



LSF

(Load Scheduling Facility)

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Sep 05, 2013

What is LSF

LSF is a suite of workload management products that schedule, monitor and analyze the workload of a network of computers. LSF JobScheduler allows you to schedule your mission-critical jobs across the whole network as if you were using a single main-frame computer

LSF, the Load Sharing Facility, is a general purpose distributed computing system from Platform Computing Corporation. It is packaged as a suite of separately licensed components, including LSF Batch, LSF JobScheduler, and LSF MultiCluster all running on the LSF Base system.

LSF unites a group of UNIX and NT computers into a single system to make better use of the resources on a network. Hosts from various vendors can be integrated into a seamless system. You can do your job and leave the system to find the best host to run your programs.

LSF supports sequential and parallel applications running as interactive and batch jobs. LSF also allows new distributed applications to be developed through C programming libraries and a tool kit of programs for writing shell scripts.



LSF Installation

Download below tarballs from Platform's website

lsf8.0.1_linux2.6-glibc2.3-x86_64.tar.Z

Lsf8.0.1_lsfinstall.tar.Z

Choose a primary LSF administrator (owns the LSF and EGO configuration files and log files; e.g., LSF_ADMINS="lsfadmin")

Choose a shared LSF installation directory (e.g., LSF_TOP="/usr/share/lsf")

Choose LSF hosts (master host, master candidates, server hosts, and client-only hosts; e.g., LSF_ADD_SERVERS="hostm hostb hostc hostd" LSF_MASTER_LIST="hostm hostd" LSF_ADD_CLIENTS="hoste hostf")

Choose LSF server hosts that are candidates to become the master host for the cluster, if you are installing a new host to be dynamically added to the cluster (for example, LSF_MASTER_LIST="hosta hostb")



LSF Installation (Cont..)

Choose a cluster name (39 characters or less with no white spaces; for example, LSF_CLUSTER_NAME="cluster1")

=====
Note: Do not use the name of any host, user, or user group as the name of your cluster.
=====

Ensure the installation file system on the file server host has enough disk space for all host types (approximately 300 MB per host type).

Ensure top-level LSF installation directory (LSF_TOP=EGO_TOP) is accessible with the same path name from all hosts in the LSF cluster (e.g., /usr/share/lsf).

Ensure the installation file system containing LSF_TOP (EGO_TOP) is writable by the user account that is running lsfinstall.

Create user accounts for LSF administrators (e.g., lsfadmin).



LSF Installation (Cont..)

Get the LSF installation script tar file `lsf8.0_lsinstall.tar.Z` and extract it (e.g., `# zcat lsf8.0_lsinstall.tar.Z | tar xvf -`)

Get the LSF distribution tar files for all host types you need, and put them in the same directory as `lsf8.0_lsinstall.tar.Z` (e.g., for Linux 2.6 kernel glibc version 2.3: `lsf8.0_linux2.6-glibc2.3-x86.tar.Z`). Do not extract the distribution tar files.

Get the LSF documentation tar file `lsf8.0_documentation.tar.Z` and put it in the same directory as `lsf8.0_lsinstall.tar.Z`. Do not extract the tar file.

Get an LSF license key and create an LSF license file (`license.dat`) in the same directory as the distribution files and `lsf8.0_lsinstall.tar.Z`

You must have a valid license file to install. If `lsinstall` cannot find a license file, it exits.



LSF Installation (Cont..)

Log on as root to the LSF installation file server.

Change to `lsf8.0_lsinstall/`.

Edit `./install.config` or `./slave.config` to specify the installation variables you want. Uncomment the options you want in the template file, and replace the example values with your own settings.

Run `./lsfinstall -f install.config`.



After installing Platform LSF

Optional. Run `hostsetup` to set up LSF hosts. Log on to each LSF server host as root. Start with the LSF master host. If you are not root, you can continue with host setup, but by default, only root can start the LSF daemons.

Run `hostsetup` on each LSF server host. For example, to use the LSF cluster installed in `/usr/share/lsf` and configure LSF daemons to start automatically:

```
# cd /usr/share/lsf/8.0/install  
# ./hostsetup --top="/usr/share/lsf" --boot="y"
```

For complete `hostsetup` usage, enter `hostsetup -h`.



After installing Platform LSF (Cont..)

Log on to the LSF master host as root, and set your LSF environment:

For csh or tcsh:

```
% source LSF_TOP/conf/cshrc.lsf
```

For sh, ksh, or bash:

```
$ . LSF_TOP/conf/profile.lsf
```

Optional. Enable Platform LSF for users.

Ensure all users include LSF_CONFDIR/cshrc.lsf or LSF_CONFDIR/profile.lsf in their .cshrc or .profile.

Run lsfstartup to start the cluster.

Test your cluster by running some basic LSF commands (e.g., lsid, lshosts, bhosts). After testing your cluster, be sure all LSF users include LSF_CONFDIR/cshrc.lsf or LSF_CONFDIR/profile.lsf in their .cshrc or .profile.



Add hosts

Set up hosts to join the cluster.

```
# hostsetup --top="/usr/share/lsf" --boot="y"
```

This sets up a host to use the cluster installed in /usr/share/lsf. It also configures the LSF daemons to start automatically (--boot="y").



Thank you

