



# Caplin Platform 4.5

---

## Guide to User Licensing

November 2008

CONFIDENTIAL

# Contents

<b>1</b>	<b>Preface.....</b>	<b>1</b>
1.1	What this document contains.....	1
	About Caplin document formats .....	1
1.2	Who should read this document.....	1
1.3	Related documents.....	1
1.4	Typographical conventions.....	3
1.5	Feedback.....	3
1.6	Acknowledgments.....	3
<b>2</b>	<b>The licensing scheme explained.....</b>	<b>4</b>
2.1	More about asset class licensing.....	6
2.2	How Liberator licenses are monitored.....	7
2.3	Benefits.....	9
2.4	Obtaining licenses through Caplin's Client Portal.....	9
2.5	Keeping within license terms.....	10
	What you need to do .....	10
	What Caplin does .....	11
<b>3</b>	<b>Managing licenses.....</b>	<b>12</b>
3.1	Installing licenses for the first time.....	12
3.2	Getting a license file from the Client Portal.....	12
3.3	To install a Liberator license.....	12
3.4	Monitoring license usage.....	13
	The warning threshold .....	14
3.5	Monitoring license usage via the Liberator status page.....	14
	Liberator – Viewing license status .....	15
	Liberator – Reaching the warning threshold .....	18
	Liberator – Entering the grace period .....	20
	Liberator – When the grace period expires .....	22
3.6	Monitoring license usage via the EMC.....	24
	EMC – Viewing license status .....	24
	EMC – Reaching the warning threshold .....	26
	EMC – Entering the grace period .....	28
	EMC – When the grace period expires .....	30
	EMC – Liberator not started within new license validity period .....	32
3.7	License usage reporting in log files.....	33
	License status messages .....	33

---

Grace period entered messages .....	34
Grace period expired messages .....	35
Liberator not started within the new license validity period .....	35
3.8 Upgrading a Liberator license.....	36
3.9 Restoring a Liberator license after a failure.....	37
3.10 Moving a Liberator to a different machine.....	37
3.11 Managing the licenses in a Liberator cluster.....	37
Problems with a clustered Liberator's license usage database .....	37
Problems with a clustered Liberator's license file .....	38
When all Liberators in the cluster fail .....	38
<b>4 Liberator log messages about licensing.....</b>	<b>39</b>
<b>5 Liberator licensing configuration.....</b>	<b>43</b>
<b>6 Glossary of terms and acronyms.....</b>	<b>45</b>

# 1 Preface

## 1.1 What this document contains

This document describes the user-based licensing scheme used in the Caplin Platform version 4.5.

The first part contains an overview of the licensing scheme, explaining the concepts, how licenses are monitored through Caplin Liberator, how they are distributed, and what you need to do to keep within the terms of your user-based licenses. (See [The licensing scheme explained](#)<sup>[4]</sup>.)

The second part describes in detail how to manage your licenses. (See [Managing licenses](#)<sup>[12]</sup>.)

At the end of the document there is some reference material and a glossary of terms and acronyms relating to licensing for the Caplin Platform. See [Liberator log messages about licensing](#)<sup>[39]</sup>, [Liberator licensing configuration](#)<sup>[43]</sup>, and [Glossary of terms and acronyms](#)<sup>[45]</sup>.

## About Caplin document formats

This document is supplied in three formats:

- ◆ Portable document format (.PDF file), which you can read on-line using a suitable PDF reader such as Adobe Reader®. This version of the document is formatted as a printable manual; you can print it from the PDF reader.
- ◆ Web pages (.HTML files), which you can read on-line using a web browser. To read the web version of the document navigate to the *HTMLDoc\_m\_n* folder and open the file *index.html*.
- ◆ Microsoft HTML Help (.CHM file), which is an HTML format contained in a single file. To read a .CHM file just open it – no web browser is needed.

### Restrictions on viewing .CHM files

You can only read .CHM files from Microsoft Windows®.

Microsoft Windows security restrictions may prevent you from viewing the content of .CHM files that are located on network drives. To fix this either copy the file to a local hard drive on your PC (for example the Desktop), or ask your System Administrator to grant access to the file across the network. For more information see the Microsoft knowledge base article at <http://support.microsoft.com/kb/896054/>.

## 1.2 Who should read this document

This document is intended for:

- ◆ Business managers who need to understand how the Caplin Platform is licensed.
- ◆ System Administrators, who need to install new and upgraded licenses and monitor license usage.

## 1.3 Related documents

- ◆ **Caplin Liberator Administration Guide**  
Describes how to install and configure the Liberator server and lists configuration items, log messages and debug messages.
- ◆ **Caplin Trader: Integrating with a Permissioning System**

Describes how to integrate Caplin Trader with your company's Permissioning System by writing a DataSource application that uses the Permissioning DataSource API. The document introduces permissioning concepts and terms, and shows the permissioning components of the Caplin Trader architecture.

## 1.4 Typographical conventions

The following typographical conventions are used to identify particular elements within the text.

<b>Type</b>	<b>Uses</b>
<b>a-config-item</b>	Configuration item name
<i>/AFolder/Afile.txt</i>	File names, folders and directories
The <code>value=10</code> attribute is...	Code fragment in line with normal text
Some text in a dialog box	Dialog box output
<code>Something typed in</code>	User input – things you type at the computer keyboard
<b>XYZ Product Overview</b>	Document name
◆	Information bullet point
■	Action bullet point – an action you should perform

**Note:** Important Notes are enclosed within a box like this.  
Please pay particular attention to these points to ensure proper configuration and operation of the solution.

**Tip:** Useful information is enclosed within a box like this.  
Use these points to find out where to get more help on a topic.

## 1.5 Feedback

Customer feedback can only improve the quality of our product documentation, and we would welcome any comments, criticisms or suggestions you may have regarding this document.

Please email your thoughts to [documentation@caplin.com](mailto:documentation@caplin.com).

## 1.6 Acknowledgments

*JMX* is a trademark of Sun Microsystems, Inc. in the U.S. or other countries.

## 2 The licensing scheme explained

Usage of the Caplin Platform ranges from distributing market data to a handful of users, to online trading within multiple trading groups by thousands of users. To license fairly across this range of users, the Platform incorporates a powerful licensing scheme based on the number of end users and the types of activity those users can perform.

The licensing scheme has operational flexibility and provides a number of different reporting mechanisms that help you to administer your licenses.

### License agreements and license files

Your implementation of the Caplin Platform is subject to a **license agreement**, which is a set of license terms and conditions that have been contractually agreed with Caplin Systems.

All Caplin Platform server-side components, such as Liberator, Transformer, and off-the-shelf DataSource Adapters, have an associated **license file**, which they read when they start up. The license file determines what features of the component are available at run time, according to the terms of the license agreement.

The Liberator server in particular plays a central role in the licensing scheme. Its license file, besides controlling various Liberator features, also implements a *user-based licensing scheme* that determines how many end users are allowed to access the Platform. The rest of this document describes this scheme and explains how it is administered.

**Tip:** In the rest of this document the term **license** means “license file” unless the context indicates otherwise.

### User-based licensing

The user-based licensing scheme is based on the concept of a **unique end user** – an end user who is uniquely identified to Caplin Liberator by their login name. The license fee is based on the maximum number of unique end users who are expected to use your implementation of the Caplin Platform during a calendar month (the license monitoring period – see [License usage monitoring at run time](#)<sup>[7b]</sup>).

### License categories

A Liberator license will contain one or more of the following categories. Each of these categories specifies limits on the number of unique end users who can access your Platform installation. Each such limit is called the **license end user limit**.

#### ◆ Unique Users Licensing

The license specifies the maximum number of unique end users who are permitted to access the Platform within each monthly period.

#### ◆ Application Level Licensing

The license specifies the maximum number of unique end users who can access the Platform *using a particular client application*. You may be licensed to use more than one type of client application and the license may have different user limits for each such application.

◆ **Asset Class (Trading Group) Licensing**

If your implementation of the Caplin Platform supports financial trading in one or several different asset classes, the license may be split into trading groups. A trading group identifies an asset class that may be traded and a client application that enables end users to trade in that class. The license specifies the maximum number of unique end users who can trade within each trading group.

## License validity times

Licenses are subject to several different time periods that govern their validity.

◆ **License expiry date**

The date at which the license expires. This is defined in the license. The expiry date applies to the license as a whole, whatever license categories are defined in the license.

◆ **New license validity period**

The time in days for which a new (or regenerated) license is valid for starting Liberator. This is defined in the Liberator license. Within this time the license must be installed and the Liberator must be started at least once. If the license has expired the Liberator will reject all attempts to connect to it; see [How Liberator licenses are monitored](#)<sup>[7]</sup>.

◆ **Grace period**

Applies to Liberator licenses. See [When license usage limits are exceeded – the grace period and beyond](#)<sup>[8]</sup>.

◆ **License monitoring period**

Liberator monitors license usage at run-time, over a succession of intervals – license monitoring periods; see [License usage monitoring at run time](#)<sup>[7]</sup>.



## 2.1 More about asset class licensing

If your Platform implementation supports financial trading (for example, you have installed and customized Caplin Trader), the Liberator license may be based on the asset classes that your end users will trade in. For the purposes of the license, an asset class is a category of financial product referenced in a trading message sent by a trading user. For example, some end users may trade in the FX (Foreign Exchange) asset class, others may trade in the FI (Fixed Income instruments) asset class.

The license will actually allow end users to trade in one or more **trading groups**. A trading group defines an asset class and an **application identifier**. The application identifier defines a particular client application through which end users can conduct trades within the asset class; for example, Caplin Trader Client.

You pay a license fee for each trading group under which end users can trade, and the license specifies a corresponding **license end user limit** for each trading group. The license end user limit is the maximum number of end users who can trade within the asset class by means of the specified client application over a calendar month (the **license monitoring period**).

### Example of trading groups specified in a Liberator license:

	Application-id	Asset class	License end user limit
<b>Trading group:</b>	Caplin Trader Client	FX Trading	200
<b>Trading group:</b>	Caplin Trader Client	FI Trading	100
<b>Trading group:</b>	Custom App 1	FX trading	300

Generally, if your Platform implementation is licensed by asset class, it will also be subject to application level licensing or unique users licensing. This allows non-trading users to access the platform for non-trading purposes, such as viewing indicative prices and other market data. For example, the license may allow up to 500 trading users, but you may also want up to 1,000 additional non-trading users to have access to the Platform. In this case the license would specify an application level limit of 1,500 unique end users (= 1,000 + 500).

The trading groups and license end user limits defined in the license do not determine whether a particular end user can actually trade in a particular asset class, except in certain situations where the number of end users logged in exceeds the license end user limit (see [When license usage limits are exceeded – the grace period and beyond](#)). Runtime controls on who can trade in what asset classes are set through a permissioning system (see for example **Caplin Trader: Integrating with a Permissioning System**).

## 2.2 How Liberator licenses are monitored

The Caplin Platform's Liberator server automatically monitors compliance to its license terms while it is running.

### Starting up

The Liberator license is supplied in a file that you install along with Liberator. When Liberator starts up, it reads the license details from the file, including the details of the license categories. For example, if the application level license category is present in the license, Liberator reads the application identifiers and the license end user limit for each id. If asset class licensing is defined, Liberator reads the information about each licensed trading group – its asset class and application identifier, and the corresponding license end user limit.

The Liberator uses the license information to determine whether it is allowed to run, which licensed Liberator features are available, and which license categories need to be monitored at run time.

The license also has a start date and a **new license validity period**. When Liberator starts up for the first time with a new license (or a regenerated one – see [Restoring a Liberator license after a failure](#)<sup>[37]</sup>), it checks the current date against these license parameters. If the current date is later than the license start date + the validity period, the Liberator will reject all attempts to connect to it.

### License usage monitoring at run time

Liberator monitors license usage at run-time, over a succession of intervals called **license monitoring periods**. The license monitoring period is one calendar month.

When the Liberator is running, it records information about new end users in a **license usage database**. When a new end user logs in to Liberator to perform a particular licensed activity for the first time during the current license monitoring period, Liberator records their login id against the relevant license category. It also increments a user count (the **license end user count**) for this license category.

For example, if application level licensing is defined, the first time an end user logs on to Liberator they are recorded against the application identifier of the client application from which they logged on, and Liberator increments the license end user count for that application. If asset class licensing is defined, the first time the end user attempts to *trade* they are recorded against the relevant trading group (application identifier + asset class) and Liberator increments the license end user count for that trading group.

The database contains a record of all the *unique* end users during the period, since each end user is only recorded and counted *once* against a license category during the license monitoring period. Multiple simultaneous logins by the same user are counted as one login.

Over the license monitoring period, Liberator constantly checks the license end user counts against the corresponding license end user limits defined in the license, to detect whether end user limits are being (or are likely to be) exceeded. As more unique end users use the system, the license end user counts increase. If by the end of the license monitoring period none of the license end user counts exceed the corresponding end user limits, Liberator resets all the counts and the recording and monitoring process starts again for the next monitoring period.

### When license usage limits are approached – the warning threshold

Liberator can be configured to issue a warning when a license end user count is approaching the limit defined in the license. The warning is posted on the Liberator status page, in the Liberator event log, and through the JMX™ monitoring facility for viewing through a monitoring and management application, such as the Caplin Enterprise Management Console.

You can configure the threshold at which the warning is triggered; for example when the number of unique end users has reached 80% of the license end user limit. The default warning level is 90%. See the **xxxx-usage-warn-level** configuration items in [Liberator licensing configuration](#) <sup>[43]</sup>.

**Note:** You should configure the warning thresholds so that you have plenty of time to upgrade your license to higher license end user limits, before the number of unique end users pushes the license into the grace period.

## When license usage limits are exceeded – the grace period and beyond

If at any time during the license monitoring period one of the license end user counts exceeds the limit defined in the license, Liberator posts an error alert on its status page, in its event log, and through the JMX monitoring facility for viewing through a monitoring and management application such as the Caplin Enterprise Management Console.

The license enters the **grace period** of *seven days*.

During the grace period any new unique users are still allowed to use the system, including the end user who triggered the onset of the grace period. This allows you to purchase and install an upgraded license that will accommodate more end users in the affected license category, while new and existing end users can continue to access the system.

If by the end of the grace period you have not installed an upgraded license, Liberator strictly enforces the license end user limit. This means that some end users who started using the system during the grace period may have their access restricted. The following table explains what restrictions are enforced depending on which license category was violated. Note that it is possible for the license end user count to be exceeded for more than one license category.

License category violated	Impact when grace period expires
<b>Unique users licensing:</b> license end user count was exceeded.	Any additional end users* who were allowed to log on to Liberator during the grace period are no longer allowed to log on.
<b>Application level licensing:</b> license end user count was exceeded.	Any additional end users* who were allowed to log on to Liberator under the relevant application identifier during the grace period are no longer allowed to log on.
<b>Asset Class (Trading Group) licensing:</b> License end user count for an {application identifier + asset class} was exceeded.	Any additional end* users who were allowed to trade in that group during the grace period are no longer allowed to trade.  These additional users can still log on to Liberator to view data, provided: <ul style="list-style-type: none"> <li>– the user count for application level licensing has not also been exceeded for this application identifier</li> <li style="text-align: center;"><i>and</i></li> <li>– the user count for unique users licensing has not also been exceeded.</li> </ul>

\* “additional end users” means the end user who triggered the onset of the grace period plus any new end users who logged on/traded during the grace period.

## 2.3 Benefits

### Business benefits

The licensing scheme is designed to fairly reflect the way you use the Caplin Platform to support your business. For example, if you use the Platform to just allow end users to view market data, unique users licensing would apply. Your license costs would therefore reflect the number of end users who are expected to view data.

If your Platform installation is used to trade financial instruments it will be licensed by asset class. In this case the license fees are intended to reflect both the worth to your business of the asset classes being traded and the number of end users trading in each asset class. For example, if you have a relatively small number of end users trading in an asset class that gives you a small profit margin per end user, the license fee for that asset class would fairly reflect that situation, compared to the fee for trading a high profit asset class by a much larger user base.

### Operational benefits

The licensing scheme has a number of run-time features that make it easier for you to administer the license.

- ◆ License usage (unique end user numbers) can easily be monitored through the Liberator status page, a JMX enabled monitoring and management application, such as the Caplin Enterprise Management Console, and Liberator's event log file.
- ◆ System administrators are warned through the monitoring facilities when license end user limits are being approached, and again when they are reached.
- ◆ The "grace period" minimizes disruption to your business and to your end users when user numbers exceed the licensed limits. New and existing end users can continue to access the system while you obtain and install an upgraded license.
- ◆ New and upgraded licenses are easily downloaded through Caplin's Client Portal web site.
- ◆ Confidentiality: License usage is monitored entirely by the Caplin Platform, so you do not have to make information about individual end users available to Caplin Systems or other third parties.

## 2.4 Obtaining licenses through Caplin's Client Portal

The Caplin Client Portal web site at <https://support.caplin.com> provides facilities for you to obtain licenses for your Caplin Platform Installation. The Caplin Support Team post information on this site about your latest license files; only you and Caplin Support have access to this data.

From the Client Portal web site you can:

- ◆ View the details and status of your licenses.
- ◆ Generate and download a license file for a server-side Platform component, such as Liberator or Transformer.
- ◆ Request an upgraded Liberator license to cater for additional end users, and then download the new license file.
- ◆ Regenerate and download a license file to replace a corrupt or lost license file in your Caplin Platform installation.

For detailed information on how to do these things, see [Managing licenses](#) <sup>12</sup>.

**Tip:** You will be asked to log in to the site; for this you will need a user name and password, obtainable from Caplin Support.

**Tip:** Besides allowing you to manage your licenses, the Client Portal also provides many other useful facilities, including access to documentation about Caplin's products and an incident tracking tool.

## 2.5 Keeping within license terms

During the life of your Caplin Platform installation you will need to ensure that you keep within the terms of your licenses. This primarily means making sure that the numbers of users accessing the system do not exceed the limits defined in the licenses. The Platform and the Client Portal provide facilities and information to help you do this.

### What you need to do

To make sure that you keep within the terms of your licenses:

- ◆ Monitor license end user counts to assess whether your license end user limits are likely to be exceeded.
- ◆ Upgrade your licenses in good time to accommodate increased numbers of users before the existing license end user limits are exceeded.
- ◆ If Liberator reports that a license warning threshold has been passed, or that a license end user limit has actually been exceeded, upgrade your license without delay. This will ensure that you can continue to provide the required level of service to end users.

See [When license usage limits are approached – the warning threshold](#)<sup>7</sup> and [When license usage limits are exceeded – the grace period and beyond](#)<sup>8</sup>.

**Note:** If Liberator reports that the grace period has been entered and you do not purchase and install an upgraded license before the grace period expires, new end users who started using the system during the grace period may have their access restricted – some end users may no longer be able to trade, or may not even be allowed to view market data.

You should monitor at frequent intervals (at least once a day) the license end user counts in your running system and the rate at which they grow, so that you have early warning of the possibility that license end user limits may be exceeded. This monitoring can form part of your normal system monitoring activity; for example, checking for fault conditions and monitoring message traffic.

## What Caplin does

Your Caplin Account Representative and the Caplin Support Team can help you to keep within your license terms:

- ◆ Your Account Representative will work with you to ensure that your licenses meet your current needs and that they will accommodate anticipated increases in end user numbers over a suitable time scale.

When contract terms and a payment schedule have been agreed, Caplin Support will prepare the required licenses according to the license agreement and will make them available for you to download from the Client Portal.

- ◆ If you do need to upgrade your licenses, for example to allow for more end users than the current license end user limits permit, or to support trading in new asset classes, contact your Caplin Account Representative or Caplin Support.

Once a new contract has been negotiated, Caplin Support will make the upgraded licenses available on the Client Portal.

- ◆ The grace period built into Liberator's license management software ensures that if your Caplin Platform installation should inadvertently exceed a license end user limit, you can continue to run the system and support new end users while you purchase an upgraded license or licenses.

## 3 Managing licenses

The following sections explain in detail how to manage your licenses.

### 3.1 Installing licenses for the first time

When you purchase the Caplin Platform you enter into a license agreement with Caplin Systems. Before you can use the Caplin Platform software, a license must be installed for each server-side component in the Platform installation, such as Liberator, Transformer, and any off-the-shelf DataSource adapters. Caplin Support will then either send you the licence files or post the license details on the Client Portal. The following sections explain how to obtain and install these licenses.

### 3.2 Getting a license file from the Client Portal

Download the license as follows:

1. Log on to the Client Portal at <https://support.caplin.com>.

**Tip:** You will need a user name and password. These can be obtained from Caplin Support.

2. Navigate to the Licensing section of the portal.
3. Select the project for which you need the license.  
This will display a list of servers for which you have licenses.
4. Click on a server to display its details (Hostname, IP address, and so on)
5. Click on the hostname to see a summary of all the licenses for this server.
6. To view the details of a license, click on **View** under **Actions**.
7. From within the license details page you can download the license: click on **Generate License** and follow the instructions.
8. You can also download the license direct from the summary view: Click on **Generate** under **Actions** and follow the instructions.

### 3.3 To install a Liberator license

**Tip:** The following instructions relate to installing a Liberator license. You install licenses for other server-side Platform components, such as Transformer and off-the-shelf DataSource adapters, in a similar way; for more information refer to the Administration Guide for the component.

1. Ensure the Liberator is not running.
2. If there is an old license file present, move or delete it (from the *etc* directory of the Liberator, or the directory defined in the Liberator configuration item **license-file**).
3. Put the new license file in place of the old one.

4. Rename the license to *license-rtttd.conf* (or to the name defined in the configuration item called **license-file**, if this is not *license-rtttd.conf*).
5. Start the Liberator.
6. For instructions on how to start a Liberator, see the **Caplin Liberator Administration Guide**.
7. Check the license details are correct by looking at the license information on the Liberator status page (see [Liberator – Viewing license status](#)<sup>[15]</sup>). If they do not seem to be correct, contact Caplin Support.

**Note:** Install a license and start its Liberator within the **new license validity period**.

This is the time in days from when you downloaded the license during which you must install the license and start the Liberator. If you install the license after this time, Liberator will reject all attempts to connect to it. Similarly, Liberator will reject all connection attempts if you install the license within the validity period but do not start the Liberator until after the validity period has expired.

If this happens, you must obtain a regenerated copy of the license from the Client Portal (see [Restoring a Liberator license after a failure](#)<sup>[37]</sup>).

**Tip:** The license details on the Caplin Portal tell you the date by which the license must be installed and Liberator started. See the **Must be started by date** in the **Expiry** section of the license details.

## Liberator license configuration items

- ◆ You can specify a different name and location for the license file through the Liberator configuration item called **license-file**.
- ◆ You can specify the name of the Liberator's license usage database through the configuration item **uapp-qdbm-name**.

For more information, see the **Liberator Administration Guide**.

## 3.4 Monitoring license usage

You should monitor license end user counts frequently (at least once a day) to assess whether your license end user limits may be exceeded.

License usage can be monitored in three ways:

- ◆ Via the Liberator status page.  
See [Monitoring license usage via the Liberator status page](#)<sup>[14]</sup>.
- ◆ Via the Enterprise Management Console (or other JMX compliant monitoring and management front-end).  
See [Monitoring license usage via the EMC](#)<sup>[24]</sup>.
- ◆ By examining the Liberator event log.  
See [License usage reporting in log files](#)<sup>[33]</sup>.



**Note:** You can only use the Enterprise Management Console (or other JMX compliant monitoring and management front-end) to monitor license usage if JMX monitoring is enabled for your Liberator.

You can set Liberator configuration items to control various aspects of license usage reporting (see [Liberator licensing configuration](#)<sup>[43]</sup>).

## The warning threshold

You can set a **warning threshold** for each license category. This is the number of unique end users at which the Liberator will warn you that the license end user count is approaching the license limit for that license category.

The Liberator status page and the Enterprise Management Console will both clearly flag when the warning threshold is reached (see [Liberator – Reaching the warning threshold](#)<sup>[18]</sup> and [EMC – Reaching the warning threshold](#)<sup>[26]</sup>).

The warning thresholds are set through the Liberator configuration items **application-usage-warn-level**, **trading-group-usage-warn-level**, and **unique-users-usage-warn-level**. They are defined as a percentage of the license end user limit for the license category, the default value being 90%.

**Note:** You should configure the warning thresholds to values that give you time to upgrade your license when a threshold is flagged, so you can have the new license in place before the number of unique end users pushes the license into the grace period.

## 3.5 Monitoring license usage via the Liberator status page

You can check the status of a Liberator license by viewing the Liberator's status page in a web browser.

The status page will warn you when

- ◆ license end user limits are about to be reached,
- ◆ the license has entered the grace period,
- ◆ the grace period has expired.

## Liberator – Viewing license status

The Liberator status page looks like this.

The screenshot shows the Liberator 4.5 Status page. On the left is a navigation menu with 'Home' selected. The main content area is titled 'Status' and contains the following information:

- Server Version:** 4.5.0
- SL4B Version:** 4.5.0
- Company:** Caplin
- Max Concurrent Users:** Unlimited
- Max Unique Users:** 1000
- Max Sources:** Unlimited
- Expiry Date:** 2008-10-08 00:00:00 +0000
- Grace Period Expiry:** Not in Grace Period
- Number of Objects:** 22

Below this is a table showing session counts:

	Total	Type 1	Type 2	Type 3	Type 4	Type 5
Current Sessions:	2	0	0	0	0	2
Peak Sessions:	2	0	0	0	0	2

There are links for '+ Cluster Information' and '+ License Information'. Below is a section for 'Data Services' with details for 'demosvc' (Status: OK, Last Change: Jun 19 12:37:41). Underneath is a 'Data Sources' section with two entries:

ID	Name	Status	Last Change	Address	Label
1	DS	UP	Jun 19 12:37:41	192.168.141.1:2019	demosrc
2	DS	UP	Jun 19 12:37:41	192.168.141.1:2018	transformer

At the bottom, there is a copyright notice: © Copyright Caplin Systems Ltd 2002-2008. All rights reserved. Contact us.

### Liberator status page

The summary status information on the top half of the page includes some basic information about the license.

**Expiry date:** shows the date when the license as a whole expires (format YYYY-DD-MM HH:MM:SS).

**Grace Period Expiry:** shows whether the licence grace period has expired. In the above example, the field indicates that the license is not in the grace period.

- Click on the link [+ License Information](#) to show more detail about the license.

The following picture shows an example of the detailed license information on the status page.

The screenshot displays the 'License Information' section of the Liberator status page. It is titled 'Licensing' and 'Trading Groups'. It lists three trading groups: \*/FI, \*/FJ, and \*/FX. Each trading group has a table of metrics including Name, Max Users, Cumulative Users, Rejected Users, and Status. Below the trading groups, there is a section for 'General Users' with a table of metrics including Name, Max Logins, Cumulative Logins, Failed Logins Count, and Status. The status for all items is 'Within license limit'.

Trading Groups	
Name:	*/FI
Max Users:	500
Cumulative Users:	0
Rejected Users:	0
Status:	Within license limit
Name:	*/FJ
Max Users:	250
Cumulative Users:	0
Rejected Users:	0
Status:	Within license limit
Name:	*/FX
Max Users:	250
Cumulative Users:	0
Rejected Users:	0
Status:	Within license limit

General Users	
Name:	DefaultApplication
Max Logins:	Unlimited
Cumulative Logins:	0
Failed Logins Count:	0
Status:	Within license limit
Name:	SL4B
Max Logins:	500
Cumulative Logins:	1
Failed Logins Count:	0
Status:	Within license limit
Name:	(Any)
Max Logins:	1000
Cumulative Logins:	1
Failed Logins Count:	0
Status:	Within license limit

Liberator status page – license details

The license status screen shows, under **General Users**, information about the Application Level Licensing category. In the above example there are two licensed client applications, a StreamLink for Browsers application (SL4B), and the default application (that is, any client application other than SL4B).

Under the name **(Any)**, information is shown about the Unique Users Licensing category. In this case up to 1,000 unique end users can log in during the license monitoring period.

- ◆ **Max Logins** shows the license end user limit for each application. In this case up to 500 unique users are allowed from SL4B, and any number from any other client application, subject to the overall unique users limit of 1,000 shown under **(Any)**.
- ◆ **Cumulative Logins** shows the number of unique users who have logged into the Liberator in this license category since the start of the current license monitoring period.
- ◆ **Status** shows the status of the license category. In this case the numbers of unique logins are within the license limits.

Under **Trading Groups** there is information about the Asset Class (Trading Group) Licensing category. In the example these are the trading groups for fixed income (**\*/FI**), foreign exchange (**\*/FX**), and “special” fixed income (**\*/FJ**) – all for any client application, as represented by the \* wildcard in **\*/FI**, **\*/FX**, and **\*/FJ**.

- ◆ The column headed **Max Users** shows the license end user limit for each trading group. In this case up to 500 unique users are allowed to trade in fixed income, up to 250 unique users can trade in “special” fixed income, and up to 250 unique users are allowed to trade in the foreign exchange trading group.
- ◆ **Cumulative Users** shows the number of unique users who have traded in the trading group since the start of the current license monitoring period: none so far.
- ◆ **Status** shows the status of the license category. In this case the numbers of unique logins are within the license limits.

## Liberator – Reaching the warning threshold

The following picture show what happens when the warning threshold has been reached for the number of unique users in the FX trading group. A warning banner appears at the top of the Liberator status page, and the affected license category is also flagged with a banner.

### Status

**Warning level reached**

Server Version:	4.5.0
SL4B Version:	4.5.0
Company:	Caplin
Max Concurrent Users:	Unlimited
Max Unique Users:	1000
Max Sources:	Unlimited
Expiry Date:	2008-10-08 00:00:00 +0000
Grace Period Expiry:	Not in Grace Period
Number of Objects:	249

	Total	Type 1	Type 2	Type 3	Type 4	Type 5
Current Sessions:	228	225	0	0	0	3
Peak Sessions:	228	225	0	0	0	3

[+ Cluster Information](#)

[- License Information](#)

### Licensing

#### Trading Groups

<table style="width: 100%; border-collapse: collapse;"> <tr><td>Name:</td><td>*/FI</td></tr> <tr><td>Max Users:</td><td>500</td></tr> <tr><td>Cumulative Users:</td><td>0</td></tr> <tr><td>Rejected Users:</td><td>0</td></tr> <tr><td>Status:</td><td>Within license limit</td></tr> </table>	Name:	*/FI	Max Users:	500	Cumulative Users:	0	Rejected Users:	0	Status:	Within license limit	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Name:</td><td>*/FJ</td></tr> <tr><td>Max Users:</td><td>250</td></tr> <tr><td>Cumulative Users:</td><td>0</td></tr> <tr><td>Rejected Users:</td><td>0</td></tr> <tr><td>Status:</td><td>Within license limit</td></tr> </table>	Name:	*/FJ	Max Users:	250	Cumulative Users:	0	Rejected Users:	0	Status:	Within license limit
Name:	*/FI																				
Max Users:	500																				
Cumulative Users:	0																				
Rejected Users:	0																				
Status:	Within license limit																				
Name:	*/FJ																				
Max Users:	250																				
Cumulative Users:	0																				
Rejected Users:	0																				
Status:	Within license limit																				
<table style="width: 100%; border-collapse: collapse;"> <tr><td>Name:</td><td>*/FX</td></tr> <tr><td>Max Users:</td><td>250</td></tr> <tr><td>Cumulative Users:</td><td>225</td></tr> <tr><td>Rejected Users:</td><td>0</td></tr> <tr><td>Status:</td><td style="background-color: orange;">Warning level reached</td></tr> </table>	Name:	*/FX	Max Users:	250	Cumulative Users:	225	Rejected Users:	0	Status:	Warning level reached											
Name:	*/FX																				
Max Users:	250																				
Cumulative Users:	225																				
Rejected Users:	0																				
Status:	Warning level reached																				

**Liberator status page when license threshold reached**

## What should I do now?

If you see that a warning level has been reached, upgrade your license as soon as possible. See [Upgrading a Liberator license](#)<sup>[36]</sup>.

## Liberator – Entering the grace period

The following picture shows what happens when the number of unique users who have traded in the FX trading group since the start of the current license monitoring period exceeds the license end user count.

In this case, the Cumulative Users figure is 251, compared to the Max Users limit of 250. The grace period is entered: an error banner appears at the top of the Liberator status page, the Grace Period Expiry date is displayed, and the affected license category is also flagged with a banner.

### Status

License limit exceeded. No new users will be accepted after 2008-06-20 12:45:24 +0000

Server Version:	4.5.0
SL4B Version:	4.5.0
Company:	Caplin
Max Concurrent Users:	Unlimited
Max Unique Users:	1000
Max Sources:	Unlimited
Expiry Date:	2008-10-08 00:00:00 +0000
Grace Period Expiry:	2008-06-20 12:45:24 +0000
Number of Objects:	263

	Total	Type 1	Type 2	Type 3	Type 4	Type 5
Current Sessions:	242	239	0	0	0	3
Peak Sessions:	242	239	0	0	0	3

[+ Cluster Information](#)

[- License Information](#)

### Licensing

#### Trading Groups

<table style="width: 100%; border-collapse: collapse;"> <tr><td>Name:</td><td>*/FI</td></tr> <tr><td>Max Users:</td><td>500</td></tr> <tr><td>Cumulative Users:</td><td>0</td></tr> <tr><td>Rejected Users:</td><td>0</td></tr> <tr><td>Status:</td><td>Within license limit</td></tr> </table>	Name:	*/FI	Max Users:	500	Cumulative Users:	0	Rejected Users:	0	Status:	Within license limit	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Name:</td><td>*/FJ</td></tr> <tr><td>Max Users:</td><td>250</td></tr> <tr><td>Cumulative Users:</td><td>0</td></tr> <tr><td>Rejected Users:</td><td>0</td></tr> <tr><td>Status:</td><td>Within license limit</td></tr> </table>	Name:	*/FJ	Max Users:	250	Cumulative Users:	0	Rejected Users:	0	Status:	Within license limit
Name:	*/FI																				
Max Users:	500																				
Cumulative Users:	0																				
Rejected Users:	0																				
Status:	Within license limit																				
Name:	*/FJ																				
Max Users:	250																				
Cumulative Users:	0																				
Rejected Users:	0																				
Status:	Within license limit																				
<table style="width: 100%; border-collapse: collapse;"> <tr><td>Name:</td><td>*/FX</td></tr> <tr><td>Max Users:</td><td>250</td></tr> <tr><td>Cumulative Users:</td><td>251</td></tr> <tr><td>Rejected Users:</td><td>0</td></tr> <tr><td>Status:</td><td style="background-color: #ff0000; color: white;">License limit exceeded</td></tr> </table>	Name:	*/FX	Max Users:	250	Cumulative Users:	251	Rejected Users:	0	Status:	License limit exceeded											
Name:	*/FX																				
Max Users:	250																				
Cumulative Users:	251																				
Rejected Users:	0																				
Status:	License limit exceeded																				

**Liberator status page when grace period entered**

## What should I do now?

If you see that a license limit has been exceeded, upgrade your license as soon as possible, and definitely before the end of the grace period. See [Upgrading a Liberator license](#)<sup>[36]</sup>.

New end users who log in for the first time during the grace period will be able to view data and trade, but if the grace period expires before you upgrade the license to permanently accommodate these new users, they will then be denied access. See [When license usage limits are exceeded – the grace period and beyond](#)<sup>[8]</sup>.



## Liberator – When the grace period expires

The following picture shows what happens when the grace period expires and you have not upgraded the license to allow for the additional unique users.

The status screen displays a banner warning with a “no entry” sign, the Grace Period Expiry date is displayed, and the affected license category is also flagged with a banner.

**Status**

**License limit exceeded. No new users will be accepted**

Server Version:	4.5.0a
SL4B Version:	4.5.0
Company:	Caplin
Max Concurrent Users:	Unlimited
Max Unique Users:	1000
Max Sources:	Unlimited
Expiry Date:	2008-10-08 00:00:00 +0000
Grace Period Expiry:	2008-06-19 12:33:26 +0000
Number of Objects:	24

	Total	Type 1	Type 2	Type 3	Type 4	Type 5
Current Sessions:	3	1	0	0	0	2
Peak Sessions:	5	3	0	0	0	2

[+ Cluster Information](#)

[- License Information](#)

**Licensing**

**Trading Groups**

Name: */FI	Name: */FJ
License Limit: 3	License Limit: 5
Usage: 4	Usage: 0
Failed Usage: 0	Failed Usage: 0
Status: License limit exceeded	Status: Within license limit
Name: */FX	
License Limit: 4	
Usage: 0	
Failed Usage: 0	
Status: Within license limit	

### Liberator status page when grace period has expired

**Note:** Some or all new users who logged in to the Liberator during the grace period will now be denied access until the license is upgraded. All subsequent new users will also be denied access. See [How Liberator Licenses are monitored](#).

## What should I do now?

Upgrade your license *immediately*. See [Upgrading a Liberator license](#)<sup>36</sup>.

### 3.6 Monitoring license usage via the EMC

If you have purchased and deployed the Caplin Enterprise Management Console (EMC), you can use it to check on the status of the licenses in your Caplin Platform installation.

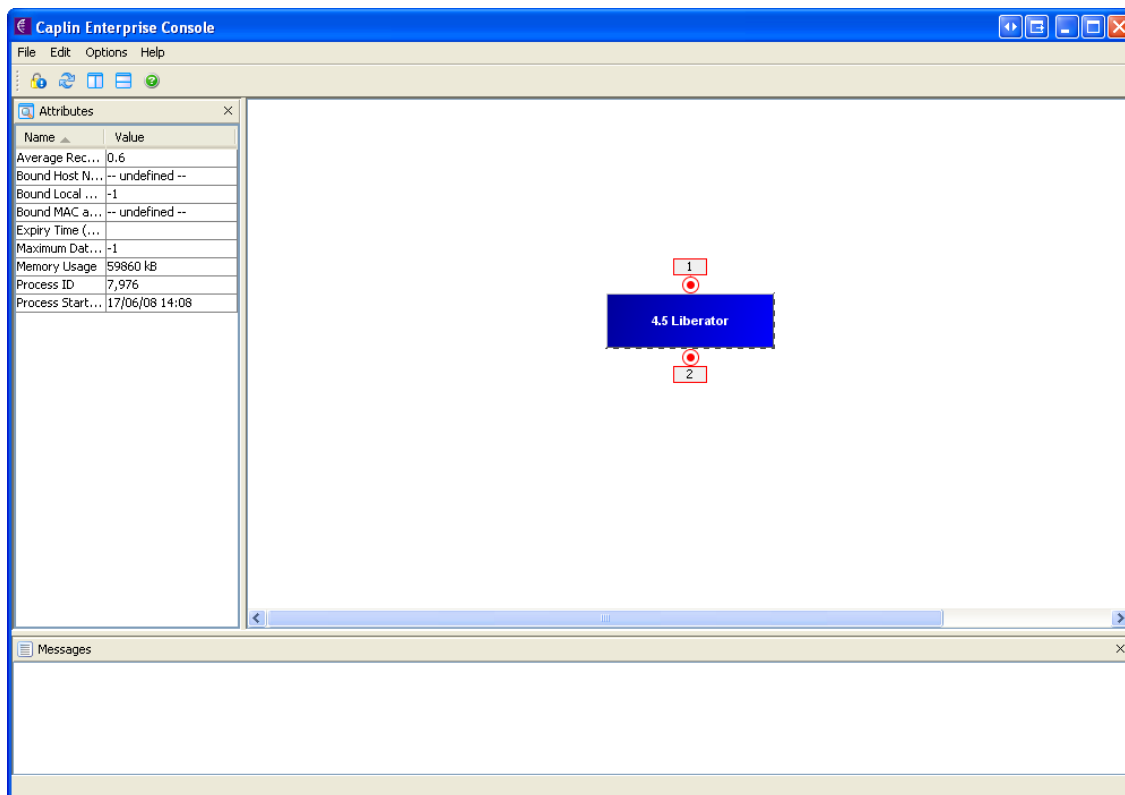
Liberator uses JMX monitoring to report on license usage, such as the number of unique end users who have logged on to Liberator in each license category or who have traded in each trading group. The EMC has screens that show this information.

The EMC will warn you when

- ◆ license end user limits are about to be reached,
- ◆ the license has entered the grace period,
- ◆ the grace period has expired.

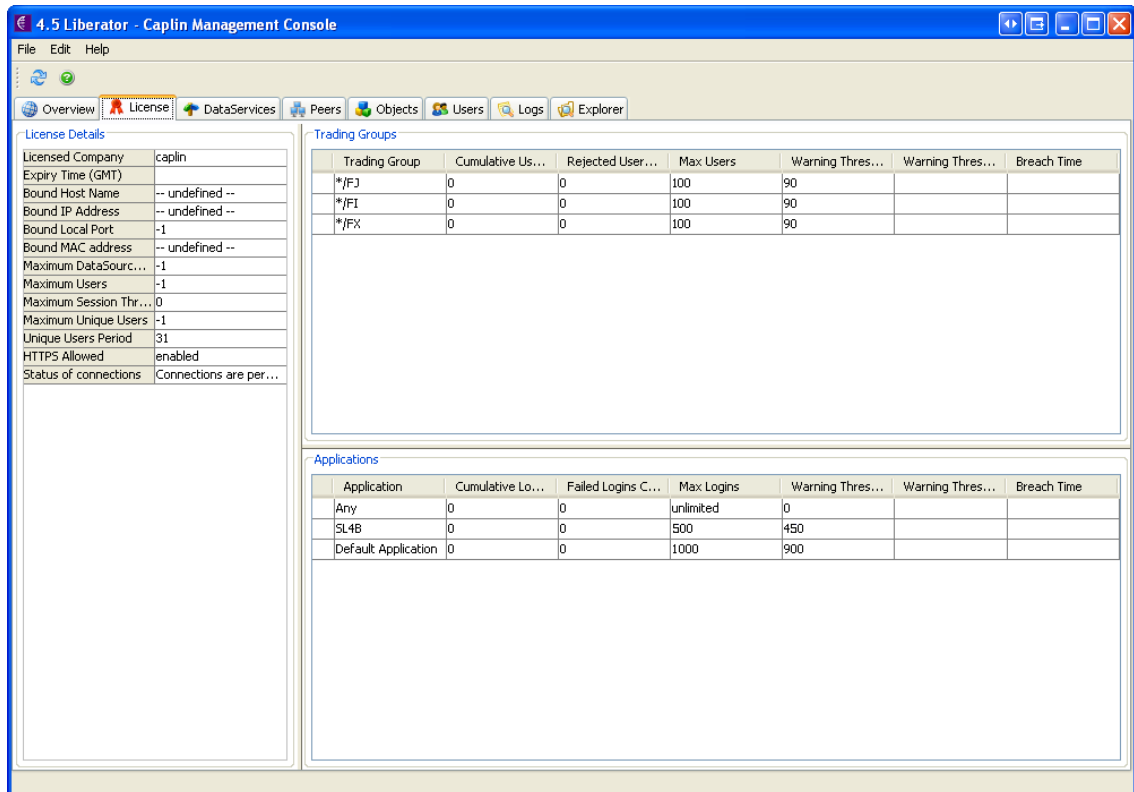
#### EMC – Viewing license status

When you start the EMC, a top level view of the Liberators and other Caplin Platform components is displayed:



EMC screen showing a Liberator

- Double click on the graphic showing the Liberator you are interested in to open a detailed view of the Liberator status.
- Select the License tab to see the current information about license usage, as shown in the following picture.



**EMC License status screen for the Liberator**

The license status screen shows, under Applications, a table giving information about the Application Level Licensing category. In the above example there are two licensed client applications: a StreamLink for Browsers application (SL4B), and the default application (that is, any client application other than SL4B). The application called “Any” represents the Unique Users Licensing category.

- ◆ The column headed Max Logins shows the license end user limit for each application. In this case up to 500 unique users are allowed from SL4B and up to 1000 unique users from any other client applications.
- ◆ Warning Threshold is the number of unique logins at which the Liberator will warn that the license end user limit may be reached. For this particular Liberator the threshold is set at 90% (the default value), which for this license is 450 unique users for SL4B and 900 unique users for any other client applications.
- ◆ Cumulative Logins shows the number of unique users who have logged into the Liberator since the start of the current license monitoring period: none so far.

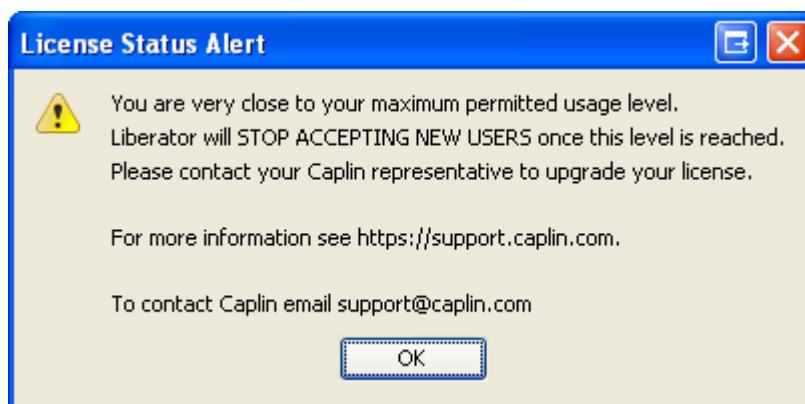
The table headed Trading Groups shows information about the Asset Class (Trading Group) Licensing category. Each row shows a licensed trading group; in the above example these are fixed income (\*FI), foreign exchange (\*FX), and “special” fixed income (\*FJ) – all for any client application, as represented by the \* wildcard in \*/FI, \*/FX, and \*/FJ.

- ◆ The column headed Max Users shows the license end user limit for each trading group. In this case up to 100 unique users are allowed to trade in each of these trading groups.
- ◆ Warning Threshold is the number of unique users who have traded at which the Liberator will raise a warning that the license end user may be reached.
- ◆ Cumulative Users shows the number of unique users who have traded in the trading group since the start of the current license monitoring period: none so far.

## EMC – Reaching the warning threshold

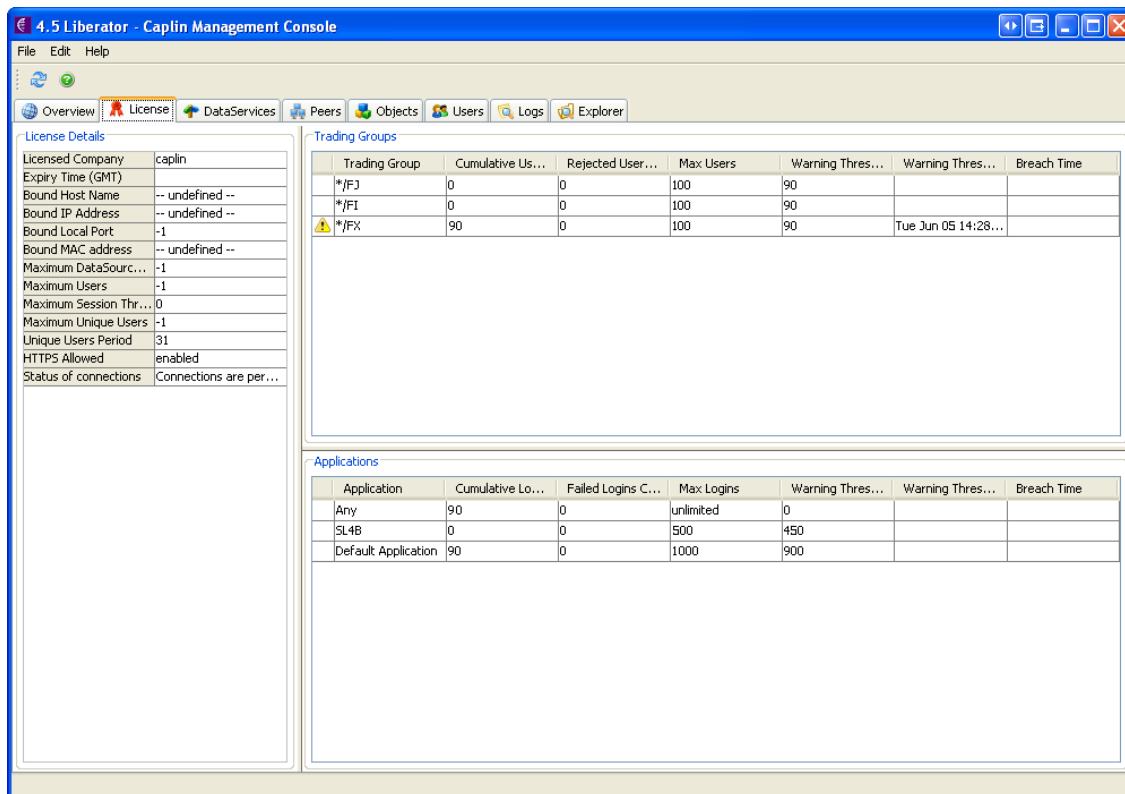
The following pictures show what happens to the previous example when 90 unique end users have traded in the FX trading group. The license end user count has reached the warning threshold of 90 unique end users.

The EMC displays a warning box:



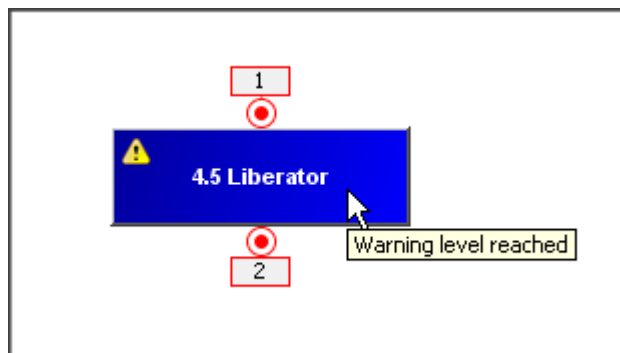
**EMC – License end user limit warning**

On the status screen the trading group where the license threshold has been exceeded is marked with a yellow warning triangle, and the date and time when the warning threshold was reached is shown.



**EMC license status screen with threshold warning**

The top level view of the Liberator, as shown on the Enterprise level screen and on the Overview tab, also shows the warning status with a yellow triangle. When you move the mouse pointer over the Liberator box, some explanatory text is displayed.



**EMC - License threshold warning displayed against the Liberator**

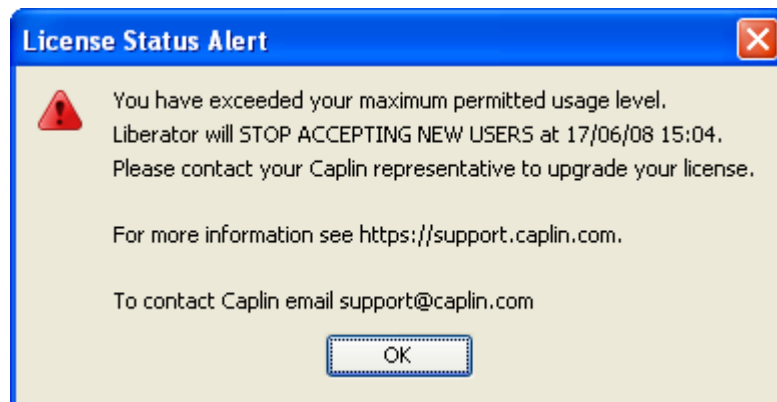
## What should I do now?

If you see that a warning level has been reached, upgrade your license as soon as possible. See [Upgrading a Liberator license](#)<sup>36</sup>.

## EMC – Entering the grace period

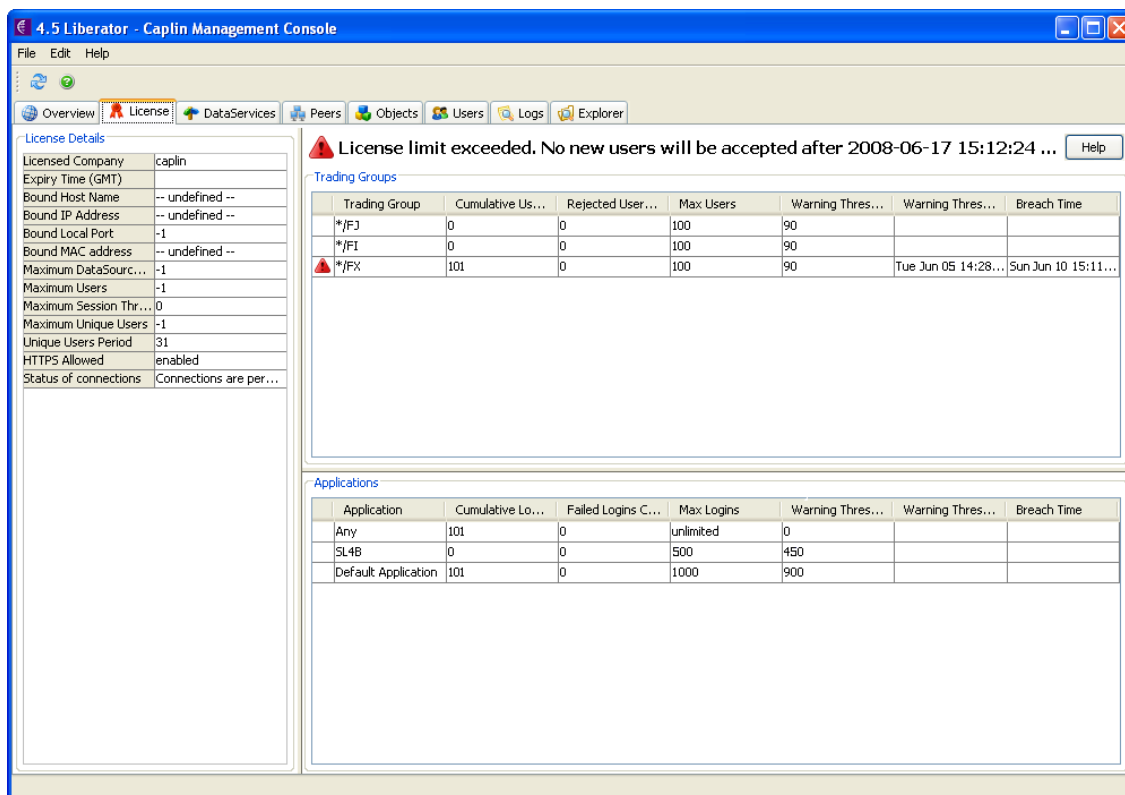
The following pictures show what happens when 101 unique end users have logged in and traded in the FX trading group. The license end user count of 100 is now exceeded.

The EMC displays a warning box. This shows the date and time when the grace period ends: “Liberator will STOP ACCEPTING NEW USERS at dd/mm/yy hh:mm.”



**EMC – Grace period reached warning**

The status screen displays a warning that gives the date and time when the grace period ends. The trading group where the license end user count has been exceeded is marked with a red warning triangle, and the Breach Time column shows the date and time when this happened.



**EMC license status screen when grace period entered**

The top level view of the Liberator also shows the warning status with a red triangle.

### What should I do now?

If you see that a license limit has been exceeded, upgrade your license as soon as possible, and definitely before the end of the grace period. See [Upgrading a Liberator license](#)<sup>36</sup>.

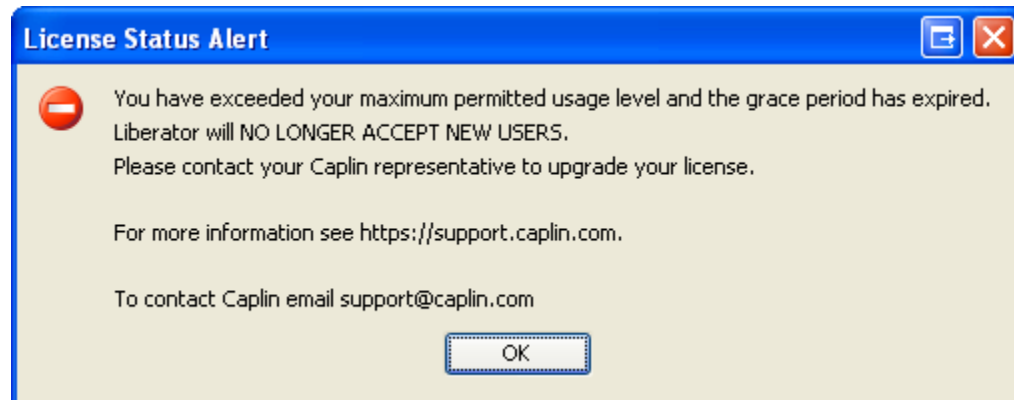
New end users who log in for the first time during the grace period will be able to view data and trade, but if the grace period expires before you upgrade the license to permanently accommodate these new users, they will then be denied access. See [When license usage limits are exceeded – the grace period and beyond](#)<sup>8</sup>.



## EMC – When the grace period expires

The following pictures show what happens when the grace period expires and you have not upgraded the license to allow for the additional unique FX trading users.

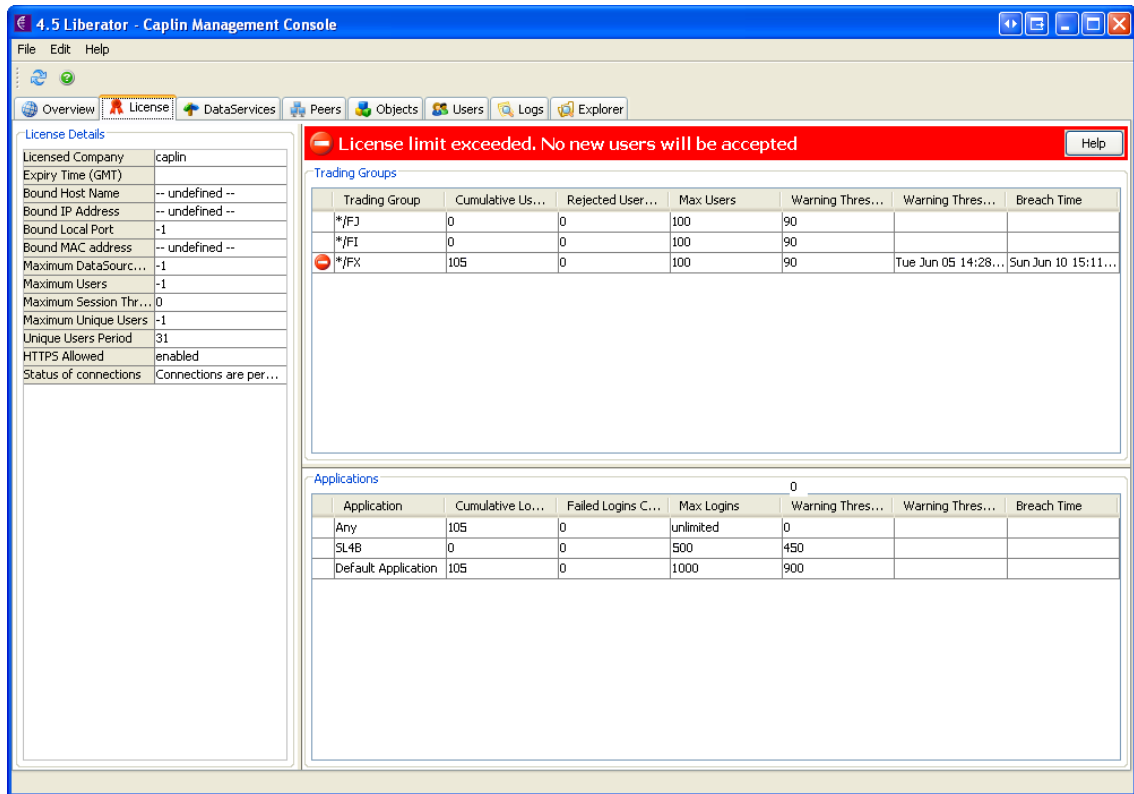
The EMC displays an error box.



### EMC – Grace period expired error

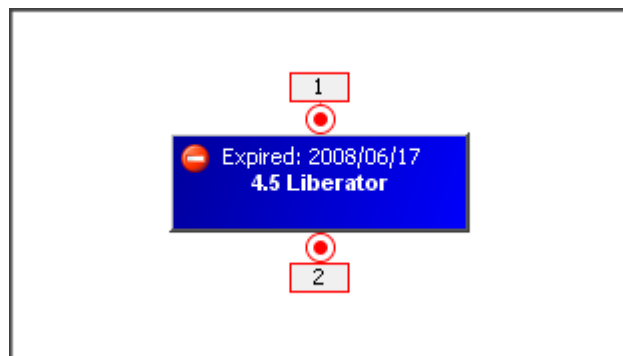
Note that the message “Liberator will NO LONGER ACCEPT NEW USERS” also means that any new end users who started to use the system since the grace period started will now no longer be able to do so.

The status screen displays a banner warning and the trading group which caused the grace period to be entered is marked with a “no entry” sign.



EMC license status screen with grace period expired error

The top level view of the Liberator also shows the warning status with a “no entry” sign.



EMC - Grace period expired error displayed against the Liberator

**Note:** Some or all new users who logged in to the Liberator during the grace period will now be denied access until the license is upgraded. All subsequent new users will also be denied access. See [How Liberator Licenses are monitored](#) [7].

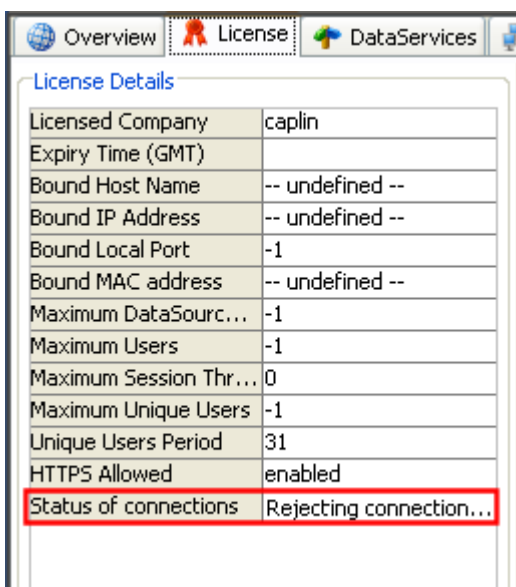
## What should I do now?

Upgrade your license *immediately*. See [Upgrading a Liberator license](#)<sup>36</sup>.

## EMC – Liberator not started within new license validity period

If you installed a new Liberator license but did not start the Liberator within the new license validity period the Liberator will reject all attempts to connect to it from client applications.

The EMC shows this against Status of Connections on the License Details panel of the License tab:



The screenshot shows the EMC interface with the 'License' tab selected. The 'License Details' panel is expanded, displaying a table of license parameters. The 'Status of connections' row is highlighted with a red border and shows the message 'Rejecting connection...'. The table contains the following data:

License Details	
Licensed Company	caplin
Expiry Time (GMT)	
Bound Host Name	-- undefined --
Bound IP Address	-- undefined --
Bound Local Port	-1
Bound MAC address	-- undefined --
Maximum DataSourc...	-1
Maximum Users	-1
Maximum Session Thr...	0
Maximum Unique Users	-1
Unique Users Period	31
HTTPS Allowed	enabled
Status of connections	Rejecting connection...

### EMC – New license validity period expired

The full message (which can be seen by expanding the panel) is:

Rejecting connection attempt because server not started up within licensed period

To fix this, see [Restoring a Liberator license after a failure](#)<sup>37</sup>.

### 3.7 License usage reporting in log files

Liberator writes various event log messages relating to its license. If JMX monitoring is not enabled for your Liberator (so you cannot use the Enterprise Monitoring Console or other JMX compliant monitoring and management front end) and you cannot access the Liberator's status page, you can still check the status of the license by looking periodically in the Liberator event log (which is a simple text file).

The most important event log messages to look for are listed in the following sections. For a comprehensive list of the licensing related event messages see [Liberator log messages about licensing](#). For more information about the event log, see the **Liberator Administration Guide**.

#### Message placeholders

In the message texts the numbered items in curly braces {1} represent placeholders for values that are placed in the message before it is written to the log file. For example an instance of the message “The number of unique users of the trading group <{1}> is {2} out of a licensed limit of {3}” could appear in the log file as “The number of unique users of the trading group <FX> is 600 out of a licensed limit of 1000”.

#### License status messages

The following messages report on license end user counts. You can configure how frequently the Liberator generates them by setting the configuration items **auth-unique-applications-report-period** and **auth-trading-group-report-period**. The default report interval is 1 hour.

Log level	Message
INFO – CRIT	The number of unique users of the default client application is {1} out of a licensed limit of {2}.
INFO – CRIT	The number of unique users of the client application <{1}> is {2} out of a licensed limit of {3}.
INFO – CRIT	The number of unique users of the trading group <{1}> is {2} out of a licensed limit of {3}.

The log level of the message depends on the number of unique users 'u':

Number of unique users 'u'	Log level of message
u < warning threshold	INFO
warning threshold <= u < license end user limit	WARN
u = license end user limit	ERROR
u > license end user limit	CRIT

**Note:** Pay particular attention to license status messages with log level WARN (the warning threshold has been reached), and ERROR or CRIT (the grace period has been entered). Upgrade your license as soon as possible. See [Upgrading a Liberator license](#)<sup>36</sup>.

## Grace period entered messages

One or more of the following messages are produced when the license grace period is entered.

Log level	Message
CRIT (Always logged)	Entering licensed grace period, this state will be valid until {1}. After this time users that were permitted during the grace period will be denied access. Please contact Caplin and arrange a license upgrade before this time to prevent this occurring.
NOTIFY	Entered license grace period due to user <{1}> application <{2}> exceeding application limit
NOTIFY	Entered license grace period due to user <{1}> in trading group <{2}>
NOTIFY	Entered license grace period due to user <{1}> application <{2}> exceeding unique users limit

**Note:** If you see one of these messages in the event log, upgrade your license as soon as possible, and definitely before the end of the grace period. See [Upgrading a Liberator license](#)<sup>36</sup>.

New end users who log in for the first time during the grace period will be able to view data and trade, but if the grace period expires before you upgrade the license to permanently accommodate these new users, they will then be denied access. See [When license usage limits are exceeded – the grace period and beyond](#)<sup>8</sup>.

## Grace period expired messages

One or more of the following messages are produced when the license grace period expires.

Log level	Message
CRIT	License grace period has expired! Rejecting user <{1}> with application <{2}>
CRIT	License grace period has expired! Rejecting user <{1}> in trading group <{2}>
CRIT	User <{1}> application <{2}> was first seen during the grace period. This has now expired so rejecting.
CRIT	User <{1}> trading group <{2}> was first seen during the grace period. This has now expired so rejecting.

**Note:** If you see one of these messages in the event log, Upgrade your license *immediately*. See [Upgrading a Liberator license](#)<sup>[36]</sup>.

Some or all new users who logged in to the Liberator during the grace period will now be denied access until the license is upgraded. All subsequent new users will also be denied access. See [How Liberator Licenses are monitored](#)<sup>[7]</sup>.

## Liberator not started within the new license validity period

If you installed a new Liberator license but did not start the Liberator within the new license validity period, the Liberator will reject all attempts to connect to it from client applications. The event log will contain one or more instances of the following message.

Log level	Message
NOTIFY	Rejecting connection attempt because server not started up within licensed period

To fix this problem, see [Restoring a Liberator license after a failure](#)<sup>[37]</sup>.

## 3.8 Upgrading a Liberator license

### When to upgrade a Liberator license

You will need to upgrade a license to allow for more end users in a license category when:

- ◆ you become aware through the various monitoring facilities that a license end user count is approaching the end user limit set for your license,  
or
- ◆ the Liberator warns that a license end user limit has been exceeded and the license has entered the grace period,  
or
- ◆ the Liberator warns that the grace period has expired.

For more information see [How Liberator licenses are monitored](#)<sup>7</sup>.

### To upgrade the license

1. Contact your Caplin Account Representative or Caplin Support to discuss and agree the requirements for the upgrade.

When the new license details have been agreed Caplin Support will either send you the upgraded licence file or post the upgraded license details on the Client Portal.

For details of how to download the upgraded license file from the Licensing section of the Caplin Client Portal, see [Getting a license file from the Client Portal](#)<sup>12</sup>.

2. Install the license; see [To install a Liberator license](#)<sup>12</sup>.

### 3.9 Restoring a Liberator license after a failure

Occasionally a Liberator license may prevent the Liberator from running properly:

- ◆ You may lose a Liberator license file through a system or administrative malfunction; the file may be corrupted or it could have been deleted, or the Liberator's license usage database could have become corrupted or been deleted. If this happens, the Liberator will no longer run.
- ◆ You installed a new license but did not start the Liberator within the new license validity period. When you do start the Liberator it will reject all attempts to connect to it.

To recover from these situations you will need to regenerate the license file with a new start date and reinstall it. There is no charge for doing this.

1. To obtain a regenerated license follow the instructions in [Getting a license file from the Client Portal](#) <sup>[12]</sup>.

The new license will be the same as the old one, apart from having a new start date of "today".

2. Then follow the instructions in [To install a Liberator license](#) <sup>[12]</sup>.

### 3.10 Moving a Liberator to a different machine

A Liberator's license file is tied to the IP address of a specific computer on which the software runs, and may also be tied to the computer's MAC address. If you move the Liberator to a different machine, it (the Liberator) will not start. This is because the new machine's IP and MAC addresses do not match the license.

For live operation, your Caplin Platform installation should include a backup hardware and software configuration that can be used for disaster recovery. Caplin Systems offer a disaster recovery license option that includes additional licenses for deployment on standby hardware. If you have purchased this option, your standby machine would normally have a standby Liberator and any other Platform components pre-installed on it, together with the correct licenses. If you normal hardware fails, you merely need to start the Liberator and other components on the backup machine(s) to get your installation running again.

If you need to move a Liberator to a different machine for reasons other than disaster recovery, contact your Caplin Account Representative or Caplin Support to obtain a new Liberator license for that machine.

### 3.11 Managing the licenses in a Liberator cluster

Your Caplin Platform installation may have several Liberator servers that are configured in a cluster so as to share information about the number of licenses, users logged on, data, and subscriptions. Each Liberator in the cluster has its own license file, but the Liberators all share the information in their license usage databases (the login names of all unique end users accessing the Liberators, and the license end user counts). This means that if one or more Liberators in the cluster should fail, you do not have to take any special action to reinstate license usage information when the failed Liberators are restarted; they set their license usage databases to the valid state held by the Liberators that did not fail.

For more information about clustering, see the **Liberator Administration Guide**.

#### Problems with a clustered Liberator's license usage database

If a Liberator's license usage database becomes corrupt, the Liberator will automatically, on restart, reconstruct the database from the information held in the license usage databases of the other Liberators in the cluster.



## Problems with a clustered Liberator's license file

If a Liberator in the cluster loses its license file or the file becomes corrupt, you must obtain and install a regenerated license for it – see [Restoring a Liberator license after a failure](#)<sup>[37]</sup>.

When you subsequently start the Liberator, it will reconstruct its license usage database, populating the database with data from the license usage databases of the other Liberators in the cluster.

You will see the following message in the Liberator's event log:

```
Could not open uupp storage, will rename existing file and retry
```

## When all Liberators in the cluster fail

In rare circumstances all the Liberators in a cluster could fail such that all the license files and license usage databases are lost. To fix this, obtain and install regenerated licenses for all the Liberators – see [Restoring a Liberator license after a failure](#)<sup>[37]</sup>.

If the machine or machines hosting the Liberators have all failed, you will need to relocate the Liberators onto new hardware – see [Moving a Liberator to a different machine](#)<sup>[37]</sup>.

## 4 Liberator log messages about licensing

The following table lists the messages relating to licensing that can be logged in the Liberator's event log file.

In the message texts the numbered items in curly braces {1} represent placeholders for values that are placed in the message before it is written to the log file. For example an instance of the message "The number of unique users of the trading group <{1}> is {2} out of a licensed limit of {3}" could appear in the log file as "The number of unique users of the trading group <FX> is 600 out of a licensed limit of 1000".

Log level	Message	Explanation
CRIT	Entering licensed grace period, this state will be valid until {1}. After this time users that were permitted during the grace period will be denied access. Please contact Caplin and arrange a license upgrade before this time to prevent this occurring.	The grace period has been entered, because a license end user limit has been reached. The grace period will expire at time {1}. Contact Caplin Support to upgrade your license.
CRIT	License grace period has expired! Rejecting user <{1}> with application <{2}>	Application level licensing: A new user {1} has attempted to log in to the system via client application {2}. However, the grace period has expired, so the user is not allowed to log in. Contact Caplin Support to upgrade your license.
CRIT	License grace period has expired! Rejecting user <{1}> in trading group <{2}>	Asset class licensing: A new user {1} has attempted to trade within trading group {2}. However, the grace period has expired, so the user is not allowed to trade. Contact Caplin Support to upgrade your license.
CRIT	User <{1}> application <{2}> was first seen during the grace period. This has now expired so rejecting.	Application level licensing: The user {1} first logged in via client application {2} during the grace period and is now attempting to log in again. However, the grace period has now expired, so this login attempt has been rejected. Contact Caplin Support to upgrade your license.
CRIT	User <{1}> trading group <{2}> was first seen during the grace period. This has now expired so rejecting.	Asset class licensing: The user {1} first traded within trading group {2} within the grace period and is now attempting to trade again. However, the grace period has now expired, so this attempt to trade has been rejected. Contact Caplin Support to upgrade your license.
ERROR	Incorrect database for this license	The license usage database does not match the installed license. This may be because the Liberator license has changed, or because the database has been moved to a different computer (which will have a different license).
INFO	Adding new unique user <{1}> from client application <{2}>. User number is {3} out of license limit {4}.	Application level licensing: A user {1} has logged in using the client application {2}. The user has been assigned user number {3} from a license end user limit of {4}.

Log level	Message	Explanation
INFO	Adding new unique user <{1}> to from client application <{2}> in trading group <{3}> . User number is {4} out of license limit {5}.	Asset class licensing: A user {1} using client application {2} has attempted to trade within trading group {3}. The user has been assigned user number {4} from a license end user limit of {5}.
INFO – CRIT	The number of unique users of the trading group <{1}> is {2} out of a licensed limit of {3}.	Asset class licensing: Reports the number of unique users in a given trading group in the current license monitoring period to date.  The log level depends on the number of unique users {2}: INFO when {2} is less than the warning threshold, WARN when {2} is at or over the warning threshold, ERROR when {2} is at the license end user limit, CRIT when {2} is above the license end user limit.  The frequency of this message is determined by the Liberator configuration item <b>auth-trading-group-report-period</b> .
INFO – CRIT	The number of unique users of the default client application is {1} out of a licensed limit of {2}.	Application level licensing: Reports the number of unique users of the default client application in the current license monitoring period to date.  The log level depends on the number of unique users {1}: INFO when {1} is less than the warning threshold, WARN when {1} is at or over the warning threshold, ERROR when {1} is at the license end user limit, CRIT when {1} is above the license end user limit.  The frequency of this message is determined by the Liberator configuration item <b>auth-unique-applications-report-period</b> .
INFO – CRIT	The number of unique users of the client application <{1}> is {2} out of a licensed limit of {3}.	Application level licensing: Reports the number of unique users of the client application {1} in the current license monitoring period to date.  The log level depends on the number of unique users {2}: INFO when {2} is less than the warning threshold, WARN when {2} is at or over the warning threshold, ERROR when {2} is at the license end user limit, CRIT when {2} is above the license end user limit.  The frequency of this message is determined by the Liberator configuration item <b>auth-unique-applications-report-period</b>
INFO	The license end user limit {1} for client application <{3}> was reached when user <{2}> logged in.	Application level licensing: Reports the user who caused the license end user limit to be reached for a particular client application.
NOTIFY	Received information about trading group {1} database that isn't licensed.	The Liberator has been informed about a trading group for which it has no licensed information. This is probably a result of an incompatible license being incorrectly used on one or more members of the cluster.

Log level	Message	Explanation
NOTIFY	Unknown version {1} for NODE_SET_ASSET_INFO	Licensing in a Liberator cluster: This Liberator's license has a more recent major or minor version than the other Liberators in the cluster.  To resolve this problem please contact Caplin Support.
NOTIFY	Unknown version {1} for NODE_SET_ASSET_STATS	Licensing in a Liberator cluster: This Liberator's license has a more recent major or minor version than the other Liberators in the cluster.  To resolve this problem please contact Caplin Support.
NOTIFY	Unknown version {1} for NODE_SET_ASSET_USER	Licensing in a Liberator cluster: This Liberator's license has a more recent major or minor version than the other Liberators in the cluster.  To resolve this problem please contact Caplin Support.
NOTIFY	Now permitting client connections since licensing is in a valid state	Licensing is now initialized, so client connections to the Liberator are now permitted.
NOTIFY	Rejecting connection attempt because server not started up within licensed period	The Liberator's new license validity period has expired. If the Liberator is part of a cluster it may obtain a good validity period from the cluster and then be able to accept connections. Otherwise it will reject all attempts to connect to it from client applications. To fix this, obtain and install a regenerated license – visit the licensing section of the Caplin Client Portal web site, or contact Caplin Support..
NOTIFY	Entered license grace period due to user <{1}> application <{2}> exceeding application limit	Application level licensing: User {1} who logged in via client application {2} breached the license end user limit for the application, so the license grace period has been entered.  This user and subsequent new users can continue to log in provided the license is upgraded before the grace period ends. If the grace period ends and the license has not been upgraded, the new users (including this one) will no longer be able to log in.
NOTIFY	Entered license grace period due to user <{1}> in trading group <{2}>	Asset class licensing: User {1} breached the license end user limit for trading within the trading group {2}, so the license grace period has been entered.  This user and subsequent new users can continue to trade provided the license is upgraded before the grace period ends. If the grace period ends and the license has not been upgraded, the new users (including this one) will no longer be able to trade.

Log level	Message	Explanation
NOTIFY	Entered license grace period due to user <{1}> application <{2}> exceeding unique users limit	<p>Unique users licensing: User {1}, logging in via client application {2}, has exceeded the global license end user limit for the platform installation, so the license grace period has been entered.</p> <p>This user and subsequent new users can continue to log in provided the license is upgraded before the grace period ends. If the grace period ends and the license has not been upgraded, the new users (including this one) will no longer be able to log in.</p>
NOTIFY	License breach time has been received from cluster/database: {1}	The Liberator has been started when the grace period has been entered. It has obtained the time {1} when the grace period started, either from another Liberator in the cluster, or from its own license usage database.
NOTIFY	Currently within a licensing grace period, will not wrap the uupp file	Because the licensing grace period has been entered, the unique end user information held in the licensing database will not be removed at the end of the current license monitoring period, and the license end user counts will not be set to zero.
NOTIFY	The licensing grace period has expired, the uupp file will not be wrapped	Because the licensing grace period has expired, the unique end user information held in the licensing database will not be removed at the end of the current license monitoring period, and the license end user counts will not be set to zero.
NOTIFY	Could not open uupp storage, will rename existing file and retry	The Liberator could not open the license usage database. This may be because the database does not match the installed license file. The Liberator renames the database and then opens a new one that is compatible with the license file.
NOTIFY	Successfully opened uupp storage, normal operation will continue	The license usage database has been successfully opened following a previous open failure.
CONFIG	License option <{1}> is enabled, but Liberator option <auth-eject-users> isn't enabled.	The Liberator configuration is inconsistent: <b>max-logins-per-user</b> or <b>max-application-logins</b> is defined in the license, but the corresponding Liberator option <b>auth-eject-users</b> is either not enabled or is not defined.
CONFIG	cluster config number ({1}) is smaller than license config ({2}) - reducing user count	The number of nodes {1}, as specified using the configuration item <b>add-cluster-node</b> , is smaller than the number {2} specified in the license. Since user licensing is valid over the entire licensed cluster, the count of licensed nodes is reduced to the lower value for this wrongly configured cluster.

## 5 Liberator licensing configuration

The following Liberator configuration items can be used to define how Liberator monitors license usage.

Configuration item	Type	Default value	Description
<b>application-usage-warn-level</b> options: <i>app-name</i> <i>warn-level</i>	string float	None Min 1% Max 99%	The warning threshold for a client application in the Application Level licensing category. This is the number of unique logins at which the Liberator will raise a warning that the license end user count is approaching the license limit for the application. The value is defined as a percentage of the license end user limit for the license category.  See also <b>default-application-usage-warn-level</b>
<b>auth-trading-group-usage-warn-level</b> options: <i>trading-group</i> <i>warn-level</i>	string float	None Min 1% Max 99%	The warning threshold for a trading group in the Asset Class (Trading Group) licensing category. This is the number of unique logins at which the Liberator will raise a warning that the license end user count is approaching the license limit for the trading group. The value is defined as a percentage of the license end user limit for the trading group.  <i>trading-group</i> has the format <application-id><asset-class> For example */FX means any application (*) trading the Foreign Exchange asset class (/FX)  See also <b>default-trading-group-usage-warn-level</b>
<b>auth-trading-group-report-period</b>	float	3,600 secs (1 hr)	The reporting interval for event log messages about end user counts in the asset class (trading group) licensing category.
<b>auth-unique-applications-report-period</b>	float	3,600 secs (1 hr)	The reporting interval for event log messages about license end user counts in the application level licensing and unique users licensing categories.

Configuration item	Type	Default value	Description
<b>default-application-usage-warn-level</b>	integer	90% Min 1% Max 99%	<p>The default warning threshold for the Application Level licensing category. This is the number of unique logins at which the Liberator will raise a warning that the license end user count is approaching the license limit for the application. The value is defined as a percentage of the license end user limit for the application.</p> <p>This configuration item applies to any client application that does not have a warning threshold defined through <b>application-usage-warn-level</b></p>
<b>default-trading-group-usage-warn-level</b>	integer	90% Min 1% Max 99%	<p>The default warning threshold for the Asset Class (Trading Group) licensing category. This is the number of unique logins at which the Liberator will raise a warning that the license end user count is approaching the license limit for the trading group. The value is defined as a percentage of the license end user limit for the trading group.</p> <p>This configuration item applies to any trading group that does not have a warning threshold defined through <b>auth-trading-group-usage-warn-level</b></p>
<b>unique-users-usage-warn-level</b>	integer	90% Min 1% Max 99%	<p>The warning threshold for the Unique Users licensing category. This is the number of unique logins at which the Liberator will raise a warning that the license end user count is approaching the license limit for this license category. The value is defined as a percentage of the license end user limit for the license category.</p>

## 6 Glossary of terms and acronyms

This section contains a glossary of terms, abbreviations, and acronyms relating to licensing for the Caplin Platform.

Term	Definition
<b>application identifier</b>	An identifier for an application running on a client; for example, <b>Caplin Trader Client</b> .
<b>Client Portal</b>	A Web site provided by Caplin Systems that allows customers to access information about Caplin's products, obtain support, <i>view license information, and download licenses</i> , all in a secure manner.
<b>Asset class</b>	A category of financial product referenced in a trading message sent by a <b>trading user</b> . For example, FX (Foreign Exchange) or FI (Fixed Income instruments).
<b>Caplin Platform</b>	The Caplin Platform is a suite of software products for on-line financial trading and Web delivery of real-time market data.
<b>Caplin Trader Client</b>	Caplin Trader Client is a Web application written in Ajax that provides a rich trading workstation in a browser. It interfaces to the <b>Caplin Platform</b> via a <b>Liberator</b> server.
<b>EMC</b>	<b>Enterprise Management Console</b> .
<b>End user</b>	A person who, or computer that, successfully logs in to <b>Liberator</b> .  See also <b>unique end user</b> , <b>trading user</b> , <b>non-trading user</b> .
<b>Enterprise Management Console (EMC)</b>	A Caplin Platform component for monitoring and controlling other Caplin Platform components through a GUI interface. The EMC uses <b>JMX</b> to access the components it monitors.
<b>Grace period</b>	When during the <b>license monitoring period</b> one of the license end user counts exceeds the limit defined in the license, <b>Liberator</b> starts a <b>grace period</b> . The grace period for a license is set by Caplin Systems and is <i>seven days</i> . You should purchase an upgraded license (with a higher license end user limit) before the grace period ends. See <a href="#">When license usage limits are exceeded – the grace period and beyond</a> .
<b>JMX</b>	Java Management Extensions A Java technology for application and network management.
<b>JMX monitoring</b>	The capability within a <b>Caplin Platform</b> component, such as <b>Liberator</b> , to provide information about the component's operation via <b>JMX</b> to an external monitoring and management application, such as the <b>Enterprise Management Console</b> .
<b>Liberator</b>	Caplin Liberator is a bidirectional streaming push server designed to deliver market data and trade messages over any network that supports Web traffic. Through its <b>license usage database</b> , Liberator monitors and controls the numbers of end-users (clients) accessing the <b>Caplin Platform</b> , by referring to the settings in the installed <b>license file</b> .
<b>License</b>	Short for <b>license file</b> .



Term	Definition
<b>License agreement</b>	<p>The set of license terms and conditions, relating to a deployment of the Caplin Platform, that have been contractually agreed between Caplin Systems Ltd. and a customer.</p> <p>The aspects of a license agreement relating to the deployment of a particular Platform component, such as <b>Liberator</b>, are encoded in a <b>license file</b>.</p>
<b>License category</b>	<p>A <b>Liberator</b> license typically falls into one or more categories. For more information see <a href="#">License categories</a> <sup>[ 4 ]</sup>.</p>
<b>License end user count</b>	<p>The number of <b>unique end users</b> recorded by <b>Liberator</b> during the current <b>license monitoring period</b></p> <p>Liberator maintains a number of license end user counts; for example there is a count for each <b>trading group</b> defined in the license. The license end user counts are held in the <b>license usage database</b>.</p> <p>Provided a <b>license end user limit</b> is not exceeded, Liberator resets the counts at the end of the current <b>license monitoring period</b>.</p>
<b>License end user limit</b>	<p>The maximum number of end users allowed, within the license terms, to perform a particular activity or activities using the <b>Caplin Platform</b>; for example, trading within a particular <b>trading group</b>.</p>
<b>License expiry date</b>	<p>The date at which a license expires. The expiry date applies to the license as a whole, whatever <b>license categories</b> are defined in the license.</p>
<b>License file</b>	<p>A file containing all the license information (relating to a <b>license agreement</b>) for an installed <b>Caplin Platform</b> component. This file is installed with the component, and the component uses the information in the file to determine its own run-time behaviour according to the terms of the license agreement.</p> <p>A Liberator license file includes information about <b>license end user limits</b> and the licensed <b>trading groups</b> for the <b>Platform</b> installation.</p>
<b>License monitoring period</b>	<p>The period over which Liberator maintains <b>license end user counts</b> of the number of <b>unique end users</b> performing activities permitted under the license terms; for example, trading within a particular <b>trading group</b>.</p> <p>The license monitoring period is a calendar month.</p>
<b>License usage database</b>	<p>The database that records information for checking license compliance; for example, the login names of all <b>unique end users</b> accessing Liberator, and the <b>license end user counts</b> that are checked against the <b>license end user limits</b> in the license. This database is maintained and checked by <b>Liberator</b>.</p> <p>Also known as the <b>UUPP database</b>.</p>
<b>New license validity period</b>	<p>The time in days for which a new or <b>regenerated license</b> is valid for starting <b>Liberator</b>. Within this time the license must be installed and the Liberator must be started at least once. If the license has expired, the Liberator will reject all attempts to connect to it. See <a href="#">How Liberator licenses are monitored</a> <sup>[ 7 ]</sup>.</p>
<b>Non-trading user</b>	<p>An end user who is not a <b>trading user</b>.</p> <p>A non-trading user would typically log in to Liberator just to view data.</p>

Term	Definition
	If the platform's permissioning system allows an end user to trade then when a non-trading user trades for the first time they become a <b>trading user</b> for licensing purposes.
<b>Platform</b>	Short for <b>Caplin Platform</b> .
<b>Regenerated license</b>	A <b>license file</b> that has been recreated using information from the <b>license agreement</b> , to replace an existing license file that has been corrupted or deleted. For Liberator licenses, the new copy of the license must be installed within the <b>new license validity period</b> from when it was created.  See <a href="#">Restoring a Liberator license after a failure</a> <sup>[37]</sup> .
<b>SL4B</b>	<u>StreamLink</u> for (4) <u>Browsers</u> A JavaScript library that connects a client application running in a Web Browser to a Liberator via Caplin's RTTP protocol.
<b>Trading group</b>	A combination of <b>asset class</b> and client <b>application identifier</b> for which a <b>Caplin Platform</b> installation is licensed to allow trading. In the <b>Liberator license file</b> , a trading group specifies the maximum number of <b>unique end users</b> who can trade that asset class from a client application (defined by its <b>application identifier</b> ) within the <b>license monitoring period</b> . See <b>license end user limit</b> .  The cost of a license is broken down by trading group. For example, \$X for the trading group that allows up to 2,000 end users to trade conduct FX trades through <b>Caplin Trader Client</b> and \$Y for the trading group that allows up to 1,000 end users to trade Fixed Income instruments through Caplin Trader Client.
<b>Trading user</b>	An <b>end user</b> who sends a trading message via <b>Liberator</b> or initiates an online financial transaction involving Liberator.
<b>Unique end user</b>	An <b>end user</b> who is uniquely identified to <b>Liberator</b> by their login name.
<b>Upgraded license</b>	A <b>license file</b> that replaces an existing license file because some of the license information in the file has been changed under the terms of a renegotiated <b>license agreement</b> . For example, the upgraded license could have a higher <b>license end user limit</b> for FX trading via Caplin Trader Client.
<b>UUPP database</b>	Another name for the <b>license usage database</b> . UUPP means <u>U</u> nique <u>U</u> sers <u>P</u> er (license monitoring) <u>P</u> eriod
<b>Warning Threshold</b>	The number of unique logins at which the Liberator will raise a warning that the <b>license end user limit</b> may be reached.

## Contact Us

Caplin Systems Ltd  
Triton Court  
14 Finsbury Square  
London EC2A 1BR  
Telephone: +44 20 7826 9600  
Fax: +44 20 7826 9610  
[www.caplin.com](http://www.caplin.com)

The information contained in this publication is subject to UK, US and international copyright laws and treaties and all rights are reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the written authorization of an Officer of Caplin Systems Limited.

Various Caplin technologies described in this document are the subject of patent applications. All trademarks, company names, logos and service marks/names ("Marks") displayed in this publication are the property of Caplin or other third parties and may be registered trademarks. You are not permitted to use any Mark without the prior written consent of Caplin or the owner of that Mark.

This publication is provided "as is" without warranty of any kind, either express or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement.

This publication could include technical inaccuracies or typographical errors and is subject to change without notice. Changes are periodically added to the information herein; these changes will be incorporated in new editions of this publication.

Caplin Systems Limited may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

This publication may contain links to third-party web sites; Caplin Systems Limited is not responsible for the content of such sites.