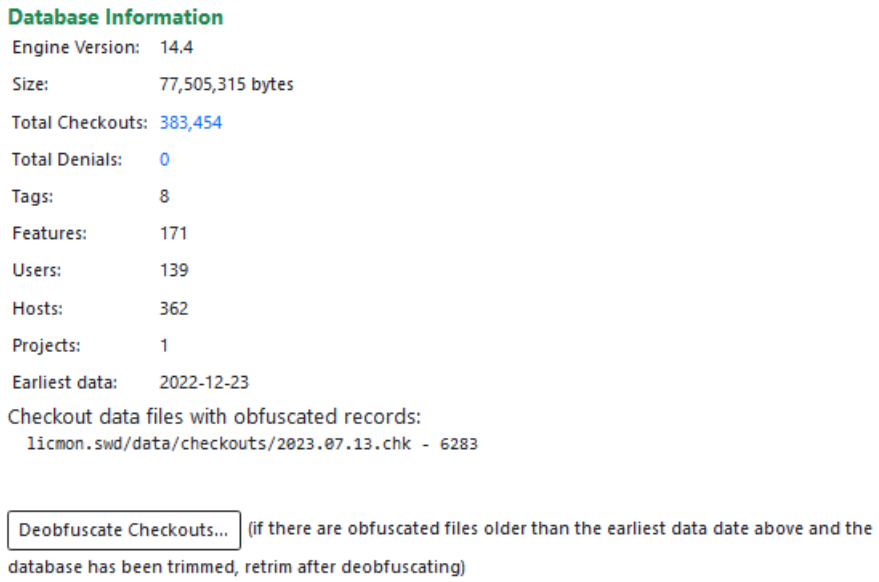


Figure 85: System Database Information

When you click on **Deobfuscate Checkout**, you will decrypt your data and load it into your database again, (once licensing has been updated or reissued).

Security Information

This shows a list of the tags and ISV daemons that are currently in server memory, along with their security status. The large page has been broken into three sections, so each can be explained.

The top portion of the **Security Information** page shows a list of the tags and ISV daemons that are currently in server memory, along with their security status.

The bottom portion of the page shows a list of areas that may contain sensitive data, along with their security status. Review these areas to determine if they should be secured before taking action.

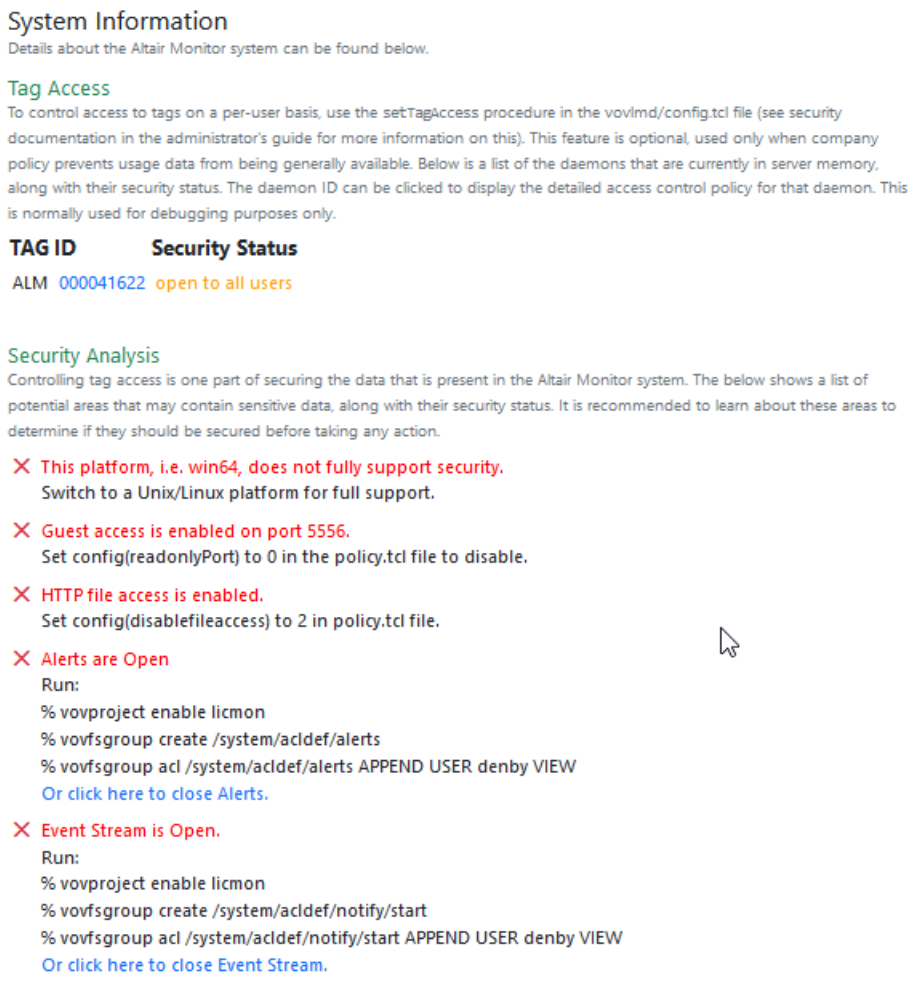


Figure 86: Tag Information

The ID can be clicked to display the access control policy for that ISV. The following page displays.

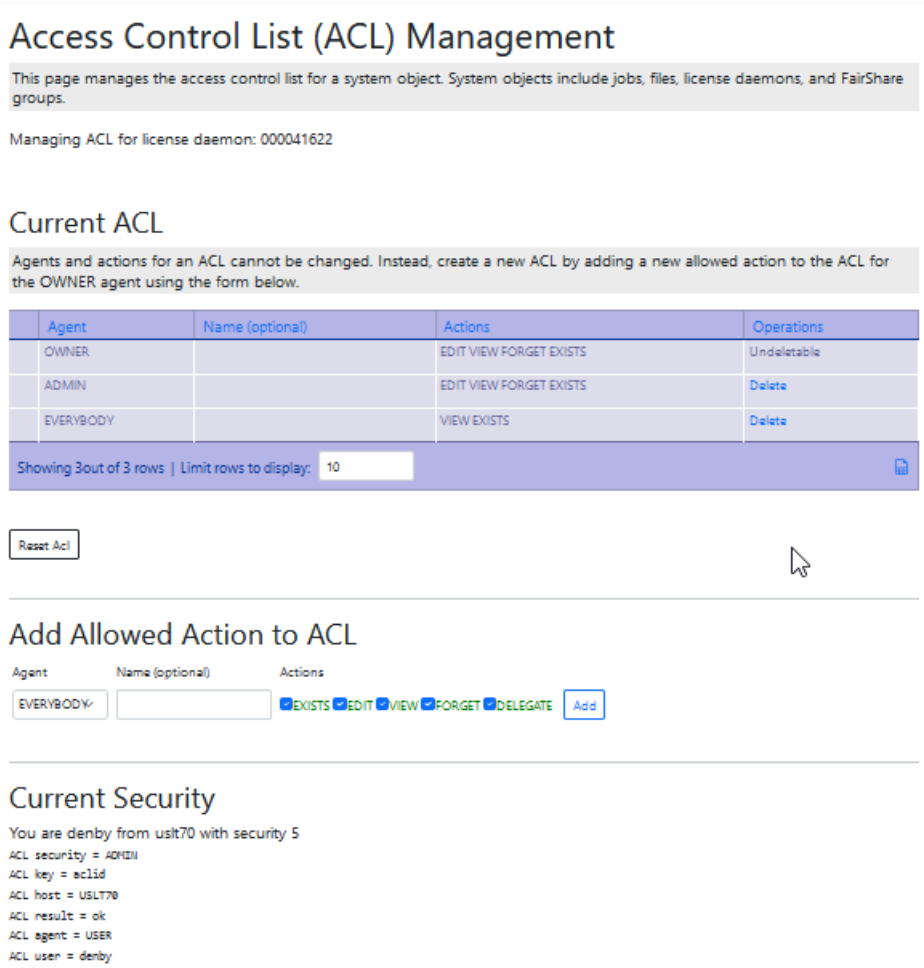


Figure 87: Access Control Policy

Configuration Information

This shows scheduled maintenance tasks, which can be configured, and existing configuration files, which can be edited.

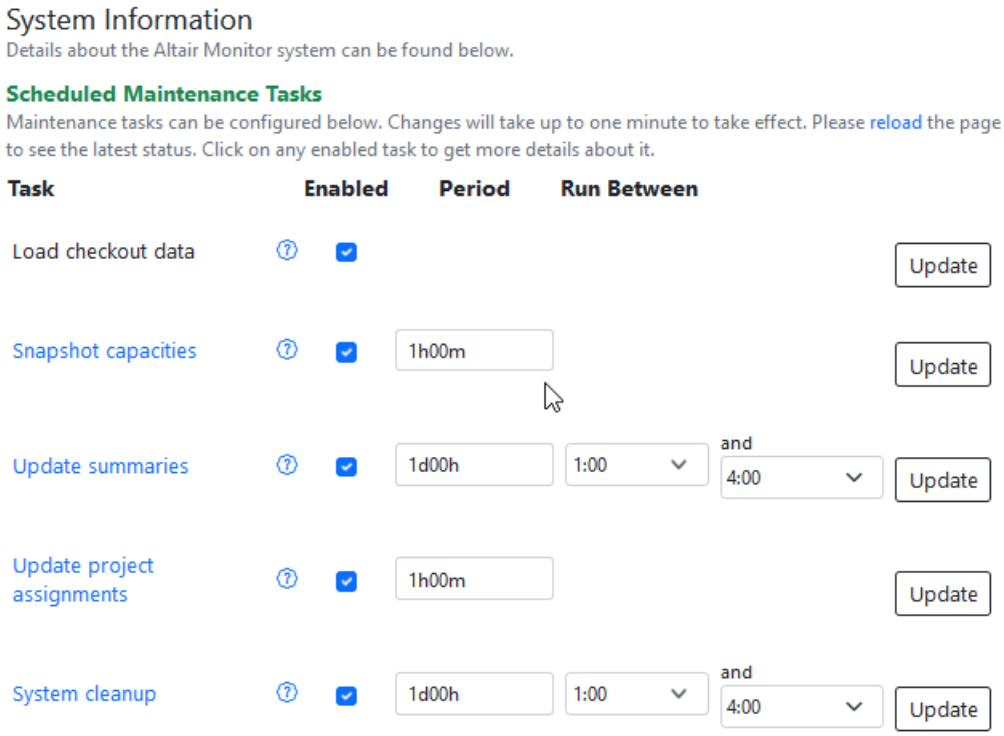


Figure 88: Admin Tab – Configuration Information

From this page, you can configure the following maintenance tasks.

Load checkout data	When enabled, this ensures that checkout data is loaded.
Snapshot capacities	When you click on the link, you will see specific node information for the job SNAPSHOT_CAPACITY, such as job description, state information, run-time information, input/output dependencies and properties. You can set the period when the task runs.
Update summaries	When you click on the link, you will see specific node information for the Job UPDATE_SUMMARIES, such as job description, state information, run-time information, input/output dependencies and properties. You can set the period measured and when it runs.
Update project assignments	When you click on the link, you will see specific node information for the Job UPDATE_PROJECTS, such as job description, state information, run-time information, input/output dependencies and properties. You can set the period measured.
System cleanup	When you click on the link, you will see specific node information for the Job SYSTEM_CLEANUP, such as job description, state information, run-time information, input/output dependencies and properties. You can set the period measured and when it runs.

Update custom groups from file	This enables you to manage custom groups from files, LIVE_LM_UPDATE_MEMBERSHIPS_FROM_FILE.
Update custom groups LDAP	This enables you to manage custom groups from LDAP, LIVE_LM_UPDATE_MEMBERSHIPS_LDAP.
Update custom groups from NIS	This enables you to manage custom groups from NIS, LIVE_LM_UPDATE_MEMBERSHIPS_NIS.
Load remote License Monitor data	This enables you to manage LIVE_LM_LOAD_REMOTE_DATA.

If you make changes, it may take up to one minute for them to take effect. Reload the page to see the latest status. The second half of the page shows the Configuration files. You can click on the file name to view or edit the file.

Workweek Information

This shows you the work week definition, which can be edited.

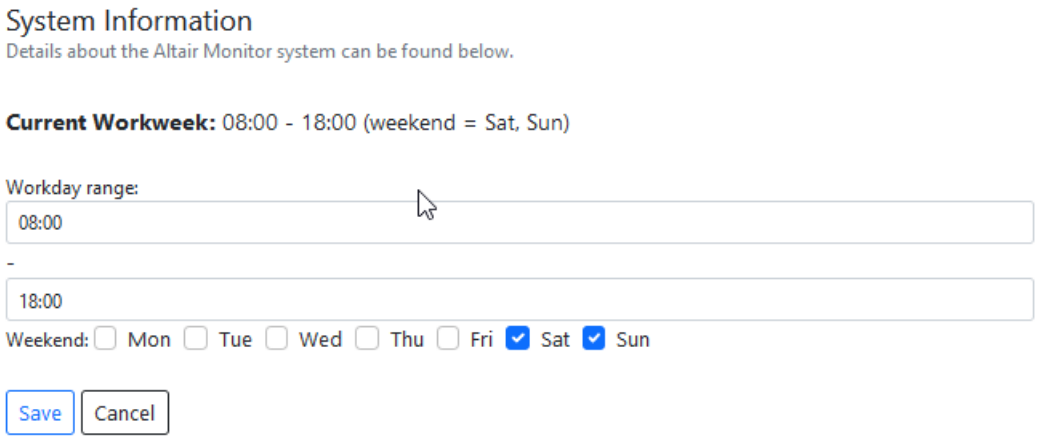


Figure 89: Workweek Information

You can adjust the Workday range and choose the weekend. Click **Save** when done.

Daemons

This page shows the active daemons and their status.

You can stop a daemon, start a daemon and learn more about the Config File, Info File and its documentation here. If you click on the Help icon next to the daemon, you will get a list of documentation references related to the daemon.

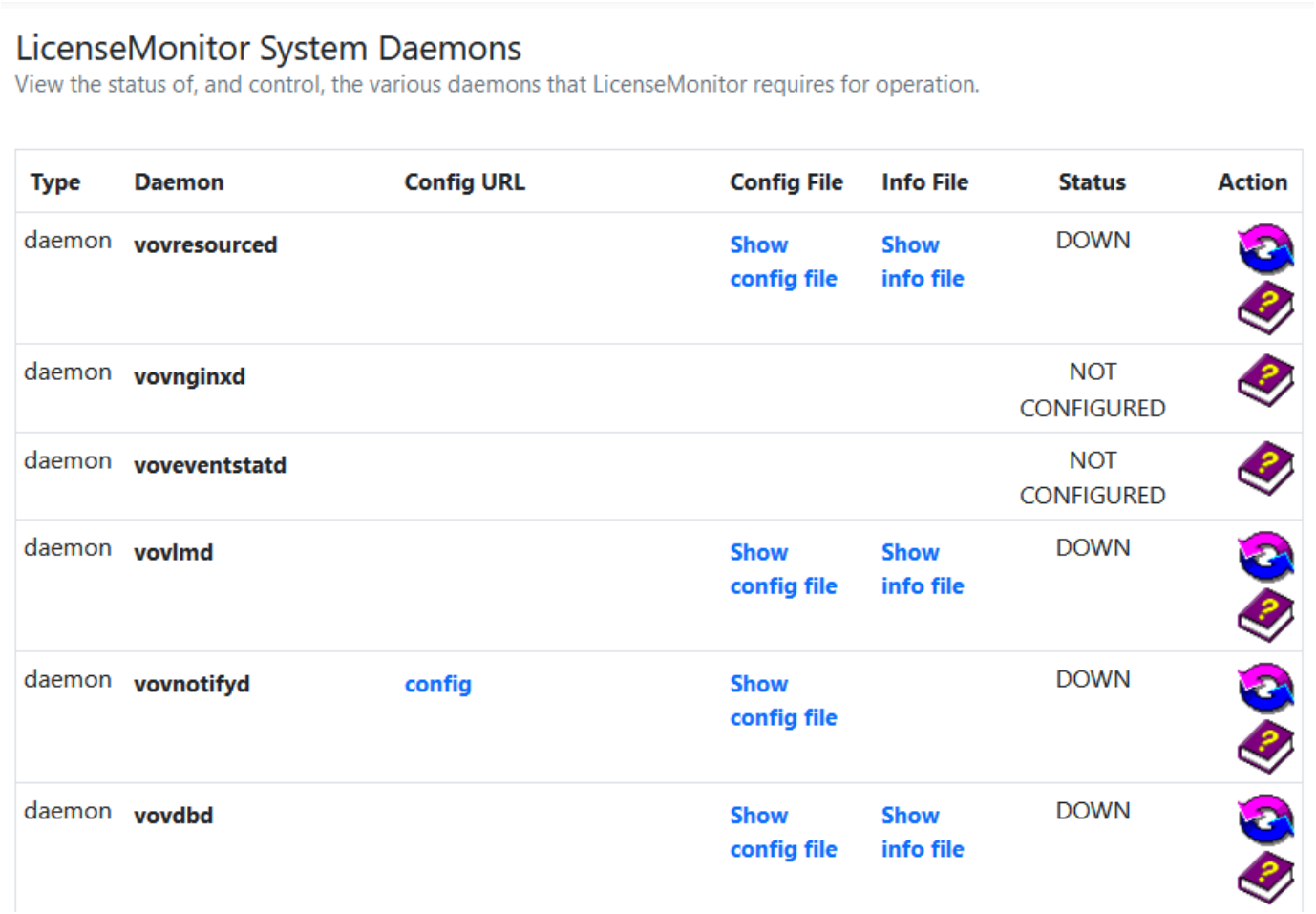


Figure 90: Daemons

Tasks

This page shows the Periodic Job List and enables you to pause and run jobs.

If you click on a job, you will advance to the job information page.

Figure 91: Tasks

Licensing

This page shows the Monitor license status and enables you to make changes to the current license environment.

The top half of the page enables you to check health of licenses, re-acquire all licenses and update vovserver's ALTAIR_LICENSE_PATH variable.

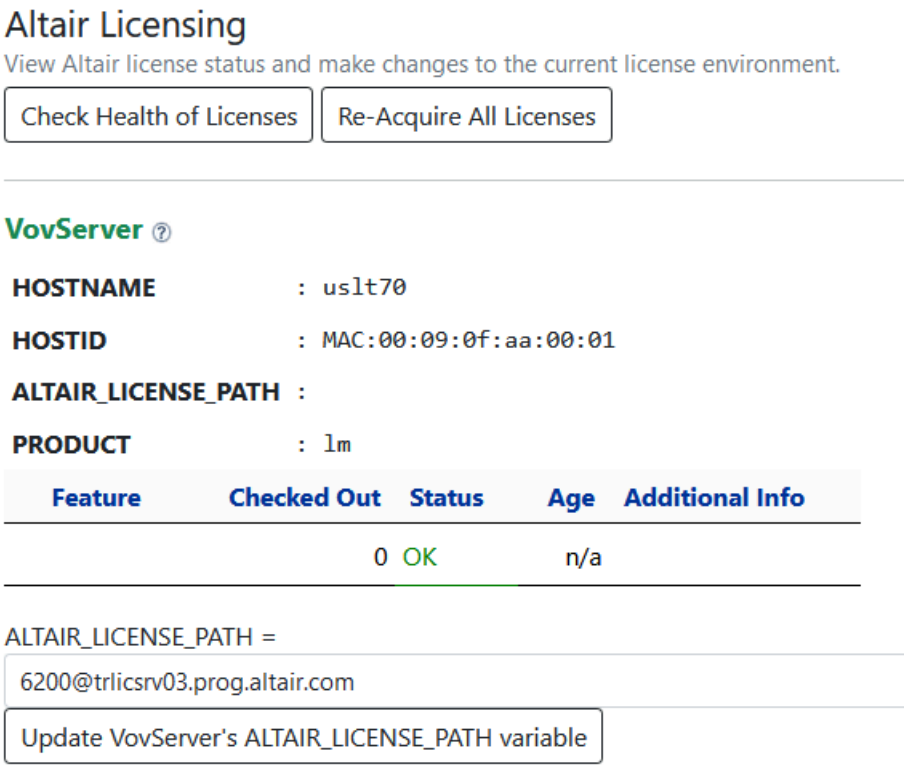


Figure 92: Licensing

The lower half of the page shows the status of the ALM server. You can view the raw status command output, and you can request a license for this host.

ALM Status

ALM SERVER : 6200@trlicsrv03.prog.altair.com

Feature	Version	Count	Reserved	Inuse	Expires	Expires In
AcuParaRead	22	100000	0	0	2022-12-31	-198d11h
BREEZE	24	100000	0	0	2025-05-09	1y296d
CatiaV5Reader	24	100000	0	2	2025-05-09	1y296d
CDTire_MSolve	24	100000	0	0	2025-05-09	1y296d
CDTire_MSolve_RS	24	100000	0	0	2025-05-09	1y296d
CDTireMBD	24	100000	0	0	2025-05-09	1y296d
CDTireNVH	24	100000	0	0	2025-05-09	1y296d
Click2ExtrudeCalibGUI	24	100000	0	0	2025-05-09	1y296d
Click2ExtrudeCalibSolver	24	100000	0	0	2025-05-09	1y296d

Figure 93:

Control Center

Manage licenses on remote servers.

The Control Center tab is only available to administrators. It requires an agent program to run on each license server host to be managed. The agent is responsible for running supported administration commands, such as starting and stopping a license daemon, and transmitting files to the server.

License files can be fetched from a license server, edited within the web interface and then published back to the license server. New license files can be uploaded and distributed to remote license manager directories. New license server directories can also be created from scratch.

The Control Center tab has four different options for making these adjustments:

Server Overview — This shows a list of the license server tags that have been configured for license management tasks. This enables you to start, stop and reread agents.

Server & File Control — This enables you to configure license management, work with licensing files, and control license servers. Only the Monitor owner-user has permission to add additional managers.

Agent Status	This shows the running remote agents, which are required for management tasks and provides more details on the connected agents.
Setup	This enables you to setup the Control Center for use. Use this page when new license servers are added or to create a new license server from scratch.

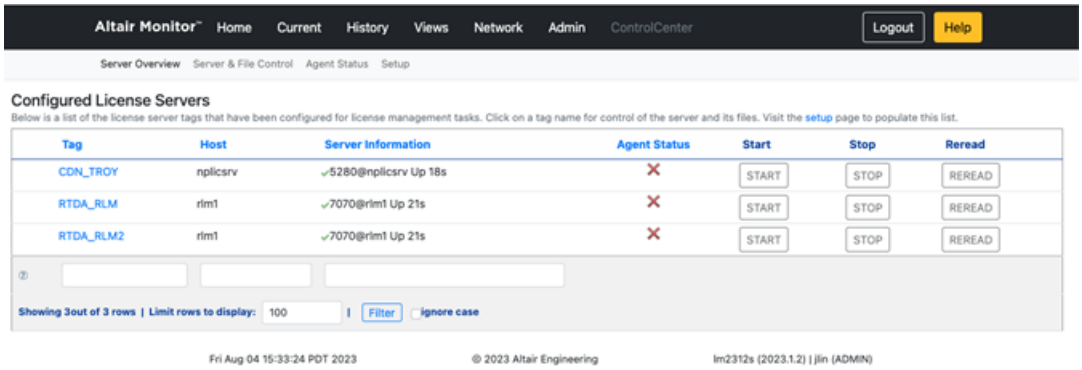


Figure 94:

Configured License Servers

The Configured License Servers option shows license tags configured for license management tasks.

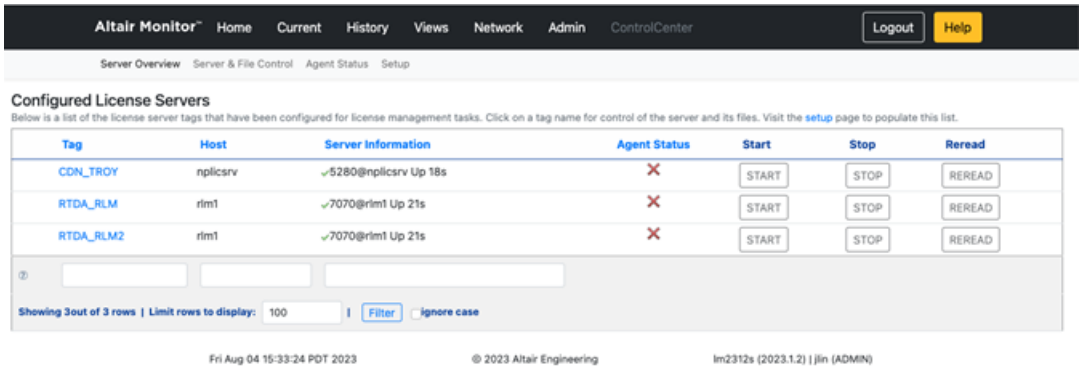


Figure 95:

This table includes the following columns:

Tag	The license server tag that has been configured for management tasks.
Host	The host that will run the agent.

Server Information	License server information.
Agent Status	This shows whether the agent is running.
Start	Starts the agent.
Stop	Stops the agent.
Reread	Rereads of license files.

Click on a tag name to control the server and its files.

Server and File Control

This option enables you to edit licensing files, work with licensing files and control license servers. Only the Monitor owner-user has permission to add additional managers on this page.

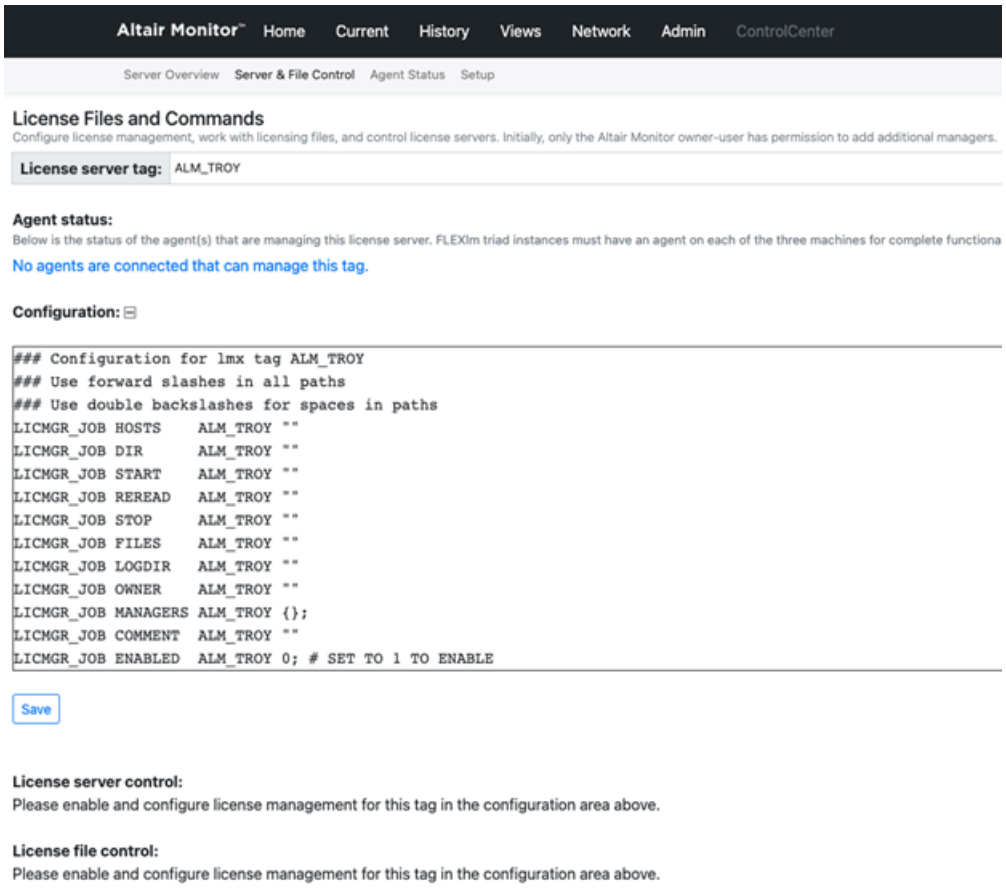


Figure 96: License Files and Commands

Select a tag by clicking on the License server tag. This brings up the information for the license server instance that the tag represents.

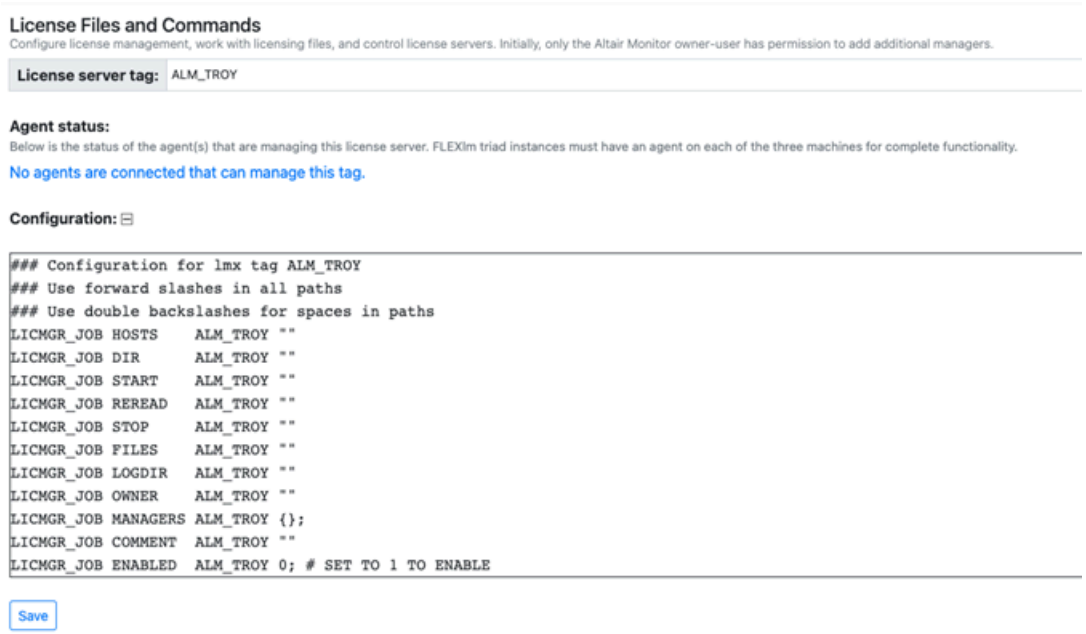


Figure 97: License Server Instance

This configuration can be edited and saved from within this page. The lower half of the page enables you to View, Edit, Import and Deploy Configuration.

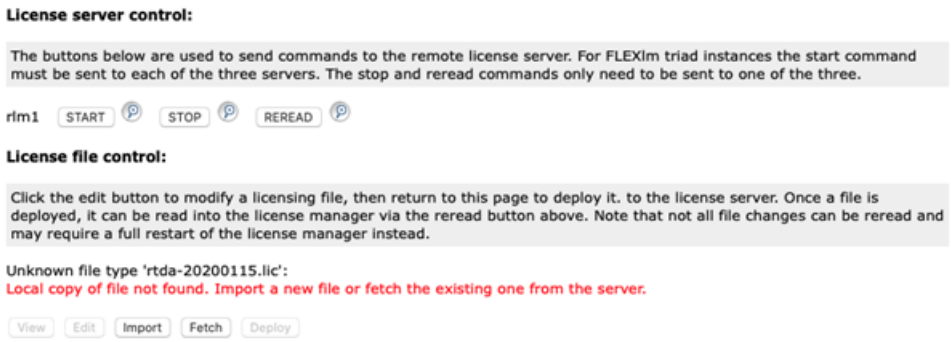


Figure 98: License Files and Commands

Agent Status

This option shows the list of the running remote agents, which are required for management tasks.

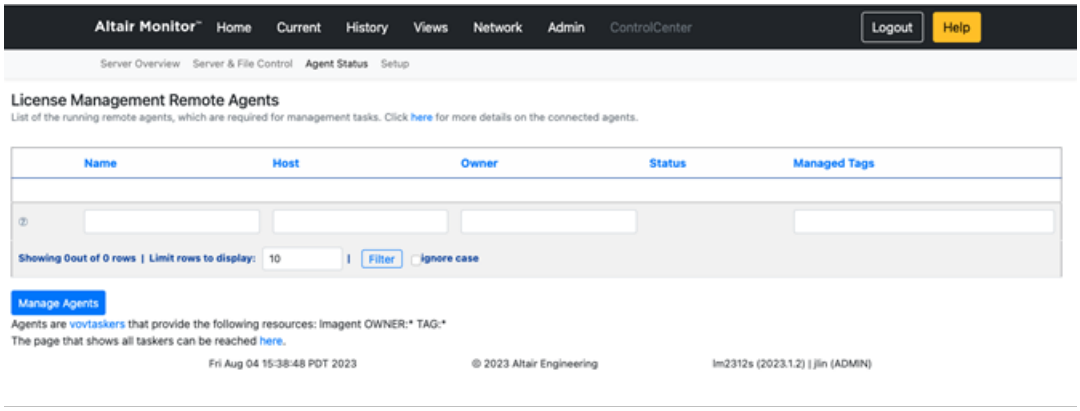


Figure 99: Agent Status Page

When you click **Manage Agents**, it will bring up the **Agent Management** page for agents that can be remotely controlled via ssh, rsh, or vovtsd.

The Control Center's license management agents are configured in the same manner as monitoring agents with one exception. Each agent can be assigned to a specific tag, so that it will only interact with the license servers to which those tags are related. This allows for securing tags to their respective administrator personnel.

If such security is not required, the agent can be configured to interact with all tags found on the same machine on which the agent is running.

Set Up

This page is used to setup the Control Center. Use this page when new license servers are added or to create a new license server from scratch.

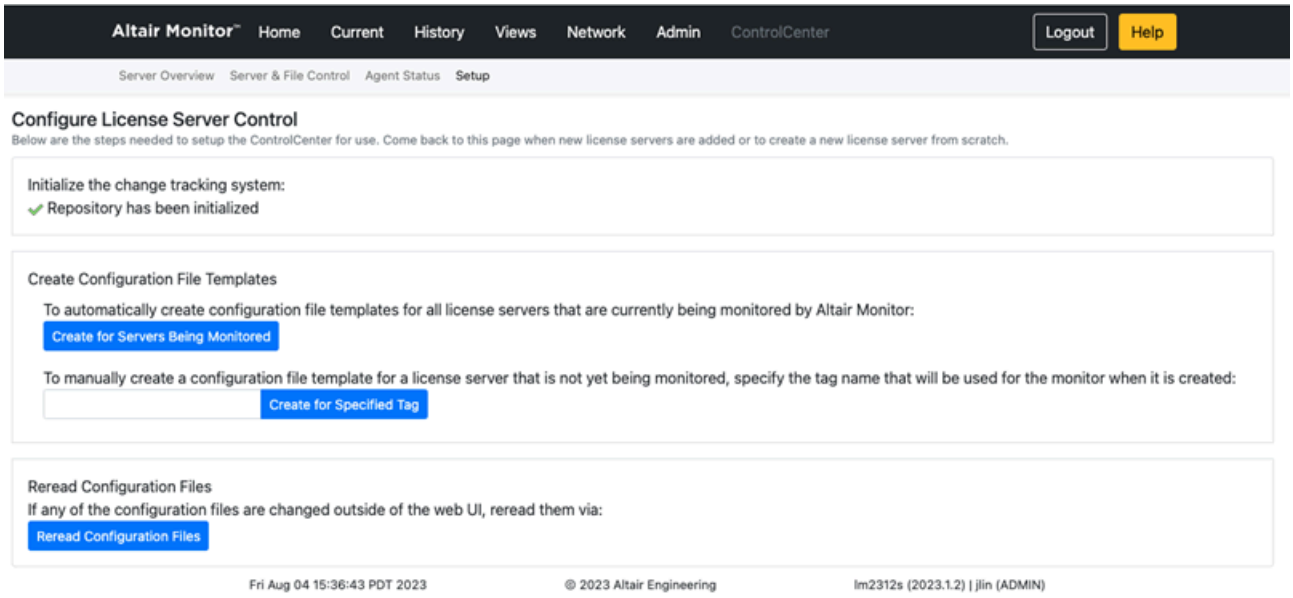

Altair Monitor
Home
Current
History
Views
Network
Admin
ControlCenter
Logout
Help
Server Overview
Server & File Control
Agent Status
Setup
Configure License Server Control
Below are the steps needed to setup the ControlCenter for use. Come back to this page when new license servers are added or to create a new license server from scratch.
Initialize the change tracking system:
Repository has been initialized
Create Configuration File Templates
To automatically create configuration file templates for all license servers that are currently being monitored by Altair Monitor:
Create for Servers Being Monitored
To manually create a configuration file template for a license server that is not yet being monitored, specify the tag name that will be used for the monitor when it is created:
Create for Specified Tag
Reread Configuration Files
If any of the configuration files are changed outside of the web UI, reread them via:
Reread Configuration Files
Fri Aug 04 15:36:43 PDT 2023
© 2023 Altair Engineering
lm2312s (2023.1.2) | jlin (ADMIN)

Figure 100:

Basic Operations and Setup (Admin Only)

This section is organized into a series of instructions designed to guide you through the beginning steps of setting up your Monitor system.

It's not meant to be a complete administrator guide, but it is designed for system administrators and for most of the steps here, you will need admin permissions.

Add a License Monitor

1. To add a license monitor, go to the **Admin** tab, and select **Monitors** from the menu bar.

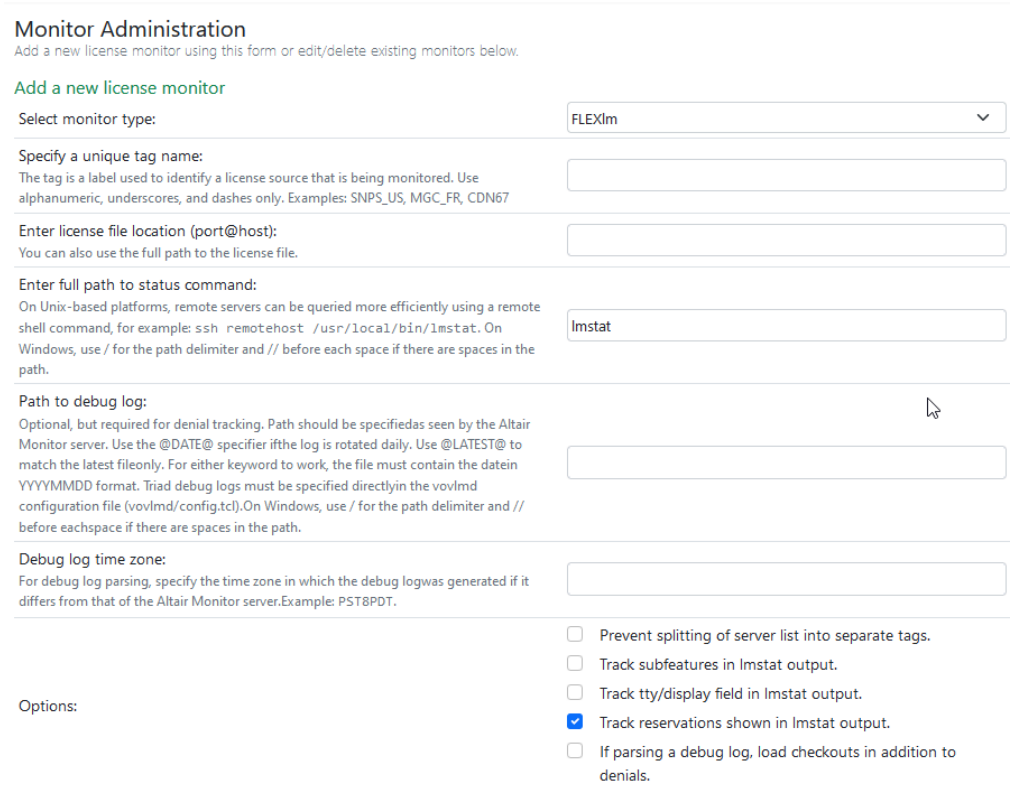


Figure 101: Add a Monitor

2. Enter details for at least sections 1-4.
   a) Select monitor type.
   b) Specify a unique tag name.
   c) Enter license file locations.
   d) Enter full path to status command.
3. On the bottom, click **Add New Monitor**.
4. Go to **Home** tab.

The current checkouts should be populating shortly, within 30 seconds.

5. For Windows users, we recommend setting up Monitor as a service, if you haven't done so already. See Set Up Monitor as a Service – Windows Only.

Sample a License Server

1. Go to the command line (right-click start menu and select **Command Prompt Admin**).
2. Enter the path to installation under the extraction directory.
   a) Type `cd win64\bat\`
   b) Type `vovinit`

   This initializes the command prompt with Altair Accelerator software and enables the shell command prompt and checks that the rlmstat – that is running is VOV.
3. Sample a license server.
   a) Enter rlmstat 7070@buffalo where:
      - rlmstat= the script that connects and request information.
      - 7070 = is the port
      - Host = buffalo
      - PORT@HOST

   It will show that the system is running.
4. Verify the system is working. If the port doesn't exist, you will get a message indicating that.

Configure Security Parameters for Specific Users

When you first install Monitor, you should set up permissions for specific users. Only administrators can perform this action.

1. Go to http://localhost:5555/admin.

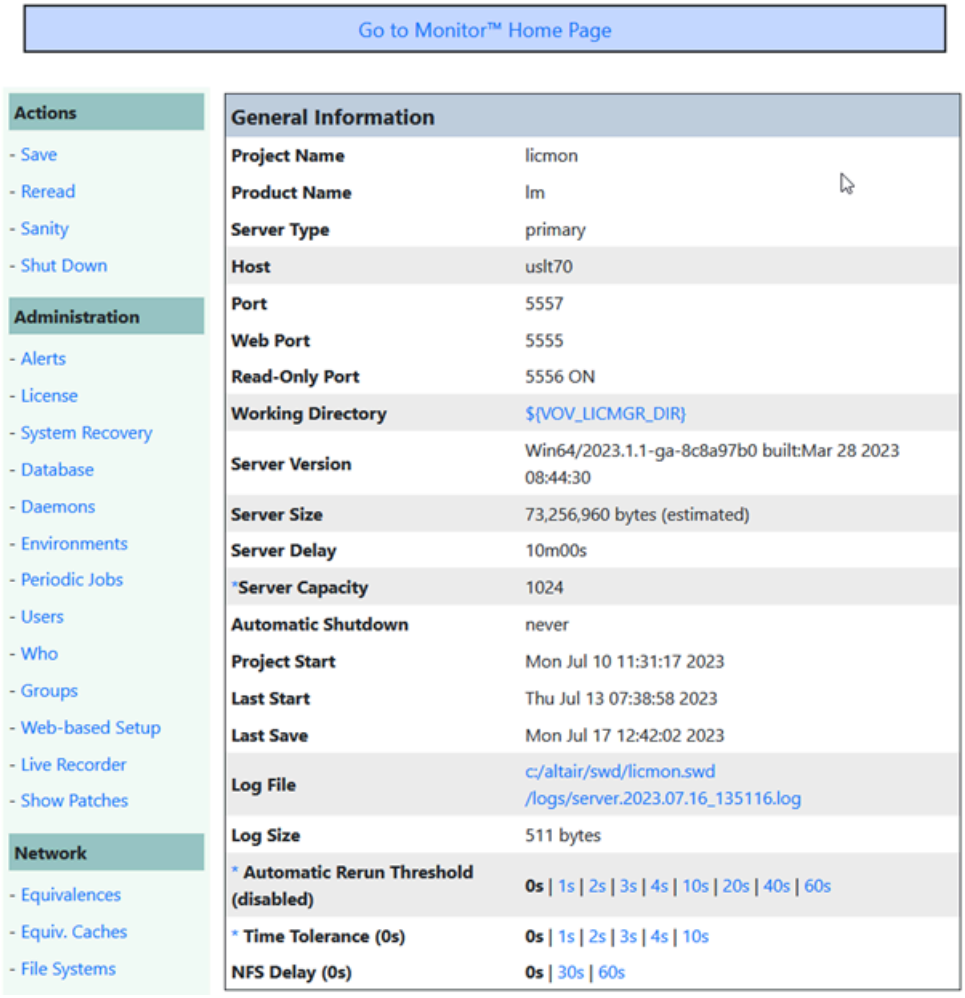


Figure 102: Monitor Admin Page

2. Scroll down to the **Project Configuration Files** section, click on **Security file** link.
   A new page will display, which explains how to set permissions. The page itself defines who has access to the vovserver for Monitor.
3. Set the security level for the user as Read only, User, Leader or Admin. See the table below for specifics on what each security level indicates.

User Security Level	Description
Read Only	Minimum privileges; a user can only browse the information but cannot change anything
User	A user can only execute established flows and view non-critical information. A user can: Create, modify or forget his own jobs Create, modify or forget his own files

User Security Level	Description
	Create, modify or forget his own set Modify or forget dependencies Create/modify/start/stop/forget own tasker Remember jobs owned by other users
Leader	A leader can create and execute arbitrary flows and view all non-security related information. A leader can: Start or stop his own taskers Forget all jobs, including jobs owned by another user Save trace database to disk **Note:** This level is rarely used.
Admin	An admin has access to most security information. An admin can: Forget jobs owned by other users Stop jobs owned by other users (no user can modify another user's jobs) Stop the server Stop/modify/forget the taskers Refresh tasker cache Destroy a user Destroy a host Create or destroy alerts Create, modify or destroy resource map Reserve resource Create, modify or destroy preemption rule Create, modify or destroy multi-queue objects (Monitor sites, NC queues, resources) Create, modify or destroy Monitor objects (licdaemons, features)

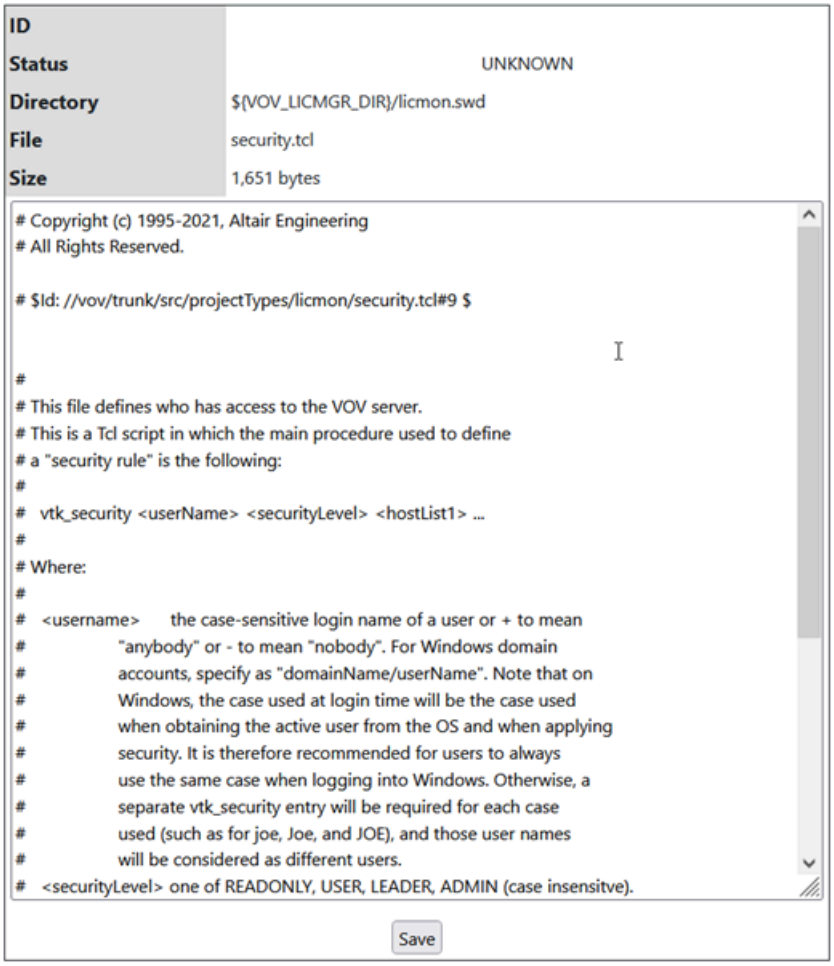


Figure 103:

The security rule is: `vtk_security <userName> <securityLevel> <hostList>` where

- <username> is the case-sensitive login name of a user
- <securityLevel> is READONLY, USER, LEADER, ADMIN (case insensitive).
- <hostList> is a list of one or more host names, which is either an actual host name, + to mean any host.

4. Configure the security parameters in accordance with these rules.
5. When done, click **Save**.

Track a Project

Monitor provides project-based tracking of license usage. You might track a project, because you want to see how many licenses specific people or a team used, so you can make an estimate and budget for the next quarter or year. To track a project, you first must set it up and wait. The project data will be useful after a certain period of time has passed, for example a quarter or six months.

First, create the project.

1. Go to the **Admin** tab and select **Groups** > **Projects**.

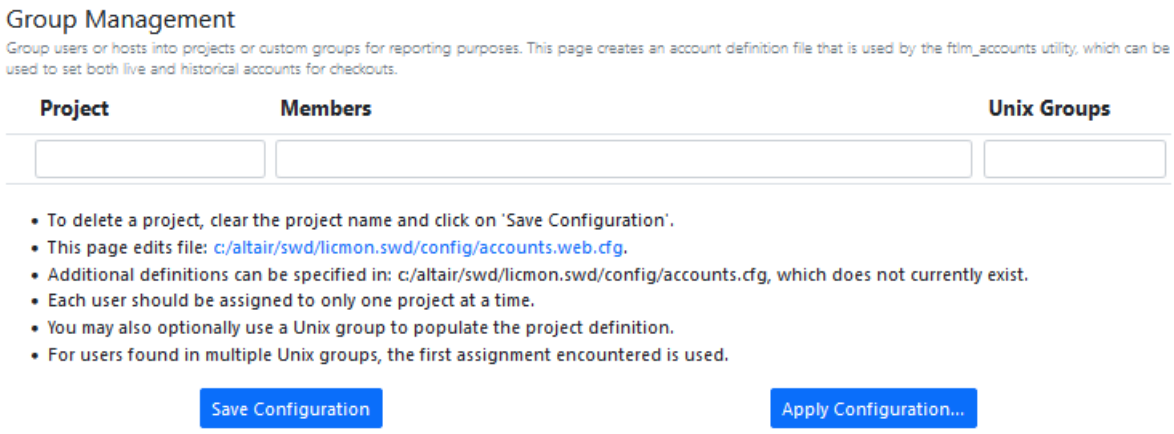


Figure 104: Groups - Project

2. Enter the **Project Name** and the **Members** you wish to monitor. The members will be listed as users in feature reports, for example. It's likely that you will enter multiple users.

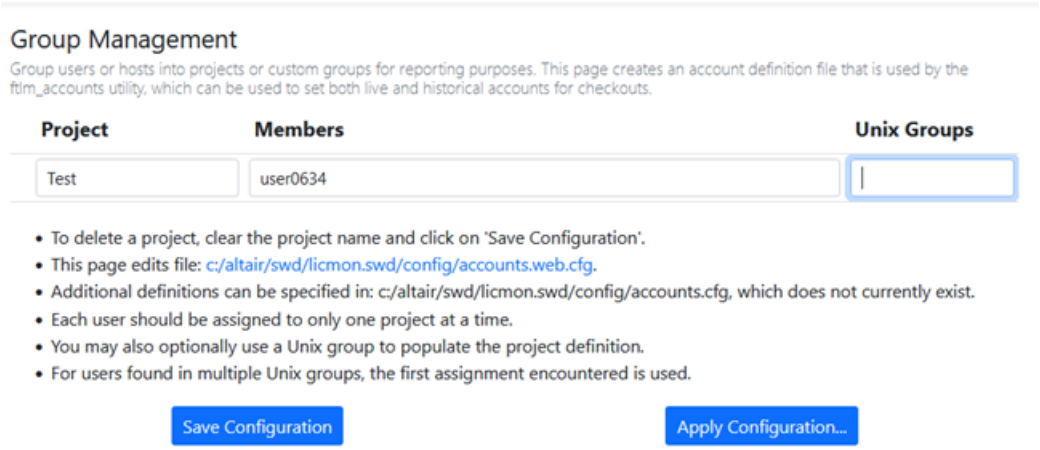


Figure 105: Group Management

3. Click **Save Configuration** and then **Apply Configuration**.
   At this point, you are done creating a project and you will need to wait a specified time period before the data rendered is meaningful.

To track a project, perform the following steps:

4. Go to the **History** page and select **Usage**.
5. Choose a report so you can evaluate the conditions of your project. You can evaluate data in daily plots, checkout statistics, efficiency statistics and many other reports. In this case, we will generate an efficiency statistics report. To do so, select **Efficiency Statistics** from the **Usage** menu.
6. Select the **Time Range**, **Tag** or **Feature** and the **Project** to track.

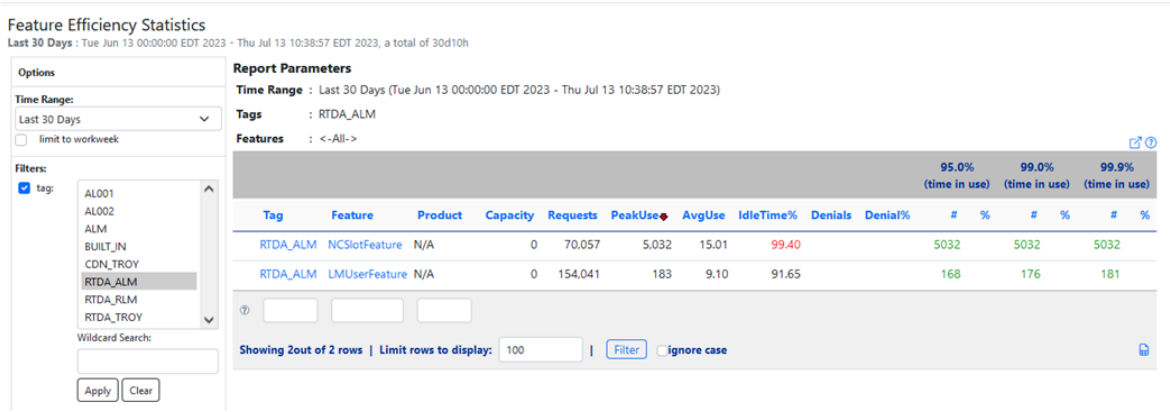


Figure 106: Feature Efficiency Statistics

7. Select your project and click **Apply**.
8. Select the feature (license) you wish to track and click **Apply**.
9. When you are done, click **Submit**.
   A report will generate that displays project status.

Add and Configure an Agent

Monitor can be configured to monitor hardware and process information if agents are configured on the machines you wish to monitor. These agents will send the following machine information to Monitor:

- CPU utilization
- File system utilization
- Process listing
- Network traffic levels (Linux only)
- Machine load (UNIX only)

Agents can be configured and controlled remotely from the Monitor server if certain conditions are met. Otherwise, agents can be configured locally on each machine monitored. In most cases, you will configure an agent to run remotely.

Agent Configuration Requirements

To remotely create and control of agents, the following must be true:

- An Altair Accelerator installation must be available on the machine monitored (either network-based or local).
- An RSH, SSH, or vovtsd connection must be allowed between the Monitor server and the host to be monitored without a password prompt appearing. The `vovtsd` daemon is provided by Altair Accelerator and provides secure connection capabilities on any configurable port for starting and stopping agents remotely. This daemon is especially useful for Windows, which do not provide built-in remote connectivity capabilities.

For networks where home directories are stored remotely and available to all machines via NFS, Monitor provides a utility called vovsshsetup to setup SSH keys. The keys allow SSH to connect to a remote machine without prompting for a password. After running the utility, one manual connection will need to be performed for each of the hosts so that its host key is added to the known_hosts file. Each host also must be able to mount the filesystem containing the Monitor software installation.

Add an Agent via an SFD

There are two Single File Distributables with distinct use cases.

lmagent SFD
: This SFD is the actual agent. It will connect to the Monitor specified in the SFD form/options. The lmagent SFD is for LM agents only, both monitoring and management agents. There is an lmagent SFD for both Windows and Linux system.

vovtsd SFD
: Not an actual agent. It is the "VOVTaskerServiceDaemon" that is used to start and stop agents remotely using the agent web UI mentioned in the "Add and Configure an Agent using the Web GUI" section.
The `vovtsd` SFD is general purpose and can be used with any of our products on any platform and is handy for when SSH is not available or when SSH requires a password.

Extract the CLI-based lmagent SFD Executable

1. On Windows:

   To extract the SFD using the CLI, you should have selected `lmagent-win64-cli.exe`. This is a subset of Altair software required to support a Monitor agent. This agent will work as both a license management agent and a monitoring agent. The subset components will be extracted into the directory specified by the CLI argument and the agent will run from within that directory. This directory will be overwritten upon each start of this executable in order to facilitate simple upgrades of the agent.

   a) At the command line, navigate to the directory where the SFD was downloaded.
   b) Run `lmagent-win64-cli.exe`.

      The software will automatically use the defaults during extraction. You can change any of the parameters using the fields as shown below:

```
CLI Usage (Windows):
lmagent-win64-cli -host <HOST> [-dir <DIR>] [-port <PORT>] [-instance
 <NAME>]
                  [-tag <TAG>] [-extract-only 0|1] [-nogui 0|1]

Required arguments for CLI mode:

-host     HOST     -- Name of Monitor server host to connect to.
-dir      DIR      -- Directory in which the agent files should be
 extracted.
                       Use forward slash (/) for path separator on Windows.
 The
```

```
                        directory path must not contain spaces
                        (default Unix: /opt/altair/agent, Windows: c:/altair/
agent).
-port     PORT      -- Port number for LicenseMonitor server (default: 5557).
-instance NAME      -- Name of Monitor instance (default: licmon).

Optional arguments for CLI mode:

-h                  -- Show this help message.
-tag TAG            -- One or more tags to be managed by this agent, passed
 in as
                        a space-separated list enclosed in either double
 quotes or
                        curly braces. Can also be 'ALLTAGS' to manage all tags
 on
                        the current host or can be left empty to use agent as
 a
                        host monitor only (default).
-nogui              -- For Unix-based platforms, suppress the GUI.
-extract-only       -- Extract only, do not run.
-start-only         -- Start only, do not extract. A previous extraction must
                        exist.
-noblock            -- Return to the shell/command prompt after startup.

Optional arguments for CLI mode on Windows (ignored on Unix-based
 platforms):

-install-service    -- Install service. The service will point to this
                        executable, so ensure it is in a path that is
 accessible
                        in a service environment. Requires both the account
 and
                        password arguments to be passed in addition to the
                        required arguments listed above.
-start-service      -- Start service. Requires no other arguments.
-stop-service       -- Stop service. Requires no other arguments.
-uninstall-service -- Uninstall service. Requires no other arguments.
-account            -- Account to use for service installation. Pass "system"
 to
                        install the service to run under the system user.
-password           -- Password to use for service installation. Pass
 "system" to
                        install the service to run under the system user.
```

2. On Linux:

To extract the SFD using the CLI, you should have selected `lmagent-linux64`. This is a self-extracting installation of the Monitor product. The software components will be extracted into the directory specified by the CLI argument and the product will run from within that directory. This directory will be overwritten upon each start of this executable in order to facilitate simple upgrades of the product.

a) At the command line, navigate to the directory where the SFD was downloaded.

b) Run `lmagent-linux64`.

The software will automatically use the defaults during extraction. You can change any of the parameters using the fields as shown below:

```
CLI Usage (Unix-based platforms):
lmagent-<VOVARCH> -host <HOST> [-dir <DIR>] [-port <PORT>] [-instance
 <NAME>]
```

```
                  [-tag <TAG>] [-extract-only 0|1] [-nogui 0|1]

Required arguments for CLI mode:

-host     HOST     -- Name of LicenseMonitor server host to connect to.
-dir      DIR      -- Directory in which the agent files should be
 extracted.
                      Use forward slash (/) for path separator on Windows.
 The
                      directory path must not contain spaces
                      (default Unix: /opt/altair/agent, Windows: c:/altair/
agent).
-port     PORT     -- Port number for LicenseMonitor server (default: 5557).
-instance NAME     -- Name of LicenseMonitor instance (default: licmon).

Optional arguments for CLI mode:

-h                 -- Show this help message.
-tag TAG           -- One or more tags to be managed by this agent, passed
 in as
                      a space-separated list enclosed in either double
 quotes or
                      curly braces. Can also be 'ALLTAGS' to manage all tags
 on
                      the current host or can be left empty to use agent as
 a
                      host monitor only (default).
-nogui             -- For Unix-based platforms, suppress the GUI.
-extract-only      -- Extract only, do not run.
-start-only        -- Start only, do not extract. A previous extraction must
                      exist.
-noblock           -- Return to the shell/command prompt after startup.

Examples:

% lmagent-linux64 -host lmsrv
% lmagent-linux64 -host lmsrv -port 7777 -instance mylm
% lmagent-macosx  -host lmsrv -dir /Applications/Altair/agent -nogui
% lmagent-win64   -host lmsrv -tag "MENTOR SYNOPSYS"
% lmagent-win64-cli -host lmsrv -port 5557 -install-service -account joe -
password secret
% lmagent-win64-cli -host lmsrv -port 5557 -install-service -account system
 -password system -start-service
% lmagent-win64-cli -start-service
% lmagent-win64-cli -stop-service -uninstall-service
```

Extract the GUI-Based lmagent SFD Executable

To install Monitor via the GUI, you should have selected either `lmagent-win64.exe` or `lmagent-linux64`.

1. After downloading Monitor, right-click on the executable file and select **Run as administrator**. The following dialog displays:

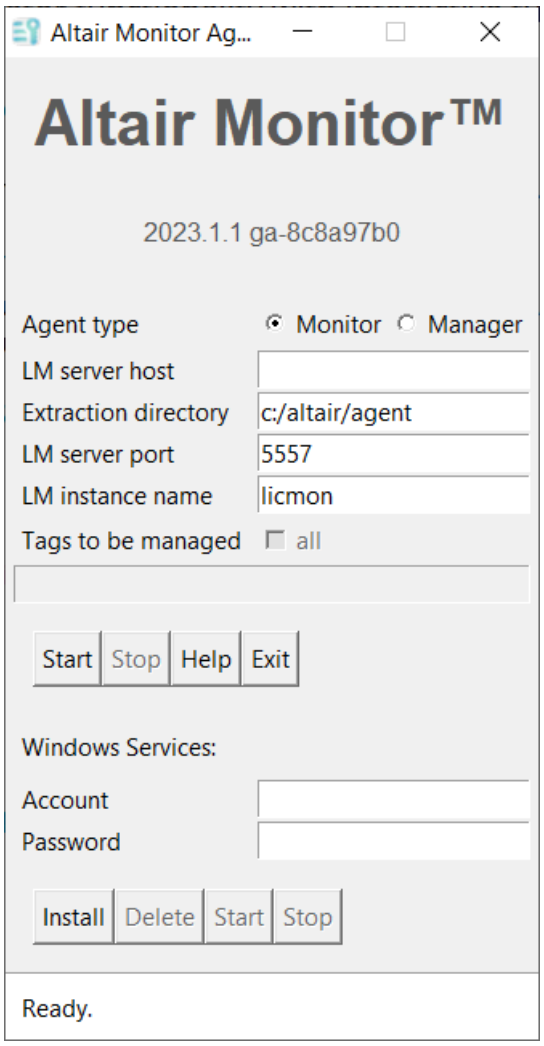


Figure 107: Altair Monitor Agent Windows

2. Make changes to the directories as desired.

   Note: Windows users, be sure to use forward slashes and NOT back slashes.

3. When done, click **Start**.
   The extraction may take time some time. When Monitor is started, you will see "Altair Monitor running as process …" at the bottom of the window.
4. With Monitor running, open a web browser and go to **http://localhost:5555** and login. Use the same login you use on your computer.
5. Continue with the setup process.

Add and Configure an Agent using the Web GUI

To add and configure an agent, perform the following steps:

1. Go to the **Admin** page and select **Agents** from the top menu.
   The follows page displays:

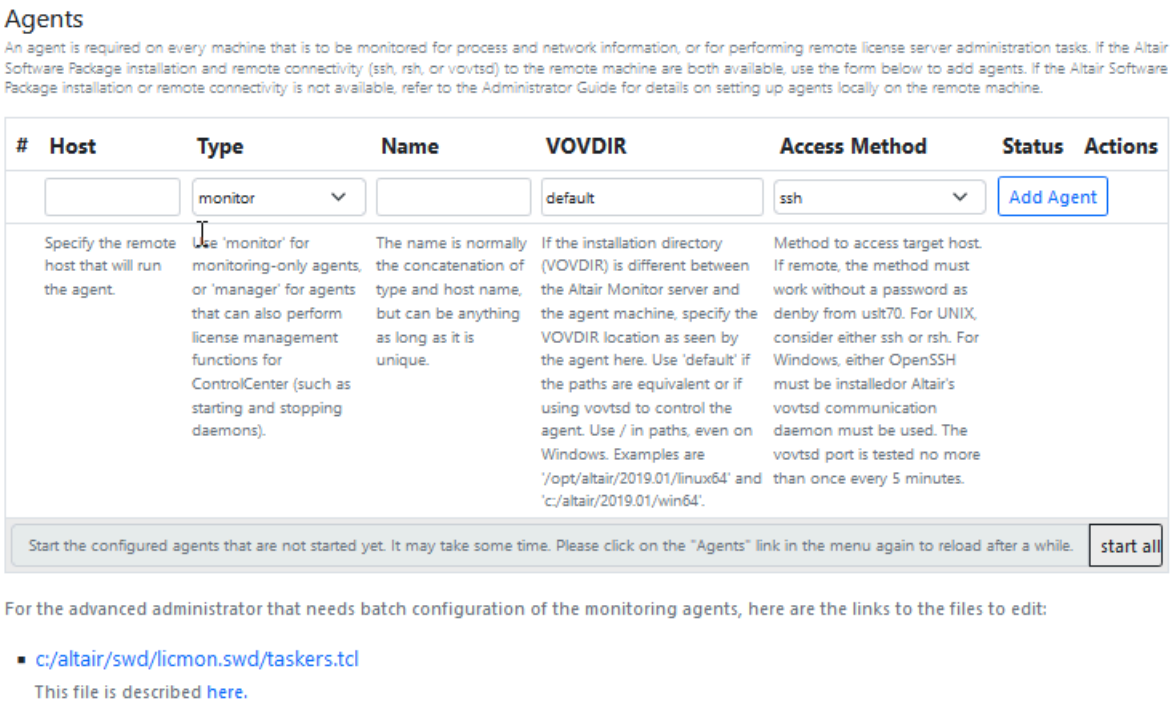


Figure 108: Agents Options

2. Specify the following attributes of your agent by entering the following specifications.
   a) Specify the remote host that will run the agent.
   b) For Type, select the **monitor** for monitoring-only agents, or the **manager** for agents that can perform license management functions in the ControlCenter (starting and stopping daemons).
   c) If you select **manager**, you will have the option of specifying a tag.
   d) For Tag, specify the tags that are to be managed by this agent. If the agent manages all tags on the host, specify the ALLTAGS keyword, which is shown by default.
   e) For Name, the name is normally the concatenation of type and host name, but it can be anything if it is unique.
   f) For VOVDIR: If the installation directory (VOVDIR) is different between the Monitor server and the agent machine, specify the VOVDIR location as seen by the agent.
   g) Use the default if the paths are equivalent. If using `vovtsd` to control the agent, use forward slashes in paths, even in Windows. Examples are: `/opt/altair/2025.1.0/linux64` and c:/altair/2025.1.0/win64.
   h) Access Method: Select the access method, local, rsh, ssh or `vovtsd`.
      - If remote, the method must work without a password. For UNIX, consider either ssh or rsh.

- For Windows, either OpenSSH must be installed or Altair Accelerator's `vovtsd` communication daemon must be used. The `vovtsd` port is tested no more than once every 5 minutes.

3. Click **Add Agent** to register the agent with the system.
   The agent can now be started by clicking **Start All Agents** or the **Start** button.

> **Note:** For agents started via rsh or ssh, the default value is the value of $VOVDIR for the Monitor instance. For vovtsd agents, the default value is $VOVDIR for the vovtsd instance.
>
> If a different value of $VOVDIR is desired, you can override the default with file-based configuration.

Add an Agent – File-Based Configuration

To override default values and create an agent, perform the following steps:

1. To configure monitoring agents, go to http://localhost:5555/admin.
2. Scroll down to **Project Configuration Files** and click on taskers.tcl link.

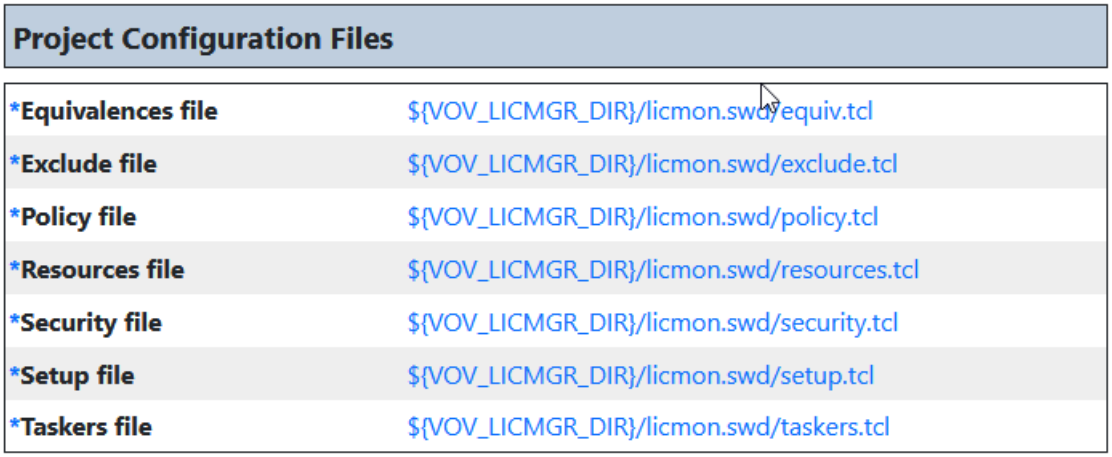


Figure 109:

3. Add the hosts to monitor.
   For example:

```
vtk_ftlm_agent_define HOSTNAME TYPE -rshcmd REMOTECMD -name AGENTNAME
```

   The value of `HOSTNAME` should be the DNS name or IP address of the host to be monitored.

   - For monitoring agents, the TYPE should be `lm`.
   - For license management agents, the TYPE should be `licmgr`.
   - Depending on the connection method desired, the REMOTECMD value should be one of rsh, ssh, or vovtsd.

- If using vovtsd, the argument "-vovtsdport PORT" arguments must be passed as well, where PORT is the port number on which vovtsd is running on the remote machine. For example:

```
vtk_ftlm_agent_define dragon lm -rshcmd vovtsd -name lmdragon -vovtsdport
 16666
```

- If the Altair Accelerator installation directory location ($VOVDIR) needs to be overridden use the -vovdir option to specify the desired location:

```
vtk_ftlm_agent_define dragon lm -rshcmd vovtsd -name lmdragon -vovtsdport
 16666 \
-vovdir /opt/altair/2025.1.0/linux64
```

4. When done, click **Save**.
   Once the agent has been properly configured, it can now be started by clicking **start all agents**.

Configure a License Server Manager

To configure a license server manager, perform the following steps:

1. From the Monitor Web GUI, go the **Control Center** tab and select the **Setup** option.
2. Click on **Initialize Repository**.
3. Go to the **Server & File Control** option.
4. Choose the License server tag you wish to configure or edit.
   The configuration will display.

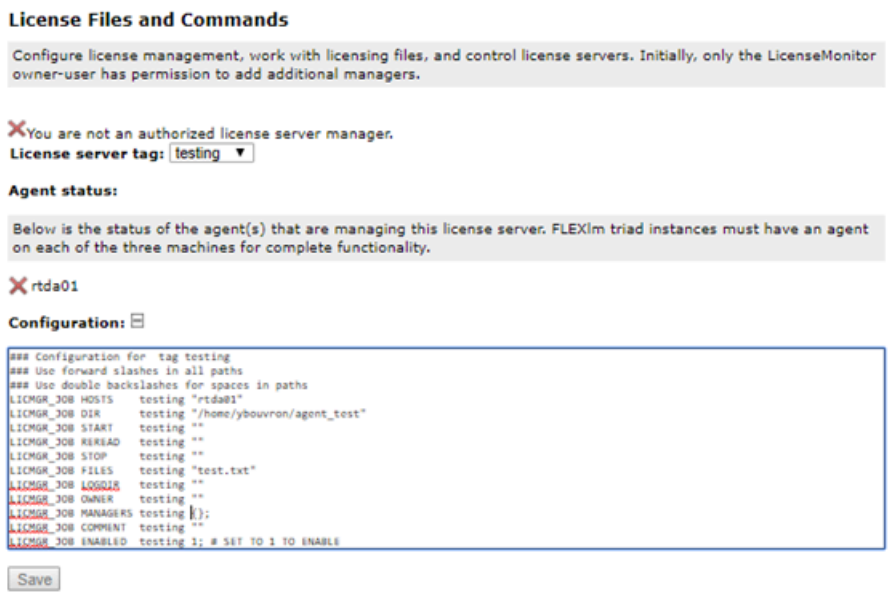


Figure 110: License Files and Commands

5. You can edit the following parameters:

HOSTS	This shows the host on which the license server instance is running. This is normally one or a triad. Multiple hosts should be separated by a space.
DIR	This is the directory that the license server instance will be started in. This is normally a single directory, but could be a list of directories if HOSTS refer to a triad, and the directory is different on each of the different hosts. If the HOSTS line shows more than one host, then the first directory is used for the first host, the second for the second host and so on. If there are fewer directories than hosts, then the last directory is used for each host in excess to the number of directories.
LOGDIR	The default location for LicenseManager job logs is the directory specified by the DIR setting. If another location is desired, specify the absolute path with the LOGDIR setting.
START	This is the command to start the license daemon. This command will be executed in the directory specified. This field can be empty if the start capability is unwanted.
STOP	This is the command to stop the license daemon; this command will also be executed in the directory specified. This field can be empty if the stop capability is unwanted.
REREAD	This command forces a reread of the license file. This field can be empty if the reread capability is unwanted.
FILES	This is a list of files in to the directory "DIR." Normally, this is the license file and the options file, but the list may also include other files. Monitor can fetch and deploy these files. The field can be empty if the file fetching and publication capabilities are unwanted.
OWNER	The user that owns the license daemon. Ideally, this should be the same user as the owner of Monitor, but in many cases, this must be a different user. This user exists in the remote system(s) specified in the HOSTS line. If left empty, it is assumed that the owner is the same as the owner of Monitor.
MANAGERS	This shows the users of Monitor that have authorization to perform license management tasks. If empty, it assumes that the only manager is the owner of Monitor.
COMMENT	This is a comment field for communication of status between team members.

ENABLED This is a flag to enable Monitor to manage the license daemon or file. The default is disabled, and the flag is set to 0. To enable, set the flag to 1.

> **Note:** The Control Center will try to fill in reasonable defaults for tags that are already being monitored by using Monitor's tracked data.

6. Once you've configured the tag appropriately, click **Save**.
This saves the configuration and creates the jobs for managing the license daemons and fetching and deploying jobs for each managed file specified in the configuration.

Configure a Notification

To configure the default notifications that come with Monitor, perform the following steps:

1. Go to the **Admin** tab and select **Notification** > **Health Check**.
The following page will display:

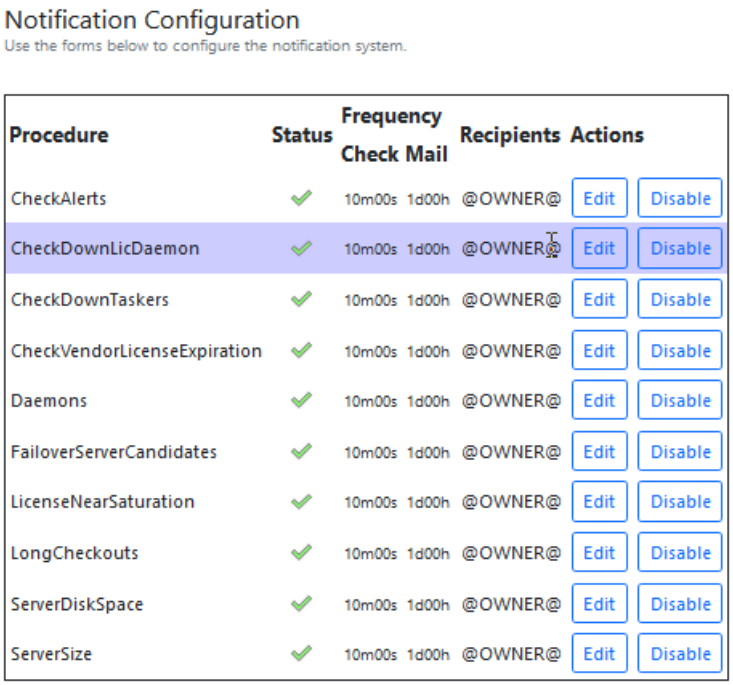


Figure 111: Admin Tab - Notification

2. This displays all the following notifications; they have default values, which can be changed.

CheckAlerts This sends an email if there are active alerts in Monitor.

CheckDownLicDaemon This sends an email if Monitor has lost a connection to a server that it is monitoring.

CheckDownSlaves	This sends an email if any of the taskers are down.
CheckVendorLicenseExpiration	This sends an email if when license is going to expire. The default is 10 days before expiration.
Daemons	This sends an email if the daemons are down.
LicenseNearSaturation	This sends an email if the feature is nearly fully utilized; the default is 95 percent – that implies that 95 percent of the feature is being used.
LongCheckouts	This sends an email if there is a checkout longer than 30 days.
ServerDiskSpace	This sends an email if available disk space is below 1%.
ServerSize	This sends an email if the size of the server increases by 1.5 times.

3. Click **Edit** for a specific alert.
   A new window displays.
4. Optional: Click **Disable**, to disable the notification.
5. From **Notification Configuration** page, you can change the following items:

Check Frequency	This sets the frequency of the health check.
Mail Notification Frequency	This sets the frequency for the notification.
Recipients	This is the list of owners who will receive notifications. Add emails and separate them by a space.
Options	The options are shown under the documentation section of this page, and you can enter in changes accordingly here.

6. Click **Change** to save your changes.

Parse a Debug Log

To investigate data obtained from a file or with the parsing file itself, you can parse a debug log and gather denial and/or utilization data. Monitor will parse the log every 12 hours, by default.

Adjust the Parsing Rate

1. To adjust the parsing rate, go to the **Admin** tab and select the **System** option and then **Configuration Information**.

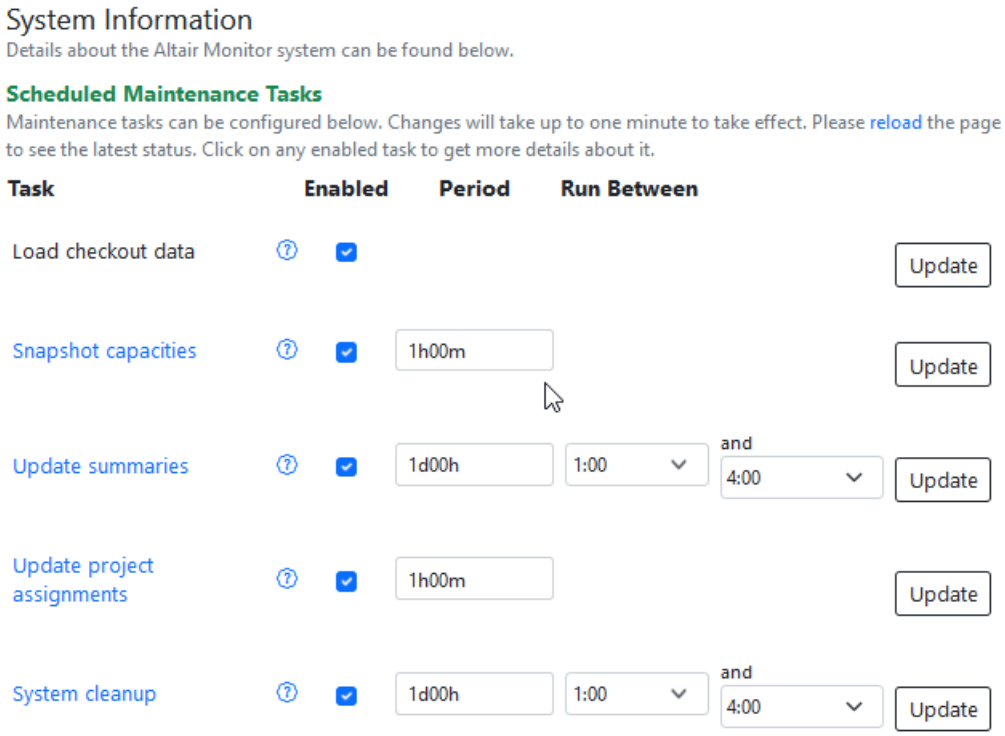


Figure 112: Admin Tab – Configuration Information

2. Make changes to the time period as desired, and then click **Update**.

Manually Parse a Debug Log

If the debug log environment is not suitable for live monitoring, logs can be manually parsed using the appropriate parsing command for each license manager type:

- FlexNet Publisher debug logs
- DSLS™ debug logs
- Altium™ debug logs

This section describes how to enable FlexNet Publisher debug logs using a static or a daily rotating debug log. We recommend using a daily rotating log.

This process takes several steps.

Static Debug Logs

A static debug log is one that captures both the `lmgrd` and vendor daemon output. The `lmgrd` daemon contributes date stamps, while the vendor daemon contributes all license activity. (`lmgrd` is the FlexNet Publisher daemon, which allows Monitor to gather data.) At license server startup time, pass the `-l </path/to/debug/log>` option to `lmgrd`. This will create a debug log that will contain all the information necessary for Monitor to properly analyze the log contents. However, this file is not rotatable, and it will

require a restart of the server to rotate the log. This type of log will also grow over time, the rate at which is determined by the amount of activity on the license server. Hence, we recommend you use the daily rotating debug log.

Rotating Debug Logs (Recommended)

A rotating debug log is one that captures only the vendor daemon output, which means there will be no date stamps in the file. Because of this, there is a chance for inaccurate assumptions in the log. For example, if license activity ceases for more than 24 hours, the day will become unknown due to there not being a visible roll-over at midnight.

To address this, the log must be rotated daily, typically a few minutes after midnight. This ensures that the license activity is current for n 24-hour period and will keep the file size small. Monitor will need to be configured to automatically look for a daily log file. For this to work properly, the debug log must be rotated to a file with a name reflecting the current date, in the format of `<fileName>.<YYYYMMDD>`, using the `lmswitch` command in conjunction with a task scheduling facility.

Set Up Monitor to Manually Parse Debug Logs

You must configure Monitor to look for a daily log file. You can use a standalone or a joint configuration. We recommend joint configuration

Joint Configuration for Parsing Debug Logs (Web Based)

To set up Monitor for joint configurations, perform the following steps:

1. Go to the **Admin** tab and select **Monitors**.
2. Scroll down to the **Edit Monitors** section, select a monitor and click **Edit**. If you don’t see the Edit option, go to the File Configuration section.

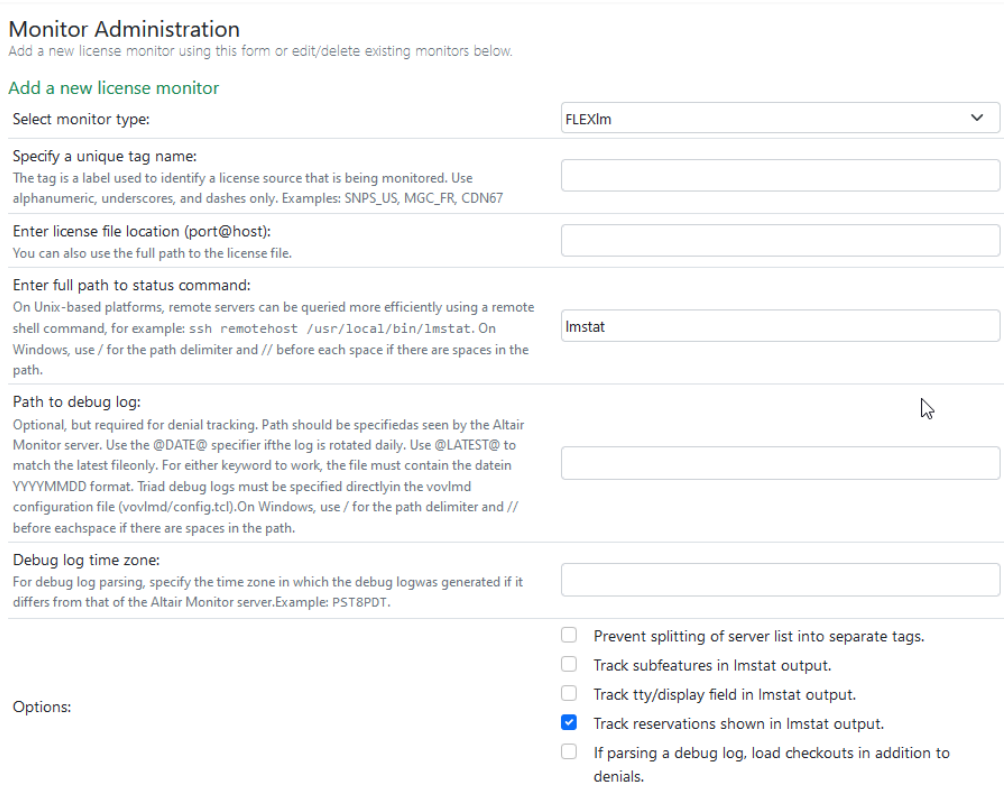


Figure 113: Add a Monitor

3. Click the **Update <Tag Name>** button.
4. Enter the path to the debug log (use the @DATE@.nameoflog)

> **Note:** For either key word to work, the date must be in the format `yyyyMMDD`.

5. Enter the Time zone, if different from that of Monitor.
6. Click **Update <Tag Name>**.

Standalone Configuration for Parsing Debug Logs (Web Based)

To set up Monitor for standalone configurations, perform the following steps:

1. Go to the **Admin** tab and select **Monitors**.

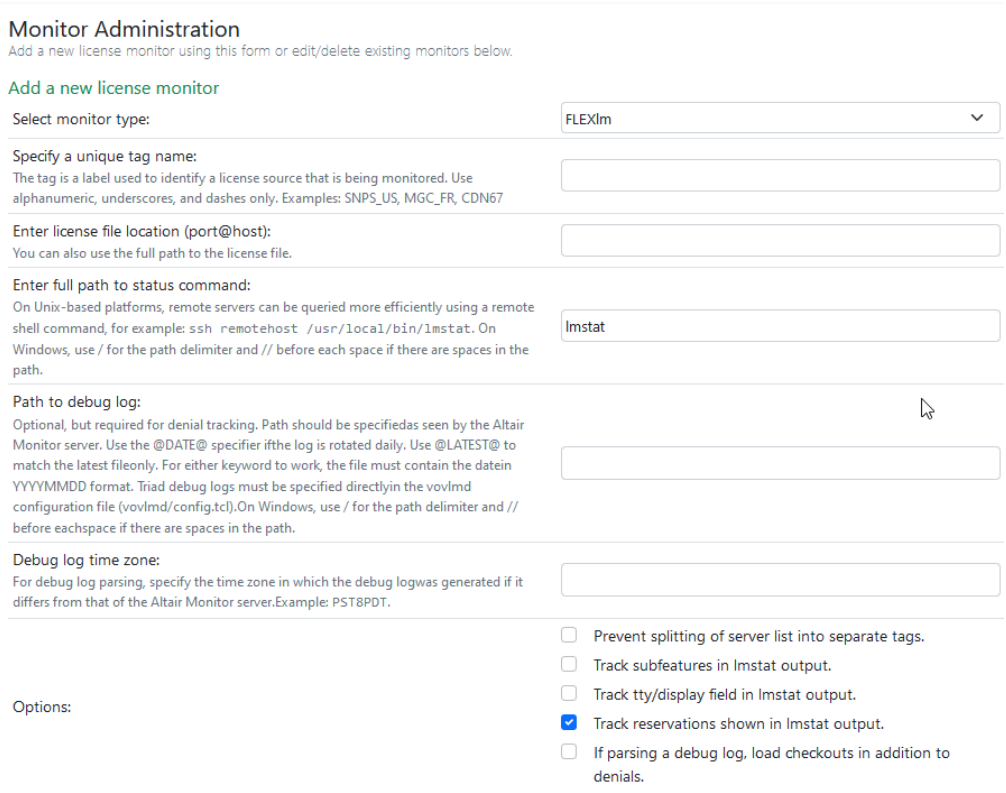


Figure 114: Add a Monitor

Enter the full path to the status command, if needed

2. Select the Monitor Type.
3. Specify a unique tag name.
4. Enter the license file location.
5. Enter the full path to the status command, if needed.
6. Enter path to debug log (use the `@DATE@.nameoflog`) note that for either key word to work the date must be in the format `yyyyMMDD`.
7. Enter the Time zone, if different from that of the Monitor server.
8. Optional: From Options, you can click **If parsing a debug log, load checkouts in additional to denials**. Click this ONLY if you don't have live sampling. We don't recommend this.
9. Select periods. Default periods can be changed, but we recommend you keep the defaults.
10. Click **Add New Monitor**.

Joint Configuration for Parsing Debug Logs – File-Based Configuration

To add denial data from a debug log to an existing tag (joint configuration), perform the following steps:

1. Go to the command line interface.
2. Go to the `path/to/licmon.swd` – go to the licmon `swd/vovlmd`.

3. Edit the `config.tcl` file and edit the tag.
4. Add `-debuglog </path/to/log>`.
5. Save the file.

Standalone Configuration for Parsing Debug Logs – File-Based Configuration

To add denial data from a debug log to an existing tag (standalone configuration), perform the following steps:

1. Go to the command line interface.
2. Go to the `path/to/licmon.swd` – go to the licmon `swd/vovlmd`.
3. Edit the `config.tcl` file and edit the tag.
4. `Add_DEBUG_LOG </path/to/log> -tag <TAG> [options]`.
   For example, for FlexNet Publisher debug log – `add_DEBUG_LOG`
   a) Go to CLI.
   b) Go to `path/to/licmon.swd/vovlmd`.
   c) Edit the `config.tcl` file and edit the tag.
   d) `Add_DEBUG_LOG </path/to/log> -tag <TAG> [options]`
   e) `Add_DEBUG_LOG </Users/ybouvron/rtda/Cadence/@DATE@.log> -tag CAD_LOG -tz PST8PDT -minPeriod 12h -maxPeriod 1d -autokill 2h`

Remove a Tag

You may want to edit or remove tags that were created to a monitor a license server.

> **Note:** Any name change will only change the name going forward; it will not change any historical data. So, if the tag changed was cad_WAN_SC and is changed to cad_WAN_AUS on Jan 1, 2023, you need to use the old name to pull reports prior to that date.

To remove a tag, perform the following steps:

1. Go to the **Admin** page, and select the **Monitors** tab.

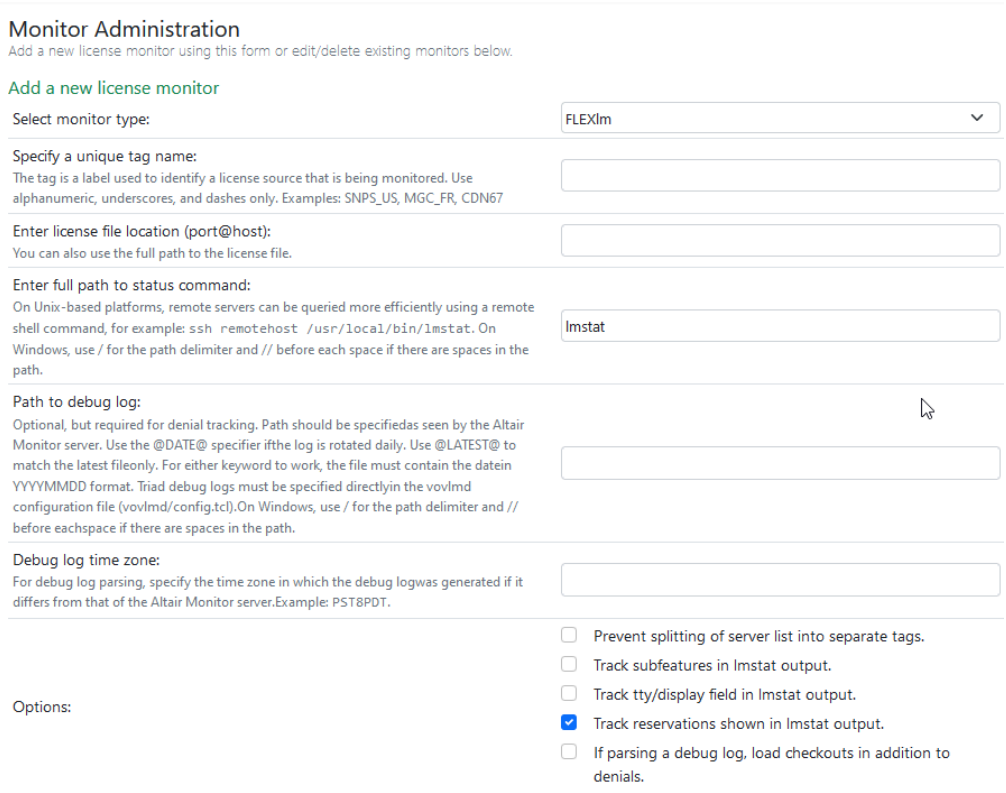


Figure 115: Add a Monitor

2. Scroll down to the bottom of the page and find the tag that needs to be removed, and click **Delete**.
   A new window appears.
3. Go to the **Admin** tab, and select **Tags** > **Server**.

Note: Ensure that the top left of the page says, "Tag Administration (server)" and NOT "Tag Administration (database)" or it will delete the tag from the database.

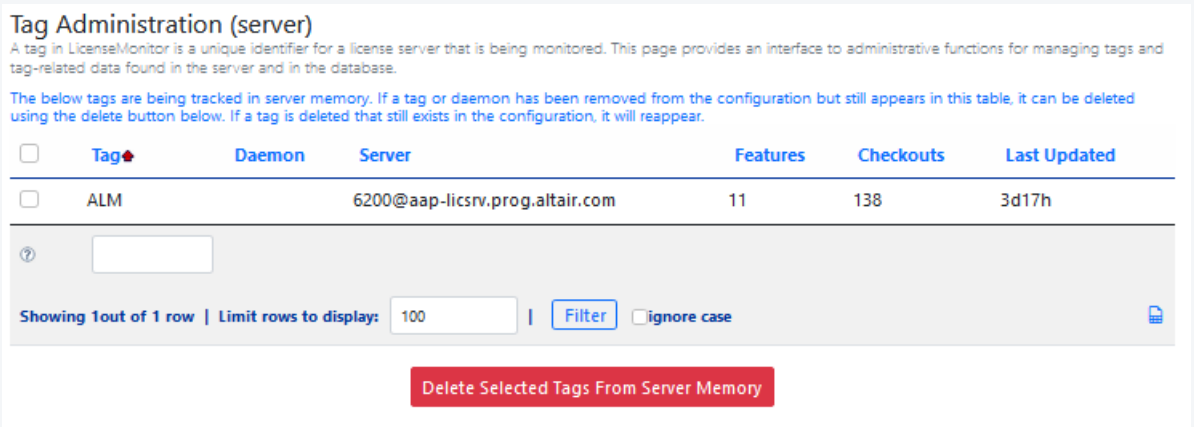


Figure 116: Tags - Server

4. Click the check box by the Tag to delete.
5. Click **Delete Selected Tags from Server Memory**.
6. Go to the **Admin** page and select the **Tasks** tab.
   The Periodic Job List will display.
7. Find the ".info" and ".stat" jobs for the Tag of your choosing.

Figure 117: Tasks

8. For each of the jobs, click on the Job name (highlighted in blue) and the **Admin Job** page will display.

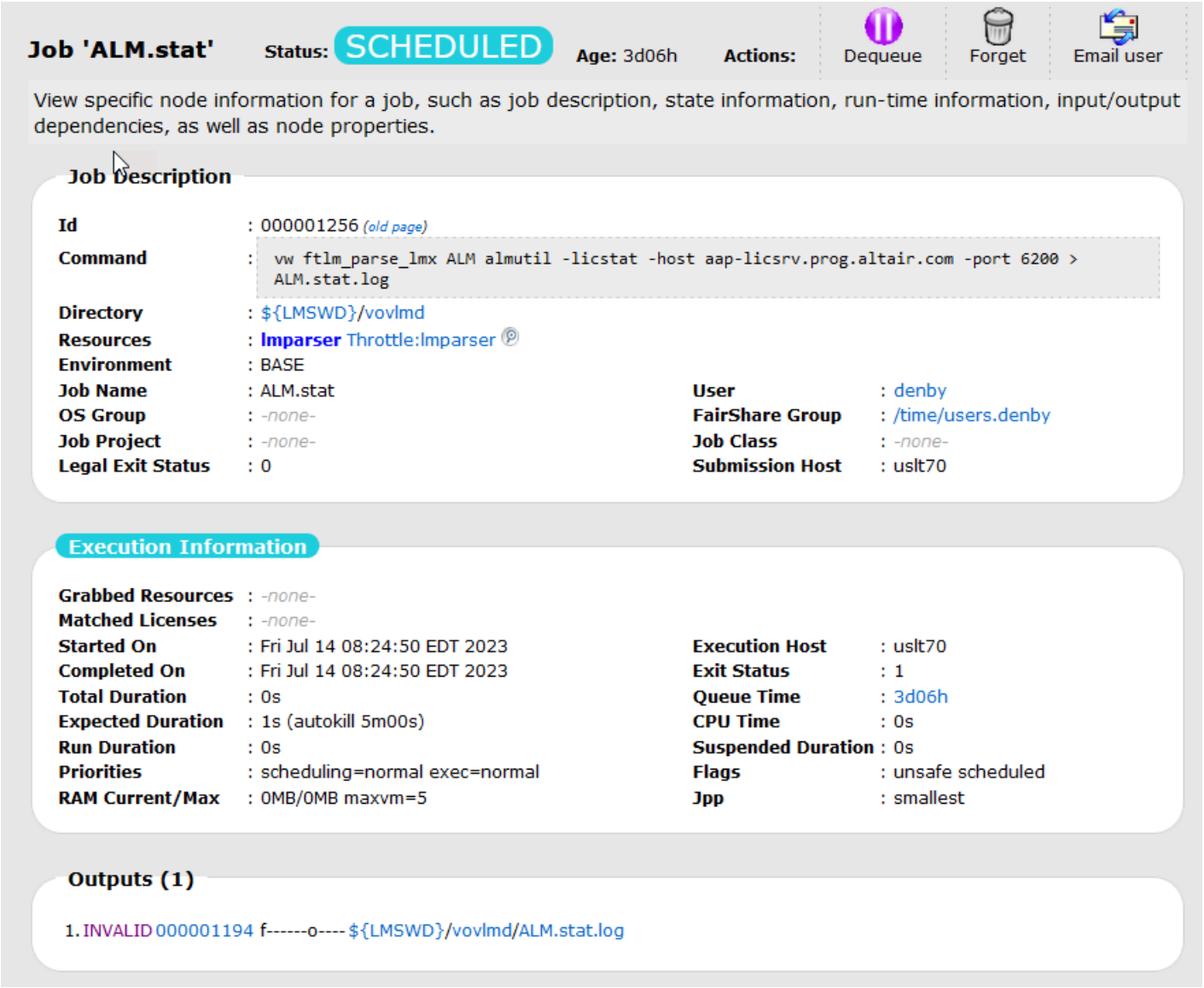


Figure 118: Job Admin Page

9. In the upper right corner, click on the trash can icon to forget the job.
10. Click **Confirm**.

Rename a Tag

To rename a tag, perform the following steps:

1. Go to the **Admin** tab, and select the **Monitors** tab.
2. Scroll down to the bottom, find the tag that needs to be removed, and select **Edit**.

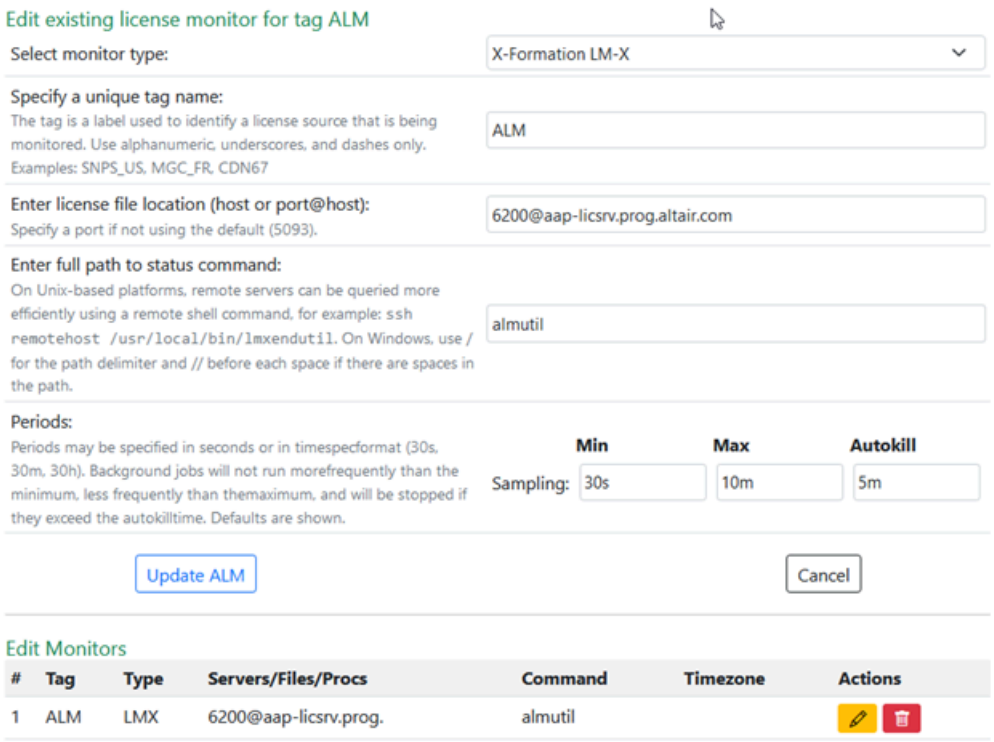
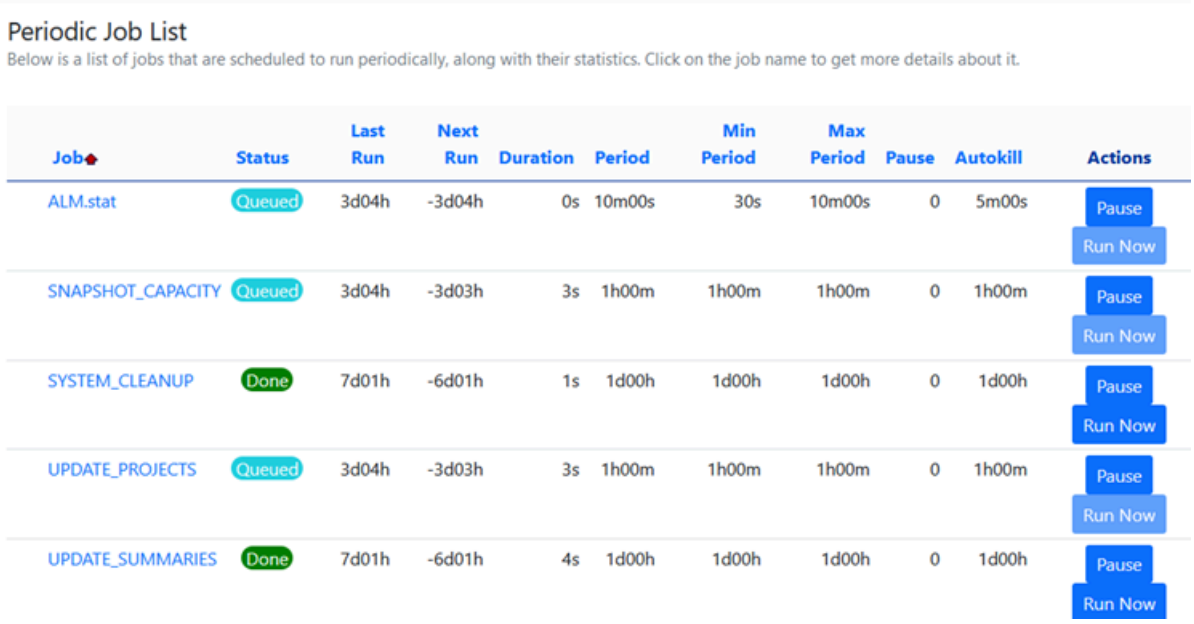


Figure 119: Renaming a Tag

3. Change the name of the tag name and click **Update** at the bottom of screen.
4. You need to delete the tag you just renamed from two different places. Go to the **Admin** tab, and select the **Tags** tab and then **Server**.
5. Ensure that the top left of the page says, "Tag Administration (server)" and NOT "Tag Administration (database)" or it will delete the tag from the database.
6. Click the checkbox by the Tag you wish to delete.
7. Click the **Delete Selected Tags from Server Memory** button.
8. Go to the **Admin** tab and select the **Tasks** option.
   The Periodic Job List will display.



Periodic Job List

Below is a list of jobs that are scheduled to run periodically, along with their statistics. Click on the job name to get more details about it.

Job	Status	Last Run	Next Run	Duration	Period	Min Period	Max Period	Pause	Autokill	Actions
ALM.stat	Queued	3d04h	-3d04h	0s	10m00s	30s	10m00s	0	5m00s	Pause Run Now
SNAPSHOT_CAPACITY	Queued	3d04h	-3d03h	3s	1h00m	1h00m	1h00m	0	1h00m	Pause Run Now
SYSTEM_CLEANUP	Done	7d01h	-6d01h	1s	1d00h	1d00h	1d00h	0	1d00h	Pause Run Now
UPDATE_PROJECTS	Queued	3d04h	-3d03h	3s	1h00m	1h00m	1h00m	0	1h00m	Pause Run Now
UPDATE_SUMMARIES	Done	7d01h	-6d01h	4s	1d00h	1d00h	1d00h	0	1d00h	Pause Run Now

Figure 120: Tasks

9. Find the ".info" and ".stat" jobs for the tag of your choosing.
10. For each of the jobs, click on the Job name (highlighted in blue).
    The **Admin Job** page will display.

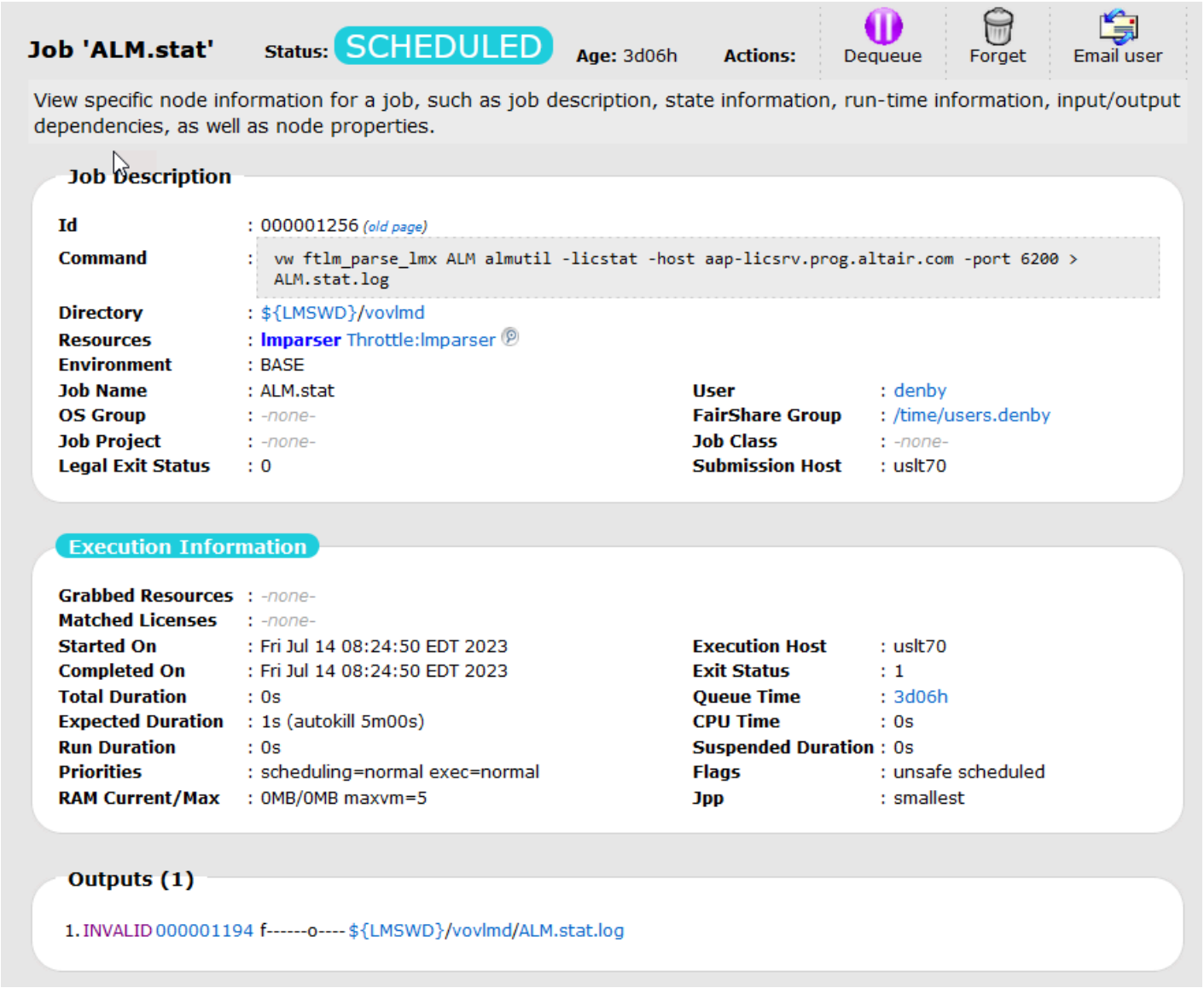


Figure 121: Job Admin Page

11. In the upper right corner, click on the trash can icon to forget the job.

12. Click **Confirm**.

Enable Monitor to Detect Short License Checkouts

If a given license checkout is not showing up in your checkout history report, it could be due to the timing of the sampling period. By default, Monitor uses a sampling period of 30 seconds to check the status of each license. To detect license checkouts less than 30 seconds, change the sampling period.

Change the Sampling Period for One Instance

To change the sampling period, perform the following steps:

1. Go to **Admin** tab and the **Monitors** option.
2. Scroll down to the last section, **Section 8 Periods**.

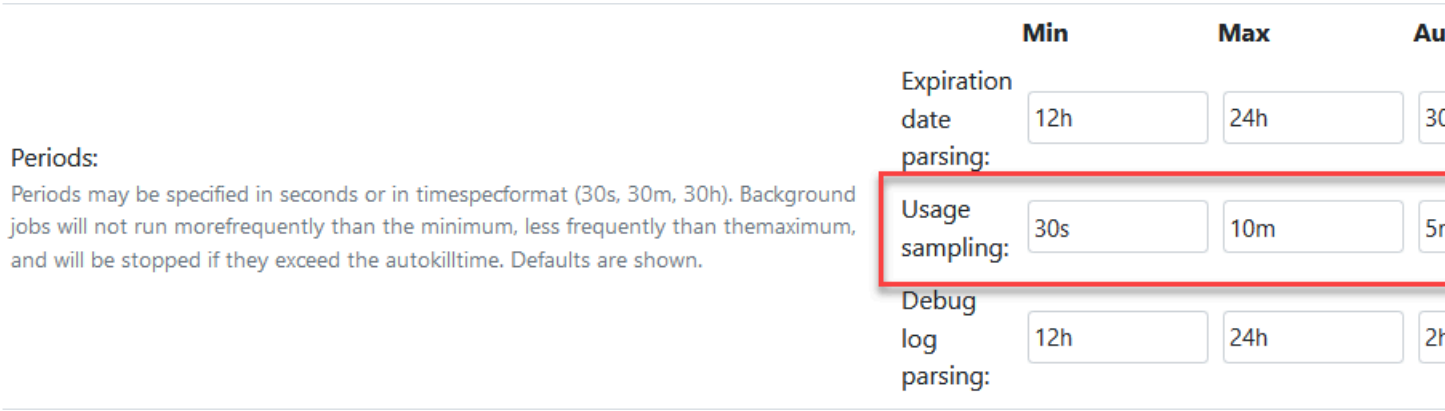


Figure 122: Admin Page – Monitor Option

3. Change the timing of the **Usage sampling** option to the desired minimum.

Reduce the Sampling Period for All License Monitors

Reducing the sampling rate can significantly increase the load on your Monitor instance. We do not recommend setting the refresh rate below 10 seconds, without close monitoring of the system response following the configuration change. This is especially true on installations with many license servers being monitored. If you still need faster sampling rate, more parsing resources may need to be configured. Please contact Altair support.

To reduce the sampling period for all license monitors at once, perform the following steps using the Command Line Interface:

1. For Linux Installations, enter:

```
vovproject enable licmon
cd `vovserverdir -p vovlmd`
```

2. For Windows installations, enter:

```
vovproject enable licmon
vovserverdir -p vovlmd
cd /path/shown/above
```

3. Edit the file in this directory called `config.tcl`. Look for the refresh rate line:

```
Set VOVLM(refresh) 30
```

4. Change it to the desired sampling rate.
   Monitor will automatically pick up the change on its next cycle.

Load a Database

This section details the multiple methods by which Monitor loads data into the database, and the configuration options available to control the data that is loaded.

You may need to manually load checkout or denial data into the database. This will be required if importing historical checkout data that is obtained from parsing a debug log, or if reloading data for checkouts and/or denials. It can also be helpful in debugging database loading problems.

1. To manually load the database, first setup the CLI:

```
% vovproject enable licmon
```

2. Change to the directory that contains the data that is to be loaded. This data is stored in the checkouts/denials data files, located in `licmon.swd/data` under a respective subdirectory for each data type. The data is organized into files that are named for each day that contains data
3. After setting up the CLI, the database loader command must be executed. The available commands are `vovsql_load_checkouts` and `vovsql_load_denials`.

   `vovsql_load_checkouts` example:

```
% vovsql_load_checkouts           licmon.swd/data/checkouts/2023*
% vovsql_load_checkouts -force    licmon.swd/data/checkouts/2023*
% vovsql_load_checkouts -origin 2 licmon.swd/data/checkouts/MGC/mgcld/
master/2023*
% vovsql_load_checkouts           licmon.swd/data/checkouts/@TODAY@
```

   `vovsql_load_denials` examples:

```
% cd `vovserverdir -p data`
% vovsql_load_denials ./denials/*/*/2023*
```

Move a Database

To move a Monitor database, perform the following steps:

1. Go to the **Admin** tab and select **System** > **Configuration Information** option.

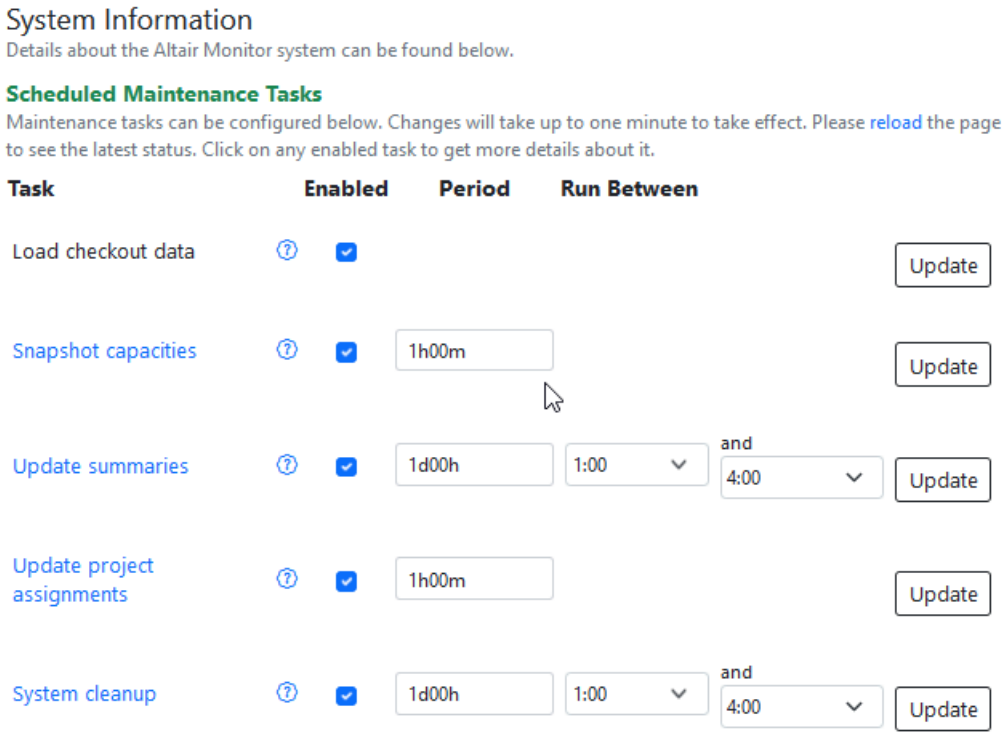


Figure 123: Admin Tab – Configuration Information

2. Uncheck the **Load checkout data** box and click **Update**.
3. From the command line, run:

```
% vovproject enable licmon
vovdaemonmgr stop vovdbd
```

4. Go to the directory where the `licmon.swd` is located and find where the database is stored under `licmon.swd > db >config.tcl`.
5. Go to that directory and copy the entire `postgresdb` directory into the new location.
6. Edit the config file under `licmon.swd>db`.
7. Change the path of `sqlconfig(datadir)` to the new path.
8. Back in the xterm enter:

```
% vovdaemonmgr start vovdbd
```

9. Return to the Monitor web interface and re-check the **Load checkout data** box and click **Update**.

> **Note:** It may take a few minutes for the system to update.

Configure LDAP

To configure LDAP, perform the following steps :

1. Copy `$VOVDIR/etc/config/ldap/ldap.cfg` to `/<path>/licmon.swd/config/ldap.cfg`
2. Edit `/<path>/licmon.swd/config/ldap.cfg` with your specific LDAP server info. You will need help from your IT to enter the needed info.
3. From the command line, run

```
% vovproject enable licmon
% vovproject sanity
```

4. To validate the query run:

```
%vovldap_query ua <your_user_name> -v -v -v
```

   If the command returns valid LDAP user info, that means the LDAP configuration is completed correctly.
5. To enable LDAP authentication for LM Web UI login, edit `/<path>/licmon.swd/policy.tcl` and update `set config(enableLdap)` value to 1.
6. To enable LDAP lookup for users' email address, go to the **Admin** tab and select **Notification** > **SMTP Configuration** and set **LDAP address** to 1.

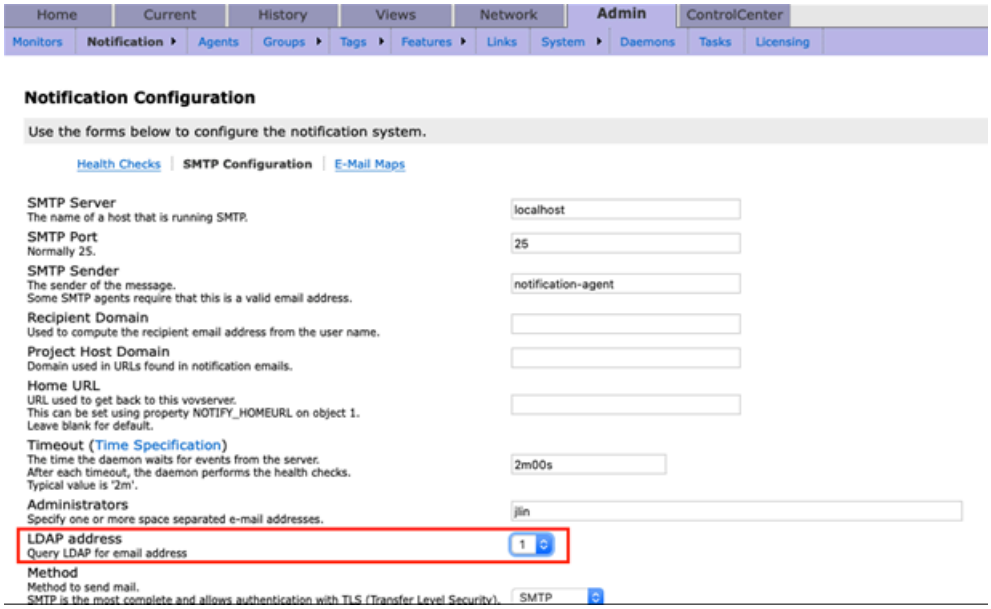


Figure 124: LDAP Configuration

Troubleshooting

Answers to common questions when using Monitor.

No Historical Data is Being Displayed

If no historical data is being displayed, check the following items and take the recommended steps.

1. If the installation is new, it will take at least one hour for the database to be loaded with data by default. Wait the appropriate amount of time.
2. If viewing either the Daily Statistics or Daily Plots page under the **History** tab, the summarized data in these reports is built overnight, so you will not see data for the current day.

Otherise, perform the following checks:

1. Verify that the license is visible and valid. Go to the **Admin** tab, and select the **Licensing** option. If your license is valid, it should display.

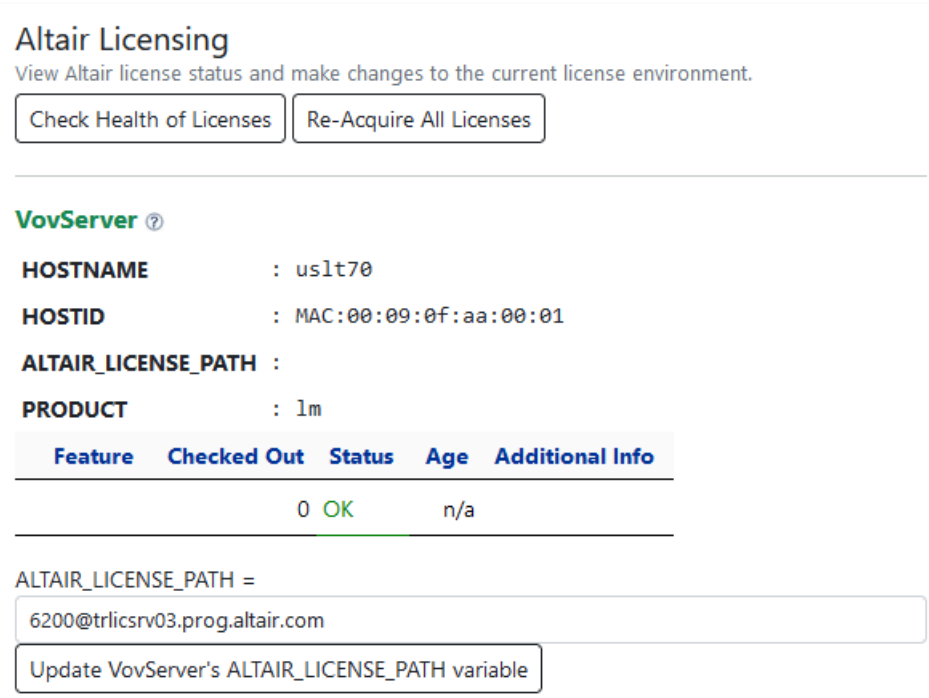
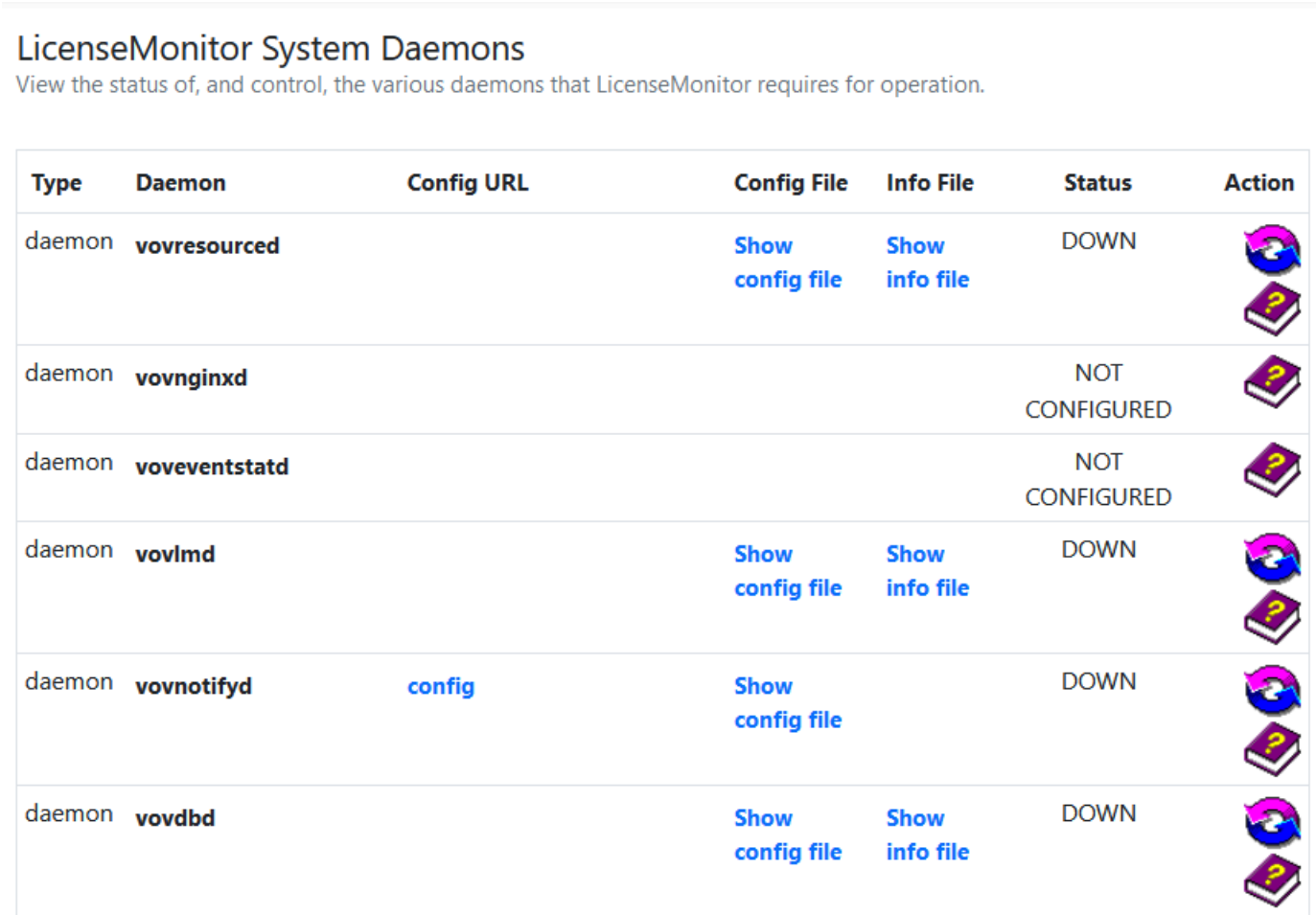


Figure 125: Licensing Page

2. Verify that the `vovdbd` daemon is running. Go to the **Admin** tab, and select **Daemons**.
   a) If the page shows that `vovbd` is not running because it is down, then click the **refresh** button.



LicenseMonitor System Daemons

View the status of, and control, the various daemons that LicenseMonitor requires for operation.

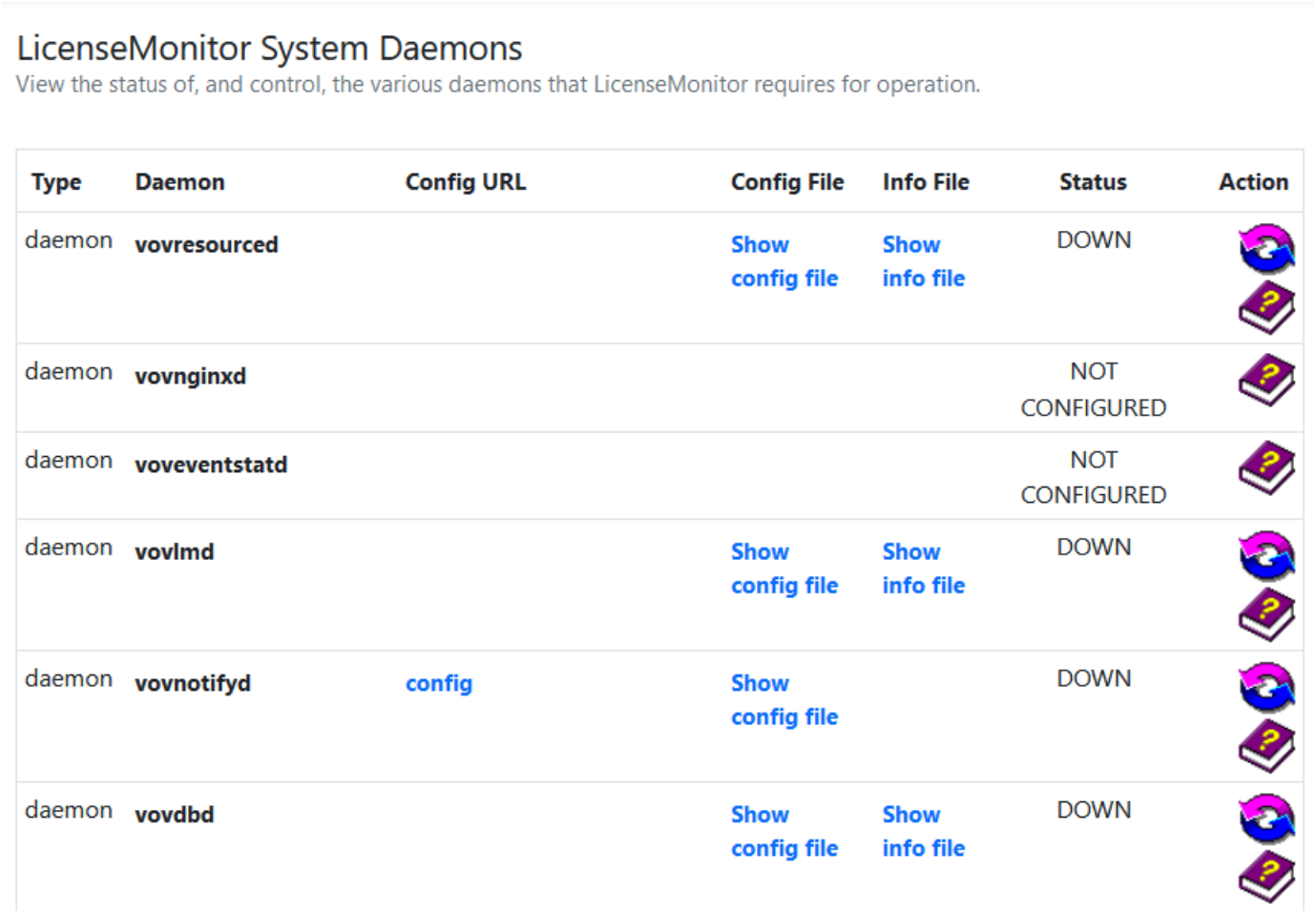
Type	Daemon	Config URL	Config File	Info File	Status	Action
daemon	**vovresourced**		Show config file	Show info file	DOWN	
daemon	**vovnginxd**				NOT CONFIGURED	
daemon	**voveventstatd**				NOT CONFIGURED	
daemon	**vovlmd**		Show config file	Show info file	DOWN	
daemon	**vovnotifyd**	config	Show config file		DOWN	
daemon	**vovdbd**		Show config file	Show info file	DOWN	

Figure 126: Daemons

3. Verify that the database is running. To do so, go to the **Admin** tab, and select the **System** > **Database Information** option.
4. If it's not running, then verify that the `live_load_checkouts` task script exists in the `licmon.swd/tasks` directory.

Email Notifications are not Being Received

1. If the `vovnotifyd` daemon is not configured or is down, you won't receive e-mails. To check the status of the `vovnotifyd` daemon, go to the **Admin** tab, and select the **Daemons** option.



LicenseMonitor System Daemons

View the status of, and control, the various daemons that LicenseMonitor requires for operation.

Type	Daemon	Config URL	Config File	Info File	Status	Action
daemon	**vovresourced**		Show config file	Show info file	DOWN	
daemon	**vovnginxd**				NOT CONFIGURED	
daemon	**voveventstatd**				NOT CONFIGURED	
daemon	**vovlmd**		Show config file	Show info file	DOWN	
daemon	**vovnotifyd**	config	Show config file		DOWN	
daemon	**vovdbd**		Show config file	Show info file	DOWN	

Figure 127: Daemons

2. If it shows not configured, then go to **Admin** tab, and select **Notifications** and then **Email Maps**.

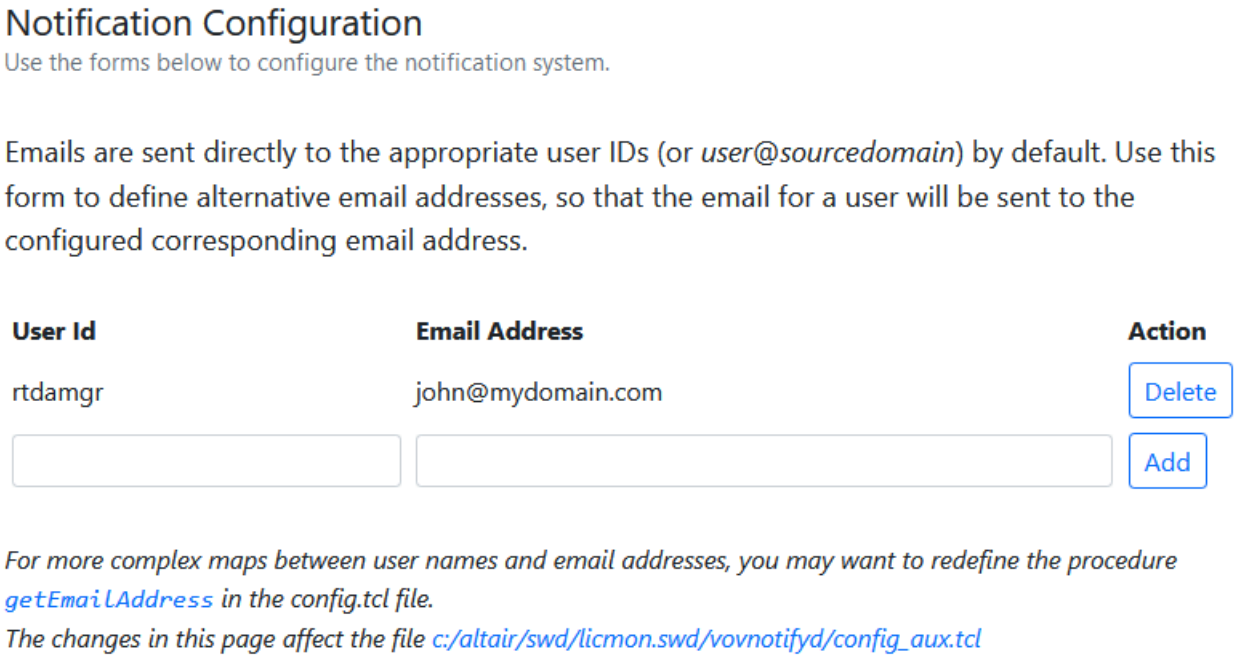


Figure 128: Notification Configuration

3. Enter your User ID and Email Address, and click **Add**.
4. Click **Send Test Mail**.
   If the mail is received, the configuration is correct and other notifications should work as well. The `vovnotifyd` daemon uses operating system user names as the basis for email addresses. If this user name does not resolve, an email address map will need to be specified.

   If no email is received, contact customer support.

Web Interface is not Responding

- The vovserver is down.
- The `vovnginxd` daemon is down.
- DNS is not configured to allow a route to the Monitor server host.
- A firewall may be running that is blocking access to the Monitor server port (5555 by default).
- If the Altair Accelerator installation or the `licmon.swd` is located on a network share, verify that the share can be reached from the Monitor server host

Updated Data from License Servers is not being Received

- The `vovlmd` daemon must be running to schedule the jobs. Check it via the **Admin** > **Daemons** page.
- Check that the parser tasker is running via the Tasker page.
  - Go to http://localhost:5555/admin.
  - Scroll down to the Project Configuration Files section, click on **Taskers file** link.
- Check that the load average on the system is not too high.
  - The default parser tasker has four job slots and a maxload of 10.0.
  - If the load average is too high, the parser will halt the execution of new jobs until the load average drops below the maxload value.
  - Try to prevent other CPU-intensive processes from running on the same machine.
- Check the output of the most recent parsing job.
  - Go to the **Current** tab and select the **Raw Data** tab.
  - Or, go to the `licmon.swd/vovlmd` directory to see if the status command is having problems executing.

Alerts for a License Server being Monitored are Intermittently Thrown

Status command failures are common, due to network connectivity glitches, bugs in the license server status command, or other external influences. Since Monitor keeps the most recent parsing job output only by default, this log cannot be used to track down the root cause of intermittent failures. But there is an advanced debug feature available to keep an archive of all parsing.

To enable this feature, go to the **Admin** tab and select the **Daemons** option.

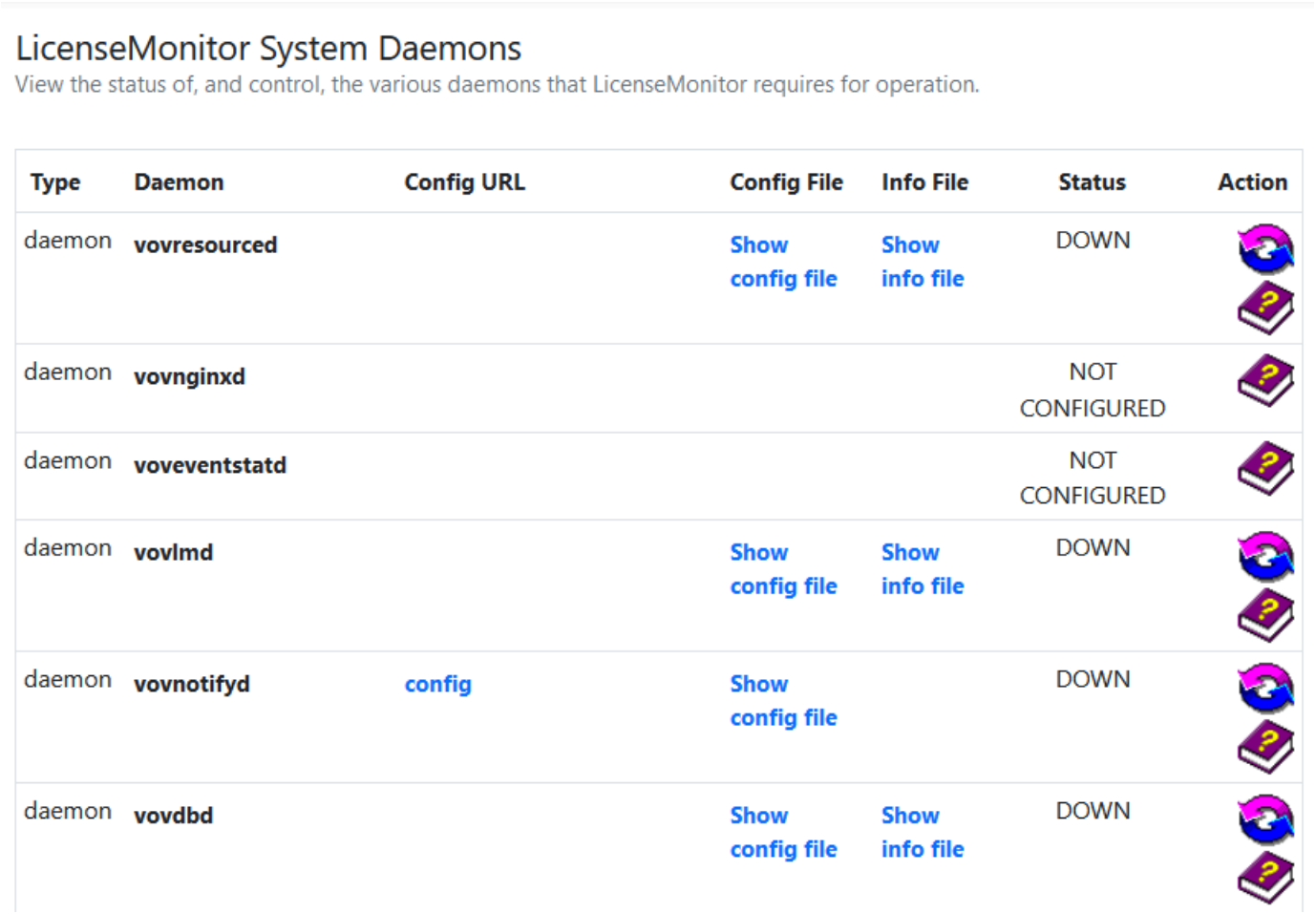


Figure 129: Daemons

Activate the `vovtriggerd` daemon. This daemon will copy (and on UNIX, compress) each parsing job log if the job fails. The copies are stored in the `licmon.swd/logs/parser` directory.

> **Note:** Only use this feature when needed, since it can consume 2-3 times the disk space required for normal operation.

Images are not Showing up in Web Pages

The images are retrieved from the readonly port (5556 by default) of the licmon server via HTTP.

- Check that readonly port is enabled.
- Check DNS/NIS setup and `/etc/nsswitch.conf` to be sure that the licmon hostname resolves.
- Set env-var VOV_HOST_NAME in `licmon.swd/setup.tcl` to a value that resolves to the Monitor server machine.

- If an IP address is the only way to access the machine from other hosts, add VOV_HOST_HTTP_NAME with the desired IP address to the setup.tcl file and perform a reread.
- To make the change effective immediately, also enter the following commands at the shell. This sets the env-var in the running vovserver.

```
% vovproject enable licmon
% vovsh -x "vtk_server_setenv VOV_HOST_HTTP_NAME <VALUE>
```

- If you are viewing Monitor over a port-forwarded tunnel through ssh, for example -L 5555:jaguar:5555, the host names differ on each end of the connection. The only way we know to deal with this is to make the Monitor host an alternate name for localhost. For the example, where the remote host is jaguar, your line in the hosts file would be similar to:

```
% 127.0.0.1 localhost jaguar
```

The Drop-down Menus do not Stay Open in Internet Explorer

This is caused by the compatibility view, which forces Internet Explorer to render pages and process scripts in an older engine that is not always compatible with newer web technologies.

Turn the compatibility view off to ensure navigation and plotting elements work correctly.

.

A Specific Tag is Missing in the Interface

By default, tags that are not actively being monitored via sampling are hidden from the user interface. There may be cases where visibility is still desired though. Such cases would be:

- A tag for a license server that no longer exists but reporting capability is still desired.
- A tag for a FlexNet Publisher license server that is not being sampled, but instead is being populated via a debug log.
- A tag for an Altium license server, which is solely populated via a log.

To ensure visibility for tags that fall under these conditions, use the `setTagAccess` configuration procedure. Tag access is defined in the `licmon.swd/vovlmd/config.tcl` file using the `setTagAccess` procedure. This procedure takes the following two arguments:

- A single tag or a list of tags.
- A single user name or a list of user names that are to be granted access to the tag being configured. The ADMIN keyword can be used to grant access to all configured administrators. The EVERYBODY keyword can be used to grant access to all users. This is the default behavior when the tag is being actively monitored via sampling.

Example:

```
#
# This is a fragment of vovAltair Monitord/config.tcl
#
setTagAccess IN_MGC "gupta sandeep mario"
setTagAccess IN_SNPS "gupta sandeep mario"
setTagAccess EU_MGC "franz javier"
setTagAccess EU_CDN "javier oliver"
setTagAccess IN_CDN EVERYBODY
setTagAccess "CN_MGC CN_SNPS" "wchen"
```

If visibility of a tag needs to be restored to all users, the procedure must be called with the EVERYBODY keyword.

What is the Difference between Monitor Samples Data and Logs Data in a History Details Report?

When generating a report with Monitor, you can choose from two types of data origins: samples data or logs data. Samples data is the most exact data, and therefore, it is the default setting.

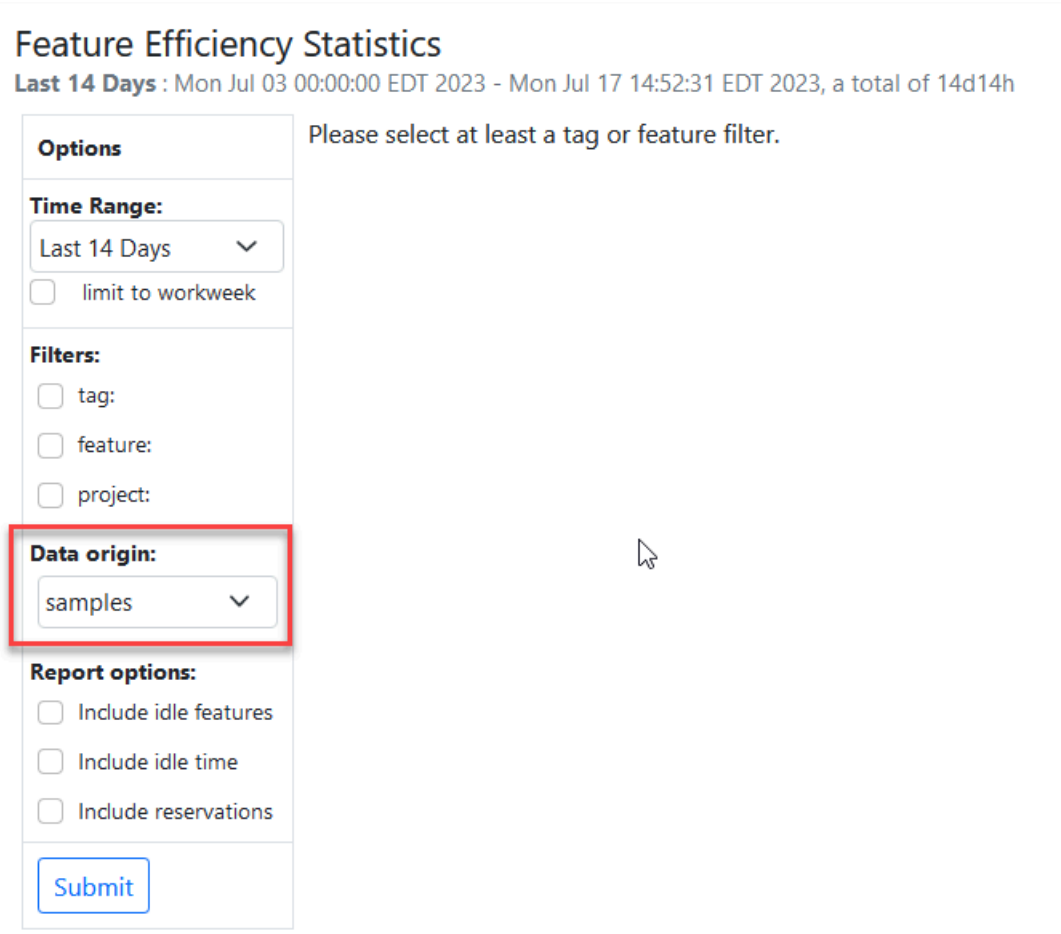


Figure 130: Data Origin

Samples data is derived from running lmstat, rlmstat, or the equivalent command for other licensing systems, against the live license server to obtain the current checkouts.

Logs data comes from parsing the debug log files from the license server. Unlike the samples data, logs data is inexact. It retrieves 1m resolution data, and does not retrieve the PIDs so it is impossible to match the OUT and IN lines to get correct checkout duration.

Only use the checkouts from logs data to get a general utilization number for time intervals when samples data is unavailable (before Monitor was started).

Note: You will only have checkout data in the logs database if you have configured that tag to extract checkouts from the log files.

Legal Notices

Intellectual Property Rights Notice

Copyrights, trademarks, trade secrets, patents and third party software licenses.

Altair HyperWorks®, a Design & Simulation Platform

Altair® ElectroFlo™ ©1992-2025

Altair Embed® ©1989-2025

Altair Embed® SE ©1989-2025

Altair Embed®/Digital Power Designer ©2012-2025

Altair Embed®/eDrives ©2012-2025

Altair Embed® Viewer ©1996-2025

Altair® e-Motor Director™ ©2019-2025

Altair® ESAComp® ©1992-2025

Altair® expertAI™ ©2020-2025

Altair® Feko® ©1999-2025

Altair® FlightStream® ©2017-2025

Altair® Flow Simulator™ ©2016-2025

Altair® Flux® ©1983-2025

Altair® FluxMotor® ©2017-2025

Altair® GateVision PRO™ ©2002-2025

Altair® Geomechanics Director™ ©2011-2022

Altair® HyperCrash® ©2001-2023

Altair® HyperGraph® ©1995-2025

Altair® HyperLife® ©1990-2025

Altair® HyperMesh® ©1990-2025

Altair® HyperMesh® CFD ©1990-2025

Altair® HyperMesh ® NVH ©1990-2025

Altair® HyperSpice™ ©2017-2025

Altair® HyperStudy® ©1999-2025

Altair® HyperView® ©1999-2025

Altair® HyperView Player® ©2022-2025

Altair® HyperWorks® ©1990-2025

Altair® HyperWorks® Design Explorer ©1990-2025

Altair® HyperXtrude® ©1999-2025

Altair® Impact Simulation Director™ ©2010-2022

Altair® Inspire™ ©2009-2025

Altair® Inspire™ Cast ©2011-2025

Altair® Inspire™ Extrude Metal ©1996-2025

Altair® S-FOUNDATION™ ©1995-2025

Altair® S-LINE™ ©1995-2025

Altair® S-PAD™ © 1995-2025

Altair® S-STEEL™ ©1995-2025

Altair® S-TIMBER™ ©1995-2025

Altair® S-VIEW™ ©1995-2025

Altair® SEAM® ©1985-2025

Altair® shapeAI™©2021-2025

Altair® signalAI™©2020-2025

Altair® Silicon Debug Tools™©2018-2025

Altair® SimLab® ©2004-2025

Altair® SimLab® ST ©2019-2025

Altair® SimSolid® ©2015-2025

Altair® SpiceVision PRO™ ©2002-2025

Altair® Squeak and Rattle Director™ ©2012-2025

Altair® StarVision PRO™ ©2002-2025

Altair® Structural Office™ ©2022-2025

Altair® Sulis™©2018-2025

Altair®Twin Activate®©1989-2025

Altair® UDE™ ©2015-2025

Altair® ultraFluidX® ©2010-2025

Altair® Virtual Gauge Director™ ©2012-2025

Altair® Virtual Wind Tunnel™ ©2012-2025

Altair® Weight Analytics™ ©2013-2022

Altair® Weld Certification Director™ ©2014-2025

Altair® WinProp™ ©2000-2025

Altair® WRAP™ ©1998-2025

Altair HPCWorks®, a HPC & Cloud Platform

Altair® Allocator™ ©1995-2025

Altair® Access™ ©2008-2025

Altair® Accelerator™ ©1995-2025

Altair® Accelerator™ Plus ©1995-2025

Altair® Breeze™ ©2022-2025

Third Party Software Licenses

For a complete list of Altair Accelerator Third Party Software Licenses, please click here.

Technical Support

Altair provides comprehensive software support via web FAQs, tutorials, training classes, telephone and e-mail.

Altair One Customer Portal

Altair One (https://altairone.com/) is Altair's customer portal giving you access to product downloads, Knowledge Base and customer support. We strongly recommend that all users create an Altair One account and use it as their primary means of requesting technical support.

Once your customer portal account is set up, you can directly get to your support page via this link: www.altair.com/customer-support/.

Altair Training Classes

Altair training courses provide a hands-on introduction to our products, focusing on overall functionality. Courses are conducted at our main and regional offices or at your facility. If you are interested in training at your facility, please contact your account manager for more details. If you do not know who your account manager is, e-mail your local support office and your account manager will contact you

Index

Numerics

A

B

C

D

E

F

G

H

I

J

L

M

N

P

R

S

T

U

V

W