IBM Spectrum LSF for SAS
10.1

Upgrading on UNIX and Linux

IBM

> **Note**
>
> Before using this information and the product it supports, read the information in "Notices" on page 5.

Contents

Chapter 1. Upgrade your IBM Spectrum LSF cluster to version 10.1 on UNIX and Linux

Run the **lsfinstall** script to upgrade your LSF cluster.

Important: This document describes how to upgrade a cluster that is running IBM Spectrum LSF Version 6.*x* or earlier, and IBM Spectrum LSF Version 7 Update 2 or later. If you have LSF 7 or LSF 7 Update 1, and you did not install IBM Spectrum LSF Application Center, follow the steps in the document *Migrating IBM Platform LSF to IBM Spectrum LSF Version 10.1 on Windows*. If you have LSF with IBM Spectrum LSF Application Center installed for a version earlier than LSF Version 7 Update 4, contact Product Support for additional information.

Complete the following steps to upgrade to LSF Version 10.1 on UNIX and Linux.

- Download LSF distribution files.
- Prepare the cluster for upgrading.
- Use the **lsfinstall** script to upgrade LSF.
- Use the **hostsetup** script to set up LSF hosts.
- Restart your cluster.

Downloading LSF distribution files

Before you upgrade LSF, download the LSF appropriate installer script package, LSF distribution packages for all host types you need, and the LSF entitlement file for the LSF edition you are upgrading.

Procedure

1. Log on to the LSF file server host as root.
2. Select the appropriate LSF installer script package:
   - `lsf10.1.0.12_lsfinstall_linux_x86_64.tar.Z` for Linux x86_64 operating systems that require the Linux JRE. Requires approximately 120 MB.
   - `lsf10.1.0.12_lsfinstall.tar.Z` for all other operating systems that require the JRE. Requires approximately 1300 MB.
   - `lsf10.1.0.12_no_jre_lsfinstall.tar.Z` for all operating systems that do not require the JRE. JRE version 1.4 or higher must already be installed on the system. Requires approximately 1 MB.
3. Download and read *Release Notes for IBM Spectrum LSF* (Version 10.1) for detailed information about what's new in LSF 10.1, 10.1 product packages, product compatibility, and known issues and limitations in LSF 10.1.
4. Get the LSF installation script package that you selected and extract it.

   For example,
   - Linux x86_64 platforms

     ```
     # zcat lsf10.1.0.12_lsfinstall_linux_x86_64.tar.Z | tar xvf -
     ```

   - Other platforms

     ```
     # zcat lsf10.1.0.12_lsfinstall.tar.Z | tar xvf -
     ```

   - No JRE required

     ```
     # zcat lsf10.1.0.12_no_jre_lsfinstall.tar.Z | tar xvf -
     ```

5. Get the LSF distribution packages for all host types you need and put them in the same directory as the extracted LSF installation script.

   For example, for Linux 2.6 kernel `glibc` version 2.3, the distribution package is `lsf10.1.0.12_linux2.6-glibc2.3-x86_64.tar.Z`.

   Important: DO NOT extract the distribution files.

6. Get the LSF entitlement file for the LSF edition you are upgrading:

   - `lsf_std_entitlement.dat` file for LSF Standard Edition
   - `lsf_exp_entitlement.dat` file for LSF Express Edition
   - `lsf_adv_entitlement.dat` file for LSF Advanced Edition

Preparing the cluster for upgrade

Before you upgrade LSF, deactivate all queues, shut down IBM Spectrum LSF Application Center if necessary, and back up important configuration files.

Procedure

1. Deactivate all queues to make sure that no new jobs can be dispatched during the upgrade. After you complete the upgrade, remember to activate the queues again so pending jobs can be dispatched.

   - Deactivate all LSF queues by running the following command:

     ```
     badmin qinact all
     ```

   - Reactivate all LSF queues after you complete the upgrade by running the following command:

     ```
     badmin qact all
     ```

2. If you installed IBM Spectrum LSF Application Center, shut it down.

   - If IBM Spectrum LSF Application Center is controlled by the enterprise grid orchestrator (EGO), run the following commands:

     ```
     egosh service stop plc
     ```

     ```
     egosh service stop purger
     ```

     ```
     egosh service stop jobdt
     ```

     ```
     egosh service stop derbydb
     ```

     ```
     egosh service stop WEBGUI
     ```

   - If IBM Spectrum LSF Application Center is not controlled by EGO, run the following commands:

     ```
     perfadmin stop all
     ```

     ```
     pmcadmin stop
     ```

3. Back up your existing **LSF_CONFDIR**, **LSB_CONFDIR**, and **LSB_SHAREDIR** parameters according to the procedures at your site.

Upgrading LSF with the lsfinstall script

Use the **lsfinstall** script to upgrade LSF.

Procedure

1. Download the LSF 10.1 installation package.
2. Go to the downloaded installation package and extract it.
3. Change to directory `lsf10.1_lsfinstall/`.
4. Open the `lsf10.1_lsfinstall/install.config` file to set the installation variables you need.
5. Follow the instructions in the `lsf_unix_install.pdf` file to use the installation command:

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

   Important: You must run the **lsfinstall** command as root.

Results

The **lsfinstall** command backs up the following configuration files for your current installation in the **LSF_CONFDIR** directory:

- `cshrc.lsf`
- `lsf.cluster.`*`cluster_name`*
- `lsf.conf`
- `lsf.shared`
- `profile.lsf`

What to do next

Important: If the **LSF_STARTUP_PATH** parameter in the `/etc/lsf.sudoers` file is set to an earlier LSF version, you must update the **LSF_STARTUP_PATH** parameter to the LSF_SERVERDIR directory for LSF 10.1 on all the hosts where it is configured.

Setting up LSF hosts with the hostsetup script

Use the **hostsetup** script to set up LSF hosts after upgrade.

Procedure

1. Follow the steps in the `$LSF_TOP/10.1/install/lsf_getting_started.html` file to set up your LSF hosts by running the **hostsetup** script.

   a) Log on to each LSF server host as root. Start with the LSF management host.

   b) Use the **hostsetup** script on each LSF server host.

   For example,

   ```
   cd /usr/share/lsf/10.1/install
   ./hostsetup --top="/usr/share/lsf/"
   ```

2. Set your LSF environment:

   For **csh** or **tcsh**, run the following command: `source LSF_TOP/conf/cshrc.lsf`

   For **sh**, **ksh**, or **bash**, run the following command: `. LSF_TOP/conf/profile.lsf`

Restarting your cluster

After you upgrade, shut down the original LSF daemons, restart LSF with the newer daemons, and reactivate your queues to accept jobs.

Procedure

1. Set the original LSF environment:

   For the **csh** or **tcsh** shell, run the following command:

   ```
   source LSF_TOP/conf/cshrc.lsf.<version>
   ```

   For example,

   ```
   source LSF_TOP/conf/cshrc.lsf.8.0
   ```

   For the **sh**, **ksh**, or **bash** shell, run the following command:

   ```
   . LSF_TOP/conf/profile.lsf.<version>
   ```

   For example,

   ```
   source LSF_TOP/conf/profile.lsf.8.0
   ```

2. Use the following commands to shut down the original LSF daemons:

   ```
   bctrld stop sbd all
   ```

   ```
   bctrld stop res all
   ```

   ```
   bctrld stop lim all
   ```

3. Set your LSF environment:

   For the **csh** or **tcsh** shell, run the following command:

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

   For the **sh**, **ksh**, or **bash** shell, run the following command:

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

4. Use the following commands to start LSF with the newer daemons:

   ```
   bctrld start lim all
   ```

   ```
   bctrld start res all
   ```

   ```
   bctrld start sbd all
   ```

5. Use the following command to reactivate all LSF queues completing the upgrade:

   ```
   badmin qact all
   ```

6. Follow the steps in `$LSF_TOP/10.1/lsf_quick_admin.html` to verify that your upgraded cluster is operating correctly.

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