Release Notes for Platform™ LSF™ License Scheduler Version 7 Update 3
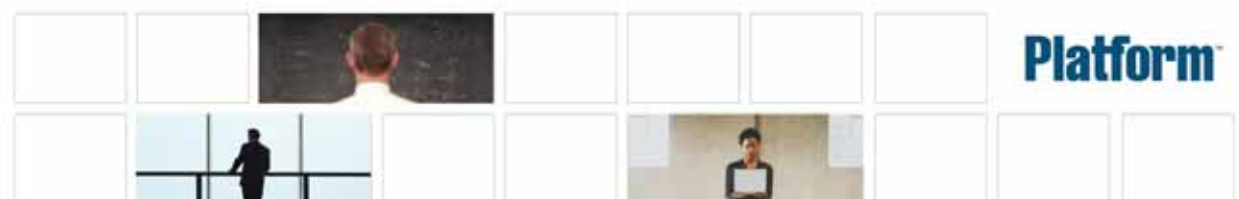
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What's new in Platform LSF License Scheduler Version 7

For detailed information about what's new in Platform LSF License Scheduler Version 7, visit the Platform Computing Web site to see *Features, Benefits & What's New*.

Platform

Upgrade and Compatibility Notes

LSF compatibility

Platform LSF License Scheduler Version 7 is compatible with LSF 7, and LSF 6.*x* servers.

System requirements

See the Platform Computing Web site for information about supported operating systems and system requirements for the Platform LSF family of products:

- Platform LSF
- Platform LSF License Scheduler

What's Changed in Platform LSF License Scheduler Version 7

- Changed behavior
- New and changed configuration parameters and environment variables
- New and changed commands, options, and output
- New and changed files
- New and changed accounting and job event fields

Changed behavior

- Maximization of License Usage—The built-in functionality of License Scheduler helps ensure that your licenses are always being used efficiently. For example, if the sbatchd encounters any problems, the job acquires the state UNKNOWN. However, License Scheduler ensures that any in use licenses continue to be allocated, but charges them to the OTHERS category until the sbatchd recovers and the job state is known again.

- Automatic Time-based Configuration—Variable time-based configuration is used to automatically change LSF License Scheduler configuration in lsf.licensescheduler based on time windows. For example, if you have design centers in remote locations, one use of time-based configuration is to switch ownership of license tokens based on local time of day. You define automatic configuration changes in lsf.licensescheduler by using if-else constructs and time expressions. After you change the files, reconfigure the cluster with the bladmin reconfig command.

- License Scheduler daemon error logs—Error logs maintain important information about LSF License Scheduler operations. When you see any abnormal behavior in License Scheduler, you should first check the appropriate error logs to find out the cause of the problem. Log files are reopened each time a message is logged, so if you rename or remove a daemon log file, the daemons will automatically create a new log file. The License Scheduler daemons log messages when they detect problems or unusual situations. The daemons can be configured to put these messages into files. The error log file names for the LSF system daemons are:

  - bld.log.*host_name*
  - blcollect.log.*host_name*

- License Scheduler daemons log error messages in different levels so that you can choose to log all messages, or only log messages that are deemed critical. Message logging for License Scheduler daemons is controlled by the parameter LS_LOG_MASK in lsf.licensescheduler. The default value for LS_LOG_MASK is LOG_WARNING.

- Defining project priority—If no hierarchical project groups are defined, the default project configuration is flat. The priority of a project has nothing to do with its position in the hierarchy. Project priority values can be compared between all leaf nodes. To configure project priority in lsf.licensescheduler, set the PRIORITY column in the Project section.

◆ Preemption in a project group hierarchy—License preemption in License Scheduler takes place when no more free tokens are available, and there is at least one underfed project and at least one overfed project. License scheduler can now preempt license tokens at leaf nodes across the branches in the group hierarchy configuration.

By default, when no PRIORITY is configured in the project group, License Scheduler only preempts within a particular branch for tokens to preempt. This approach works like a flat project configuration—projects are underfed only when they have need and their inuse tokens are less than their owned tokens. Projects are overfed when their inuse tokens are greater than their owned tokens.

To enable *top-down* preemption, configure priorities for projects in the project group hierarchy. Top-down preemption is the default when priorities are configured in a project group hierarchy.

To enable *bottom-up* preemption, configure priorities for projects in the project group hierarchy, and specify LS_PREEMPT_PEER=Y in the Parameters section of `lsf.licensescheduler`.

New and changed configuration parameters and environment variables

The following configuration parameters and environment variables are new or changed for LSF License Scheduler Version 7:

lsf.licensescheduler ◆ *Feature section*—LS_FEATURE_PERCENTAGE=Y | N configures license ownership in percentages instead of absolute numbers. When not combined with hierarchical projects, affects DISTRIBUTED and NON_SHARED_DISTRIBUTION values only. When using hierarchical projects, percentage is applied to OWNERSHIP, LIMITS, and NON_SHARED values.

◆ *Parameters section*:

❖ LS_DEBUG_BLD=*log_class*—Sets the debugging log class for the LSF License Scheduler`bld` daemon. Specifies the log class filtering to be applied to `bld`. Messages belonging to the specified log class are recorded. Not all debug message are controlled by log class.

❖ LS_LOG_MASK=*message_log_level*—Specifies the logging level of error messages for LSF License Scheduler daemons. If LS_LOG_MASK is not defined in `lsf.icensescheduler`, the value of LSF_LOG_MASK in `lsf.conf` is used. If neither LS_LOG_MASK nor LSF_LOG_MASK is defined, the default is LOG_WARNING.

❖ LS_PREEMPT_PEER—Enables bottom-up license token preemption in hierarchical project group configuration. License Scheduler attempts to preempt tokens from the closest projects in the hierarchy first. This balances token ownership from the bottom up.

◆ *ProjectGroup section*—PRIORITY defines the priority assigned to the hierarchical group member projects. Specify the priority for each member, separated by spaces, in the same order as listed in the GROUP column.

"0" is the lowest priority, and a higher number specifies a higher priority. This column overrides the default behavior. Instead of preempting based on the accumulated `inuse` usage of each project, the projects are preempted according to the specified priority from lowest to highest.

By default, priorities are evaluated top down in the project group hierarchy. The priority of a given node is first decided by the priority of the parent groups. When two nodes have the same priority, priority is determined by the accumulated `inuse` usage of each project at the time the priorities are evaluated. Specify LS_PREEMPT_PEER=Y in the Parametersr section to enable bottom-up license token preemption in hierarchical project group configuration.

A dash (`-`) is equivalent to a zero, which means there is no priority for the project. You can leave the parentheses empty `()` if desired.

Use `blinfo -G` to view hierarchical project group priority information.

◆ Automatic time-based confguration—Automatically change LSF License Scheduler license token distribution policy configuration based on time windows. Use if-else constructs and time expressions in the Feature section to define automatic configuration changes. After you change the file, check the configuration with the `bladmin ckconfig` command, and restart License Scheduler the cluster with the `bladmin reconfig` command. The expressions are evaluated by License Scheduler every 10 minutes based on the `bld` start time. The expressions are evaluated by LSF License Scheduler every 10 minutes based on bld start time. When an expression evaluates true, License Scheduler dynamically changes the configuration based on the associated configuration statements and restarts `bld`.

Environment variables

No environment variables have been added or changed in LSF License Scheduler Version 7.

New and changed commands, options, and output

The following command options and output are new or changed for LSF License Scheduler Version 7:

bladmin

`blddebug [-c class_name ...] [-l debug_level] [-f logfile_name] [-o]`

Sets the message log level fo the LSF License Scheduler daemon `bld` to include additional information in log files. You must be `root` or the LSF administrator to use this command.

If the `bladmin blddebug` is used without any options, the following default values are used:

◆ *class_name*=0 (no additional classes are logged)

◆ *debug_level*=0 (LOG_DEBUG level in parameter LS_LOG_MASK)

◆ *logfile_name*=current LSF system log file in the LSF system log file directory, in the format *daemon_name*`.log.`*host_name*

`blcdebug [-l debug_level ] [-f logfile_name] [-o] collector_name ... | all`

Sets temporary message log level options for `blcollect`:

If `bladmin blcdebug` is used without any options, the following default values are used:

◆ *debug_level*=0 (LOG_DEBUG level in parameter LS_LOG_MASK)

◆ *logfile_name*=current LSF system log file in the LSF system log file directory, in the format *daemon_name*`.log.`*host_name*

◆ *collector_name*=default

blinfo

◆ `-G` displays the priority of the project (PRIORITY) if it is different from the default behaviour. A larger number indicates a higher priority.

◆ `-Lp` displays the priority of the project if it is different from the default behaviour. A larger number indicates a higher priority.

◆ `-Lp` displays the DESCRIPTION of the project or project group.

◆ `-P` lists the license ownership in percentage when LS_FEATURE_PERCENTAGE=Y in the Feature section of `lsf.licensescheduler`.

◆ `-g` *feature_group*—When FEATURE_GROUP is configured for a group of license features in `lsf.licensescheduler`, shows only information about the features configured in the FEATURE_LIST of specified feature groups. You can specify more than one feature group at a time.

◆ `-o alpha│total│ avail` sorts license feature information alphabetically, by total licenses, or by available licenses.

blstat

◆ `-a` displays each project group's accumulated value of licenses. The license token dispatching order is based on the sort order, which is based on the scaled accumulate value of each project. The lower the value, the sooner the license token is dispatched to that project.

◆ `-Lp` displays the DESCRIPTION of the project or project group.

◆ `-c` *token_name* displays cross cluster information for tokens, sorted by the value of SCALED_ACUM. The first cluster listed receives tokens first. Information displayed includes token usage, reserved tokens, free tokens, demand for tokens, accumulated value of tokens, and scaled accumulate value of tokens in each cluster.

◆ `-g` *feature_group*—When FEATURE_GROUP is configured for a group of license features in `lsf.licensescheduler`, shows only information about the features configured in the FEATURE_LIST of specified feature groups. You can specify more than one feature group at a time.

◆ `-o alpha│total│ avail` sorts license feature information alphabetically, by total licenses, or by available licenses.

New and changed files

No new files have been added in Platform LSF License Scheduler Version 7.

New and changed accounting and job event fields

No changes have been made to Platform LSF License Scheduler accounting files.

Known Issues

To avoid `bld` license checkout failure, the FLEXlm daemon version must be higher than the version used to compile `bld`. Run `lmver bld` to check the FLEXlm daemon version.

For example, the following `bld` requires a FLEXlm daemon version higher than version 9.2.0:

```
lmver bld
lmver - Copyright (c) 1989-2003 by Macrovision Corporation. All rights reserved.
FLEXlm v9.2.0 (liblmgr.a), Copyright (c) 1988-2003 by Macrovision Corporation. All rights
reserved.
```

The following `bld` requires a FLEXlm daemon version higher than version 9.2.3:

```
lmver bld
lmver - Copyright (c) 1989-2004 by Macrovision Corporation. All rights reserved.
FLEXlm v9.2.3 (liblmgr.a), Copyright (c) 1988-2004 by Macrovision Corporation. All rights
reserved.
```

Download `lsf_ld` and `lmgrd` compiled on the correct version from `ftp.platform.com`, under the directory `/support/FLEXlm`.

Download the Platform LSF License Scheduler Version 7 Distribution Packages

Download the distribution packages Through FTP at `ftp.platform.com`.

Download LSF through FTP

Prerequisites: Access to the Platform FTP site is controlled by login name and password. If you cannot access the distribution files for download, send email to `support@platform.com`.

1   Log on to the LSF file server.

2   Change to the directory where you want to download the LSF distribution files. Make sure that you have write access to the directory. For example:

```
# cd /usr/share/lsf/tarfiles
```

3   FTP to the Platform FTP site:

```
# ftp ftp.platform.com
```

4   Provide the login user ID and password provided by Platform.

5   Change to the directory for the License Scheduler Version 7 release:

```
ftp> cd /distrib/7.0/license_scheduler_update3
```

6   Set file transfer mode to binary:

```
ftp> binary
```

7   Get the distribution packages for the products you want to install on the supported platforms you need. For example:

❖   For the Solaris 10 64-bit version of LSF License Scheduler Version 7:

```
ftp> get lsfupdate3_licsched_sparc-sol10-64.tar.Z
```

TIP: *Do not* uncompress and extract the distribution files.

8   Exit FTP.

```
ftp> quit
```

Install Platform LSF License Scheduler Version 7

Installing Platform LSF involves the following steps:

1   Get a DEMO license (`license.dat` fie).

2   Run the installation programs.

Get a Platform LSF demo license

Before installing Platform LSF Version 7, you must get a demo license key.

Contact `license@platform.com` to get a demo license.

Put the demo license file `license.dat` in the same directory where you downloaded the Platform LSF License Scheduler product distribution tar files.

Run the Platform LSF License Scheduler installation

See *Using Platform LSF License Scheduler* for installation and configuration steps.

Get Technical Support

Contact Platform

Contact Platform Computing or your LSF vendor for technical support. Use one of the following to contact Platform technical support:

Email

support@platform.com

World Wide Web

www.platform.com

Mail

Platform Support
Platform Computing Inc.
3760 14th Avenue
Markham, Ontario
Canada L3R 3T7

When contacting Platform, please include the full name of your company.

See the Platform Web site at http://www.platform.com/company/contact-us for other contact information.

Get patch updates and other notifications

To get periodic patch update information, critical bug notification, and general support notification from Platform Support, contact supportnotice-request@platform.com with the subject line containing the word "subscribe".

To get security related issue notification from Platform Support, contact securenotice-request@platform.com with the subject line containing the word "subscribe".

We'd like to hear from you

If you find an error in any Platform documentation, or you have a suggestion for improving it, please let us know:

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Mail

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Canada L3R 3T7

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