

Readme file for IBM® Spectrum LSF 10.1 Fix Pack 14 (601547)

Abstract

IBM Spectrum LSF version 10.1 Fix Pack 14. This fix pack is a compilation of the fixes to resolve issues between 16 April 2022 and 20 April 2023, and also includes new solutions for LSF. For details of this fix pack, refer to the LSF 10.1 Fix Pack 14 fixed bugs list ([lsf10.1.0.14_fixed_bugs.pdf](#)), which can be downloaded from [IBM Fix Central](#) by searching the following fix ID: lsf-10.1.0.14-spk-2023-Apr-build601547.

Description

Readme documentation for IBM Spectrum LSF 10.1 Fix Pack 14 (601547) including installation-related instructions, prerequisites and co-requisites, and list of fixes.

LSF Version 10.1 Fix Pack 14 addresses the following issues by providing fixes for each one:

ID	Fixed date	Description
P104889	5/18/2023	Fix to prevents the mbatchd daemon from core dumping if there is a minus sign (-) after the last quotation mark (") in the select string of a job's resource requirements.
P104874	4/18/2023	Fix to prevent the job <code>res</code> from core dumping when the <code>KRB5CCNAME</code> environment variable value is set with a <code>KEYRING</code> format of <code>TGT</code> .
P104873	4/18/2023	Fix to: 1. prevent <code>bsub</code> from receiving incorrect error messages when using <code>esub</code> to change queue names. 2. prevent <code>lshosts -gpu</code> from core dumping when <code>LSF_LSHOSTS_FORMAT</code> is configured in <code>lsf.conf</code> or is set as an environment variable.
P104865	4/11/2023	Fix to allow the mbatchd daemon to handle multiple wildcards with job dependency conditions, when <code>LSB_INDEX_BY_JOB=JOBNAME</code> is defined in the <code>lsf.conf</code> configuration file.
P104864	4/10/2023	Fix to enable LSF to correctly find the <code>eauth</code> executable if the <code>LSF_SERVERDIR</code> parameter is configured in the <code>lsf.conf</code> file, and LSF is started on the management node using the <code>systemd lsfd.service</code> file.
P104861	4/6/2023	Fix to allow the <code>bwait</code> command to run successfully after running the <code>badminmbdrestart</code> command.
P104860	4/3/2023	Fix to prevent the mbatchd daemon from generating query logs with negative data size values.
P104853	3/24/2023	Fix to: 1. enable high priority GPU jobs to pre-empt multiple low priority GPU jobs in default mode. 2. prevent <code>bhosts -gpu</code> from causing child mbatchd to core dump.
P104852	3/24/2023	Fix to prevent LSF Data Manager from wrongly creating the <code>#folderdata#</code> subdirectory in the file destination location, if <code>bstage in -all</code> is used.
P104849	3/23/2023	Fix to allow GPU resource enforcement for MIG GPU jobs to work.
P104847	3/22/2023	Fix to allow submitting new jobs without authentication errors, while the submission is included in a forwarded job that is running in a remote cluster, regardless of cluster name set for the <code>LSF_SUBMIT_TO_CLUSTER</code> environment variable value.

P104839	3/13/2023	Fix to address an issue that a job may stay pending for a long time if alternative resource requirements are requested.
P104834	3/6/2023	Fix to allow the <code>bhist -l</code> command to always show the Job is forced to run message, even if the job is forced to run using the <code>brun</code> command and the <code>lsb.events</code> events file is switched.
P104833	3/3/2023	Fix to: 1. resolve an issue where LSF can terminate a job for exceeding its memory limit even though it has not. This applies only to LSF running on hosts with Linux cgroups memory enforcement enabled. 2. prevent the <code>bhist</code> command (long format) from displaying an incorrect value for <code>MEMLIMIT</code> after a job's <code>MEMLIMIT</code> is modified.
P104829	2/27/2023	Fix to enable the LSF resource connector to create new instances even if there are jobs with the same <code>RC_ACCOUNT</code> value using uppercase and lowercase letters.
P104822	2/14/2023	Fix to resolve the <code>sbatchd</code> daemon from logging the error message: <code>mysetLimits64: setrlimit64(RLIMIT_NOFILE) failed for job <jobid></code> , when a job runs from the queue with the <code>USE_PAM_CREDS</code> setting enabled.
P104816	2/3/2023	Fix to: 1. prevent the <code>bjobs -o all</code> command from giving a warning message when the <code>LSB_GPU_NEW_SYNTAX</code> parameter does not have a value of <code>extend</code> . 2. prevent the <code>bqueues -o "hosts"</code> command from core dumping when the hosts list is too long. 3. prevent the <code>lshosts -gpu -o "hname"</code> command from core dumping. 4. Correct a typo in the output of <code>bhosts -json</code> .
P104815	2/2/2023	Fix to prevents the <code>lim</code> daemon on dynamic server hosts from crashing when the <code>LSF_ANNOUNCE_MASTER_TCP_WAITTIME</code> parameter is defined in the management node's <code>lsf.conf</code> configuration file.
P104811	1/30/2023	Fix to allows the LSF management hostname in the client cache file to be updated after LSF management node failover.
None	1/17/2023	Fix for the <code>badmin perfmon view</code> command to show a wider format.
P104805	1/16/2023	Fix to prevent the <code>lim</code> daemon from core dumping on ARMv8 server hosts.
P104804	1/14/2023	Fix to prevent the <code>mbschd</code> daemon from core dumping.
P104800	1/12/2023	Fix to prevent extra jobs from getting dispatched for the default license project in an environment with LSF License Scheduler. This fix also optimizes <code>mbatchd</code> daemon performance when there are many jobs in <code>ZOMBIE</code> state and prevents the <code>mbschd</code> daemon from core dumping.
P104799	1/6/2023	Fix to prevent the <code>lim</code> daemon from core dumping on some server hosts.
P104797	1/3/2023	Fix to prevent LSF Data Manager from copying files even though there is no change in the data source file and folder.
None	1/4/2023	Fix to set <code>MAX_SBD_CONNS = 2 * numOfHosts + 300</code> in the <code>lsb.params</code> file.
P104794	1/4/2023	Fix to provide support for LSF to report job CPU usage information (CPU peak, CPU peak reached duration, CPU average efficiency, and CPU peak efficiency) when running the <code>bjobs</code> , <code>bhist</code> , and <code>bacct</code> commands.
None	1/3/2023	Fix to add a warning log message for the <code>sbatchd</code> daemon when a user sets stack size smaller than 512KB.
P104791	12/27/2022	Fix to resolve: 1. no username in the query log when running the <code>bhosts -s</code> command. 2. the <code>bwait</code> command unexpectedly exits when it gets invalid data. 3. the <code>bjobs -o husage</code> command core dumps while running a large parallel job.

P104782	12/8/2022	Fix to allow job command lines to display truncated in the <code>lsb.events</code> and <code>lsb.acct</code> files, if the length exceeds 4096 characters.
P104774	12/1/2022	Fix to prevent the <code>bjobs</code> command to show no related objects in pending reasons when LSF resource connector is enabled.
P104771	11/29/2022	Fix to allow the <code>LSF_NIOS_PORT_RANGE</code> setting to work for <code>blaunch</code> jobs.
P104770	11/28/2022	Fix to allow job array limits to work when enabling global policies.
P104769	11/25/2022	Fix to ensure that the temporary files created by LSF for Docker jobs are cleaned after jobs finish.
P104765	11/15/2022	Fix to support Nvidia Multi-Instance GPU (MIG) device isolation and to correct GPU device enforcement when the GPU ID is not same as the minor ID.
P104761	12/12/2022	Fix to prevent the <code>mbatchd</code> daemon from hanging when there are too many jobs killed by <code>KILL_JOBS_OVER_RUNLIMIT</code> .
P104757	10/19/2022	Fix to: 1. prevent the <code>mbatchd</code> daemon from core dumping if a job contains a long <code>rusage</code> value in the resource requirement and speeds up LSF to show the correct maximum slots when a compute host status changes from <code>closed_LIM</code> to <code>ok</code> . 2. prevent jobs from remaining as pending if both <code>HOSTS</code> and <code>RC_HOSTS</code> are defined in the queue for the LSF resource connector. 3. enables the LSF resource connector to automatically requeue jobs on a host when the host is moved to <code>lost_and_found</code> .
None	10/7/2022	Fix to improve scheduling efficiency in the LSF planning scheduler for specific job resource requirements.
P104752	10/5/2022	Fix to resolve an <code>mbatchd</code> daemon hanging issue when searching for the next available job ID.
None	9/27/2022	Fix to prevent Docker jobs from failing when <code>LSF_DAEMON_WRAP</code> is enabled.
P104748	9/23/2022	Fix to allow the <code>EGO_LIM_PERF_LOG_INTERVAL</code> parameter to take effect when set in the <code>lsf.conf</code> configuration file.
P104747	9/22/2022	Fix to ensure that the <code>mbatchd</code> daemon correctly logs an event file, even if the <code>LSB_CONTAINER_IMAGE</code> environment variable value contains a line break.
P104286	9/21/2022	Fix to prevent jobs from remaining in pending state for two cases: for GPU jobs when <code>LSB_RB_AVAIL_RESOURCE=Y</code> is configured in <code>lsf.conf</code> , and when the LSF resource connector is enabled for jobs submitted with the <code>select[hname=='xxx']</code> resource requirement.
P104741	8/25/2022	Fix to prevent the <code>sbatchd</code> daemon from core dumping when GPU enforcement, running the <code>daemons.wrap</code> executable, and v2 cgroups are enabled on the Linux system.
P104005	9/8/2022	Fix to introduce a new parameter called <code>MAX_PREEEXEC_FORWARDING_RETRY</code> , in the <code>lsb.params</code> configuration file. The parameter controls the maximum times to attempt forwarding a job to a remote cluster, if the job has been rejected due to the pre-execution command of the job.
None	9/7/2022	Fix to prevent the <code>badmin</code> command from core dumping when a user runs the <code>badmin rc view</code> command if <code>LSF_ROOT_USER=Y</code> is configured in <code>lsf.conf</code> .
P103995	9/6/2022	Fix to: 1. allow LSF Linux PAM sessions run when a daemon wrapper is enabled. 2. prevent the <code>JOB_TERMINATE_INTERVAL</code> setting from being ignored when a daemon wrapper is enabled. 3. support environment variables containing spaces for a job's Docker container.
None	8/30/2022	Fix to add <code>LSB_CLEAN_PDONE_TIMEOUT</code> into the command <code>bparams</code> output.

None	8/30/2022	Fix to enhance the <code>sbatchd</code> log message to indicate when it cannot open a job file when it is preparing email content after job is <code>DONE</code> .
P104740	8/24/2022	Fix to ensure that when the <code>CONDENSE_PENDING_REASONS</code> parameter is enabled for the <code>mbatchd</code> daemon, the <code>bjobs -psum</code> command shows the proper category for jobs with pending reason <code>Individual host based reasons</code> .
P104739	8/19/2022	Fix to: 1. prevent the <code>RUNLIMIT</code> from being ignored when a client host is configured in the <code>lsb.hosts</code> file. 2. treats total <code>gmem</code> for GPU of preemptable jobs as available during pre-emption scheduling.
P104738	8/19/2022	Fix to ensure that <code>mbatchd</code> daemon always uses requested CPU number for a job to calculate job CPU efficiency unless affinity binding is requested.
P104737	8/17/2022	Fix to prevent the <code>lim</code> daemon from core dumping on some server hosts.
P104736	8/17/2022	Fix to verify that the <code>bsla</code> command shows the complete guaranteed resource pool name, even when the length of the name is longer than 30 characters.
P104735	8/11/2022	Fix to prevent <code>lim</code> daemon memory leaks on AIX.
P104729	8/11/2022	Fix to: 1. ensure that completed rerunnable jobs are cleaned from the <code>mbatchd</code> daemon after a <code>CLEAN_PERIOD</code> is reached, when the job is requeued from an <code>UNKNOWN</code> status due to original execution host becoming unavailable status. 2. prevent the <code>mbatchd</code> daemon from hanging when interactive job submission hosts become unavailable.
P104727	8/8/2022	Fix for: 1. a core dump issue when there is a conflict for global limits. 2. a pending reason mismatch issue in for a multiclusterv environment. 3. an output issue for the <code>bresources -glm</code> command.
P104726	8/3/2022	Fix to prevent the <code>sbatchd</code> daemon on a job execution host to recount run limits from 0 after this daemon is started or restarted directly after the <code>mbatchd</code> daemon is restarted.
P104723	7/26/2022	Fix to allow the <code>blcollect</code> daemon to continue using information from other features when some features are found to have greater check-out numbers than the total available number, so that it does not drop all information of features that are collected from the license server.
P104721	7/25/2022	Fix to: 1. correct an issue on RHEL 7.8 and 7.9 where the memory limit of a running job is modified, and LSF fails to modify the <code>cgroup</code> limit setting of the job. 2. show the correct value for <code>MEMLIMIT</code> after the memory limit of a running job that was modified in the output of the <code>bhist -l</code> command.
P104720	7/22/2022	Fix to correct the resource requirement of a job, which was submitted from a float client.
P104719	7/20/2022	Fix to prevent jobs from showing as running after parallel restarting of the <code>mbatchd</code> daemon, although those jobs were already finished on the execution host.
P104715	7/14/2022	Fix to resolve an issue where LSF cannot see the <code>rusage</code> option for GPU jobs, caused by n NVIDIA Data Center GPU Manager (DCGM) API version mismatch.
P104714	7/11/2022	Fix for an issue where Rational ClearCase job shows exit code 255 and a process that remains in the execution host.
None	7/06/2022	Fix to prevent the <code>mbatchd</code> daemon from exiting if one hostname cannot be resolved by the DNS.
P104709	7/06/2022	Fix to introduce a new parameter to reject feature configuration if the <code>NAME</code> value includes a hyphen or minus character (-).

P104703	6/17/2022	Fix to verify that jobs are scheduled correctly when both alternative resource requirement (<code>rusage</code>) and slots limits on partial hosts exists.
P104700	7/15/2022	Fix a <code>USERDOMAIN</code> environment variable that is lost for the job when <code>JOB_STARTER = preservestarter.exe</code> is set.
P104695	6/2/2022	Fix to: 1. verify that the <code>SLOTS_PER_PROCESSOR</code> limit is calculated correctly while <code>PARALLEL_SCHED_BY_SLOTS</code> is enabled. 2. separate the <code>egroup</code> standard out (<code>stdout</code>) and standard errors (<code>stderr</code>) messages when <code>egroup</code> is running on CentOS. 3. prevent the <code>mbatchd</code> daemon from generating core dumps when the daemon resolves an instance hostname from the IP address in the LSF resource connector.
P104684	5/24/2022	Fix to: 1. prevent the <code>mbschd</code> daemon from core dumping when array jobs are submitted to fair share queues and the hierarchy of user groups change. 2. prevent the <code>mbatchd</code> daemon from core dumping if a job command is long when a job is canceled.
P104669	5/23/2022	Fix to allow the <code>blaunch</code> command to be able to start tasks on hosts with names that begin with a number.
P104663	5/19/2022	Fix to extend the HTTP read timeout to 20 seconds for the LSF resource connector (host factory) for the Google Compute Cloud plug-in.
P104647	5/6/2022	Fix to allow <code>hostsetup</code> to support condense hostnames configured in the cluster configuration file (<code>lsf.cluster</code>).
None	4/25/2022	Fix to enhance the <code>sbatchd</code> log message to use the Linux glibc 2.17 package when the host is enabled for <code>cgroup V2</code> .
P104627	4/22/2022	Fix to: 1. prevent the <code>mbatchd</code> daemon from core dumping when there are <code>bresize</code> jobs on dynamic hosts. 2. prevent the <code>mbatchd</code> daemon from forwarding the <code>DATA AVAILABILITY</code> message to execution clusters. 3. prevent the <code>mbschd</code> daemon from core dumping when a pending array job is switched from a fair share queue which uses <code>egroup</code> , to a queue where the fair share does not use <code>egroup</code> . 4. prevent the query <code>mbatchd</code> daemon from core dumping when it handles <code>bhosts</code> requests. 5. enable LSF to create Nvidia Multi-Instance GPU (MIG) instances when not specifying the <code>mig in -gpu</code> option. 6. prevent the <code>mbschd</code> daemon from core dumping when it checks job group limits. 7. put <code>JGRP_ADD</code> events into the LSF batch event log (<code>lsb.events</code>) file in correct order when the <code>mbatchd</code> daemon event switches.
P104625	4/18/2022	Fix to prevent the <code>bsub</code> command from ignoring the leading and trailing spaces inside quotation marks for the variable values in <code>bsub -env</code> .
P104623	4/19/2022	Fix to: 1. support <code>gpu_driver</code> as a filter option in the <code>bhosts</code> , <code>bsub</code> , and <code>lshosts</code> commands. 2. prevent <code>lim</code> from core dumping on GPU hosts when LSF the management host fails over.

In addition to addressing fixes for found issues, LSF version 10.1 Fix Pack 14 offers new solutions:

ID	Fixed date	Description
P104702	1/26/2022	LSF resource connector for AWS now supports using Amazon EC2 Fleet API to create groups (or a fleet) of instances.
P104730	8/16/2022	LSF Data Manager now supports cross-cluster user account mapping for a multicluster environment, allowing cross-cluster job submission and execution for a multicluster environment which has different user accounts assigned to different hosts.
P104744	10/14/2022	LSF now supports unique global job IDs in an LSF multicluster environment, to use the same job IDs between the forwarding and forwarded clusters, keeping the IDs uniform.
SPCLSF-824	10/14/2022	LSF supports a new <code>RC_ACCOUNT</code> field in <code>JOB_FINISH2</code> events in the <code>lsb.stream</code> file.
SPCLSF-825	10/14/2022	LSF supports a new <code>VM_TYPE</code> field in <code>JOB_FINISH2</code> events in the <code>lsb.stream</code> file.
SPCLSF-847	10/14/2022	The <code>BSUB_QUIET</code> environment variable, which controls job submission printed output for the <code>bsub</code> command, now supports new values to print the job ID only, and to print both the job ID and queue name.
SPCLSF-851	10/14/2022	LSF now supports <code>all</code> as a value for the <code>-o</code> output option for the <code>bjobs</code> , <code>busers</code> , <code>bqueues</code> , and <code>bhosts</code> commands.
SPCLSF-854	10/14/2022	LSF now supports automatic cgroup creation. When enabled, LSF will automatically allocate a cgroup of one core per job task for all newly submitted jobs
P104005	9/26/2022	A new parameter, <code>MAX_PREEEXEC_FORWARDING_RETRY</code> in the <code>lsb.params</code> configuration file, is introduced to control the maximum times to attempt forwarding a job to a remote cluster, if the job has been rejected due to the pre-execution command of the job.
SPCLSF-853	1/27/2023	LSF now supports the <code>total_mem</code> , <code>reserved_mem</code> and <code>available_mem</code> fields for the <code>-o</code> output option of <code>bhosts</code> command, representing total memory, currently reserved memory, and currently available memory for the host.
P104844	3/29/2023	LSF now supports a rate limiter, to limit the rate of excessive requests to the <code>mbatchd</code> daemon, preventing stress on the cluster, and improving performance.
SPCLSF-855	6/9/2023	The <code>ResourceMap</code> section of the <code>lsf.cluster.cluster_name</code> configuration file is extended so that administrators can now assign a specific resource value when defining and mapping shared resources in a cluster. This way, when jobs are dispatched, they are associated with the assigned resource requirement.
2778	6/9/2023	LSF now leverages cgroups to enforce Nvidia Multi-Instance GPU (MIG) device isolation. Set this enforcement by configuring <code>LSB_RESOURCE_ENFORCE="gpu"</code> in the <code>lsf.conf</code> configuration file.
SPCLSF-852	6/9/2023	The LSF resource connector for IBM Cloud Gen2 has been enhanced so that the <code>LSB_RC_TEMPLATE_REQUEST_DELAY</code> parameter in the <code>lsf.conf</code> configuration file takes effect with certain IBM Cloud Gen 2 capacity error codes.
SPCLSF-866	6/9/2023	<p>LSF now supports enhanced behavior for the <code>lsfd.service</code> file: there is now a child service file for each LSF daemon (<code>lsfd-lim.service</code>, <code>lsfd-res.service</code>, and <code>lsfd-sbd.service</code>), to handle each daemon separately. If any of the key LSF daemons fail, each daemon can now automatically restart.</p> <p>Note: To leverage the enhanced <code>lsfd.service</code>, use the updated LSF installer from Passport Advantage to install LSF on a server host. If LSF is already installed on a server host, apply Fix Pack 14, and follow these steps:</p> <ol style="list-style-type: none"> 1. Stop old model of <code>lsfd.service</code> if it was deployed, run <code>systemctl stop lsfd</code>.

		<ol style="list-style-type: none"> 2. Back up the <code><LSF_SERVERDIR>/lsf_daemons</code> file. 3. Copy the script <code>instlib/startup.svr4</code> to <code><LSF_SERVERDIR>/lsf_daemons</code> 4. Modify the <code><LSF_SERVERDIR>/lsf_daemons</code> file, by changing the line <code>LSF_CONF=@LSF_CONF@</code> to <code>LSF_CONF=<LSF_TOP>/conf/lsf.conf</code>. 5. Refresh the <code>lsfd.service</code> file in <code>/usr/lib/systemd/system</code> by running: <code>hostsetup -top=<lsf_top> --boot=y</code> 6. Load the new <code>lsfd.service</code>, <code>lsfd-lim.service</code>, <code>lsfd-res.service</code>, and <code>lsfd-sbd.service</code> files by running: <code>systemctldaemon-reload</code>.
SPCLSF-805	6/9/2023	LSF now provides more detailed information in the <code>bjobs</code> , <code>bhist</code> , and <code>bacct</code> commands for job CPU average efficiency, CPU peak usage, and duration to reach CPU peak.
2987/3002	6/9/2023	LSF administrators can mark dynamic hosts that are no longer available, as expired, using the new <code>lsadmin expire</code> command. Furthermore, if the <code>LSF_DYNAMIC_HOST_TIMEOUT</code> parameter, in the <code>lsf.conf</code> configuration file is configured, then the hosts marked as expired will be automatically removed from the LSF cluster, cleaning up the environment so extra hosts do not affect cluster performance. The <code>LSF_DYNAMIC_HOST_TIMEOUT</code> has been enhanced to support more cleanup timeout options.

For further details on these solutions, see [What's new in IBM Spectrum LSF Version 10.1 Fix Pack 14](#) topic.

Readme file for: IBM® Spectrum LSF
Product or component release: 10.1
Update name: Fix 601547
Fix ID: `lsf-10.1.0.14-spk-2023-Apr-build601547`
Publication date: 9 June 2023

Contents:

1. List of fixes
2. Download location
3. Products or components affected
4. System requirements
5. Installation and configuration
6. List of files
7. Product notifications
8. Copyright and trademark information

1. List of fixes

P104874, P104873, P104865, P104861, P104860, P104853, P104852, P104849, P104847, P104839
 P104834, P104833, P104829, P104822, P104816, P104811, P104805, P104804, P104800, P104799
 P104799, P104797, P104794, P104791, P104782, P104774, P104771, P104770, P104769, P104765
 P104761, P104757, P104752, P104748, P104747, P104286, P104741, P104005, P103995, P104740
 P104739, P104738, P104737, P104736, P104735, P104729, P104727, P104726, P104723, P104721
 P104720, P104719, P104715, P104714, P104709, P104703, P104700, P104695, P104684, P104669
 P104663, P104647, P104627, P104625, P104623
 P104702, P104730, P104744, SPCLSF-824, SPCLSF-825, SPCLSF-847, SPCLSF-851, SPCLSF-854

P104005, SPCLSF-853, P104844, SPCLSF-855,2778, SPCLSF-852, SPCLSF-866, SPCLSF-805
2987/3002

2. Download Location

Download Fix 601547 from the following location: <https://www.ibm.com/support/fixcentral>

3. Products or components affected

Components affected by the new issues addressed in LSF version 10.1 Fix Pack 14 include the following components in all Linux and UNIX packages:

```
include/lsf/lsf.h
include/lsf/lsbatch.h
install/hostsetup
install/patchlib/queryfuncs.sh
install/instlib/startup.svr4
misc/examples/clearcase/daemons.wrap.c
```

```
lib/libbat.a
lib/libbat.so
lib/liblsf.so
lib/liblsf.a
lib/liblsbstream.so
lib/liblsbstream.a
```

```
bin/bacct
bin/badmin
bin/bapp
bin/battach
bin/battr
bin/bbot
bin/bchkpnt
bin/bclusters
bin/bconf
bin/bctrld
bin/bentags
bin/bgadd
bin/bgbroker
bin/bgdel
bin/bgmod
bin/bgpinfo
bin/bhist
bin/bhosts
bin/bhpart
bin/bimages
bin/bjdepinfo
bin/bjgroup
bin/bjobs
bin/bkill
bin/blaunch
bin/blimits
bin/bmg
bin/bmggroup
bin/bmig
bin/bmod
bin/bparams
```


bin/bpeek
bin/bpost
bin/bqueues
bin/bqc
bin/bread
bin/breboot
bin/breconfig
bin/brequeue
bin/bresize
bin/bresources
bin/brestart
bin/bresume
bin/brlainfo
bin/brsvadd
bin/brsvdel
bin/brsvmod
bin/brsvs
bin/brsvjob
bin/brun
bin/bsla
bin/bslots
bin/bstatus
bin/bstop
bin/bsub
bin/bswitch
bin/btop
bin/bugroup
bin/busers
bin/bwait
bin/lsacct
bin/lsacctmrg
bin/lsadmin
bin/lsclusters
bin/lseligible
bin/lsgrun
bin/lshosts
bin/lsid
bin/lsinfo
bin/lsload
bin/lsloadadj
bin/lslockhost
bin/lslogin
bin/lsltasks
bin/lsmail
bin/lsmake
bin/lsmake4
bin/lsmakerm
bin/lsmon
bin/lspasswd
bin/lsplace
bin/lsrcp
bin/lsreconfig
bin/lsreghost
bin/lsrtasks
bin/lsrun
bin/lstcsh
bin/lsunlockhost

bin/resmig
bin/tssub

etc/lim
etc/res
etc/nios
etc/sbatchd
etc/mbatchd
etc/mbschd
etc/daemons.wrap
etc/lsfdockerlib.py
etc/docker-starter.py
etc/lsfproxycd
etc/ebrokerd
etc/gpolicycd
etc/mgres

resource_connector/google/lib/GcloudTool.jar
resource_connector/google/lib/auto-value-annotations-1.7.4.jar
resource_connector/google/lib/checker-compat-qual-2.5.5.jar
resource_connector/google/lib/commons-beanutils-1.9.4.jar
resource_connector/google/lib/commons-codec-1.14.jar
resource_connector/google/lib/commons-collections-3.2.2.jar
resource_connector/google/lib/commons-lang-2.6.jar
resource_connector/google/lib/commons-logging-1.2.jar
resource_connector/google/lib/error_prone_annotations-2.3.4.jar
resource_connector/google/lib/ezmorph-1.0.6.jar
resource_connector/google/lib/failureaccess-1.0.1.jar
resource_connector/google/lib/google-api-client-1.31.1.jar
resource_connector/google/lib/google-api-services-compute-v1-rev20210301-1.31.0.jar
resource_connector/google/lib/google-auth-library-credentials-0.22.1.jar
resource_connector/google/lib/google-auth-library-oauth2-http-0.22.1.jar
resource_connector/google/lib/google-http-client-1.38.0.jar
resource_connector/google/lib/google-http-client-apache-v2-1.38.0.jar
resource_connector/google/lib/google-http-client-jackson2-1.38.0.jar
resource_connector/google/lib/google-oauth-client-1.31.2.jar
resource_connector/google/lib/grpc-context-1.22.1.jar
resource_connector/google/lib/guava-30.0-android.jar
resource_connector/google/lib/httpclient-4.5.13.jar
resource_connector/google/lib/httpcore-4.4.13.jar
resource_connector/google/lib/j2objc-annotations-1.3.jar
resource_connector/google/lib/jackson-annotations-2.12.4.jar
resource_connector/google/lib/jackson-core-2.12.4.jar
resource_connector/google/lib/jackson-databind-2.12.4.jar
resource_connector/google/lib/json-lib-2.2.3-jdk15.jar
resource_connector/google/lib/jsr305-3.0.2.jar
resource_connector/google/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar
resource_connector/google/lib/log4j-api-2.17.1.jar
resource_connector/google/lib/log4j-core-2.17.1.jar
resource_connector/google/lib/opencensus-api-0.24.0.jar
resource_connector/google/lib/opencensus-contrib-http-util-0.24.0.jar
resource_connector/google/scripts/example_user_data.sh
resource_connector/ibmcloudgen2/scripts/example_user_data.sh
resource_connector/ibmcloudgen2/scripts/nextgen_get_status.py
resource_connector/ibmcloudgen2/scripts/nextgen_return_request.py

```

resource_connector/ibmcloudgen2/scripts/nextgen_utils.py
resource_connector/ibmcloudgen2/scripts/vpc_vm_dns.py
resource_connector/aws/lib/aws-java-sdk-core-1.12.188.jar
resource_connector/aws/lib/aws-java-sdk-ec2-1.12.188.jar
resource_connector/aws/lib/AwsTool.jar
resource_connector/aws/lib/commons-beanutils-1.9.4.jar
resource_connector/aws/lib/commons-codec-1.14.jar
resource_connector/aws/lib/commons-collections-3.2.2.jar
resource_connector/aws/lib/commons-lang-2.6.jar
resource_connector/aws/lib/commons-logging-1.2.jar
resource_connector/aws/lib/ezmorph-1.0.6.jar
resource_connector/aws/lib/httpclient-4.5.13.jar
resource_connector/aws/lib/httpcore-4.4.13.jar
resource_connector/aws/lib/ion-java-1.0.2.jar
resource_connector/aws/lib/jackson-annotations-2.12.4.jar
resource_connector/aws/lib/jackson-core-2.12.4.jar
resource_connector/aws/lib/jackson-databind-2.12.4.jar
resource_connector/aws/lib/jackson-dataformat-cbor-2.12.4.jar
resource_connector/aws/lib/jmespath-java-1.12.188.jar
resource_connector/aws/lib/joda-time-2.9.9.jar
resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar
resource_connector/aws/lib/log4j-api-2.17.1.jar
resource_connector/aws/lib/log4j-core-2.17.1.jar
resource_connector/aws/scripts/example_user_data.sh
resource_connector/azure/scripts/example_user_data.sh
resource_connector/openstack/scripts/example_user_data.sh
resource_connector/cyclecloud/scripts/example_user_data.sh

```

Note: The LSF header files and libraries are changed in this fix pack. Recompile your application, with static-linked LSF libraries to ensure that the changes are applied.

4. System requirements

```

linux2.6-glibc2.3-x86_64
linux3.10-glibc2.17-x86_64
linux3.10-glibc2.17-ppc64le
linux3.12-glibc2.17-armv8

```

5. Installation and configuration

Before you install

Notes:

- If `LSF_UNIT_FOR_LIMITS` is not defined in the `lsf.conf` file, or is defined as `K` or `KB` in the LSF cluster, you must complete the following tasks to support cluster hosts with memory larger than 2 TB and avoid compatibility issues with IBM Spectrum LSF RTM:
 - Update LSF RTM to version 10.2
 - Download and install the following fix from [IBM Fix Central](#): `rtm-10.2-build534789`
- If `LSF_STRICT_CHECKING` is not configured in the `$LSF_ENVDIR/lsf.conf` file, there are known issues for existing running or suspended `blaunch` jobs after the cluster is updated with Fix Pack 14, as follows:
 - XDR error messages in the `sbatchd` and `RES` log files.
 - LSF cannot update the runtime resource usage information of existing running

- `blaunch jobs.`
- LSF cannot stop existing running `blaunch jobs.`
- LSF cannot resume existing suspended `blaunch jobs.`

`LSF_TOP` is the full path to the top-level installation directory of LSF.

1. Log in to the LSF management host as the LSF primary administrator.
2. Set your environment:
 - For `csh` or `tcsh`: `% source LSF_TOP/conf/cshrc.lsf`
 - For `sh`, `ksh`, or `bash`: `$. LSF_TOP/conf/profile.lsf`
3. Shut down the LSF daemons by running the following commands:


```
badadmin hshutdown all
badadmin mbdrestart -s
lsadmin resshutdown all
lsadmin limshutdown all
```

Installation steps

1. Log in to the LSF management host as `root` and set your environment:
 - For `csh` or `tcsh`: `% source LSF_TOP/conf/cshrc.lsf`
 - For `sh`, `ksh`, or `bash`: `$. LSF_TOP/conf/profile.lsf`
2. Go to the `install` directory of the fix: `cd $LSF_ENVDIR/../10.1/install/`
3. Copy the LSF 10.1 Fix Pack 14 file to the `install` directory:


```
$LSF_ENVDIR/../10.1/install/
```
4. If any of the following scheduling plug-ins are enabled in the `LSF_TOP/conf/lSBATCH/<CLUSTER_NAME>/configdir/lsb.modules` file, make sure that the file name of the plug-in is listed in the file `LSF_TOP/10.1/install/patchlib/daemonlists.tbl` file:


```
schmod_csm.so
schmod_mauai.so
schmod_dc.so
schmod_xl.so
schmod_craylinux.so
```
5. In the `$LSF_SERVERDIR` directory, change the owner of the `docker-control.py`, `docker-monitor.py`, `docker-starter.py`, and `lsfdockerlib.py` files to the LSF primary administrator.
6. If you do not use NTP to synchronize the clocks on the servers in your cluster, set `LSF_EAUTH_TIMEOUT=0` in the `lsf.conf` file.
7. Run the `patchinstall` command to install LSF 10.1 Fix Pack 14: `./patchinstall <LSF 10.1 Fix Pack 14 fix>.`
8. If the cluster uses the LSF multicluster capability, update all clusters to LSF 10.1 Fix Pack 14 or explicitly set the `LSF_STRICT_CHECKING` parameter to the same value in each cluster.
9. If you are using the LSF resource connector, you must update the cloud image to Fix Pack 14. If there are already created running instances, you must update all the running instances to Fix Pack 14 as well.

Notes:

- If the `LSF_STRICT_CHECKING`, `LSF_AUTH_QUERY_COMMANDS`, and `LSF_ENV_OVERRIDE` parameters are not defined in the `lsf.conf` file, after you update to Fix Pack 14 the `LSF_STRICT_CHECKING=ENHANCED`, `LSF_AUTH_QUERY_COMMANDS=Y` and `LSF_ENV_OVERRIDE=N` settings are enforced by

default to ensure security. In addition, you must update all the installed platforms in your cluster to Fix Pack 14.

- If LSF_STRICT_CHECKING is set to N or Y, and LSF_AUTH_QUERY_COMMANDS=N is defined in the lsf.conf file, after updating to Fix Pack 14, the LSF_STRICT_CHECKING=ENHANCED, LSF_AUTH_QUERY_COMMANDS=Y and LSF_ENV_OVERRIDE=N settings are not enforced from the packaged configuration. This option is not recommended.
- For Ubuntu 22.04 support, the LSF installer has been refreshed on IBM Passport Advantage. If you have not or cannot run the new LSF installer, follow these steps to update the profile.lsf and cshrc.lsf environment shell files to use LSF on Ubuntu 22.04:

1. In the LSF_TOP/conf/profile.lsf file, apply the following diff:

```

        if [ "$?" != "0" ] ; then
            continue
        fi
        _libcver=`$glibc 2>/dev/null | grep "GNU C Library" |
$AWK '{print substr($0,match($0,/version/))}' | $AWK '{print $2}' | $AWK
-F. '{print $2}' | sed 's/,//'`
-        fi
+        else
+            ldd --version >/dev/null 2>&1
+            if [ "$?" != "0" ] ; then
+                continue
+            fi
+            _libcver=`ldd --version 2>/dev/null |grep ldd | $AWK '{
print $NF }' | $AWK -F. '{print $2}'`
+        fi
+
        if [ "$_libcver" != "" ] ; then
            break
        fi
done
```

2. In the LSF_TOP/conf/cshrc.lsf file, apply the following diff:

```

        if ( -x "$glibc" ) then
            $glibc >& /dev/null
            if ( "$status" == "0" ) then
                set _libcver=`$glibc | grep "GNU C Library" | $AWK
'{print substr($0,match($0,/version/))}' | $AWK '{print $2}' | $AWK -F.
'{print $2}' | sed 's/,//'`
                if ( "$_libcver" != "" ) then
                    break
                endif
            endif
        else
+            ldd --version >& /dev/null
+            if ( "$status" == "0" ) then
+                set _libcver=`ldd --version | grep ldd | $AWK '{
print $NF }' | $AWK -F. '{print $2}'`
+                if ( "$_libcver" != "" ) then
+                    break
+                endif
+            endif
+        endif
endif
```

end

After installation

Start the LSF daemons by running the following commands:

```
lsadmin limstartup all
lsadmin resstartup all
badmin hstartup all
```

Uninstallation

To roll back this fix pack:

1. Log in to the LSF management host as the LSF primary administrator and set your environment:
 - For csh or tcsh: % source LSF_TOP/conf/cshrc.lsf
 - For sh, ksh, or bash: \$. LSF_TOP/conf/profile.lsf
2. Shut down the LSF daemons by running the following commands:

```
badmin hshutdown all
badmin mbdrestart
lsadmin resshutdown all
lsadmin limshutdown all
```
3. Log in to the LSF management host as root and set your environment:
 - For csh or tcsh: % source LSF_TOP/conf/cshrc.lsf
 - For sh, ksh, or bash: \$. LSF_TOP/conf/profile.lsf
4. Run `./patchinstall -r <LSF 10.1 Fix Pack 14 fix>` to uninstall the LSF 10.1 Fix Pack 14 fix.
5. Start the LSF daemons by running the following commands:

```
lsadmin limstartup all
lsadmin resstartup all
badmin hstartup all
```

6. List of files in package

The following components in all Linux and UNIX packages:

Component	linux2.6-glibc2 x86_64 / linux3.10-glibc2 x86_64
filelist.txt	√
fixlist.txt	√
include/	√
include/lsf/	√
include/lsf/lsf.h	√
include/lsf/lssched.h	√
include/lsf/lsbatch.h	√
include/lsf/pam.h	√
include/lsf/errors.def.h	√
include/lsf/pm.h	√
install/hostsetup	√
install/patchlib/queryfuncs.sh	√

install/instlib/startup.svr4	√
\$PLATFORM/	√
\$PLATFORM/lsf_release	√
\$PLATFORM/bin/	√
\$PLATFORM/bin/openmpi_rankfile.sh	√
\$PLATFORM/bin/dnssec-keygen	√
\$PLATFORM/bin/parallelupgrade.sh	√
\$PLATFORM/bin/qstat	√
\$PLATFORM/bin/bapp	√
\$PLATFORM/bin/mpich2_wrapper	√
\$PLATFORM/bin/btop	√
\$PLATFORM/bin/bwait	√
\$PLATFORM/bin/lselectible	√
\$PLATFORM/bin/bsla	√
\$PLATFORM/bin/bgpinfo	√
\$PLATFORM/bin/bhpart	√
\$PLATFORM/bin/mpich_mx_wrapper	√
\$PLATFORM/bin/lsrcp	√
\$PLATFORM/bin/lsfshutdown	√
\$PLATFORM/bin/bclusters	√
\$PLATFORM/bin/ppmsetvar	√
\$PLATFORM/bin/pvmjob	√
\$PLATFORM/bin/brsvadd	√
\$PLATFORM/bin/mpichp4_wrapper	√
\$PLATFORM/bin/lacct	√
\$PLATFORM/bin/bgbroker	√
\$PLATFORM/bin/bsub	√
\$PLATFORM/bin/pmd_w	√
\$PLATFORM/bin/bpeek	√
\$PLATFORM/bin/openmpi_wrapper	√
\$PLATFORM/bin/bacct	√
\$PLATFORM/bin/brequeue	√
\$PLATFORM/bin/bjgroup	√
\$PLATFORM/bin/bslots	√
\$PLATFORM/bin/lsf-spark-shell.sh	√
\$PLATFORM/bin/lsfstartup	√
\$PLATFORM/bin/lrun	√
\$PLATFORM/bin/mvapich_wrapper	√
\$PLATFORM/bin/mpirun.lsf	√
\$PLATFORM/bin/bjobs	√
\$PLATFORM/bin/lload	√
\$PLATFORM/bin/lshosts	√
\$PLATFORM/bin/lsfrsv	√
\$PLATFORM/bin/battr	√
\$PLATFORM/bin/battach	√
\$PLATFORM/bin/brlinfo	√
\$PLATFORM/bin/xagent	√

\$PLATFORM/bin/bstatus	√
\$PLATFORM/bin/lspasswd	√
\$PLATFORM/bin/lsfhadoop.sh	√
\$PLATFORM/bin/lsmail	√
\$PLATFORM/bin/bmod	√
\$PLATFORM/bin/qdel	√
\$PLATFORM/bin/lcid	√
\$PLATFORM/bin/lsfrestart	√
\$PLATFORM/bin/bpost	√
\$PLATFORM/bin/intelmpi_wrapper	√
\$PLATFORM/bin/brsvjob	√
\$PLATFORM/bin/lsf-start-spark.sh	√
\$PLATFORM/bin/poejob	√
\$PLATFORM/bin/bentags	√
\$PLATFORM/bin/sca_mpimon_wrapper	√
\$PLATFORM/bin/ch	√
\$PLATFORM/bin/tspeek	√
\$PLATFORM/bin/bparams	√
\$PLATFORM/bin/lrun.sh	√
\$PLATFORM/bin/bjdepinfo	√
\$PLATFORM/bin/bgmod	√
\$PLATFORM/bin/lsf-spark-submit.sh	√
\$PLATFORM/bin/bctrl	√
\$PLATFORM/bin/egoapplykey	√
\$PLATFORM/bin/initialize_eas	√
\$PLATFORM/bin/blast	√
\$PLATFORM/bin/brestart	√
\$PLATFORM/bin/egoenv	√
\$PLATFORM/bin/brsvdel	√
\$PLATFORM/bin/egosh	√
\$PLATFORM/bin/zapit	√
\$PLATFORM/bin/lammpirun_wrapper	√
\$PLATFORM/bin/lslogin	√
\$PLATFORM/bin/TaskStarter	√
\$PLATFORM/bin/lsf-stop-spark.sh	√
\$PLATFORM/bin/bhist	√
\$PLATFORM/bin/pam	√
\$PLATFORM/bin/badmin	√
\$PLATFORM/bin/bqueues	√
\$PLATFORM/bin/bresize	√
\$PLATFORM/bin/qsub	√
\$PLATFORM/bin/egoconfig	√
\$PLATFORM/bin/lsacctmrg	√
\$PLATFORM/bin/poe_w	√
\$PLATFORM/bin/bgadd	√
\$PLATFORM/bin/gmmpirun_wrapper	√
\$PLATFORM/bin/qothers	√

\$PLATFORM/bin/lsreghost	√
\$PLATFORM/bin/bmig	√
\$PLATFORM/bin/resmig	√
\$PLATFORM/bin/bswitch	√
\$PLATFORM/bin/mpdstartup	√
\$PLATFORM/bin/user_post_exec_prog	√
\$PLATFORM/bin/user_pre_exec_prog	√
\$PLATFORM/bin/pjllib.sh	√
\$PLATFORM/bin/brun	√
\$PLATFORM/bin/brsvs	√
\$PLATFORM/bin/parallelupgrade.jar	√
\$PLATFORM/bin/brsvsub	√
\$PLATFORM/bin/lsgrun	√
\$PLATFORM/bin/bmg	√
\$PLATFORM/bin/busers	√
\$PLATFORM/bin/preservestarter	√
\$PLATFORM/bin/lsloadadj	√
\$PLATFORM/bin/bbot	√
\$PLATFORM/bin/lsmakerm	√
\$PLATFORM/bin/lsclusters	√
\$PLATFORM/bin/lsinfo	√
\$PLATFORM/bin/bconf	√
\$PLATFORM/bin/lsmake	√
\$PLATFORM/bin/mpichsharemem_wrapper	√
\$PLATFORM/bin/lsadmin	√
\$PLATFORM/bin/blimits	√
\$PLATFORM/bin/egoexec	√
\$PLATFORM/bin/egogenkey	√
\$PLATFORM/bin/bmgroup	√
\$PLATFORM/bin/bread	√
\$PLATFORM/bin/bkill	√
\$PLATFORM/bin/lsmake4	√
\$PLATFORM/bin/lsportcheck	√
\$PLATFORM/bin/init_energy	√
\$PLATFORM/bin/lstcsh	√
\$PLATFORM/bin/lsmon	√
\$PLATFORM/bin/brsvmod	√
\$PLATFORM/bin/lsrtasks	√
\$PLATFORM/bin/lsplace	√
\$PLATFORM/bin/bimages	√
\$PLATFORM/bin/bhosts	√
\$PLATFORM/bin/tssub	√
\$PLATFORM/bin/bgdel	√
\$PLATFORM/bin/augmentstarter	√
\$PLATFORM/lib/	√
\$PLATFORM/lib/jsdl.xsd	√
\$PLATFORM/lib/liblsbstream.a	√

\$PLATFORM/lib/schmod_bluegene.so	√
\$PLATFORM/lib/libicuio.so.55	√
\$PLATFORM/lib/hwloc_nvml.so	√
\$PLATFORM/lib/cal_jobweight.so	√
\$PLATFORM/lib/libmosquitto.so	√
\$PLATFORM/lib/permapl.so	√
\$PLATFORM/lib/schmod_cpuset.so	√
\$PLATFORM/lib/topology_ego_default.so	√
\$PLATFORM/lib/libicuio.so.55.1	√
\$PLATFORM/lib/libicui18n.so.55	√
\$PLATFORM/lib/schmod_dc.so	√
\$PLATFORM/lib/libpm.a	√
\$PLATFORM/lib/schmod_csm.so	√
\$PLATFORM/lib/sec_ego_ext_co.so	√
\$PLATFORM/lib/libfairshareadjust.so	√
\$PLATFORM/lib/jsdl-lsf.xsd	√
\$PLATFORM/lib/policy/	√
\$PLATFORM/lib/policy/libMDPlan.so	√
\$PLATFORM/lib/policy/libslot.so	√
\$PLATFORM/lib/policy/libplacetus.so	√
\$PLATFORM/lib/libicudata.so.55	√
\$PLATFORM/lib/sec_ego_default.so	√
\$PLATFORM/lib/resplugin/	√
\$PLATFORM/lib/resplugin/libcomputer.so	√
\$PLATFORM/lib/schmod_dispatch-limit.so	√
\$PLATFORM/lib/jsdl-posix.xsd	√
\$PLATFORM/lib/librbac_ego_default.so	√
\$PLATFORM/lib/liblimsim_craylinux.so	√
\$PLATFORM/lib/schmod_pset.so	√
\$PLATFORM/lib/sec_ego_pam_default.so	√
\$PLATFORM/lib/sec_ego_gsskrb.so	√
\$PLATFORM/lib/esd_ego_default.so	√
\$PLATFORM/lib/liblsfcdgm.so.2	√
\$PLATFORM/lib/liblsbstream.so	√
\$PLATFORM/lib/libexp.so	√
\$PLATFORM/lib/libbat.a	√
\$PLATFORM/lib/liblsf.a	√
\$PLATFORM/lib/libesc.so	√
\$PLATFORM/lib/eventplugin_snmp.so	√
\$PLATFORM/lib/libvem.so	√
\$PLATFORM/lib/schmod_craylinux.so	√
\$PLATFORM/lib/schmod_jobweight.so	√
\$PLATFORM/lib/rbac_ego_default.so	√
\$PLATFORM/lib/schmod_xl.so	√
\$PLATFORM/lib/libicuuc.so.55	√
\$PLATFORM/lib/sec_ego_digest.so	√
\$PLATFORM/lib/schmod_crayxl.so	√

\$PLATFORM/lib/libevent.so	√
\$PLATFORM/lib/libegostream.so	√
\$PLATFORM/lib/schmod_dist.so	√
\$PLATFORM/lib/libfairshareadjust.a	√
\$PLATFORM/lib/libeas.so	√
\$PLATFORM/lib/sec_ego_master.so	√
\$PLATFORM/lib/liblsf.so	√
\$PLATFORM/lib/libtopology.so	√
\$PLATFORM/lib/topology_dynamic.so	√
\$PLATFORM/lib/libvem.so.3.4.0	√
\$PLATFORM/lib/sec_ego_kerberos.so	√
\$PLATFORM/lib/schmod_rms.so	√
\$PLATFORM/lib/librbac.so	√
\$PLATFORM/lib/lib2vemkd.so	√
\$PLATFORM/lib/libbat.jsdl.a	√
\$PLATFORM/lib/libptmalloc3.so	√
\$PLATFORM/lib/libbat.so	√
\$PLATFORM/etc/	√
\$PLATFORM/etc/esub.mpichp4	√
\$PLATFORM/etc/egosetsudoers.sh	√
\$PLATFORM/etc/lsfEGOControlMbatchd.sh	√
\$PLATFORM/etc/esub.ls_dyna	√
\$PLATFORM/etc/tmp.elim.sa	√
\$PLATFORM/etc/echkpnt	√
\$PLATFORM/etc/mbatchd	√
\$PLATFORM/etc/esub.tvpoe	√
\$PLATFORM/etc/vemkd	√
\$PLATFORM/etc/esub.bproc	√
\$PLATFORM/etc/nqsi	√
\$PLATFORM/etc/esub.mpich_gm	√
\$PLATFORM/etc/rla	√
\$PLATFORM/etc/utmpreg	√
\$PLATFORM/etc/erenew.krb5	√
\$PLATFORM/etc/daemons.wrap	√
\$PLATFORM/etc/echkpnt.fluent	√
\$PLATFORM/etc/krbrenewd	√
\$PLATFORM/etc/ego_daemons.sh	√
\$PLATFORM/etc/lsfdockerlib.py	√
\$PLATFORM/etc/esub.openmp	√
\$PLATFORM/etc/named	√
\$PLATFORM/etc/gpolicyd	√
\$PLATFORM/etc/erestart	√
\$PLATFORM/etc/elim.frequency	√
\$PLATFORM/etc/tmp.eslim.ostype	√
\$PLATFORM/etc/esub.mvapich	√
\$PLATFORM/etc/esub.intelmpi	√
\$PLATFORM/etc/esub.mpich2	√

\$PLATFORM/etc/egostartup.sh	√
\$PLATFORM/etc/eadmin	√
\$PLATFORM/etc/mbschd	√
\$PLATFORM/etc/egoremovevc.sh	√
\$PLATFORM/etc/wsm	√
\$PLATFORM/etc/lsmail	√
\$PLATFORM/etc/esub.tvmpich_gm	√
\$PLATFORM/etc/docker-control.py	√
\$PLATFORM/etc/elim.hpc	√
\$PLATFORM/etc/esub.tv	√
\$PLATFORM/etc/echkpnt.ls_dyna	√
\$PLATFORM/etc/sbatchd	√
\$PLATFORM/etc/esub.eas	√
\$PLATFORM/etc/kubebridge	√
\$PLATFORM/etc/mgres	√
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\$PLATFORM/etc/disable_device	√
\$PLATFORM/etc/eexec.gold	√
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\$PLATFORM/etc/mesub	√
\$PLATFORM/etc/esub.fluent	√
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\$PLATFORM/etc/melim	√
\$PLATFORM/etc/elim.gpu.ext	√
\$PLATFORM/etc/esub.pvm	√
\$PLATFORM/etc/docker-monitor.py	√
\$PLATFORM/etc/eauth.krb5	√
\$PLATFORM/etc/tmp.elim.docker	√
\$PLATFORM/etc/mosquitto	√
\$PLATFORM/etc/esub.tvlammpi	√
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\$PLATFORM/etc/erestart.fluent	√
\$PLATFORM/etc/elim.icp.uploader	√
\$PLATFORM/etc/esub.oldtvpo	√
\$PLATFORM/etc/execproxy	√
\$PLATFORM/etc/enroot-starter.py	√
\$PLATFORM/etc/esub.oldpoe	√
\$PLATFORM/etc/wsgserver	√
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\$PLATFORM/etc/esub.openmpi	√
\$PLATFORM/etc/esub.dprov	√

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\$PLATFORM/etc/tmp.eslim.daemonversions	√
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\$PLATFORM/etc/esub.mpich_mx	√
\$PLATFORM/etc/elim.gpu.topology	√
\$PLATFORM/etc/nios	√
\$PLATFORM/etc/elim.gpu	√
\$PLATFORM/etc/egoshutdown.sh	√
\$PLATFORM/etc/erestart.ls_dyna	√
\$PLATFORM/etc/lsfcontainerlib.py	√
\$PLATFORM/etc/esub.poe	√
\$PLATFORM/etc/batch-driver	√
man/	√
man/man1/	√
man/man1/bwait.1	√
man/man1/bclusters.1	√
man/man1/lshosts.1	√
man/man1/lsload.1	√
man/man1/lsmake.1	√
man/man1/blcollect.1	√
man/man1/bmig.1	√
man/man1/battr.1	√
man/man1/bhpart.1	√
man/man1/blimits.1	√
man/man1/blusers.1	√
man/man1/bkill.1	√
man/man1/brsvsub.1	√
man/man1/lsrtasks.1	√
man/man1/brestart.1	√
man/man1/lsportcheck.1	√
man/man1/blinfo.1	√
man/man1/lslogin.1	√
man/man1/bimages.1	√
man/man1/lsplace.1	√
man/man1/bmod.1	√
man/man1/bpeek.1	√
man/man1/bpost.1	√
man/man1/lsid.1	√
man/man1/bhist.1	√
man/man1/bresources.1	√
man/man1/pam.1	√
man/man1/busers.1	√
man/man1/bslots.1	√
man/man1/bbot.1	√
man/man1/bgdel.1	√

man/man1/ch.1	√
man/man1/tspeek.1	√
man/man1/qsub.1	√
man/man1/bchkpnt.1	√
man/man1/bgadd.1	√
man/man1/qstat.1	√
man/man1/bgmod.1	√
man/man1/lsinfo.1	√
man/man1/btop.1	√
man/man1/lsclusters.1	√
man/man1/lsnqs.1	√
man/man1/bdata.1	√
man/man1/ssched.1	√
man/man1/bstop.1	√
man/man1/bgpinfo.1	√
man/man1/bsla.1	√
man/man1/battach.1	√
man/man1/lsloadadj.1	√
man/man1/blhosts.1	√
man/man1/bswitch.1	√
man/man1/lsfmon.1	√
man/man1/ssacct.1	√
man/man1/egosh.1	√
man/man1/blcstat.1	√
man/man1/bmgroup.1	√
man/man1/lsacctmrg.1	√
man/man1/lspasswd.1	√
man/man1/lsrcp.1	√
man/man1/brsvs.1	√
man/man1/bread.1	√
man/man1/bstatus.1	√
man/man1/wgpasswd.1	√
man/man1/lsmon.1	√
man/man1/lsacct.1	√
man/man1/blparams.1	√
man/man1/bsubmit.1	√
man/man1/brlainfo.1	√
man/man1/lsgrun.1	√
man/man1/taskman.1	√
man/man1/bsub.1	√
man/man1/bhosts.1	√
man/man1/bugroup.1	√
man/man1/lsreghost.1	√
man/man1/qdel.1	√
man/man1/blstat.1	√
man/man1/bresume.1	√
man/man1/tssub.1	√

man/man1/bacct.1	√
man/man1/bjgroup.1	√
man/man1/brsvjob.1	√
man/man1/bstage.1	√
man/man1/blkill.1	√
man/man1/bentags.1	√
man/man1/bltasks.1	√
man/man1/bqueues.1	√
man/man1/bresize.1	√
man/man1/bparams.1	√
man/man1/bjdepinfo.1	√
man/man1/lsrcun.1	√
man/man1/bapp.1	√
man/man1/bjobs.1	√
man/man1/brequeue.1	√
man/man3/	√
man/man3/extsched_order_getJobUser.3	√
man/man3/dm_delete_tag.3	√
man/man3/extsched_order_isJobListEmpty.3	√
man/man3/ls_inserttrtask.3	√
man/man3/glblib.3	√
man/man3/lsb_forcekilljob.3	√
man/man3/lsb_freeGlobalLimitInfoEnt.3	√
man/man3/extsched_cand_getnextgroup.3	√
man/man3/CanBePreemptedFn.3	√
man/man3/lsb_submitframe.3	√
man/man3/ls_getmastername.3	√
man/man3/ls_getmodelfactor.3	√
man/man3/ls_insertltask.3	√
man/man3/ls_rkill.3	√
man/man3/RsrcReqHandler_NotifyAllocFn.3	√
man/man3/lsb_hostinfo_ex.3	√
man/man3/ls_loadinfo.3	√
man/man3/ls_info.3	√
man/man3/extsched_getScoutMode.3	√
man/man3/extsched_freeRsrcReqInfo.3	√
man/man3/ls_rgetmnthost.3	√
man/man3/lslib.3	√
man/man3/lsb_writestatus.3	√
man/man3/ls_initrex.3	√
man/man3/lsb_globalFairshareLoad.3	√
man/man3/extsched_getChunkRef.3	√
man/man3/ls_gethostinfo.3	√
man/man3/lsb_queueinfo.3	√
man/man3/extsched_getEnt_.3	√
man/man3/extsched_resreq_setobject.3	√
man/man3/extsched_resetJob.3	√

man/man3/ls_listrtask.3	√
man/man3/lsb_liveconfig.3	√
man/man3/extsched_setMainReason.3	√
man/man3/RsrcReqHandler_SortFn.3	√
man/man3/ls_lockhost.3	√
man/man3/extsched_getPreemptableJobs.3	√
man/man3/extsched.3	√
man/man3/lsb_modify.3	√
man/man3/lsb_hostgrpinfo.3	√
man/man3/ls_rstat.3	√
man/man3/lsb_liveconfigPack.3	√
man/man3/extsched_freeAlloc.3	√
man/man3/lsb_chkpntjob.3	√
man/man3/extsched_destroyTab.3	√
man/man3/ls_fdbusy.3	√
man/man3/lsb_usergrpinfo.3	√
man/man3/ls_listltask.3	√
man/man3/lsb_hostinfo.3	√
man/man3/extsched_initTab_.3	√
man/man3/lsb_openjobinfo_a.3	√
man/man3/glb_param.3	√
man/man3/extsched_order_getPreJobOfList.3	√
man/man3/extsched_set_hData.3	√
man/man3/lsb_serviceClassInfo.3	√
man/man3/glb_workloadinfo.3	√
man/man3/JobOrderFn4Que.3	√
man/man3/lsb_closependingreasons.3	√
man/man3/lsb_signaljobarray_ex.3	√
man/man3/extsched_reason_set.3	√
man/man3/lsb_parameterinfo.3	√
man/man3/lsb_deljgrp.3	√
man/man3/extsched_getRsrcReqInf.3	√
man/man3/extsched_get_key.3	√
man/man3/ls_clusterinfo.3	√
man/man3/ls_createdir.3	√
man/man3/ls_findmyconnections.3	√
man/man3/ls_rfstat.3	√
man/man3/freeDmParams.3	√
man/man3/lsb_readpendingreasons.3	√
man/man3/lsb_holdjgrp.3	√
man/man3/extsched_alloc_registerallocator.3	√
man/man3/ls_rread.3	√
man/man3/lsb_readjobinfo_cond.3	√
man/man3/extsched_cand_removehost.3	√
man/man3/RsrcReqHandler_FreeFn.3	√
man/man3/lsb_attrInfo.3	√
man/man3/extsched_alloc_gethostslot.3	√

man/man3/lsb_signaljobarray.3	√
man/man3/lsb_guaranteedResourcePoolInfo.3	√
man/man3/dm_params.3	√
man/man3/lsb_writestream.3	√
man/man3/lsb_pendreason.3	√
man/man3/ls_chdir.3	√
man/man3/ls_readconfenv.3	√
man/man3/extsched_jobArray2Str.3	√
man/man3/ls_rclose.3	√
man/man3/lsb_rc_showstatus.3	√
man/man3/extsched_getRsrcReqInfo.3	√
man/man3/lsb_jobpendingsummary.3	√
man/man3/lsb_readstatusline.3	√
man/man3/lsb_readrankfile.3	√
man/man3/glb_collectorStatus.3	√
man/man3/lsb_suspreason.3	√
man/man3/lsb_addreservation.3	√
man/man3/lsb_hostinfo_cond.3	√
man/man3/ls_rfterminate.3	√
man/man3/lsb_rc_free_hostinfo.3	√
man/man3/lsb_gpdCtrl.3	√
man/man3/lsb_readjobmsg.3	√
man/man3/ls_getacctrec.3	√
man/man3/lsb_geteventrecbyline.3	√
man/man3/ls_donerex.3	√
man/man3/extsched_job_getextresreq.3	√
man/man3/lsb_writependingreasons.3	√
man/man3/ls_conntaskport.3	√
man/man3/lsb_puteventrec.3	√
man/man3/lsb_deljgrp_ext.3	√
man/man3/extsched_resreq_registerhandler.3	√
man/man3/lsb_addjgrp.3	√
man/man3/ls_getmnthost.3	√
man/man3/lsb_readframejob.3	√
man/man3/extsched_order_getJobSubmitTime.3	√
man/man3/extsched_inScout.3	√
man/man3/ls_loadadj.3	√
man/man3/ls_rwaittid.3	√
man/man3/lsb_limitInfo.3	√
man/man3/lsb_closestatus.3	√
man/man3/extsched_order_getJobSeqNum.3	√
man/man3/ls_rlseek.3	√
man/man3/lsb_getjobdepinfo.3	√
man/man3/extsched_cand_getavailslot.3	√
man/man3/extsched_resreq_getextresreq.3	√
man/man3/lsb_launch.3	√
man/man3/ls_stoprex.3	√

man/man3/glb_userinfo.3	√
man/man3/lsb_readstatus.3	√
man/man3/extsched_freeAllocLimitList.3	√
man/man3/ls_getclustername.3	√
man/man3/lsb_reconfig.3	√
man/man3/extsched_addAllocLimit.3	√
man/man3/extsched_rmEnt_.3	√
man/man3/extsched_freeIntAlloc.3	√
man/man3/extsched_getJobInfo.3	√
man/man3/lsb_userinfo.3	√
man/man3/extsched_getHost.3	√
man/man3/lsb_readstreamlineMT.3	√
man/man3/extsched_isEstimatorMode.3	√
man/man3/extsched_host_resources.3	√
man/man3/lsb_readstreamline.3	√
man/man3/extsched_rmEntAndFreeData.3	√
man/man3/lsb_switchjob.3	√
man/man3/lsb_calendarinfo.3	√
man/man3/extsched_alloc_type.3	√
man/man3/lsb_openstatus.3	√
man/man3/dm_local.3	√
man/man3/lsb_peekjob.3	√
man/man3/das_perror.3	√
man/man3/das_strerror.3	√
man/man3/extsched_createTabAndInit.3	√
man/man3/extsched_delRef_.3	√
man/man3/dm_chgrp.3	√
man/man3/extsched_order_getJobPriority.3	√
man/man3/ls_loadofhosts.3	√
man/man3/ls_unlockhost.3	√
man/man3/extsched_create_sTab.3	√
man/man3/lsb_runjob.3	√
man/man3/lsb_calendarop.3	√
man/man3/lsb_perror.3	√
man/man3/lsb_streamversion.3	√
man/man3/extsched_getRsrcReqForJob.3	√
man/man3/extsched_modifyJob.3	√
man/man3/extsched_getCheckAllocContext.3	√
man/man3/RsrcReqHandler_NewFn.3	√
man/man3/lsb_sharedresourceinfo.3	√
man/man3/ls_rsetenv.3	√
man/man3/lsb_deletejob.3	√
man/man3/ls_placereq.3	√
man/man3/lsb_movejob.3	√
man/man3/dm_cache.3	√
man/man3/lsb_globalPolicyStatus.3	√
man/man3/dm_stage_out.3	√

man/man3/extsched_destroy_sTab.3	√
man/man3/glb_groupinfo.3	√
man/man3/lsb_init.3	√
man/man3/das_init.3	√
man/man3/lsb_sysmsg.3	√
man/man3/lsb_getallocFromHostfile.3	√
man/man3/lsb_listjgrp.3	√
man/man3/lsb_closestream.3	√
man/man3/lsb_requeuejob.3	√
man/man3/ls_rfcontrol.3	√
man/man3/lsb_suspendreason_ex.3	√
man/man3/extsched_order_getJobNumOfList.3	√
man/man3/dm_admin.3	√
man/man3/extsched_nextEnt_.3	√
man/man3/lsb_openjobinfo_req.3	√
man/man3/lsb_readstream.3	√
man/man3/ls_errlog.3	√
man/man3/lsb_attrReq.3	√
man/man3/extsched_freeTab_.3	√
man/man3/extsched_register_canBePreempted.3	√
man/man3/extsched_freeJobInfo.3	√
man/man3/lsb_pendreason_ex.3	√
man/man3/ls_deletertask.3	√
man/man3/AllocatorFn.3	√
man/man3/lsb_freeGuaranteedResourcePoolEntArray.3	√
man/man3/ls_perror.3	√
man/man3/ls_load.3	√
man/man3/lsb_openjobinfo_a_ext.3	√
man/man3/lsb_hostpartinfo.3	√
man/man3/ls_gethostfactor.3	√
man/man3/lsb_switchReq.3	√
man/man3/ls_placeofhosts.3	√
man/man3/lsb_openstream.3	√
man/man3/ls_sysmsg.3	√
man/man3/extsched_job_getaskedslot.3	√
man/man3/lsb_killbulkjobs.3	√
man/man3/extsched_getHostID.3	√
man/man3/ls_deleteltask.3	√
man/man3/extsched_order_getNextJobOfList.3	√
man/man3/extsched_createTab.3	√
man/man3/ls_rexecve.3	√
man/man3/extsched_TabEmpty_.3	√
man/man3/glb_close_all.3	√
man/man3/extsched_firstEnt_.3	√
man/man3/lsb_userinfo2.3	√
man/man3/extsched_order_getFirstJobOfList.3	√
man/man3/lsb_jsdl2submit.3	√

man/man3/lsb_mig.3	√
man/man3/ls_resreq.3	√
man/man3/ls_getmyhostname2.3	√
man/man3/extsched_getAllocLimitList.3	√
man/man3/lsb_reljgrp.3	√
man/man3/ls_eligible.3	√
man/man3/lsb_globalFairshareConf.3	√
man/man3/extsched_addEnt_.3	√
man/man3/ls_ropen.3	√
man/man3/RsrcReqHandler_CheckAllocFn.3	√
man/man3/glb_jobinfo.3	√
man/man3/dm_chmod.3	√
man/man3/lsbllib.3	√
man/man3/ls_rtask.3	√
man/man3/ls_rwrite.3	√
man/man3/extsched_getAlloc.3	√
man/man3/ls_rescontrol.3	√
man/man3/ls_rtaske.3	√
man/man3/lsb_closejobinfo.3	√
man/man3/lsb_signaljob.3	√
man/man3/lsb_openjobinfo.3	√
man/man3/lsb_resize_cancel.3	√
man/man3/extsched_getSchedJobModError.3	√
man/man3/lsb_queuecontrol.3	√
man/man3/lsb_hostcontrol.3	√
man/man3/ls_sharedresourceinfo.3	√
man/man3/extsched_getJobAlloc.3	√
man/man3/extsched_getResType.3	√
man/man3/lsb_modreservation.3	√
man/man3/lsb_hclosure_lock_ids.3	√
man/man3/extsched_freeRefTab_.3	√
man/man3/extsched_resreq_getqueueextsched.3	√
man/man3/extsched_alloc_modify.3	√
man/man3/getRegisteredDmdCluster.3	√
man/man3/lsb_removereservation.3	√
man/man3/glb_perror.3	√
man/man3/lsb_postjobmsg.3	√
man/man3/lsb_signaljob_ex.3	√
man/man3/dm_list_tags.3	√
man/man3/lsb_submitPack.3	√
man/man3/ls_rexecv.3	√
man/man3/ls_stdinmode.3	√
man/man3/ls_gethostmodel.3	√
man/man3/ls_getmyhostname.3	√
man/man3/lsb_switchjobarray.3	√
man/man3/dm_clusters.3	√
man/man3/lsb_geteventrec.3	√

man/man3/lsb_globalLimitInfo.3	√
man/man3/lsb_submit.3	√
man/man3/extsched_get_hData.3	√
man/man3/lsb_readjobinfo.3	√
man/man3/lsb_wait.3	√
man/man3/glb_info.3	√
man/man3/lsb_freeLimitInfoEnt.3	√
man/man3/lsb_freelogrec.3	√
man/man3/ls_limcontrol.3	√
man/man3/dm_stage_in.3	√
man/man3/ls_getstdin.3	√
man/man3/lsb_resize_request.3	√
man/man3/lsb_openpendingreasons.3	√
man/man3/ls_isconnected.3	√
man/man3/lsb_forcekilljob_ex.3	√
man/man3/ls_rwait.3	√
man/man3/ls_setstdin.3	√
man/man3/extsched_determineEvent.3	√
man/man3/glb_init_all.3	√
man/man3/lsb_rc_hostinfo.3	√
man/man3/lsb_resize_release.3	√
man/man3/lsb_removereservation2.3	√
man/man3/daslib.3	√
man/man3/ls_connect.3	√
man/man3/extsched_get_INT_Job.3	√
man/man3/extsched_clustername.3	√
man/man3/lsb_modjgrp.3	√
man/man3/extsched_order_registerOrderFn4AllQueues.3	√
man/man3/lsb_getalloc.3	√
man/man3/das_reset.3	√
man/man3/extsched_register_jobEventCallback.3	√
man/man3/lsb_reservationinfo.3	√
man/man3/ls_gethosttype.3	√
man/man5/	√
man/man5/lsb.threshold.5	√
man/man5/lim.acct.5	√
man/man5/lsf.task.5	√
man/man5/server.config.5	√
man/man5/lsb.resources.5	√
man/man5/lsf.usermapping.5	√
man/man5/lsb.hosts.5	√
man/man5/profile.lsf.5	√
man/man5/hosts.5	√
man/man5/lsf.conf.5	√
man/man5/lsf.sudoers.5	√
man/man5/lsb.nqsmaps.5	√
man/man5/lsb.queues.5	√

man/man5/lsb.params.5	√
man/man5/lsf.licensescheduler.5	√
man/man5/cshrc.lsf.5	√
man/man5/lsb.acct.5	√
man/man5/lsf.acct.5	√
man/man5/install.config.5	√
man/man5/lsf.datamanager.5	√
man/man5/lsf.cluster.5	√
man/man5/lsb.serviceclasses.5	√
man/man5/lsb.applications.5	√
man/man5/lsb.users.5	√
man/man5/lsb.modules.5	√
man/man5/lsb.events.5	√
man/man5/lsf.shared.5	√
man/man5/lsb.globalpolicies.5	√
man/man5/lsb.reasons.5	√
man/man5/setup.config.5	√
man/man5/slave.config.5	√
man/man5/ego.sudoers.5	√
man/man8/	√
man/man8/blaunch.8	√
man/man8/pim.8	√
man/man8/gpolicyd.8	√
man/man8/egosc.8	√
man/man8/mbatchd.8	√
man/man8/egoconfig.8	√
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resource_connector/google/lib/commons-beanutils-1.9.4.jar	√
resource_connector/google/lib/jackson-core-2.12.4.jar	√
resource_connector/google/lib/google-auth-library-credentials-0.22.1.jar	√
resource_connector/google/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar	√
resource_connector/google/lib/log4j-api-2.17.1.jar	√
resource_connector/google/lib/failureaccess-1.0.1.jar	√
resource_connector/google/lib/GcloudTool.jar	√
resource_connector/google/lib/jackson-annotations-2.12.4.jar	√
resource_connector/google/lib/grpc-context-1.22.1.jar	√
resource_connector/google/lib/jsr305-3.0.2.jar	√
resource_connector/google/lib/commons-logging-1.2.jar	√
resource_connector/google/lib/opencensus-contrib-http-util-0.24.0.jar	√
resource_connector/google/lib/guava-30.0-android.jar	√
resource_connector/google/lib/ezmorph-1.0.6.jar	√
resource_connector/google/lib/commons-codec-1.14.jar	√
resource_connector/google/lib/opencensus-api-0.24.0.jar	√
resource_connector/google/lib/auto-value-annotations-1.7.4.jar	√
resource_connector/google/lib/log4j-core-2.17.1.jar	√
resource_connector/google/lib/httpclient-4.5.13.jar	√
resource_connector/google/lib/google-http-client-1.38.0.jar	√
resource_connector/google/lib/google-oauth-client-1.31.2.jar	√
resource_connector/google/lib/json-lib-2.2.3-jdk15.jar	√
resource_connector/google/lib/checker-compat-qual-2.5.5.jar	√

resource_connector/google/lib/google-auth-library-oauth2-http-0.22.1.jar	√
resource_connector/google/lib/error_prone_annotations-2.3.4.jar	√
resource_connector/google/lib/j2objc-annotations-1.3.jar	√
resource_connector/google/lib/commons-lang-2.6.jar	√
resource_connector/google/scripts/	√
resource_connector/google/scripts/getAvailableMachines.sh	√
resource_connector/google/scripts/getAvailableTemplates.sh	√
resource_connector/google/scripts/requestReturnMachines.sh	√
resource_connector/google/scripts/example_user_data.sh	√
resource_connector/google/scripts/getRequestStatus.sh	√
resource_connector/google/scripts/getReturnRequests.sh	√
resource_connector/google/scripts/requestMachines.sh	√
resource_connector/openshift/	√
resource_connector/openshift/conf/	√
resource_connector/openshift/conf/openshiftprov_config.json	√
resource_connector/openshift/conf/openshiftprov_templates.json	√
resource_connector/openshift/lib/	√
resource_connector/openshift/lib/animal-sniffer-annotations-1.14.jar	√
resource_connector/openshift/lib/joda-time-2.9.3.jar	√
resource_connector/openshift/lib/commons-collections-3.2.2.jar	√
resource_connector/openshift/lib/guava-25.1-jre.jar	√
resource_connector/openshift/lib/joda-convert-1.2.jar	√
resource_connector/openshift/lib/jackson-databind-2.12.4.jar	√
resource_connector/openshift/lib/bcpkix-jdk15on-1.61.jar	√
resource_connector/openshift/lib/commons-collections4-4.1.jar	√
resource_connector/openshift/lib/client-java-8.0.0.jar	√
resource_connector/openshift/lib/commons-beanutils-1.9.4.jar	√
resource_connector/openshift/lib/jackson-core-2.12.4.jar	√
resource_connector/openshift/lib/okio-1.17.2.jar	√
resource_connector/openshift/lib/error_prone_annotations-2.1.3.jar	√
resource_connector/openshift/lib/commons-compress-1.19.jar	√
resource_connector/openshift/lib/bcprov-ext-jdk15on-1.61.jar	√
resource_connector/openshift/lib/commons-lang3-3.7.jar	√
resource_connector/openshift/lib/swagger-annotations-1.5.22.jar	√
resource_connector/openshift/lib/okhttp-3.14.3.jar	√
resource_connector/openshift/lib/bcprov-jdk15on-1.61.jar	√
resource_connector/openshift/lib/j2objc-annotations-1.1.jar	√
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resource_connector/openshift/lib/javax.annotation-api-1.3.2.jar	√
resource_connector/openshift/lib/builder-annotations-0.21.0.jar	√
resource_connector/openshift/lib/jackson-annotations-2.12.4.jar	√
resource_connector/openshift/lib/log4j-slf4j-impl-2.17.1.jar	√
resource_connector/openshift/lib/snakeyaml-1.25.jar	√
resource_connector/openshift/lib/jsr305-3.0.2.jar	√
resource_connector/openshift/lib/commons-logging-1.2.jar	√
resource_connector/openshift/lib/ocTool.jar	√
resource_connector/openshift/lib/jose4j-0.7.0.jar	√

resource_connector/openshift/lib/gson-2.8.0.jar	√
resource_connector/openshift/lib/resourcecify-annotations-0.21.0.jar	√
resource_connector/openshift/lib/checker-qual-2.0.0.jar	√
resource_connector/openshift/lib/ezmorph-1.0.6.jar	√
resource_connector/openshift/lib/commons-codec-1.14.jar	√
resource_connector/openshift/lib/protobuf-java-3.4.0.jar	√
resource_connector/openshift/lib/client-java-api-8.0.0.jar	√
resource_connector/openshift/lib/client-java-proto-8.0.0.jar	√
resource_connector/openshift/lib/log4j-core-2.17.1.jar	√
resource_connector/openshift/lib/gson-fire-1.8.3.jar	√
resource_connector/openshift/lib/sundr-core-0.21.0.jar	√
resource_connector/openshift/lib/logging-interceptor-3.14.3.jar	√
resource_connector/openshift/lib/slf4j-api-1.7.25.jar	√
resource_connector/openshift/lib/json-lib-2.2.3-jdk15.jar	√
resource_connector/openshift/lib/sundr-codegen-0.21.0.jar	√
resource_connector/openshift/lib/commons-lang-2.6.jar	√
resource_connector/openshift/scripts/	√
resource_connector/openshift/scripts/getAvailableMachines.sh	√
resource_connector/openshift/scripts/getAvailableTemplates.sh	√
resource_connector/openshift/scripts/requestReturnMachines.sh	√
resource_connector/openshift/scripts/getRequestStatus.sh	√
resource_connector/openshift/scripts/getReturnRequests.sh	√
resource_connector/openshift/scripts/requestMachines.sh	√
resource_connector/openshift/helpers/	√
resource_connector/openshift/helpers/lsf_rc_role_binding.yaml	√
resource_connector/openshift/helpers/lsf_rc_sa.yaml	√
resource_connector/openshift/helpers/lsf_subdomain.yaml	√
resource_connector/openshift/helpers/lsf_rc_cluster_role.yaml	√
resource_connector/openshift/helpers/enable_lsf_rc.sh	√
resource_connector/openshift/helpers/lsf_rc_role.yaml	√
resource_connector/openshift/helpers/lsf_rc_cluster_role_binding.yaml	√
resource_connector/openstack/	√
resource_connector/openstack/conf/	√
resource_connector/openstack/conf/osprov_config.json	√
resource_connector/openstack/conf/create_server.json	√
resource_connector/openstack/conf/osprov_templates.json	√
resource_connector/openstack/scripts/	√
resource_connector/openstack/scripts/getAvailableMachines.sh	√
resource_connector/openstack/scripts/getAvailableTemplates.sh	√
resource_connector/openstack/scripts/OpenStackClient.py	√
resource_connector/openstack/scripts/requestReturnMachines.sh	√
resource_connector/openstack/scripts/example_user_data.sh	√
resource_connector/openstack/scripts/install_dns.sh	√
resource_connector/openstack/scripts/getRequestStatus.sh	√
resource_connector/openstack/scripts/Log.py	√
resource_connector/openstack/scripts/getReturnRequests.sh	√
resource_connector/openstack/scripts/Main.py	√

resource_connector/openstack/scripts/generatehosts	√
resource_connector/openstack/scripts/requestMachines.sh	√
resource_connector/openstack/scripts/MachineFile.py	√
schema/	√
schema/sc.xsd	√
schema/samples/	√
schema/samples/ResourceGroupConfiguration.xml	√
schema/samples/JSDLSpecification.xml	√
schema/samples/UserDatabaseSample.xml	√
schema/samples/ServiceDescriptionSample.xml	√
schema/samples/ActivitySpecification.xml	√
schema/samples/DistributionPolicySample.xml	√
schema/md.xsd	√
schema/ego.xsd	√
scripts/	√
scripts/egosrvloader.sh	√
util/	√
util/support/	√
util/support/support_tools_lsf101_linux-x86-64	√
util/support/README.docx	√
util/support/Support_Tool_Lic_Agreement.docx	√
util/support/lsfsupporttool.conf	√
util/support/snap_shot_gather.sh	√
util/elim.mic.ext/	√
util/elim.mic.ext/elim.mic.ext	√
util/elim.mic.ext/README	√
util/eass3/	√
util/eass3/rpower_suspend.sh	√
util/eass3/config	√
util/eass3/rpower_resume.sh	√
util/eass3/rpower_reset.sh	√
util/gpfs/	√
util/gpfs/elim.gpfshost	√
util/gpfs/elim.gpfsglobal	√

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