IBM Spectrum LSF for SAS
10.1

*Migrating to IBM Spectrum LSF Version
10.1 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. Migrate your IBM Spectrum LSF cluster to version 10.1

IBM Spectrum LSF directory structure

The installed directory structure changed in LSF Version 7 Update 2. The LSF directory structure differs from the directory structure of previous releases of LSF Version 7. The LSF directories have been consolidated to resemble the LSF 6.*x* directory structure, where configuration, work, and logging directories for EGO and reporting components are located under the standard LSF directories `LSF_TOP/conf`, `LSF_TOP/work`, and `LSF_TOP/log` for easier administration and upgrade.

These directories can be located on their own file systems and have the following access permissions:

- `LSF_TOP/conf` is writable by the LSF administrator, master host, and master candidate hosts
- `LSF_TOP/log` is writable by all hosts in the cluster
- `LSF_TOP/work` is writable by the master host and master candidate hosts, and is accessible to slave hosts

How to use this document

To update your existing LSF Version 7 or LSF Version 7 Update 1 cluster to 10.1, you must follow the steps in this document to manually copy some of your existing configuration files to other directories.

Note:

These upgrade steps only apply to LSF Version 7 and LSF Version 7 Update 1. For LSF versions prior to Version 7 or later than LSF Version 7 Update 1, you can upgrade your cluster by following the steps in *Upgrading IBM Spectrum LSF on UNIX and Linux* (Version 10.1).

The IBM Spectrum LSF Application Center (previously called the Platform Management Console) is now installed separately from LSF.

Get ready to migrate

Procedure

Get the LSF entitlement file for the edition you are installing:

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

Get ready to install

Procedure

1. Log on to the LSF file server host as root.
2. Select and download the appropriate LSF installer script package:
   - `lsf10.1.0.12_lsfinstall_linux_x86_64.tar.Z` for Linux x86_64 platforms requiring the Linux JRE. Requires approximately 120 MB.
   - `lsf10.1.0.12_lsfinstall.tar.Z` for all other platforms requiring the JRE. Requires approximately 1300 MB.

- `lsf10.1.0.12_no_jre_lsfinstall.tar.Z` for all platforms not requiring the JRE. JRE version 1.4 or higher must already be installed on the system. Requires approximately 1 MB.

3. Obtain the following files:

   - LSF Knowledge Center: `knowledge_center10.1.0.12.tar.Z`

   - LSF distribution tar files for all host types you need.

     Download and read the *Release Notes for IBM Spectrum LSF* (Version 10.1) for detailed steps on downloading LSF distribution tar files.

4. Put the distribution tar files in the same directory that contains the LSF installer script package.

5. Extract the LSF installer script package that you selected.

   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 -
     ```

   Important:

   DO NOT extract the distribution tar files.

6. Define the required installation parameters in `install.config`. You should specify the same values as those defined for your existing cluster.

   - For **LSF_TOP**, specify a different directory than the one used for your existing cluster. This prevents your existing configuration files from being overwritten when you install LSF 10.1.

   - EGO is disabled by default in `install.config`. Your existing LSF Version 7 cluster may use EGO functionality for daemon control and reporting. To maintain the functionality of your existing cluster, set the parameter **ENABLE_EGO** to match your existing cluster.

   - LSF 10.1 does not use the parameter **EGO_TOP**.

Run lsfinstall

Procedure

1. Change to `lsf10.1.0.12_lsfinstall/`.
2. Read `lsf10.1.0.12_lsfinstall/install.config` and decide which installation variables you need to set.
3. Edit `lsf10.1.0.12_lsfinstall/install.config` to set the installation variables you need.
4. Follow the instructions in `lsf_unix_install.pdf` to run:

   `./lsfinstall -f install.config`

   Important:

   You must run **lsfinstall** as root.

Copy and edit LSF configuration files

About this task

In the following procedure, the phrase *lsf_top_old* refers to the **LSF_TOP** directory for the original cluster, and the phrase *lsf_top_new* refers to the **LSF_TOP** directory for the newer cluster.

Procedure

1. Deactivate all queues to make sure that no new jobs are dispatched during the update:

   ```
   badmin qinact all
   ```

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

3. Shut down the older version of the LSF Version 7 cluster:

   ```
   lsfshutdown
   ```

4. Migrate the LSF lsbatch files directory:

   ```
   cp -rfp $LSB_CONFDIR_old/* $LSB_CONFDIR_new/
   ```

5. Migrate the LSF work directory:

   ```
   cp -rfp lsf_top_old/work lsf_top_new
   ```

6. Does your existing cluster use default values for all parameters defined in lsf.conf?

   - If *yes*, you do not have to edit lsf.conf. Go to step 7.
   - If *no*, you must edit lsf.conf and change the values of the parameters to match those defined for your existing cluster. Go to step 6.

7. You can update lsf.conf in one of two ways:

   - Copy the old lsf.conf file from *lsf_top_old*/conf to *lsf_top_new*/conf and add the parameters **LSF_ENABLE_EGO** and **EGO_WORKDIR**. For a description of **LSF_ENABLE_EGO**, see the *IBM Platform LSF Configuration Reference*. For a description of **EGO_WORKDIR**, see the *EGO Reference*.
   - Edit the new lsf.conf file in *lsf_top_new*/conf to match the values defined in your old lsf.conf file.

   Note:

   All required LIM parameters are now defined *only* in lsf.conf. Corresponding LIM parameters no longer appear in ego.conf.

8. If you want to change any parameter values in the cluster file, edit the file lsf.cluster.*cluster_name*. LSF 10.1 no longer uses ego.cluster.*cluster_name*.

Copy and edit EGO configuration files

About this task

In the following procedure, the phrase *ego_top* refers to the **EGO_TOP** directory for the existing cluster, the phrase *lsf_top_new* refers to the **LSF_TOP** directory for the new cluster, and the phrase *lsf_cluster_name* refers to the name of your cluster.

Procedure

1. Migrate the user file:

   ```
   cp -rfp ego_top/kernel/conf/users.xml
   lsf_top_new/conf/ego/lsf_cluster_name/kernel/users.xml
   ```

2. Migrate the consumer trees file:

```
cp -rfp ego_top/kernel/conf/ConsumerTrees.xml
```

lsf_top_new/conf/ego/*lsf_cluster_name*/kernel/ConsumerTrees.xml

3. Migrate the resource groups file:

```
cp -rfp ego_top/kernel/conf/ResourceGroups.xml
```

lsf_top_new/conf/ego/*lsf_cluster_name*/kernel/ResourceGroups.xml

4. Migrate the EGO working files:

```
cp -rfp ego_top/kernel/work/vemkd
```

lsf_top_new/work/*lsf_cluster_name*/ego/

```
cp -rfp ego_top/kernel/work/data
```

lsf_top_new/work/*lsf_cluster_name*/ego/

5. If you have enabled the dynamic host feature for your cluster, migrate the host cache files:

```
cp -rfp ego_top/kernel/work/lim
```

lsf_top_new/work/*lsf_cluster_name*/ego

Start the cluster

Procedure

1. 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`
2. Start the LSF 10.1 cluster:

   `lsfstartup`
3. Check to see that the cluster is working properly.

Run hostsetup to set up LSF hosts

About this task

Run the LSF 10.1 **hostsetup** command on each host to reset LSF runlevel changes (rc).

Procedure

1. Follow the steps in `LSF_TOP/10.1/lsf_getting_started.html` to set up your LSF hosts (**hostsetup**).

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

   b) Run **hostsetup** on each LSF server host.

   For example:

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

   For complete **hostsetup** usage, enter **hostsetup -h.**
2. Set your LSF environment:
   - For **csh** or **tcsh**: `source LSF_TOP/conf/cshrc.lsf`
   - For **sh**, **ksh**, or **bash**:`. LSF_TOP/conf/profile.lsf`

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