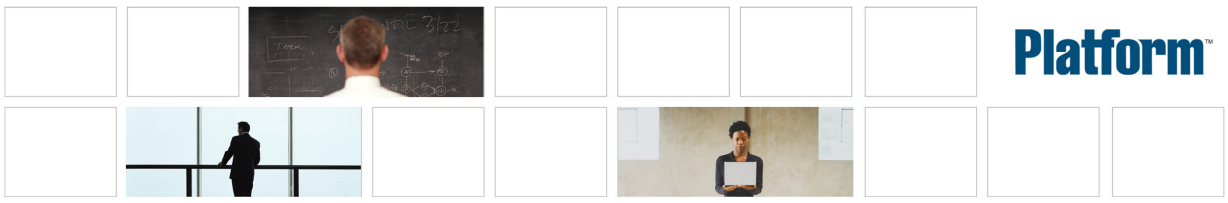
Release Notes for Platform LSF

Platform LSF
Version 7 Update 4
Release date: October 2008
Last modified: April 27, 2009



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Upgrade and Compatibility Notes

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What's new in Platform LSF Version 7 Update 4

For detailed information about what's new in Platform LSF Version 7 Update 4, visit the Platform Computing Web site to see features and benefits: *http://www.platform.com/Products/platform-lsf-family/platform-lsf/features-and-benefits*.

Server host compatibility

Important:

To use new features introduced in Platform LSF Version 7, you *must* upgrade all hosts in your cluster to LSF 7.

LSF 6.*x* and 5.*x* servers are compatible with Platform LSF Version 7 master hosts. All LSF 6.*x* and 5.*x* features are supported by LSF 7 master hosts.

Upgrade from an earlier version of LSF on UNIX and Linux

Follow the steps in *Upgrading Platform LSF on UNIX and Linux* (`lsf_upgrade_unix.pdf`) to run `lsfinstall` to *upgrade* LSF:

- Upgrade a pre-version 7 UNIX or Linux cluster to LSF Version 7 Update 4
- Upgrade an LSF Version 7 Update 2 or Update 3 UNIX or Linux cluster to LSF Version 7 Update 4

Important:

DO NOT use the UNIX and Linux upgrade steps to migrate an existing LSF 7 Update 1 cluster to LSF 7 Update 4. Follow the manual steps in the document *Migrating to Platform LSF Version 7 Update 4 on UNIX and Linux* to migrate an existing LSF 7 Update 1 cluster to LSF 7 Update 4 on UNIX and Linux.

Migrate your existing LSF 7 cluster to Update 4 on UNIX and Linux

Follow the steps in *Migrating to Platform LSF Version 7 Update 4 on UNIX and Linux* (`lsf_migrate_unix.pdf`) to migrate an *existing* LSF 7 cluster:

- Migrate an existing LSF Version 7 cluster to LSF 7 Update 4 on UNIX and Linux
- Migrate an existing LSF 7 Update 1 cluster to LSF 7 Update 4 on UNIX and Linux

Note:

DO NOT use these steps to migrate an existing LSF 7 Update 2 or higher cluster to LSF 7 Update 4. Follow the steps in *Upgrading Platform LSF on UNIX and Linux* to upgrade LSF.

Migrate LSF on Windows from an earlier version

To migrate a *pre-version* 7 cluster to a new LSF 7 on Windows cluster, follow the steps in *Migrating Your Windows Cluster to Platform LSF Version 7* (`lsf_migrate_windows.pdf`).

Note:

DO NOT use these steps to migrate an existing LSF 7 cluster to LSF 7 Update 4.

Migrate your existing LSF cluster to Update 4 on Windows

To migrate an *existing* LSF 7 Windows cluster to LSF 7 Update 4 on Windows, follow the steps in *Migrating Platform LSF Version 7 to Update 4 on Windows* (`lsf_migrate_windows_to_update4.pdf`).

Note:

DO NOT use these steps to migrate a pre-version 7 cluster to LSF 7 Update 4.

Maintenance pack and update availability

At release, Platform LSF Version 7 Update 4 includes all bug fixes and solutions up to and including August 31 2008. Fixes after that date will be included in the next LSF update.

System requirements

See the Platform Computing Web site for information about supported operating systems and system requirements for Platform LSF: *http://www.platform.com/Products/platform-lsf-family/platform-lsf/system-requirements*.

API compatibility

Full backward compatibility: your applications will run under LSF Version 7 without changing any code.

The Platform LSF Version 7 API is fully compatible with the LSF Version 6.*x*. and 5.*x* APIs. An application linked with the LSF Version 6.*x* or 5.*x* libraries will run under LSF Version 7 without relinking.

To take full advantage of new Platform LSF Version 7 features, you should recompile your existing LSF applications with LSF Version 7.

New and changed LSF APIs

See the *LSF API Reference* for more information.

The following APIs have changed for LSF Version 7 Update 4:

- `lsb_submit()` and `lsb_modify()`: Add the options SUB3_INTERACTIVE_SSH and SUB3_XJOB_SSH, SUB3_RUNTIME_ESTIMATION, SUB3_RUNTIME_ESTIMATION_ACC, SUB3_RUNTIME_ESTIMATION_PERC, SUB3_AUTO_RESIZE and SUB3_RESIZE_NOTIFY_CMD to the JobSubReq structure options3 field
- `lsb_readjobinfo()` and `lsb_readjobinfo_cond()`: Add the int runtimeEstimation field to the submit structure
- `lsb_readjobinfo()` and `lsb_readjobinfo_cond()`: Add the following fields to the jobInfoEnt structure:
  - resizeMin
  - resizeMax
  - resizeReqTime
  - jStartNumExHosts
  - jStartExHosts
  - lastResizeTime
- `lsb_submit()`: Add notifyCmd field to submit structure for job resize notification command to be invoked on the first execution host when a resize request has been satisfied.
- `lsb_launch()`: Add LSF_DJOB_USE_LOGIN_SHELL and LSF_DJOB_USE_BOURNE_SHELL options to userOptions parameter to specify with shell to launch commands through (user login shell or Bourne shell (`/bin/sh`)).

The following APIs are new for LSF Version 7 Update 4:

- `lsb_resize_cancel()`: Cancels a pending job resize allocation request
- `lsb_resize_release()`: Releases part of the allocation of a running resizable job

What's Changed in Platform LSF Version 7 Update 4

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New and changed behavior

SSH

Platform LSF now supports OpenSSH (SSH-1 and SSH-2).

Strict syntax for resource requirement selection strings

The syntax of resource requirement selection strings has been enhanced to make resource selection more consistent and rigorous. When LSF_STRICT_RESREQ=Y is configured in `lsf.conf`, resource requirement strings in select sections must conform to a more strict syntax. Strict syntax checking does not apply to the other resource requirement sections (order, rusage, same, or span). However, when LSF_STRICT_RESREQ=Y in `lsf.conf`, LSF also rejects resource requirement strings where an rusage section contains a non-consumable resource. When LSF_STRICT_RESREQ=N, the default resource requirement selection string evaluation is performed.

Installation

- LSF installation with `lsfinstall` has been improved to to support the LDAP environment for host name, user name, services lookup.
- Installation on Windows has been enhanced and streamlined:
  - Remove manual steps for using a shared installation directory
  - In Windows master host installation, set the LSF password file directly, so cluster administrators can submit jobs without extra steps to verify LSF cluster
  - Add a new dialog for shared location on all hosts installation, so you can decide to use a shared location as LSF_CONFDIR or keep local configuration
  - Add new dialog for Windows service account, so you can choose another account instead of LocalSystem
  - Platform Management Console (PMC) is in a separate msi package

LSF License Scheduler

The Platform LSF License Scheduler flexible grid interface license management plugin is no longer supported.

Platform Management Console

The Platform Management Console allows you to submit and monitor jobs, and provides access to job reports. You can choose to submit jobs directly from the PMC, or through a separate workload management application. After logging on to the PMC, you can monitor the jobs you submitted through either the console or a workload management application.

You can submit jobs through a number of standard interfaces in the PMC. A generic interface is provided, along with several pre-configured and customizable interfaces (such as Fluent, LS-DYNA, ABAQUS, ANSYS, Nastran, and EnginFrame).

Resizable jobs

Enabling resizable jobs allows LSF to run a job with minimum and maximum slots requested and have it dynamically use the number of slots available at any given time.

By default, if a job specifies minimum and maximum slots requests (`bsub -n` *`min_slots`*`,` *`max_slots`*), LSF makes a one time allocation and schedules the job. You can configure resizable jobs so that LSF dispatches jobs as long as minimum slot request is satisfied. After the job successfully starts, LSF continues to schedule and allocate additional resources to satisfy the maximum slot request for the job.

The allocation change request may be triggered automatically or by the `bresize` command. For example, after the job starts, you can explicitly cancel resize allocation requests or have the job release idle resources back to the LSF.

An *autoresizable job* is a resizable job with a minimum and maximum slot request. LSF automatically schedules and allocates additional resources to satisfy job maximum request as the job runs.

Automatic daemon shutdown

For hosts that attempted to join the cluster but failed to communicate within the LSF_DYNAMIC_HOST_WAIT_TIME period, automatically shuts down any running daemons. Enable EGO_ENABLE_AUTO_DAEMON_SHUTDOWN in `lsf.conf`. This feature also works when dynamic host support is not enabled.

Log file owner

On UNIX hosts, you can set a log file owner for the LSF daemons (not including the `mbschd`) to change the default owner (LSF administrator). Changes are made to LSF_LOGFILE_OWNER in `lsf.conf`.

For more information, see *Administering Platform LSF*.

Resource reservation

For jobs that need more than one resource before it will run, you can choose to reserve resources for pending jobs that are waiting for another resource to become available. This ensures that when the rare resource becomes available, the job will already have any other resources reserved and will therefore run right away.

See lsb.resources in the *LSF Configuration Reference* for more information.

File name lengthened

The number of characters allowed in a file name, including the directory path, has been lengthened. File names can be up to and including 4094 characters. Checkpoint directories are limited to 4000 characters.

Host name ranges

A number of commands often require you to specify host names. You can now specify host name ranges instead.

For more information, see *Administering Platform LSF*.

Processor binding for job processes

Processor binding for LSF job processes takes advantage of the power of multiple processors and multiple cores to provide hard processor binding functionality for sequential LSF jobs and parallel jobs that run on a single host. There are six values you can set LSF_BIND_JOB in `lsf.conf` or BIND_JOB in `lsb.applications` to: BALANCE, ANY, NONE, PACK, USER_CPU_LIST, USER.

For more information, see *Administering Platform LSF*.

Host group administrator

The new host group administrators can open or close any hosts that belong to their host group.

User group administrator

User groups can now have optional administrators that can control the jobs their users submit. They can even resume their users' jobs that were suspended by the cluster administrator.

Job and queue host specification improved

When you have defined your queues with a list of hosts and you submit a job while specifying hosts with `bsub -m`, if you specify a host that does not belong to the correct queue, the job still runs on the other hosts specified. Before this enhancement, the job would have failed because it could not run on the host that does not belong to the queue. This is especially useful if you use scripts to run your jobs and are sometimes modify the host members of a queue.

Resource requirement order string

The resource requirement order string now supports numeric static resources in addition to builtin and external load indices.

Event streaming

Event streaming is now disabled by default. To enable event streaming, define
```
ENABLE_EVENT_STREAM=Y
```
in `lsb.params`.

SSH support

Secure Shell or SSH is a network protocol that provides confidentiality and integrity of data using a secure channel between two networked devices. You can enable and use SSH in LSF to secure communication between hosts and during interactive job submission on the following operating systems:

- Linux 2.6 x86-64
- Sun Solaris 10 on Sparc
- Microsoft Windows (XP/Vista/2003/2008)

New and changed configuration parameters and environment variables

The following configuration parameters and environment variables are new or changed for LSF Version 7 Update 4:

install.config

- The ENABLE_HPC_INST parameter is obsolete. To enable configuration for Platform LSF HPC features, specify ENABLE_HPC_CONFIG=Y in `install.config`.

lsb.applications

- BIND_JOB: The values for BIND_JOB have changed from YES or NO to BALANCE, ANY, NONE, PACK, USER_CPU_LIST, USER to specify the processor binding policy for sequential and parallel job processes that run on a single host.
- DJOB_RESIZE_GRACE_PERIOD=*seconds*: When a resizable job releases resources, the LSF distributed parallel job framework terminates running tasks if a host has been

completely removed. A DJOB_RESIZE_GRACE_PERIOD defines a grace period in seconds for the application to clean up tasks itself before LSF forcibly terminates them.

- LOCAL_MAX_PREEXEC_RETRY=*integer*: The maximum number of times to attempt the pre-execution command of a job on the local cluster. Specify a value between 0 < MAX_PREEXEC_RETRY < INFINIT_INT. INFINIT_INT is defined in `lsf.h`. By default, the number of preexec retry times is unlimited.
- MAX_PREEXEC_RETRY=*integer*: MultiCluster job forwarding model only. The maximum number of times to attempt the pre-execution command of a job from a remote cluster. If the job's pre-execution command fails all attempts, the job is returned to the submission cluster. Specify a value between 0 < MAX_PREEXEC_RETRY < INFINIT_INT. INFINIT_INT is defined in `lsf.h`. The default value is 5.
- REMOTE_MAX_PREEXEC_RETRY=*integer*: REMOTE_MAX_PREEXEC_RETRY is equivalent to MAX_PREEXEC_RETRY
- RES_REQ: When LSF_STRICT_RESREQ=Y is configured in `lsf.conf`, resource requirement strings in select sections must conform to a more strict syntax. The strict resource requirement syntax only applies to the select section. Strict syntax checking does not apply to the other resource requirement sections (order, rusage, same, or span). However, when LSF_STRICT_RESREQ=Y in `lsf.conf`, LSF also rejects resource requirement strings where an rusage section contains a non-consumable resource. When LSF_STRICT_RESREQ=N, the default resource requirement selection string evaluation is performed.
- RESIZABLE_JOBS=Y|N|auto: configures the resizable jobs feature in the application profile. N disables the resizable job feature in the application profile. Y enables resizable jobs in the application profile and all jobs belonging to the application are resizable by default. auto specifies that all jobs belonging to the application are autoresizable.
- RESIZE_NOTIFY_CMD=*notification_command*: Defines an executable command to be invoked on the first execution host of a job when a resize event occurs. The maximum length of notification command is 4 KB.

lsb.hosts

- GROUP_ADMIN—Specifies an administrator for a host group.

lsb.params

- MAX_EVENT_STREAM_FILE_NUMBER: Defines the maximum number of `lsb.stream.utc` files that `mbatchd` uses before logging an error message to the mbd.log file and stopping the writing of events to the `lsb.stream` file. The default value is 10.
- USE_SUSP_SLOTS=Y | N: If USE_SUSP_SLOTS=Y, pending jobs in the lower priority queue can be dispatched to the slots released by SSUSP jobs. Set USE_SUSP_SLOTS=N to prevent pending jobs in the lower priority queue from being dispatched to the slots released by SSUSP jobs.
- ENABLE_EVENT_STREAM: The default has changed from Y to N. By default, this parameter is not defined, which means that event streaming is not enabled (ENABLE_EVENT_STREAM=N).
- PRIVILEGED_USER_FORCE_BKILL: A new parameter, when set to Y, allows `bkill -r` to be used only by root and the LSF administrator. For all other users, the -r option is ignored.

lsb.queues

- RES_REQ: When LSF_STRICT_RESREQ=Y is configured in `lsf.conf`, resource requirement strings in select sections must conform to a more strict syntax. The strict resource requirement syntax only applies to the select section.

lsb.resources

- The RESERVE parameter in the ReservationUsage section has been updated to reflect the ability to reserve resources when needed.
- RES_SELECT: When LSF_STRICT_RESREQ=Y is configured in `lsf.conf`, resource requirement strings in select sections must conform to a more strict syntax. The strict resource requirement syntax only applies to the select section.

lsb.users

- GROUP_ADMIN—Specifies an administrator for a user group.

lsf.conf

- LSF_STRICT_RESREQ=Y | N: When LSF_STRICT_RESREQ=Y, the resource requirement selection string must conform to the stricter resource requirement syntax described in *Administering Platform LSF*. The strict resource requirement syntax only applies to the select section. Strict syntax checking does not apply to the other resource requirement sections (order, rusage, same, or span). However, when LSF_STRICT_RESREQ=Y in `lsf.conf`, LSF also rejects resource requirement strings where an rusage section contains a non-consumable resource. When LSF_STRICT_RESREQ=N, the default resource requirement selection string evaluation is performed.
- EGO_ENABLE_AUTO_DAEMON_SHUTDOWN: Lets you shut down daemons automatically if a host fails to join the cluster.
- LSF_LOGFILE_OWNER: Lets you specify an owner of daemon log files other than the administrator (the default).
- LSB_MIXED_PATH_DELIMITER: Specifies the type of delimiter that separates UNIX and Windows file paths when LSB_MIXED_PATH_ENABLE=y.
- LSB_MIXED_PATH_ENABLE: Lets you specify both a UNIX and Windows path for some options of `bsub`.
- LSF_BIND_JOB: The values for LSF_BIND_JOB have changed from YES or NO to BALANCE, ANY, NONE, PACK, USER_CPU_LIST, USER to specify the processor binding policy for sequential and parallel job processes that run on a single host.
- LSF_LSLOGIN_SSH: Enables SSH to secure communication between hosts and during job submission. SSH is used when running any of the following:
  - Remote log on to a lightly loaded host (`lslogin`)
  - An interactive job (`bsub -IS` | `-ISp` | `-ISs`)
  - An X-window job (`bsub -IX`)
  - An externally submitted job that is interactive or X-window (`esub`)

lsf.shared

When LSF_STRICT_RESREQ=Y in `lsf.conf`, LSF rejects resource requirement strings where an rusage section contains a non-consumable resource.

lsb.serviceclasses

SLA name cannot be the same as a fairshare queue name, in addition to a host partition name or user group name.

Environment variables

- BSUB_CHK_RESREQ=*any_value*: When BSUB_CHK_RESREQ is set, `bsub` checks the syntax of the resource requirement selection string without actually submitting the job for scheduling and dispatch. Use BSUB_CHK_RESREQ to check the compatibility of your existing resource requirement select strings against the stricter syntax enabled by LSF_STRICT_RESREQ=y in `lsf.conf`. LSF_STRICT_RESREQ does not need to be set to check the resource requirement selection string syntax. `bsub` only checks the select section of the resource requirement. Other sections in the resource requirement string are not checked.
- LSB_BIND_CPU_LIST: The binding requested at job submission takes effect when LSF_BIND_JOB=USER_CPU_LIST in `lsf.conf` or BIND_JOB=USER_CPU_LIST in an application profile in `lsb.applications`. LSF makes sure that the value is in the correct format, but does not check that the value is valid for the execution hosts.
- LSB_USER_BIND_JOB: The binding requested at job submission takes effect when LSF_BIND_JOB=USER in `lsf.conf` or BIND_JOB=USER in an application profile in `lsb.applications`. This value must be one of Y, BALANCE, PACK, or ANY. Any value other than Y, BALANCE, or PACK is treated as ANY.

New commands

The following new commands have been added to LSF Version 7 Update 4:

bresize (new)

Releases slots from a running resizable job, and cancels pending job resize allocation requests.

Use `bresize release` to explicitly release slots from a running job. When releasing slots from an allocation, a minimum of 1 slot on the first execution host must be retained.

Use `bresize cancel` to cancel a pending allocation request for the specified job ID. The active pending allocation request is generated by LSF automatically for autoresizable jobs. If job does not have active pending request, the command fails with an error message.

By default, only cluster administrators, queue administrators, root and the job owner are allowed to run `bresize` to change job allocations.

Changed commands, options, and output

The following command options and output are new or changed for LSF Version 7 Update 4:

bacct

Use `bacct -l` to view resizable job information logged to `lsb.acct`:

- The autoresizable attribute of a job and the resize notification command if `bsub -ar` and `bsub -rnc` *resize_notification_command* are specified.
- Job allocation changes whenever a JOB_RESIZE event is logged to `lsb.acct`.

When an allocation grows, `bacct` shows:

```
Additional allocation on num_hosts Hosts/Processors host_list
```

When an allocation shrinks, `bacct` shows

```
Release allocation on num_hosts Hosts/Processors host_list
```

badmin

The following metrics are collected and recorded in each sample period:

- The number of queries handled by `mbatchd`
- The number of queries for each of jobs, queues, and hosts. (`bjobs`, `bqueues`, and `bhosts`, as well as other daemon requests)
- The number of jobs submitted (divided into job submission requests and jobs actually submitted)
- The number of jobs dispatched
- The number of jobs completed
- The numbers of jobs sent to remote cluster
- The numbers of jobs accepted by from cluster
- The file descriptors used by `mbatchd`

bapp

The long output (`bapp -l`) now includes the processor binding policy values for sequential and parallel job processes (BIND_JOB).

bhist

Displays resizable job information:

- For JOB_NEW events, `bhist` displays the auto resizable attribute and resize notification command in the submission line.
- For JOB_MODIFY2 events (`bmod`), `bhist` displays the auto resizable attribute and resize notification command in the submission line.
- `bhist` displays job resize notification command information for JOB_RESIZE_NOTIFY_START, JOB_RESIZE_NOTIFY_ACCEPT, and JOB_RESIZE_NOTIFY_DONE events.
- For JOB_RESIZE_RELEASE events, `bhist` displays job resize allocation release information.
- For JOB_RESIZE_CANCEL events, `bhist` displays job resize allocation cancel information.

bhosts

When LSF adds more resources to a running resizable job, `bhosts` displays the added resources. When LSF removes resources from a running resizable job, `bhosts` displays the updated resources.

bjgroup

When LSF adds more resources to a running resizable job, `bjgroup` displays the added resources. When LSF removes resources from a running resizable job, `bjgroup -N` displays the updated resources.

bjobs

- -WF: Displays an estimated finish time for running or pending jobs. For done or exited jobs, displays the actual finish time (FINISH_TIME).
- -WL: Displays the estimated remaining run time of jobs (TIME_LEFT).
- -WP: Displays the current estimated completion percentage of jobs (%COMPLETE).
- For resizable jobs, `bjobs -l` displays the autoresizable attribute and the resize notification command.
- `bjobs -l` displays which administrator terminated the job.

blaunch

- -use-login-shell launches commands through user's login shell.
- -no-shell launches commands without any intermediate shell.

blimits

When LSF adds more resources to a running resizable job, `blimits` displays the added resources. When LSF removes resources from a running resizable job, `blimits` displays the updated resources.

blplugins (obsolete)

The `blplugins` command is no longer supported.

bmgroup and bugroup

`bugroup` and `bmgroup` display related user group administrator and host group administrator information.

bmod

- For resizable jobs, `bmod -R "rusage[mem | swp]"` only affects the resize allocation request if the job has not been dispatched.
- Use the -rnc and -ar options to modify the autoresizable attribute or resize notification command for resizable jobs. You can only modify the autoresizable attribute for pending jobs (PSUSP or PEND). You can only modify the resize notification command for unfinished jobs (not DONE or EXIT jobs).
- The following options allow you to modify a job's estimated run time:
  - `-We` [*hour*:]*minute*[**/***host_name* | **/***host_model*]: Sets an estimated run time. Specifying a host or host model normalizes the time with the CPU factor (time/CPU factor) of the host or model.
  - `-We+` [*hour*:]*minute*]: Sets an estimated run time that is the value you specify added to the accumulated run time. For example, if you specify **-We+ 30** and the job has already run for 60 minutes, the new estimated run time is now 90 minutes.
  - `-Wep` [*value*]: Sets an estimated run time that is the percentage of job completion that you specify added to the accumulated run time. For example, if you specify **-Wep+ 25** (meaning that the job is 25% complete) and the job has already run for 60 minutes, the new estimated run time is now 240 minutes.

bqueues

When a resizable job has a resize allocation request, `bqueues` displays pending requests. When LSF adds more resources to a running resizable job, `bqueues` decreases job PEND counts and

displays the added resources. When LSF removes resources from a running resizable job, `bqueues` displays the updated resources.

bresources

`bresources` can display the resource policy configured in the ReservationUsage section of `lsb.resources`.

bslots

If LSF_STRICT_RESREQ=y in `lsf.conf`, the selection string on the -R option must conform to the stricter resource requirement string syntax described in *Administering Platform LSF*. The strict resource requirement syntax only applies to the select section.

bsub

- If LSF_STRICT_RESREQ=Y in `lsf.conf`, the selection string on the -R option must conform to the stricter resource requirement string syntax described in *Administering Platform LSF*. The strict resource requirement syntax only applies to the select section.
- -ar: Specifies that the job is autoresizable.
- -a *esub_application*: If you have an esub that runs an interactive or X-window job and you have SSH enabled in `lsf.conf`, the communication between hosts is encrypted.
- -IS | -ISp | -ISs | -IX: Submit an interactive job through a secure shell (`ssh`) Optionally, you can enable `ssh` in `lsf.conf` to encrypt the communication for interactive jobs.
- -rnc *resize_notification_cmd*: Specify the full path of an executable to be invoked on the first execution host when the job allocation has been modified (both shrink and grow). -rnc overrides the notification command specified in the application profile (if specified). The maximum length of the notification command is 4 KB.

busers

When a resizable job has a resize allocation request, `busers` displays pending requests. When LSF adds more resources to a running resizable job, `busers` decreases job PEND counts and displays the added resources. When LSF removes resources from a running resizable job, `busers` displays the updated resources.

bswitch

`bswitch` can switch resizable jobs between queues regardless of job state. Once the job is switched, the parameters in new queue apply, including threshold configuration, run limit, CPU limit, queue-level resource requirements, etc.

lsfinstall

To enable configuration for Platform LSF HPC features, specify ENABLE_HPC_CONFIG=Y in `install.config`. The ENABLE_HPC_INST parameter is obsolete.

lslogin

- As an alternative to `rlogin`, you can use an SSH connection by enabling LSF_LSLOGIN_SSH in `lsf.conf`.

New configuration files

No new configuration files have been added in Platform LSF Version 7 Update 4.

New and changed accounting and job event fields

lsf.*cluster_name*.license.acct

Dual-core CPU license information (LSF_DUALCORE) has been removed as of this update.

lsb.acct

The new resizable job feature adds a new JOB_RESIZE event. When there is an allocation change, LSF logs a JOB_RESIZE event after `mbatchd` receives a JOB_RESIZE_NOTIFY_DONE event.

The new resizable job feature also adds a new SUB3_AUTO_RESIZABLE option and two new fields at the end of JOB_FINISH event:

resizeNotifyCmd

Job resize notification command to be invoked on the first execution host when a resize request has been satisfied.

lastResizeTime

Last resize time. The latest wall clock time when a job allocation is changed.

The following existing JOB_FINISH fields are also changed:

numExecHosts

Logged value reflects the allocation at job finish time.

execHosts

The logged value reflects the allocation at job finish time.

lsb.events

The new resizable job feature introduces new events and modifies existing JOB_NEW, JOB_MODIFY2, and JOB_START events.

JOB_NEW	A new field resizeNotifyCmd is introduced at the end of the JOB_NEW record. New submission options are used in options3: SUB3_AUTO_RESIZE and SUB3_RESIZE_NOTIFY_CMD.
JOB_MODIFY2	A new field resizeNotifyCmd is introduced at the end of JOB_MODIFY2 record. New submission options are used in options3: SUB3_AUTO_RESIZE and SUB3_RESIZE_NOTIFY_CMD.
JOB_START	A new field jFlags2 is introduced at the end of the JOB_START record.

The following new events are added to `lsb.events`:

JOB_RESIZE_NOTIFY_START	Logged when a job resize (shrink or grow) request has been sent to the first execution host.
JOB_RESIZE_NOTIFY_ACCEPT	Logged when a job resize request has been accepted from the first execution host of a job.

JOB_RESIZE_NOTIFY_DONE	Logged when the job resize notification command completes.
JOB_RESIZE_RELEASE	Logged when LSF receives a resource release request from the client.
JOB_RESIZE_CANCEL	Logged when LSF receives a resource allocation cancel request from the client.

Bugs fixed since May 2008 (LSF 7 Update 3)

Bugs fixed in the September 2008 update (LSF 7 Update 4) since the May 2008 update (LSF 7 Update 3) are listed in the document *Fixed Bugs for Platform LSF 7 Update 4*.

Known Issues

Platform LSF Version 7 Update 4

Platform LSF

When submitting a job from an older version of an LSF client (either a pre-7.0.4 version of bsub or an application built with a pre-7.0.4 version of the LSF library) to an LSF 7 Update4 cluster:

1. If the job is submitted from a subdirectory under `HOME` with relative path (for example, `./job`), the job will go to EXIT.
2. If the job is submitted with `-k chkpnt_dir`, the checkpoint directory is changed to `HOME` (although checkpoint still works).

A patch for the above problem is available at patches/7.0.4/patch/build121337.

Platform LSF Session Scheduler

A Session Scheduler job suspended with `bstop` enters USSUP state and the job cannot be killed with `bkill`. The out-of-box TERMINATE_CONTROL=SIGINT configuration in Session Scheduler causes only SIGINT to be sent to the job from `bkill`. To be terminated, the job must receive the required SIGCONT, SIGINT, SIGTERM, and SIGKILL signals. You must run `bresume` to cause the job to receive the correct `bkill` signals.

Platform LSF License Scheduler

When installing License Scheduler standalone, the installer removes EGO environment variables from `cshrc.lsf` and `profile.lsf`. Specify a different LSF_TOP from the LSF installation to install standalone License Scheduler.

Download the Platform LSF Version 7 Distribution Packages

Download the LSF distribution packages two ways:

- Through FTP at `ftp.platform.com`
- Through the World Wide Web at `my.platform.com`

Download LSF through FTP

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 LSF Version 7 release:

   ```
   ftp> cd /distrib/7.0
   ```
6. Set file transfer mode to binary:

   ```
   ftp> binary
   ```
7. For LSF on UNIX and Linux, get the installation distribution file.

   ```
   ftp> get platform_lsf_update4/lsf7Update4_lsfinstall.tar.Z
   ```

   Tip:

   Before installing LSF on your UNIX and Linux hosts, you must uncompress and extract lsf7Update4_lsfinstall.tar.Z to the same directory where you download the LSF product distribution tar files.
8. Get the distribution packages for the products you want to install on the supported platforms you need. For example:
   - For the Solaris 7 64-bit version of LSF Version 7:

     ```
     ftp> get platform_lsf_update4/lsf7Update4_sparc-sol7-64.tar.Z
     ```

     Tip:

     Put the LSF distribution files in the same directory as the installation tar files. *Do not* uncompress and extract the distribution files.
   - For32-bit LSF Version 7 on Windows:

     ```
     ftp> get platform_lsf_update4/lsf7Update4_win32.msi
     ```
9. Download the Platform LSF Version 7 documentation from `/distrib/7.0/docs/`.

   ```
   ftp> get docs/lsf7Update4_documentation.zip
   ftp> get docs/lsf7Update4_documentation.tar.Z
   ```

   Tip:

   After installing LSF, you should extract the Platform LSF Version 7 documentation files to LSF_TOP/docs/lsf. Browse LSF_TOP/docs/lsf/index.html to access the LSF 7 Knowledge Center. If you install the Platform Management Console, the

LSF 7 Knowledge Center is installed automatically to LSF_TOP/docs/lsf.

10. Download the Platform EGO Version 1.2.3 documentation from `/distrib/7.0/docs/`.

```
ftp> get docs/ego1.2.3_documentation.zip
ftp> get docs/ego1.2.3_documentation.tar.Z
```

Tip:

After installing LSF, you should extract the EGO documentation files to LSF_TOP/docs/ego. Browse LSF_TOP/docs/ego/index.html to access the EGO Knowledge Center. If you install the Platform Management Console, the EGO Knowledge Center is installed automatically to LSF_TOP/docs/ego.

11. Optional. Download the Platform Management Console (PMC) distribution package from `/distrib/7.0/platform_lsf_update4/`.

```
ftp> get platform_lsf_update4/lsf7Update4_pmc_linux-x86.tar.Z
```

OR

```
ftp> get platform_lsf_update4/lsf7Update4_pmc_linux-x86_64.tar.Z
```

Note:

To take advantage of the Platform LSF reporting feature, you *must* download and install the Platform Management Console. The reporting feature is only supported on the same platforms as the Platform Management Console: 32-bit and 64-bit x86 Windows and Linux operating systems.

12. Exit FTP.

```
ftp> quit
```

Download LSF from my.platform.com

You must provide your Customer Support Number and register a user name and password on `my.platform.com` to download LSF.

To register at `my.platform.com`, click **New User?** and complete the registration form. If you do not know your Customer Support Number or cannot log in to `my.platform.com`, send email to *support@platform.com*.

1. Navigate to *http://my.platform.com*.
2. Choose **Products** > **Platform LSF Family** > **LSF 7 Update 4**.
3. Under **Download**, choose **Product Packages**.
4. Select the Updates, Packages, and Documentation you wish to download.
5. Log out of `my.platform.com`.

Archive location of previous update releases

Directories containing release notes and distribution files for previous LSF Version 7 update releases are located on the Platform FTP site under `/distrib/7.0/archive`. Archive directories are named relative to the current update release:

- LSF Version 7 Update 1: `/distrib/7.0/archive/update1`

- LSF Version 7 Update 2: `/distrib/7.0/archive/update2`
- LSF Version 7 Update 3: `/distrib/7.0/archive/update3`

Install Platform LSF 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 product distribution tar files.

Run the UNIX and Linux installation

Use the `lsfinstall` installation program to install a new LSF Version 7 cluster, or upgrade from and earlier LSF version.

See *Installing Platform LSF on UNIX and Linux* for new cluster installation steps.

See the *Platform LSF Command Reference* for detailed information about `lsfinstall` and its options.

Important:

DO NOT use the UNIX and Linux upgrade steps to migrate an existing LSF 7 cluster or LSF 7 Update 1 cluster to LSF 7 Update 4. Follow the manual steps in the document *Migrating to Platform LSF Version 7 Update 4 on UNIX and Linux* to migrate an existing LSF 7 Update 1 cluster to LSF 7 Update 4 on UNIX and Linux.

Run the Windows installation

Platform LSF on Windows 2000, Windows 2003, and Windows XP is distributed in the following packages:

- `lsf7Update4_win32.msi`
- `lsf7Update4_win-x64.msi`
- `lsf7Update4_win-ia64.msi`

See *Installing Platform LSF on Windows* for new cluster installation steps.

To migrate your existing LSF Version 7 cluster on Windows to LSF 7 Update 4, you must follow the manual steps in the document *Migrating Platform LSF Version 7 to Update 4 on Windows* (`lsf_migrate_windows_to_update4.pdf`).

Install Platform LSF License Scheduler

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

Install Platform LSF Session Scheduler

See *Installing and Running Platform LSF Session Scheduler* for installation and configuration steps.

Install Platform LSF Desktop Support

See the *Platform LSF Desktop Support Administrator's Guide* for installation and configuration steps.

Learn About Platform LSF Version 7

Information about Platform LSF is available from the following sources:

- World Wide Web and FTP
- Platform LSF documentation
- Platform EGO documentation
- Platform training

World Wide Web and FTP

Information about Platform LSF Version 7 is available in the LSF area of the Platform FTP site (`ftp.platform.com/distrib/7.0/`).

The latest information about all supported releases of Platform LSF is available on the Platform Web site at *www.platform.com*.

If you have problems accessing the Platform web site or the Platform FTP site, send email to *support@platform.com*.

my.platform.com

`my.platform.com`—Your one-stop-shop for information, forums, e-support, documentation and release information. `my.platform.com` provides a single source of information and access to new products and releases from Platform Computing.

On the Platform LSF Family product page of `my.platform.com`, you can download software, patches, updates and documentation. See what's new in Platform LSF Version 7, check the system requirements for Platform LSF, or browse and search the latest documentation updates through the Platform LSF Knowledge Center.

Platform LSF documentation

The Platform LSF Knowledge Center is your entry point for all LSF documentation. If you have installed the Platform Management Console, access and search the Platform LSF documentation through the link to the Platform Knowledge Center.

Get the latest LSF documentation from `my.platform.com`. Extract the LSF documentation distribution file to the directory `LSF_TOP/docs/lsf`.

Platform EGO documentation

The Platform EGO Knowledge Center is your entry point for Platform EGO documentation. It is installed when you install LSF. To access and search the EGO documentation, browse the file `LSF_TOP/docs/ego/1.2.3/index.html`.

If you have installed the Platform Management Console, access the EGO documentation through the link to the Platform Knowledge Center.

Platform training

Platform's Professional Services training courses can help you gain the skills necessary to effectively install, configure and manage your Platform products. Courses are available for

both new and experienced users and administrators at our corporate headquarters and Platform locations worldwide.

Customized on-site course delivery is also available.

Find out more about Platform Training at *www.platform.com/services/training*, or contact *Training@platform.com* for details.

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 *www.platform.com/company/contact-us* for other contact information.

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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

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Email

doc@platform.com

Mail

Information Development

Platform Computing Inc.
3760 14th Avenue Markham
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