



Landslide[®] License Server

Release 4.8

User Guide

© **2024** Spirent Communications, Inc. All Rights Reserved.

All of the company names and/or brand names and/or product names referred to in this document, in particular, the name “Spirent” and its logo device, are either registered trademarks or trademarks of Spirent plc and its subsidiaries, pending registration in accordance with relevant national laws. All other registered trademarks or trademarks are the property of their respective owners. The information contained in this document is subject to change without notice and does not represent a commitment on the part of Spirent Communications. The information in this document is believed to be accurate and reliable; however, Spirent Communications assumes no responsibility or liability for any errors or inaccuracies that may appear in the document.

Page Part Number: 71-009792, Version A0

Table of Content

1.	Introduction.....	5
1.1.	Overview.....	5
1.2.	Intended Audience.....	5
1.3.	Documentation.....	5
1.4.	Document Conventions.....	6
1.5.	How to Contact Us.....	6
2.	License Server Based License.....	7
2.1.	License Server License Types Limit Conditions.....	7
2.1.1.	Multi-TAS Limit by TAS licensing.....	7
2.1.2.	Multi-TAS Limit by TS licensing.....	8
2.1.3.	Multi-TAS Limit by TS Type.....	8
2.1.4.	Multi-TAS Limit by TS Day.....	8
2.2.	Auto-Download License.....	9
2.2.1.	Auto-Download License Installation.....	9
2.3.	Offline License Mode Operation.....	10
3.	License Server User Setup/Installation.....	15
3.1.	Connections and Power On.....	15
3.2.	License Server Connectivity.....	16
3.3.	Testing Connectivity to License Server.....	17
3.3.1.	Reaching the Network.....	17
3.3.2.	Connectivity Testing.....	17
3.3.3.	Proxy and Firewall Issues.....	19
3.4.	License Server Redundancy.....	19
3.4.1.	License Server Redundancy Operations.....	19
3.4.2.	License Server Redundancy State.....	20
4.	License Server Dashboard Operation.....	21
4.1.	Viewer Account.....	22
4.1.1.	Login to Viewer User.....	22
4.1.2.	Viewer Dashboard Menu.....	22
4.1.3.	Viewer Log View Menu.....	31
4.1.4.	Viewer Usage Menu.....	33
4.1.5.	Viewer Licenses Menu.....	34
4.1.6.	Viewer Monitor Menu.....	35

4.1.7. Viewer User Menu – User Settings	36
4.2. Admin Account.....	37
4.2.1. Login to Admin User.....	37
4.2.2. Admin Dashboard Menu	37
4.2.3. Admin Log Menu	40
4.2.4. Admin View Usage Menu.....	41
4.2.5. Admin Licenses Menu	42
4.2.6. Admin Monitor Menu	43
4.2.7. Admin Notification Settings View.....	43
4.2.8. Admin SSL Certificate Menu	45
4.2.9. Admin User	47
4.3. Monitor_Status Account.....	47
4.3.1. Monitor_Status Log Menu	47
4.3.2. Stack Trace Window	49
5. Common Tasks	50
5.1. License Server Tasks	50
5.1.1. View the Usage/Status of a License or TAS.	50
5.1.2. Prevent a License or TAS from using a license.....	50
5.1.3. Find Errors related to a License or TAS.	51
5.1.4. Enable Email Notifications	52
5.1.5. Weekly Usage Email Example	55
5.1.6. Error Message Email Example.....	55
6. Troubleshooting.....	56
6.1. Logging into License Server Problems	56
6.1.1. Issues Logging into Dashboard From admin/viewer Users	56
7. Log Messages for License Server.....	58
8. Upgrade Process	64

1. Introduction

The purpose of this document is to provide the end user of the Landslide License Server with the information necessary to install, activate, and use the dashboard of the License Server. This document does not apply if you did not purchase or receive a Landslide License Server.

1.1. Overview

This guide is designed to introduce you to the License Server operations, develop your working knowledge of the dashboard interface, and assist in learning simple problem-solving tasks.

There are two licensing methods available in Landslide, Fingerprint and License Server. Both require a Spirent generated license file to be installed locally on the Test Administration Server (TAS) via the TAS Manager. The License Server licensing uses a Spirent deployed license server in the cloud or on a E10 corporate license server deployed in the customer's network to control whether the TAS is allowed to run with the currently installed license.

1.2. Intended Audience

The primary intended audience for this guide is the end user; customers that get a Corporate E10 License Server and need to access the Dashboard. Users with a License Server License that communicates with a Spirent Cloud License Server may find Section 2 useful, but the rest of the document does not apply. This guide is intended for those who have a working knowledge of the Spirent Landslide system.

1.3. Documentation

To access the latest version of this document, perform the following steps:

1. Log into the Spirent Customer Service Center website (<http://support.spirent.com>) using the email address and password assigned to you by Spirent.
2. In the Search Knowledge Base box, enter **DOC12129**, and click on **Search KB**.
The results list appears.
3. Click on Landslide Test System User Documentation.
The Landslide Test System User Documentation page appears.
4. Click on the link for the document in which you are interested.
The page for the selected document appears.
5. Click on the link in the Attachment area to view the corresponding PDF.

1.4. Document Conventions

This document uses the following conventions:

- Text you type appears *in this type style*
- Keyboard keys are displayed IN THIS TYPE STYLE

1.5. How to Contact Us

To obtain technical support for any Spirent Communications product, please contact our Support Services department using any of the following methods:

Americas

E-mail: support@spirent.com

Web: <http://support.spirent.com>

Toll Free: +1 800-SPIRENT (+1 800-774-7368) (North America)

Europe, Middle East, and Africa

E-mail: support@spirent.com

Web: <http://support.spirent.com>

EMEA Phone: +33 (1) 6137 2270

Asia Pacific East

E-mail: support@spirent.com

Web: <http://support.spirent.com>

China WeChat: 思博伦技术中心

In China Mainland Phone: +86 (400) 810-9529 (toll-free)

Out of China Mainland Phone: +86 10 8233-0033

Asia Pacific South

E-mail: support@spirent.com

Web: <http://support.spirent.com>

India, South East Asia, Australia, and New Zealand Phone: +91 800-419-2111

+91 (80) 67023400

The Spirent Knowledge Base (<http://support.spirent.com>) is designed to serve your technical information needs. The Knowledge Base gives you access to tens of thousands of documents that help answer your network analysis and measurement questions. New content is added daily by Spirent's communications and networking experts. Sign in with your user ID and password to gain access to additional content that is available only to customers – user manuals, Help files, release notes, Tech Bulletins, and more. When you sign in, you can also use the Knowledge Base to download software and firmware, and to manage your SRs.

Information about Spirent Communications and its products and services can be found on the main company website at <http://www.spirent.com>.

2. License Server Based License

NOTE:

License Server based licenses are mandatory for Virtual TASs.

There are two licensing methods available in Landslide: Fingerprint and License Server. Both require a Spirent generated license file to be installed locally on the TAS via the TAS Manager. For the purpose of this guide, this section will focus only on the Landslide License Server method.

There is also a License Server Redundancy feature, there is no license key to purchase but must be designated when the License Servers are configured through Spirent Landslide licensing. This makes a secondary license server accessibility when one License Server is offline (due to power outage or network outage) by having multiple (at least two) License Servers in sync and having TAS's licenses installed that include both addresses.

The License Server Based License is broken down into several different types of licenses Max-TAS (Standard) / Max-TS / TS Days / Max-TS-License-Type. For more details see the following section. For pricing of each license type please contact Spirent Support Services at <http://support.spirent.com>.

2.1. License Server License Types Limit Conditions

License Server licensing uses a Spirent deployed license server in the cloud or on a E10 corporate license server deployed in the customer's network to control whether the TAS is allowed to run with the currently installed license. The license server DOES NOT control features and applications for the TAS; these are still controlled by the local license file installed on the TAS via the TAS Manager. The IP address of the license server is encoded in the license file generated by Spirent and installed locally on the TAS via the TAS Manager. No additional configuration of the TAS is necessary. When a TAS attempts to start, it communicates with the license server to confirm whether it is allowed to run with the locally installed license. If the license is confirmed the TAS continues with the startup process.

License server licensing is required for all virtual TAS configurations. It can also be used to allow multiple TAS to share the same license (Multi-TAS).

2.1.1. Multi-TAS Limit by TAS licensing

Multi-TAS Limit by TAS licensing can be used to allow a single license (applied individually to each TAS being controlled) to apply the same application, feature, and test server configuration to one or more TAS systems. This can be useful in a virtual environment where a customer might need to run multiple TAS systems with identical applications, features, and test server configurations simultaneously.

Example:

If a Multi-TAS Limit by TAS license is configured to support 2 TAS with 4 Virtual Small test servers. Each TAS would be able to provision and run tests on 4 Virtual Small test servers for a total of 8 Virtual Small test servers.

2.1.2. Multi-TAS Limit by TS licensing

Multi-TAS Limit by TS licensing can be used to share a provisioned maximum number of active test servers across multiple TAS systems with a single license file. The single license (applied individually to each TAS being controlled) allows the same application and feature configuration to be used on each TAS. The type of test servers defined is also the same for each TAS in this case as well. Each TAS can add and configure up to the maximum number of test servers allowed for the TAS type defined. However, the license server monitors the number of active test servers across all TAS using the common license file and limits the number of test servers allowed to run concurrently to the Total Licensed TS value provisioned in the license. On the System Status window, the user can see their running totals for their License, as reported by the License Server.

Example:

If a Multi-TAS Limit by TS license is configured to support 2 TAS with Total Licensed TS provisioned to 4, each TAS would be able to add and configure the maximum number of test servers allowed on the given TAS platform but would be limited to running no more than 4 test servers at a time across both TAS systems.

2.1.3. Multi-TAS Limit by TS Type

Multi-TAS Limit by TS Type can be used to allow the License to limit TSs by type and by TS Processes Limit across multiple TAS's.

Example:

If the license is configured for 4 C100 M4 Ultra Extreme TS's and 3 TAS's are pointing to the same license, two TAS's could run a test with two C100 M4 Ultra Extreme TS's and the 3rd TAS would see an error message "Licensed running test servers limit reached" if it attempted to run a test on a C100 M4 Ultra Extreme TS. On the System Status window, the user can see their running totals for their License, as reported by the License Server for both TSs allowed, and TS Processes allowed.

2.1.4. Multi-TAS Limit by TS Day

Multi-TAS Limit by TS Days is a consumption license model that is based on test server usage. The single license (applied individually to each TAS being controlled) allows the same application, feature, and test server configuration to be used on one or more TAS systems. Each TAS using the common license file is limited to a maximum Licensed TS per TAS and the license server monitors the number of TS Days used. Once the TS Days used reaches the TS Days Limit provisioned in the license, the license server will prevent additional tests from being run. On the System Status window, the user can see their running totals for their License, as reported by the License Server.

2.2. Auto-Download License

The Auto-Download License is a mechanism where the TAS can automatically query/retrieve the license from a single location thus removing license file dependency. This option prevents the need to manually install a new license on each of the TASs anytime there is an update. This feature is only available with License Server licensing on Cloud License Server.

2.2.1. Auto-Download License Installation

The following steps must be taken when using an Auto-Download License:

2.2.1.1 Initial Install Landslide Server License

To initially setup your TASs, you must install a onetime license that provides the TAS with the information required to query the License Server for the real license.

1. Customer requests License Server Loaded License from [Spirent Customer Support](#).
2. Customer support generates the specific license.
3. Customer support installs the “real” license on the license server and sends the license file to customer.
4. Customer installs the license file on all the TASs.
5. TAS is started, it requests the “real” license from License server, receives response and applies the license.

2.2.1.2 Change or Update a Landslide Server License

If at a later time you need to update the license, and deploy it to all the TASs:

1. Customer requests to change their license from Spirent customer support.
2. Support generates the specific license.
3. Support installs the “real” license on the license server and lets’ customer know when complete.
4. Customer restarts their TASs (NO LICENSE FILE INSTALLED). TASs will still be using old license until they restart.
5. TASs are started, it requests the “real” license from License server, receives response and applies the license.

2.3. Offline License Mode Operation

NOTE:

The Offline feature is available in Landslide release 20.8 or greater.

This feature allows the configuration of a set number of TS per type that will be reserved when the License Server is determined to be offline/unreachable. From the time that the License Server is offline until the license server timeout (default 30 mins), the user will still be able to reserve TS per the configured offline reservation counts. These values are setup in the Landslide System Status – Licensing window from the “TSs Type Reservation” function. See the *System Status* window in the Landslide online help for information on how to configure the offline license for one License Server or Redundant License Server settings. The following figures show:

- System Status – Licensing tab for single License Server status
- System Status – Licensing tab for redundant License Server status

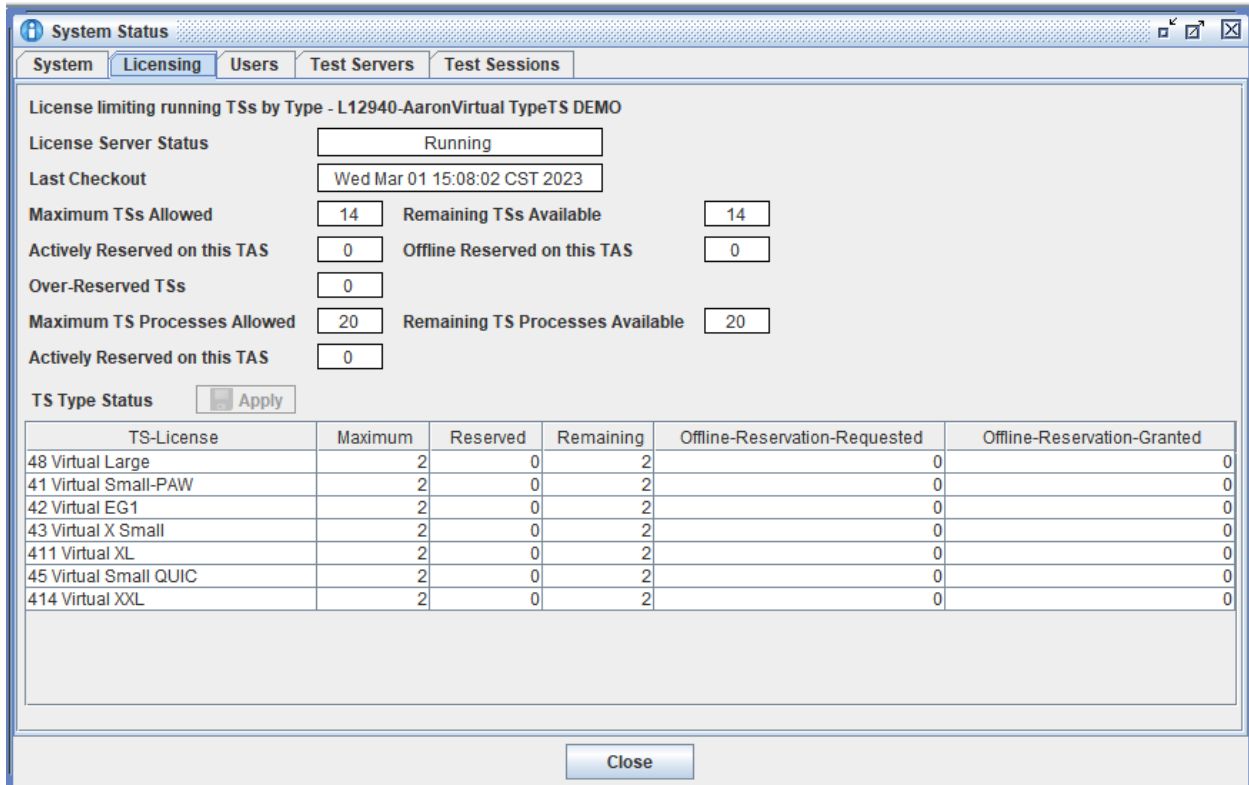


Figure 1. Landslide System Status – Offline Licensing Settings

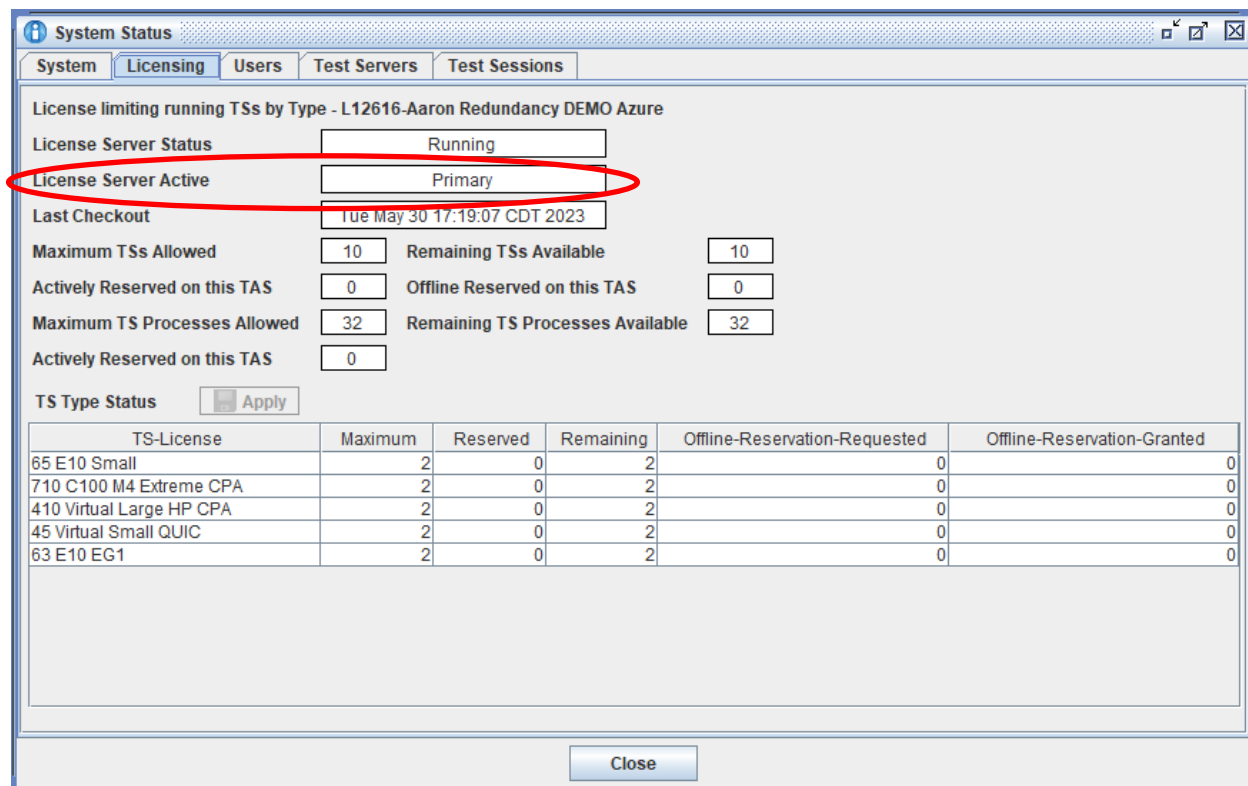


Figure 2. Landslide System Status – Offline Licensing Settings for Redundant Server

License Server TS Days Consumption, visible only if Consumption Licensing is enabled. This license server-based licensing model tracks and limits the number of TS Days that are used by a license. It is only available through a License Server License, Corporate or standard Spirent-in-the-Cloud.

A TS Day is a unit of measure for either: A single specific test server (by ID/Name) when it reaches 1 hour of TS-Process-Minutes usage in a given day starting at midnight local TAS time or a Catch-All TS Day when no single TS has reached a TS Day, but the sum of all TS-Process-Minutes \geq 12 hours. The day will reset at midnight. The TAS will prevent TSs from running tests if the Remaining TS Days reported by the License Server is 0 AND the TS has not already reported its TS Day Used. The TAS will track TS Days for each TS, using the TS-Process-Minutes Usage stats. When a TS has reached 1 hour of TS-Process-Minutes, it will be marked as "Used a TS Day".

- **License Server Status** – Current Status of connection with License Server, RUNNING, WARNING, or LOCKED.
- **License Server Active** – This field will only be displayed for Redundant licenses, PRIMARY or SECONDARY.
- **Last Checkout** – Timestamp of last checkout with License Server.
- **Max TS Days** – Indicates the total TS-Days the license will support, as reported by the License Server.

- **Remaining TS Days** – Indicates how many TS-Days remain for the license. Does not include TS-Days currently counted and in use by this TAS.
- **Used TS Days** – Indicates the total TS-Days used by this TAS under this License.

License Server - Multi-TAS Limit by TS licensing is used to share a provisioned maximum number of active test servers across multiple TAS systems with a single license file. The single license (applied individually to each TAS being controlled) allows the same application and feature configuration to be used on each TAS. The type of test servers defined is also the same for each TAS in this case as well. Each TAS can add and configure up to the maximum number of test servers allowed for the TAS type defined. However, the license server monitors the number of active test servers across all TASs using the common license file and limits the number of test servers allowed to run concurrently to the Total Licensed TS value provisioned in the license.

License Server - Multi-TAS Limit by TS Type is used to allow the License to limit TSs by type across multiple TASs. The license server monitors the number of active test servers across all TASs using the common license file and limits the number of test servers by type allowed to run concurrently to the Total Licensed TS value provisioned in the license.

- License limiting running TSs by Type – will display if Multi-TAS Limit by TS Type is used.
- License Server Status – Current Status of connection with License Server, RUNNING, WARNING, or LOCKED.
- Last Checkout – Timestamp of last checkout with License Server.
- Maximum TSs Allowed – Indicates the total number of TSs the license will allow across all TASs (shows the last known values when not communicating with the License Server, that is not in the Running state.)
- Remaining TSs Available – Indicates the total number of TSs available to reserve across all TASs (shows the last known values when not communicating with the License Server, that is not in the Running state.)
- Actively Reserved on this TAS – Indicates the total number of TSs reserved/running on this TAS.
- Offline Reserved on this TAS – Indicates the total number of TSs not running, but locally reserved on this TAS (offline.)
- Over-Reserved TSs – Indicates the total number of TSs running but should not be based on locally reserved on the License Server.
- Maximum TS's Processes Allowed – Indicates the total number of TS's Processes the license will allow across all TASs (shows the last known values when not communicating with the License Server, that is not in the Running state.)
- Remaining TS's Processes Available – Indicates the total number of TS's Processes available to reserve across all TASs (shows the last known values when not communicating with the License Server, that is not in the Running state.)
- Actively Reserved on this TAS – Indicates the total number of TS's Processes reserved/running on this TAS.

- **TS Type Status** - Indicates the Maximum, Reserved, Remaining, Offline (requested), and Granted (offline) for each TS-Type License. TS Admin+ level users are able to configure a set number of TSs per type that will be reserved (if available per remaining counts) when the License Server is determined to be offline/unreachable. From the time that the License Server is offline (determined by offline timer) until the license server timeout (default 30 mins), the user will be able to reserve a TS per the configured offline reservation counts (or less if the last available counts would limit.)

Examples of TS Type A max limit of 2 and License Server offline:

Scenario I - active 0, granted 1, remaining 2 → can reserve 1 TS Type A

Scenario II - active 1, granted 1, remaining 2 → can reserve 1 TS Type A

Scenario III - active 0, granted 1, remaining 0 → cannot reserve any TS Type A

- **Multi-TAS Limit by TS Type** is used to allow the License to limit TSs by type across multiple TASs.

The Landslide License Server dashboard will indicate when a license is in the Offline State by placing the status color orange to the left of the Landslide License and Active TAS entry. The following figures show the dashboard indicator and the Active TAS details.

NOTE:

Refer to the section 4.1.2 Viewer Dashboard Menu for more details on the viewer account dashboard.

Active Landslide Licenses (Displaying 1 of 23 Filtered)											
ID	Name	Customer	Sales #	Type	TAS Limit (Max/Active/Remaining)	TS Limit (Max/Active/Remaining)	TS Processes Limit (Max/Active/Remaining)	TS-Days Limit (Max/Used/Remaining)	First Expires	TCM	TSPM
12613	Aaron TypeTS Limit	Landslide Team	9999999	TypeTS	5 / 1 / 4	12 / 0 / 12	10 / 0 / 10	NA		0	0

Active TASs for Selected License #12613 (Total=1)												
Key (Fingerprint-Address-Address)	Version	Type	TAS Limit	TS Limit (Max/Active)	TS Processes Limit (Max/Active)	TS-Days Limit (Max/Used)	Generated	Expires	First Checkout	Last Checkout	TCM	TSPM
null-10.70.132.100	99.9.0.0? (internal)	TypeTS	5	12 / 0	10 / 0	NA	09/27/2022		2022-10-10 15:24	2022-10-10 19:34	0	0

Figure 3. Landslide License Server – Offline License Status

Landslide® License Server

Release 4.8 – User Guide

Active TAS Details

License: 12613
Name: Aaron TypeTS Limit
Active: Yes
Customer: Landslide Team
Sales Order: 9999999
Version: 99.9.0.77 (internal)
Limit Condition: TypeTS
Max TASs: 5
Max TSs: 12
Active TSs: 0
Max TS Processes: 10
Active TS Processes: 0
Offline Reservations Enabled: false
TS License Type Limits:
45-Virtual Small QUIC Max: 2 Active: 0 Offline Req: 0 Granted: 0 Last Remaining: 0
49-Virtual Large HP Max: 2 Active: 0 Offline Req: 0 Granted: 0 Last Remaining: 0
63-E10 EG1 Max: 2 Active: 0 Offline Req: 0 Granted: 0 Last Remaining: 0
65-E10 Small Max: 2 Active: 0 Offline Req: 0 Granted: 0 Last Remaining: 0
410-Virtual Large HP CPA Max: 2 Active: 0 Offline Req: 0 Granted: 0 Last Remaining: 0
710-C100 M4 Extreme CPA Max: 2 Active: 0 Offline Req: 0 Granted: 0 Last Remaining: 0
Fingerprint: null
IP Address: 10.70.132.100
IP Address Outer:
Generated: 09/27/2022
Expires:
First Checkout: 2022-10-10 15:24
Last Checkout: 2022-10-10 18:54
Checkout Timeout: 30 minutes
TC Minutes: 0
TS Process Minutes: 0

OK

Figure 4. Landslide License Server

3. License Server User Setup/Installation

Your Landslide License Server comes fully ready to be installed, just plug and play. This section will give an overview of the installation process and provide tips on what to do to make sure the License Server is working properly.

3.1. Connections and Power On

Perform the following steps:

1. Once the Landslide License Server is removed from the packaging, plug in a RJ-45 cable between the Ethernet port made available at customer site and management port (eth0) on the rear of the Landslide license Server Unit.

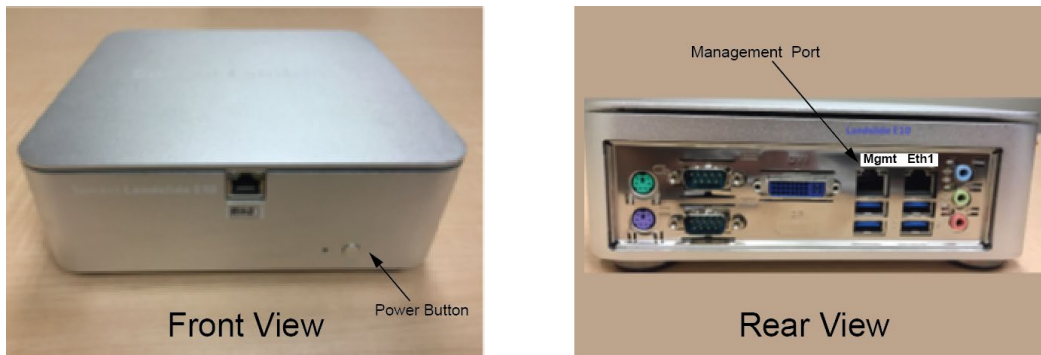


Figure 5. Landslide License Server

2. Plug in the power cord of the Landslide Server unit. The system should automatically bootup.
3. The general steps involved in configuring a Landslide test system are outlined below.
4. Install and power up the Landslide License Server (E10) combined Manager and Test Server(s).
5. Provide an IP address on your management network for the Manager and for each Test Server.

NOTE:

The management network should be different from the test network that contains the devices/systems under test.

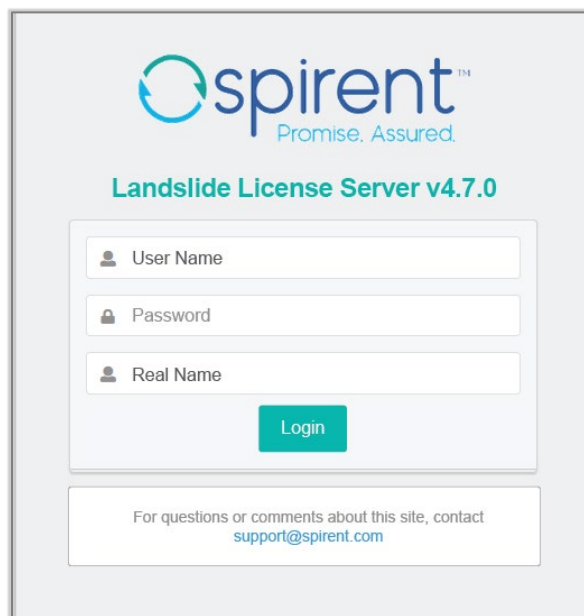


Figure 6. Landslide License Server Login Menu

Use the following section, *License Server Connectivity*, to confirm all components are properly connected.

3.2. License Server Connectivity

The following topics are valid for systems using one of our cloud license servers or their own corporate license server. Spirent provides four public internet cloud-based license servers:

If you are unable to permit the TAS to reach the internet, Spirent offer some options:

1. Use a second port on the TAS to access the internet for just the purpose of talking to the license server. You can set up the network rules to only allow HTTPS to the Spirent license server using port 443 and/or 8443.
2. Use a corporate E10 license server.
3. Use a corporate AWS based license server, where Spirent gives the VPN direct access to the license server, and then use Spirent AMI.

3.3. Testing Connectivity to License Server

3.3.1. Reaching the Network

The first thing to consider is if the TAS can reach the License Server. To test this out, you can use telnet, nc and/or curl as cfguser shell on the TAS to try to reach the expected IP Address or FQDN of the License Server your license is expected to use.

NOTE:

Before attempting to perform these tests with Spirent cloud license server address, please send an email to LandslideLicenseSrvNotification@spirent.com to let Spirent know you will be performing tests. Spirent will know to ignore the email warnings that will be received from the TAS.

3.3.2. Connectivity Testing

Telnet provides a better means of testing connectivity this is because Telnet tests for connectivity over a specific port, Telnet is much more thorough in its method of connectivity.

3.3.2.1 Connectivity Test Using Telnet or Curl:

Testing License Server with IP Address 11.22.33.44 443

1. From the command prompt enter **##>telnet 11.22.33.44 443**
2. Response:
Trying 11.22.33.44...
Connected to 11.22.33.44
3. Escape by entering **^]**
4. Response:
^CConnection closed by foreign host

If you see "Connected" in the responses below you know TCP can be established. We will only be using Telnet for its ability to generically open a TCP Socket.

Testing License Server with IP Address 11.22.33.44 8443

1. From the command prompt enter **##>telnet 11.22.33.44 8443**
2. Response:
Trying 11.22.33.44...
Connected to 11.22.33.44.
3. Escape by entering **^]**
4. Response:
^CConnection closed by foreign host.

If you see "Connected" in the responses below you know TCP can be established. We will only be using Telnet for its ability to generically open a TCP Socket.

Testing License Server with IP Address 11.22.33.44 443

1. From the command prompt enter **##>curl -v telnet://11.22.33.44:443**
2. Response:
 - * Trying 11.22.33.44:443...
 - * TCP_NODELAY set
 - * Connected to 11.22.33.44 (11.22.33.44) port 443 (#0)
 - ^C
 - ##>

If you see "Connected" you know TCP can be established.

3.3.2.2 HTTPS Test Using Curl

Testing HTTPS Test Using Curl:

1. From the command prompt enter
##>curl -k --url https://11.22.33.44:443/ls-lic-srv-api/LicenseDashboard.jsp
Response:
<!DOCTYPE html>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<meta http-equiv="Cache-Control" content="no-cache, no-store, must-revalidate" />
<meta http-equiv="Pragma" content="no-cache" />
<meta http-equiv="Expires" content="0" />
<title>License Server Dashboard</title>
<link rel="shortcut icon" type="image/x-icon" href="support/images/favicon.ico" />
....

You must try to query the license server URL and confirm the response includes something from our License Server, clearly the Title proves it.

If the TCP test works, but the HTTPS test does not, you may have an issue with a Proxy, NAT, or Firewall or something other network device that does not like the SSL Certificate, or performs some additional filtering based on the Application Layer protocol. See the next section on Proxy and Firewall Issues.

3.3.3. Proxy and Firewall Issues

Some networks are preventing HTTPS connections if the SSL Certificate is not rooted in a trusted certificate. Our primary cloud license server has an SSL Certificate signed by Spirent CA. Our AWS License Server has an SSL Certificate signed by Digicert. Spirent offers two options. Customers having issues with SSL Certificate approval can either:

1. Install Spirent CA in their trust store.
2. Switch their license to use our AWS License Server.

3.4. License Server Redundancy

The License Server Redundancy feature allows continuous Landslide License Server accessibility when one License Server is offline. This could be due to power outage or network outage. The feature provides having multiple (at least 2) License Servers in sync and having the TAS's licenses installed that include both addresses.

- Two License Servers in a pair should be assigned a default role as Primary or Secondary.
- Two License Servers in a license should be assigned a role of Primary and Secondary, but these roles do not have to match how the license Servers are configured.
- If there are two TASs under one license, the **TAS Setting lic_srv_redundant_flip=ON** will swap the provisioned Primary/Secondary license server addresses in the license from the TAS. If set the license server configured as “Secondary” will be used as the “Primary”

3.4.1. License Server Redundancy Operations

When TAS switches from Primary to Secondary, from TASs perspective, not the role the License Server the following will occur:

1. Real-Time Log on the TAS.
2. Log in a License Server when it receives a checkout from TAS where the checkout counter is > 1 and TAS indicates the License Server is Secondary, for which the previous checkout was NOT from the current License Server.
3. Send out Email Notification from the Secondary License Server.
4. When TAS switches to the Secondary it should automatically attempt the Primary License server after 15 minutes by default. The **TAS Setting lic_srv_primary_switchback_min** configures how many minutes TAS will wait before retrying the Primary license server after switching to the Secondary license server.

When TAS switches back from Secondary to Primary, from TAS's perspective, the following will occur:

1. Real-Time Log on the TAS.
2. Log in a License Server when it receives a checkout from TAS where the checkout counter > 1 and TAS indicates the License Server is Primary, for which the previous checkout was NOT from the current License Server.

- Send out Email Notification from the Primary License Server.

3.4.2. License Server Redundancy State

When the License Server is configured at the factory to support the Redundancy feature, the Landslide client **System Status> Licensing** dialog box will display a status for “License Server Active” state. The status will display the currently active License Server state, either Primary or Secondary.

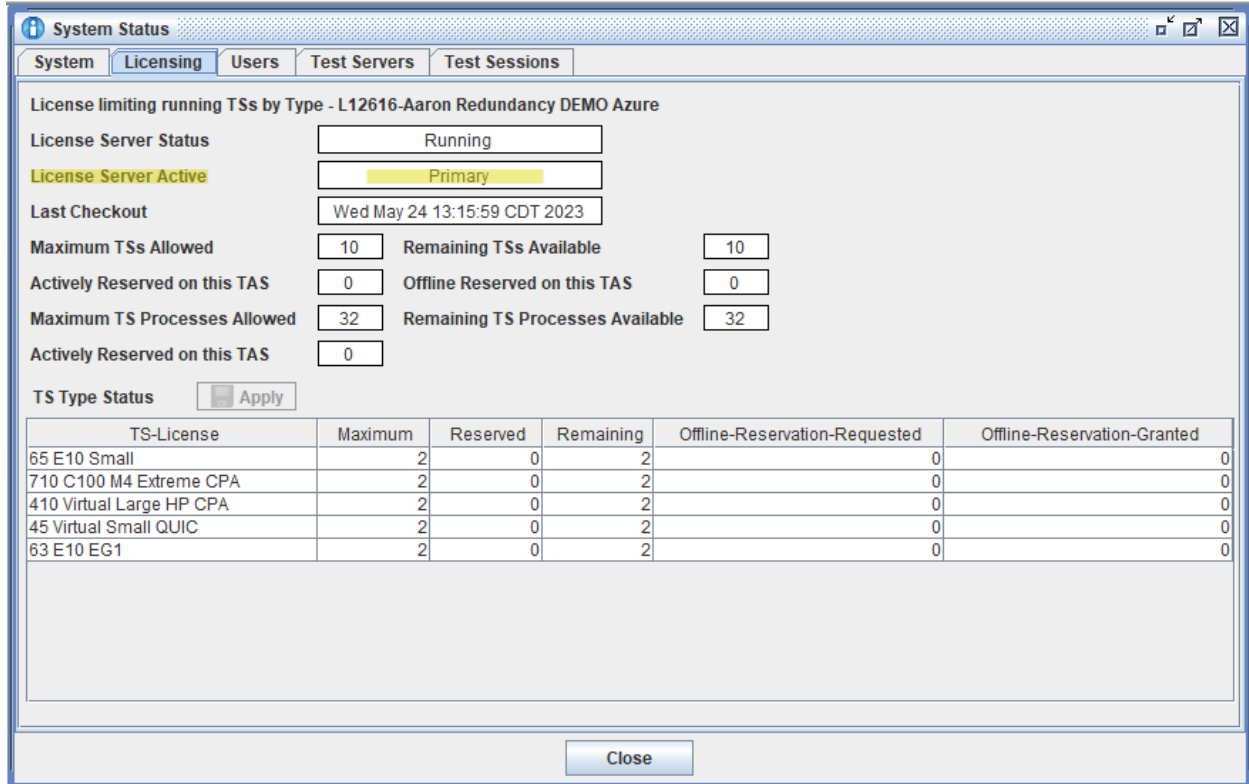


Figure 7. Dialog Box for Redundancy Status on Landslide

4. License Server Dashboard Operation

The dashboard allows a user to interface with Landslide License Server application, there are three user names allowed to access the dashboard:

- **viewer** – has access to monitor, dashboard, log views. No writing capabilities except for changing password. Viewer account has no password by default, but one can be set. Without password set, leave password field blank.
- **admin** – has read/write capabilities in all views. The admin account has a factory setup password of **a1b2c3d4**.
If user forgets admin password must contact <http://support.spirent.com> to help reset or recover password.
- **monitor_status** – only has access to monitor view. This user sign in allows the user to bypass login, in case server is down. There is no password check on this account.

Since there are only three User Names, the “Real Name” entry provides more information in the log messages of who is actually logged in via the log in screen.

NOTE:

The User Name entry is case sensitive and must be typed in as shown above.

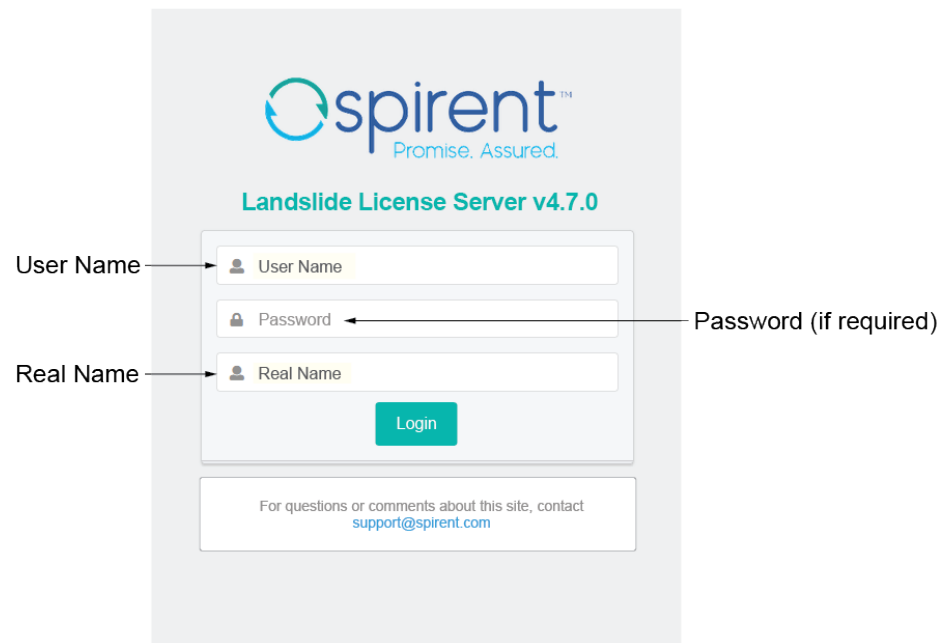


Figure 8. Landslide License Server Login Menu

4.1. Viewer Account

4.1.1. Login to Viewer User

The viewer account has read-only privileges, to login to the viewer user account you must enter the User Name = **viewer**, the password if one has been set, and the Real Name. The viewer user account has no factory password setup.

If a user forgets the **viewer** account password, they must use the **admin** user account to reset the password.

To access the other views of the viewer account, select the drop-down **Views** menu in the upper left of the screen. As shown in the following figure.

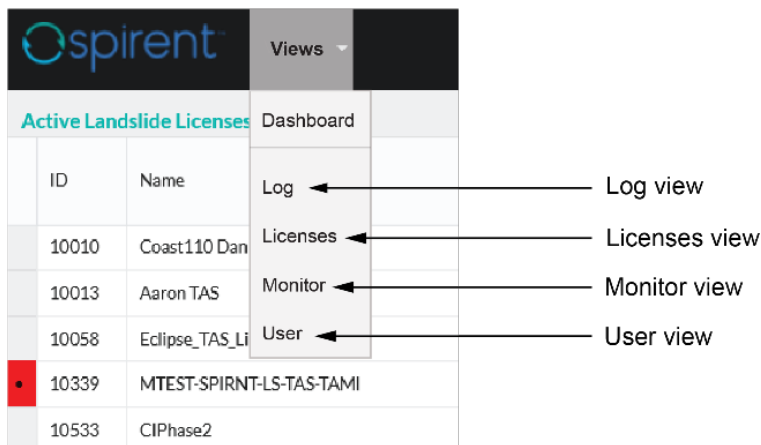


Figure 9. Accessing Views

4.1.2. Viewer Dashboard Menu

The default view is the dashboard, which is broken up into two main areas,

- Header Information
- “Active Landslide Licenses”
- “Active TASs” for selected license.

The top part of the view is a list of the Active Landslide licenses, and the bottom part shows the Active TASs for the selected license. The standard dashboard is shown in the following figure.

Figure 10. Viewer Dashboard Menu

4.1.2.1 Redundancy Configuration of a License Server

If the License Server is configured for Redundancy the Dashboard updates include indicators of how the License Servers were configured themselves as Primary / Secondary (Status Role determined by License Server perspective - NOT TAS) and which server the Active TAS is currently checked out from.

- Header will display "Redundant Role: [Primary|Secondary]" under username information. As shown in the following figure.







Figure 11. Viewer Dashboard for Redundancy Menu

- State column on Active TAS table displays P or S for which License Server received the checkout request from the License Server perspective. If border is highlighted in yellow, that indicates that from the TAS perspective, the "secondary" license server is active.

- Link to the Dashboard of the corresponding Redundant License Server (if current Dashboard is Primary – then it will be the link to Secondary Dashboard or vice-versa.)
- Active TAS Dashboard State Legend

4.1.2.2 Active Landslide Licenses

Each column of an active License entry gives the details of the status/setup for that license. The first column (which is unlabeled) shows the status of that active License. The visual representations for the status conditions are shown in the first column:

-  Grey Shaded box – indicates that there is no active TAS currently running, it is in an idle state.
-  Green box – indicates there is at least one active TAS checked out to that license.
-  Red box – indicates this Landslide license ID is currently blocked.
-  Orange – indicates there is at least one offline TAS checked out to that license.
-  Bullet – means that the license is “White Listed.” The term White Listed indicates that the license is disabled from sending email notifications, with the exception of delete actions and internal errors related to this license. This will stop the flooding of emails to a user if a specific TAS is constantly trying to be checked out and possibly having a routing issue.
-  Limit columns are shaded light orange if limit is reached (Remaining # = 0)

The next 4 columns specify the license ID, Name, Customer, and Sales #. The remaining columns indicate what type of limitations are established for the specific license. There are 4 types of limits, all 4 will have a TAS limit:

License Type	Task Limits
TAS	Limited by the number of TASs (Max/Active/Remaining)
TS	Limited by total number of TSs (Max/Active/Remaining)
TS Type	Limited by TS Processes Limit (Max/Active/Remaining)
TS - Days	Limited by TS Processes Days (Max/Used/Remaining)

NOTE:

If a TAS issues a checkout request with a license that has **expired by more than 1 day and less than 5 days**, the license server will allow it with a warning. If email notification enabled, there will be 1 notification sent per TAS using that expired active license.







If a TAS issues a checkout request with a license that has **expired by more than 5 days**, the license server will reject it. If email notification enabled, there will be 1 notification sent per TAS using that expired active license.

The remaining 3 columns track:

- **First Expires:** earliest expiration date reported by any TAS on the Landslide license.
- **TCM (Test Case Minutes):** Total test case minutes that have been executed by the TASs tied to the Landslide license.
- **TSPM (TS Process Minutes):** Total process minutes that have been executed by the TASs tied to the Landslide license.

4.1.2.3 Active TASs for Selected License

Each column of an active TAS license entry gives the details of the status/setup for that license. The first column (which is unlabeled) shows the status of that TAS License. The visual representations of the TAS status are shown in the First column of the following table:

Active TAS State	Redundancy License Server	License Server Perspective	TAS Perspective	Details
	No	N/A	N/A	Green box – indicates TAS is Active. TAS, not blocked and not in Offline mode
	No	N/A	N/A	Red box – indicates active TAS, this TAS is currently blocked (blocked supersedes Offline.)
	No	N/A	N/A	Orange – indicates active TAS is currently offline (not checked out for 15 mins.)
	No	N/A	N/A	Limit columns are shaded light orange if limit is reached (Remaining # = 0)
	Yes	Primary	Primary	Active TAS, last checkout on Primary License Server from License Servers' perspective, last checkout on Primary License Server from TAS's perspective, not blocked, and not in Offline mode
	Yes	Primary	Primary	Active, last checkout on Primary License Server from License Servers' perspective, last checkout on Primary License Server from TAS's perspective, and blocked (blocked supersedes offline.)

Active TAS State	Redundancy License Server	License Server Perspective	TAS Perspective	Details
P	Yes	Primary	Primary	Active, last checkout on Primary License Server from License Servers' perspective, last checkout on Primary License Server from TAS's perspective, and Offline (not checked out for 15 mins)
S	Yes	Secondary	Primary	Active, last checkout on Secondary License Server from License Servers' perspective, last checkout on Primary License Server from TAS's perspective, not blocked, and not in Offline mode
S	Yes	Secondary	Primary	Active, last checkout on Secondary License Server from License Servers' perspective, last checkout on Primary License Server from TAS's perspective, and blocked (blocked supersedes offline)
S	Yes	Secondary	Primary	Active, last checkout on Secondary License Server from License Servers' perspective, last checkout on Primary License Server from TAS's perspective, and Offline (not checked out for 15 mins)
P	Yes	Primary	Secondary	Active, last checkout on Primary License Server from License Servers' perspective, last checkout on Secondary License Server from TAS's perspective, not blocked, and not in Offline mode
P	Yes	Primary	Secondary	Active, last checkout on Primary License Server from License Servers' perspective, last checkout on Secondary License Server from TAS's perspective, and blocked (blocked supersedes offline)

Active TAS State	Redundancy License Server	License Server Perspective	TAS Perspective	Details
P	Yes	Primary	Secondary	Active, last checkout on Primary License Server from License Servers' perspective, last checkout on Secondary License Server from TAS's perspective, and Offline (not checked out for 15 mins)
S	Yes	Secondary	Secondary	Active, last checkout on Secondary License Server from License Servers' perspective, last checkout on Secondary License Server from TAS's perspective, not blocked, and not in Offline mode
S	Yes	Secondary	Secondary	Active, last checkout on Secondary License Server from License Servers' perspective, last checkout on Secondary License Server from TAS's perspective, and blocked (blocked supersedes offline)
S	Yes	Secondary	Secondary	Active, last checkout on Secondary License Server from License Servers' perspective, last checkout on Secondary License Server from TAS's perspective, and Offline (not checked out for 15 mins)

The next column specifies the **Key** (Fingerprint-Address-Address) of the TAS license, **Version**, and **Type**. The remaining columns indicate what type of limitations are established for the specific license. There are 4 types of limits, all 4 will have a TAS limit:

License Type	Task Limits
TAS	Limited by the number of TASs (Max/Active/Remaining)
TS	Limited by total number of TSs. (Max/Active/Remaining)
TS Type	Limited by TS Processes Limit (Max/Active/Remaining)
TS - Days	Limited by TS Processes Days (Max/Used/Remaining)

NOTE:

If a TAS issues a checkout request with a license that has **expired by more than 1 day and less than 5 days**, the license server will allow it with a warning. If email notification is enabled, there will be 1 notification sent per TAS using that expired active license.

If a TAS issues a checkout request with a license that has **expired by more than 5 days**, the license server will reject it. If email notification is enabled, there will be 1 notification sent per TAS using that expired active license.

The remaining columns display:

- **Generated:** earliest expiration date reported by any TAS on the Landslide license.
- **Expires:**
- **First Checkout:**
- **Last Checkout:**
- **TCM (Test Case Minutes):** Total test case minutes that have been executed by the TASs.
- **TSPM (TS Process Minutes):** Total process minutes that have been executed by the TASs.

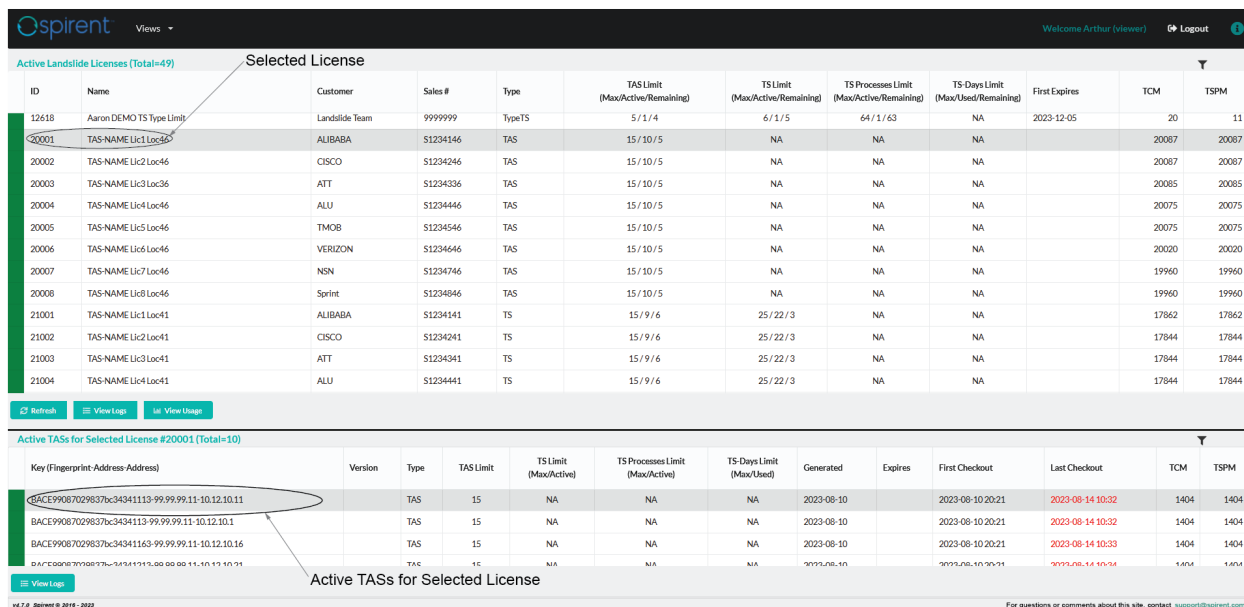


Figure 12. Viewer Dashboard with Active TAS

To get a more detailed summary of the selected license, hover over the license in the Active TASs at the bottom of the menu. The Active TAS details are shown in the following figure.

```

License: 13106
Name: BDC-PV_reservation
Active: Yes
Customer: Landslide Team
Sales Order: 1111111
Version: TAS-23.1.0.4-(internal)
Limit Condition: TypeTS
Max TSs: 16
Active TSs: 0
Max TS Processes: 20
Active TS Processes: 0
Offline Reservations Enabled: false
TS License Type Limits:
  48-Virtual Large Max: 4 Active: 0 Offline Req: 0 Granted: 0
  410-Virtual Large HP CPA Max: 4 Active: 0 Offline Req: 0 Granted: 0
  413-Virtual XL HP CPA Max: 4 Active: 0 Offline Req: 0 Granted: 0
  416-Virtual XXL HP CPA Max: 4 Active: 0 Offline Req: 0 Granted: 0
Fingerprint: 466eac6ZDM=f60E3ODBk6a1IIZA==0100010016a1IIZA==
IP Address: 10.61.45.195
IP Address Outer: 10.61.45.195
Generated: 2023-02-02
Expires:
First Checkout: 2023-02-19 20:03
Last Checkout: 2023-02-22 16:23
Checkout Timeout: 30 minutes
TC Minutes: 606
TS-Process Minutes: 516
    
```

Figure 13. Active TAS Detail

4.1.2.4 Viewer Dashboard Action Buttons

The following actions only apply when an Active Landslide License: The View Logs and View Usage buttons are accessible from the Dashboard View when specific License is selected. The following actions only apply to the admin account of Active Landslide Licenses:

Selecting an action button will perform the following task:



Selecting **Refresh** will cause the Dashboard display to refresh.



Selecting **View Logs** will display the recent License Server activity for the selected license. For details on the log entries refer to the following section, *4.1.3 “Viewer Log View Menu.”*



Selecting **View Usage** will display the usage for the selected Landslide License. For details on the usage entries refer to the following section, *4.1.4 “Viewer Usage Menu.”*

4.1.2.5 Dashboard Filtering

Additional features on the viewer dashboard are being able to sort and filter the data. Sorting can be done by clicking on the column header. The column header text will now be underlined, indicating the column that is sorted.

Filtering can be done on both portions of the dashboard, by clicking the **Filter** icon  of the portion you want to filter. The **Filter License Display** and **Filter TAS Display** appear, shown in the following figures.

The screenshot displays the Spirent License Server interface. At the top, it shows 'Active Landslide Licenses (Total: 9)'. Below this is a table with columns: ID, Name, Customer, Sales #, Type, TAS Limit (Max/Active/Remaining), TS Limit (Max/Active/Remaining), TS Processes Limit (Max/Active/Remaining), TS Days Limit (Max/Used/Remaining), First Expires, TCM, and TSPM. One license is highlighted with a green bar and a callout 'Active Landslide License'. Below the table is a section for 'Active TAs for Selected License #13106 (Total: 1)'. This section has a table with columns: Key (Fingerprint, Address, Address), Version, Type, TAS Limit, TS Limit (Max/Active), TS Processes Limit (Max/Active), TS Days Limit (Max/Used), Generated, Expires, First Checkout, Last Checkout, TCM, and TSPM. A callout 'Active TAs for Selected License' points to this section. On the right side, there is a 'Filter License Display' panel with an 'Apply Filter' checkbox and dropdown menus for 'License State' and 'Limit Condition'. Callouts 'Filter for Landslide Licenses' and 'Filter for Selected TAs' point to the filter panels.

Figure 14. Filtering on Landslide Licenses (viewer user)

This image shows a close-up of the 'Filter License Display' panel. It includes an 'Apply Filter' checkbox which is checked. Below it are two dropdown menus: 'License State' and 'Limit Condition'. The 'License State' dropdown is open, showing options: ALL, Active, Inactive, Disabled, and Offline. The 'Limit Condition' dropdown is also open, showing options: ALL, TAS, TS, TS-Days, and TypeTS. Text entries are marked with an asterisk (*). A note states: '* Enter a text value for filtering. Text entries are case sensitive.' An 'Ok' button is at the bottom right of the panel.

Figure 15. Filter License Display Options (viewer user)

How to use the License filter menu:

1. Select the filter conditions or enter a text value.

NOTE:
Filter entries for Dashboard view are case sensitive.

2. Select the **Apply Filter** check box.
3. Once the conditions are set, click the **Ok** button to perform the filtering.

The display window will now show the results from the License filtering and the column header of the filtered item will be bolded.

If required filtering on the Active TAS results can be performed. The **Filter TAS Display** menu displays, as shown in the following figure.

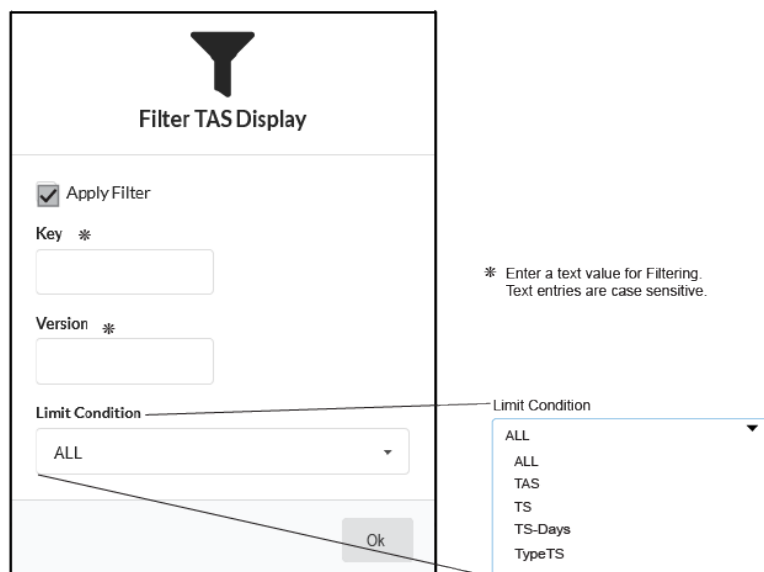


Figure 16. Filter on TAS Display Options (viewer user)

How to use the TAS filter menu:

1. Select the desired filter Limit Conditions or enter a text value.

NOTE:
Filter entries for Dashboard view are case sensitive.

2. Select the **Apply Filter** checkbox.
3. Once the conditions are set, click the **Ok** button to perform the filtering.

The display window will now show the results from the TAS filtering and the column header of the filtered item will be bolded.

4.1.3. Viewer Log View Menu

The **Log View** displays the most recent 1,000 log entries based on the filter criteria. These entries will include Warnings and Errors that could also be received in a notification email. The Message column contains more details depending on the action type of the entry.

Filtering can be done on the Log View entries to assist in finding a specific log entry. The following figure is an example of what a user might see in a **Log View** and the filter selections.

NOTE:
Refer to “Log Messages for License Server” on page 58 for a complete listing of warning/error messages.

Time Stamp (YYY-MM-DD HH:MM:SS)	Severity Level	Action Performed	ID	Message
2023-02-23 19:13:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 19:11:48	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 19:08:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])
2023-02-23 19:08:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 19:06:47	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 19:03:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])
2023-02-23 19:03:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 19:01:47	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 18:59:43	WARNING	SERVER	12616	null-10.70.132.19-192.168.4.72 Aaron Redundancy TEST Auto-Checkin
2023-02-23 18:58:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])
2023-02-23 18:58:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 18:56:47	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 18:53:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])
2023-02-23 18:53:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 18:51:47	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 18:48:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])
2023-02-23 18:48:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 18:46:47	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 18:45:42	WARNING	CHECKOUT	12616	TAS null-10.70.132.19-192.168.4.72 Aaron Redundancy TEST has not checked out in 15 minutes, auto-checkin is 30 minutes
2023-02-23 18:43:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])
2023-02-23 18:43:40	INFO	CHECKOUT	12616	44707k6OGQ~f50MzYzJf6a1lIzA--0100010016a1lIzA--10.71.15.215-10.71.15.215 - Aaron Redundancy TEST
2023-02-23 18:41:47	INFO	CHECKOUT	12383	406eeM6MWU~0c3UwNGUz6a1lIzA--0100010016a1lIzA--10.61.45.154-10.61.45.154 - ER-TEST
2023-02-23 18:38:42	INFO	CHECKOUT	13106	466eac6ZDM~f60E300Bk6a1lIzA--0100010016a1lIzA--10.61.45.195-10.61.45.195 - BDC_PV_reservation: active TS Process count (0): active TS Types count (48-0[0],416-0[0],410-0[0],413-0[0])

Figure 17. Viewer Log View Menu

Filtering can be done on the Log view, by clicking the **Filter** icon . The **Filter Log Display** is shown in the following figure. Select the desired filter conditions or enter a value, select the apply filter checkbox. Once the conditions are set click the **Ok** button to perform the filtering.

Filter Log Display

Apply Filter

Level:

Action:

License ID:

Message:

Level

- ALL
- ALL
- ERROR
- WARNING
- INFO

Action

- ALL
- ALL
- LICENSE RESET
- LICENSE DELETE
- LICENSE REJECT
- LICENSE ALLOW
- LICENSE UPLOAD
- LICENSE DOWNLOAD
- SERVER
- ADMIN CHECKIN
- CHECKIN
- CHECKOUT
- TAS REJECT
- TAS ALLOW

* User can enter a value for filtering.

Figure 18. Filter Log Display menu - Viewer User

4.1.4. Viewer Usage Menu

Selecting **View Usage** from the dashboard will display the usage data for the selected Landslide License. The View Usage menu is shown in the following figure.

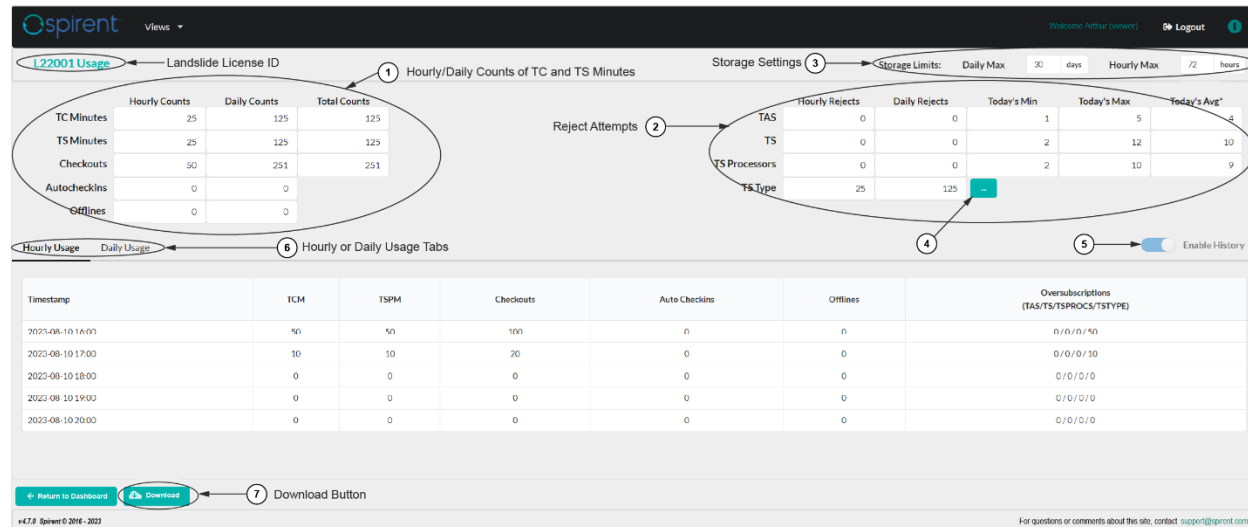

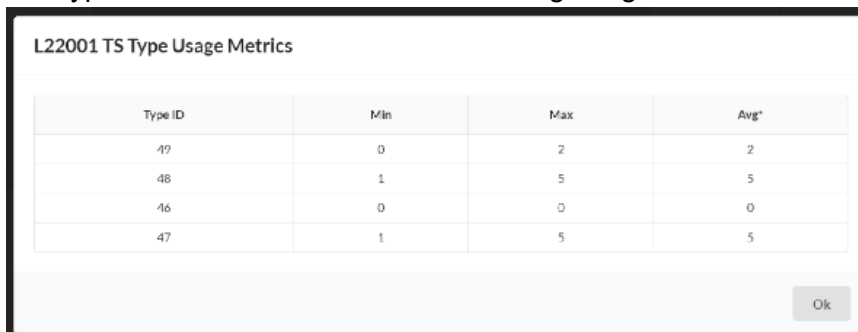


Figure 19. Viewer Usage Menu

- ① Offlines are the number of times a TAS has transitioned to OFFLINE mode due to not being checked out for 15 mins; this applies to TS Type licenses only. Displays the hourly, daily counts of TC and TS Minutes (Totals are since the upgrade of the License Server to v4.7.0.) This section also includes the number of Checkouts, hourly, daily, and total checkouts. In addition, there are hourly and daily counts autocheckins, offlines entries. Autocheckins are the number of times a TAS has checked in due to expired checkout limit. This is the period of time where a TAS didn't checkout, by default the time limit is 30 mins. Offlines are the number of times a TAS has transitioned to OFFLINE mode due to not being checked out for 15 mins; this applies to TS Type licenses only.
- ② Checkout attempts that were rejected due to requests that exceeded limits either on the TAS limit, TS limit, TS Processors limit, or TS Type limit. This section also includes the current day's Min/Max/Avg* values for each level. Today's Avg* is recalculated whenever a new checkout request contains at least one different for the number of requested TAS/TS/TS Procs.
- ③ Max number of hours/days stored in the usage files. These values can only be changed when logged into the admin account of the License Server.

- 4 Display the Min/Max/Avg of the TS Types. Selecting the  icon will display the TS Type metrics. As shown in the following image:



Type ID	Min	Max	Avg*
49	0	2	2
48	1	5	5
46	0	0	0
47	1	5	5

- 5 Enable/disable the writing to the hourly/daily usage files. This function is not available in the viewer user account, available only when logged into the admin user account.
- 6 **Daily Usage** tab – shows the contents of the daily usage .csv file.
Hourly Usage tab – shows the contents of the hourly usage .csv file.
- 7 Downloads a zip file containing the Daily and Hourly usage of .csv files for that License.

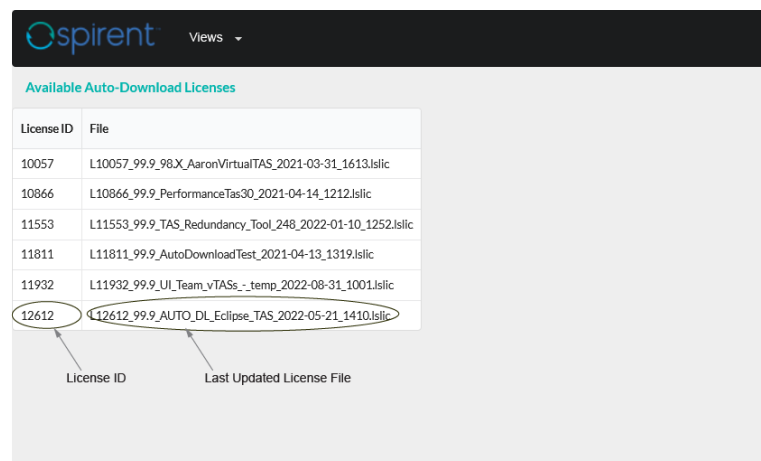
4.1.5. Viewer Licenses Menu

NOTE:

This information only applies to customer using the Auto-Download license feature. See “Auto-Download License” on page 9 for details on this feature.

The License View menu displays the **Available Auto-Download Licenses**, which license IDs have been updated, and their last update file. The following figure shows a sample of the **Licenses** view menu.

You must be logged in to the admin user account to add or delete licenses.



License ID	File
10057	L10057_99.9_98X_AaronVirtualTAS_2021-03-31_1613.Islic
10866	L10866_99.9_PerformanceTas30_2021-04-14_1212.Islic
11553	L11553_99.9_TAS_Redundancy_Tool_248_2022-01-10_1252.Islic
11811	L11811_99.9_AutoDownloadTest_2021-04-13_1319.Islic
11932	L11932_99.9_UI_Team_vTASs_-_temp_2022-08-31_1001.Islic
12612	L12612_99.9_AUTO_DL_Eclipse_TAS_2022-05-21_1410.Islic

Figure 20. Licenses View – Viewer User

4.1.6. Viewer Monitor Menu

The Monitor view displays the most recent 250 log entries. These entries will include Warnings and Errors that could also be received in a notification email. The message entry contains more detail depending on the action type of the entry.

The following figure shows a typical viewer Monitor menu.

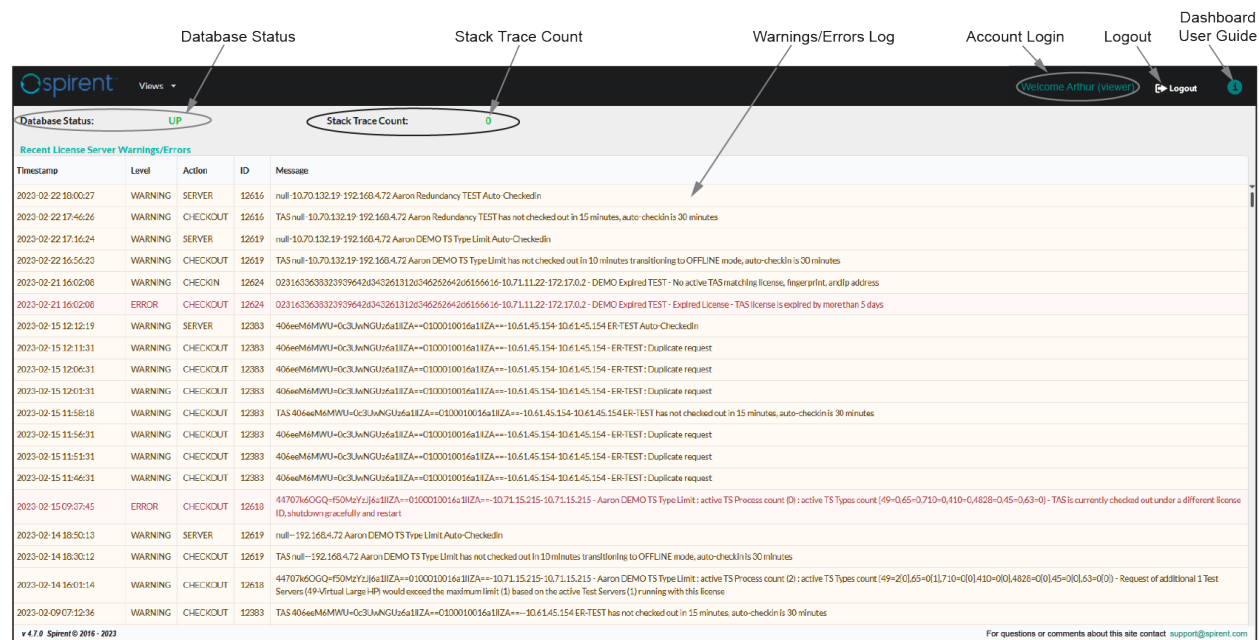


Figure 21. Viewer Monitor Menu

The monitor menu shows the following three conditions of the license server:

- Database Status – Up or Down
- Stack Trace Count – Gives the number of the last stack traces. Selecting the Trace Count number will bring up the last 10 to 25 stack traces that the system has logged.
- Recent License Server Warnings/Errors – Shows a log of the last 250 warnings or errors that have occurred and the pertinent information to help understand why the license server is down or not responding properly.
- Replicated database tables will only apply to the Dashboard view. Logs and configurations related to user passwords, email notification, downloadable licenses, and certificates are not replicated to the redundant server.
- If TAS is checked out and doesn't match the existing "Server Role" value, then that indicates a License Server swap was performed from the TAS perspective. Log entry for checkouts matching this pattern will be marked as "Warning", include appended "(License Server swap)" in log message, and email notification will be sent from the newly used License Server.

Recent License Server Activity				
Timestamp	Level	Action	ID	Message
2023-04-07 15:25:26	WARNING	CHECKOUT	12616	4470766GQG-150MzYzj6a1RZA--0100010016a11ZA---1071.15.215-1071.15.215- Aaron Redundancy DEMO : active TS Process count (1) : active TS Types count (49--101,65--0111710--001,410--001,45--001,63--001) (License Server swap)

Figure 22. License Server Swap Warning

Stack Traces

```

com.mysql.jdbc.exceptions.jdbc4.MySQLIntegrityConstraintViolationException: Column 'activeTestServerCount' cannot be null at
sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method) at
sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstructorAccessorImpl.java:57) at
sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:45) at
java.lang.reflect.Constructor.newInstance(Constructor.java:526) at com.mysql.jdbc.Util.handleNewInstance(Util.java:404) at
com.mysql.jdbc.Util.getInstance(Util.java:387) at com.mysql.jdbc.SQLError.createSQLException(SQLError.java:932) at
com.mysql.jdbc.MySQLIO.checkErrorPacket(MySQLIO.java:3878) at com.mysql.jdbc.MySQLIO.checkErrorPacket(MySQLIO.java:3814) at
com.mysql.jdbc.MySQLIO.sendCommand(MySQLIO.java:2478) at com.mysql.jdbc.MySQLIO.sqlQueryDirect(MySQLIO.java:2625) at
com.mysql.jdbc.ConnectionImpl.executeSQL(ConnectionImpl.java:2547) at
com.mysql.jdbc.StatementImpl.executeUpdateInternal(StatementImpl.java:1541) at
com.mysql.jdbc.StatementImpl.executeLargeUpdate(StatementImpl.java:2605) at
com.mysql.jdbc.StatementImpl.executeUpdate(StatementImpl.java:1469) at
com.spirent.is.licserver.db.ActiveLicenseTable.updateTestServerInfo(ActiveLicenseTable.java:629) at
com.spirent.is.licserver.data.LicenseManager.processCheckinSynced(LicenseManager.java:565) at
com.spirent.is.licserver.data.LicenseManager.processCheckin(LicenseManager.java:137) at
com.spirent.is.licserver.servlets.TaskCheckin.doPost(TaskCheckin.java:155) at javax.servlet.http.HttpServlet.service(HttpServlet.java:646) at
javax.servlet.http.HttpServlet.service(HttpServlet.java:727) at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:303) at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:208) at
org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52) at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:241) at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:208) at
org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.java:220) at
org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.java:122) at
org.apache.catalina.authenticator.AuthenticatorBase.invoke(AuthenticatorBase.java:503) at
org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:170) at
org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:103) at
org.apache.catalina.valves.AccessLogValve.invoke(AccessLogValve.java:950) at
org.apache.catalina.core.StandardEngineValve.invoke(StandardEngineValve.java:116) at
org.apache.catalina.connector.CoyoteAdapter.service(CoyoteAdapter.java:421) at
org.apache.coyote.http11.AbstractHttp11Processor.process(AbstractHttp11Processor.java:1070) at
org.apache.coyote.AbstractProtocol$AbstractConnectionHandler.process(AbstractProtocol.java:611) at
org.apache.tomcat.util.net.JIoEndpoint$SocketProcessor.run(JIoEndpoint.java:316) at
java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1145) at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:615) at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61) at java.lang.Thread.run(Thread.java:744)
    
```

Figure 23. Monitor Status Stack Trace Menu

4.1.7. Viewer User Menu – User Settings

The User menu allows you to change the account password. By default, there is no password set for the viewer account, but one can be set. Password must have a minimum of 6 characters.

User Settings

Figure 24. User Setting menu (viewer user)

How to Setup or Change the viewer user password:

1. From the User view, enter the **Original Password**.
2. Then **New Password**. (Password must have minimum of 6 characters.)
3. Then enter Confirm New Password.
4. Click the **Update** button to complete the password change.

4.2. Admin Account

The administrator user account has read/write capabilities in all views and various license setup capabilities.

4.2.1. Login to Admin User

The admin account has read/write privileges, to login to the admin user account you must enter the user name **admin** and the password. The admin user account has a factory default password of **a1b2c3d4**.

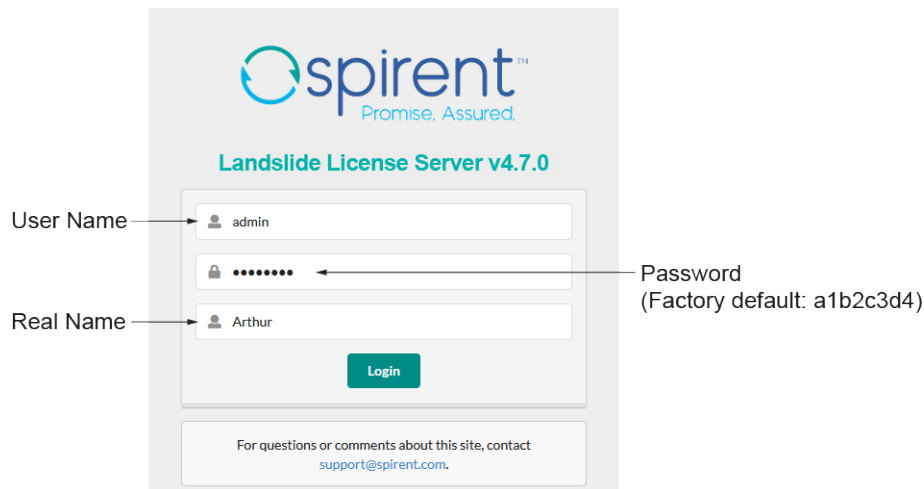


Figure 25. Admin Login menu

If a user forgets the admin password, they must contact <http://support.spirent.com> to help reset or recover password.

4.2.2. Admin Dashboard Menu

Upon entering the **admin** account of the License Server, the default view is the dashboard which will have the same information as the **viewer** dashboard, The dashboard is broken up into two main areas,

- “Active Landslide Licenses”
- “Active TASs for Selected Active TASs” (for selected license)

In addition, there are action buttons at the end of the **Active Landslide Licenses** section. Only the refresh and the unlock buttons will be active, the other remaining buttons will be in-active until a license is selected. The following figure shows a typical initial admin dashboard menu.

The screenshot shows the Spirent Admin Dashboard. At the top, there is a navigation bar with a 'Views Menu' dropdown, 'Active Landslide Licenses' link, 'Selected License' link, 'Login Name (Account Type)' (Welcome, Arthur (admin)), and 'Logout' button. The main content area is divided into two sections:

Active Landslide Licenses (Total=40)

ID	Name	Customer	Sales #	Type	TAS Limit (Max/Active/Remaining)	TS Limit (Max/Active/Remaining)	TS Processes Limit (Max/Active/Remaining)	TS-Days Limit (Max/Used/Remaining)	First Expires	TCM	TSPM
12611	TS-Type-Test	Landslide Team	1234567	TypeTS	2/0/2	6/0/6	0/0/0	NA		40346	18667
12613	Aaron TypeTS Limit	Landslide Team	9999999	TypeTS	5/0/4	6/0/6	10/0/10	NA	2023-12-05	34	12
12616	Aaron DEMO TAS Limit	Landslide Team	9999999	TAS	5/0/5	NA	NA	NA	2023-12-05	0	0
12617	Aaron DEMO TS Limit	Landslide Team	9999999	TS	5/0/5	32/0/32	NA	NA	2023-12-05	32	36
12618	Aaron DEMO TS Type Limit	Landslide Team	9999999	TypeTS	5/1/4	6/1/5	64/1/63	NA	2023-12-05	20	11
20001	TAS-NAME Lic1 Loc46	ALIBABA	S1234146	TAS	15/10/5	NA	NA	NA		6017	6017
20002	TAS-NAME Lic2 Loc46	CISCO	S1234246	TAS	15/10/5	NA	NA	NA		6017	6017
20003	TAS-NAME Lic3 Loc46	ATT	S1234346	TAS	15/10/5	NA	NA	NA		6017	6017
20004	TAS-NAME Lic4 Loc46	ALU	S1234446	TAS	15/10/5	NA	NA	NA		6015	6015
20005	TAS-NAME Lic5 Loc46	TMOB	S1234546	TAS	15/10/5	NA	NA	NA		6015	6015
20006	TAS-NAME Lic6 Loc46	VERIZON	S1234646	TAS	15/10/5	NA	NA	NA		5960	5960
20007	TAS-NAME Lic7 Loc46	NSN	S1234746	TAS	15/10/5	NA	NA	NA		5900	5900
20008	TAS-NAME Lic8 Loc46	Sprint	S1234846	TAS	15/10/5	NA	NA	NA		5900	5900
21001	TAS-NAME Lic1 Loc41	ALIBABA	S1234141	TS	15/9/6	25/22/3	NA	NA		3813	3813
21002	TAS-NAME Lic2 Loc41	CISCO	S1234241	TS	15/9/6	25/22/3	NA	NA		3795	3795
21003	TAS-NAME Lic3 Loc41	ATT	S1234341	TS	15/9/6	25/22/3	NA	NA		3795	3795
21004	TAS-NAME Lic4 Loc41	ALU	S1234441	TS	15/9/6	25/22/3	NA	NA		3795	3795
21005	TAS-NAME Lic5 Loc41	TMOB	S1234541	TS	15/9/6	25/22/3	NA	NA		3795	3795

Below the main table, there are action buttons for the selected license: Refresh, Unlock, White List, Reject, View Logs, and View Usage.







Active TAS for Selected License #21002 (Total=9)

Key (Fingerprint-Address-Address)	Version	Type	TAS Limit	TS Limit (Max/Active)	TS Processes Limit (Max/Active)	TS-Days Limit (Max/Used)	Generated	Expires	First Checkout	Last Checkout	TCM	TSPM
BACE99087029837bc34342113-99-99-97-122-10-12-21-11		TS	15	25/2	NA	NA	2023-08-10		2023-08-10 12:57	2023-08-10 16:05	20	20
BACE99087029837bc3434213-99-99-97-122-10-12-21-11		TS	15	25/2	NA	NA	2023-08-10		2023-08-10 12:57	2023-08-10 16:05	20	20

Below the TAS table, there are action buttons for the selected TAS: Reject, Allow, and View Logs.

Figure 26. Admin Dashboard view

Each column of a License entry gives the details of the status/setup for that license. The first column (which is unlabeled) shows the status of that License. The visual representations for the status conditions are shown in the first column:

-  Grey Shaded box – indicates that there is no active TAS currently running, it is in an idle state.
-  Green box – indicates there is at least one active TAS checked out to that license.
-  Red box – indicates this Landslide license ID is currently blocked.
-  Orange – indicates there is at least one offline TAS checked out to that license.
-  Bullet – means that the license is “White Listed.” The term White Listed indicates that the license is disabled from sending email notifications, with the exception of delete actions and internal errors related to this license. This will stop the flooding of emails to a user if a specific TAS is constantly trying to be checked out and possibly having a routing issue.
-  Limit columns are shaded light orange if limit is reached (Remaining # = 0)

The following actions only apply to the admin account of Active Landslide License:



Selecting **Refresh** will cause the Active Landslide Licenses display to refresh.



Selecting **Unlock** allows the admin to delete, reset, and force check-in of a TAS. This function is not auto enabled, the user must get an unlock code from Spirent Customer Support to perform this function. See the *Unlock Operation* below for further details.



Selecting the **White List** option will disable the license from sending email notifications with the exception of Delete actions and internal errors related to this license. When a license is White Listed a bullet (●) will be displayed in the first column to indicate the White List setting and a notification email will be sent to the distribution list. The button will change to **Black List** selection.



Selecting the **Black List** option will enable all email notifications set for this license, and the button will change to **White List**.



Selecting the **Reject** option will disable checkouts associated with the currently selected license (indicated by Red status for blocked)



Selecting the **Allow** option will enable checkouts associated with the currently selected license.



Selecting **View Logs** will display the Active Landslide Licenses Log. For details on the log entries refer to the following section, 4.1.3 “Viewer Log View Menu.”



Selecting **View Usage** will display the usage for the Active Landslide License selected. For details on the log entries refer to the following section, 4.2.4 “Admin View Usage Menu.”

4.2.2.1 Unlock Operation

Once the **Unlock** button is selected the following menu will be displayed on the screen. The Unlock function is not auto enabled, the user must get an unlock code from Spirent Customer Support to perform this function.

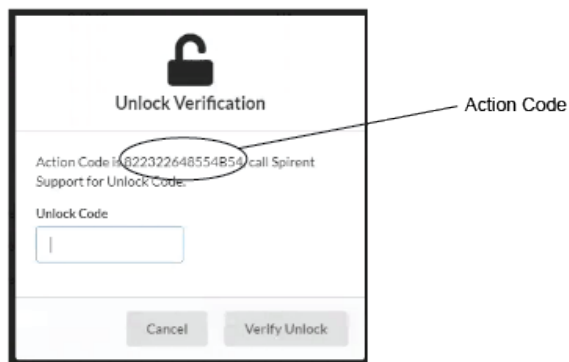


Figure 27. Unlock Verification Menu

Once the action code is decoded, the user will need to resend the Unlock and enter the code. When this operation is enacted, three buttons (Reset, Delete, and Checkin) will appear on the display for only a 30-minute period. See the following figure.



Reset

Gives the admin the Reset privilege of an Active Landslide License for 30-minutes. Selecting **Reset** will remove all active TASs associated with the currently selected license and reset the active counts to zero.



Delete

Gives the admin the Delete privilege of an Active Landslide License for 30-minutes. Selecting **Delete** will remove the currently selected license.

The screenshot shows the Spirent Admin Dashboard. At the top, it says "Active Landslide Licenses (Total=3)". Below this is a table with columns: ID, Name, Customer, Sales #, Type, TAS Limit (Max/Active/Remaining), TS Limit (Max/Active/Remaining), TS Processes Limit (Max/Active/Remaining), TS Days Limit (Max/Used/Remaining), First Expires, TCM, and TSPM. The table has three rows of data.

Below the table are buttons: Refresh, Unblock, White List, Reset, View Log, and View Usage.

Below that is a section for "Active TASs for Selected License #11932 (Total=1)". It has a table with columns: Key (Fingerprint Address), Version, Type, TAS Limit, TS Limit (Max/Active), TS Processes Limit (Max/Active), TS Days Limit (Max/Used), Generated, Expires, First Checkout, Last Checkout, TCM, and TSPM. There is one row of data.

At the bottom of this section are buttons: Reject, Allow, and View Log.

At the very bottom, it says "v4.7.0 Spirent © 2018 - 2022" and "For questions or comments about this site, contact support@spirent.com".

Figure 28. Unlock Admin Dashboard menu.

When the Unlock function is active there are three additional buttons on the Active TAS for Selected License display. These buttons will also have a 30-minute active time limit.



Checkin

Selecting **Checkin** will force a TAS checkin. Example: when TAS has autocheckin timeout configured to 5 days on the license and you need to checkin this TAS to be able to checkout another TAS.



Reject

Selecting the **Reject** option will disable checkouts associated with the currently selected TAS (indicated by Red status for blocked.)



Allow

Selecting the **Allow** option will enable checkouts associated with the currently selected TAS. This button will be active only after a TAS has been rejected.

4.2.3. Admin Log Menu

The admin Log view is identical to the viewer account log view. See 4.1.3 Viewer Log View Menu for further details on the Log view screen.

NOTE:

For a complete listing of warning/error messages refer to Section 5. *Log Messages for License Server.*

4.2.4. Admin View Usage Menu

Selecting **View Usage** from the dashboard will display the usage data for the selected Landslide License. The **View Usage** menu for the admin account is shown in the following figure.

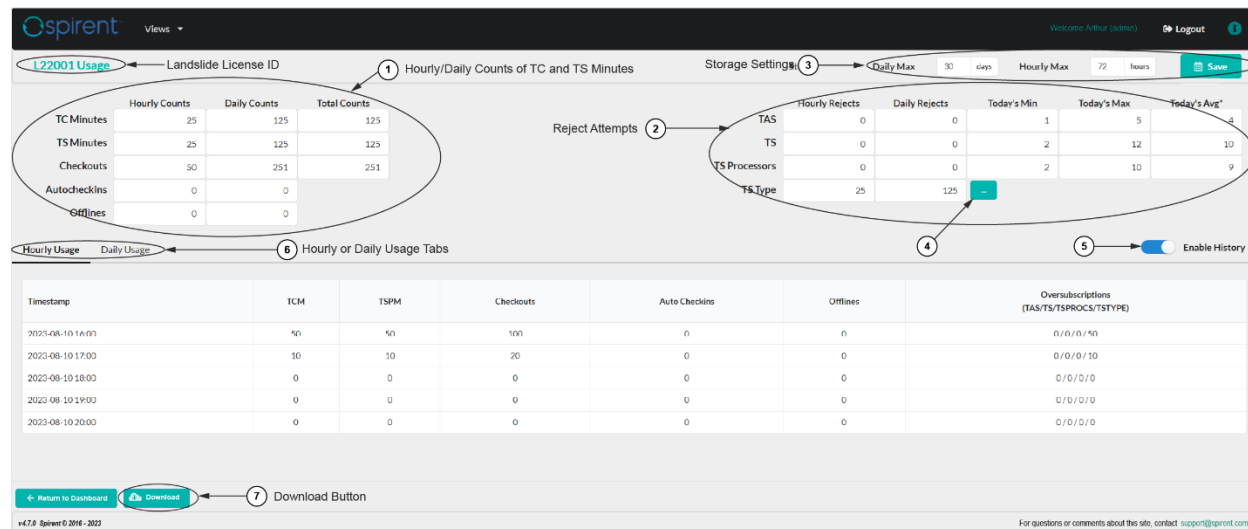


Figure 29. View Usage Menu for Admin Login

- ① Displays the hourly/daily counts of TC and TS Minutes (Totals are since the upgrade of the License Server to v4.7.0.)
- ② Checkout attempts that were rejected due to requests that exceeded limits either on the TAS limit, TS limit, TS Processors limit, or TS Type limit. This section also includes the current day's Min/Max/Avg values for each level. Min/Max/Avg are the only values that are in memory and will be reset whenever the license server is restarted. All other values are written to the database or files, if **Enable History** is activated. The **Enable History** is only active when logged into the admin user account.
- ③ Set max number of hours/days stored in the usage files. These values can be changed when logged into the admin account of the License Server. Use the **SAVE** icon to store the values.
- ④ Display the Min/Max/Avg of the TS Types. Selecting the **...** icon will display the TS Type metrics. As shown in the following image:

L22001 TS Type Usage Metrics				
Type ID	Min	Max	Avg*	
49	0	2	2	
48	1	5	5	
46	0	0	0	
47	1	5	5	

Ok

- 5 Enable/disable the writing to the hourly/daily usage files. This function is available in the admin user account.
- 6 **Daily Usage** tab – shows the contents of the daily usage .csv file.
Hourly Usage tab – shows the contents of the hourly usage .cvs file.
- 7 Downloads a zip file containing the Daily and Hourly usage of .cvs files for that License.

4.2.5. Admin Licenses Menu

NOTE:

This information only applies to customer using the Auto-Download license feature. Refer to section “2.2 Auto-Download License” for details on this feature.

The Licenses View menu displays the **Available Auto-Download Licenses**, which license IDs have been updated, and their last update file. The following figure shows the admin **Licenses** view menu.

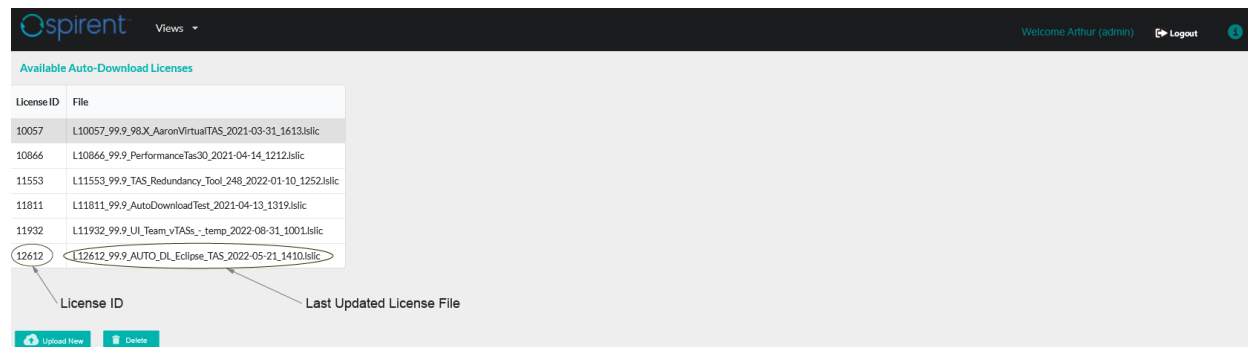


Figure 30. Admin Licenses View

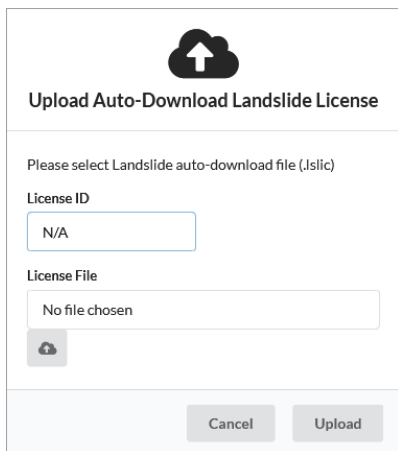
You must be logged in to the admin user account to **Upload** or **Delete** a license.

To delete a license, perform the following steps:

1. Highlight the License to be deleted.
2. Select the **Delete** button, a confirmation pop-up menu will display.
3. Select **Yes** to delete the license or **No** to cancel.

To upload a license file, perform the following steps:

1. To upload a new license select the  button, the following menu will display.



Upload Auto-Download Landslide License


Please select Landslide auto-download file (.lslic)

License ID
N/A

License File
No file chosen

Cancel Upload

Figure 31. Upload Auto-Download Landslide License menu

2. Select the  icon to bring up the Upload dialog box.
3. Use the file the File Explore to navigate to the Landslide License file you want to upload. The file must have an extension of “.lslic”.
4. Select the **Open** button to upload the license file. The filename will appear in the License File box on the Upload Auto-Download menu.
5. Select the **Upload** button. You can back out of the menu by selecting **Cancel**.

4.2.6. Admin Monitor Menu

The admin Monitor view is identical to the viewer account monitor view. Refer to the section “4.1.6 Viewer Monitor Menu” for further details on the Monitor view menu.

4.2.7. Admin Notification Settings View

The Notification Settings menu is only visible to the admin user. This menu allows the admin user to setup who will get the email notifications when warnings or errors are generated.

The user is allowed to set up time intervals for outgoing emails. There will be a weekly summary email of the sum of the test case minutes and test server minutes of each license, for the previous week. Since this email gives the sum total of minutes used for a specific license you will need to do a difference of the last week sum and this week’s sum to get the test case and test server minutes for the reported week.

The following figure displays the Notification Settings menu.

The screenshot shows a web form for configuring notification settings. It is organized into several sections:

- Email Notification:** A checked checkbox, a text field for SMTP Server Address (smtpexample.sirius.com), a text field for Port (25), a spinner for Initial Delay (60) with a unit dropdown (s), a spinner for Repeat Interval (5) with a unit dropdown (min), and a checked checkbox for Use SSL.
- Use SendGrid:** A checked checkbox and a text field for SendGrid API Key (masked with dots).
- User and Password:** Text fields for User (adent), Password (masked), and Confirm Password (masked).
- Email Addresses:** Text fields for To Email Address (aurthur.dent@sirius.com), From Email Address (donotreply@internal.sirius.com), and Reply To Email Address (user@sirius.com).
- Subject and Label:** Text fields for Email Subject Prefix (ADent) and From Sender Label (Test Landslide License Server).
- Buttons:** 'Send Test Email' and 'Update' buttons at the bottom.

Figure 32. Notification Settings menu (admin user)

1. Enter the required values for each setting:
 - a. **Email Notification** – if selected uses the settings to send out email notifications and summary.
 - b. **SMTP Server Address** – outgoing email client address.
 - c. **Port** – port used for SMTP email transmissions.
 - d. **Initial Delay** – delay from first checkout for a warning or error. Reporting on license status color orange or red, but not will not report on a license that is “whitelisted” (black dot status).
The range is 1-720 seconds; the default is 60 seconds.
 - e. **Repeat Interval** – Is the delay period for which the notification routine will wait to check for warnings/errors to report. Enter the time in minutes that you want the system to repeat. The range is 1-720 minutes; default is 60 seconds.
 - f. **Use SSL** – if selected enforces the use of SSL certificate protocol.
 - g. **Use SendGrid** – if selected uses SendGrid to send emails instead of SMTP Server Address.
 - h. **SendGrid API Key** – Customer's SendGrid key required to use SendGrid.
 - i. **User** – Is customer-defined and can be any alphanumeric character (used only for SMTP email transmissions).
 - j. **Password and Confirm Password** – You must enter a password for the username created and enter the password again in the confirm password. (used only for SMTP email transmissions).
 - k. **To Email Address** – Enter as many email addresses as required.
 - l. **From Email Address** – Enter the email address to be shown as the sender.

- m. **Reply to Email Address** – Enter the email address to be shown as the reply address.
 - n. **Email Subject Prefix** – optional label to precede the subject for outgoing emails.
 - o. **From Sender Label** – configurable label for sender, default "Landslide License Server Alarm Sender."
2. **Send Test Email** – once all configurations are entered, press this button to send test email.
 3. **Update** – press this button to submit all email notification set up values.

The following figure shows a sample weekly notification email.

Landslide License Server Usage Report (10.162.11.100)

ATS Landslide License Server <donotreply@spirent.com>
 To: LandslideLicenseSrvNotification

Weekly Usage file: License Histories, CSV, & separate license history files. (Only included if there are any licenses with history usage enabled.)

Mon 4/8/2024 1:00 AM

Is-licsvr-usage.csv 2 KB
 WeeklyUsageHistory.zip 6 KB

Spreadsheet of table below (CSV)
 Table of Sum Total Minutes for the previous week.

License	License Name	Customer	TC-Minutes	TS-Minutes
10057	VogonVirtualTAS	Landslide Team	14975	12365
10389	Trillain-Virtual-C100-TAS	Trillain Mobility	1268171	1198368
10533	ZBPhase2-Is-licsvr	Landslide Team	167407734	121860725
10946	Perfect-R17160042-svr-MultiTAS	Sirius Corporation	61602745	20901647
11001	Edge088	Landslide Team	102038	107292

Figure 33. Weekly Email Notification sample

4.2.8. Admin SSL Certificate Menu

The SSL Certificate view will initially display the current certificate configuration for this license server. The following figure shows the SSL Certificate menu.

spirent Views

Welcome Arthur (admin) Logout

Current SSL Certificate Summary

Certificate Info

Creation date: Jan 20, 2023

Owner: CN=Landslide License Server, OU=Landslide, O=Spirent Communications, L=Plano, ST=TX, C=US

Issuer: CN=Landslide License Server, OU=Landslide, O=Spirent Communications, L=Plano, ST=TX, C=US

Valid from: Fri Jan 20 11:40:10 CST 2023 until: Wed Jan 19 11:40:10 CST 2028

Install Self Signed Certificate Install Certificate

Figure 34. SSL Certificate Summary menu

There will be two options to install certificates:

- Install Self-Signed Certificate – The following menu will display.

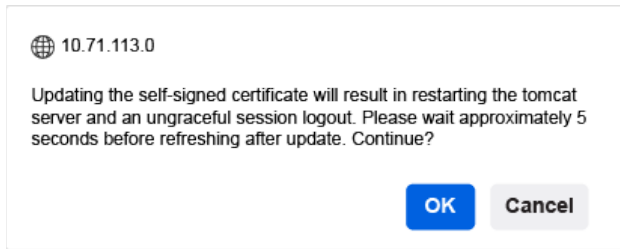



Figure 35. SSL Certificate menu

- Install Certificate – The following menu will display.
 - You will then need to select an SSL Certificate and Key file to upload. Select the upload icon  to select a Certificate file.
 - You must then select to **Install** or **Cancel** to exit without installing.

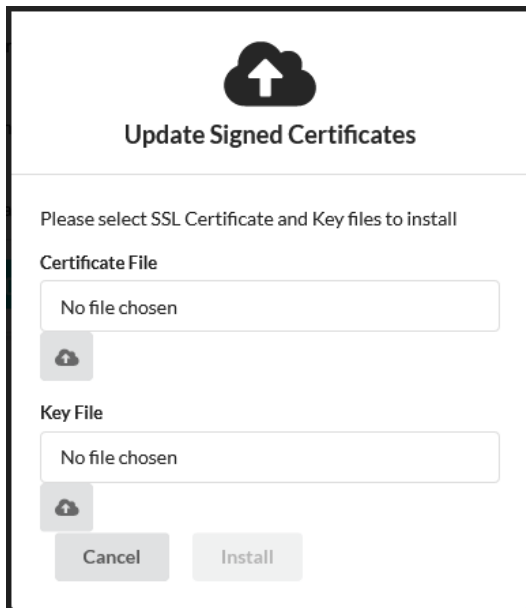


Figure 36. Update Signed SSL Certificate menu.

If the License Server is installed but not updated for a year or two the certificate will expire. Your browser may not allow you to connect with the with the License Server. Installing the Self-Signed certificate will let you get beyond the initial error messages.

4.2.9. Admin User

The User view will allow you to set either the admin or the viewer password. Use the drop-down menu to select for which account you would like to change the password. The following figure shows the User Settings menu.

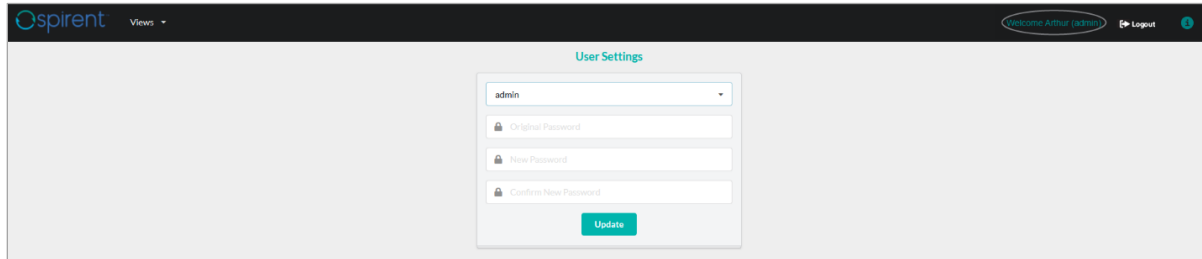


Figure 37. Admin User View

The default password for the **admin** account is **a1b2c3d4**. Password for admin user must have minimum of 6 characters.

To change the password for either the admin or the user accounts you must enter the **Original Password**, the **New Password**, the **Confirm New Password**, and then click the **Update** button to complete the password change.

4.3. Monitor_Status Account

The **monitor_status** user account is only used when server is not responding properly, or a user cannot login. Entering the **monitor_status** allows the user to bypass the basic login to view the overall status of the license server.

4.3.1. Monitor_Status Log Menu

The Log view displays the most recent 1,000 log entries based on the filter criteria. These entries will include Warnings and Errors that could also be received in a notification email. The message entry contains more detail depending on the action type of the entry.

The Log view is the only view for the **monitor_status** account. The following figures show an example of what a user might see in the **monitor_status** log menu.

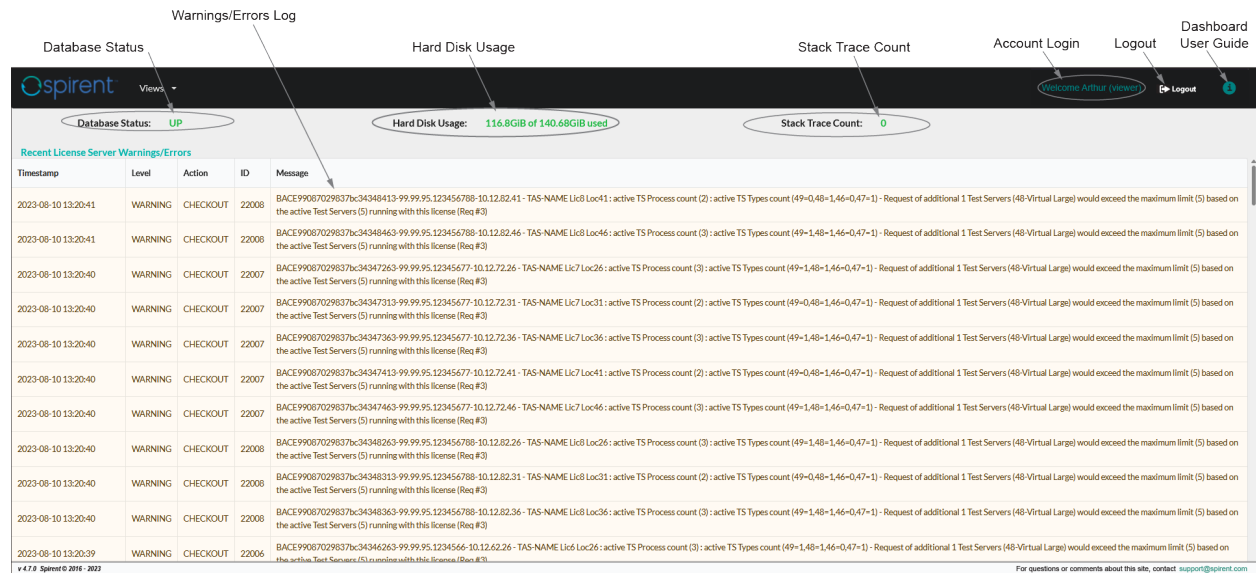


Figure 38. Monitor Status Menu

The monitor_status log view shows the following three conditions of the license server:

- Database Status – Up or Down
- Hard Disk Usage – Gives the status of the hard disk space. The color of the Hard Disk Usage status denotes the available space of the hard disk:
 - If >10% space available, the text color will be in **Green**.
 - If <10% space available, the text color will be in **Orange**.
 - If <5% space available, the text color will be in **Red**.
- Stack Trace Count – Gives the number of the last stack traces.
- Recent License Server Warnings/Errors – Shows a log of the last 250 warnings or errors that have occurred and the pertinent information to help understand why the license server is down or not responding properly.

4.3.2. Stack Trace Window

To access the Stack trace window, select the number to the right of the Stack Trace Count: text. The following figure will display and show the last 10-25 stack traces.

Stack Traces

```

com.mysql.jdbc.exceptions.jdbc4.MySQLIntegrityConstraintViolationException: Column 'activeTestServerCount' cannot be null at
sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method) at
sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstructorAccessorImpl.java:57) at
sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:45) at
java.lang.reflect.Constructor.newInstance(Constructor.java:526) at com.mysql.jdbc.Util.handleNewInstance(Util.java:404) at
com.mysql.jdbc.Util.getInstance(Util.java:387) at com.mysql.jdbc.SQLException.createSQLException(SQLException.java:932) at
com.mysql.jdbc.MySQLIO.checkErrorPacket(MySQLIO.java:3878) at com.mysql.jdbc.MySQLIO.checkErrorPacket(MySQLIO.java:3814) at
com.mysql.jdbc.MySQLIO.sendCommand(MySQLIO.java:2478) at com.mysql.jdbc.MySQLIO.sqlQueryDirect(MySQLIO.java:2625) at
com.mysql.jdbc.ConnectionImpl.execSQL(ConnectionImpl.java:2547) at
com.mysql.jdbc.StatementImpl.executeUpdateInternal(StatementImpl.java:1541) at
com.mysql.jdbc.StatementImpl.executeUpdateLargeUpdate(StatementImpl.java:2605) at
com.mysql.jdbc.StatementImpl.executeUpdate(StatementImpl.java:1469) at
com.spirent.ls.licserver.db.ActiveLicenseTable.updateTestServerInfo(ActiveLicenseTable.java:629) at
com.spirent.ls.licserver.data.LicenseManager.processCheckinSynced(LicenseManager.java:565) at
com.spirent.ls.licserver.data.LicenseManager.processCheckin(LicenseManager.java:137) at
com.spirent.ls.licserver.servlets.TasCheckin.doPost(TasCheckin.java:155) at javax.servlet.http.HttpServlet.service(HttpServlet.java:646) at
javax.servlet.http.HttpServlet.service(HttpServlet.java:727) at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:303) at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:208) at
org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52) at
org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:241) at
org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:208) at
org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.java:220) at
org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.java:122) at
org.apache.catalina.authenticator.AuthenticatorBase.invoke(AuthenticatorBase.java:503) at
org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:170) at
org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:103) at
org.apache.catalina.valves.AccessLogValve.invoke(AccessLogValve.java:950) at
org.apache.catalina.core.StandardEngineValve.invoke(StandardEngineValve.java:116) at
org.apache.catalina.connector.CoyoteAdapter.service(CoyoteAdapter.java:421) at
org.apache.coyote.http11.AbstractHttp11Processor.process(AbstractHttp11Processor.java:1070) at
org.apache.coyote.AbstractProtocol$AbstractConnectionHandler.process(AbstractProtocol.java:611) at
org.apache.tomcat.util.net.JIoEndpoint$SocketProcessor.run(JIoEndpoint.java:316) at
java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1145) at
java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:615) at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61) at java.lang.Thread.run(Thread.java:744)

```

Figure 39. Monitor Status Stack Trace Menu

5. Common Tasks

5.1. License Server Tasks

5.1.1. View the Usage/Status of a License or TAS.

1. From the Dashboard view of either the viewer or admin user.
2. Find the License ID that you want to know the status or usage, if you cannot see the license or need look it up by another parameter such as the Name or Customer then you can either Sort (select column heading to perform Sort function) or Filter ▼ the Dashboard entries.
3. Click on the required License entry. The far-left column shows the status of the license, and the lower part of the menu displays any active TASs for that license.

5.1.2. Prevent a License or TAS from using a license.

To prevent a License or TAS from using a license you must Reject the License or TAS. Perform the following steps to Reject a license or TAS.

1. Login in as the **admin** user. (Default password is **a1b2c3d4**.)

The screenshot shows the login interface for the Spirent Landslide License Server v4.7.0. At the top, the Spirent logo is displayed with the tagline "Promise. Assured." Below the logo, the text "Landslide License Server v4.7.0" is shown. The login form consists of three input fields: "User Name" with the value "admin", "Password" (masked with dots), and "Real Name" with the value "Arthur". A green "Login" button is positioned below the fields. At the bottom of the form, there is a note: "For questions or comments about this site, contact support@spirent.com." Arrows point from the labels "User Name", "Real Name", and "Password" to their respective input fields.

Figure 40. Admin User Login Menu


- From the Dashboard view select/find the required license to Reject.

The screenshot displays the Spirent Admin Dashboard. At the top, there's a navigation bar with 'Views' and a user profile 'Welcome Arthur (admin) Logout'. Below this, a section titled 'Active Landslide Licenses (Total=3)' contains a table with columns: ID, Name, Customer, Sales #, Type, TAS Limit (Max/Active/Remaining), TS Limit (Max/Active/Remaining), TS Processes Limit (Max/Active/Remaining), TS-Days Limit (Max/Used/Remaining), First Expires, TCM, and TSPM. The row for 'UR Team vTAS' (ID: 11932) is highlighted in green. An arrow points to the 'Reject' button in the action bar below this table, with the text 'Reject Button for Selected License, button will toggle to Allow.' Below this, another section titled 'Active TASs for Selected License #11932 (Total=1)' contains a table with columns: Key (Fingerprint-Address-Address), Version, Type, TAS Limit, TS Limit (Max/Active), TS Processes Limit (Max/Active), TS-Days Limit (Max/Used), Generated, Expires, First Checkout, Last Checkout, TCM, and TSPM. The row for 'TS-23.2.1.4-Internal' is highlighted in green. An arrow points to the 'Reject' button in the action bar below this table, with the text 'Action Button for Selected TAS, button will toggle to Allow.'

Figure 41. Admin Dashboard Menu – Rejecting License or TAS

- Select the **Reject** button for either the license or TAS. The button will toggle to Allow.

5.1.3. Find Errors related to a License or TAS.

- From the Log view of either the viewer or admin user.
- Select the Filter  icon on the upper left section of the screen.
- From the Filter pop-up menu, select the Apply Filter checkbox.
- Now select or enter the required filter data, as shown in the following figure.
- Be sure to select the Apply Filter checkbox and click the **OK** button to apply settings.
The Log view will update with the filter results.
- Search the results for the desired License or TAS.
- To remove filter setting:
 - Select the **Filter** icon.
 - De-select the **Apply Filter** checkbox.
 - Click the **OK** button to apply the setting.

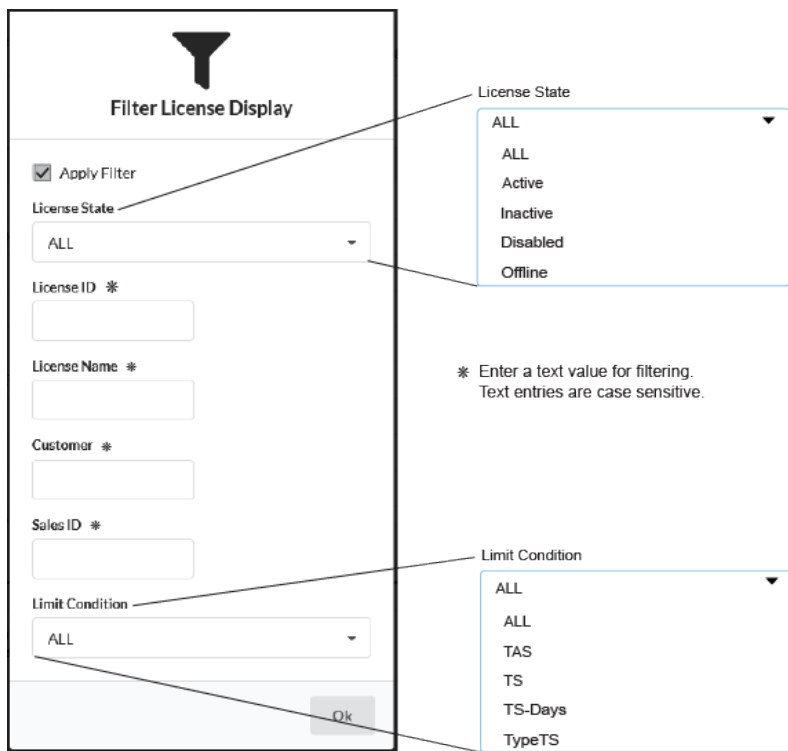


Figure 42. Filter Menu from Dashboard

5.1.4. Enable Email Notifications

To receive a weekly usage email for each license and real time error message notifications, you will need to do the following. Once both set ups are completed successfully – weekly usage and error message notifications will be enabled.

1. Login in as the **admin** user. (Default password is **a1b2c3d4**.)

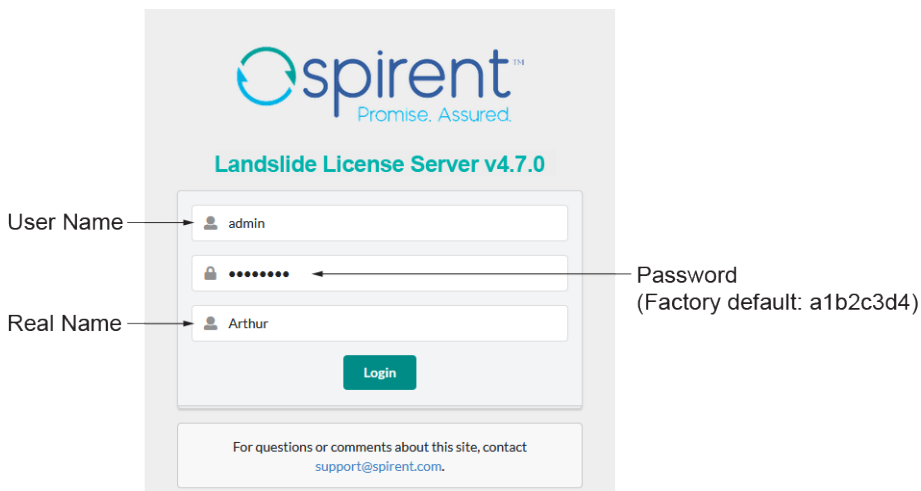


Figure 43. Admin Login Menu

2. Select the **Views** dropdown menu and select **Notification**.

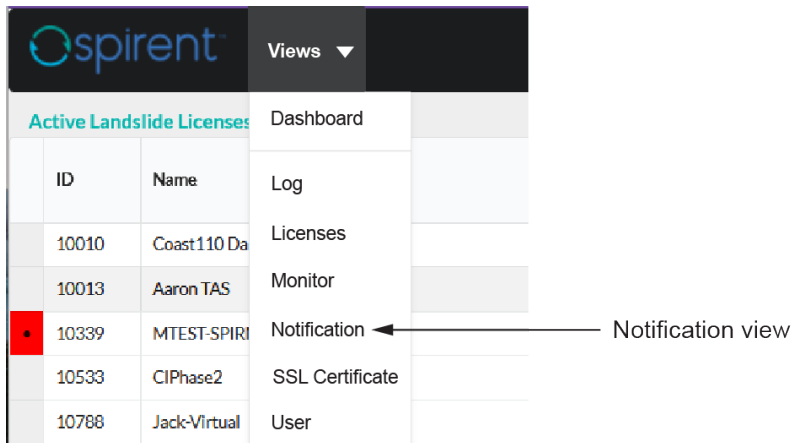


Figure 44. Views Dropdown Menu - Notification




3. Select the **Email Notification** checkbox to enable the notification of warnings/errors and weekly usage report.

The screenshot shows the 'Notification Setting Menu' form. It includes several sections:

- Email Notification:** A checked checkbox, an SMTP Server Address field (smtpexample.sirius.com), a Port field (25), an Initial Delay field (60 s), a Repeat Interval field (5 min), and a checked Use SSL checkbox.
- SendGrid API Key:** A checked Use SendGrid checkbox and a field for the API key.
- User and Password:** Fields for User (adent), Password, and Confirm Password.
- Email Addresses:** Fields for To Email Address (aurthur.dent@sirius.com), From Email Address (donotreply@internal.sirius.com), and Reply To Email Address (user@sirius.com).
- Subject and Label:** Fields for Email Subject Prefix (ADent) and From Sender Label (Test Landslide License Server).
- Buttons:** Send Test Email and Update buttons.

Figure 45. Notification Setting Menu

4. To configure your email options, enter your desired setting values:
 - a. **Email Notification** – if selected uses the settings to send out email notifications and summary.
 - b. **SMTP Server Address** – outgoing email client address.
 - c. **Port** – port used for SMTP email transmissions.
 - d. **Initial Delay** – delay from first checkout for a warning or error. Reporting on license status color orange or red, but not will not report on a license that is “whitelisted” (black dot status). The range is 1-720 seconds; the default is 60 seconds.

- e. **Repeat Interval** – Is the delay period for which the notification routine will wait to check for warnings/errors to report. Enter the time in minutes that you want the system to repeat. The range is 1-720 minutes; default is 5 minutes.
 - f. **Use SSL** – if selected enforces the use of SSL certificate protocol.
 - g. **Use SendGrid** – if selected uses SendGrid to send emails instead of SMTP Server Address.
 - h. **SendGrid API Key** – Customer's SendGrid key required to use SendGrid.
 - i. **User** – Is customer defined and can be any alphanumeric character.
 - j. **Password and Confirm Password** – You must enter a password for the username created and enter the password again in the confirm password.
 - k. **To Email Address** – Enter as many email addresses as required.
 - l. **From Email Address** – Enter the email address to be shown as the sender.
 - m. **Reply to Email Address** – Enter the email address to be shown as the reply address.
 - n. **Email Subject Prefix** – optional label to precede the subject for outgoing emails.
5. Once the Notification Settings screen has been completed, use the  button to set the entries.
 6. Use the  button to test the settings.
If the email fails, look for an error message in the Log view by following the steps:
 - a. Click on the **Views** dropdown menu at the top of the License Server screen.
 - a. Select the Log view.
 - b. Select the Filter  icon.
 - c. Check the **Apply Filter** check box.
 - d. Select the **Level** dropdown menu and select **Error**.
 - e. Click the **OK** button.
 - f. Search the filtered log for an email type error.

5.1.5. Weekly Usage Email Example

The following figure shows an example of a typical weekly email notification.

Since this email gives the sum total of minutes used for a specific license you will need to do a difference of the last week sum and this week’s sum to get the test case and test server minutes for the reported week.

Landslide License Server Usage Report (10.162.11.100)

ATS Landslide License Server <donotreply@spirent.com>
 To: LandslideLicenseSrvNotification

Attachments: **ls-licsrv-usage.csv** (2 KB) - Spreadsheet of table below (CSV); **WeeklyUsageHistory.zip** (6 KB) - Weekly Usage file: License Histories, CSV, & separate license history files. (Only included if there are any licenses with history usage enabled.)

License	License Name	Customer	TC-Minutes	TS-Minutes
10057	VogonVirtualTAS	Landslide Team	14975	12365
10389	Trillain-Virtual-C100-TAS	Trillain Mobility	1268171	1198368
10533	ZBPhase2-Is-Illicense-svr	Landslide Team	167407734	121860725
10946	Perfect-R17160042-svr-MultiTAS	Sirius Corporation	61602745	20901647
11001	Edge088	Landslide Team	102038	107292

Figure 46. License Server Usage Report Email

5.1.6. Error Message Email Example

Landslide License Server Notification

Landslide License Server Alarm Sender
 To: Dent, Art

Errors and/or Warnings occurred on 10.40.203.10

2022-11-11 08:01:02 WARNING 12856 SERVER
 10703M6MTc=fddlmMjQ3fddlmMjQ30100010016a1lIZA==--10.109.187.237 CloudSure-dev-team-2 Auto-Checkedin

Figure 47. Email Error Notification

6. Troubleshooting

6.1. Logging into License Server Problems

6.1.1. Issues Logging into Dashboard From admin/viewer Users

You will need to login to the License Server with **monitor_status** user account. This user is only used when the server is not responding properly, or a user cannot login. Entering the **monitor_status** allows the user to bypass the basic login to view the overall status of the license server.

1. Login to **monitor_status** user account.

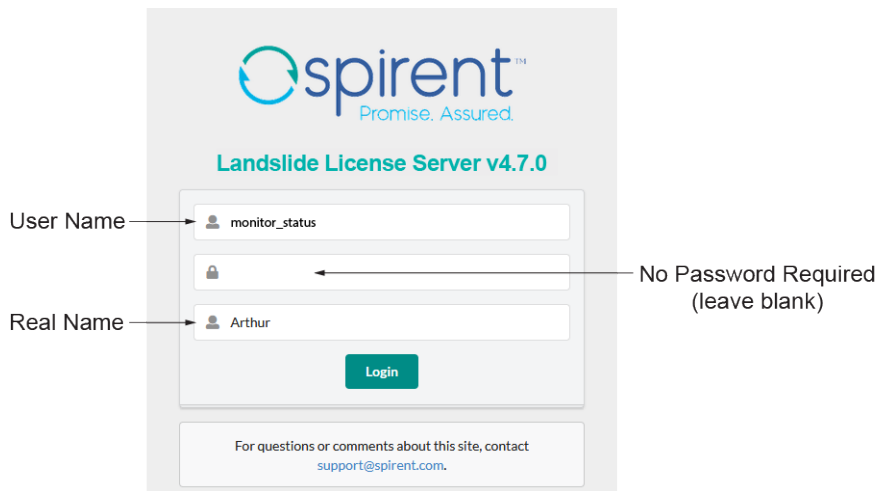


Figure 48. Monitor_Status Login menu

2. If logging fails to connect use the connectivity testing section to troubleshoot, *3.3 Testing Connectivity to License Server*.
3. If logging is successful verify database is **Up** and if any **Stack Traces** have occurred. Use the following figure to navigate the **monitor_status** screen.
4. Click on the green number to the right of Stack Trace Count text to open the details of the Stack Trace pop-up.

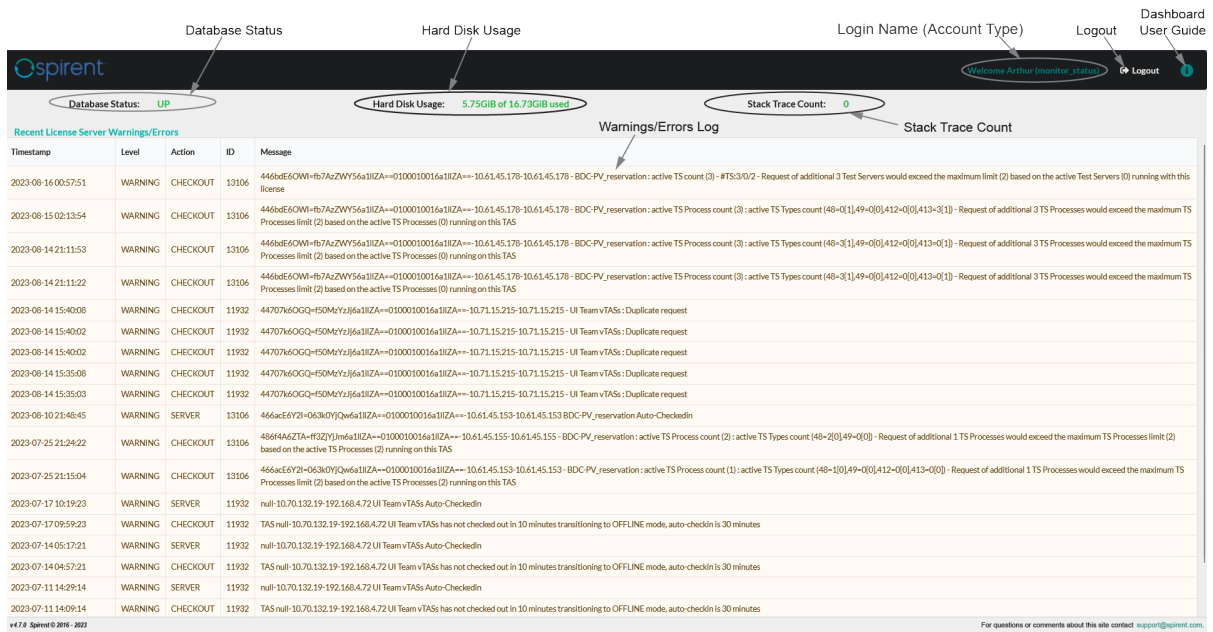


Figure 49. Monitor_Status Dashboard menu



Figure 50. Stack Trace Window

- Review the Stack Traces entries for possible problems.

7. Log Messages for License Server

The following table contains a listing of the possible messages that could be seen on the License Server Log view.

SEVERITY LEVEL	ACTION	MESSAGE	DESCRIPTION
INFO	CHECKOUT	[TAS KEY] – [License Name] [Extra info - TS Days count / active TS Process count/ active TS count / (TSTYPE#=REQ#[OFFLINEREQ#]]	The TAS has checked out its license. TS information only provided/ applicable for TS-Days or Max-Running-TS or TS-Type limitation type licenses.
WARNING	CHECKOUT	[TAS KEY] – [License Name] [Extra info - TS Days count / active TS Process count/ active TS count / (TSTYPE#=REQ#[OFFLINEREQ#]] (License Server swap)	The TAS has checked out its license on a different license server (Redundancy only). TS information only provided/applicable for TS-Days or Max-Running-TS or TS-Type limitation type licenses.
INFO	CHECKOUT	Bad Request From [remote address] – [error - Invalid license / parsing]	License server received bad Checkout request, first Bad Request within a 9-minute period will be INFO Severity.
WARNING	CHECKOUT	Bad Request From [remote address] – [error - Invalid license / parsing]	License server received bad Checkout request, multiple Bad Requests within 9 minutes will be WARNING Severity.
WARNING	CHECKOUT	TAS [TAS KEY] has not checked out in 15 minutes; auto-checkin is [timeout] minutes	A checked-out TAS did not send a Checkout request in 15 minutes. This is warning of potential comm issues or that the TAS didn't gracefully shutdown and check-in the license.

SEVERITY LEVEL	ACTION	MESSAGE	DESCRIPTION
WARNING	CHECKOUT	TAS [TAS KEY] [License Name] has not checked out in 10 minutes transitioning to OFFLINE mode, auto-checkin is [timeout] minutes	A checked-out TAS with TS Type limit and Offline Reservations configured has not sent a Checkout request in 10 minutes. This is warning that TAS is in OFFLINE state and warning of potential comm issues or that TAS didn't gracefully shutdown and check-in the license.
WARNING	CHECKOUT	TAS [TAS KEY] [License Name] OFFLINE transition results in active TS Type counts exceeding 1 or more limits	A checked-out TAS with TS Type limit and Offline Reservations configured has not sent a Checkout request in 10 minutes. This is warning that TAS is in OFFLINE state that exceeds one or more TS Type limits and warning of potential comm issues or that TAS didn't gracefully shutdown and check-in the license.
WARNING	CHECKOUT	[TAS KEY] – [License Name] [Extra info - TS Days count / active TS Process count/ active TS count / (TSTYPE#=REQ#[OFFLINEREQ#] / REASON FOR WARNING]	The TAS has checked out its license, but request exceeded a limit. TS information only provided/ applicable for TS-Days or Max-Running-TS or TS-Type limitation type licenses.
WARNING	CHECKOUT	[TAS KEY] – [License Name] - TAS License is expired by more than 1 day	License is expired by more than 1 day and less than 5 days and checkout still allowed during this grace period
ERROR	CHECKOUT	[TAS KEY] – [License Name] - TAS License is expired by more than 5 days	License is expired by more than 5 days and checkout is blocked until new license is installed on TAS
INFO	CHECKIN	[TAS KEY] – [License Name]	The TAS has successfully checked in its license.
WARNING	CHECKIN	Bad Request From [remote address] – [error - Invalid license / parsing]	License server received bad Checkin request

SEVERITY LEVEL	ACTION	MESSAGE	DESCRIPTION
WARNING	SERVER	[TAS KEY] [License Name] Auto-Checkedin	A checked-out TAS was auto-checked in because no Checkout request was received in the configured auto-checkin-timeout period.
ERROR	SERVER	Unexpected Database Error on Checkin Heartbeat	Database issue on auto-checkins.
ERROR	SERVER	Unexpected Database Error on Checkin of [TAS KEY]	Database issue on Checkin of a specific TAS.
ERROR	SERVER	Unexpected Database Error on Checkout of [TAS KEY]	Database issue on Checkout of a specific TAS.
ERROR	SERVER	Unexpected Database Error on License reset of #[License Number]	Database issue on Reset of a specific license.
ERROR	SERVER	Unexpected Database Error on License delete of #[License Number]	Database issue on Delete of a specific license.
ERROR	SERVER	Unexpected Database Error on License allow/reject of #[License Number]	Database issue on Allow/Reject of a specific license.
ERROR	SERVER	Unexpected Database Error on TAS allow/reject of [TAS KEY]	Database issue on Allow/Reject of a specific TAS.
ERROR	SERVER	Unexpected Database Error on License	Miscellaneous Database issue related to a specific license.
INFO	LIC_DELETE	Delete license [License Name] issued by [Real Name]	User Deleted a license (Delete button in super-user mode)
INFO	LIC_REJECT	Rejecting license [License Name] issued by [Real Name]	User Rejected a license (Reject button)

SEVERITY LEVEL	ACTION	MESSAGE	DESCRIPTION
INFO	LIC_ALLOW	Allowing license [License Name] issued by [Real Name]	User Allowed (Un-Rejected) a license (Allow button)
INFO	LIC_RESET	Resetting license [License Name] issued by [Real Name]	User Reset a license (Reset button)
INFO	TAS_ALLOW	Allowing [TAS KEY] issued by [Real Name]	User Allowed (Un-Rejected) a TAS (Allow button)
INFO	TAS_REJECT	Rejecting [TAS KEY] issued by [Real Name]	User Rejected a TAS (Reject button)
INFO	SERVER	Removing license [License Name] from white list issued by [Real Name]	User White Listing a License (White List button)
INFO	SERVER	Adding license [License Name] from white list issued by [Real Name]	User Black Listing a License (Black List button)
INFO	SERVER	Enabling usage history license [License Name] issued by [Real Name]	User enabling the writing to hourly and daily usage log files
INFO	SERVER	Disabling usage history license [License Name] issued by [Real Name]	User disabling the writing to hourly and daily usage log files
INFO	SERVER	Update usage history limits license [License Name] issued by [Real Name]	User updated the max entry limits for the hourly and daily usage log files
INFO	SERVER	Enabling usage history license [License Name] issued by [Real Name]	User enabling the writing to hourly and daily usage log files
INFO	SERVER	License Server DB successfully upgraded	License Server upgraded.
ERROR	SERVER	License Server DB failed to upgrade	License Server failed to upgrade.

SEVERITY LEVEL	ACTION	MESSAGE	DESCRIPTION
ERROR	SERVER	Invalid login attempt ([username]) from [remote address] UA: [user agent]	User login failed authentication.
INFO	SERVER	[username] login from [remote address] UA [user agent]	User logged in.
INFO	SERVER	Valid unlock action from [remote address]	User successfully enabled "Unlocked" temporary super-user mode (Unlock button).
INFO	SERVER	unlock action timeout	User action to unlock a license timed out (Unlock button).
ERROR	SERVER	Invalid unlock action from [remote address]	User failed to enable "Unlocked" super-user mode (Unlock button).
** The LIC_UPLOAD and LIC_DOWN actions only apply for customers using the Auto-Download feature.			
INFO	LIC_UPLOAD	Request From [remote address] - added [filename]	User successfully uploads new auto-download license file.
INFO	LIC_UPLOAD	Bad Request From [remote address] - [uploaded license file not valid unable to save uploaded file database update failed]	User tries to upload invalid license file or server fails to save file, first bad upload/download request within a 9-minute period will be INFO Severity.
WARNING	LIC_UPLOAD	Bad Request From [remote address] - [uploaded license file not valid unable to save uploaded file database update failed]	User tries to upload invalid license file or server fails to save file, multiple bad upload/download within a 9-minute period will be WARNING Severity.
INFO	LIC_UPLOAD	License File deleted	User deletes auto-download license file.
WARNING	LIC_UPLOAD	License File delete attempt failed	Database issue on delete of a specific auto-download license.

SEVERITY LEVEL	ACTION	MESSAGE	DESCRIPTION
INFO	LIC_DOWNLOAD	Request #1 From [remote address]	TAS 1st Step of License Download request.
INFO	LIC_DOWNLOAD	Bad Request #1 From [remote address] - [no match bad encryption]	TAS 1st Step of License Download request fails, first bad upload/download request within a 9-minute period will be INFO Severity.
WARNING	LIC_DOWNLOAD	Bad Request #1 From [remote address] - [no match bad encryption]	TAS 1st Step of License Download request fails, multiple bad upload/download requests within a 9-minute period will be WARNING Severity.
INFO	LIC_DOWNLOAD	Request #2 From [remote address] - downloaded [filename]	TAS 2nd Step of License Download request successfully downloaded file.
INFO	LIC_DOWNLOAD	Bad Request #2 From [remote address] - no match	TAS 2nd Step of License Download request fails to download file, first bad upload/download request within a 9-minute period will be INFO Severity.
WARNING	LIC_DOWNLOAD	Bad Request #2 From [remote address] - no match	TAS 2nd Step of License Download request fails to download file, multiple bad upload/download requests within a 9-minute period will be INFO Severity.

8. Upgrade Process

The upgrade process for the Landslide License Server requires you to contact Spirent Customer Support for assistance. Please see “*How to Contact Us*” on page 6.