

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 13

The following bugs have been fixed in LSF Version 10.1 Fix Pack 13 between 11 Jun 2021 and 15 Apr 2022:

P104619	Date	4/8/2022
	Description	This fix prevents the sbatchd daemon not working when cgroup V2 is enabled.
	Component	sbatchd res
	Impact	Sbatchd crash when cgroup v2 enabled

P104613	Date	3/28/2022
	Description	lsf support tools v1.2 patch release
	Component	"util/support/README.docx util/support/Support_Tool_Lic_Agreement.docx util/support/lsfsupporttool.conf util/support/snap_shot_gather.sh util/support/support_tools_lsf101_linux-x86-64"
	Impact	Update to LSF support tools

P104614	Date	3/27/2022
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	Description	<p>"This fix addresses the following issues:</p> <ol style="list-style-type: none"> 1. Prevents the mbschd daemon occasionally core dump after global policy is enabled for multiple clusters. 2. Adds a pending reason message for jobs that cannot forward to remote cluster. 3. Prevents the ebrokerd daemon hangs when it terminates thousands of instances on cloud. 4. Prevents the mbatchd daemon core dumps, when it replays JOB_SWITCH event. 5. Enables the GPU_RUN_TIME work, when the value of GPU_RUN_TIME_FACTOR is less than 1. 6. Improves to set pending reason for preemptive jobs, if the closed_Busy host is not used by advanced reservation."
	Component	mbatchd, mbschd, ebrokerd, bjobs ,liblsbstream.so, liblsbstream.a , libbat.so, libbat.a, liblsf.so, liblsf.a, lsbatch.h, lsf.h
	Impact	Resolves multiple issues with remote forwarded jobs

P104603	Date	3/15/2022
	Description	This fix enables the sbatchd daemon correctly reports job application "exit code".
	Component	sbatchd res
	Impact	Fix bsub -w "exit(j1, 140)" not working for a job killed by LSF for RUNLIMIT reached

P104596	Date	3/6/2022
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	Description	<p>"This fix addresses the following issues:</p> <ol style="list-style-type: none"> 1. When configure Docker integration at the queue level, a non-context user is unable to run the battach command to attach the Docker job dispatched to this queue. 2. When a job's pre-execution (PRE-EXEC) fails, the custom scheduler plug-in incorrectly indicates that the job is done. 3. The bjdepinfo command does not show child dependent array jobs, if an element of the array job is finished and cleaned. 4. The stream file cannot exceed 2 GB."
	Component	mbatchd mbschd ebrokerd
	Impact	Allow battach to attach to docker container

P104576	Date	2/16/2022
	Description	This fix prevents pending jobs from running after the mbatchd daemon restarts.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix case where job not dispatched to a host with affinity job running but with enough available slots

P104548	Date	2/15/2022
	Description	The fix enables the lsrcp command to show clear error messages when it fails.
	Component	lsrcp
	Impact	Improve lsrcp error messages

P104571	Date	2/15/2022
	Description	This fix ensures that LSF can run the user data script that is specified in the launch template if the user_data.sh script file does not exist in the <LSF_TOP>/10.1/resource_connector/aws/scripts/ directory for AWS cloud.
	Component	"resource_connector/aws/lib/aws-java-sdk-core-1.11.699.jar resource_connector/aws/lib/aws-java-sdk-ec2-1.11.699.jar resource_connector/aws/lib/jmespath-java-1.11.699.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/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/joda-time-2.9.9.jar resource_connector/aws/lib/ezmorph-1.0.6.jar resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar resource_connector/aws/lib/httpclient-4.5.13.jar resource_connector/aws/lib/httpcore-4.4.13.jar resource_connector/aws/lib/log4j-api-2.17.1.jar resource_connector/aws/lib/log4j-core-2.17.1.jar resource_connector/aws/lib/ion-java-1.0.2.jar resource_connector/aws/lib/AwsTool.jar"
	Impact	Ensure lsf uses correct user_data.sh script

P104574	Date	2/14/2022
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	Description	This fix prevents the mbatchd daemon from core dump on remote cluster when a job's jobinfo is missing.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix potential mbatchd core dump after FP12 upgrade

P104552	Date	1/21/2022
	Description	The fix makes LSF_DISABLE_LSRUN=N when the lsruntime hosts are among LSF_ADDON_HOSTS hosts.
	Component	sbatchd res
	Impact	Add PAC security feature into LSF_ADDON_HOSTS

P104541	Date	1/12/2022
	Description	This patch prevents lim from having a high CPU utilization on a host with 8 GPUs.
	Component	lim lsmload lshosts
	Impact	Improve lim performance on 8 GPU host

P104536	Date	1/11/2022
	Description	This fix ensures that LSF does not skip GPU error messages on GPU DCGM V2 hosts
	Component	liblsfcdgm.so.2
	Impact	Fix issue where LSF was skipping GPU error messages

P104515	Date	1/5/2022
	Description	This patch updates log4j to 2.17.1.

	Component	"resource_connector/aws/lib/aws-java-sdk-core-1.11.699.jar resource_connector/aws/lib/aws-java-sdk-ec2-1.11.699.jar resource_connector/aws/lib/jmespath-java-1.11.699.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/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/joda-time-2.9.9.jar resource_connector/aws/lib/ezmorph-1.0.6.jar resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar resource_connector/aws/lib/httpclient-4.5.13.jar resource_connector/aws/lib/httpcore-4.4.13.jar resource_connector/aws/lib/log4j-api-2.17.1.jar resource_connector/aws/lib/log4j-core-2.17.1.jar resource_connector/aws/lib/ion-java-1.0.2.jar resource_connector/aws/lib/AwsTool.jar resource_connector/azure/lib/jackson-annotations-2.12.4.jar resource_connector/azure/lib/jackson-core-2.12.4.jar resource_connector/azure/lib/jackson-databind-2.12.4.jar resource_connector/azure/lib/jackson-datatype-joda-2.12.4.jar resource_connector/azure/lib/gson-2.2.4.jar resource_connector/azure/lib/guava-20.0.jar resource_connector/azure/lib/adal4j-1.1.2.jar resource_connector/azure/lib/azure-1.0.0.jar resource_connector/azure/lib/azure-annotations-1.0.0.jar resource_connector/azure/lib/azure-client-authentication-1.0.4.jar
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	Impact	Java log4j security fix

P104500	Date	12/27/2021
	Description	This fix enables LSF to ignore a bad host in a host group without rejecting the entire host group when submitting a job.
	Component	mbatchd mbschd ebrokerd

	Impact	Resolve issue where bad host in host group may cause the entire host group to not be recognized
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P104461	Date	12/22/2021
	Description	This fix ensures that LSF properly updates Boolean resources when a new resource connector host with the same name rejoins the LSF cluster with different Boolean resources.
	Component	lim lsload mbatchd mbschd ebrokerd
	Impact	Resolve issue where resource connector job keeps pending even if the instance meets its resource requirement

P104476	Date	12/22/2021
	Description	This fix prevents jobs from pending if the resource requirement amount is zero.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix 0 license requirement job from pending forever

P104499	Date	12/22/2021
	Description	This fix prevents jobs from running on unexpected hosts.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix jobs dispatched to wrong hostgroups

P104474	Date	12/15/2021
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	Description	This patch fixes CVE-2021-44228, update log4j to 2.16.0.
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	Component	"resource_connector/aws/lib/aws-java-sdk-core-1.11.699.jar resource_connector/aws/lib/aws-java-sdk-ec2-1.11.699.jar resource_connector/aws/lib/jmespath-java-1.11.699.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/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/joda-time-2.9.9.jar resource_connector/aws/lib/ezmorph-1.0.6.jar resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar resource_connector/aws/lib/httpclient-4.5.13.jar resource_connector/aws/lib/httpcore-4.4.13.jar resource_connector/aws/lib/log4j-api-2.16.0.jar resource_connector/aws/lib/log4j-core-2.16.0.jar resource_connector/aws/lib/ion-java-1.0.2.jar resource_connector/aws/lib/AwsTool.jar resource_connector/azure/lib/jackson-annotations-2.12.4.jar resource_connector/azure/lib/jackson-core-2.12.4.jar resource_connector/azure/lib/jackson-databind-2.12.4.jar resource_connector/azure/lib/jackson-datatype-joda-2.12.4.jar resource_connector/azure/lib/gson-2.2.4.jar resource_connector/azure/lib/guava-20.0.jar resource_connector/azure/lib/adal4j-1.1.2.jar resource_connector/azure/lib/azure-1.0.0.jar resource_connector/azure/lib/azure-annotations-1.0.0.jar resource_connector/azure/lib/azure-client-authentication-1.0.4.jar
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	<p>resource_connector/azure/lib/rxjava-1.2.4.jar</p> <p>resource_connector/azure/lib/activation-1.1.jar</p> <p>resource_connector/azure/lib/mail-1.4.7.jar</p> <p>resource_connector/azure/lib/joda-time-2.10.8.jar</p> <p>resource_connector/azure/lib/jcip-annotations-1.0.jar</p> <p>resource_connector/azure/lib/accessors-smart-1.2.jar</p> <p>resource_connector/azure/lib/json-smart-2.3.jar</p> <p>resource_connector/azure/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/azure/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/azure/lib/commons-lang3-3.4.jar</p> <p>resource_connector/azure/lib/log4j-api-2.16.0.jar</p> <p>resource_connector/azure/lib/log4j-core-2.16.0.jar</p> <p>resource_connector/azure/lib/asm-5.0.4.jar</p> <p>resource_connector/azure/lib/slf4j-api-1.7.22.jar</p> <p>resource_connector/azure/lib/slf4j-simple-1.7.5.jar</p> <p>resource_connector/azure/lib/AzureTool.jar</p> <p>resource_connector/cyclecloud/lib/jackson-annotations-2.12.4.jar</p> <p>resource_connector/cyclecloud/lib/jackson-core-2.12.4.jar</p> <p>resource_connector/cyclecloud/lib/jackson-databind-2.12.4.jar</p> <p>resource_connector/cyclecloud/lib/okhttp-3.14.1.jar</p> <p>resource_connector/cyclecloud/lib/okio-1.17.2.jar</p> <p>resource_connector/cyclecloud/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/cyclecloud/lib/commons-io-2.11.0.jar</p> <p>resource_connector/cyclecloud/lib/commons-lang-2.6.jar</p> <p>resource_connector/cyclecloud/lib/log4j-api-2.16.0.jar</p> <p>resource_connector/cyclecloud/lib/log4j-core-2.16.0.jar</p> <p>resource_connector/cyclecloud/lib/CycleCloudTool.jar</p> <p>resource_connector/google/lib/jackson-annotations-2.12.4.jar</p> <p>resource_connector/google/lib/jackson-core-2.12.4.jar</p> <p>resource_connector/google/lib/jackson-databind-2.12.4.jar</p>
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	<p>resource_connector/google/lib/google-api-client-1.31.1.jar</p> <p>resource_connector/google/lib/google-api-services-compute-v1-rev20210301-1.31.0.jar</p> <p>resource_connector/google/lib/google-auth-library-credentials-0.22.1.jar</p> <p>resource_connector/google/lib/google-auth-library-oauth2-http-0.22.1.jar</p> <p>resource_connector/google/lib/auto-value-annotations-1.7.4.jar</p> <p>resource_connector/google/lib/jsr305-3.0.2.jar</p> <p>resource_connector/google/lib/error_prone_annotations-2.3.4.jar</p> <p>resource_connector/google/lib/failureaccess-1.0.1.jar</p> <p>resource_connector/google/lib/guava-30.0-android.jar</p> <p>resource_connector/google/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar</p> <p>resource_connector/google/lib/google-http-client-1.38.0.jar</p> <p>resource_connector/google/lib/google-http-client-apache-v2-1.38.0.jar</p> <p>resource_connector/google/lib/google-http-client-jackson2-1.38.0.jar</p> <p>resource_connector/google/lib/j2objc-annotations-1.3.jar</p> <p>resource_connector/google/lib/google-oauth-client-1.31.2.jar</p> <p>resource_connector/google/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/google/lib/commons-codec-1.14.jar</p> <p>resource_connector/google/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/google/lib/commons-lang-2.6.jar</p> <p>resource_connector/google/lib/commons-logging-1.2.jar</p> <p>resource_connector/google/lib/grpc-context-1.22.1.jar</p> <p>resource_connector/google/lib/opencensus-api-0.24.0.jar</p> <p>resource_connector/google/lib/opencensus-contrib-http-util-0.24.0.jar</p> <p>resource_connector/google/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/google/lib/json-lib-2.2.3-jdk15.jar</p>
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	<p>resource_connector/google/lib/httpclient-4.5.13.jar</p> <p>resource_connector/google/lib/httpcore-4.4.13.jar</p> <p>resource_connector/google/lib/log4j-api-2.16.0.jar</p> <p>resource_connector/google/lib/log4j-core-2.16.0.jar</p> <p>resource_connector/google/lib/checker-compat-qual-2.5.5.jar</p> <p>resource_connector/google/lib/GcloudTool.jar</p> <p>resource_connector/openshift/lib/jackson-annotations-2.12.4.jar</p> <p>resource_connector/openshift/lib/jackson-core-2.12.4.jar</p> <p>resource_connector/openshift/lib/jackson-databind-2.12.4.jar</p> <p>resource_connector/openshift/lib/jsr305-3.0.2.jar</p> <p>resource_connector/openshift/lib/gson-2.8.0.jar</p> <p>resource_connector/openshift/lib/error_prone_annotations-2.1.3.jar</p> <p>resource_connector/openshift/lib/guava-25.1-jre.jar</p> <p>resource_connector/openshift/lib/j2objc-annotations-1.1.jar</p> <p>resource_connector/openshift/lib/protobuf-java-3.4.0.jar</p> <p>resource_connector/openshift/lib/logging-interceptor-3.14.3.jar</p> <p>resource_connector/openshift/lib/okhttp-3.14.3.jar</p> <p>resource_connector/openshift/lib/okio-1.17.2.jar</p> <p>resource_connector/openshift/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/openshift/lib/commons-codec-1.14.jar</p> <p>resource_connector/openshift/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/openshift/lib/commons-lang-2.6.jar</p> <p>resource_connector/openshift/lib/commons-logging-1.2.jar</p> <p>resource_connector/openshift/lib/gson-fire-1.8.3.jar</p> <p>resource_connector/openshift/lib/client-java-8.0.0.jar</p> <p>resource_connector/openshift/lib/client-java-api-8.0.0.jar</p> <p>resource_connector/openshift/lib/client-java-proto-8.0.0.jar</p> <p>resource_connector/openshift/lib/builder-annotations-0.21.0.jar</p> <p>resource_connector/openshift/lib/resourcecify-annotations-0.21.0.jar</p> <p>resource_connector/openshift/lib/sundr-codegen-0.21.0.jar</p>
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		resource_connector/openshift/lib/sundr-core-0.21.0.jar resource_connector/openshift/lib/swagger-annotations-1.5.22.jar resource_connector/openshift/lib/javax.annotation-api-1.3.2.jar resource_connector/openshift/lib/joda-time-2.9.3.jar resource_connector/openshift/lib/ezmorph-1.0.6.jar resource_connector/openshift/lib/json-lib-2.2.3-jdk15.jar resource_connector/openshift/lib/commons-collections4-4.1.jar resource_connector/openshift/lib/commons-compress-1.19.jar resource_connector/openshift/lib/commons-lang3-3.7.jar resource_connector/openshift/lib/log4j-api-2.16.0.jar resource_connector/openshift/lib/log4j-core-2.16.0.jar resource_connector/openshift/lib/log4j-slf4j-impl-2.16.0.jar resource_connector/openshift/lib/jose4j-0.7.0.jar resource_connector/openshift/lib/bcpkix-jdk15on-1.61.jar resource_connector/openshift/lib/bcprov-ext-jdk15on-1.61.jar resource_connector/openshift/lib/bcprov-jdk15on-1.61.jar resource_connector/openshift/lib/checker-qual-2.0.0.jar resource_connector/openshift/lib/animal-sniffer-annotations-1.14.jar resource_connector/openshift/lib/joda-convert-1.2.jar resource_connector/openshift/lib/slf4j-api-1.7.25.jar resource_connector/openshift/lib/snakeyaml-1.25.jar resource_connector/openshift/lib/ocTool.jar"
	Impact	Java log4j security fix

P104470	Date	12/13/2021
	Description	This fix sets the job's status as USUSP if the command abnormally exits for a RESUME action in JOB_CONTROLS.
	Component	bhist mbatchd mbschd ebrokerd sbatchd res

	Impact	Fix issue where a job could be stuck in SSUSP state if resume script returns non zero value
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P104460	Date	12/13/2021
	Description	This fix makes sure that the mbatchd daemon updates the job status based on newly-added projects to the bld deamon.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix to prevent jobs from pending for abnormally long time with new projects

P104472	Date	12/7/2021
	Description	Fix to resolve an issue with the mbschd. If a job array with many individually specified elements is submitted this could potentially cause the mbschd to die.
	Component	All binaries
	Impact	Fix mbschd core dump

P104471	Date	12/6/2021
	Description	LSF_STARTUP_USERS does not work with security settings in lsfc.conf
	Component	lsadmin, badmin, lim, lsload
	Impact	Fix authorized user unable to start up LSF when certain security enhancement settings are enabled

P104463	Date	12/1/2021
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	Description	The fix resolve the problem that job exit by reason TERM_EXTERNAL_SIGNAL rather than TERM_MEMLIMIT when job memory limit reached.
	Component	sbatchd res
	Impact	Fix issue where sometimes job killed with exit code 137 or TERM_EXTERNAL_SIGNAL when memlimit reached.

P104448	Date	11/26/2021
	Description	This fix enable LSF RC for AWS plugin to correctly detect spot instance reclaimed by AWS.
	Component	"resource_connector/aws/lib/AwsTool.jar resource_connector/aws/lib/aspectjrt-1.7.2.jar resource_connector/aws/lib/aspectjweaver-1.7.2.jar resource_connector/aws/lib/aws-java-sdk-1.11.699.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/freemarker-2.3.10.jar resource_connector/aws/lib/httpclient-4.5.13.jar resource_connector/aws/lib/httpcore-4.4.1.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/joda-time-2.9.9.jar resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar resource_connector/aws/lib/log4j-api-2.14.1.jar resource_connector/aws/lib/log4j-core-2.14.1.jar""

	Impact	Fix issue where LSF could not receive AWS spot instance reclaim notification
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P104455	Date	11/22/2021
	Description	LSF malforms the bjobs -p1 -psum command output if the pending reason messages contain '\n'.
	Component	mbatchd mbschd ebrokerd bjobs
	Impact	Fix bjobs -p1 -psum issue when handling pending reasons provided by external scheduler plug-in

P104445	Date	11/17/2021
	Description	This fix introduces a parameter to control whether containers automatically mount the /tmp directory for Docker jobs.
	Component	sbatchd res
	Impact	New feature to control docker container directory mounting behavior

P104441	Date	11/17/2021
	Description	This fix ensures that the LSF multicluster capability shows consistent forwarded job status among the submission and execution clusters.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix case where job status remains pending with pending reason "System is not ready for scheduling after reconfiguration" at the submission cluster, but job at the remote cluster is either done successfully or exited.

P104446	Date	11/17/2021
	Description	This fix enable LSF to write RC_RECLAIM in jobs output file.
	Component	mbatchd mbschd ebrokerd sbatchd res
	Impact	Enhance LSF resource connector to provide right job exit code and job exit info in job summary when job is terminated by spot instance reclaim

P104438	Date	11/11/2021
	Description	This fix allows LSF to keep the same PATH value for the post-execution environment as the pre-execution environment.
	Component	sbatchd res
	Impact	Fix to ensure PATH variable is consistent

P104431	Date	11/2/2021
	Description	This fix resolve a problem that sbatchd repeatedly restart when host unreachable on resource connector hosts.
	Component	sbatchd res
	Impact	Fix sbatchd random restarts with resource connector enabled

P104430	Date	11/1/2021
	Description	This fix ensures that the LIM daemon works properly when a canonical name (CNAME) record is used in DNS.

	Component	lim lsload
	Impact	Fix lim core dump when using DNS host aliases

P104425	Date	10/29/2021
	Description	This fix improves the performance of the mbschd daemon for multiple jobs with a requested host group.
	Component	mbatchd mbschd ebrokerd
	Impact	Improve mbschd daemon initialization performance when there are many user limitations in the lsb.resources file

P104427	Date	10/28/2021
	Description	If the job status file is deleted, then the mbatchd daemon restarts, then the sbatchd daemon restarts, this fix ensures that the sbatchd daemon sends job resource usage information to mbatchd.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix case where sbatchd does not send job resource usage to mbatchd if jobs tatus file is deleted

P104412	Date	10/25/2021
	Description	This fix prevents a child mbatchd core dump when the events file is broken.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix potential mbatchd core dump

P104411	Date	10/22/2021
	Description	This fix prevents jobs from being requeued again after the mbatchd daemon restarts.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix incorrect job state transition on mbatchd restart

P104409	Date	10/22/2021
	Description	This fix prevents RES from running into deadlock at startup if lsf.conf is unreachable.
	Component	sbatchd res
	Impact	Fix potential RES deadlock that prevents jobs from finishing

P104400	Date	10/15/2021
	Description	This fix improves the error handling logic in the AWS plugin to prevent dead loops when these exceptions occur.

	Component	resource_connector/aws/lib/AwsTool.jar resource_connector/aws/lib/aspectjrt-1.7.2.jar resource_connector/aws/lib/aspectjweaver-1.7.2.jar resource_connector/aws/lib/aws-java-sdk-1.11.699.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/freemarker-2.3.10.jar resource_connector/aws/lib/httpclient-4.5.13.jar resource_connector/aws/lib/httpcore-4.4.1.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/joda-time-2.9.9.jar resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar resource_connector/aws/lib/log4j-api-2.14.1.jar resource_connector/aws/lib/log4j-core-2.14.1.jar
	Impact	Improve ebokerd host reclaim handling when hosts are already gone in AWS

P104392	Date	10/12/2021
	Description	This fix adds support for the "CapacityOptimized" allocation strategy for AWS spot requests in the LSF Resource Connector.

	Component	resource_connector/aws/lib/AwsTool.jar resource_connector/aws/lib/aspectjrt-1.7.2.jar resource_connector/aws/lib/aspectjweaver-1.7.2.jar resource_connector/aws/lib/aws-java-sdk-1.11.699.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/freemarker-2.3.10.jar resource_connector/aws/lib/httpclient-4.5.13.jar resource_connector/aws/lib/httpcore-4.4.1.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/joda-time-2.9.9.jar resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar resource_connector/aws/lib/log4j-api-2.14.1.jar resource_connector/aws/lib/log4j-core-2.14.1.jar
	Impact	Add "capacity-optimized" allocation strategy to LSF RC AWS spot instance

P104391	Date	10/11/2021
	Description	This fix prevents the mbatchd daemon from core dumping when a user submit jobs from float client.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix mbatchd crash when submitting from a float client with signal 11

P104388	Date	9/29/2021
	Description	This fix prevents the mbatchd daemon from hanging when it terminates jobs on a reclaimed host in LSF resource connector.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix potential mbatchd deadlock on resource connector host reclaim

P104377	Date	9/20/2021
	Description	This fix prevents the mbatchd daemon from logging a problematic JOB_STATUS event if some host names in the host rusage string of the running job are empty.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix possible mbatchd core dump on startup

P104376	Date	9/16/2021
	Description	This fix allows LSF to set an open file soft limit to the job environment that is based on the LSF daemon startup environment.
	Component	sbatchd res
	Impact	Fix LSF unable to set different soft and hard limits for LSF processes

P104375	Date	9/16/2021
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	Description	This fix improves the performance of the management host LIM when a large number of resource connector instances are reclaimed.
	Component	lim lsload
	Impact	Fix issue where lshosts/bhosts gpu and lsload -gpuload shows unknown for Nvidia A100

P104373	Date	9/15/2021
	Description	Fix to ensure a job with compound resource requirements that contains partial GPU requirements can run normally.
	Component	sbatchd res
	Impact	Fix case where parallel job could be stuck at pending with "Failed in talking to server to start the job" message

P104372	Date	9/15/2021
	Description	This fix to improve the scheduler performance when the cluster-wide DEFAULT_RESREQ_ORDER is configured in the lsb.params file.
	Component	mbatchd mbschd ebrokerd
	Impact	Improve mbschd performance

P104350	Date	8/26/2021
	Description	This fix prevents mbatchd core dump in submission cluster if the size of package sending to remote cluster is greater than 5M.
	Component	mbatchd mbschd ebrokerd

	Impact	Fix mbatchd core dump on submission cluster
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P104346	Date	8/25/2021
	Description	This fix allows the bswitch command to operate on pending jobs if LSF already increased the priority of the pending jobs (due to pending time) to a value that is higher than the MAX_USER_PRIORITY value because of the configuration of the JOB_PRIORITY_OVER_TIME parameter.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix issue where bswitch fails with 'Bad user priority' message

P104326	Date	8/9/2021
	Description	bsub failed with "User permission denied" after several times retry and eauth timeout reaches.
	Component	bsub brestart
	Impact	Fix issue where bsub returns "User permission denied" error for large pack job

P104322	Date	8/3/2021
	Description	This fix ensures that the "maxMem" field is correct for the JOB_FINISH2 record in the lsb.stream file.
	Component	mbatchd mbschd ebrokerd
	Impact	Fix inaccurate values in maxMem field

P104275	Date	6/23/2021
	Description	This fix improves the performance of the bhist command.
	Component	bhist
	Impact	Improve performance of bhist under certain scenarios

P104273	Date	6/21/2021
	Description	This fix restores the gpu_driver and gpu_maxfactor resources as built-in resources so that users can use them in a resource requirement specification.
	Component	lim lsload mbatchd mbschd ebroke rd
	Impact	Fix not being able to use resource gpu_driver when LSF_GPU_RESOURCE_IGNORE=Y is set.

P104272	Date	6/21/2021
	Description	This fix ensures that the "bacct -l" command shows the correct host-based memory usage on the first execution host, and this fix also prevents sbatchd from core dumping on the first execution host when the sbatchd restarts.
	Component	res sbatchd
	Impact	Fix issue where sbatchd on first execution node of blaunch job can not be restarted after patching

P104266	Date	6/17/2021
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	Description	This fix improves the time that the bkill command takes to kill array jobs in a remote cluster.
	Component	mbatchd mbschd ebrokerd
	Impact	Improve bkill performance on remote cluster large array jobs

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 13

The following enhancements have been done in LSF Version 10.1 Fix Pack 13 between 11 Jun 2021 and 15 Apr 2022:

SPCLSF-832	Date	3/30/2022
	Description	LSF now supports Apptainer, the Linux foundation's version of Singularity
	Component	mbatchd sbatchd res

SPCLSF-833	Date	3/20/2022
	Description	LSF now supports GPUs through Singularity
	Component	sbatchd res

SPCLSF-815	Date	2/15/2022
	Description	Existing LSF commands that support a host name parameter, now also support host groups.
	Component	mbatchd, batrr, brsvs, bresume, lshosts, lsload, lim

SPCLSF-802	Date	2/1/2022
	Description	LSF admin can now specify preferred host for job dispatch within a host group. Set this value in the GROUP_MEMBER section of the lsb.hosts configuration file.
	Component	mbatchd, mbschd, bmgroun

SPCLSF-819	Date	1/27/2022
	Description	LSF now supports blimits -o option for custom formatted output.
	Component	blimits

SPCLSF-835	Date	1/20/2022
	Description	LSF now uses version 2.6 of the hardware locality (hwloc) library.
	Component	lim, lsload, lshosts, bhosts

SPCLSF-795	Date	1/19/2022
	Description	LSF now supports the use of Pod Manager (Podman) 3.3.1. The Podman integration allows LSF to run jobs in Podman OCI containers on demand.
	Component	mbatchd, sbatchd, res, battach, blaunch, lsfdockerlib.py, docker-starter.py, docker-control.py

SPCLSF-805	Date	1/10/2022
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	Description	bjobs command can now report CPU efficiency
	Component	mbatchd, sbatchd, bjobs, bhist, bacct, bparams

SPCLSF-791	Date	12/16/2021
	Description	LSF can now modify cgroup memory limit of a running job with bmod -M
	Component	sbatchd, also ego library

SPCLSF-800	Date	12/10/2021
	Description	LSF resource connector can automatically select templates to minimize number of requested instances
	Component	badmin mbatchd mbschd ebrokerd

SPCLSF-799	Date	12/8/2021
	Description	LSF now allows negation operator (~) for hostgroups in lsb.queues
	Component	mbatchd mbschd

SPCLSF-804	Date	11/24/2021
	Description	Improved GPU utilization metrics in bhist and bacct
	Component	bhist bacct mbatchd

SPCLSF-808	Date	11/23/2021
	Description	LSF resource connector can automatically select the cheapest spot instance template
	Component	ebrokerd, mbatchd, badmin, AwsTool.jar

SPCLSF-803/ SPCLSF-786/ P104486	Date	11/23/2021
	Description	LSF now allows you to use the new bkill -stat command option to kill jobs with the specified status
	Component	bkill, mbatchd, sbatchd

SPCLSF-792/ SPCLSF-786/ P104486	Date	11/21/2021
	Description	LSF now allows you to use the new bkill -d command option to kill jobs, then records the jobs as DONE after the jobs exit.
	Component	bkill, mbatchd, sbatchd

SPCLSF-794	Date	11/15/2021
	Description	LSF admin can now specify how many MultiCluster jobs or tasks, from remote clusters, that can be configured at the receive-jobs queue by setting two new parameters, IMPT_JOBLIMIT and IMPT_TASKLIMIT, in the lsb.queues configuration file.
	Component	mbatchd, mbschd, bqueues, bjobs

SPCLSF-793	Date	11/12/2021
	Description	LSF can prevent use of bwait command within a job by setting the new LSB_BWAIT_IN_JOBS = N in lsf.conf
	Component	mbatchd, mbschd, bwait, bpeek

SPCLSF-801	Date	11/11/2021
	Description	Updates to resizable GPU jobs with new LSB_RESIZE_GPUS and LSB_RESIZE_TIME environment variables to modify the resize notification command environment.
	Component	bacct bhist bresize disable_device mbatchd mbschd res sbatchd

SPCLSF-797	Date	11/10/2021
	Description	LSF can now use the number of jobs in the fairshare scheduling algorithm instead of the number of job slots.
	Component	mbatchd, mbschd, bparams, bqueues, gpolicyd, bgpinfo

SPCLSF-790	Date	11/3/2021
	Description	LSF now has new limit and resource output fields that you can specify for the bqueues -o command
	Component	bqueues

SPCLSF-1/ SPCLSF-608	Date	11/2/2021
	Description	LSF now allows you to delete job groups that reaches a specific idle time with new bgdel -d idle_time command

	Component	bjgroup, bgdel, bparams, mbatchd
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392	Date	2/17/2022
	Description	Prevent nios from printing errors to STDERR
	Component	nios

311	Date	11/25/2021
	Description	Add timestamp to docker container name to avoid container name conflicts
	Component	docker-starter.py

290	Date	10/31/2021
	Description	Fix lsadmin limdebug not recognizing log class LC_LOADINDX
	Component	lsadmin

271	Date	10/28/2021
	Description	Fix issue where if mbatchd restarts and it can't find the job status file, resume job signal will be sent to wrong PID
	Component	mbatchd sbatchd

283	Date	10/26/2021
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	Description	Improve input argument validation of lshosts
	Component	lshosts

230	Date	10/9/2021
	Description	Allow dynamic hosts to be part of hostgroups
	Component	mbatchd

248	Date	9/26/2021
	Description	Fix "ERROR_6012" when running hostsetup script on AIX
	Component	hostsetup

218	Date	8/31/2021
	Description	Improve error message clarity when entering invalid input for bjobs -o
	Component	bjobs

193	Date	8/11/2021
	Description	"block" is now a supported field name for bjobs -o
	Component	bjobs

Fixed Bugs and Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 12

The following bugs and enhancements have been done in LSF Version 10.1 Fix Pack 12 between 12 Nov 2020 and 10 Jun 2021:

P104243	Date	2021-5-31
	Description	This fix ensures that jobs are forwarded to remote clusters, which also enables the LSF resource connector.
	Component	mbatchd mbschd ebrokerd
	Impact	The Docker job cannot be forwarded to remote clusters.

P104239	Date	2021-5-26
	Description	This fix prevents rusage errors when users submit jobs that have spaces in the rusage string.
	Component	mbatchd mbschd ebrokerd
	Impact	The rusage section does not support space characters.

P104203	Date	2021-4-25
	Description	This fix prevents jobs on spot instances from being wrongly terminated when the spot instance is reclaimed, even though the jobs are requeued and dispatched to run on a new instance.
	Component	mbatchd mbschd ebrokerd
	Impact	The job on a spot instance is terminated when the spot instance is reclaimed.

P104194	Date	2021-4-16
	Description	This fix prevents pending jobs from showing the pending reason of "Template host only used for demand calculation" in the LSF resource connector.
	Component	mbatchd mbschd ebrokerd
	Impact	The job's pending reason is wrong when the LSF resource connector feature is enabled.

P104186	Date	2021-4-15
	Description	This fix enables users to configure how the LSF resource connector takes action on jobs that are running on a host when that host is reclaimed.
	Component	mbatchd mbschd ebrokerd bapp bjobs bhist
	Impact	The interactive job is requeued after the execution host is reclaimed from the public cloud provider.

P104174	Date	2021-4-12
	Description	This fix prevents instances from being wrongly deleted by the LSF resource connector on Google Cloud.

	Component	resource_connector/google/lib/google-api-client-1.22.0.jar resource_connector/google/lib/jackson-annotations-2.10.0.jar resource_connector/google/lib/jackson-databind-2.10.0.jar resource_connector/google/lib/google-http-client-1.22.0.jar resource_connector/google/lib/jackson-core-2.10.0.jar resource_connector/google/lib/log4j-api-2.8.2.jar resource_connector/google/lib/commons-collections-3.2.2.jar resource_connector/google/lib/jsr305-1.3.9.jar resource_connector/google/lib/json-lib-2.2.3-jdk15.jar resource_connector/google/lib/commons-logging-1.2.jar resource_connector/google/lib/httpclient-4.5.12.jar resource_connector/google/lib/google-http-client-jackson2-1.22.0.jar resource_connector/google/lib/commons-beanutils-1.9.4.jar resource_connector/google/lib/ezmorph-1.0.6.jar resource_connector/google/lib/google-oauth-client-1.31.0.jar resource_connector/google/lib/google-api-services-compute-v1-rev182-1.22.0.jar resource_connector/google/lib/log4j-core-2.8.2.jar resource_connector/google/lib/commons-lang-2.6.jar resource_connector/google/lib/GcloudTool.jar
	Impact	The job pends or is queued after the execution host is deleted by the LSF resource connector on Google Cloud.

P104166	Date	2021-4-12
	Description	This fix prevents the bsub command from taking JSON or YAML code in the user job command as bsub options for job submission.

	Component	bsub
	Impact	The job's -json or -yaml option is wrongly parsed by bsub.

P104170	Date	2021-4-9
	Description	This fix to improve the response time when running the bconf command to modify a usergroup.
	Component	mbatchd mbschd ebrokerd
	Impact	It takes a long time for the mbatchd process to response bconf command.

P104164	Date	2021-3-31
	Description	This fix prevents jobs from remaining in a RUN status indefinitely when the host restarts and the job user is deleted after the restart.
	Component	sbatchd res
	Impact	The job remained in RUN status after the execution host is rebooted and the submission user is deleted.

P104155	Date	2021-3-25
	Description	This fix ensures that the bsub command skips the script parse check for directories that have the same name as the job command in the user's environment.
	Component	bsub

	Impact	bsub does not work if script parsing is enabled.
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P104154	Date	2021-3-25
	Description	This fix ensures that the mbatchd daemon can open the lsb.pendinfo.state file if root does not have access to this file.
	Component	mbatchd mbschd ebrokerd
	Impact	The mbatchd process cannot open lsb.pendinfo.state file.

P104145	Date	2021-3-23
	Description	This fix prevents the mbatchd daemon from crashing when it replays events.
	Component	mbatchd mbschd ebrokerd
	Impact	The mbatchd process crashed when it replays events.

P104133	Date	2021-3-22
	Description	The fix ensures that LSF_STRICT_CHECKING=ENHANCED works on AIX platforms.

	Component	<p> bacct bupart bread bswitch bimages breboot btop bjdepinfo breconfig bugroup bjgroup brequeue busers bjobs bresize bwait battach bresources bkill brestart bapp blaunch bresume bbot brlainfo bclusters brsvdel blimits brsvjob brsvadd bctrid bmg brsvmod bentags bmgroup brsvs bgadd bmig brsvsub bgbroker bmod brun bgdel bgpinfo bpeek bstatus bhist bpost bstop bsub bhosts bqueues badmin bchkpnt bconf bsia bparams bslots bgmod bqcbattr lsacctmrg lslockhost lsadmin lslogin lsitasks lsclusters lsmail lsmake lseligible lsmakerm lsrestart lsmon lsfrsv lspasswd lsfsshutdown lsrcp lsfsstartup lsreghost lsreconfig lsrtasks lsgrun lsrun lshosts lsacct lsinfo lsid lsload lsloadadj lstcsh lsplace lsunlockhost lsmake4 mesub echkpnt eadmin erestart augmentstarter TaskStarter zapit tspeek tssub lspportcheck qstat qdel egoconfig egoenv egoexec egosh egosc ego_client vemkd wsgserver named wsm execproxy utmpreg xagent resmig ch ppmsetvar preservestarter egogenkey egoapplykey dnssec-keygen nqsi mpdstartup pmd_w pvmjob init_energy initialize_eas mbatchd mbschd sbatchd res nios lim ebrokerd gpolicyd eauth krbrenewd mosquito pim pem pam rla eauth.krb5 qrestart qjlist qlimit qmapmgr qmgr qps qrun qsa qsnapshot qwatch batch-acct clnqs pipeclient qsub poejob poe_w elim.gpu lsf_release libbat.a libbat.so liblsbstream.a liblsbstream.so liblsf.a liblsf.so lsf.h lsbatch.h lssched.h </p>
	Impact	<p>The functionality of ENHANCED for parameter LSF_STRICT_CHECKING does not work on AIX systems.</p>

P104134	Date	2021-3-17
	Description	<p>This fix enables LSF to refresh the "type" if "type" is configured in the LSF_LOCAL_RESOURCES parameter on a local ls.conf file on a dynamic host.</p>

	Component	lim lsload
	Impact	The host's type is not updated if "type" is configured in the LSF_LOCAL_RESOURCES parameter on a local lsf.conf file on a dynamic host.

P104107	Date	2021-3-14
	Description	This fix ensures that bsub can transfer TGT files.
	Component	bsub krbrenewd
	Impact	bsub cannot transfer TGT files.

P104125	Date	2021-3-11
	Description	This fix ensures that LSF does not round up a job's runtime limit, which prevents jobs from failing due to a runtime limit that exceeds policy values.
	Component	mbschd mbatchd ebrokerd
	Impact	The job is wrongly pended because the runtime limit exceeds policy values.

P104122	Date	2021-3-9
	Description	This fix prevents jobs with data requirements from pending after running the "badadmin reconfig" command.
	Component	mbschd mbatchd ebrokerd

	Impact	The job is wrongly pended after running the "badadmin reconfig" command.
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P104104	Date	2021-3-9
	Description	This fix makes sure that when one host is invalid in the host range in the lsb.hosts file, LSF sets the other hosts in this range as the right status.
	Component	mbschd mbatchd ebrokerd
	Impact	If one host is invalid in the condensed host group, the host's status in this group is wrong.

P104117	Date	2021-3-3
	Description	This fix to resolve an issue with the extsched (API extsched_getRsrcReqInfo()) where the value of the threshold field in the returned data structure was always 0.
	Component	mbschd mbatchd ebrokerd
	Impact	The threshold field is not correctly handled by the sched_getRsrcReqInfo() API.

P104112	Date	2021-3-2
	Description	This fix ensures that the "bacct -l" command shows the correct host-based memory usage on the first execution host.
	Component	sbatchd res

	Impact	The job's host-based memory usage is wrong in the the output of "bacct -l".
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P104111	Date	2021-3-1
	Description	This fix to ensure that mbatchd sends interactive license jobs to bld when user mapping is enabled.
	Component	mbatchd mbschd ebrokerd sbatchd res
	Impact	The interactive job's license requirement is not sent to License Scheduler when both LSF multicluster and user mapping features are enabled.

P104078	Date	2021-3-1
	Description	This fix to ensure that the bsub/bmod commands retain the whole command line of the script file if it is over 4096 characters.
	Component	bsub bmod liblsf.a liblsf.so libbat.a libbat.so liblsbstream.a liblsbstream.so lsf.h lsbatch.h
	Impact	The job's command line over 4096 characters is truncated by mbatchd.

P104108	Date	2021-2-28
	Description	This fix ensures that a job's reserved memory is calculated accurately.
	Component	mbatchd mbschd ebrokerd

	Impact	The job's memory reservation is not released after the configured duration.
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P104103	Date	2021/2/26
	Description	This fix prevents the LSF resource connector for CycleCloud from dropping instances in building status when there are failed instances in the node creation request.
	Component	<p>cyclecloud/lib/commons-collections-3.2.2.jar</p> <p>cyclecloud/lib/commons-io-2.5.jar</p> <p>cyclecloud/lib/commons-lang-2.6.jar</p> <p>cyclecloud/lib/CycleCloudTool.jar</p> <p>cyclecloud/lib/jackson-annotations-2.10.0.jar</p> <p>cyclecloud/lib/jackson-core-2.10.0.jar</p> <p>cyclecloud/lib/jackson-databind-2.10.0.jar</p> <p>cyclecloud/lib/log4j-api-2.8.2.jar</p> <p>cyclecloud/lib/log4j-core-2.8.2.jar</p> <p>cyclecloud/lib/okhttp-3.14.1.jar</p> <p>cyclecloud/lib/okio-1.17.2.jar</p>
	Impact	The LSF resource connector for CycleCloud drops instances in building status when there are failed instances in the node creation request.

P104089	Date	2021-2-23
	Description	This fix to ensure that the LIM daemon works properly with no memory issues.
	Component	lim Isload

	Impact	The LIM process has memory leak issues.
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P104066	Date	2021-2-23
	Description	This fix ensures that the lsload and bhosts commands can select hosts by the "not host" criterion - select[(hname != 'hostA')].
	Component	lim lsload mbatchd mbschd ebrokerd
	Impact	The selection criterion – select[hname != hostA] – does not work on lsload and bhosts commands.

P104084	Date	2021-2-19
	Description	This fix addresses the issue where LSF stops dispatching jobs after jobs are requeued when the LSB_REQUEUE_HOLD_INTERVAL parameter is enabled.
	Component	mbatchd mbschd ebrokerd
	Impact	The cluster does not work after jobs are requeued.

P104083	Date	2021-2-12
	Description	This fix resolves the communication issues between the planner and main scheduler for jobs with certain rusage requirements.
	Component	mbatchd mbschd ebrokerd

	Impact	There are XDR error messages in the log of the mbschd process and the cluster does not work.
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P104077	Date	2021-2-5
	Description	This fix ensures that jobs with a compute unit requirement of usablecuslots can be scheduled normally.
	Component	mbatchd mbschd ebrokerd
	Impact	The usablecuslots requirement does not work after the compute unit feature is enabled.

P104052	Date	2021-2-5
	Description	This fix ensures that the LSF resource connector can request new instances after running the "badadmin mbdrestart" command.
	Component	mbatchd mbschd ebrokerd
	Impact	The LSF resource connector does not create new instances after running the "badadmin mbdrestart" command.

P104035	Date	2021-2-1
	Description	This fix ensures that the communication between the submission side and execution side can recover after the mbatchd restarts.
	Component	mbatchd mbschd ebrokerd

	Impact	The status of forwarded jobs is mismatched between the submission and the execution clusters.
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P104065	Date	2021-1-31
	Description	This fix to ensure that the LIM daemon works properly on hosts with NVLINK connections.
	Component	lim lsload
	Impact	The LIM process crashed on POWER hosts with NVLINK connections.

P104027	Date	2021-1-25
	Description	This fix to ensure that authentication for bpeek requests work when LSB_QUERY_ENH = Y is enabled in the lsf.conf file.
	Component	mbatchd mbschd ebrokerd
	Impact	bpeek does not work after LSB_QUERY_ENH is configured as Y.

P104041	Date	2021-1-18
	Description	This fix to ensure that the bld daemon can get the latest job information after running bmod -R together with other options such as -Jd or -o.
	Component	mbatchd mbschd ebrokerd

	Impact	The job's latest license requirement is not sent to the license scheduler.
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P104026	Date	2021-1-15
	Description	This fix to prevent array jobs from remaining in the PSUSP status after event switching and running the badmin mbdrestart command.
	Component	mbatchd mbschd ebrokerd
	Impact	The array job status becomes PSUSP after switching events and the restarting the mbatchd process.

P104024	Date	2021-1-8
	Description	This fix resolves a problem when using the job forwarding model of the LSF multicluster capability with global fairshare where the submission cluster misses the chargedSAAP field in the JOB_FINISH and JOB_FINISH2 event logs.
	Component	mbatchd mbschd ebrokerd
	Impact	Global fairshare information is missed in the job's event log when the LSF multicluster capability is enabled.

P104019	Date	2021-1-5
	Description	This fix changes the file permission of the \$LSB_SUB_PARM_FILE to 0644 to increase security.
	Component	bsub
	Impact	\$LSB_SUB_PARM_FILE was created under /tmp directory with 0666 permission.

P104015	Date	2020-12-28
	Description	This fix resolves a core dump issue when job exit email notification is configured when using the LSF multicluster capability.
	Component	mbatchd mbschd ebokerd
	Impact	The mbatchd process crashed in LSF multicluster environment.

P104008	Date	2020-12-15
	Description	This fix the memory leak when lim rcvconflnfo from client.
	Component	lsload lim
	Impact	The LIM process has memory leak issue when the error message is logged in the log file.

P103992	Date	2020-12-2
	Description	This fix moves the closed_busy hosts display to the pending reason in the non-candidate hosts instead of the candidate hosts.
	Component	mbatchd mbschd ebokerd
	Impact	The host is wrongly put into candidate host category in the output of job's pending reason.

P103987	Date	2020-12-1
	Description	This fix allows LSF to lock the LIM when scheduling exclusive jobs.
	Component	sbatchd res
	Impact	The exclusive scheduling feature is broken when LSB_DISABLE_LIMLOCK_EXCL is set to N or not setting in lsf.conf.

P103982	Date	2020-11-23
	Description	This fix ensures that when NIOS receives a RES2NIOS_CONNECT connection within niosExecSSH() while waiting for the XAGENT2NIOS_REPORT_DISPLAY signal, LSF ignores it and retries three times.
	Component	nios blaunch
	Impact	The X11 job randomly failed.

1280	Date	2021-6-10
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	Description	<p>This solution enhances the functionality of the LSF resource connector OpenShift plugin including</p> <ul style="list-style-type: none"> - The LSF cluster name can be configured by LSF_OPERATOR_CLUSTER in openshiftprov_config.json. - The timeout value of the OpenShift API request can be configured by TIME_IN_SEC in openshiftprov_config.json. - The status sync mechanism of new Pod can be changed by WAIT_POD_IP in openshiftprov_config.json. - The mount point of each persistent volume claim can be configured by mountPaths field for each template in openshiftprov_templates.json. - The change of the management Pod's IP address does not affect the functionality of cluster.
	Component	<p>resource_connector/openshift/lib/ocTool.jar resource_connector/openshift/helpers/enable_lsf_rc.sh resource_connector/openshift/helpers/lsf_rc_cluster_role_binding.yaml resource_connector/openshift/helpers/lsf_rc_cluster_role.yaml resource_connector/openshift/helpers/lsf_rc_role_binding.yaml resource_connector/openshift/helpers/lsf_rc_role.yaml resource_connector/openshift/helpers/lsf_rc_sa.yaml resource_connector/openshift/helpers/lsf_subdomain.yaml</p>

941	Date	2021-6-10
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	Description	<p>This solution enforces the LSF security mechanism by default by enabling LSF_STRICT_CHECKING=ENHANCED, LSF_AUTH_QUERY_COMMANDS=Y, LSF_ENV_OVERRIDE=N, and also introduces the "badadmin security view" command to view the cluster's security mechanism configuration. Meanwhile, the cluster administrator can set the grace period of the previous LSF_EAUTH_KEY by specifying the LSF_EAUTH_OLDKEY and LSF_EAUTH_OLDKEY_EXPIRY parameters in the /etc/lsf.sudoers file.</p>
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	Component	<p>lsf.h lsbatch.h lssched.h TaskStarter augmentstarter bacct badmin bapp batch-acct battach batrr bbot bchkpnt bclusters bconf bctrld bentags bgadd bgbroker bgdel bgmod bgpinfo bhist bhosts bhpart bimages bjdepinfo bjgroup bjobs bkill blaunch blimits bmg bmggroup bmig bmod bmodify bparams bpeek bpost bqc bqueues bread breboot breconfig brequeue bresize bresources brestart bresume brlainfo brsvadd brsvdel brsvjob brsvmod brsvs brsvsub brun bsia bslots bstatus bstop bsub bswitch btop bugroup busers bwait ch clnqs dnssec-keygen egoapplykey egoconfig egoenv egoexec egogenkey egosh lsacct lsacctmrg lsadmin lsclusters lseligible lsfrsv lsgrun lshosts lsid lsinfo lsload lsloadadj lslockhost lslogin lsitasks lsmail lsmake lsmake4 lsmakerm lsmon lspasswd lsplace lspportcheck lsrtp lsreconfig lsreghost lsrtasks lsrun lstcsh lsunlockhost mpdstartup pam pipeclient pmd_w poe_w poejob ppmsetvar preservestarter pvmjob resmig tspeek tssub xagent zapit libbat.a libbat.so liblsbstream.a liblsbstream.so libfairshareadjust.a libfairshareadjust.so liblsf.a liblsf.so liblsfdcm.so.2 daemons.wrap eadmin eauth eauth.krb5 ebrokerd echkpnt echkpnt.fluent echkpnt.ls_dyna eexec.gold ego_client egosc erenew.krb5 erestart erestart.fluent erestart.ls_dyna execproxy gpolicyd krbrenewd lim lsmail mbatchd mbschd melim mesub mosquito named nios pem pim res rla sbatchd utmpreg vemkd wsgserver wsm</p>
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159 166	Date	2021-5-31
	Description	This fix correctly handles new VM instances with the same hostname and IP address joining the cluster in the cloud environment.
	Component	mbatchd mbschd ebrokerd

P104238	Date	2021-5-26
	Description	This solution enhances the LSF resource connector to support new Google Cloud features, including instance templates, local SSDs, preemptible VMs, and bulk APIs.

	Component	<p>resource_connector/google/lib/checker-compat-qual-2.5.5.jar</p> <p>resource_connector/google/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/google/lib/commons-codec-1.11.jar</p> <p>resource_connector/google/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/google/lib/commons-lang-2.6.jar</p> <p>resource_connector/google/lib/commons-logging-1.2.jar</p> <p>resource_connector/google/lib/error_prone_annotations-2.3.4.jar</p> <p>resource_connector/google/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/google/lib/failureaccess-1.0.1.jar</p> <p>resource_connector/google/lib/GcloudTool.jar</p> <p>resource_connector/google/lib/google-api-client-1.31.1.jar</p> <p>resource_connector/google/lib/google-api-services-compute-v1-rev20210301-1.31.0.jar</p> <p>resource_connector/google/lib/google-auth-library-credentials-0.22.1.jar</p> <p>resource_connector/google/lib/google-auth-library-oauth2-http-0.22.1.jar</p> <p>resource_connector/google/lib/google-http-client-1.38.0.jar</p> <p>resource_connector/google/lib/google-http-client-apache-v2-1.38.0.jar</p> <p>resource_connector/google/lib/google-http-client-jackson2-1.38.0.jar</p> <p>resource_connector/google/lib/google-oauth-client-1.31.2.jar</p> <p>resource_connector/google/lib/grpc-context-1.22.1.jar</p> <p>resource_connector/google/lib/guava-29.0-android.jar</p> <p>resource_connector/google/lib/httpclient-4.5.13.jar</p> <p>resource_connector/google/lib/httpcore-4.4.13.jar</p> <p>resource_connector/google/lib/j2objc-annotations-1.3.jar</p> <p>resource_connector/google/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/google/lib/jackson-core-2.11.3.jar</p> <p>resource_connector/google/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/google/lib/json-lib-2.2.3-jdk15.jar</p>
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		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-2.8.2.jar resource_connector/google/lib/log4j-core-2.8.2.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 mbatchd mbschd ebrokerd
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P104259	Date	2021-5-25
	Description	This fix adds machined to the output of the getReturnRequest interface for cloud provider plugins to prevent instances from being orphaned when the host name is reused in the LSF resource connector.

	Component	<p>resource_connector/aws/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/aws/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/aws/lib/aspectjweaver-1.7.2.jar</p> <p>resource_connector/aws/lib/aws-java-sdk-1.11.699.jar</p> <p>resource_connector/aws/lib/aspectjrt-1.7.2.jar</p> <p>resource_connector/aws/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/aws/lib/httpclient-4.5.12.jar</p> <p>resource_connector/aws/lib/commons-logging-1.2.jar</p> <p>resource_connector/aws/lib/log4j-core-2.8.2.jar</p> <p>resource_connector/aws/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/aws/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/aws/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/aws/lib/commons-codec-1.14.jar</p> <p>resource_connector/aws/lib/joda-time-2.9.9.jar</p> <p>resource_connector/aws/lib/freemarker-2.3.10.jar</p> <p>resource_connector/aws/lib/httpcore-4.4.1.jar</p> <p>resource_connector/aws/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/aws/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/aws/lib/AwsTool.jar</p> <p>resource_connector/aws/lib/commons-lang-2.6.jar</p> <p>resource_connector/softlayer/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/softlayer/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/softlayer/lib/aspectjweaver-1.7.2.jar</p> <p>resource_connector/softlayer/lib/softlayer-api-client-0.2.2.jar</p> <p>resource_connector/softlayer/lib/aspectjrt-1.7.2.jar</p> <p>resource_connector/softlayer/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/softlayer/lib/SoftLayerTool.jar</p> <p>resource_connector/softlayer/lib/gson-2.2.4.jar</p> <p>resource_connector/softlayer/lib/httpclient-4.5.12.jar</p> <p>resource_connector/softlayer/lib/commons-logging-1.2.jar</p> <p>resource_connector/softlayer/lib/commons-lang3-3.1.jar</p> <p>resource_connector/softlayer/lib/log4j-core-2.8.2.jar</p>
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	<p>resource_connector/softlayer/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/softlayer/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/softlayer/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/softlayer/lib/joda-time-2.9.9.jar</p> <p>resource_connector/softlayer/lib/freemarker-2.3.10.jar</p> <p>resource_connector/softlayer/lib/httpcore-4.4.1.jar</p> <p>resource_connector/softlayer/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/softlayer/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/softlayer/lib/commons-lang-2.6.jar</p> <p>resource_connector/cyclecloud/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/cyclecloud/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/cyclecloud/lib/okio-1.17.2.jar</p> <p>resource_connector/cyclecloud/lib/log4j-core-2.8.2.jar</p> <p>resource_connector/cyclecloud/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/cyclecloud/lib/commons-io-2.5.jar</p> <p>resource_connector/cyclecloud/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/cyclecloud/lib/okhttp-3.14.1.jar</p> <p>resource_connector/cyclecloud/lib/CycleCloudTool.jar</p> <p>resource_connector/cyclecloud/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/cyclecloud/lib/commons-lang-2.6.jar</p> <p>resource_connector/azure/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/azure/lib/activation-1.1.jar</p> <p>resource_connector/azure/lib/slf4j-api-1.7.22.jar</p> <p>resource_connector/azure/lib/azure-mgmt-compute-1.0.0.jar</p> <p>resource_connector/azure/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/azure/lib/guava-29.0-jre.jar</p> <p>resource_connector/azure/lib/jcip-annotations-1.0.jar</p> <p>resource_connector/azure/lib/azure-mgmt-network-1.0.0.jar</p> <p>resource_connector/azure/lib/okhttp-3.14.9.jar</p> <p>resource_connector/azure/lib/mail-1.4.7.jar</p>
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	<p>resource_connector/azure/lib/slf4j-simple-1.7.5.jar</p> <p>resource_connector/azure/lib/azure-mgmt-graph-rbac-1.0.0.jar</p> <p>resource_connector/azure/lib/jackson-datatype-joda-2.10.0.jar</p> <p>resource_connector/azure/lib/AzureTool.jar</p> <p>resource_connector/azure/lib/azure-annotations-1.0.0.jar</p> <p>resource_connector/azure/lib/azure-mgmt-keyvault-1.0.0.jar</p> <p>resource_connector/azure/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/azure/lib/okio-1.17.2.jar</p> <p>resource_connector/azure/lib/azure-mgmt-trafficmanager-1.0.0.jar</p> <p>resource_connector/azure/lib/azure-mgmt-servicebus-1.0.0.jar</p> <p>resource_connector/azure/lib/nimbus-jose-jwt-8.17.jar</p> <p>resource_connector/azure/lib/azure-mgmt-batch-1.0.0.jar</p> <p>resource_connector/azure/lib/azure-mgmt-redis-1.0.0.jar</p> <p>resource_connector/azure/lib/azure-mgmt-cdn-1.0.0.jar</p> <p>resource_connector/azure/lib/commons-lang3-3.4.jar</p> <p>resource_connector/azure/lib/lang-tag-1.4.jar</p> <p>resource_connector/azure/lib/azure-client-authentication-1.0.2.jar</p> <p>resource_connector/azure/lib/gson-2.2.4.jar</p> <p>resource_connector/azure/lib/json-smart-1.1.1.jar</p> <p>resource_connector/azure/lib/azure-client-runtime-1.0.2.jar</p> <p>resource_connector/azure/lib/azure-mgmt-appservice-1.0.0.jar</p> <p>resource_connector/azure/lib/commons-logging-1.2.jar</p> <p>resource_connector/azure/lib/log4j-core-2.8.2.jar</p> <p>resource_connector/azure/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/azure/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/azure/lib/logging-interceptor-3.14.9.jar</p> <p>resource_connector/azure/lib/client-runtime-1.0.2.jar</p> <p>resource_connector/azure/lib/azure-mgmt-sql-1.0.0.jar</p> <p>resource_connector/azure/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/azure/lib/adal4j-1.1.2.jar</p>
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	<p>resource_connector/azure/lib/commons-codec-1.14.jar</p> <p>resource_connector/azure/lib/retrofit-2.9.0.jar</p> <p>resource_connector/azure/lib/joda-time-2.9.9.jar</p> <p>resource_connector/azure/lib/okhttp-urlconnection-3.14.9.jar</p> <p>resource_connector/azure/lib/azure-1.0.0.jar</p> <p>resource_connector/azure/lib/converter-jackson-2.1.0.jar</p> <p>resource_connector/azure/lib/adapter-rxjava-2.1.0.jar</p> <p>resource_connector/azure/lib/oauth2-oidc-sdk-4.5.jar</p> <p>resource_connector/azure/lib/azure-mgmt-resources-1.0.0.jar</p> <p>resource_connector/azure/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/azure/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/azure/lib/azure-mgmt-dns-1.0.0.jar</p> <p>resource_connector/azure/lib/rxjava-1.2.4.jar</p> <p>resource_connector/azure/lib/commons-lang-2.6.jar</p> <p>resource_connector/azure/lib/azure-mgmt-storage-1.0.0.jar</p> <p>resource_connector/google/lib/google-http-client-apache-v2-1.38.0.jar</p> <p>resource_connector/google/lib/google-http-client-jackson2-1.38.0.jar</p> <p>resource_connector/google/lib/httpcore-4.4.13.jar</p> <p>resource_connector/google/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/google/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/google/lib/google-api-services-compute-v1-rev20210301-1.31.0.jar</p> <p>resource_connector/google/lib/google-api-client-1.31.1.jar</p> <p>resource_connector/google/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/google/lib/google-auth-library-credentials-0.22.1.jar</p> <p>resource_connector/google/lib/listenablefuture-9999.0-empty-to-avoid-conflict-with-guava.jar</p> <p>resource_connector/google/lib/failureaccess-1.0.1.jar</p> <p>resource_connector/google/lib/GcloudTool.jar</p>
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	<p>resource_connector/google/lib/grpc-context-1.22.1.jar</p> <p>resource_connector/google/lib/jsr305-3.0.2.jar</p> <p>resource_connector/google/lib/commons-logging-1.2.jar</p> <p>resource_connector/google/lib/opencensus-contrib-http-util-0.24.0.jar</p> <p>resource_connector/google/lib/log4j-core-2.8.2.jar</p> <p>resource_connector/google/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/google/lib/guava-29.0-android.jar</p> <p>resource_connector/google/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/google/lib/jackson-core-2.11.3.jar</p> <p>resource_connector/google/lib/opencensus-api-0.24.0.jar</p> <p>resource_connector/google/lib/httpclient-4.5.13.jar</p> <p>resource_connector/google/lib/commons-codec-1.11.jar</p> <p>resource_connector/google/lib/google-http-client-1.38.0.jar</p> <p>resource_connector/google/lib/google-oauth-client-1.31.2.jar</p> <p>resource_connector/google/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/google/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/google/lib/checker-compat-qual-2.5.5.jar</p> <p>resource_connector/google/lib/google-auth-library-oauth2-http-0.22.1.jar</p> <p>resource_connector/google/lib/error_prone_annotations-2.3.4.jar</p> <p>resource_connector/google/lib/commons-lang-2.6.jar</p> <p>resource_connector/google/lib/j2objc-annotations-1.3.jar</p> <p>resource_connector/openshift/lib/animal-sniffer-annotations-1.14.jar</p> <p>resource_connector/openshift/lib/joda-time-2.9.3.jar</p> <p>resource_connector/openshift/lib/guava-25.1-jre.jar</p> <p>resource_connector/openshift/lib/joda-convert-1.2.jar</p> <p>resource_connector/openshift/lib/bcpkix-jdk15on-1.61.jar</p> <p>resource_connector/openshift/lib/commons-collections4-4.1.jar</p> <p>resource_connector/openshift/lib/client-java-8.0.0.jar</p> <p>resource_connector/openshift/lib/commons-beanutils-1.9.4.jar</p>
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	<p>resource_connector/openshift/lib/error_prone_annotations-2.1.3.jar</p> <p>resource_connector/openshift/lib/okio-1.17.2.jar</p> <p>resource_connector/openshift/lib/bcprov-ext-jdk15on-1.61.jar</p> <p>resource_connector/openshift/lib/commons-compress-1.19.jar</p> <p>resource_connector/openshift/lib/log4j-api-2.12.1.jar</p> <p>resource_connector/openshift/lib/commons-lang3-3.7.jar</p> <p>resource_connector/openshift/lib/joda-convert-1.6.jar</p> <p>resource_connector/openshift/lib/swagger-annotations-1.5.22.jar</p> <p>resource_connector/openshift/lib/okhttp-3.14.3.jar</p> <p>resource_connector/openshift/lib/bcprov-jdk15on-1.61.jar</p> <p>resource_connector/openshift/lib/j2objc-annotations-1.1.jar</p> <p>resource_connector/openshift/lib/log4j-slf4j-impl-2.12.1.jar</p> <p>resource_connector/openshift/lib/javax.annotation-api-1.3.2.jar</p> <p>resource_connector/openshift/lib/builder-annotations-0.21.0.jar</p> <p>resource_connector/openshift/lib/snakeyaml-1.25.jar</p> <p>resource_connector/openshift/lib/jsr305-3.0.2.jar</p> <p>resource_connector/openshift/lib/commons-logging-1.2.jar</p> <p>resource_connector/openshift/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/openshift/lib/ocTool.jar</p> <p>resource_connector/openshift/lib/jose4j-0.7.0.jar</p> <p>resource_connector/openshift/lib/gson-2.8.0.jar</p> <p>resource_connector/openshift/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/openshift/lib/checker-qual-2.0.0.jar</p> <p>resource_connector/openshift/lib/resourcecify-annotations-0.21.0.jar</p> <p>resource_connector/openshift/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/openshift/lib/log4j-core-2.12.1.jar</p> <p>resource_connector/openshift/lib/protobuf-java-3.4.0.jar</p> <p>resource_connector/openshift/lib/client-java-api-8.0.0.jar</p> <p>resource_connector/openshift/lib/client-java-proto-8.0.0.jar</p> <p>resource_connector/openshift/lib/commons-codec-1.11.jar</p>
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		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/jackson-annotations-2.10.0.jar resource_connector/openshift/lib/sundr-codegen-0.21.0.jar
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94	Date	2021-4-28
	Description	This fix allows LIM to correctly report GPU information when there is a GPU error.
	Component	lim Isload

144	Date	2021-4-26
	Description	This fix ensures that eslim.ostype correctly works on the CentOS system.
	Component	eslim.ostype

132	Date	2021-4-16
	Description	This fix correctly logs the time usage for the LSB_TIME_MBD parameter in the log file of matched process.
	Component	mbatchd mbschd ebrokerd

62	Date	2021-3-30
	Description	This fix enables ebrokerd to correctly handle post provision scripts.
	Component	mbatchd mbschd ebrokerd

86	Date	2021-3-26
	Description	This fix resolves issues with the LSF_STRIP_DOMAIN parameter in the lsf.conf file.

	Component	<p>bin/TaskStarter.exe bin/augmentstarter.exe bin/bacct.exe bin/badmin.exe bin/bapp.exe bin/battr.exe bin/bbot.exe bin/bchkpnt.exe bin/bclusters.exe bin/bconf.exe bin/bctrlid.exe bin/bgadd.exe bin/bgbroker.exe bin/bgdel.exe bin/bgmod.exe bin/bgpinfo.exe bin/bhist.exe bin/bhosts.exe bin/bhpart.exe bin/bjdepinfo.exe bin/bjgroup.exe bin/bjobs.exe bin/bkill.exe bin/blaunch.exe bin/blimits.exe bin/bmg.exe bin/bmggroup.exe bin/bmig.exe bin/bmod.exe bin/bparams.exe bin/bpeek.exe bin/bpost.exe</p>
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	<p>bin/bqueues.exe bin/bread.exe bin/brequeue.exe bin/bresize.exe bin/bresources.exe bin/brestart.exe bin/bresume.exe bin/brsvadd.exe bin/brsvdel.exe bin/brsvmod.exe bin/brsvs.exe bin/brun.exe bin/bsla.exe bin/bslots.exe bin/bstatus.exe bin/bstop.exe bin/bsub.exe bin/bswitch.exe bin/btop.exe bin/bugroup.exe bin/busers.exe bin/bwait.exe bin/egoapplykey.exe bin/egoconfig.exe bin/egogenkey.exe bin/egosh.exe bin/egostashpass-AD.exe bin/lscact.exe bin/lscactmrg.exe bin/lscadmgr.exe bin/lscadmin.exe bin/lscclusters.exe</p>
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	<p>bin/lselectible.exe bin/lstart bin/lshutdown bin/lstartup bin/lsgun.exe bin/lshosts.exe bin/lid.exe bin/linfo.exe bin/lload.exe bin/lloadadj.exe bin/llogin.exe bin/lstasks.exe bin/lmail.exe bin/lmon.exe bin/lpasswd.exe bin/lplace.exe bin/lportcheck.exe bin/lrcp.exe bin/lreghost.exe bin/lrtasks.exe bin/lrun.exe bin/lsmtp.exe bin/pam.exe bin/ppmsetvar.exe bin/preservestarter.exe bin/setutil.exe bin/sleep.exe bin/tspeak.exe bin/tssub.exe bin/wgpasswd.exe bin/wguser.exe etc/TSJobHelper.exe</p>
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		<p>etc/daemons.wrap.exe etc/eadmin etc/eauth.exe etc/eauth.krb5.exe etc/ebrokerd.exe etc/echkpnt.exe etc/egosc.exe etc/elim.icp.uploader.exe etc/elim.jsdl.exe etc/elogd.exe etc/erestart.exe etc/esub.password.exe etc/gpolicyd.exe etc/krbrenewd.exe etc/lim.exe etc/lsmail.exe etc/lstsmgr.exe etc/mbatchd.exe etc/mbschd.exe etc/melim.exe etc/mesub.exe etc/nios.exe etc/pem.exe etc/res.exe etc/sbatchd.exe etc/tmp.elim.sa.exe etc/tmp.eslim.daemonversions.exe etc/tmp.eslim.ostype.exe etc/vemkd.exe etc/wsgserver.exe etc/libsched.dll lib/libbat.lib</p>
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		lib/libbatw2k.dll lib/libbatw2k.lib lib/libfairshareadjust.dll lib/libfairshareadjust.lib lib/liblsbstream.dll lib/liblsbstream.lib lib/liblsf.lib lib/liblsfdll.dll lib/liblsfw2k.dll lib/liblsfw2k.lib include/lsf/lbatch.h include/lsf/lsf.h include/lsf/lssched.h
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P104144	Date	2021-3-23
	Description	Enhancement for LSF to support DCGM version 2.1.7.
	Component	Isload lim res sbatchd mbatchd mbschd ebrokerd liblsfdcg.so.2

82	Date	2021-3-11
	Description	This fix prevents LIM from crashing when two different hosts use the same IP address.
	Component	lim Isload

78	Date	2021-3-10
	Description	This fix prevents the mbatchd from crashing when “-m” is specified as “[[]”.
	Component	mbatchd mbschd ebrokerd

36	Date	2021-2-24
	Description	This fix prevents the matched process from logging thousands of errors such as do_asyncStatusReq() in restart scenario.
	Component	sbatchd res

P104014	Date	2020-12-28
	Description	This solution enables LSF to support dynamic or static scheduling for the NVIDIA Multi-Instance-GPU (MIG).
	Component	bacct bhist bhosts bjobs bmod bsub lim lshosts lslload mbatchd mbschd res sbatchd lsbatch.h lsf.h liblsf.a liblsf.so libbat.a libbat.so

RFE#143909	Date	2020-12-28
	Description	This fix increases the MAX number of TCP connection from 400 to _SC_OPEN_MAX in LIM.
	Component	lslload lim

265473	Date	2020-12-7
	Description	This fix correctly logs the port number of LSF daemons in the log file.
	Component	lim sbatchd res mbatchd mbschd lsload ebrokerd

265317	Date	2020-12-1
	Description	This fix correctly logs the host name in the log file if the host cannot meet the requirement of select string.
	Component	lim lsload

262270	Date	2020-11-24
	Description	This fix ensures the exit code of "bus -K" command is same as the job's exit code in the output of "bhist -l jobID".
	Component	blaunch nios

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 11

The following bugs have been fixed in LSF Version 10.1 Fix Pack 11 between 10 Apr 2020 and 12 Nov 2020:

P103957	Date	2020-11-12
	Description	Fix to make sure that LSF parses and gets the correct GROUP_MEMBER string for bconf to create a user group if the string is longer than 4608 characters.
	Component	mbatchd mbschd
	Impact	The bconf command incorrectly reports an unknown user in the GROUP_MEMBER list while creating a user group if the user list is longer than 4608 characters.

P103954	Date	2020-11-9
	Description	Fix to allow Advanced Reservation exclusive jobs to reserve slots when LSB_SLOT_RESERVE_ENHANCE is enabled.
	Component	mbatchd mbschd
	Impact	Advanced Reservation exclusive jobs do not reserve slots even when LSB_SLOT_RESERVE_ENHANCE is enabled.

P103952	Date	2020-11-9
	Description	This fix allows you to specify a customized width for the SLA name displayed to avoid this name being truncated in the 'bresources -gl' command output.

	Component	bresources
	Impact	The default display width of an SLA name in the 'bresource -gl' command option output is static. If the name is too long, the name is truncated.

P103942	Date	2020-11-12
	Description	This fix sets the AWS RunInstancesRequest minimal count to 1 to allow users to fully use the AWS vCPU quota.
	Component	<p>AwsTool.jar aspectjrt-1.7.2.jar aspectjweaver-1.7.2.jar</p> <p>aws-java-sdk-1.11.699.jar commons-beanutils-1.9.4.jar</p> <p>commons-codec-1.14.jar commons-collections-3.2.2.jar</p> <p>commons-lang-2.6.jar commons-logging-1.2.jar</p> <p>ezmorph-1.0.6.jar freemarker-2.3.10.jar httpclient-4.5.12.jar</p> <p>httpcore-4.4.1.jar jackson-annotations-2.10.0.jar</p> <p>jackson-core-2.10.0.jar jackson-databind-2.10.0.jar</p> <p>joda-time-2.9.9.jar json-lib-2.2.3-jdk15.jar</p> <p>log4j-api-2.8.2.jar log4j-core-2.8.2.jar</p>

	Impact	When LSF requests to create AWS on demand instances, LSF sets the AWS RunInstancesRequest minimal count and maximum count to the number that LSF requests. If the number exceeds the remaining number of vCPU limits in the user AWS account, an InsufficientInstanceCapacity exception occurs and the remaining number of vCPUs cannot be used.
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P103937	Date	2020-11-6
	Description	This fix to ensure that pending jobs get available licenses from License Scheduler if the jobs are requesting License Scheduler resources and are submitted into an active advance reservation.
	Component	mbatchd mbschd
	Impact	Jobs that are in an active advance reservation and are requesting License Scheduler resources do not get enough licenses according to License Scheduler even when there are enough free licenses in the feature.

P103929	Date	2020-11-9
	Description	This patch prevents the LSF resource connector for CycleCloud from deleting instances after you correct syntax errors in the template and restart the mbatchd daemon.
	Component	mbatchd mbschd ebrokerd
	Impact	The LSF resource connector for CycleCloud deletes instances after you correct the syntax errors in the template and restart the mbatchd daemon.

P103912	Date	2020-10-16
	Description	This patch fixes the following cgroup-related error messages in the sbatchd.log file: "Failed to get top level NUMA nodes".
	Component	mbatchd mbschd ebrokerd
	Impact	The following cgroup-related error messages are in the sbatchd.log file: "Failed to get top level NUMA nodes".

P103897	Date	2020-10-1
	Description	Fix to resolve an issue where the mbatchd might core dump after a restart while reading the lsb.events file.
	Component	mbatchd mbschd

	Impact	mbatchd might core dump after a restart while reading the lsb.events file.
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P103892	Date	2020-10-27
	Description	This fix resolves issues with the scheduler daemon performing slower for jobs with specific resource requirements.
	Component	mbatchd mbschd bresources bjobs lim lload bparams bhosts bsub busers liblsf.a liblsf.so libbat.a libbat.so liblsbstream.a liblsbstream.so lsf.h lsbatch.h
	Impact	The scheduler daemon is performing slower for jobs with a specific set of resource requirements.

P103890	Date	2020-9-28
	Description	The extsched API is enhanced. A plugin can now determine if the scheduler is running in estimator mode.
	Component	mbatchd mbschd lssched.h
	Impact	A plugin can not determine if the scheduler is running in estimator mode.

P103889	Date	2020-9-28
	Description	This patch prevents the LSF resource connector for CycleCloud from deleting instances when the CycleCloud server is down, then comes back up.
	Component	<p>cyclecloud/lib/commons-collections-3.2.2.jar</p> <p>cyclecloud/lib/commons-io-2.5.jar</p> <p>cyclecloud/lib/commons-lang-2.6.jar</p> <p>cyclecloud/lib/CycleCloudTool.jar</p> <p>cyclecloud/lib/jackson-annotations-2.10.0.jar</p> <p>cyclecloud/lib/jackson-core-2.10.0.jar</p> <p>cyclecloud/lib/jackson-databind-2.10.0.jar</p> <p>cyclecloud/lib/log4j-api-2.8.2.jar</p> <p>cyclecloud/lib/log4j-core-2.8.2.jar</p> <p>cyclecloud/lib/okhttp-3.14.1.jar</p> <p>cyclecloud/lib/okio-1.17.2.jar</p>
	Impact	The LSF resource connector for CycleCloud deletes instances when the CycleCloud server is down, then comes back up.

P103887	Date	2020-9-28
	Description	This fix prevents dependency jobs from being kept pending incorrectly after the job is requeued due to a GPU error.

	Component	mbatchd mbschd ebrokerd
	Impact	When a job depends on a second job, the first job runs when the dependency condition is met. After the first job is run, if the job is requeued because there is a GPU error, the dependency condition can never be met again, which causes the job to keep pending.

P103882	Date	2020-9-24
	Description	This fix ensures that the SIGINT is passed to job processes in the container for the bsub -l and bsub -lp command options.
	Component	docker-control.py lsfdockerlib.py
	Impact	When a user presses Ctrl+c for a Docker interactive job that is submitted by bsub -l or bsub -lp, the job process in the container cannot receive the SIGINT signal.

P103874	Date	2020-10-2
	Description	This fix increases the AWS provider log default rotation size to 200MB.

	Component	<p>AwsTool.jar aspectjrt-1.7.2.jar aspectjweaver-1.7.2.jar</p> <p>aws-java-sdk-1.11.699.jar commons-beanutils-1.9.4.jar</p> <p>commons-codec-1.14.jar commons-collections-3.2.2.jar</p> <p>commons-lang-2.6.jar commons-logging-1.2.jar</p> <p>ezmorph-1.0.6.jar freemarker-2.3.10.jar</p> <p>httpclient-4.5.12.jar httpcore-4.4.1.jar</p> <p>jackson-annotations-2.10.0.jar jackson-core-2.10.0.jar</p> <p>jackson-databind-2.10.0.jar joda-time-2.9.9.jar</p> <p>json-lib-2.2.3-jdk15.jar log4j-api-2.8.2.jar log4j-core-2.8.2.jar</p>
	Impact	<p>The default AWS provider size (10MB) is not large enough for large scale clusters. The entire log rotates in 15 minutes if the log level is set to TRACE.</p>

P103862	Date	2020-9-24
	Description	<p>Fix to keep badmin working as expected if LSF_AUTH=none is defined in the lsf.conf file.</p>
	Component	badmin bctrl
	Impact	<p>If LSF_AUTH=none is defined in the lsf.conf file, the badmin command might crash or work abnormally.</p>

P103842	Date	2020-9-24
	Description	Fix to ensure that dynamic hosts can join the cluster normally after a master LIM restart when LSB_SHAREDIR is set to a directory with root_squash configured.
	Component	lim
	Impact	When LSB_SHAREDIR is set to a directory with root_squash configured, the master LIM fails to read the hostcache file, leading to dynamic hosts not being able to join the cluster after a master LIM restart.

P103841	Date	2020-8-28
	Description	This fix prevents a core dump when using the brun command with egroup and pre-execution scripts.
	Component	mbatchd mbschd ebrokerd
	Impact	When a user uses the brun command to run a job that belongs to a share account and the job fails because of the pre-execution environment, the job is dispatched again. If the share account is removed through the egroup update, this job's share account is not updated correctly, which causes a core dump.

P103823	Date	2020-8-21
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	Description	This fix resolves issues with badmin hclose/hopen failing with the "XDR encode/decode error" message when LSF_STRICT_CHECKING=Y is configured in the lsf.conf file.
	Component	badmin
	Impact	The badmin hclose/hopen commands failed with the "XDR encode/decode error" message when LSF_STRICT_CHECKING=Y is configured in the lsf.conf file.

P103822	Date	2020-8-20
	Description	This fix ensures that the generated values in the input JSON file of the post-provisioning script are not empty.
	Component	ebrokerd mbatchd mbschd bjobs commons-collections-3.2.2.jar commons-io-2.5.jar commons-lang-2.6.jar CycleCloudTool.jar jackson-annotations-2.10.0.jar jackson-core-2.10.0.jar jackson-databind-2.10.0.jar log4j-api-2.8.2.jar log4j-core-2.8.2.jar okhttp-3.14.1.jar okio-1.17.2.jar
	Impact	The LSF ebokerd daemon generates empty values in the input JSON file of the post-provisioning script.

P103814	Date	2020-8-25
	Description	Fix to ensure that mbatchd does not report incorrect GPU error messages for unavail servers.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon incorrectly reports error messages that GPU is not supported for servers that are in unavail status.

P103813	Date	2020-8-21
	Description	This fix improves the bjobs query performance by avoiding redundant calls to the lsb_parameterInfo API.
	Component	mbatchd mbschd ebrokerd bjobs
	Impact	The bjobs -l and -p command options call the lsb_parameterInfo API, which causes bjobs to call mbatchd twice. This fix prevents the second redundant call for the lsb_parameterInfo API to improve performance.

P103809	Date	2020-8-19
	Description	Fix inconsistent job exit codes for background jobs and foreground jobs when the jobs' running times exceed the run time limit.
	Component	sbatchd res

	Impact	There are inconsistent job exit codes for background jobs and foreground jobs when the jobs' running times exceed the run time limit.
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P103808	Date	2020-8-19
	Description	This fix resolves badmin security issues when setting the LSF_LIBDIR parameter to a user's directory.
	Component	badmin
	Impact	There is a security issue with the badmin command when setting the LSF_LIBDIR parameter to a user's directory.

P103805	Date	2020-8-10
	Description	Fix to ensure that jobs are dispatched to hosts according to the order[] resource requirement.
	Component	mbatchd mbschd
	Impact	Jobs that are submitted with a specified host group and order[] resource requirement might not be dispatched to the right host according to the order[] resource requirement.

P103804	Date	2020-8-21
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	Description	Fix to ensure that the Docker image information can be transferred successfully, and enhancements to enable Docker image affinity.
	Component	lim mbatchd mbschd bsub
	Impact	The server host LIM and management host LIM fails when using the UDP protocol if the message size is large.

P103780	Date	2020-8-21
	Description	This fix enables the sbatchd daemon to correctly set the user group for the job RES when a user submits a job with the "bsub -L" command option.
	Component	sbatchd res
	Impact	The sbatchd daemon misses passing the user group to the job RES when a user submits a job with the "bsub -L" command option.

P103745	Date	2020-8-21
	Description	This fix improves scheduling performance with job group limits when the TRACK_ELIGIBLE_PENDINFO parameter is configured in the lsb.params file.

	Component	mbatchd mbschd
	Impact	The scheduling performance is slow with job group limits when the TRACK_ELIGIBLE_PENDINFO parameter is enabled in the lsb.params file.

P103734	Date	2020-8-7
	Description	This fix resolves issues with pending jobs that do not have pending reasons by using bjobs -o.
	Component	mbatchd mbschd
	Impact	Some jobs are in pending status but have no pending reasons.

P103728	Date	2020-7-9
	Description	This fix improves the performance of the bjobs -o command option.
	Component	mbatchd mbschd bjobs
	Impact	LSF takes a long time to process a bjobs -o query request due to decreased performance.

P103723	Date	2020-7-29
	Description	This fix allows the user to run LSF Docker jobs when the context user is not in the local Docker group but has external authentication.
	Component	sbatchd res
	Impact	When submitting a Docker job while the context user is not in local docker group but has external authentication, the job RES process exits due to the local Docker group permission check. This fix removes the local Docker group permission check in RES to resolve this issue.

P103721	Date	2020-7-20
	Description	Fix to ensure that the LSB_RC_EXTERNAL_HOST_IDLE_TIME parameter works properly after reconfiguring the mbatchd daemon.
	Component	mbatchd mbschd
	Impact	After reconfiguring the mbatchd daemon, the LSB_RC_EXTERNAL_HOST_IDLE_TIME parameter in the lsfc.conf might be reset unexpectedly.

P103717	Date	2020-7-31
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	Description	This fix resolves issues with communications between mbatchd and mbschd after an mbatchd parallel restart.
	Component	mbatchd mbschd
	Impact	Communications are broken between the mbatchd and mbschd daemons after an mbatchd parallel restart.

P103714	Date	2020-7-31
	Description	This fix prevents memory corruption in the RES process when the current working directory for the Docker job has a long file path.
	Component	sbatchd res
	Impact	When submitting a Docker job with a current working directory that has a long specified file path, the job RES process exits abnormally due to memory corruption.

P103709	Date	2020-8-18
	Description	This patch ensures that LSF ebrokerd can generate the correct node request to CycleCloud.
	Component	<p>ebrokerd mbatchd mbschd bjobs</p> <p>cyclecloud/lib/commons-collections-3.2.2.jar</p> <p>cyclecloud/lib/commons-io-2.5.jar</p> <p>cyclecloud/lib/commons-lang-2.6.jar</p> <p>cyclecloud/lib/CycleCloudTool.jar</p> <p>cyclecloud/lib/jackson-annotations-2.10.0.jar</p> <p>cyclecloud/lib/jackson-core-2.10.0.jar</p> <p>cyclecloud/lib/jackson-databind-2.10.0.jar</p> <p>cyclecloud/lib/log4j-api-2.8.2.jar</p> <p>cyclecloud/lib/log4j-core-2.8.2.jar</p> <p>cyclecloud/lib/okhttp-3.14.1.jar</p> <p>cyclecloud/lib/okio-1.17.2.jar</p>
	Impact	LSF ebrokerd cannot generate the correct node request to CycleCloud.

P103703	Date	2020-6-11
	Description	Fix to ensure that the LIM daemon works properly after restarting the master LIM daemon when there are dynamic hosts and "share to all" resources configured in the cluster.
	Component	lim
	Impact	When there are dynamic hosts and "share to all" resources configured in the cluster, the child LIM might core dump after restarting the master LIM daemon.

P103686 P103659 P103658 P103657	Date	2020-7-28
	Description	This fix allows loaning on owned hosts by GSLA owners in a host pool to improve resource utilization within the host pool, and includes a change to the guarantee policy query output (bresources) to display the owners for hosts that are included in the pool. This fix also addresses some related performance issues.
	Component	mbatchd mbschd bresources bjobs lim lload bparams bhosts bsub busers

	Impact	<p>1. When a host guarantee policy is configured and a host is allocated to a service class, jobs that do not belong to that service class are prohibited from using the host, even through loaning.</p> <p>2. Modifying running jobs triggers an mbatchd resource update, which slows down LSF.</p> <p>3. When submitting a job from an expired floating client or after a master lim restart/reconfig operation, mbatchd rejects the request and blocks the client for a few minutes.</p> <p>4. 'busers all' is unresponsive for a few minutes when the cluster has a few thousand running jobs and users or user groups.</p>
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P103661	Date	2020-7-25
	Description	This fix resolves memory leaks when DCGM is enabled.
	Component	lim
	Impact	The LIM process has memory leaks on LSF server hosts when DCGM is enabled.

P103660	Date	2020-7-20
	Description	This fix resolves dispatch issues with parallel jobs.
	Component	mbatchd mbschd

	Impact	If the EGROUP_UPDATE_INTERVAL parameter is defined in the lsb.params file and the queue has defined the HOSTS parameter as "HostName! HostGroup" where members of HostGroup are retrieved by egroup, a parallel job running on this queue cannot run on multiple execution hosts.
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P103654	Date	2020-6-17
	Description	This fix prevents the child mbatchd from core dumping when a user runs bjobs if LSB_PEND_REASON_FILTERED is enabled in lsf.conf.
	Component	mbatchd mbschd
	Impact	The child mbatchd core dumps when a user runs bjobs if the LSB_PEND_REASON_FILTERED parameter is enabled in the lsf.conf file.

P103652	Date	2020-5-29
	Description	Fix to prevent more advance reservation jobs running on the hosts.
	Component	mbatchd mbschd
	Impact	When the internal LSB_PERIODIC_LOAD_UPD parameter is enabled in the lsf.conf, more advance reservation jobs might run on the hosts.

P103640	Date	2020-5-29
	Description	Fix to ensure that LSF Data Manager transfers a job's output file from the execution host to the submission host.
	Component	sbatchd res
	Impact	When a job's output file that is specified by the bsub -o option is also specified in the bsub -f option as a file that needs to be transferred from the execution host to the submission host, LSF Data Manager is not triggered as expected.

P103623	Date	2020-5-28
	Description	This fix ensures that the job's mem and swp usage values are correctly recorded when they are zero.
	Component	sbatchd res
	Impact	bacct reports an abnormally large number for the mem and swp usage for a job.

P103622	Date	2020-5-30
	Description	This fix prevents hosts from being stuck in the "Deallocated_Sent" status in the LSF resource connector for Google Cloud.

	Component	<p>mbatchd mbschd ebrokerd</p> <p>resource_connector/google/lib/google-oauth-client-1.22.0.jar</p> <p>resource_connector/google/lib/google-api-client-1.22.0.jar</p> <p>resource_connector/google/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/google/lib/commons-codec-1.10.jar</p> <p>resource_connector/google/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/google/lib/google-http-client-1.22.0.jar</p> <p>resource_connector/google/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/google/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/google/lib/httpclient-4.5.jar</p> <p>resource_connector/google/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/google/lib/jsr305-1.3.9.jar</p> <p>resource_connector/google/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/google/lib/guava-20.0.jar</p> <p>resource_connector/google/lib/commons-logging-1.2.jar</p> <p>resource_connector/google/lib/google-http-client-jackson2-1.22.0.jar</p> <p>resource_connector/google/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/google/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/google/lib/google-api-services-compute-v1-rev182-1.22.0.jar</p> <p>resource_connector/google/lib/log4j-core-2.8.2.jar</p> <p>resource_connector/google/lib/commons-lang-2.6.jar</p> <p>resource_connector/google/lib/GcloudTool.jar</p>
	Impact	<p>Hosts are stuck in the "Deallocated_Sent" status in the LSF resource connector for Google Cloud.</p>

P103618	Date	2020-5-11
	Description	This fix resolves issues with the child mbatchd core dumping when running running the busers or bhosts commands.
	Component	mbatchd mbschd
	Impact	The child mbatchd daemon core dumps when running the busers or bhosts commands.

P103580	Date	2020-5-11
	Description	This fix prevents the bjobs -o "interactive" command from showing that an interactive job is non-interactive if LSF_UNIT_FOR_LIMITS is not defined and the job requires an rlimit value that is larger than MAX_INT.
	Component	bjobs
	Impact	If the LSF_UNIT_FOR_LIMITS parameter is not defined and an interactive job requires a value for rlimit that is larger than MAX INT, the bjobs -o "interactive" command incorrectly shows that the job is not interactive.

P103553	Date	2020-4-26
	Description	This fix ensures that the lim daemon works normally when there is an invalid resource name in the LSF_LOCAL_RESOURCES parameter in the lsfc.conf file.

	Component	lim
	Impact	The output of the lshosts -s command is incorrect when there is an invalid resource name in the LSF_LOCAL_RESOURCES parameter in the lsf.conf file.

P103552	Date	2020-4-28
	Description	Fix to ensure that bmod can find a job that is submitted with advance reservation options when NEWJOB_REFRESH is enabled.
	Component	mbatchd mbschd
	Impact	When the NEWJOB_REFRESH parameter is enabled in the lsb.params file, the bmod command cannot find the job that is submitted with advance reservation options.

P103541	Date	2020-4-28
	Description	This fix ensures that the mbatchd daemon works normally when there is a long JOB_MODIFY2 event.
	Component	bjobs
	Impact	The mbatchd daemon crashes when it replays a long JOB_MODIFY2 event during LSF startup.

P103527	Date	2020-5-14
	Description	This fix improves the method that LSF uses to get job information from the cgroup files.
	Component	sbatchd res
	Impact	The LSF server host status is "unreach" because it is busy opening the cgroup files.

P103526	Date	2020-5-14
	Description	Fix to ensure that the amount of available memory is correct when modifying a job's resource requirement.
	Component	mbatchd mbschd
	Impact	When modifying a job's resource requirement, the actual used memory is cleaned. This leads to an incorrect decrease in the amount of available memory.

P103504	Date	2020-4-30
	Description	This patch resolves an issue where the maximum number of jobs is 0 for dynamic hosts when setting MXJ = ! in the lsb.hosts file.

	Component	mbatchd mbschd schmod_demand.so
	Impact	If the MXJ parameter is set to "!" in the lsb.hosts file, the number of maximum jobs is 0 and the host status is "close_Full" for dynamic hosts that are added to the cluster.

256692	Date	2020-11-9
	Description	mbschd failed to save job pending reasons to /tmp
	Component	mbatchd mbschd
	Impact	Job detail pending reason gets lost.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 10

The following bugs have been fixed in LSF Version 10.1 Fix Pack 10 between 16 Oct 2019 and 10 Apr 2020:

P103651	Date	2020-4-10
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	Description	This fix ensures that LSF does not create more than the expected number of VMs despite the value of the JOB_ACCEPT_INTERVAL parameter.
	Component	lim mbatchd mbschd
	Impact	LSF creates more than the expected number of VMs if JOB_ACCEPT_INTERVAL is not 0.

P103650	Date	2020-4-10
	Description	This fix ensures that LSF does not create VMs if the shared resources requested by the job is 0.
	Component	lim mbatchd mbschd
	Impact	LSF repeatedly creates VMs even if the shared resource requested by the job is 0.

P103641	Date	2020-4-10
	Description	This fix ensures that sys.path can be set for Isfdocklib.py.
	Component	docker-control.py docker-monitor.py sbatchd res
	Impact	sys.path is not set for Isfdocklib.py

P103633	Date	2020-4-10
	Description	This fix ensures that hu_name is the short host name in the JOB_FINISH & JOB_FINISH2 records.
	Component	AwsTool.jar commons-codec-1.10.jar jackson-annotations-2.9.8.jar jackson-core-2.9.8.jar jackson-databind-2.9.8.jar
	Impact	No hu_name in the JOB_FINISH & JOB_FINISH2 records.

P103632	Date	2020-4-10
	Description	This fix ensures that the RC_ACCOUNT tag is in the LSF RC AWS integration.
	Component	AwsTool.jar commons-codec-1.10.jar jackson-annotations-2.9.8.jar jackson-core-2.9.8.jar jackson-databind-2.9.8.jar
	Impact	RC_ACCOUNT tag is missing in the LSF RC AWS integration.

P103630	Date	2020-4-10
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	Description	This fix ensures bmod runs successfully when the job runs into a same advance reservation name as used by this job.
	Component	mbatchd mbschd
	Impact	bmod failed when the job runs into a same advance reservation name as used by this job.

P103627	Date	2020-4-10
	Description	This fix ensures that bjobs can show the correct CPU and memory usage for Docker jobs.
	Component	docker-starter.py docker-monitor.py docker-control.py lsfdockerlib.py
	Impact	bjobs shows incorrect CPU and memory usage for Docker jobs.

P103523	Date	2020-4-10
	Description	This fix introduces a parameter named LSF_GPU_RESOURCE_IGNORE in Isf.conf to enable LSF to remove some GPU resources from mbatchd to improve performance.
	Component	mbatchd mbschd lim lsload

	Impact	LSF has GPU resources that are not used for GPU scheduling (including gpu_error, gpu_status, gpu_model, and gpu_mode), but these GPU resources are included in LSF resources, which affects LSF performance.
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P103481	Date	2020-4-10
	Description	This patch prevents eventfd leaks from the sbatchd daemon after migrating a job.
	Component	sbatchd res
	Impact	The sbatchd daemon has eventfd leaks after migrating a job.

P103475	Date	2020-4-8
	Description	This patch ensures that the file limit is set correctly when submitting a Docker job.
	Component	sbatchd res
	Impact	The file limit is not set correctly when submitting a Docker job.

P103470	Date	2020-4-8
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	Description	This fix makes the MPS daemon start timeout value configurable and logs a warning message when the MPS daemon reaches this start timeout value.
	Component	sbatchd res
	Impact	No timeout of MPS daemon start.

P103460	Date	2020-3-25
	Description	This patch ensures that the battach command still works if a job has a pre-execution command.
	Component	sbatchd res
	Impact	The battach command fails if the job has a pre-execution command.

P103451	Date	2020-3-25
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	Description	This fix ensures that when mbatchd is performing a reconfig and detects that the LIM is down even if the LIM is performing a reconfig, mbatchd repeats its attempt to call the LIM based on the LSB_CALL_LIM_RETRY parameter.
	Component	sbatchd res
	Impact	When mbatchd is performing a reconfig and detects that the LIM is down even if the LIM is performing a reconfig, mbatchd repeats its attempt to call the LIM based on the LSB_CALL_LIM_RETRY parameter.

P103448	Date	2020-3-20
	Description	Fix exclusive boolean resource when dynamic hosts join the cluster.
	Component	lim
	Impact	The first time a dynamic host joins the cluster without the parameter LSF_GET_CONF=lim defined in lsf.conf, the master host will not accept exclusive boolean resources from the slave's LSF_LOCAL_RESOURCES parameter.

P103445	Date	2020-3-17
	Description	Fix to ensure that RUNLIMIT works properly for interactive jobs when the HOST_PRE_EXEC parameter is configured in the lsb.applications or lsb.queuefiles files.
	Component	sbatchd res

	Impact	RUNLIMIT does not work for interactive jobs when the HOST_PRE_EXEC parameter is configured in the lsb.applications or lsb.queues files.
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P103443	Date	2020-3-17
	Description	This fix prevents the LSF server hosts from being in the unreachable status by ensuring that the connection between the mbatchd and sbatchd daemons remains stable.
	Component	sbatchd res
	Impact	RUNLIMIT does not work for interactive jobs when the HOST_PRE_EXEC parameter is configured in the lsb.applications or lsb.queues files.

P103439	Date	2020-3-10
	Description	This patch ensures that the battach command works if the user's umask value is 077.
	Component	docker-starter.py docker-control.py docker-monitor.py lsfdockerlib.py
	Impact	The battach command fails with the following error if the user's umask value is 077: "Failed to attach to job:".

P103438	Date	2020-3-25
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	Description	Fix to ensure that the 'bjobs -l' command works correctly when the ElasticSearch query function is enabled and the job spans to thousands of hosts.
	Component	bjobs
	Impact	The 'bjobs -l' command might core dump when the ElasticSearch query function is enabled and the job spans thousands of hosts.

P103432	Date	2020-3-5
	Description	Fix to ensure that the egroup feature works as expected when EGROUP_UPDATE_INTERVAL is set in lsb.params.
	Component	mbatchd mbschd
	Impact	The value of MAX_JOBS changes unexpectedly for users that belong to a user group with members that are retrieved from an egroup. This is due to the EGROUP_UPDATE_INTERVAL setting in the lsb.params file.

P103424	Date	2020-3-2
	Description	This fix resolves performance issues related to the LOAN_POLICIES parameter of the Guaranteed Resource Pool in the lsb.resources file.
	Component	mbatchd mbschd

	Impact	If multiple queues are defined in the LOAN_POLICIES parameter for the Guarantee Resource Pool in the lsb.resources file, and these queues have several pending jobs with different resource requirements, this might cause performance issues and doubles the memory usage of the mbschd process.
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P103421	Date	2020-2-19
	Description	This fix prevents the mbatchd daemon from taking a long time to initialize when a host group excludes a child host group with a regular expression as a group member.
	Component	mbatchd mbschd
	Impact	When a host group excludes a child host group with the regular expression (host[1-10] or host1*) as a group member, the mbatchd daemon takes a long time to initialize in a large cluster.

P103418	Date	2020-3-11
	Description	This fix updates the elim.gpu script to adjust the gpu_mut, gpu_ut, shared_ut, and shared_mut values, and to add gpu_power data collection, to improve the performance of the script for NVIDIA GPUs.
	Component	elim.gpu.ext.c

	Impact	elim.gpu script to will not update the gpu_mut, gpu_ut, shared_ut, and shared_mut values and does not have data collection for GPU power usage.
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P103415	Date	2020-2-13
	Description	This fix ensures that the bjobs, bhist, and bacct commands can show a job's CPU usage even if the execution host reboots while the job is running.
	Component	sbatchd res
	Impact	LSF does not log CPU usage for a job if the execution host reboots before the job is finished.

P103414	Date	2020-2-13
	Description	This fix prevents the interactive IntelMPI job from hanging if the user is authenticated with the sssd daemon.
	Component	blaunch nios
	Impact	The interactive IntelMPI job hangs indefinitely if the user is authenticated with the sssd daemon.

P103409	Date	2020-2-13
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	Description	This fix allows you to specify "bsub jobscript" inside another bsub command when LSB_BSUB_PARSE_SCRIPT=Y is set in lsf.conf.
	Component	bsub
	Impact	The LSB_BSUB_PARSE_SCRIPT=Y setting in the lsf.conf file does not work if "bsub jobscript" is specified in another bsub command.

P103390	Date	2020-3-25
	Description	This fix prevents the lsload command from failing when querying the GPU load (-gpuload option) of the cluster.
	Component	lsload
	Impact	The lsload command fails when querying the GPU load (-gpuload option) of the cluster.

P103389	Date	2020-2-15
	Description	This fix prevents job submissions from failing on float clients.
	Component	lsf.h lsbatch.h liblsbstream.a liblsbstream.so libbat.a libbat.so liblsf.a liblsf.so bsub mbatchd mbschd
	Impact	Job submissions on float clients might fail without retrying with the following error message in the mbatchd daemon log file: processClient: Request from non-LSF host

P103388	Date	2020-2-15
	Description	This fix enables the LSF resource connector for Azure to create instances even if the user specifies a long tag in instanceTags.
	Component	AzureTool.jar
	Impact	The LSF resource connector for Azure fails to create instances if the user specifies a long tag in instanceTags.

P103378	Date	2020-2-3
	Description	This fix prevents the LIM from failing when the docker resource is defined in Isf.shared file.
	Component	lim
	Impact	If you defined the docker resource in Isf.shared file, the master LIM fails when mbd initializes.

P103371	Date	2020-1-30
	Description	This fix prevents jobs from exiting in an abnormal manner.
	Component	sbatchd res

	Impact	If LSF failed to open the /proc/<PID>/fd directory, the job exits in an abnormal manner.
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P103366	Date	2020-1-30
	Description	This fix enables the LSF resource connector to generate a request for new instances when a user submits a job with a shared "all" resource.
	Component	lim mbatchd mbschd
	Impact	If a user submits a job with a shared "all" resource, the LSF resource connector creates no instances and the job pends.

P103356	Date	2020-1-30
	Description	This patch partially fixes the issue where a job is dispatched by mistake due to inaccurate values of the total available memory.
	Component	mbatchd mbschd

	Impact	Job may be dispatched by mistake due to an inaccurate value of the total available memory.
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P103339	Date	2020-1-30
	Description	This fix ensures that a user group is created dynamically if it is added with the bconf command when GROUP_MEMBER is set to all and LSB_SACCT_ONE_UG=Y is enabled.
	Component	mbatchd mbschd
	Impact	A user group that is added by the bconf command with GROUP_MEMBER set to all is not created dynamically when a user submits a job with -G if LSB_SACCT_ONE_UG=Y is enabled. As a result, the job priority is not correct for fairshare scheduling.

P103335	Date	2019-12-9
	Description	Fix to make the SCHED_PER_JOB_SORT parameter work properly.
	Component	mbatchd mbschd
	Impact	The SCHED_PER_JOB_SORT parameter in the lsb.params file does not work as expected.

P103329	Date	2019-12-27
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	Description	This fix ensures the maxMem value is correct for finished parallel jobs that are allocated on one host.
	Component	pam sbatchd res
	Impact	The maxMem value might be wrong for finished parallel jobs that are allocated on one host.

P103326	Date	2019-12-10
	Description	This fix enables the LIM daemon to prevent a dynamic host that has a host name of "localhost" from joining the LSF cluster.
	Component	lim
	Impact	If a dynamic host with the host name of "localhost" joins the LSF cluster, the mbatchd daemon exits. This fix enhances the LIM daemon to prevent this type of dynamic host from joining LSF cluster.

P103324	Date	2019-11-27
	Description	This fix prevents the cluster from going down after replaying the old JOB_START event format in the lsb.events file.

	Component	mbatchd mbschd
	Impact	LSF cannot correctly parse the old JOB_START event format in the lsb.events file, which results in the cluster going down.

P103323	Date	2019-11-20
	Description	This fix ensures that the "bjobs -W" command displays "-" for MEM, SWAP, and PIDS fields for finished jobs.
	Component	bjobs
	Impact	The "bjobs -W" command always displays MEM, SWAP, and PIDS even for jobs that are finished. This fix ensures that "bjobs -W" command output uses a hyphen "-" to describe MEM, SWAP, and PIDS for finished jobs.

P103299	Date	2019-11-20
	Description	This fix prevents Docker jobs from terminating incorrectly when Docker jobs reach their memory limits.
	Component	docker-control.py docker-monitor.py sbatchd res
	Impact	When submitting a Docker job with a memory limit value that is the same as the swap limit value, the job cannot terminate correctly.

P103300	Date	2019-11-20
	Description	Fix to reduce the amount of time that mbatchd hangs when calling the LIM to update shared resources with all host instances.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon might hang for few seconds when calling the LIM to update shared resources with all host instances.

P103294	Date	2019-11-6
	Description	This fix prevents the NIOS of a blaunch job from hanging indefinitely when non-LSF processes connect to the NIOS.
	Component	nios
	Impact	When a non-LSF process connects to the NIOS of a blaunch job, the NIOS hangs indefinitely.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 9

The following bugs have been fixed in LSF Version 10.1 Fix Pack 9 between 10 May 2019 and 16 Oct 2019:

P103281	Date	2019-10-16
	Description	The fix ensures that the mbatchd and mbschd daemons work correctly after changing some project users, which ensures that the fairshare calculation is unaffected.
	Component	mbatchd mbschd
	Impact	Scheduling cycle is large and jobs cannot be dispatched.

P103280	Date	2019-10-16
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	Description	This fix prevents the customized fairshare adjustment plugin from using the wrong index number.
	Component	mbatchd mbschd
	Impact	Dynamic priority calculation might be wrong

P103279	Date	2019-10-16
	Description	This fix ensures that GPU affinity jobs can still be scheduled after being killed and after starting the LSF daemons on the execution host.
	Component	mbatch mbschd
	Impact	GPU affinity jobs might be not dispatched.

P103273	Date	2019-10-16
	Description	This fix ensures that Docker jobs can start successfully without errors in the res log such as "startContainerJob: LSF cannot start container <docker>"
	Component	docker-starter.py lsfdockerlib.py

	Impact	Docker jobs cannot start successfully and logs an error in the res log such as "startContainerJob: LSF cannot start container <docker>"
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P103271	Date	2019-10-16
	Description	This fix prevents the sbatchd daemon from core dumping if it was started by systemd.
	Component	sbatchd res
	Impact	The sbatchd daemon might core dump if systemd started the sbatchd daemon.

P103270	Date	2019-10-16
	Description	This fix prevents the lsadmin command from hanging when communicating with the hosts that are in de-allocation/closed_RC stage .
	Component	lim mbd lsadmin badmin
	Impact	lsadmin command might hang for some time.

P103268	Date	2019-10-16
	Description	This fix enhances the error message when submitting a job with the -eptl option but TRACK_ELIGIBLE_PENDINFO is not enabled and the queue is not explicitly specified.
	Component	mbatchd mbschd
	Impact	When TRACK_ELIGIBLE_PENDINFO is not enabled and the queue is not explicitly specified explicitly, the message is unclear when submitting a job with the -eptl option.

P103261	Date	2019-10-16
	Description	This fix prevents mbatchd from logging warning messages when jobs pend due to failing to start on the host.
	Component	mbatchd mbschd
	Impact	No message output when jobs pend due to failing to start on the host.

P103260	Date	2019-10-16
	Description	This fix ensures that bmgrouop shows the correct host member list when the sub-hostgroup has both normal hosts and condensed format hosts.
	Component	mbatchd mbschd
	Impact	bmgrouop shows hosts that are excluded from the group when they are defined with wildcard characters.

P103259	Date	2019-10-16
	Description	This fix ensures that the lsload -gpu command outputs error messages if the specified hosts have no GPU load.
	Component	lsload
	Impact	No error messages in the lsload -gpu command output if the specified hosts have no GPU load.

P103256	Date	2019-10-16
	Description	This fix ensures that the lshosts command displays the correct server type for client hosts.
	Component	lshosts
	Impact	The "server" type is incorrectly shown in lshosts output for client hosts.

P103246	Date	2019-10-16
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	Description	This fix allows you to specify a customized width of the POOL_NAME column by setting the LSB_GPOOL_NAME_DISP_LENGTH environment variable.
	Component	bresources
	Impact	The resource pool name is truncated in bresources -g output if POOL_NAME is longer than 17 characters.

P103245	Date	2019-10-16
	Description	This fix prevents the user mapping of a forward pending job from failing when the mbatchd daemon restarted on the execution cluster while using the LSF multicluster capability.
	Component	mbatchd mbschd
	Impact	When using the LSF multicluster capability, the user mapping of a forward pending job failed when the mbatchd daemon restarted on the execution cluster.

P103237	Date	2019-10-15
	Description	This fix prevents the lspasswd command from core dumping.
	Component	lspasswd
	Impact	When the length of the LSF_USER_DOMAIN parameter value is longer than 64 characters, running the lspasswd command results in a segmentation fault.

P103235	Date	2019-10-16
	Description	This fix prevents the child sbatchd process from core dumping when running a job with JOB_INCLUDE_POSTPROC enabled when cgroup is disabled.
	Component	sbatchd res
	Impact	The child sbatchd process core dumps when cgroup is disabled and you run a job with JOB_INCLUDE_POSTPROC enabled.

P103230	Date	2019-10-16
	Description	This fix makes LSF reserve GPU memory per GPU instead of per tasks.
	Component	mbschd mbatchd bhosts bjobs

	Impact	LSF jobs reserve GPU memory per tasks, which is not consistent with the intended LSF behavior.
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P103229	Date	2019-10-10
	Description	This fix prevents the mbatchd daemon from failing while reconfiguring the cluster after enabling the Microsoft Azure CycleCloud provider plug-in in the LSF resource connector.
	Component	mbatchd mbschd
	Impact	If the Microsoft Azure CycleCloud provider plug-in is enabled in the LSF resource connector, the mbatchd daemon might fail when reconfiguring the cluster after resource connector hosts are added to or removed from the cluster.

P103228	Date	2019-10-10
	Description	This fix ensures that LSF renews Kerberos credentials for all jobs on an execution host..
	Component	sbatchd res
	Impact	If more than one job is running on an execution host, LSF fails to renew Kerberos credentials for all jobs on that execution host.

P103226	Date	2019-10-16
	Description	This fix ensures the job's terminated time is correctly shown in the email notification that is sent when the job is done or exits.
	Component	sbatchd res
	Impact	When a job is done or exits, LSF sends a mail to the submission user. If the job is related to an advance reservation, the completed date in mail is incorrectly shown as the end date defined in advance reservation instead of the actual job ending time.

P103216	Date	2019-10-12
	Description	This patch enables the mbatchd daemon to skip the submission host check for modified jobs.
	Component	mbatchd mbschd
	Impact	The bmod command fails when the job's submission hosts are removed from the cluster and the DNS server.

P103202	Date	2019-09-16
	Description	Fix to enable LSF to ignore idle job exceptions if jobs do not have the run time usage after restarting the mbatchd daemon.
	Component	mbatchd mbschd

	Impact	Too many jobs are reported as idle job exceptions, which prevents the LSF eadmin from starting up after the mbatchd daemon starts up because these jobs do not have the run time usage before mbatchd polls the sbatchd daemon.
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P103200	Date	2019-09-16
	Description	This fix prevents the child mbatchd process from failing after enabling the LSB_QUERY_ENH parameter.
	Component	mbatchd mbschd
	Impact	If a user queries the host's GPU information after enabling the LSB_QUERY_ENH parameter, the child mbatchd process fails.

P103191	Date	2019-09-30
	Description	This fix prevents the mbatchd daemon from logging an error message of "CPU from list is not valid." if LSF_INTELLIGENT_CPU_BIND is enabled in the lsf.conf file.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon logs the following error message "CPU from the list is not valid" if LSF_INTELLIGENT_CPU_BIND is enabled in the lsf.conf file.

P103188	Date	2019-09-30
	Description	This fix prevents the LSF resource connector from failing to create Azure instances if "userData" is not defined in azureprov_templates.json.
	Component	AzureTool.jar
	Impact	The LSF resource connector fails to create Azure instances if "userData" is not defined in the azureprov_templates.json file.

P103187	Date	2019-09-11
	Description	This patch enhances the bacct command to correctly read events that are generated by an earlier version of LSF.
	Component	bacct
	Impact	The bacct command shows a "Bad event format" error when reading events that are generated by an earlier version of LSF.

P103186	Date	2019-09-11
	Description	This fix corrects the bjobs -o command output when SECURE_JOB_INFO_LEVEL=3 is configured in the lsb.params file.
	Component	mbatchd mbschd

	Impact	When SECURE_JOB_INFO_LEVEL=3 is configured in the lsb.params file, the bjobs -o command might display the wrong information.
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P103183 P103184	Date	2019-09-11
	Description	This fix prevents wrong resource usage information from being collected and enables memory limits for individual container jobs.
	Component	sbatchd res bsub docker-control.py docker-monitor.py lsfdockerlib.py docker-starter.py
	Impact	If an LSF job tries to collect resource usage information during the same session as it is pulling a Docker image, the LSF job gets the wrong resource usage information. This fix improves the collection logic in the monitor script to collect resource usage information after LSF finishes pulling the Docker image.

P103181	Date	2019-09-11
	Description	This patch prevents LSF from rotating the LIM log if EGO is not enabled.
	Component	lim pim melim

	Impact	When EGO is not enabled, LSF might rotate the LIM log because the default value of EGO_LOG_MAX_ROTATE and EGO_LOG_MAX_SIZE cannot be changed.
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P103180	Date	2019-09-11
	Description	This fix prevents Docker jobs from failing with a Python error: "exceptions must be old-style classes or derived from BaseException, not str".
	Component	sbatchd res
	Impact	Docker jobs fail with a Python error: "exceptions must be old-style classes or derived from BaseException, not str".

P103179	Date	2019-09-11
	Description	The fix resolves an issue where a GPU cannot be detected.
	Component	lim elim.gpu.topology
	Impact	LSF uses hwloc to collect GPU device topology on a host. Considering device information does not usually appear under the HWLOC_OBJ_PACKAGE and HWLOC_OBJ_CACHE node types, they are ignored to reduce time. However, on some Dell machines, the GPU devices are found under those two node types, which means GPU information cannot be collected on those machines.

P103162	Date	2019-08-22
	Description	This fix prevents a job from pending if dynamic hosts with the same host name are recreated but with different boolean resources in LSF Resource Connector.
	Component	mbatchd mbschd schmod_demand.so
	Impact	In LSF Resource Connector, the host name might be reused for newly created instances. If an instance with Boolean resource A had been created, joined, then finally terminated and removed from the LSF cluster, but later a new instance with the same host name with Boolean resource B is created and joins the LSF cluster, the job requesting resource B still pending.

P103156	Date	2019-08-22
	Description	Fix to resolve the problem of the scheduler API extsched_getAllocLimitList() reporting an incorrect value for available memory.
	Component	mbatchd mbschd
	Impact	Available resources on hosts within the cluster are reported by the mbatchd to the mbschd. It is possible that if a job running on a host is modified (using bmod) the memory load reported by the mbatchd for that host can be wrong. This issue is now corrected.

P103152	Date	2019-08-22
	Description	Fix to prevent mbatchd from core dumping in a cloud environment where dynamic hosts are frequently adding or removing different types of resources to or from LSF.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon might core dump in a cloud environment where hosts are frequently adding or removing different types of resources to or from LSF.

P103142	Date	2019-08-21
	Description	This patch prevents an advance reservation from immediately becoming active if it was added using the brsvadd command with Sunday as the time window.
	Component	mbatchd mbschd
	Impact	When using the brsvadd command to adds an advance reservation and the time window is Sunday, the reservation immediately becomes active.

P103141	Date	2019-08-13
	Description	This patch ensures that the correct job max swap usage is reported even when using cgroup.
	Component	sbatchd res
	Impact	The reported job max swap usage value might be wrong when using cgroup.

P103131	Date	2019-08-13
	Description	This fix resolves job automatic migration issues after switching the running job to another queue.
	Component	sbatchd res mbatchd mbschd
	Impact	A job cannot be automatically migrated after switching the running job to a queue where the RERUNNABLE and MIG parameters are both configured.

P103125	Date	2019-08-13
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	Description	<p>This provides the following fixes:</p> <ul style="list-style-type: none"> - The master LIM, upon receiving a request to add a slave LIM into the cluster, will add, update, and remove resources properly, not just updating existing resources. - Ensures the slave LIM will always send add host requests to the master LIM on startup. Previously, slave hosts missed sending host requests if the resource names are the same but resource values differ. - Ensures that a duplicate resource value for a host does not happen by processing the hostcache file correctly. - By comparing machine instance IDs, ensures that all resources are updated from the LIM before allowing the host to become available, therefore jobs will only be dispatched when resources are updated.
	Component	mbatchd, mbschd, ebrokerd, lim, schmod_demand.so
	Impact	When cloud bursting is enabled with LSF resource connector, cloud hosts joining LSF cluster may reuse the same host name.

P103124	Date	2019-08-02
	Description	This fix prevents the sbatchd daemon from frequently logging "Cannot access job spool directory" error messages when running badmin reconfig.

	Component	sbatchd, res
	Impact	The sbatchd daemon frequently logs the following error message "Cannot access job spool directory" when performing the badmin reconfig action.

P103123	Date	2019-07-30
	Description	This fix addresses performance issues for short Docker jobs in LSF clusters.
	Component	sbatchd res docker-starter.py docker-control.py docker-monitor.py lsfdockerlib.py
	Impact	Short Docker jobs run slower than normal (non-Docker) short jobs in the LSF cluster.

P103121	Date	2019-07-19
	Description	Fix to clean the job's attached files when the jobs are cleaned from the mbatchd memory.
	Component	mbatchd, mbschd
	Impact	The files that are attached to jobs with the bpost -a command are not cleaned when the jobs are cleaned from the mbatchd memory.

P103105	Date	2019-07-11
	Description	This fix resolves an sbatchd core dump issue when running the badmin hrestart command and a GPU job is running on that host.
	Component	sbatchd, res
	Impact	When running GPU jobs and the sbatchd daemon is restarted on that host, the sbatchd daemon might core dump.

P103092	Date	2019-07-11
	Description	This fix resolves the issue where the NIOS service hangs when another non-LSF application connects to NIOS.
	Component	Nios
	Impact	With bsub interactive jobs, the NIOS service hangs if other non-LSF applications connect to NIOS.

P103075	Date	2019-06-26
	Description	This patch prevents the bjobs -U command from showing incorrect jobs that not belong to the specified advance reservation.
	Component	mbatchd mbschd
	Impact	The bjobs -U command shows incorrect jobs that do not belong to the specified advance reservation.

P103074	Date	2019-06-25
	Description	This fix resolves a problem with sbatchd calling PIM to get the rusage information and having a job being incorrectly killed due to the job RES PID being changed.
	Component	sbatchd res
	Impact	When cgroups are enabled, there is an issue when the sbatchd daemon calls PIM to get the rusage information: this leads to the job being incorrectly killed due to the memory limit. The root cause is that the job RES PID changed, and sbatchd cannot get the correct cgroup name. This fix resolves the problem.

P103067	Date	2019-07-15
	Description	This fix prevents memory leaks in the lsb_openjobinfo() API if Kerberos authentication is enabled.
	Component	mbatchd mbschd bjobs libbat.a libbat.so liblsf.a liblsf.so liblsbstream.a liblsbstream.so lsbatch.h lsf.h

	Impact	There is memory leak in the lsb_openjobinfo() API if Kerberos authentication is enabled.
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P103064	Date	2019-07-15
	Description	Fix to correct a job's submitted projects that have no shares in LSF License Scheduler to a default project.
	Component	mbatchd mbschd
	Impact	If a job specifies a license project that has no share in distribution of the requested features, but has a share in other features, the job pends forever.

P103062	Date	2019-06-20
	Description	Fix to prevent the mbschd scheduling interval from jumping to more than 300 seconds.
	Component	mbatchd mbschd
	Impact	The mbschd scheduling interval might jump to more than 300 seconds and cannot schedule jobs in time.

P103051	Date	2019-07-15
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	Description	This patch allows for the transfer of user groups, using APIs, when LSF_UGROUP_TRANSFER is set to Y in the lsf.conf file. It also allows the user group transfer to be kept after running bmod to transfer a pending job to another queue.
	Component	bsub bmod libbat.so libbat.a liblsf.so liblsf.a liblsbstream.a liblsbstream.so lsf.h lsbatch.h mbatchd mbschd
	Impact	<ol style="list-style-type: none"> 1. When LSF_UGROUP_TRANSFER=Y is defined in the lsf.conf configuration file, user group transfer does not work using APIs. 2. The user group transfer is not kept after running bmod to transfer a pending job to another queue.

P103033	Date	2019-06-13
	Description	This patch corrects the value of IDLE_FACTOR for parallel jobs.
	Component	mbatchd mbschd
	Impact	The value of IDLE_FACTOR is not correct for parallel jobs.

P103026	Date	2019-05-28
	Description	This fix ensures that the bpeek command works normally when running the bsub -E and brequeue commands.
	Component	mbatchd mbschd

	Impact	After submitting a job with the bsub -E option, running the brequeue command causes a JOB_EXECUTE switch, which causes the bpeek command to fail.
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P103007	Date	2019-05-24
	Description	This fix maintains a consistent order for the GPU ID sequence among the job's tasks.
	Component	mbatchd mbschd
	Impact	When the task number is larger than the GPU number for GPU affinity jobs, the sequence of the GPU ID column might be out of order.

P103003	Date	2019-05-27
	Description	This fix ensures that the mbatchd daemon does not log unnecessary and redundant error messages.
	Component	mbatchd mbschd
	Impact	The message "do_asyncStatusReq(): Job <xxxxx> failed in getJobData()" is frequently logged in the mbatchd.log file.

P102999	Date	2019-05-15
	Description	Fix to prevent a GSLA job from running on other GSLA hosts.
	Component	mbatchd mbschd
	Impact	GSLA pool restrictions do not take effect: A GSLA job runs on a host that is in other GSLA host pool.

P102994	Date	2019-05-15
	Description	This patch adds a new function for the sbatchd daemon: if sbatchd tries to kill the mbatchd process, it will first check if the pid's process name is mbatchd.
	Component	sbatchd res
	Impact	A "houseKeeping: kill mbatchd ### because it is not active" message appears in the sbatchd.log file even though the sbatchd daemon did not kill the mbatchd daemon.

P102858	Date	2019-05-15
	Description	The fix prevents the child mbatchd process from crashing when running in multi-threaded mode.
	Component	mbatchd mbschd
	Impact	If the LSB_QUERY_ENH parameter is configured as Y in Isf.conf file, the child mbatchd process might crash when responding to the query command.

226748	Date	2019-05-15
	Description	This fix addresses a discrepancy between the output of 'bjobs -prio' and 'bqueues -r <queue_name>' when the queue is configured with the FAIRSHARE and APS_PRIORITY policies.
	Component	mbatchd mbschd
	Impact	There was a discrepancy between the output of 'bjobs -prio' and 'bqueues -r <queue_name>' when the queue is configured with the FAIRSHARE and APS_PRIORITY policies.

221612	Date	2019-05-15
	Description	This fix enhances the mbschd daemon's backfill scheduling policy to resolve performance issues during backfilling and prevent backfilled jobs from potentially running into a system advance reservation.
	Component	mbatchd mbschd bjobs
	Impact	A scheduler hanging issue that is introduced by a previous system advance reservation (AR) fix where jobs would run into an AR during backfill.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 8

The following bugs have been fixed in LSF Version 10.1 Fix Pack 8 between 18 Dec 2018 and 10 May 2019:

P103003	Date	2019-5-10
	Description	This fix updates the error message from mbatchd when the user runs "badmin reconfig" without "docker" defined in Isf.shared.
	Component	mbatchd mbschd
	Impact	The error message from mbatchd suggests that the user define nvidia-docker in Isf.shared, but defining nvidia-docker will not resolve the issue.

P102992	Date	2019-5-10
	Description	Fix to allow the backfill of eligible exclusive jobs on a host with an advance reservation in the future.
	Component	mbatchd mbschd
	Impact	Exclusive eligible jobs cannot backfill on a host with a future advance reservation when another exclusive job is pending because the job cannot end before the start time of the advance reservation.

P102983	Date	2019-5-7
	Description	Fix to improve the time for mbatchd to replay the lsb.events file if RUN_TIME_FACTOR or CPU_TIME_FACTOR is enabled in the fairshare formula.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon takes approximately 40 minutes to replay the lsb.events file if RUN_TIME_FACTOR or CPU_TIME_FACTOR is enabled in the fairshare formula.

P102982	Date	2019-4-30
	Description	This fix allows interactive jobs with pseudo-terminals to exit normally when NIOS accidentally exits.
	Component	res sbatchd

	Impact	For interactive jobs with a pseudo-terminal attached, if NIOS accidentally exits, the jobs stay in a RUNNING state.
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P102976	Date	2019-4-24
	Description	This fix enables users to run interactive Docker jobs.
	Component	res sbatchd
	Impact	When a user submits an interactive Docker job (for example, by running <code>bsub -l -app centos /bin/bash</code>), the job does not run interactively.

P102972	Date	2019-4-25
	Description	This fix prevents the master LIM daemon from core dumping if the user configures an invalid resource or no wildcard asterisk characters (*) in the RESOURCEMAP string for the LSF_LOCAL_RESOURCES parameter in the <code>lsf.conf</code> file on non-shared slave hosts.
	Component	lim
	Impact	The master LIM daemon core dumps if the user configures an invalid resource or no wildcard asterisk characters (*) in the RESOURCEMAP string for the LSF_LOCAL_RESOURCES parameter in the <code>lsf.conf</code> file on non-shared slave hosts.

P102968	Date	2019-4-26
	Description	Fix to enable slave hosts to join the cluster even if they do not share a file system with master hosts in an IPv6 environment.
	Component	res sbatchd
	Impact	Slave hosts cannot join the cluster if they do not share a file system with master hosts in an IPv6 environment.

P102965	Date	2019-4-11
	Description	This patch prevents the bjobs command from showing "-1" in a job PID.
	Component	res sbatchd
	Impact	The bjobs command reports "-1" as the PID for jobs.

P102948	Date	2019-4-25
	Description	This fix ensures that LSF reports the correct memory for Docker containers.
	Component	lim
	Impact	lsload reports mem incorrectly when LSF is running in a Docker container.

P102944	Date	2019-4-25
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	Description	This fix prevents the bjobs command from showing an incorrect pending reason when a job with a "span[hosts=1]" requested minimal slots number is less than the number of CPUs on the host, but the job requested maximum slots number is greater than the number of CPUs on the host.
	Component	mbatchd mbschd
	Impact	The bjobs command shows the incorrect host level pending reason of "Not enough processors to meet the job's spanning requirement" if a job with a "span[hosts=1]" requested minimal slots number is less than the number of CPUs on the host, but the job requested maximum slots number is greater than the number of CPUs on the host.

P102935	Date	2019-4-9
	Description	This fix ensures that LSF kills all processes launched by the post-execution script after the JOB_POSTPROC_TIMEOUT period expires when enabling cgroups.
	Component	sbatchd res
	Impact	LSF does not stop post processes after the JOB_POSTPROC_TIMEOUT is expired.

P102932	Date	2019-3-29
	Description	Fix to prevent a job's pending reason from being incorrectly changed after using the bstop command to stop another running job when all candidate hosts are fully utilized.
	Component	mbatchd mbschd
	Impact	When all candidate hosts are fully utilized, the pending job reason is "Job slot limit reached". After using the bstop command to stop another running job, the pending reason is changed when the job requests affinity resources. However, the new pending reason is incorrect because bstop does not release the slot that is used by the running job, so the reason should still be "Job slot limit reached".

P102915	Date	2019-3-19
	Description	This fix prevents an interactive Docker job from losing its connection when resizing the terminal.
	Component	sbatchd res nios
	Impact	The interactive Docker job loses the connection after resizing the terminal.

P102891	Date	2019-4-2
	Description	This fix prevents the LIM from core dumping on a GPU host with an old NVIDIA NVML driver installed.
	Component	lim
	Impact	GPU hosts with an old NVML driver installed, which does not have an export interface, might cause the LIM to core dump.

P102890	Date	2019-4-2
	Description	This patch allows the transfer of more than 16 user groups when LSF_UGROUP_TRANSFER is set to Y.
	Component	bsub
	Impact	When LSF_UGROUP_TRANSFER is set to Y, there is a limit of 16 UNIX groups to transfer supplementary groups to the execution host.

P102888	Date	2019-3-21
	Description	This fix prevents the bhist command from showing an array job ID if user specifies a job ID that is larger than 2147483647.
	Component	bhist
	Impact	The bhist command incorrectly gets information on an array job ID if the user specifies a job ID that is larger than 2147483647.

P102887	Date	2019-3-7
	Description	This fix addresses an issue in a multi-cluster environment where the mbatchd daemon cannot start after data corruption to the lsb.jobinfo.events file due to a disk full event.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon in the execution side of a job-forwarding multi-cluster environment cannot start up after data is lost from the lsb.jobinfo.events file because the disk for the LSB_SHAREDIR file path reached 100% capacity.

P102885	Date	2019-3-27
	Description	This patch prevents exceptions in docker-control.py, docker-monitor.py, and docker-starter.py from occurring when killing a Docker job.
	Component	docker-control.py docker-monitor.py docker-starter.py
	Impact	Exceptions in docker-control.py, docker-monitor.py, and docker-starter.py occur when killing a Docker job.

P102884	Date	2019-3-27
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	Description	This fix enables LSF to add the LSB_SUB_MEM_SWAP_HOST_LIMIT parameter into the \$LSB_SUB_PARM_FILE file when submitting jobs with the -hl option.
	Component	bsub bmod lsbatch.h lsf.h libbat.a libbat.so liblsf.a liblsf.so liblsbstream.a liblsbstream.so
	Impact	LSF does not add the LSB_SUB_MEM_SWAP_HOST_LIMIT parameter to the \$LSB_SUB_PARM_FILE file when submitting jobs with the -hl option.

P102877	Date	2019-3-1
	Description	This fix prevents the mbatchd daemon from core dumping when replaying the lsb.jobinfo.events log.
	Component	mbatchd mbschd
	Impact	The mbatchd daemon core dumps when replaying the lsb.jobinfo.events log.

P102872	Date	2019-3-5
	Description	This fix enables the bsub command to work properly if the LSF_SUB_COMMAND_LINE string in the esub is longer than 2048 characters.

	Component	bsub libbat.a libbat.so liblsf.a liblsf.so liblsbstream.a liblsbstream.so lsbatch.h lsf.h
	Impact	The command bsub does not work as expected if the LSF_SUB_COMMAND_LINE string in the esub is longer than 2048 characters.

P102867	Date	2019-3-27
	Description	The fix ensures that the ls_b_readstreamline API reads the correct value for the job interactive attribute from JOB_STATUS2 event.
	Component	lsbatch.h lsf.h libbat.a libbat.so liblsf.a liblsf.so ls_bstream.a libls_bstream.so
	Impact	The ls_b_readstreamline API reads the job interactive attribute as NULL from JOB_STATUS2 event.

P102862	Date	2019-2-13
	Description	<p>This fix enables the lslod and bhosts commands to display the value of external resources as a full, unrounded float number instead of in scientific notation.</p> <p>This fix adds a parameter to control the display format of the lslod and bhosts commands:</p> <p>LSF_EXT_DISPLAY_UNROUNDED:</p> <p>Configured in the lsf.conf file or be set as environment variable</p> <p>Syntax</p> <p>LSF_EXT_DISPLAY_UNROUNDED=Y y</p> <p>Description</p> <p>When set to "Y y", the lslod and bhosts commands display the value of the external resources as full, unrounded numbers.</p> <p>When set to "N n", the lslod and bhosts commands display the value of the external resources in rounded scientific notation.</p> <p>Default</p> <p>N.</p>
	Component	lslod bhosts

	Impact	The lsload and bhosts commands display the value of external resources in rounded scientific notation instead of the full, unrounded numbers.
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P102860	Date	2019-3-27
	Description	This fix enables lim and elim.gpu.topology to detect the GPU properly on hosts that have two sibling GPUs under one PCI, where the first GPU is not an Nvidia GPU, but the second GPU is an Nvidia GPU.
	Component	lim elim.gpu.topology elim.gpu.topology.c
	Impact	The lim and elim.gpu.topology processes cannot detect the Nvidia GPU properly on hosts that have two sibling GPUs under one PCI (especially on AWS GPU instances), where the first GPU is not an Nvidia GPU, but the second GPU is an Nvidia GPU.

P102846	Date	2019-1-11
	Description	This fix enables Docker batch jobs that are submitted in a Docker job to be run successfully.
	Component	bsub

	Impact	Docker batch jobs that are submitted in a Docker job do not run.
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P102838	Date	2019-1-11
	Description	Fix to prevent GPU-CPU affinity jobs from pending when the GPU that satisfies the GPU requirement is attached to a socket that is not the first socket.
	Component	mbatchd mbschd
	Impact	A GPU-CPU affinity job is pending when the GPU that satisfies the GPU requirement is attached to a socket that is not the first socket.

P102835	Date	2019-1-3
	Description	This fix ensures that the memory usage of the lim process does not increase when the DCGM Integration is configured.
	Component	lim
	Impact	The memory usage of the lim process continues to increase when the NVIDIA Data Center GPU Manager (DCGM) Integration is configured.

P102832	Date	2019-1-5
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	Description	This fix prevents a job from executing the JOB_CONTROLS terminate action command in a dead loop when the job reaches the PROCESSLIMIT and RUNLIMIT values.
	Component	sbatchd res
	Impact	When a job reaches the PROCESSLIMIT and RUNLIMIT values and the JOB_CONTROLS terminate action is configured as a command, the job executes the JOB_CONTROLS terminate action command in a dead loop.

P102830	Date	2019-1-7
	Description	This fix ensures that when using the lease mode with the LSF multicluster capability, the provider cluster exports the correct number of slots to the consumer cluster.
	Component	mbatchd mbschd
	Impact	When using lease mode with the LSF multicluster capability, the provider cluster incorrectly exports 0 slots to the consumer cluster.

P102802	Date	2019-3-14
	Description	This fix allows Docker jobs to start if NFS is root squashed and makes LSF only check the docker user group permission when the program calls the docker binary to execute a specific command.
	Component	sbatchd res

	Impact	<ol style="list-style-type: none"> 1. Docker jobs cannot start if NFS is root squashed. 2. An error logs when bkillng docker job.
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P102743	Date	2018-12-20
	Description	Fix to prevent bswitch from core dumping when eswitch and LSB_SUB_COMMANDNAME=y are enabled.
	Component	bswitch
	Impact	<ol style="list-style-type: none"> 1. Docker jobs cannot start if NFS is root squashed. 2. An error logs when bkillng docker job.

P102714	Date	2018-12-20
	Description	This fix prevents array jobs from pending if the array job slot limit is changed to 0, then to a positive number.
	Component	mbatchd mbschd
	Impact	Array jobs pend if the bmod command is run on the array job to change the slot limit to 0, then to a positive number..

217694	Date	2019-4-19
	Description	This fix prevents the bhist command from showing an fseek() error when the offset value is larger than the maximum integer (2147483647).
	Component	bhist
	Impact	If the offset value in the first line in lsb.events is greater than the maximum integer, bhist will not work normally.

216730	Date	2019-5-9
	Description	This patch ensures that logdir/info/*.msgs that are created by the "bpost -a" command can be cleaned regularly.
	Component	mbatchd mbschd
	Impact	There are a lot of useless files under logdir/info.

213471	Date	2019-3-13
	Description	This fix prevents mbatchd from core dumping when running bconf if the planner is enabled.
	Component	mbatchd mbschd
	Impact	mbatchd core dumps when running bconf if the planner is enabled.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 7

The following bugs have been fixed in LSF Version 10.1 Fix Pack 7 between 24 May 2018 and 18 Dec 2018:

P102829	Date	2018-12-18
	Description	This fix ensures that the GPU NVLink feature works on IBM POWER 8 platforms.
	Component	Lim
	Impact	The GPU NVLink feature does not work on IBM POWER 8 platforms.

P102828	Date	2018-12-18
	Description	This fix prevents hosts from being blocked due to a demanded packages guarantee even if the corresponding SLA does not require resources.
	Component	mbatchd mbschd
	Impact	Hosts are blocked due to a demanded packages guarantee even if the corresponding SLA does not require resources.

P102826	Date	2018-12-18
	Description	This fix prevents jobs from pending if there are available resources in the guarantee resource SLA.
	Component	mbatchd mbschd
	Impact	If the guarantee resource SLA has available resources, the job submitted with "span[hosts=1]" cannot use them.

P102811	Date	2018-12-11
	Description	This patch enables LSF to check whether a queue name contains blank spaces, and ignores queues with names that contain blank spaces.
	Component	mbatchd mbschd
	Impact	LSF cannot schedule jobs when the queue name includes blank spaces.

P102799	Date	2018-11-29
	Description	This fix prevents GPU CUDA MPS jobs from hanging when cgroup and daemon wrapper are both enabled.

	Component	sbatchd res
	Impact	GPU CUDA MPS jobs hang when cgroup and daemon wrapper are both enabled.

P102797	Date	2018-11-13
	Description	Fix to restore the functionality of guarantee resource pool loaning for resource-based pools.
	Component	mbatchd mbschd
	Impact	The loan policy of resource-only guarantee pools does not work for resource-based pools. This fix restores the correct behavior.

P102791	Date	2018-10-31
	Description	This fix resolves an mbatchd core dump issue when LSF hosts changed after running the lsadmin reconfig or lsadmin limrestart commands.
	Component	mbatchd mbschd

	Impact	The parent mbatchd daemon core dumps if the LSF hosts changed after running the lsadmin reconfig or lsadmin limrestart commands.
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P102781	Date	2018-11-15
	Description	This fix prevents LSF from frequently generating error messages in the LIM log file when the network is unstable.
	Component	lim
	Impact	When the network is unstable, LSF generates frequent error messages in the LIM log.

P102780	Date	2018-10-31
	Description	Fix to allow LSF to terminate a job successfully when the run time limit of the job is reached if both the RESUME and TERMINATE actions are defined in the lsb.queues file.
	Component	mbatchd mbschd
	Impact	Job cannot be terminated when the run time limit is reached if both the RESUME and TERMINATE actions are defined in the lsb.queues file.

P102779	Date	2018-10-31
	Description	This fix prevents interactive jobs from showing a pending reason of level 0 if LSB_BJOBS_PENDREASON_LEVEL=1 is configured in lsf.conf.
	Component	nios
	Impact	Interactive jobs incorrectly show a pending reason of level 0 if LSB_BJOBS_PENDREASON_LEVEL=1 is configured in the lsf.conf file.

P102774	Date	2018-10-31
	Description	This fix ensures that the output of the blimits command is consistent.
	Component	mbatchd mbschd
	Impact	<p>If a numeric resource is defined as PER_HOST and used by a limit in the lsb.resources file, the parallel job's usage of this resource might be incorrect when the mbatchd daemon restarts or reconfigures and the RESOURCE_RESERVE_PER_TASK parameter is defined as Y in the lsb.params file.</p> <p>This results in inconsistencies in the blimits command output.</p>

P102771	Date	2018-10-24
	Description	This fix changes LSF behavior to log a warning message instead of rejecting a job if the submission user does not belong to the transfer supplementary user group on the execution host.
	Component	sbatchd res
	Impact	The LSF user group transfer feature allows users to transfer the supplementary user groups from the submission host to the execution host to help execute the job. However, this feature checks whether the user belongs to each user group on the execution host and rejects the job if the user does not belong.

P102769	Date	2018-10-24
	Description	This fix resolves issues with the badmin mbddebug -o and badmin schddebug -o commands.
	Component	badmin

	Impact	The badmin mbddebug -o and badmin schddebug -o commands do not work.
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P102767	Date	2018-10-17
	Description	This patch ensures that the bpeek -f command that is running within a script can be interrupted by Ctrl-c.
	Component	bpeek
	Impact	The bpeek -f command that is running within script cannot be interrupted by Ctrl-c.

P102764	Date	2018-10-21
	Description	Fix to ensure that the GPU jobs that are dispatched by the mbatchd daemon have an allocated GPU.
	Component	mbatchd mbschd
	Impact	Some GPU jobs do not have an allocated GPU if the jobs are dispatched by the mbatchd daemon.

P102762	Date	2018-10-21
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	Description	Fix to resolve a file descriptor leak problem in Docker driver jobs in the sbatchd daemon and enable all non-Docker group users to submit LSF Docker driver jobs.
	Component	sbatchd res
	Impact	<p>The sbatchd daemon does not close the file descriptors to the /tmp/.sbd...db file, which belongs to the Docker job. This causes a file descriptor leak and might cause future Docker jobs to fail with too many open files in the sbatchd daemon. This fix prevents these problems by preventing file descriptor leaks in sbatchd for Docker driver jobs.</p> <p>LSF supports using the user account that is configured in the Docker application profile to execute Docker jobs even if the submission user is not a Docker group member on the execution host. This fix resolves issues with the supplementary user groups to allow all non-Docker group users to submit and execute Docker driver jobs.</p>

P102761	Date	2018-10-17
	Description	Fix for a bug that causes LSF to lose job information when a reconfiguration is triggered at the same time as LSF is performing a parallel restart.

	Component	mbatchd mbschd
	Impact	If an LSF reconfiguration occurs during a parallel restart, LSF might try to access the jobinfo events file from multiple processes at the same time. This might create a situation where LSF loses job information for jobs that are logged after the reconfiguration completed, but before the parallel restart completed.

P102749	Date	2018-10-10
	Description	This fix prevents the mbatchd daemon from core dumping after running the "badmin reconfig" command while running resizable host partition jobs.
	Component	mbatchd, mbschd
	Impact	The mbatchd daemon core dumps after running the "badmin reconfig" command while running resizable host partition jobs.

P102747	Date	2018-10-12
	Description	Fix for the issue where the scheduler disregards a queue's configured FWD_USERS setting.
	Component	mbatchd, mbschd, schmod_demand.so
	Impact	This fix is required if your site uses the LSF multicluster capability and the sending queue has FWD_USERS configured. Users that are excluded by the FWD_USERS setting from having their jobs forwarded to the remote cluster may have their jobs forwarded.

P102744	Date	2018-9-29
	Description	This fix ensures the daemons.wrap executable can run the specific cleartool for security reason.
	Component	mbatchd, mbschd
	Impact	<p>The daemons.wrap executable searches the PATH environment as root to find and run the cleartool command for integration with ClearCase.</p> <p>This is a security vulnerability because any executable file named cleartool in the previous path is run as root.</p> <p>This patch introduces a new parameter - LSF_DAEMON_WRAP_CLEAR TOOL in lsf.conf.</p> <p>After installing this patch, define this parameter to specify a file path to the cleartool command.</p> <p>For example,</p> <pre>LSF_DAEMON_WRAP_CLEAR TOOL=/opt/rational/clearcase/bin/cleartool</pre> <p>If this parameter is not defined, the daemons.wrap executable searches the PATH environment to run the cleartool command. This is the previous behavior.</p>

P102735	Date	2018-09-26
	Description	This fix ensures that the combined and effective resource requirement is correct when multiple ptile values are specified in the queue level resource requirement string (RES_REQ in lsb.queues).
	Component	mbatchd, mbschd
	Impact	When the compound or alternative resource requirement is used at the job level and the queue level resource requirement (RES_REQ) specifies multiple ptile values in the span string, the merged resource requirement is wrong and LSB_EFFECTIVE_RSRCREQ is missing.

P102734	Date	2018-10-15
	Description	Fix to prevent GPU jobs from pending if they have a span string in different alternative resource requirements or if they are in share mode with sibling resource requirements.
	Component	mbatchd, mbschd

	Impact	<p>GPU jobs keep pending if they have a span string in different alternative resource requirements.</p> <p>GPU jobs keep pending if they are in share mode with sibling resource requirements.</p>
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P102733	Date	2018-09-26
	Description	This fix allows a float client that belongs to two clusters to submit jobs to both clusters even if LSF_CONFDIR in the lsf.conf file for both clusters are configured with the same value.
	Component	bsub
	Impact	A float client that belongs to two clusters fails to submit jobs to the second cluster if the LSF_CONFDIR parameter in the lsf.conf file for both clusters are configured with the same value.

P102732	Date	2018-09-30
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	Description	This fix resolves an issue where a GPU job remains pending if LSF_GPU_AUTOCONFIG=Y and LSB_GPU_NEW_SYNTAX=extend are set and LSF cannot detect the NUMA ID for GPU topology. This fix adds support for detecting "TITAN X (Pascal)" model GPUs.
	Component	lim
	Impact	1) GPU jobs keep pending when LSF_GPU_AUTOCONFIG=Y and LSB_GPU_NEW_SYNTAX=extend are set. The lshosts -gpu command output shows that the numa_id value is -1. 2) Cannot detect "TITAN X (Pascal)" model GPUs.

P102729	Date	2018-09-27
	Description	This fix allows the block scheduling policy to work with -R "cu[]" as expected.
	Component	mbatchd, mbschd

	Impact	<p>The block scheduling policy does not work with the -R "cu[]" command.</p> <p>For example:</p> <pre>-R "span[block=4] cu[pref=config:maxcus=1:type=enclosure]"</pre> <p>With the "cu" setting, "block" will be broken, and the job does not run.</p>
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P102726	Date	2018-10-15
	Description	This patch adds "RUNNING at" and "Created at" times to the qstat command output.
	Component	mbatchd, mbschd
	Impact	The qstat command is missing "RUNNING at" and "Created at" times in the output.

P102723	Date	2018-09-18
	Description	This fix enables the lsrn command to remove the Kerberos tickets that it generates.
	Component	sbatchd res
	Impact	The lsrn command generates Kerberos tickets but does not remove them.

P102715	Date	2018-09-07
	Description	This fix prevents the host from being busy when some increasing resources are defined in the head of Resource section of Isf.shared.
	Component	lim
	Impact	When some increasing resources are defined in the header of the Resource section of Isf.shared, LSF reports all hosts are busy due to threshold is reached.

P102711	Date	2018-08-31
	Description	This fix prevents the mbschd daemon from crashing when the hname not equal expression is used in the select string of the resource requirements.
	Component	mbatchd mbschd
	Impact	If the hname not equal expression is used in the select string of the resource requirement, the mbschd daemon crashes.

P102699	Date	2018-08-26
	Description	Fix to prevent share mode GPU jobs from pending incorrectly on a host after running the badmin reconfig command.
	Component	mbatchd mbschd

	Impact	Share mode GPU jobs are pending on a host after running the badmin reconfig command if all the GPUs on the host are occupied by share mode GPU jobs before running the badmin reconfig command.
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P102696	Date	2018-08-27
	Description	Fix to prevent the mbschd daemon from logging too many SCH_MOD_scheduleFutureAllocJobs timing logs even if the ALLOCATION_PLANNER is not enabled.
	Component	mbatchd mbschd
	Impact	The mbschd daemon log file size increases quickly with too many SCH_MOD_scheduleFutureAllocJobs timing logs even if the ALLOCATION_PLANNER is not enabled.

P102694	Date	2018-08-15
	Description	Fix to ensure that the bjobs command displays the detailed pending reason for jobs when set by an external scheduler plugin.
	Component	bjobs
	Impact	If an external scheduler plugin is configured and causes a job to pend, the 'bjobs -l' and 'bjobs -p' commands would not report the detailed pending reason set by the external scheduler plugin.

P102688	Date	2018-08-15
	Description	This fix prevents mbschd in the submission cluster from core dumping when there is a job running in the execution cluster.
	Component	mbatchd mbschd
	Impact	Core dump of mbschd in the submission cluster occurs when there is a job running in the execution cluster.

P102678	Date	2018-08-8
	Description	This fix allows the sbatchd daemon to resend the job finish status to the mbatchd daemon if the status being passed by the socket is missed by the OS.
	Component	sbatchd res
	Impact	The OS misses the sbatchd daemon sending the job finish status to the mbatchd daemon. This causes the mbatchd daemon to show that the job is always running.

P102674	Date	2018-08-7
	Description	The fix allows the remote task that is run by the blaunch command to read contents from the standard input (stdin).
	Component	nios

	Impact	If the blaunch command runs a remote task, the remote task cannot read contents from the standard input (stdin).
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P102670	Date	2018-08-7
	Description	This fix prevents the mbatchd daemon from core dumping in the execution cluster under the multicluster job forwarding mode if the JOB_ACCEPT event is lost in the execution cluster due to the mbatchd daemon restarting.
	Component	mbatchd mbschd
	Impact	When the JOB_ACCEPT event is lost because the mbatchd daemon stops abnormally, and the mbatchd daemon starts in the execution cluster under the multicluster job forwarding mode, the mbatchd daemon core dumps.

P102669	Date	2018-08-7
	Description	This fix prevents lpasswd from getting and setting terminal attribution in checking mode.
	Component	lpasswd
	Impact	The command lpasswd attempts to get and set terminal attribution in checking mode.

P102647	Date	2018-08-7
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	Description	This fix prevents the child lim from core dumping when LSF_DEBUG_LIM=LC_ELIM is set in the lsf.conf file.
	Component	Lim
	Impact	When LSF_DEBUG_LIM=LC_ELIM is set in the lsf.conf file, running the lim reconfig command might cause a core dump.

P102642	Date	2018-08-7
	Description	This fix prevents multiple -R options in different lines of the job pack submission file from accumulating, which can cause some job submissions to fail because the accumulated resource requirement string is longer than 512 characters.
	Component	bsub lsf.h lsbatch.h libbat.a libbat.so liblsf.a liblsf.so
	Impact	The multiple -R options in different lines of a job pack submission file are accumulated and some job submissions fail because the resource requirement string accumulates and therefore becomes longer than 512 characters.

P102637	Date	2018-08-7
	Description	This fix prevents mbatchd from core dumping if the job name contains "[" characters.
	Component	mbatchd mbschd

	Impact	When a job name has "[" characters followed by more than 200 additional characters, the child mbatchd might core dump.
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P102629	Date	2018-08-7
	Description	This fix resolves issues with running the bmod -Jd or -Jdn command options on running jobs.
	Component	mbatchd mbschd bmod
	Impact	Running the bmod -Jd or -Jdn command options on a running job is rejected in LSF 10.1 Fix Pack 3.

P102627	Date	2018-08-7
	Description	This fix prevents LSF from exceeding job group limits.
	Component	mbatchd mbschd
	Impact	If an array job depends on a single job, there is a race condition between the mbatchd daemon and the mbschd daemon about handling each jobs' dependency conditions.

P102615	Date	2018-08-7
	Description	This fix enables LSF to correctly handle the "all" keyword for user groups to present all users.
	Component	mbatchd mbschd
	Impact	If the administrator defines a Linux OS level user group "all" and uses this user group for a service class, users who are not in this user group cannot submit jobs to this service class.

P102609	Date	2018-08-7
	Description	This fix ensures that a local preferred affinity job does not pend incorrectly when the limit cache is enabled.
	Component	mbatchd mbschd
	Impact	The local preferred affinity job is incorrectly going into pending status when the limit cache is enabled.

P102608	Date	2018-08-7
	Description	This fix allows jobs to resume if it was stopped with the bstop command and TRACK_ELIGIBLE_PENDINFO=Y is set in the lsb.params file.
	Component	mbatchd mbschd

	Impact	If a job was stopped with the bstop command, the job cannot be resumed with the bresume command and stays in the SSUSP status if eligible pending time is enabled (that is, TRACK_ELIGIBLE_PENDINFO=Y is set in the lsb.params file). This issue might occur for jobs that were forced to run immediately with the brun command.
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Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 6

The following bugs have been fixed in LSF Version 10.1 Fix Pack 6 between 27 March 2018 and 24 May 2018:

P102589	Date	2018-5-24
	Description	When the system resources are at 100% utilization, the sbatchd daemon might become unresponsive on the connect() system call to PIM for over one hundred seconds. This means that the host status becomes unreach.
	Component	sbatchd res
	Impact	The host status becomes unreach when system resources are at 100% utilization by preventing the sbatch daemon from become unresponsive when connecting to the PIM.

P102584	Date	2018-5-24
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	Description	<p>This fix addresses the following issue:</p> <p>The sbatchd daemon reports error messages regarding cgroup in sbatch log file.</p>
	Component	sbatchd res
	Impact	sbatchd daemon will not report error messages when cgroup feature is not active.

P102571	Date	2018-5-24
	Description	This patch ensures that the mbatchd daemon responds normally even when there are several dependency jobs in the cluster.
	Component	mbatchd
	Impact	The mbatchd daemon responds slowly when there are several dependency jobs in the cluster.

P102557	Date	2018-5-20
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	Description	<p>When LSF_PIM_LINUX_ENHANCE is enabled, the memory usage reported by PIM might be inaccurate, especially for long running jobs.</p> <p>To resolve this issue, LSF PIM can read the smaps file of the process more frequently to update the job shared memory usage.</p> <p>The following parameter enables this behavior:</p> <p>LSF_PIM_SMAPS_UPDATE = Y</p> <p>When enabled, the LSF PIM is more frequent on reading the smaps file of the process to update the job shared memory usage. This way, the job's memory usage is more accurate and up to date. However, enabling this behavior means that the PIM might use more CPU than before.</p> <p>Default: N.</p>
	Component	pim
	Impact	LSF PIMM will report inaccurate job memory usage.

P102550	Date	2018-5-20
	Description	<p>Job status is still PEND when it satisfies the dispatch conditions. The mbschd daemon log shows the following error message:</p> <p>"SCH_MOD_printRusage(): SCH_MOD_rememberSibling() job xxxxxx execution rusage is NULL".</p>
	Component	mbschd
	Impact	Job cannot be dispatch, still pending.

P102545	Date	2018-4-25
	Description	This fix prevents the LSF rusage string merge from bld from failing.
	Component	mbatchd
	Impact	LSF merging the rusage string from bld fails, which generates several error logs to the mbatchd daemon log file, and the output of the bjobs and bhist commands are incorrect.

190951	Date	2018-5-21
	Description	This fix addresses the following issue: When submitting a python job asking for more than 99 threads, it will cause sbatchd to crash and the job did not run.
	Component	sbatchd res
	Impact	Sbatchd crash and job will not run.

186957	Date	2018-5-21
	Description	This fix addresses the following issue: LSF deletes the active Kerberos authorization tickets file which is specified by KRB5CCNAME environment variable even though LSF has no Kerberos enabled.
	Component	sbatchd res badmin

	Impact	No active Kerberos authorization tickets file which is specified by KRB5CCNAME environment variable even though LSF has no Kerberos enabled.
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184922	Date	2018-5-21
	Description	The LSF internal used environment variable is exposed outside when lsb_init() fails.
	Component	libbat.a libbat.so liblsf.a liblsf.so libfairshareadjust.a libfairshareadjust.so liblsbstream.a liblsbstream.so lsf.h lsbatch.h
	Impact	An internal used environment variable is left when lsb_init() fails.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 5

The following bugs have been fixed in LSF Version 10.1 Fix Pack 5 between 20 November 2017 and 27 March 2018:

P102540	Date	2018-3-27
	Description	Cannot correctly handle the job's status and the host's IP address information.
	Component	lim sbatchd mbatchd

	Impact	<p>If the script runs a command in the background and is used as arguments of the bsub command for submitting a new job, LSF marks the wrong status for the job after the sbatchd daemon on the execution host is restarted.</p> <p>Meanwhile, LSF cannot correctly retrieve the host's IP address information if the host has multiple IP addresses with the same name in different domains.</p>
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P102534	Date	2018-3-27
	Description	The MPS daemon is not terminated after using the bkill command to kill an interactive job that uses GPU resources exclusively.
	Component	sbatchd
	Impact	<p>When using the bkill command to kill an interactive job that uses GPU resources exclusively, the MPS daemon is not terminated.</p> <p>This fix ensures that such a job is properly terminated.</p>

P102525	Date	2018-3-19
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	Description	mbatchd daemon cannot start up when there are several hundred egroups configured in the lsb.users file with fairshare policy.
	Component	mbatchd
	Impact	The mbatchd daemon core dumps after applying a new lsb.users file because the file has several hundred configured egroups with fairshare policy.

P102521	Date	2018-3-16
	Description	lim -t and lshosts -l commands cannot show the correct processor numbers.
	Component	lim
	Impact	On POWER hosts, the lim daemon ignores socket level information because the old version of the Hardware Locality (hwloc) does not return the correct socket physical index, which makes the processor always set as 1. This fix upgrades Hardware Locality (hwloc) to version 1.11.8, which returns the correct socket physical index and allows the lim daemon to consider socket level so that the processor is set correctly.

P102507	Date	2018-2-2
	Description	The average memory is not correctly reported if JOB_INCLUDE_POSTPROC=Y is defined and the job is done.
	Component	sbatchd

	Impact	If JOB_INCLUDE_POSTPROC=Y is defined, LSF does not correctly report the average memory in the bjobs command when the job is done.
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P102499	Date	2018-2-2
	Description	The ebrokerd daemon cannot use syslog to log messages even if the LSF_LOGDIR parameter is not defined.
	Component	ebrokerd
	Impact	The ebrokerd daemon cannot start up if the LSF_LOGDIR parameter is not defined.

P102494	Date	2018-1-31
	Description	The "Max processed requests by mbatchd" value that is shown in the 'badmin perfmon view' command is significantly and incorrectly decreased.
	Component	mbatchd
	Impact	badmin perfmon view command cannot work correctly.

P102487	Date	2018-1-14
	Description	The error message does not mention how long the sbatchd daemon waited before killing an idle mbatchd daemon process.
	Component	sbatchd

	Impact	It is unclear how long sbatchd waited before killing an idle mbatchd process.
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P102481	Date	2018-1-8
	Description	After running the btop command on a job, that job still does not run first under certain conditions.
	Component	mbatchd mbschd
	Impact	btop command cannot work normally under certain conditions.

P102475	Date	2018-1-2
	Description	All hosts become unreachable after running a Nessus security scan.
	Component	mbatchd
	Impact	LSF cannot work normally if a security scanner runs.

P102471	Date	2018-1-8
	Description	When using the LSF API lsb_submit to submit several jobs in a loop, and using esub to modify the host string at the same time, the end user program might core dump.
	Component	lsf.h lsbatch.h libbat.a libbat.so liblsf.a liblsf.so

	Impact	User program that uses the lsb_submit API to submit several jobs in a loop and uses an esub to modify the host string at the same time might core dump.
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P102465	Date	2018-1-21
	Description	The sbatchd daemon might report the following message when a normal job (that is, not a short job) starts: mykillpg: job< > was a short job and exited before LSF could get the memory usage from the cgroups.
	Component	sbatchd
	Impact	The sbatchd daemon might report "job was a short job and exited" messages when a normal job (that is, not a short job) starts in some situations.

P102461	Date	2017-12-20
	Description	When using the new GPU syntax (that is, LSB_GPU_NEW_SYNTAX=Y is set), and a user submits a job using the bsub -gpu option, the corresponding environment variable LSB_SUB4_GPU_REQ is not written to the LSB_SUB_PARM_FILE file. This fix adds the LSB_SUB4_GPU_REQ environment variable to the LSB_SUB_PARM_FILE file.

	Component	bsub bmod libbat.so libbat.a liblsf.so liblsf.a lsf.h lsbatch.h
	Impact	No LSB_SUB4_GPU_REQ environment variable in the LSB_SUB_PARM_FILE file. Note: Only Spectrum LSF 10.1 SPK3 or later version has this issue.

P102459	Date	2017-12-21
	Description	If LSB_INTERACT_MSG_INTVL is set to a value that is less than 60 seconds in the lsf.conf file, LSF does not show pending reasons in time.
	Component	nios
	Impact	The LSB_INTERACT_MSG_INTVL parameter in the lsf.conf cannot work correctly if it is set to a value that is less than 60 seconds.

P102458	Date	2017-12-21
	Description	The mbatchd daemon might core dump if the mbschd daemon fails to fill allocation decisions for several jobs.
	Component	mbschd
	Impact	The mbatchd daemon core dumps if the mbschd daemon fails to fill allocation decisions for several jobs.

P102457	Date	2017-12-27
	Description	<p>When License Scheduler restarts, the connection between LSF and License Scheduler is lost. LSF discards the license server information, which could be obsolete, so a job dispatched at this moment does not set the environment variable LS_LICENSE_SERVER_<feature_name>.</p> <p>After this enhancement, if LSF discards license server information, LSF sets the environment variable LS_LICENSE_SERVER_<feature_name> as empty instead of not setting it for jobs. This can help you to distinguish whether a job has a specified license resource in an rusage string by checking the existence of the environment variable LS_LICENSE_SERVER_<feature_name>.</p>
	Component	mbschd
	Impact	The environment variable LS_LICENSE_SERVER_<feature_name> is not set in running jobs when License Scheduler restarts.

P102456	Date	2017-12-18
	Description	Array jobs could not be scheduled properly to use GPUs in "exclusive_process" mode when there are insufficient GPUs on the hosts.
	Component	Mbschd
	Impact	Although there are insufficient GPUs on the hosts, an array job in "exclusive_process" mode can be scheduled.

P102448	Date	2017-12-12
	Description	The bjobs and bjobs -o commands are slow even if they are not querying for pending reason information.
	Component	mbatchd
	Impact	Even if they are not querying for pending reason information, bjobs and bjobs -o commands are running slowly.

P102447	Date	2017-12-7
	Description	The command "lim -t" might show incorrect types and cores on some new processors. The fix resolves these issues by updating to a later version of the hardware locality (hwloc) library.
	Component	lim
	Impact	Cannot show new processor types and cores in lim -t.

P102445	Date	2017-12-7
	Description	The sbatchd daemon might have a socket leak when using a daemon wrapper and the JOB_CONTROLS parameter is configured in the lsb.queues file.

	Component	sbatchd
	Impact	Socket leaks in the sbatchd daemon when using a daemon wrapper and the JOB_CONTROLS parameter is configured in the lsb.queues file.

P102443	Date	2018-2-28
	Description	<p>The sbatchd daemon might crash when submitting an array job to a host where the CPU could not be detected correctly but is used for the CPU binding feature.</p> <p>This fix prevents the sbatchd daemon from core dumping by improving the logic of selecting the best CPU in sbatchd.</p>
	Component	sbatchd
	Impact	sbatchd daemon might core dump when LSF_BIND_JOB=Y is enabled in lsf.conf.

P102441	Date	2017-12-6
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	Description	<p>If ABS_RUNLIMIT=Y is defined in the lsb.params file and a job with a queue level RUNLIMIT pends, the "bjobs -l" command does not show the correct host name in RUNLIMIT.</p> <p>This fix enables the "bjobs -l", "bjobs -o runtimelimit" and "bjobs -o runtimelimit -hms" commands to only display limit values for the RUNLIMIT if ABS_RUNLIMIT=Y in lsb.params or lsb.applications.</p>
	Component	bjobs
	Impact	<p>"bjobs -l" command does not show the correct host name in RUNLIMIT if ABS_RUNLIMIT=Y is defined in the lsb.params file and a job with a queue level RUNLIMIT pends.</p>

P102440	Date	2017-12-14
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	Description	<p>1. Up to $n * \text{SBD_SLEEP_TIME}$ seconds of CPU time is lost in LSF reporting.</p> <p>2. All LSF accounting files, (such as <code>lsb.events</code>, <code>lsb.acct</code>, and <code>lsb.stream</code>) have incorrect values for user time and system time. The user time is recorded as the total CPU time, and system time is recorded as zero, which are both incorrect.</p> <p>The second issue is fixed by the introduction of a new parameter, <code>LSB_CPUACCT_STAT</code> in <code>lsf.conf</code>. To separate CPU time and system time, configure "<code>LSB_CPUACCT_STAT=Y</code>" in <code>lsf.conf</code>. The default value is <code>N</code>.</p>
	Component	<code>sbatchd res</code>
	Impact	Sometimes LSF cannot get accurate CPU time usage information.

P102439	Date	2017-12-6
	Description	In the LSF multicluster job forwarding mode, when the <code>bsub -m</code> option specifies more than 5 remote hosts, the <code>mbatchd</code> daemon of submission cluster might crash.
	Component	<code>mbatchd</code>
	Impact	The <code>mbatchd</code> daemon might crash in the LSF multicluster job forwarding model.

P102436	Date	2017-11-30
	Description	When the LSB_MAILSENDER parameter is specified in the lsf.conf file, the envelope sender address (sendmail -f) is not changed to the LSB_MAILSENDER parameter value.
	Component	sbatchd
	Impact	The envelope sender address (sendmail -f) is not changed to the value of the LSB_MAILSENDER parameter, even if it is set in the lsf.conf file.

P102431	Date	2018-2-27
	Description	The "lsadmin ckconfig -v" command shows EGO parameter messages even when EGO is not enabled.
	Component	lim
	Impact	"lsadmin ckconfig -v" command shows EGO parameter messages when EGO is not enabled.

182130	Date	2018-3-27
	Description	The sbatchd daemon accepts TCP connection from another cluster's mbatchd, causing jobs to not be able to finish.

	Component	sbatchd
	Impact	The sbatchd daemon cannot accept the connection from the mbatchd daemon in the master host.

179902	Date	2018-3-27
	Description	In RHEL 7 the systemd unit file for lsf created by `hostsetup --boot=y` does not consider that the LSF installation has to be mounted before the service can be started.
	Component	hostsetup
	Impact	In a RHEL 7 environment, LSF daemons cannot start up after the installation directory is mounted under the systemd environment.

178776	Date	2018-3-19
	Description	If containers have LSF jobs running inside, LSF attempts to kill the Docker container, but this attempt fails because the container is already dead. LSF then considers the jobs as still running, even if the specified run limit is exceeded.
	Component	docker-monitor.py

	Impact	Some Docker containers might end up being in a "Dead" state.
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175301	Date	2017-12-8
	Description	Some log messages were set as LOG_DEBUG level, which causes a large log file size when users turn on LSF log debug mode.
	Component	mbatchd
	Impact	The log file size is too large when users turn on LSF log debug mode.

174658	Date	2017-12-5
	Description	The format of "bjobs -psum" is inconsistent with the column format in the bjobs man page.
	Component	bjobs
	Impact	"bjobs -psum" output is not clear.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 4

The following bugs have been fixed in LSF Version 10.1 Fix Pack 4 between 06 July 2017 and 20 November 2017:

P102456	Date	2017-12-18
	Description	Array jobs could not be scheduled properly to use GPUs in "exclusive_process" mode when there are insufficient GPUs on the hosts.
	Component	mbschd
	Impact	When using GPU in "exclusive_process" mode, an array job might fail if there are not enough available GPUs on the hosts.

P102422	Date	2017-11-20
	Description	In a Docker job's interactive mode (with "bsub -lp"), typing CTRL + C causes a job to exit unexpectedly.
	Component	res
	Impact	Interactive Docker job exits after typing CTRL +C.

P102417	Date	2017-11-7
	Description	Both the mbschd and mbatchd daemons might core dump if different users frequently run the btop or bbot commands on array jobs.
	Component	mbschd, mbatchd
	Impact	mbschd and mbatchd daemons core dump, when different users frequently run the btop/bbot commands on array jobs.

P102415	Date	2017-11-7
	Description	The badmin reconfig command might have a slow response because the mbatchd daemon is attempting to resolve compute unit names.
	Component	mbatchd
	Impact	badmin reconfig is slow because the mbatchd daemon is attempting to resolve compute unit names.

P102414	Date	2017-11-7
	Description	When running bkill to kill a parallel job that has multiple running processes, there is a delay between the time stamp of the KILL signal and the time stamp of the EXIT message in a job's bhist output.
	Component	sbatchd res
	Impact	There is some delay in executing a bkill operation on an LSF job.

P102409	Date	2017-10-26
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	Description	When submitting a job with the -R option (to specify the rusage), and the first resource in the OR condition is insufficient, but the second resource in the OR condition is sufficient because there are enough slots, the job incorrectly becomes pending with the reason: "Job's requirements for resource reservation not satisfied".
	Component	mbschd schmod_dist.so schmod_xl.so
	Impact	Job will pend due to the first resource in the OR condition of the rusage section not being satisfied, even if the second resource in the OR condition is sufficient.

P102394	Date	2017-10-17
	Description	In an LSF multicluster forward mode environment, when the resource connector is enabled at the execution cluster, the submission cluster does not forward jobs if the required resource is not currently available in the remote cluster. However, the resource is available from configured resource providers through resource connector.
	Component	mbatchd
	Impact	If the required resource is not available in the execution cluster, the forwarded job can be acquired from resource providers through resource connector.

P102391	Date	2017-11-6
	Description	<p>Currently, LSF allows the user to set the TMPDIR environment variable as a temporary directory and if the directory does not exist, LSF creates the directory and deletes it when the job is finished.</p> <p>However, if this directory is shared between different host jobs, different jobs in one same host, or different parallel tasks in the same job, the shared TMPDIR directory might be deleted before the job or task within the same job finishes and causes the whole job to fail.</p>
	Component	res
	Impact	Jobs will fail, if the TMPDIR environment variable is set to a shared directory and the directory was deleted before other jobs that use this directory are finished.

P102384	Date	2017-10-20
	Description	bsub might core dump when using an esub to modify the command string at the same time.
	Component	bsub, bmod, libbat.so, libbat.a, liblsf.a, liblsf.so, lsbatch.h, lsf.h

	Impact	Core dump
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P102382	Date	2017-9-14
	Description	In LSF, Version 10.1 Fix Pack 2 or newer, an extra period / dot character (".") is added to lines in the job output file that end with a time stamp. This causes the external parsing tool to fail.
	Component	sbatchd
	Impact	Inaccurate job output file.

P102378	Date	2017-9-27
	Description	When the resource connector is enabled, the ebrokerd daemon might have memory leaks for each host transition. When the resource connector is enabled with LSF multicluster capability, the mbatchd daemon might have memory leaks for each periodic update.
	Component	mbatchd, ebrokerd
	Impact	Memory leak issues when resource connector and LSF multi-cluster capability are both enabled.

P102373	Date	2017-10-23
	Description	When running the "badmin mbdrestart -p" command, the following error message is logged: log_mbdDie: fflush() failed, Bad file descriptor.
	Component	mbatchd
	Impact	mbatchd daemon flushes error messages from the log file, when running the "badmin mbdrestart -p" command.

P102361	Date	2017-9-11
	Description	The lsb.events file becomes large when there are invalid user accounts on the execution host. The increasing size of the lsb.events file is caused by the job being continuously retried. This fix avoids unnecessary job retries if there is an invalid user account on the execution host.
	Component	mbatchd
	Impact	The lsb.events file becomes too large when there are invalid user accounts on the execution host.

P102353	Date	2017-9-27
	Description	<p>The format of the job's Ticket Granting Ticket (TGT) file name is jobid_jobindex with a fixed prefix of "lsf_krb5cc_j" and stored in the /tmp directory.</p> <p>This fix introduces a new parameter named LSB_KRB_TGT_PREFIX in the lsf.conf file to customize the TGT file name prefix.</p> <p>Syntax</p> <p>LSB_KRB_TGT_PREFIX=string</p> <p>Description:</p> <p>This parameter specifies the prefix of the job's Kerberos Ticket Granting Ticket (TGT) after enabling the TGT forwarding feature.</p> <p>Valid characters for this parameter are alphanumeric (A-Z, a-z, 0-9), minus sign (-), underscore (_) and period (.).</p> <p>The job's TGT is saved in the /tmp directory on the execution host and the file name is LSB_KRB_TGT_PREFIXjobid_jobindex.</p> <p>Run badadmin hrestart all to make changes take effect.</p> <p>Default</p> <p>The default prefix is "lsf_krb5cc_j".</p>
	Component	sbatchd

	Impact	User cannot customize the job's Ticket Granting Ticket file name prefix.
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P102339	Date	2017-10-23
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	Description	<p>LSF does not disable resource reservations in the scheduler daemon (mbschd) for jobs that are blocked by the per-user job slot limit as defined in the submission queue.</p> <p>These types of jobs are blocked during job submission by the mbatchd daemon. When the HPC allocation feature is enabled, the total number of slots that are requested by affinity jobs are determined during job scheduling. This means that affinity jobs can still get resource reservations even when blocked by the per-user job slot limit as defined in the submission queue.</p> <p>Limitations:</p> <p>LSF cannot disable resource reservations for jobs that use compound resource requirements if there is no job task that can be allocated for a part of its resource requirements.</p> <p>For example, the following job has two parts of resource requirements: one part requests 2 tasks with 2 cores per task, another part requests 3 tasks with 7 cores per task. If the available number of cores on any host is less than 7 cores, the following job can still get a resource reservation for the first part of its resource requirement.</p> <p>However, if there is a host that has more than 7 available cores when LSF schedules for the second part of resource requirements of the job, LSF does not reserve any resources for the entire job.</p> <pre>bsub -R "2*{affinity[core(2)]} + 3*{affinity[core(7)]}" -q reserve_queue ./job</pre>
	Component	mbschd

	Impact	The scheduler daemon (mbschd) cannot disable resource reservations for jobs that are blocked by the per-user job slot limit as defined on the submission queue.
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P102338	Date	2017-10-23
	Description	After a job that was submitted using the bsub -XF command is automatically re-queued, the NIOS process cannot exit and the CPU usage is at 100%.
	Component	nios
	Impact	NIOS process cannot exit and the CPU usage is at 100%.

P102337	Date	2017-9-21
	Description	LSF reschedules finished array jobs to run again after the mbatchd daemon restarts if JOB_ARRAY_EVENTS_COMBINE=Y is set in the lsb.params file. This is because mbatchd switches out improper events from the lsb.events file. This fix ensures that mbatchd does not switch out the wrong events.
	Component	mbatchd
	Impact	The finished array jobs will be scheduled to run again after the mbatchd daemon restarts when JOB_ARRAY_EVENTS_COMBINE=Y is set in the lsb.params file.

P102336	Date	2017-9-5
	Description	A requeued job reaches the DONE status but it cannot be cleaned up from the mbatchd daemon memory.
	Component	mbatchd
	Impact	The requeued DONE jobs cannot be cleaned from the mbatchd daemon memory.

P102335	Date	2017-8-23
	Description	In an LSF multicluster environment, where the LSB_QUERY_PORT is enabled in the submission cluster, the mbatchd query process will crash while handling a "bjobs -lp" request on the submission cluster.
	Component	mbatchd
	Impact	mbatchd query process will crash while handling a "bjobs -lp" request.

P102333	Date	2017-9-1
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	Description	<p>For a parallel job with alternative resource requirements such as "rusage[resA resB resC...]" only some of the specified resources are sufficient. The job is pending because of insufficient slots, but LSF reports an incorrect pending reason.</p> <p>The new parameter LSB_ALT_RUSAGE_REASON is introduced in lsf.conf to fix this issue.</p> <p>Syntax</p> <pre>LSB_ALT_RUSAGE_REASON=Y N y n</pre> <p>Description</p> <p>When this parameter is set to Y, jobs with alternative resource requirements (separated by the " " operator, such as "rusage[resA resB resC ]"), report different pending reasons depending on which resource requirement cannot be satisfied. The pending reason LSF reports relates to the resource that cannot be satisfied.</p> <p>Different pending reasons are reported depending on the kind of resource that is insufficient:</p> <ul style="list-style-type: none">- All resources specified in rusage are insufficient and all are shared resources- The pending reason is set to the last specified resource in rusage.- All resources are shared resources and parts of resources specified in rusage are enough for parallel jobs.- The job is pending because of insufficient slots- The pending reason is set to slots.- All resources are insufficient and the rusage specifies built-in resources- The pending reason is set to the first insufficient built-in resource. <p>After configuring this parameter, run badadmin reconfig to have it take effect.</p>
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		<p>Default</p> <p>N</p>
	Component	<p>mbschd</p> <p>schmod_default.so</p> <p>schmod_dist.so</p> <p>schmod_maui.so</p> <p>schmod_parallel.so</p> <p>schmod_preemption.so</p> <p>schmod_reserve.so</p> <p>schmod_xl.so</p>
	Impact	<p>No clear pending reason for jobs with alternative resource requirements such as "rusage[resA resB resC...]" depending on the type of insufficient resource.</p>

P102331	Date	2017-10-24
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	Description	<p>The LSF scheduler process (mbschd) works together with the main daemon (mbatchd) to manage job lifecycles. At the beginning of each scheduling session, mbschd gets a snapshot of the cluster state from mbatchd, which includes updates on resource availability and pending jobs. The scheduler then makes scheduling decisions based on this snapshot. The decisions are published to mbatchd to act on.</p> <p>A long scheduling cycle can lower cluster utilization, since resources released during one scheduling session will not be reallocated until the subsequent scheduling session at the earliest. Scheduling session lengths are displayed with the command: <code>badmin perfmon view</code>.</p> <p>This fix improves scheduling performance by making the scheduler process more efficient at pruning its search space. In particular, this can help in some cases where clusters configure host-based limits (<code>lsb.resources</code>), and guarantee policies (<code>lsb.resources</code>).</p>
	Component	mbschd
	Impact	Scheduling is slow.

P102329	Date	2017-8-23
	Description	<p>No matter how many CPUs are configured in a cluster, the default value of LSB_MAX_JOB_DISPATCH_PER_SESSION in mbschd will always be set as 300.</p> <p>This fix ensures the default value of LSB_MAX_JOB_DISPATCH_PER_SESSION in mbschd can be calculated based on the total CPUs in LSF, which is the same for mbatchd.</p>
	Component	mbatchd mbschd
	Impact	The default value of LSB_MAX_JOB_DISPATCH_PER_SESSION in mbschd will always be set as 300, no matter how many CPUs are configured in a cluster.

P102328	Date	2017-8-9
	Description	CPU times reported (by bhist) at the end of single-thread jobs are larger than the actual runtime of the jobs.
	Component	sbatchd
	Impact	Incorrect CPU time accounting issue in bhist.

P102323	Date	2017-8-2
	Description	LSF calculates the fairshare priority incorrectly when a user submits a long-running job but gets a high priority.
	Component	mbatchd
	Impact	Incorrect fairshare priority calculation issue, so that a user who submits a long-running job does not get a high priority.

P102320	Date	2017-8-3
	Description	LSF ignores the duration of memory resources for jobs in package type guarantee pools. The problem is that the duration of memory resources is incorrectly ignored if the job does not use the package type guarantee pools or the guarantee pools have no guaranteed memory resources.
	Component	mbatchd
	Impact	The duration of memory resources is ignored.

P102314	Date	2017-7-25
	Description	When lsb.jobinfo.events is in an NFS location where the NFS option root_squash is set, and the LSB_JOBINFO_DIR parameter is set, then mbatchd will access the lsb.jobinfo.events file as root rather than as the primary LSF administrator. This will cause mbatchd to crash.

	Component	mbatchd
	Impact	mbatchd accesses lsb.jobinfo.events as root rather than as the primary lsf administrator and mbatchd crashes.

P102313	Date	2017-7-24
	Description	<p>METRIC_LOG in the lsb.stream file cannot be disabled when the SCHED_METRIC_ENABLE parameter is set.</p> <p>This fix introduces an internal parameter DISABLE_STREAM_METRIC_LOG in the lsb.params file to disable METRIC_LOG in the lsb.stream file when it is set to Y/y. Default value of this parameter is N.</p>
	Component	mbatchd

	Impact	User cannot disable METRIC_LOG in the lsb.stream file even if the SCHED_METRIC_ENABLE parameter is set.
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P102292	Date	2017-7-10
	Description	<p>A job's post-execution script does not run because there is a delay in creating the cgroups subsystems.</p> <p>This fix checks for the existence of folders that are related to the cgroup. The fix retries this check up to 5 times and also attempts to open the files related to the cgroups subsystems up to 5 times to avoid the latency on the cgroups subsystem creation.</p>
	Component	sbatchd res
	Impact	A job's post-execution script cannot run.

P102286	Date	2017-8-8
	Description	When a user kills a running job, LSF may kill processes not belonging to that job.

	Component	sbatchd res
	Impact	LSF will kill the wrong processes after a user kills a running job.

P102278	Date	2017-7-6
	Description	If the load schedule and stop policy has been configured on hosts (to control swap resources), running jobs on those hosts would incorrectly enter SSUSP status after executing lsadmin reconfig.
	Component	lim
	Impact	A running job will enter SSUSP status after lsadmin reconfig has been executed.

P102274	Date	2017-7-6
	Description	When using the LSF API lsb_submit with a resource requirement string to submit a job and using esub to modify the resource requirement string at the same time, the end user program might core dump.
	Component	lsf.h lsbatch.h libbat.a libbat.so liblsf.a liblsf.so
	Impact	The user program that uses the lsb_submit API to submit job and uses an esub to modify the resource requirement string at the same time might core dump.

165702	Date	2017-10-25
	Description	bqueues -l & bqueues -r will exit with "Protocol error with server" if the size of the returned data is bigger than 512M.
	Component	mbatchd bqueues
	Impact	bqueues -l & bqueues -r does not display queue information as expected.

159805	Date	2017-11-5
	Description	The bhist message for multicluster job status contains the typo "recongized".
	Component	sbatchd bhist bjobs
	Impact	Misspelled word in bhist -l output.

152497	Date	2017-10-16
	Description	When LSB_BSUBI_OLD=Y in lsf.conf, the output of resizing jobs which were submitted before it was set to Y is confusing.
	Component	mbatchd bresize
	Impact	Output is confusing and unclear to users.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 3

The following bugs have been fixed in LSF Version 10.1 Fix Pack 3 between 16 February 2017 and 06 July 2017:

P102288	Date	2017-06-30
	Description	This fix addresses the following issue: For parallel or multiple host jobs, when releasing one host's slots by using the bresize command, LSF might abort the tasks on other hosts because of improper signals from the job res.
	Component	res
	Impact	The bresize command might cause multiple host jobs some host tasks to abort even if the hosts did not release the slots.

P102282	Date	2017-06-05
	Description	This fix allows job to be scheduled even if the LSF_LOGDIR parameter is not defined in the lsf.conf file.
	Component	mbatchd

	Impact	If the LSF_LOGDIR parameter is not defined in the lsf.conf file, jobs remain pending indefinitely.
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P102278	Date	2017-07-06
	Description	This fix addresses the following issue: If the load schedule and stop policy has been configured on hosts (to control swap resources), running jobs on those hosts would incorrectly enter SSUSP status after executing lsadmin reconfig.
	Component	lim
	Impact	Running job from will enter SSUSP status after lsadmin reconfig has been executed.

P102277	Date	2017-07-06
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	Description	<p>This fix addresses the following issue:</p> <p>When using the bsub -pack option and you use an esub to modify the host options, the bsub command core dumps.</p>
	Component	bsub
	Impact	bsub command will core dump when using the bsub -pack command option and using an esub to modify the host options.

P102273	Date	2017-06-29
	Description	<p>This fix addresses the following issue:</p> <p>When the job submission has compound resource requirements that include compute units, LSF might over-schedule jobs, which exceeds the specified limits definition.</p>
	Component	mbschd
	Impact	Limit doesn't take effect and resources are over committed.

P102272	Date	2017-06-29
	Description	<p>This fix addresses the following issue:</p> <p>When the job's dependencies contains the wildcard character (*) on both sides of the job name (such as "**<job name>*") and the mbatchd daemon restarts, it will take much more time to parse this job's JOB_NEW event.</p>
	Component	mbatchd

	Impact	mbatchd daemon replay events very slowly if a job has the dependency "ended(*jobname*)".
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P102267	Date	2017-06-30
	Description	<p>This fix addresses the following issue:</p> <p>If a user runs an invalid bmod command where the argument for an option is a multi-line command, the content of the command is recorded literally in the lsb.events file, which causes the bhist command to report a "Bad event format" error for each line of that record.</p>
	Component	bmod
	Impact	bhist command will report a "Bad event format" error after using the bmod command if the argument for the "-Z" option is on multiple lines.

P102253	Date	2017-06-17
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	Description	<p>This fix addresses the following issue:</p> <p>If the LSF_DAEMON_WRAP parameter is enabled in the lsf.conf file and the DJOB_ENV_SCRIPT parameter is not configured in the lsb.applications file, the user-defined script is still incorrectly invoked as if the DJOB_ENV_SCRIPT parameter is defined.</p>
	Component	daemons.wrap
	Impact	<p>The user-defined script will be incorrectly invoked even if the DJOB_ENV_SCRIPT parameter is not configured in the lsb.applications file.</p>

P102252	Date	2017-06-13
	Description	<p>This fix addresses the following issue:</p> <p>Add environment variable DAEMON_WRAP_ENABLE_BPOST to control bpost call in daemons.wrap.</p> <p>DAEMON_WRAP_ENABLE_BPOST is disabled by default. Set DAEMON_WRAP_ENABLE_BPOST=y to enable a bpost call when cleartool setview fails.</p>
	Component	daemons.wrap
	Impact	<p>No environment variable DAEMON_WRAP_ENABLE_BPOST to control bpost call in daemons.wrap.</p>

P102241	Date	2017-06-21
	Description	<p>This fix addresses the following issue:</p> <p>This issue occurs only in multi-cluster environments where the version of the submission cluster is lower than LSF 10.1 and the version of the execution cluster is LSF 10.1.</p> <p>When the runtime resource usage limit of a forwarded job is modified in the submission cluster and the mbatchd daemon of the submission cluster can recognize the name of the execution host, the execution host enters an unreach status.</p>
	Component	sbatchd mbatchd
	Impact	The execution host will enter an unreach status when the runtime resource usage limit of a forwarded job is modified in the submission cluster whose version is lower than 10.1.

P102236	Date	2017-06-06
	Description	<p>This fix addresses the following issue:</p> <p>The bhist command shows the incorrect pending time when there are two exit JOB_STATUS events in the lsb.events file.</p>
	Component	bhist

	Impact	The displayed pending time in the bhist command output is incorrect, when there are two exit JOB_STATUS events in the lsb.events file.
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P102234	Date	2017-06-21
	Description	<p>This fix addresses the following issue:</p> <p>When the scheduler binary file is obtained from compiler optimization, the child scheduler might crash. This is because the child scheduler uses a function that might cause a core dump under a specific case, but the child scheduler normally checks for this case before running the function to prevent the core dump. The compiler optimization removes this check, which causes the child scheduler to run the function regardless of the circumstances and potentially cause a core dump. This fix restores the check to prevent the function from running and causing a core dump.</p>
	Component	mbschd
	Impact	Child scheduler will crash when the scheduler binary file is a compiler optimization binary file.

P102232	Date	2017-05-26
	Description	<p>This fix addresses the following issue:</p> <p>When a queue has either the SLOT_RESERVE parameter or RESOURCE_RESERVE parameter enabled in the lsb.queues file to enable resource reservation, and there are many pending jobs in the queue, the scheduling performance drops significantly and takes a long time to make reservations.</p>
	Component	mbschd
	Impact	Scheduling performance is slow when enabling resource reservation on queues.

P102231	Date	2017-06-14
	Description	<p>This fix addresses the following issue:</p> <p>Prior to this patch MBD didn't distinguish between expected and unexpected error cases during recovery of the jobinfo cache. This patch will properly distinguish these cases and treat unexpected errors as fatal errors. When a fatal error occurs, MBD will exit. Cache recovery will be retried when SBD restarts MBD. This patch also improves the logging of file system access errors during recovery of the lsb.jobinfo.events file.</p>
	Component	mbatchd

	Impact	Job information lost in the lsb.jobinfo.events file and cause the job cannot be scheduled in the cluster.
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P102230	Date	2017-06-05
	Description	<p>This fix addresses the following issue:</p> <p>A pending interactive job cannot be modified by the bmod command if automatic job rerun is enabled in the queue (that is, the RERUNNABLE parameter is set to "yes" in the lsb.queues file).</p>
	Component	mbatchd
	Impact	The pending interactive jobs cannot be modified by the bmod command if automatic job rerun is enabled in the queue.

P102229	Date	2017-06-05
	Description	<p>This fix addresses the following issue:</p> <p>The mbatchd daemon cannot start up because it core dumps when it recovers an auto-resizable job whose resize allocation is not consistent with the execution host list.</p>

	Component	mbatchd
	Impact	mbatchd daemon will core dump when it recovers an auto-resizable job whose resize allocation is not consistent with the execution host list.

P102224	Date	2017-05-18
	Description	<p>This fix addresses the following issue:</p> <p>In the lsb.resources file, when the length of a resource limit name is 40 characters, its limit usage cannot be shown with the blimits command.</p>
	Component	mbschd
	Impact	blimits command cannot show the resource limit usage when the length of the resource limit name is 40 characters.

P102217	Date	2017-05-15
	Description	<p>This fix addresses the following issue:</p> <p>Adding to the list of supported regions that are supported by AWS host provider used by the resource connector. The following new regions will be supported: (us-east-2, eu-west-2, ap-south-1, ca-central-1).</p>
	Component	AwsTool.jar
	Impact	Resource connector for AWS does not work on AWS region us-east-2, eu-west-2, ap-south-1, ca-central-1.

P102208	Date	2017-05-12
	Description	<p>This fix addresses the following issue:</p> <p>When the "PREEMPT_JOBTYPE" parameter is configured as "EXCLUSIVE" in the lsb.params file, the mbschd daemon crashes when resuming the cross-host preemptive parallel suspended job.</p>
	Component	mbschd
	Impact	The mbschd daemon will crash when the "PREEMPT_JOBTYPE" parameter is configured as "EXCLUSIVE" in the lsb.params file.

P102199	Date	2017-05-02
	Description	<p>This fix addresses the following issue:</p> <p>A migrated job has an incorrect runtime after mbatchd restart, caused when part of the job event is switched.</p>
	Component	mbatchd
	Impact	Where part of the migrated job events are switched, the runtime of a job is incorrect after mbatchd restart.

P102198	Date	2017-05-02
	Description	<p>This fix addresses the following issue:</p> <p>If a host group contains hosts that are unknown, some good status hosts might be excluded from this host group after the mbatchd daemon restarts.</p> <p>In addition, this might result in the host group containing no hosts, which results in the entire host group being unavailable.</p>
	Component	mbatchd
	Impact	A host group might be missing good status hosts or become unavailable after an mbatchd daemon restart if it contains unknown hosts.

P102196	Date	2017-04-26
	Description	<p>This fix addresses the following issue:</p> <p>If an LSF host group contains some hosts that are not static servers, some good status hosts might be excluded from this host group after a reconfiguration. In addition, this might result in the host group containing no hosts, which results in the entire host group being unavailable.</p>
	Component	mbatchd
	Impact	A host group might be missing some good status hosts after a reconfiguration if it contains some hosts that are not static servers.

P102188	Date	2017-04-04
	Description	<p>This fix addresses the following issue:</p> <p>Jobs with run limits at the queue and application level fail to submit if the run limits at the queue and application level are both identical and the ABS_RUNLIMIT parameter is set to Y in the lsb.params file.</p>

	Component	mbatchd
	Impact	Job cannot be submitted that have identical run limits specified at the queue and application level if the ABS_RUNLIMIT parameter is set to Y in the lsb.params file.

P102186	Date	2017-04-21
	Description	This fix addresses the following issue: When LSF is rotating event files, bhist might not be able to display the complete job history due to this race condition.
	Component	bhist
	Impact	There is a race condition when LSF is rotating event files to allow bhist to display the complete job history during this time.

P102178	Date	2017-04-04
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	Description	<p>This fix addresses the following issue:</p> <p>When parallel restart happens at the same time as lsb.jobinfo.events are rewritten its possible for records in that event file to be corrupted.</p> <p>This fix will prevent the corruption by properly synchronizing the two operations.</p>
	Component	mbatchd
	Impact	LSF will cause corruption in the lsb.jobinfo.events file.

P102171	Date	2017-04-10
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	Description	<p>This fix addresses the following issue:</p> <p>Jobs are submitted with specified host list to a queue and some specified hosts are removed from the queue's host list later.</p> <p>After mbatchd is reconfigured and jobs are requeued, requeued jobs are dispatched to those removed hosts.</p> <p>The fix just covers the case that ENABLE_HOST_INTERSECTION is defined as Y in the lsb.params file.</p>
	Component	mbatchd
	Impact	The requeued jobs cannot be dispatched to hosts that are removed from a queue's host list.

P102170	Date	2017-04-13
	Description	<p>This fix addresses the following issue:</p> <p>If the LSB_KRB_TGT_FWD parameter is configured as Y in the lsf.conf file and the JOB_INFO_MEMORY_CACHE_SIZE parameter is configured as a non-zero value in the lsb.params file, the job's Kerberos TGT file in the LSB_JOBINFO_DIR directory cannot be deleted.</p>
	Component	mbatchd
	Impact	mbatchd daemon cannot delete Kerberos TGT files from LSB_JOBINFO_DIR directory.

P102169	Date	2017-03-22
	Description	This fix addresses the following issue: liblsbstream.a and libfairsharedjust.a static libraries are missing from LSF lib directory.
	Component	liblsbstream.a libfairshareadjust.a
	Impact	liblsbstream.a and libfairsharedjust.a static libraries are missed.

P102164	Date	2017-04-11
	Description	This fix addresses the following issue: When cgroup enforcement is enabled for GPUs, jobs that require more GPUs (2 out of 2 available GPUs or 3 - 4 out of 4 available GPUs) often get terminated. The percentage of failure is close to 100%.
	Component	mbatchd
	Impact	GPU jobs cannot run successfully on linux3.10-glibc2.17-x86_64.

P102158	Date	2017-04-11
	Description	<p>This fix addresses the following issue:</p> <p>Rerunnable jobs get requeued when execution hosts are unavailable.</p> <p>This means that Analytics does not correctly calculate the job pending time.</p> <p>This fix adds a job signal event before the job finish event in the lsb.stream, allowing Analytics to correctly calculate pending time for these jobs.</p> <p>A new parameter, LOG_JOB_SIGNAL_FOR_HOST_UNAVAIL, is added in lsb.params to control whether to log an additional job signal event.</p> <p>Name:</p> <p>LOG_JOB_SIGNAL_FOR_HOST_UNAVAIL = Y y N n</p> <p>Description:</p> <p>If enabled (set to Y y), when slave hosts become unavailable, LSF logs a job signal event before the first job finish event in the lsb.stream file for rerunnable jobs that run on those slave hosts.</p> <p>Default:</p> <p>N</p>

	Component	mbatchd
	Impact	Analytics cannot calculate pending time correctly for re-runnable jobs that are requeued when execution hosts become unavailable.

P102152	Date	2017-03-30
	Description	This fix addresses the following issue: After running the badmin mbdrestart command, if the mbatchd daemon exits abnormally when starting up, the sbatchd daemon will wait for very long time before trying to restart the mbatchd again.
	Component	sbatchd
	Impact	sbatchd daemon cannot restart mbatchd daemon in a timely manner after mbatchd exits abnormally when starting up.

P102147	Date	2017-03-24
	Description	This fix addresses the following issue: When enable cgroup, after JOB_POSTPROC_TIMEOUT is expired, LSF does not kill all processes launched by post-exec, but cgroup is still tracking those processes.

	Component	sbatchd
	Impact	LSF kills all processes launched by post-exec script after JOB_POSTPROC_TIMEOUT is expired when enable cgroup.

P102141	Date	2017-03-22
	Description	This fix addresses the following issue: The bmgrou command does not display a host groups with names that contain the text "others".
	Component	mbatchd
	Impact	bmgrou command can not display host groups with names that contain the text "others".

P102139	Date	2017-03-24
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	Description	<p>This fix addresses the following issue:</p> <p>Jobs are not being scheduled in the specified time window even when the bqueues command shows that the queue is open and active. This issue happens only when the RUN_WINDOW parameter in the lsb.queues file is configured to always be open.</p> <p>For example, if you set the RUN_WINDOW parameter as follows: RUN_WINDOW = 0:0:0-4:09:00 4:13:00-5:13:00 5:14:00-1:13:00 01:14:00-0:0:0</p> <p>The bqueues binary shows the queue is still open and active, but jobs in the according queue can not be scheduled with the pending reason - "New job is waiting for scheduling;"</p> <p>This is because the logic for calculating the run window close time in LSF does not correctly handle the case when the configured run window is always opened.</p>
	Component	mbatchd
	Impact	<p>The scheduler cannot work normally when submitting a job to a queue with a run window that is always open.</p>

P102136	Date	2017-03-17
	Description	<p>This fix addresses the following issue:</p> <p>RUNLIMIT cannot be enforced for jobs with pre-execution functions if they were submitted to an LSF cluster that only has Fix Packs applied that are older than 390354 and the pre-execution functions finished before applying a newer Fix Pack (and restarted sbatchd to apply the changes).</p>
	Component	sbatchd
	Impact	<p>RUNLIMIT cannot be enforced for jobs with pre-execution functions if current sbatchd is older than 390354 and the pre-execution functions finished before applying a newer sbatchd patch.</p>

P102119	Date	2017-03-10
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	Description	<p>This fix addresses the following issue:</p> <p>If the LSF_COLLECT_ENERGY_USAGE parameter is configured as Y in the lsf.conf file, the sbatchd daemon that is running on the host is unresponsive after multiple jobs are dispatched to the same host.</p> <p>When attempting to restart sbatchd on the host with the "badadmin hrestart" command, the command fails with one of the following error messages:</p> <ol style="list-style-type: none"> 1. "Host control failed: Failed in an LSF library call: Failed in sending/receiving a message: Connection reset by peer" 2. "Host control failed: Failed in an LSF library call: Communication time out"
	Component	sbatchd
	Impact	<p>The sbatchd daemon on the host will become unresponsive when LSF_COLLECT_ENERGY_USAGE=Y is defined in lsf.conf.</p>

P102115	Date	2017-03-07
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	Description	<p>This fix addresses the following issue:</p> <p>When a user defines the JOB_SPOOL_DIR parameter in the lsb.params file with variable substitutions, the bpeek command cannot read the job output.</p> <p>After applying this fix, the bpeek command will support the following user defined variables to be used in JOB_SPOOL_DIR:</p> <p>%U: username</p> <p>%H: (first) execution host name</p> <p>%P: project name</p> <p>%JG: job group name</p> <p>%C: execution cluster name</p> <p>NOTE: This fix does not support Windows operating systems.</p>
	Component	bpeek, libbat.a, libbat.so, liblsf.a, liblsf.so, lsf.h, lsbatch.h
	Impact	bpeek command cannot read job output when JOB_SPOOL_DIR is defined with variable substitutions

P102105	Date	2017-03-10
	Description	<p>This fix addresses the following issue:</p> <p>When bsub is rejected on non-LSF hosts, bsub does not call the ebsub file.</p>
	Component	bsub, libbat.a, libbat.so, liblsf.a, liblsf.so, lsf.h, lsbatch.h
	Impact	The ebsub file is not called when the bsub is rejected on non-LSF hosts.

P102103	Date	2017-03-02
	Description	<p>This fix addresses the following issue:</p> <p>When bpeek is run in a pseudo terminal that is started by an interactive job, the error "Job <jobid> is not found" is always returned.</p>
	Component	bpeek, libbat.a, libbat.so, liblsf.a, liblsf.so, lsf.h, lsbatch.h
	Impact	bpeek cannot work in a pseudo terminal that is started by an interactive job.

P102100	Date	2017-02-17
	Description	<p>This fix addresses the following issue:</p> <p>If the file attribute of <code>lsb.lease.state</code> has been changed and the cluster manager cannot open it, the <code>mbatchd</code> daemon cannot start in an environment that is using the LSF multicluster capability.</p>
	Component	<code>mbatchd</code>
	Impact	<code>mbatchd</code> daemon cannot start up after the ownership of <code>lsb.lease.state</code> file has been changed.

P102071	Date	2017-02-22
	Description	<p>This fix addresses the following issues:</p> <p>This fix is required if your cluster uses a third party scheduler plugin that uses the external scheduler API <code>extsched_modifyJob()</code>. When the job parameter <code>extsched_modifyJob()</code> specifies a job array with arbitrary elements, the job array may remain unaffected by the parameter setting.</p>

	Component	mbatchd
	Impact	The external scheduler API extsched_modifyJob() has no affect when the provided job parameter specifies a job array with arbitrary elements.

158094	Date	2017-07-05
	Description	<p>This fix addresses the following issue:</p> <ol style="list-style-type: none"> 1. The sched_setaffinity() API repeatedly shows error messages when attempting CPU binding. The error messages resemble the following: 2. setCPUAffinity: sched_setaffinity() failed to bind to all 1024 logical CPU with error number <22>. This issue occurs in RHEL 5 kernel 2.6.18 platforms.
	Component	mbatchd
	Impact	The sched_setaffinity() API from logging repeate error messages when attempting CPU binding

157354	Date	2017-07-04
	Description	This fix enables users with a restrictive user mask (0077, for instance) to start a Docker-based LSF job successfully.
	Component	res
	Impact	Users with a restrictive user mask (0077, for instance) are not able to start a Docker-based LSF job.

156718	Date	2017-07-06
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	Description	<p>This fix addresses the following issue:</p> <p>Currently, LSF use submission environment variables overwrite environment variables in docker container. But user need special environment variable like LD_LIBRARY_PATH in image. So this solution merge PATH, LD_LIBRARY_PATH, LD_PRELOAD from job environment with image settings.</p> <p>The merging rule is putting the variable value in user environment first which showed as below:</p> <p>PATH=job_PATH:image_PATH</p> <p>LD_LIBRARY_PATH=job_LD_LIBRARY_PATH:image_LD_LIBRAR Y_PATH</p> <p>LD_PRELOAD=job_LD_PRELOAD:image_LD_PRELOAD</p>
	Component	res
	Impact	No PATH, LD_LIBRARY_PATH and LD_PRELOAD in submission environment with the value of these environment variables in docker images.

156008	Date	2017-06-30
	Description	This fix prevents mbschd generating large numbers of core when using express version entitlement file.
	Component	mbschd
	Impact	LSF cannot scedule jobs

155022	Date	2017-07-06
	Description	MPS fails to start in multi-host job if LSF_TMPDIR is pointing to a shared file system.
	Component	sbatchd res
	Impact	Cannot use MPS.

152237	Date	2017-05-15
	Description	This fix allows the sbatchd daemon to correctly log CGROUP related error message.
	Component	sbatchd
	Impact	Unexplained errors in sbatchd logs on multiple hosts.

151340	Date	2017-05-09
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	Description	<p>This fix addresses the following issue:</p> <p>If you create an advance reservation and submit an exclusive job (without a RUN LIMIT or the job cannot finish before the current end time of the advance reservation) to the advance reservation after it becomes active, the brsvmod command cannot extend the advance reservation when the exclusive job is running.</p>
	Component	mbatchd
	Impact	brsvmod command cannot extend the end time of the advance reservation if an exclusive job (without a RUN LIMIT or the job cannot finish before the current end time of the advance reservation) was submitted to this advance reservation and the job is running.

149041	Date	2017-05-23
	Description	Fixed PE job keep pending issue when user disabled fair share plugin in all LSF queues.
	Component	mbschd
	Impact	PE job keep pending.

148457	Date	2017-04-20
	Description	<p>This fix prevents the mbatchd daemon from corrupting files under LSB_LOCALDIR/LSB_SHAREDIRE directory when LSB_LOCALDIR and LSB_SHAREDIRE are set as the same value.</p>

	Component	mbatchd
	Impact	When set LSB_LOCALDIR and LSB_SHAREDDIR to same directory, the files in LSB_LOCALDIR/LSB_SHAREDIRE may be corrupted.

147765	Date	2017-06-30
	Description	CUDA_VISIBLE_DEVICES environment variable not visible in host-based pre-exec and post-exec.
	Component	mbatchd sbatchd res
	Impact	Cannot operate GPU in host-based pre-exec and post-exec.

147039	Date	2017-04-17
	Description	This fix allows the mabatchd daemon to release the memory resource usage on leased-in hosts.
	Component	mbatchd
	Impact	Job cannot be scheduled because of resource issue.

141493	Date	2017-02-17
	Description	The fix prevents the mbatchd daemon from crashing when LSF_LOGDIR and DIAGNOSE_LOGDIR are not configured.
	Component	mbschd
	Impact	mbatchd daemon will crash when LSF_LOGDIR and DIAGNOSE_LOGDIR are not configured.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 2

The following bugs have been fixed in LSF Version 10.1 Fix Pack 2 between 21 October 2016 and 15 February 2017:

P102110	Date	2017-03-31
	Description	This fix enhances LSF security of authorizing user credentials for the data stream between LSF clients and servers. It addresses CVE-2017-1205.
	Component	eauth mbatchd res sbatchd badmin lsadmin
	Impact	Potential root exploit and potential replay attack.

P102095	Date	2017-02-10
	Description	If the parameter JOB_INCLUDE_POSTPROC is set to Y in lsb.params, a host will enter an "unreach" status when multiple jobs are dispatched to it simultaneously.
	Component	sbatchd
	Impact	Host will enter an "unreach" status when the parameter JOB_INCLUDE_POSTPROC is set to Y in lsb.params.

P102084	Date	2017-02-15
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	Description	When mbatchd exits abnormally, either by itself or if it is killed by a signal, the sbatchd on the master host cannot start a new mbatchd and keeps logging the following message: houseKeeping: kill mbatchd <pid> for it is not active for a long time.
	Component	sbatchd
	Impact	The sbatchd on the master host cannot start a new mbatchd after the previous mbatchd exits abnormally.

P102083	Date	2017-01-27
	Description	Interactive jobs cannot run when bsub gets input from a pipe or file. For example: Case 1: echo sh bsub -l (Note: Only -l is supported for this fix, -ls, -lp, -lSs and -lSp are not supported.) Case 2: bsub -l < file (Note: "bash", "csh", "ksh" or "sh" is the command in the file).
	Component	bsub lsbatch.h lsf.h libbat.a libbat.so liblsf.a liblsf.so
	Impact	Interactive jobs cannot run when the bsub command contains a pipe or file.

P102081	Date	2017-01-24
	Description	The mbatchd might core dump if the job has dependency conditions that are changed using the bmod command.
	Component	mbatchd

	Impact	The mbatchd may core dump.
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P102075	Date	2017-01-11
	Description	Job report output does not show start time stamp or report time stamp.
	Component	sbatchd
	Impact	Start time stamp and report time stamp are not available.

P102064	Date	2017-01-18
	Description	When the total memory of all hosts in the cluster exceeds 2147483647 MB there is a warning message in mbatchd log: "The total memory in the cluster used for calculating the fairshare adjustment exceeds the maximum and has been reset to 2147483647."
	Component	mbatchd
	Impact	A warning message appears in the mbatchd log file when the total memory of all hosts in the cluster exceeds 2147483647 MB.

P102058	Date	2017-01-12
	Description	Child mbatchd core dump when job priority changes.
	Component	mbatchd
	Impact	Child mbatchd will core dump.

P102053	Date	2016-12-23
	Description	For interactive jobs, when the job queue-level pre-execution function is enabled, the runtime limit does not work.
	Component	mbatchd sbatchd
	Impact	Runtime limits do not work for interactive jobs.

P102052	Date	2016-12-23
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	Description	If RESOURCE_RESERVE_PER_TASK is configured in the lsb.params file and mem is not defined as a reservation resource, a job with the requirement "rusage[mem=X] span[block=Y]" cannot run on a host even if the resource requirement is satisfied.
	Component	mbschd schmod_default.so schmod_parallel.so schmod_reserve.so
	Impact	Jobs with a "rusage[mem=X] span[block=Y]" requirement will not run, when RESOURCE_RESERVE_PER_TASK is configured in the lsb.params file.

P102034	Date	2016-12-18
	Description	When LSB_BJOBS_CHUNK_JOB_START_TIME is set to y or Y, bjobs -l displays the job start time for chunk jobs (instead of the chunk start time).
	Component	mbatchd
	Impact	For chunk jobs, bjobs -l incorrectly displays the job start time instead of the chunk start time.

P102027	Date	2016-12-09
	Description	When the queue is configured with SLOT_RESERVE or RESOURCE_RESERVE and there are many pending jobs in the queue, the scheduler takes a long time to make the reservation and the mbatchd daemon automatically restarts the scheduler.

	Component	bparams mbatchd mbschd schmod_default.so schmod_reserve.so
	Impact	The mbatchd daemon will kill the mbschd daemon when there are too many pending jobs in the queue.

P102026	Date	2016-12-09
	Description	When the "-env" option is specified in the bsub command, the LSF_SUB4_SUB_ENV_VARS environment variable cannot be found in the \$LSB_SUB_PARM_FILE.
	Component	bsub bmod brestart mesub lsf.h lsbatch.h libbat.a libbat.so liblsf.a liblsf.so
	Impact	Cannot find LSF_SUB4_SUB_ENV_VARS in \$LSB_SUB_PARM_FILE.

P101991	Date	2016-12-11
	Description	When LSB_EXTENDED_RSRCREQ_STR=Y is configured in the lsf.conf file, the LSF system rejects jobs with resource requirement strings greater than 511 characters in length.
	Component	mbatchd
	Impact	LSF rejects jobs with resource requirement strings greater than 511 characters in length when LSB_EXTENDED_RSRCREQ_STR=Y is configured in the lsf.conf file.

P101990	Date	2016-11-23
	Description	If some LSF job processes have the same pgid as the job RES (for sequential jobs) or task RES (for parallel jobs), but these processes are not in the cgroup that LSF created for the job, when all processes in the cgroup are done or exited, the job cannot be finished. The bjobs command always shows the job as running.
	Component	sbatchd res
	Impact	When cgroup is enabled, LSF jobs may continue to show as running if some job processes were moved out of the cgroup process group.

P101984	Date	2016-11-28
	Description	When a job is finished, and is still in the memory of the mbatchd daemon, the lsb_readjobinfo API returns a value of zero for the job's memory and swap usage.
	Component	mbatchd lsbatch.h lsf.h libbat.a libbat.so liblsf.so liblsf.a
	Impact	The memory and swap usage are incorrect when the lsb_readjobinfo API calls a finished job.

P101976	Date	2017-01-20
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	Description	<p>If the version of Kerberos is 1.12 and above, LSF fails to renew a ticket when using the LSF Ticket Granting Ticket forwarding feature.</p> <p>Meanwhile, Kerberos provides two pre-authentication mechanisms. If the preauth attribute has been configured for krbtgt principle on Kerberos 1.12 and above, the administrator should configure the pre-authentication mechanism in kdc.conf and krb5.conf.</p>
	Component	krbrenewd eauth.krb5
	Impact	<p>LSF Ticket Granting Ticket forwarding feature does not work with Kerberos version 1.12 and above.</p>

P101974	Date	2016-11-15
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	Description	<p>This fix is for two issues:</p> <ol style="list-style-type: none"> 1. In a multi-cluster environment, when LC_TRACE is set for LSB_DEBUG_MBD in lsf.conf, a child mbatchd that sends jobs to the scheduler may crash if there are jobs forwarded to a remote cluster. This causes the scheduler to keep exiting and not schedule jobs. 2. The mbatchd daemon crashes after a job clean action on a job that is terminated after triggering the hung job removal policy, defined through the REMOVE_HUNG_JOBS_FOR parameter.
	Component	mbatchd
	Impact	The mbatchd will crash.

P101973	Date	2016-11-09
	Description	In MultiCluster lease mode, if a job used a leased-in resource with a duration in rusage, subsequent jobs cannot use this resource until the previous job is finished.
	Component	mbatchd
	Impact	In MultiCluster lease mode, some jobs will remain pending until the previous job is finished.

P101972	Date	2016-11-09
	Description	Suspended jobs do not show the suspend reason in the IBM Spectrum LSF Application Center pending reason section.
	Component	bjobs

	Impact	LSF Application Center does not show the suspend reason for suspended jobs in the pending reason section.
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P101959	Date	2016-11-03
	Description	The previous way for LSF to calculate a host's effective run queue length was complicated and hard to use. This made it difficult to correctly set the host's load-based threshold. This fix provides a simpler way to calculate run queue length. The new behavior is parameter controlled, enabled by defining the parameter LSF_LIM_MULTICORE_ADJUST in lsf.conf.
	Component	lim
	Impact	Too difficult to set a load-based threshold.

P101957	Date	2016-10-24
	Description	When one job fails to do a checkpoint, and exits due to other reasons, LSF cannot set the LSB_JOBEXIT_INFO environment variable value.
	Component	sbatchd
	Impact	LSB_JOBEXIT_INFO environment value is not set.

P101956	Date	2016-11-03
	Description	When daemons are started on slave servers, LSB_SHAREDIR is automatically mounted on slave servers.

	Component	lim, res, sbatchd, mbatchd, nios, lsreghost, rla
	Impact	Slave servers will access LSB_SHAREDIR if LSF_REG_FLOAT_HOSTS is not configured as Y in lsf.conf.

136800	Date	2017-01-11
	Description	If the LSF external scheduler API is used to make an external scheduler plugin, and if the callback routine that adjusts the allocation decision returns SCH_MOD_DECISION_PENDJOB directly, then after submitting some jobs the memory image size of the mbschd process will continue to increase.
	Component	mbschd, schmod_demand.so schmod_preemption.so schmod_default.so schmod_reserve.so misc/examples/external_plugin/README
	Impact	The host's resource usage is low.

123437	Date	2016-10-26
	Description	When the if/else branches of a time window are defined with overlapping times, mbatchd will perform more reconfig actions.

	Component	mbatchd
	Impact	mbatchd will perform more reconfig actions than necessary when a time window is overlapped.

Fixed Bugs for IBM Spectrum LSF Version 10.1 Fix Pack 1

The following bugs have been fixed in LSF Version 10.1 Fix Pack 1 between 22 July 2016 and 20 October 2016:

P101978	Date	2016-10-20
	Description	IBM Spectrum MPI cannot run successfully with LSF if the LSF cluster has CUDA MPS enabled. This is because LSF does not expose MPS environment variables to a job process if that process is not created through the blaunch framework.
	Component	sbatchd

	Impact	IBM Spectrum MPI cannot run with LSF if the LSF cluster has GPU MPS enabled.
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P101937	Date	2016-10-12
	Description	After running the lsadmin reconfig command, the master LIM might not successfully restart because the UDP port is not released in time by a child LIM that is answering queries. This fix releases the UDP port on the child LIM to avoid port conflicts with the new LIM.
	Component	lim
	Impact	LIM is gone and will not come up.

P101915	Date	2016-9-24
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	Description	<p>If <code>LSB_RC_EXTERNAL_HOST_FLAG</code> is defined in <code>lsf.conf</code> and the resource connector providers are configured in a correct manner then whenever there is a pending workload that cannot run on the local hosts, hosts are borrowed from the external provider. But not every pending workload can run on the external hosts.</p> <p>Also, if <code>HOSTS</code> parameter value is defined as a host group in <code>lsb.queues</code>, borrowing is disabled.</p> <p>This fix introduces a new parameter RC_HOSTS in <code>lsb.queues</code> to enable borrowing at the queue level instead of enabling it cluster-wide.</p> <p>While setting up the OpenStack environment, multiple users and projects need to be created. Both user and project can have a different domain name.</p> <p>This fix introduces a new parameter OS_PROJECT_DOMAIN_ID to specify a different domain name for the project. It doesn't have to be the same as OS_USER_DOMAIN_ID.</p>
	Component	<p><code>bqueues mbatchd mbschd schmod_default.so schmod_demand.so resource_connector/hostProviders/openstack/scripts/Main.py</code></p> <p><code>resource_connector/hostProviders/openstack/scripts/OpenStackClient.py</code></p> <p><code>resource_connector/hostProviders/openstack/conf/osprov_config.json</code></p>

	Impact	User domain and project domain cannot be differentiated for OpenStack resource connector. VM provisioning is not triggered by setting HOSTS=vmgrp in queue.
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P101911	Date	2016-9-27
	Description	After a failover occurs, the sbatchd on the secondary master host gives mbatchd a fixed time to start (90 seconds) before it treats mbatchd as not started and tries to start a new one again. This fix extends the time to align with the first master host, and further extend it if the first time startup attempt failed. In addition, instead of just starting a new mbatchd, LSF terminates the old mbatchd process before it starts the new mbatchd.
	Component	sbatchd
	Impact	Failover doesn't work as expected.

P101909	Date	2016-10-5
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	Description	<p>When the LSF daemon wrapper is enabled (that is, if "LSF_DAEMON_WRAP=y" is defined in the lsf.conf file), new jobs might not run in hosts that are running for a long time.</p> <p>If this occurs, the message "Too many open files" is recorded in the sbatchd log, and the file descriptor leak can be detected by running the lsdf command for sbatchd daemons.</p>
	Component	sbatchd
	Impact	System run out of open files. Job submission fails.

P101900	Date	2016-9-27
	Description	If a job's usage includes reserved and unreserved resources, and the reserved resources are not satisfied in the cluster, the job's pending reason is reported incorrectly.
	Component	mbatchd
	Impact	Incorrect pending reason causes confusion to customer in resource planning.

P101882	Date	2016-10-12
	Description	When submitting an interactive job with the "-cwd" option, if the specified directory does not exist, the client-end shows the message "Terminated while pending". This causes confusion because the job has been dispatched to the execution host. This fix changes the message to "Terminated on execution host" and appends a prompt message.
	Component	nios
	Impact	bhist/bsub show inconsistent information. It causes customer confusion.

P101876	Date	2016-9-28
	Description	This fix modifies the preemption scheduling plugin, schmod_preemption.so, to reduce the time spent on job preemption condition evaluation. This fix reduces the time spent on the POSTPROC phase of the scheduling cycle when there are some running preemptable jobs.
	Component	schmod_preemption.so mbschd
	Impact	Customer workload slows.

P101870	Date	2016-9-1
	Description	When using LSF's liblsfstream.so to parse an LSF stream file, if there are "JOB_FORCE" type record items within it, the parsing fails.

	Component	liblsbstream.so
	Impact	Common job loader reports errors when parsing lsb.stream file

P101865	Date	2016-9-12
	Description	The fix allows LSF users to adjust the NICE value of each LSF daemon process on UNIX platform.
	Component	lim pim res sbatchd mbatchd lsadmin badmin blaunch lsbatch.h lsf.h libbat.a liblsf.a libbat.so liblsf.so
	Impact	mbatch, sbatchd, mbschd have 0 as default NICE. They might not response if the host has other high priority applications running.

P101859	Date	2016-8-30
	Description	With JOB_CWD_TTL=0 configured in lsb.params, LSF does not delete a finished interactive job current working directory (cwd).
	Component	sbatchd
	Impact	Interactive jobs do not delete their temporary cwd, and the user's file system fills up.

P101856	Date	2016-8-18
	Description	Job environment variables LSB_JOBPIIDS and LSB_JOBPGIDS are not set correctly when the parameters LSF_DAEMON_WRAP=Y and LSF_HPC_EXTENSIONS="CUMULATIVE_RUSAGE" are configured in lsf.conf.
	Component	sbatchd
	Impact	JOB_CONTROL will not work with the job processes

P101852	Date	2016-9-2
	Description	When cgroup is not enabled, if a job process runs in a separate process group, CPU time from bjobs output is underreported when the process completes, and following job process is still running.
	Component	pim
	Impact	Incorrect numbers mean it is difficult to tell if hardware is being wasted.

P101846	Date	2016-8-24
	Description	Poor mbatchd performance when using bjobs -o to query job information, due to unnecessary calls to lsb_parameterinfo().
	Component	bjobs

	Impact	Master load is very high. mbatchd (both parent and child) is very busy. job submission is very slow.
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P101844	Date	2016-8-20
	Description	When submitting an interactive job with LSB_NUM_NIOS_CALLBACK_THREADS configured in Isf.conf, mbatchd logs the following error message to the mbatchd log: "niosCallback_ ... failed: Connection refused".
	Component	mbatchd res
	Impact	mbatchd log is flooded with messages for every interactive job

P101843	Date	2016-8-19
	Description	When using a floating client that joins two clusters in an LSF multi-cluster facility environment, if one cluster is restarted, bsub might fail.
	Component	lim
	Impact	Float client cannot be added to cluster by bsub without waiting for a while or running Isid.

P101842	Date	2016-9-12
	Description	During the scheduler session, hosts are selected as candidate hosts and pending reason are set for them. However, subsequent cross-host parallel jobs still try to ALLOC on these candidate hosts in the same scheduler session. This occurs because the scheduler session takes a long time in the ALLOC phase. This fix decreases the amount of time needed for the ALLOC phase, to improve scheduling efficiency.
	Component	mbschd, schmod_parallel.so, schmod_reserve.so, schmod_default.so
	Impact	Workload slows down and resources are wasted.

P101841	Date	2016-8-15
	Description	In the lsload output, many hosts appear to be in busy status by "r1m" load index. However, the "r1m" index value from "lsload -E" output does not exceed the threshold defined in the lsf.cluster file.
	Component	lim
	Impact	When the issue occurs, host is not recognized by scheduler to dispatch jobs, which causes the host resources to be wasted.

P101834	Date	2016-9-1
	Description	When the bsub command is used with the -P <project name> option and there is an esub script that will modify the <project name>, the bsub command will cause a core dump.

	Component	bsub libbat.a libbat.so liblsf.a liblsf.so lsbatch.h lsf.h
	Impact	Job submission fails.

P101825	Date	2016-8-15
	Description	On IBM Power hosts: When parallel jobs are submitted across multiple nodes, nios hangs, causing the jobs to hang.
	Component	nios
	Impact	Jobs hang.

P101820	Date	2016-8-1
	Description	The job dependency evaluation process is slow when the job dependency relationship is complicated.
	Component	mbatchd
	Impact	The cluster cannot start.

P101819	Date	2016-8-4
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	Description	Fix for the extsched API that is used to create plug-ins for the LSF scheduler. This fix ensures that the correct context is set during preemption scheduling. The scheduling context is obtained by the use of the extsched API function <code>extsched_getCheckAllocContext()</code> from within a plug-in's <code>checkAlloc</code> callback.
	Component	Issched.h mbschd schmod_preemption.so
	Impact	External scheduler API doesn't work as expected

P101797	Date	2016-7-22
	Description	<p>When running the <code>bsub -L</code> option, the remote host <code>sbatchd</code> filters out most environment variables from the submission host and only keeps the following environment variables:</p> <ul style="list-style-type: none"> -LSB_ACCT_MAP -LSF_VERSION -LSB_UNIXGROUP -LSB_JOB_STARTER -LSF_INTERACTIVE_STDERR -LOGNAME -LSF_CUR_SECURITY_LABEL -LSF_JOB_SECURITY_LABEL -LSF_ISV_MODE -LSB_FANOUT_CONN_PER_HOST -OMP_NUM_THREADS -LSF_PJL_TYPE -LSB_JOB_REPORT_MAIL

		<p>In addition, if the job is an interactive job, the following environment variables are also kept:</p> <p>-TERMCAP</p> <p>-TERM</p> <p>However, if the value of an environment variable is the same as the name of one of the environment variables that are kept, the bsub -L option incorrectly keeps this environment variable.</p> <p>For example, if an environment variable named MY_ENVAR has the value "LSF_VERSION", bsub -L incorrectly keeps the MY_ENVAR environment variable despite the fact that this environment variable should be filtered out.</p>
	Component	sbatchd
	Impact	Job cannot run normally.

P101795	Date	2016-7-19
	Description	When a job changes from a suspend state to the run state, restarting mbatchd causes the run time total in the lsb.acct file to be different from the run time total in the bhist command output.
	Component	mbatchd
	Impact	Incorrect runtime information for jobs.

P101791	Date	2016-8-5
	Description	When using APIs to perform a continuous query, the query might fail if the float client expired.
	Component	bsub libbat.a libbat.so liblsf.a liblsf.so lsf.h lsbatchd.h
	Impact	job queries failed

P101788	Date	2016-8-17
	Description	<p>When the parallel blaunch job RES loses connection with the job RES, the parallel blaunch job RES sends a SIGINT/SIGTERM/SIGKILL signal to the job to end it, but there is no time interval before sending these signals. This means that the job has no time to handle the job data before it ends.</p> <p>This fix introduces the LSB_BLAUNCH_TERMINATE_INTERVAL parameter in the lsf.conf file to resolve this issue by introducing a time interval before sending the terminal signal.</p> <p>LSB_BLAUNCH_TERMINATE_INTERVAL</p> <p>Syntax</p> <p>LSB_BLAUNCH_TERMINATE_INTERVAL=seconds</p> <p>Description</p> <p>UNIX only.</p> <p>Specifies the time interval, in seconds, after the blaunch job RES lost a</p>

		<p>connection or encounters a connection problem with the job RES before sending SIGINT, SIGTERM, and SIGKILL signals. This time interval allows the job to clean up before it ends.</p> <p>Default 10(seconds)</p>
	Component	res
	Impact	blaunch job needs some time to do clean up.

P101785	Date	2016-7-20
	Description	<p>Jobs with alternative license resource requirements involving multiple license resources cannot run if one rusage string is not satisfied and the other rusage string is satisfied.</p> <p>For example, a job with an alternative resource requirement string such as "A B,C" cannot run if "A" is not satisfied but "B,C" is satisfied in the cluster for the job.</p>
	Component	mbschd schmod_default.so schmod_parallel.so
	Impact	Job dispatch rate is very low when this problem happens. License utilization is low.

P101781	Date	2016-8-8
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	Description	When enabling the LSF_PROCESS_TRACKING and LSF_LINUX_CGROUP_ACCT parameters in the lsf.conf file, the parent sbatchd cannot clean up any obsolete job cgroup directories.
	Component	sbatchd
	Impact	Job dispatched to host fails with "Failed in talking to server to start the job" message.

P101780	Date	2016-7-29
	Description	The leased-in cluster defines a host group that uses an asterisk as a group member to present the leased-in hosts, and the submitted jobs specifying the defined host group are forwarded to the leased-out cluster.
	Component	mbatchd
	Impact	LSF multi-cluster facility doesn't work properly.

P101774	Date	2016-7-7
	Description	After enabling LSB_LIMIT_CACHE in Isf.conf, jobs that use license project mode resources are always pending even when the resource requirement is satisfied in the cluster.
	Component	mbschd schmod_default.so
	Impact	Job cannot run even the resources are available. It slows down licenses resource usability.

P101757	Date	2016-6-17
	Description	When a job submitted with the energy aware scheduling feature finishes, the attribute count has the wrong value for the JOB_FINISH2 record in the Isb.stream file. As a result, some fields cannot be read correctly.
	Component	liblsbstream.so
	Impact	Analytics reports wrong data.

P101750	Date	2016-7-26
	Description	When passing 200 to 300 job IDs to bjobs -a -w, the bjobs -a -w command is slow to complete.

	Component	mbatchd bjobs
	Impact	Job query is slow.

P101749	Date	2016-7-1
	Description	When jobs that require licenses are to run on dynamic hosts, they stay in a pending state, while mbatchd reports that licenses are available.
	Component	mbatchd
	Impact	Jobs hangs in pending state.

P101748	Date	2016-6-30
	Description	The lim core dumps when a master or management host is failing over.
	Component	lim
	Impact	LSF fails to failover

P101736	Date	2016-6-25
	Description	<p>Jobs that are submitted to a compute host with its LSF daemons shut down remain pending even if the LSF daemons restart and the compute host is in "ok" status:</p> <ol style="list-style-type: none"> 1. Shut down a slave host with "lsf_daemons stop" 2. Submit a job to this host 3. When bhost shows "unreach" and lsload shows "unavail" status, restart the slave by "lsf_daemons start" <p>The job might remain pending even if the slave is back and bhosts show "OK" status.</p>
	Component	mbatchd
	Impact	Jobs cannot be dispatched to host even when it shows "OK" status.

P101739	Date	2016-7-14
	Description	<p>This fix resolves the following issues :</p> <ol style="list-style-type: none"> 1. A job submitted to run on a borrowed host with resource requirement (-R) that selects a template based on a string resource type doesn't run until mbdreconfig or mbdrestart. 2. When the same borrowed host joins the cluster again, but with a different string resource type, the job fails to start on that host unless mbdreconfig or mbdrestart. 3. A job submitted to run on "n" slots triggers over-borrowing of the hosts from the cloud provider due to a lag between the borrowed host joining the cluster and the slave lim reporting the host load information.

	Component	<p>badmin bhosts blimits lim ebrokerd mbatchd mbschd</p> <p>schmod_default.so schmod_demand.so schmod_preemption.so</p> <p>/resource_connector/hostProviders.json,</p> <p>/resource_connector/openstack/conf/create_server.json,</p> <p>/resource_connector/openstack/conf/osprov_config.json</p> <p>/resource_connector/openstack/conf/osprov_templates.json</p> <p>/resource_connector/openstack/provider.json</p> <p>/resource_connector/openstack/scripts/Log.py</p> <p>/resource_connector/openstack/scripts/MachineFile.py</p> <p>/resource_connector/openstack/scripts/Main.py</p> <p>/resource_connector/openstack/scripts/OpenStackClient.py</p> <p>/resource_connector/openstack/scripts/generatehosts</p> <p>/resource_connector/openstack/scripts/getAvailableMachines.sh</p> <p>/resource_connector/openstack/scripts/getAvailableTemplates.sh</p> <p>/resource_connector/openstack/scripts/getRequestStatus.sh</p> <p>/resource_connector/openstack/scripts/getReturnRequests.sh</p> <p>/resource_connector/openstack/scripts/install_dns.sh</p> <p>/resource_connector/openstack/scripts/requestMachines.sh</p> <p>/resource_connector/openstack/scripts/requestReturnMachines.sh</p> <p>/resource_connector/openstack/scripts/user_data.sh</p> <p>/resource_connector/openstack/scripts/userscript.sh</p>
	Impact	Job cannot run.

P101728	Date	2016-6-13
	Description	If the number of sbatchd file descriptors is greater than 1024, sbatchd core dumps during job fanout.
	Component	sbatchd
	Impact	sbatchd core dumps and job fails.

P101723	Date	2016-7-1
	Description	When the LSF cluster has several hosts configured in the lsf.cluster.clustername file, the "badadmin hstartup" command takes long time to complete.
	Component	badadmin lsadmin
	Impact	badadmin hstartup slows down

P101707	Date	2016-6-28
	Description	When bresume 0 is used, all jobs are resumed. To save bresume time, this fix provides the parameter LSB_RESUME_ONLY_SUSPEND_JOB in lsf.conf to resume only suspended jobs (PSUSP jobs not included).
	Component	bresume
	Impact	bresume performance is affected.

P101662	Date	2016-04-22
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	Description	In some configurations where the length of the resource name is greater than 25 characters, the blimits and bresources commands incorrectly display the message "... glibc detected *** blimits: free(): invalid pointer ..."
	Component	blimits bresources
	Impact	blimits and bresources have the error message which confuse customer.

P101652	Date	2016-5-30
	Description	In LSF multi-cluster facility, when the total value of dynamic shared resources changes in the provider cluster, the consumer cluster cannot detect the changes and therefore gets the wrong leased-in resource value, which results in missing shared resources. At this time, mbschd may get the wrong available resource value from mbatchd, which might result in the wrong decision to dispatch a job.
	Component	mbatchd
	Impact	When the resource number in provider side becomes 0, the consumer side never dispatches jobs to the cluster.

P101619	Date	2016-7-1
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	Description	When a job's pre-execution script fails repeatedly, the recorded run time in the stream file is not correct. This fix enables LSF to correctly record the run time by including a job's failed pre-execution run time.
	Component	mbatchd
	Impact	The jobs run time is not accurate and meanwhile the job pending time calculated in Analytics is negative.

126045	Date	2016-10-12
	Description	bmod core dumps when trying to modify job options by -q.
	Component	bmod
	Impact	bmod cannot be used.

122572	Date	2016-9-21
	Description	Current configurable value of MAX_CONCURRENT_QUERY parameter is restricted to 1-100. Users keep getting retry and warning messages after reaching the 100 limit.
	Component	Mbatchd
	Impact	Query limit is too small.

124222	Date	2016-9-30
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	Description	When using "bmod -g /group <jobid>", the command gives "Cannot combine modify job group or service class option with others. Job not modified." error.
	Component	bmod
	Impact	Customer cannot modify job group of a job.

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 11

The following enhancements have been done in LSF Version 10.1 Fix Pack 11 between 10 Apr 2020 and 12 Nov 2020:

258595	Date	2020-12-05
	Description	This fix prevents users from using LSF as arbitrary users by replacing the eauth key in the data packet that is used for authentication mechanism.
	Component	

255469	Date	2020-11-05
	Description	In SPK 10, root is disabled by default to avoid potential security issues. This project ensures that customers are able to configure root as the LSF administrator for management requirements.
	Component	lim, res, mbatchd, sbatchd, lsadmin

263174	Date	2020-11-05
	Description	This fix is a security update of the google oauth client library to version 1.31.0 for CVE-2020-7692.

		<p>resource_connector/google/lib/GcloudTool.jar</p> <p>resource_connector/google/lib/commons-beanutils-1.9.4.jar</p> <p>resource_connector/google/lib/commons-collections-3.2.2.jar</p> <p>resource_connector/google/lib/commons-lang-2.6.jar</p> <p>resource_connector/google/lib/commons-logging-1.2.jar</p> <p>resource_connector/google/lib/ezmorph-1.0.6.jar</p> <p>resource_connector/google/lib/google-api-client-1.22.0.jar</p> <p>resource_connector/google/lib/google-api-services-compute-v1-rev182-1.22.0.jar</p> <p>resource_connector/google/lib/google-http-client-1.22.0.jar</p> <p>Component resource_connector/google/lib/google-http-client-jackson2-1.22.0.jar</p> <p>resource_connector/google/lib/google-oauth-client-1.31.0.jar</p> <p>resource_connector/google/lib/httpclient-4.5.12.jar</p> <p>resource_connector/google/lib/jackson-annotations-2.10.0.jar</p> <p>resource_connector/google/lib/jackson-core-2.10.0.jar</p> <p>resource_connector/google/lib/jackson-databind-2.10.0.jar</p> <p>resource_connector/google/lib/json-lib-2.2.3-jdk15.jar</p> <p>resource_connector/google/lib/jsr305-1.3.9.jar</p> <p>resource_connector/google/lib/log4j-api-2.8.2.jar</p> <p>resource_connector/google/lib/log4j-core-2.8.2.jar</p>
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247904	Date	2020-11-04
	Description	This project enables users to define enroot application profiles and submit/execute enroot container jobs.
	Component	mbatchd sbatchd res eauth bjobs battach enroot-starter.py lsfdockerlib.py lscontainerlib.py docker-starter.py docker-control.py docker-monitor.py

RFE#136213	Date	2020-11-03
	Description	LSF now supports the use of AMD GPUs. You can now specify AMD GPU models in the GPU requirements strings (bsub -gpu option or the GPU_REQ parameter in the lsb.queues and lsb.applications files).
	Component	bhist bhosts bjobs bmod bsub lim lshosts mbatchd mbschd res sbatchd bswitch bacct

243637	Date	2020-10-29
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	Description	LSF maintains an asked hosts list for each job. This list is created by expanding the condensed form of requested hosts, and replacing requested host groups with the hosts belonging to the group. The asked hosts list can potentially be very large. It is common that many jobs are submitted with requests for the same hosts. This can result in the mbatchd daemon consuming a lot of memory. This enhancement caches the asked hosts list generated with the goal of reducing the mbatchd memory footprint.
	Component	mbatchd mbschd

RFE#143929	Date	2020-10-21
	Description	The extsched API is enhanced. A plugin can now register a job event callback function so that it can be notified when a job is created and/or destroyed within the scheduler context.
	Component	mbschd, mbschd lssched.h

254665	Date	2020-10-14
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	Description	<p>This project enhances security on Linux, including:</p> <p>Query commands now go through authentication. A new configuration parameter LSF_AUTH_QUERY_COMMANDS is introduced to in lsf.conf to make the authentication configurable.</p> <p>Enable a user to impersonate another user in TGT token, as long as the user has permission to issue the TGT token. A new configuration parameter LSB_KRB_IMPERSONATE is introduced to in lsf.conf to control this behavior.</p>
	Component	mbschd, mbschd lssched.h

251263	Date	2020-10-12
	Description	<p>This project optimizes GPU matrix collection. If LSF_GPU_RESOURCE_IGNORE=Y, LSF_GPU_AUTOCONFIG=Y, and LSB_GPU_NEW_SYNTAX=Y or extend, all built-in GPU resources are completely removed in lim, and GPU information is collected using a different method instead of using built-in GPU resources.</p>
	Component	lim lshosts lsload liblsf.a liblsf.so lsf.h lsbatch.h

258780	Date	2020-10-07
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	Description	RC plugin scales an LSF cluster up and down when deployed in a OpenShift cluster with deploying/deleting pods (LSF dynamic hosts). On-premise LSF cluster can be configured to forward its workloads to a remote cluster where RC Demand policies are configured to get extra resources from OpenShift cluster.
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		<p>ebrokerd</p> <p>resource_connector/openshift/conf/openshiftprov_config.json</p> <p>resource_connector/openshift/conf/openshiftprov_templates.json</p> <p>resource_connector/openshift/helpers/enable_lsf_rc.sh</p> <p>resource_connector/openshift/helpers/lsf_rc_role.yaml</p> <p>resource_connector/openshift/helpers/lsf_rc_role_binding.yaml</p> <p>resource_connector/openshift/helpers/lsf_rc_sa.yaml</p> <p>resource_connector/openshift/scripts/getRequestStatus.sh</p> <p>resource_connector/openshift/scripts/requestMachines.sh</p> <p>resource_connector/openshift/scripts/getAvailableTemplates.sh</p> <p>resource_connector/openshift/scripts/getReturnRequests.sh</p> <p>resource_connector/openshift/scripts/requestReturnMachines.sh</p> <p>resource_connector/openshift/lib/ocTool.jar</p> <p>resource_connector/openshift/lib/animal-sniffer-annotations-1.14.jar</p> <p>resource_connector/openshift/lib/bcpxix-jdk15on-1.61.jar</p> <p>resource_connector/openshift/lib/bcprov-ext-jdk15on-1.61.jar</p> <p>resource_connector/openshift/lib/bcprov-jdk15on-1.61.jar</p> <p>resource_connector/openshift/lib/builder-annotations-0.21.0.jar</p> <p>resource_connector/openshift/lib/checker-qual-2.0.0.jar</p> <p>resource_connector/openshift/lib/client-java-8.0.0.jar</p> <p>resource_connector/openshift/lib/client-java-api-8.0.0.jar</p> <p>resource_connector/openshift/lib/client-java-proto-8.0.0.jar</p>
	Component	

resource_connector/openshift/lib/commons-beanutils-1.9.4.jar
resource_connector/openshift/lib/commons-codec-1.11.jar
resource_connector/openshift/lib/commons-collections4-4.1.jar
resource_connector/openshift/lib/commons-compress-1.19.jar
resource_connector/openshift/lib/commons-lang3-3.7.jar
resource_connector/openshift/lib/commons-logging-1.2.jar
resource_connector/openshift/lib/error_prone_annotations-2.1.3.jar
resource_connector/openshift/lib/ezmorph-1.0.6.jar
resource_connector/openshift/lib/gson-2.8.0.jar
resource_connector/openshift/lib/gson-fire-1.8.3.jar
resource_connector/openshift/lib/guava-25.1-jre.jar
resource_connector/openshift/lib/j2objc-annotations-1.1.jar
resource_connector/openshift/lib/jackson-databind-2.10.0.jar
resource_connector/openshift/lib/jackson-annotations-2.10.0.jar
resource_connector/openshift/lib/jackson-core-2.10.0.jar
resource_connector/openshift/lib/javax.annotation-api-1.3.2.jar
resource_connector/openshift/lib/joda-convert-1.2.jar
resource_connector/openshift/lib/joda-convert-1.6.jar
resource_connector/openshift/lib/joda-time-2.9.3.jar
resource_connector/openshift/lib/jose4j-0.7.0.jar
resource_connector/openshift/lib/json-lib-2.2.3-jdk15.jar

		<p>resource_connector/openshift/lib/jsr305-3.0.2.jar</p> <p>resource_connector/openshift/lib/log4j-api-2.12.1.jar</p> <p>resource_connector/openshift/lib/log4j-core-2.12.1.jar</p> <p>resource_connector/openshift/lib/log4j-slf4j-impl-2.12.1.jar</p> <p>resource_connector/openshift/lib/logging-interceptor-3.14.3.jar</p> <p>resource_connector/openshift/lib/okhttp-3.14.3.jar</p> <p>resource_connector/openshift/lib/okio-1.17.2.jar</p> <p>resource_connector/openshift/lib/protobuf-java-3.4.0.jar</p> <p>resource_connector/openshift/lib/resourcecify-annotations-0.21.0.jar</p> <p>resource_connector/openshift/lib/slf4j-api-1.7.25.jar</p> <p>resource_connector/openshift/lib/snakeyaml-1.25.jar</p> <p>resource_connector/openshift/lib/sundr-codegen-0.21.0.jar</p> <p>resource_connector/openshift/lib/sundr-core-0.21.0.jar</p> <p>resource_connector/openshift/lib/swagger-annotations-1.5.22.jar</p>
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251221	Date	2020-10-05
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	Description	<p>RC plugin scales an LSF cluster up and down when deployed in an IBM Cloud cluster with dynamic hosts. LSF multi cluster mode with an on-prem cluster performing cloud bursting on to an LSF cluster IBM Cloud. LSF cluster on cloud auto scales based on the demand leveraging the python plugin for resource connector.</p>
	Component	<p>ebrokerd</p> <p>ibmcloudgen2/scripts/nextgen_get_status.py</p> <p>ibmcloudgen2/scripts/nextgen_get_templates.py</p> <p>ibmcloudgen2/scripts/nextgen_rc_config.py</p> <p>ibmcloudgen2/scripts/nextgen_request_machines.py</p> <p>ibmcloudgen2/scripts/nextgen_return_machines.py</p> <p>ibmcloudgen2/scripts/nextgen_return_request.py</p> <p>ibmcloudgen2/scripts/nextgen_utils.py</p> <p>ibmcloudgen2/scripts/requestMachines.sh</p> <p>ibmcloudgen2/scripts/requestReturnMachines.sh</p> <p>ibmcloudgen2/scripts/getRequestStatus.sh</p> <p>ibmcloudgen2/scripts/getAvailableTemplates.sh</p> <p>ibmcloudgen2/scripts/getReturnRequests.sh</p> <p>ibmcloudgen2/scripts/example_user_data.sh</p> <p>ibmcloudgen2/scripts/vpc_vm_dns.py</p> <p>ibmcloudgen2/conf/ibmcloudgen2_config.json</p> <p>ibmcloudgen2/conf/ibmcloudgen2_templates.json</p>

260062	Date	2020-9-29
	Description	<p>The extsched API is enhanced. A plugin can now determine if the scheduler is running in estimator mode.</p> <p>The new API is: int extsched_isEstimatorMode(void);</p>
	Component	mbatchd mbschd lssched.h

243294	Date	2020-9-29
	Description	<p>egroup performance enhancement; LSB_START_EBROKERD=Y allows a large cluster with EGROUP_UPDATE_INTERVAL to get better mbatchd daemon performance.</p>
	Component	mbatchd ebrokerd mbschd

243918	Date	2020-9-23
	Description	<p>Update existing Cyclecloud resource connector plugins to take advantage of new features. Namely:</p> <ul style="list-style-type: none"> Ability to create spot instances through configuration templates Ability to configure Cyclecloud's maximum cost parameter to ensure the instance is evicted if the instance cost exceeds a certain amount for LSF to gracefully handle a situation where a compute instance is evicted by Azure.

	Component	CycleCloudTool.jar
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254436	Date	2020-9-21
	Description	Previously, lsload -gpu -gpuload show GPU information by calling ls_loadinfo() and ls_sharerresourceinfo() to filter GPU resources information. Since GPU resource are all removed in fix 251263, lsload will call ls_gethostgpuinfo() to get hostGpuInfo directly, then display GPU information.
	Component	lim lshosts lsload liblsf.a liblsf.so lsf.h lsbatch.h

252302	Date	2020-9-21
	Description	Support PER consumers in global limits.
	Component	blimits gpolicyd mbatchd mbschd bparams

251261	Date	2020-9-21
	Description	This project enables lim collecting GPU power utilization and show it in "lsload -gpuload".
	Component	lim lshosts lsload liblsf.a liblsf.so lsf.h lsbatch.h

246063	Date	2020-9-14
	Description	This project enables users to define podman application profile and submit/execute podman container jobs.
	Component	mbatchd sbatchd res eauth bjobs battach enroot-starter.py lsfdockerlib.py lsfcontainerlib.py docker-starter.py docker-control.py docker-monitor.py

252064	Date	2020-9-10
	Description	For security considerations, daemons now control commands (start/stop/restart) for lim/res/sbatchd are moved to a separate command 'bctrlid'.
	Component	bctrlid lsadmin badmin

RFE#140171	Date	2020-9-10
	Description	This solution allows GPU jobs to be preempted by non-GPU jobs and enhances the preemption behavior between GPU jobs.
	Component	mbatchd mbschd

RFE#143647	Date	2020-8-28
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	Description	Allow more granular control of the RC_ACCOUNT parameter by allowing it to be set per job. Previously, this could only be configured per application or per queue.
	Component	bjobs bsub bhist bacct bparams mbatchd mbschd

RFE#115560	Date	2020-8-20
	Description	This project enhances RES to re-create the tmp directory if there is no job tmp directory.
	Component	Res

251210	Date	2020-8-20
	Description	Enhanced 'badmin perfmon' and 'bacct' to display scheduler efficiency with respect to slots and memory utilization.
	Component	badmin mbatchd mbschd bacct

200204	Date	2020-8-15
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	Description	The goal is to help LSF support basic features on cgroup v2, which means this project intends to support all cgroup v2 controllers as they are added to the kernel.
	Component	lim sbatchd res disable_device

RFE#140735	Date	2020-8-10
	Description	This project adds support to specify units in the bjobs -o format string for a few fields, and supports the LSB_UNIT_FOR_JOBS_DISPLAY environment variable or parameter in lsf.conf to specify the unit for bjobs -o for all supported fields.
	Component	bjobs

RFE#120924	Date	2020-7-23
	Description	This project enables lsmake to also respect the LSF_DISABLE_LSRUN parameter to refuse remote connections unless the user is either an LSF administrator or root.
	Component	lsmake res sbatchd

245961	Date	2020-6-19
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	Description	This enhancement enables LSF to support GPU DCGM rusage reports when GPU_REQ "mode=shared:j_exclusive=yes" is specified.
	Component	res sbatchd

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 10

The following enhancements have been done in LSF Version 10.1 Fix Pack 10 between 16 Oct 2019 and 10 Apr 2020:

247222	Date	2020-4-10
	Description	<p>In this security enhancement, the LSF_ROOT_REX parameter is now obsolete and no longer allows root execution privileges for jobs from local and remote hosts. Any actions that were performed with root privileges must instead be performed as the LSF administrator.</p> <p>If you need to temporarily run LSF or LSF License Scheduler commands with root privileges, specify LSF_ROOT_USER=Y in the lsfc.conf file. When you are done, you must disable this parameter to ensure that your cluster remains secure.</p>
	Component	lim res sbatchd mbatchd eauth badmin breconfig breboot lsadmin lsreconfig lslockhost lsunlockhost gpolicyd

RFE#134737	Date	2020-4-10
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	Description	This solution enables global limits for multiple clusters. It supports configured general global limits in the configuration file. Also supports global job group limit when using the LSF multicluster forward mode.
	Component	mbatchd, mbschd, gpolicyd, blimits, bparams bjobs bamin

234998	Date	2020-4-10
	Description	This solution optimizes internal logic on shared resource sync up, GPU auto-configuration, and scheduling efficiency. This solution adjusts some system defaults to give more room for responding to non-query requests from users.
	Component	mbatchd sbatchd mbschd bhosts lshosts lsload bqueues bparams. lim res

231669	Date	2020-4-8
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	Description	<p>This solution enables LSF to automatically assign a name to a Docker container when it creates the Docker container.</p> <p>To enable this feature, set the ENABLE_CONTAINER_NAME parameter to True in the lsfdockerlib.py file.</p> <p>When running a container job, specify the --name option in the options keyword configuration for LSF to assign a name to the container.</p>
	Component	docker-starter.py. docker-monitor.py. docker-control.py. lsfdockerlib.py. sbatchd. res

241590	Date	2020-4-2
	Description	This solution allows LSF to use LSF Application Center desktop client hosts as job submission hosts.
	Component	bsub

232016	Date	2020-3-31
	Description	This solution enables users to create attributes for hosts and to use these attributes for job affinity scheduling. This solution also supports affinity scheduling between jobs.
	Component	mbatchd mbschd bmod bsub bhist bhosts batrr bjobs

RFE#136544 RFE#138444	Date	2020-3-23
	Description	<p>This solution introduces new GPU options nocvd, block and gpack to the existing GPU resource requirements string (that is, the bsub -gpu command option, LSB_GPU_REQ parameter in the lsfc.conf file, and the GPU_REQ parameter in the lsbc.queues and lsbc.applications files) .</p> <p>1) When nocvd is added to the existing mps value in the GPU resource requirements string, for mps job, LSF will not set CUDA_VISIBLE_DEVICES<number>, so that LSF MPI will not set CUDA_VISIBLE_DEVICES for tasks.</p> <p>2) When block=yes, LSF distributes all the allocated GPUs of a job as blocks when the number of tasks is bigger than the requested number of GPUs.</p> <p>3) When gpack=yes, LSF packs multiple shared mode GPU jobs to allocated GPUs to reuse the shared mode GPU, instead of to allocate new idle GPUs to the jobs.</p>
	Component	mbatchd mbschd sbatchd res bsub bmod bhist bjobs

RFE#135651	Date	2020-3-27
	Description	This solution enhances lsgrun/lstrun to also respect the LSF_UGROUP_TRANSFER parameter to use the UNIX group information that is set by the user on the client side.
	Component	lsrun lsgrun res sbatchd

RFE#119533 RFE#115006	Date	2020-3-20
	Description	This solution introduces a new parameter MC_FORWARD_DELAY in lsb.queues to control job forward decisions.
	Component	mbatchd mbschd bqueues

RFE#138039 RFE#137622	Date	2020-3-19
	Description	This solution adds -C option to the bstop and bresume commands to allow user adding a reason as to why the job is being stopped or resumed. These stop or resume reasons and the related hosts appear in the bhist -l command output.
	Component	bjobs bhist bkill bstop bresume mbatchd lsbatch.h libbat.a libbat.so

RFE#118273	Date	2020-3-17
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	Description	This solution allows you to create and use files that contain job submission options in JSON and YAML formats. Once created, use the new bsub -json and -yaml command options to specify the JSON and YAML job submission files.
	Component	bsub

RFE#136927	Date	2020-3-17
	Description	This solution enables LSF to open a PAM session when submitting jobs and starting tasks (using blaunch) on Linux hosts using PAM. It also ensures that more restrictive LSF limits are enforced on hosts where PAM is enabled.
	Component	mbatchd sbatchd res bapp bqueues

RFE#138975	Date	2020-3-11
	Description	This solution allows you specify the image name of the Azure Machine Image in the LSF resource connector template for Microsoft Azure CycleCloud. This also allows you to specify versions of the image from the Azure Shared Image Gallery.
	Component	CyclecloudTool.jar

RFE#135253	Date	2020-3-3
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	Description	This solution supports EFA-enabled EC2 instances and AWS launch templates in the LSF resource connector plug-in. This solution provides flexibility to add additional AWS attributes, including EFA, to the current RC template supported features.
	Component	AwsTool.jar ebrokerd aws-java-sdk-1.11.699.jar

RFE#124224	Date	2020-2-13
	Description	This solution introduces a new bjobs -env command option to view the environment variables for the specified job and another new bjobs -script command option to view the job script.
	Component	bjobs mbatchd lsbatch.h libbat.a libbat.so

RFE#115457	Date	2020-1-31
	Description	This solution allows LSF administrators to specify multiple reasons for closing hosts by specifying lock IDs when closing the hosts. A closed host remains closed until all lock IDs are removed from the host.

	Component	mbatchd badmin bhosts lsbatch.h libbat.so libbat.a liblsbstream.so liblsbstream.a mbschd lsf.h liblsf.so liblsf.a
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225554	Date	2020-1-31
	Description	This solution introduces a new scheduling algorithm for package guarantees to improve resource utilization within the GSLA pool and includes a change to the guarantee policy query output (bresources) to make the policy easier to understand.
	Component	mbatchd, mbschd, bjobs, bhist, bresources, blimits, bsub, bparams

RFE#133199 RFE#124530	Date	2019-12-19
	Description	This solution adds a new command named "battach", which will allow users to connect to the job execution host for debugging and general connectivity.
	Component	res sbatchd, mbatchd mbschd bjobs battach lsf.h lsbatch.h libbat.a libbat.so liblsf.a liblsf.so

236332	Date	2019-12-19
	Description	This enhancement enables the bsub -K command to display the job ID after the job is finished.
	Component	nios

235545	Date	2019-12-11
	Description	This solution allows users to specify a host project ID for the LSF resource connector for Google Cloud to generate subnet and VPN values. To specify a host project ID, specify the new hostProject parameter in the googleprov_templates.json file.
	Component	GcloudTool.jar

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 9

The following enhancements have been done in LSF Version 10.1 Fix Pack 9 between 10 May 2019 and 16 Oct 2019:

RFE#132797 RFE#132887	Date	2019-10-15
	Description	This solution enhances granular secure control for bhist and bacct commands, and introduces a new level of job information control.
	Component	bhist, bacct, bparams, bjobs, mbatchd

222841	Date	2019-10-15
	Description	This solution introduces a new scheduling feature has been that allows for the placement of parallel jobs to be spread out across an allocation.
	Component	mbatchd, mbschd, bsub, bmod

231538	Date	2019-10-15
	Description	This solution allows the cluster administrator to specify the maximum number of jobs that can be dispatched in a specified number of scheduling sessions.
	Component	mbatchd mbschd schmod_dispatch-limit.so

221919	Date	2019-10-14
	Description	This solution allows LSF to hide the GPUs in a Docker job if the Docker job does not request it.
	Component	docker-starter.py

221556	Date	2019-10-14
	Description	The LSF Resource Connector (RC) uses the CycleCloud provider to cloud-burst to CycleCloud and have LSF automatically borrow hosts in CycleCloud to grow the cluster when demand is high. LSF RC releases and terminates the borrowed hosts from the CycleCloud through the CycleCloud provider when the demand is low and hosts are idle.

	<p>mbatchd mbschd lim schmod_demand.so ebrokerd</p> <p>example_hostProviders.json</p> <p>cyclecloud/conf/lsf-headless-cyclecloud.txt</p> <p>cyclecloud/conf/cyclecloudprov_config.json</p> <p>cyclecloud/conf/cyclecloudprov_templates.json</p> <p>cyclecloud/lib/commons-collections-3.2.2.jar</p> <p>cyclecloud/lib/commons-io-2.5.jar</p> <p>cyclecloud/lib/commons-lang-2.6.jar</p> <p>cyclecloud/lib/CycleCloudTool.jar</p> <p>cyclecloud/lib/jackson-annotations-2.9.8.jar</p> <p>cyclecloud/lib/jackson-databind-2.9.8.jar</p> <p>Component cyclecloud/lib/jackson-core-2.9.8.jar</p> <p>cyclecloud/lib/log4j-api-2.8.2.jar</p> <p>cyclecloud/lib/log4j-core-2.8.2.jar</p> <p>cyclecloud/lib/okhttp-3.14.1.jar</p> <p>cyclecloud/lib/okio-1.17.2.jar</p> <p>cyclecloud/scripts/getAvailableMachines.sh</p> <p>cyclecloud/scripts/getAvailableTemplates.sh</p> <p>cyclecloud/scripts/getRequestStatus.sh</p> <p>cyclecloud/scripts/getReturnRequests.sh</p> <p>cyclecloud/scripts/requestMachines.sh</p> <p>cyclecloud/scripts/requestReturnMachines.sh</p> <p>cyclecloud/scripts/user_data.sh</p>
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228174	Date	2019-10-09
	Description	This solution enhances the hostsetup script to make it more tolerant in the systemd environment.
	Component	hostsetup

RFE#131304	Date	2019-09-30
	Description	This solution allows jobs that request rusage resources to be submitted with resource distribution configuration (such as per job, per task, or per host) at the job, application, and queue level.
	Component	mbschd, mbatchd, bld, bsub

RFE#117508	Date	2019-09-30
	Description	This enhancement improves the performance of job submission involving data requirements that cannot be directly accessed from the submission host.
	Component	bsub, bmod, bhist, bjobs, mbatchd, bdata, bstage, and dmd dm_stagein_transfer.sh and dm_stageout_transfer.sh

231386	Date	2019-09-30
	Description	<p>The LSF connector for Kubernetes allows LSF to schedule Kubernetes pods according to LSF scheduling policies. Advanced LSF GPU policies like topology awareness and NVlink scheduling can be used for Kubernetes pods. LSF native workloads can be scheduled on the same set of hosts as containerized workloads. A new Kubernetes pod controller is provided that allows co-scheduling of static or elastic containerized workloads.</p>
	Component	<p>mbatchd mbschd sbatchd lim bsub bmod brun bresize brequeue bkill bstop bresume blimits bpost bread bmig badmin bparams bswitch bjobs kubebri dge parallelJob-controller batch-driver 10.1/misc/kubernetes: create-lsf-k8s-config.sh example-template.yaml parallelJob-v1alpha1.yaml lsb.paralleljobs</p>

213543	Date	2019-09-27
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	Description	This project supports adding hosts with memory larger than 2TB to the cluster.
	Component	mbatchd mbschd lim res sbatchd vemkd bhosts bacct bhist blimits bparams bconf bjobs bapp bsub bmod lload lshosts bqueues egosh lsf.h lsbatch.h liblsbstream.a liblsbstream.so libbat.a libbat.so liblsf.a liblsf.so libfairshareadjust.so schmod_jobweight.so

RFE#129249	Date	2019-09-27
	Description	This solution supports configure EXEC_DRIVER, CONTAINER and DOCKER_IMAGE_AFFINITY on lsb.queues.
	Component	mbatchd mbschd sbatchd bqueues

209150	Date	2019-09-26
	Description	This solution enhances the bjobs/bacct/bhist/bhost to query energy/gpfs io/accounting information from LSF Explorer with HTTPS
	Component	bhist bacct bjobs bhosts

223676

Date

2019-09-18

	Description	<p>In previous versions of LSF, when specifying GPU resource requirements at multiple levels (that is, at the job level with the bsub -gpu command option, the application or queue level with the GPU_REQ parameter in the lsb.applications or lsb.queues files, or the cluster level with the LSB_GPU_REQ parameter in the lsf.conf file), the entire GPU requirement string overrides the GPU requirement strings at the lower levels of precedence. Even if an individual option is not specified in the higher level GPU requirement string, the default value of the higher level GPU requirement string takes precedence.</p> <p>This solution allows you to merge all individual options in GPU requirement strings separately. Any specified options override the any options that are specified at the lower levels of precedence. If an individual option is not specified, but is explicitly specified at a lower level, then the highest level for which the option is specified takes precedence. To enable this feature, specify the new parameter GPU_REQ_MERGE=Y in the lsb.params file. In addition, LSB_GPU_NEW_SYNTAX=extend must be defined in the lsf.conf file to enable the GPU_REQ_MERGE parameter.</p>
	Component	bparams mbatchd mbschd

198148	Date	2019-09-16
	Description	This solution enhances busers output to show the user-specified information including GPU allocation information.
	Component	busers mbatchd mbschd

214893	Date	2019-09-06
	Description	<p>This solution enhances LSF for RC Azure plugin:</p> <ol style="list-style-type: none">1. Fixed an issue with an instance creation failure if "userData" is not set in templates.2. Support the "TRACE" log level.3. Be able to delete instances left over on the cloud after a timeout.4. Add a log to check if vNet, subnet, security groups, images exist in the resource group on cloud.

		aws/lib/AwsTool.jar azure/lib/AzureTool.jar google/lib/GcloudTool.jar softlayer/lib/SoftLayerTool.jar aws/scripts/getAvailableMachines.sh aws/scripts/getAvailableTemplates.sh aws/scripts/getRequestStatus.sh aws/scripts/getReturnRequests.sh aws/scripts/requestMachines.sh aws/scripts/requestReturnMachines.sh aws/scripts/user_data.sh azure/scripts/getAvailableTemplates.sh azure/scripts/getRequestStatus.sh azure/scripts/getReturnRequests.sh azure/scripts/requestMachines.sh Component azure/scripts/requestReturnMachines.sh azure/scripts/user_data.sh google/scripts/getAvailableMachines.sh google/scripts/getAvailableTemplates.sh google/scripts/getRequestStatus.sh google/scripts/getReturnRequests.sh google/scripts/requestMachines.sh google/scripts/requestReturnMachines.sh google/scripts/user_data.sh softlayer/scripts/postprovision.sh softlayer/scripts/getAvailableTemplates.sh softlayer/scripts/getRequestStatus.sh softlayer/scripts/requestMachines.sh softlayer/scripts/requestReturnMachines.sh
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RFE#128610	Date	2019-08-29
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	Description	This solution adds a new field "ask_hosts" into bjobs -o to display the asked host list specified by bsub -m.
	Component	mbatchd bjobs mbschd

227903	Date	2019-08-27
	Description	This solution enables the main mbatchd daemon to directly handle bread/bstatus command requests, instead of forking a child to handle these requests.
	Component	mbatchd mbschd

216048	Date	2019-08-20
	Description	This solution enables LSF to give preference for execution hosts that already have the requested Docker image when scheduling Docker-based containerized jobs.
	Component	bsub bapp bparams lim mbatchd mbschd lsf.h lsbatch.h liblsbstream.a liblsbstream.so libbat.a libbat.so liblsf.a liblsf.so libfairshareadjust.so schmod_jobweight.so

RFE#125752	Date	2019-08-19
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	Description	This solution allows you to share an NVIDIA Multi-Process Service (MPS) daemon for multiple GPU jobs if they are submitted by the same user with the same resource requirements.
	Component	bhist bjobs bmod bsub mbatchd mbschd res sbatchd

RFE#126118	Date	2019-08-19
	Description	This solution enhances the time based configuration to allow the configuration of time zones with the time.
	Component	mbatchd mbschd

RFE#126318	Date	2019-08-18
	Description	This solution extends the -M option of bsub and bmod to opt out of the smart memory limit. The job will be killed immediately when it reaches memory limit.
	Component	bsub bmod bjobs bhist mbatchd sbatchd

RFE#132828	Date	2019-08-18
	Description	This solution allows you to specify "0" for the swap threshold in the LSB_MEMLIMIT_ENF_CONTROL parameter to eliminate swap as a factor in the threshold definition.
	Component	bsub bmod bjobs bhist mbatchd sbatchd

218953	Date	2019-08-13
	Description	This solution addresses performance issues for short Docker jobs in LSF clusters.
	Component	sbatchd res docker-starter.py docker-control.py docker-monitor.py lsfdockerlib.py

RFE#131371	Date	2019-08-07
	Description	This solution introduces a new option -Ne for bsub, bmod, and brestart to let LSF just send mail when job under Exit status. This solution also extends LSB_JOB_REPORT_MAIL to support "ERROR" which is same as specified -Ne.
	Component	bsub bhist bmod bjobs brestart mbatchd sbatchd lsbatch.h libbat.a ibbat.so liblsbstream.a liblsbstream.so

226014	Date	2019-07-23
	Description	This solution adds a port check tool to check and list ports in LSF that are in use before installation or while the LSF processes are up and running. The tool only checks ports on the host for availability, it will discover the ports through reading of the configuration files.

	Component	lsmail, lspportcheck
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214892	Date	2019-06-25
	Description	This solution enhances the AWS plugin to be able to delete instances left over on the cloud after timeout.

	Component	<p>aws/lib/AwsTool.jar azure/lib/AzureTool.jar</p> <p>google/lib/GcloudTool.jar softlayer/lib/SoftLayerTool.jar</p> <p>aws/scripts/getAvailableMachines.sh</p> <p>aws/scripts/getAvailableTemplates.sh</p> <p>aws/scripts/getRequestStatus.sh aws/scripts/getReturnRequests.sh</p> <p>aws/scripts/requestMachines.sh</p> <p>aws/scripts/requestReturnMachines.sh</p> <p>aws/scripts/user_data.sh azure/scripts/getAvailableTemplates.sh</p> <p>azure/scripts/getRequestStatus.sh</p> <p>azure/scripts/getReturnRequests.sh</p> <p>azure/scripts/requestMachines.sh</p> <p>azure/scripts/requestReturnMachines.sh</p> <p>azure/scripts/user_data.sh google/scripts/getAvailableMachines.sh</p> <p>google/scripts/getAvailableTemplates.sh</p> <p>google/scripts/getRequestStatus.sh</p> <p>google/scripts/getReturnRequests.sh</p> <p>google/scripts/requestMachines.sh</p> <p>google/scripts/requestReturnMachines.sh</p> <p>google/scripts/user_data.sh</p> <p>softlayer/scripts/getAvailableTemplates.sh</p> <p>softlayer/scripts/getRequestStatus.sh</p> <p>softlayer/scripts/postprovision.sh</p> <p>softlayer/scripts/requestMachines.sh</p> <p>softlayer/scripts/requestReturnMachines.sh</p>
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213280	Date	2019-06-17
	Description	This solution supports application limits in the limit section of the lsb.resources configuration file.
	Component	bconf blimits bjobs bresources mbd mbschd

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 8

The following enhancements have been done in LSF Version 10.1 Fix Pack 8 between 18

December 2018 and 10 May 2019:

215902	Date	2019-5-7
	Description	This solution enhances the LSF resource connector to be more fault tolerant. Allows CLOSED_RC hosts to be switched to ok more quickly, resulting in less wasted resources. InstanceID, cluster name and template name are added to host local resources for more accurate information and better tracking. InstanceID is added to job finish event in lsb.acct.

	Component	ebrokerd mbatchd bhosts all google jar, all azure jar, all softlayer jar, all aws jar files aws/scripts/user_data.sh azure/scripts/user_data.sh google/scripts/user_data.sh softlayer/scripts/postprovision.sh
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RFE#124185	Date	2019-5-7
	Description	This enhancement allows LSF administrators to use bconf to configure guarantee service classes.
	Component	mbschd mbatchd bconf

205560	Date	2019-5-1
	Description	This enhancement enables the bjobs -plan command option to display the planner's predicted start and finish time for jobs.
	Component	bjobs

212310	Date	2019-4-30
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	Description	This solution enables LSF to use the watchdog feature to regularly run external scripts that check application data, logs, and other information. LSF can use these scripts to pass on the job information.
	Component	mbatchd sbatchd bapp bpost bread bhist lsbatch.h liblsf.a liblsf.so libbat.a libbat.so liblsbstream.a liblsbstream.so

RFE#128967	Date	2019-4-27
	Description	This enhancement allows a user to exclude a fairshare user group from being associated with a job. This is done using the bsub -G "~group_name" command option. When a fairshare group is excluded, the job is charged against a path excluding the usergroup and its descendants (user group's subtree).
	Component	bsub bmod bjobs mbschd mbatchd

212129	Date	2019-4-26
	Description	This enhancement adds a new badmin rc subcommand to provide detailed information about resource connector's API errors, templates, policies, current host status and instances.
	Component	mbatchd ebrokerd, mbschd badmin, all google jar, all azure jar, all softlayer jar, all aws jar files

RFE#130360	Date	2019-4-23
	Description	This solution includes an updated Docker execution driver to enable users to run an entry point based Docker job (for example, to run a Docker job with docker image mgibio/samtools:1.9).
	Component	sbatchd res docker-starter.py

214891	Date	2019-4-23
	Description	This fix enhances the Google provider plugin to synchronize hosts between LSF and the cloud.
	Component	GcloudTool.jar getReturnRequests.sh ebrokerd

RFE#128579	Date	2019-4-19
	Description	This enhancement adds pre-execution start time for jobs that have pre-execution processes. When job done, the mbatchd records the start time in JOB_FINISH event.
	Component	mbatchd bacct liblsbstream.a liblsbstream.so

218064	Date	2019-4-16
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	Description	This enhancement enables users to configure timeout values for each host provider. The default value is 10 minutes. If an RC host does not join the LSF cluster within the configured timeout value, the host is relinquished.
	Component	ebrokerd mbatchd

216311	Date	2019-4-2
	Description	This enhancement allows LSF to handle bread/bstatus requests in the query mbatchd and supports multi-threaded querying when LSB_QUERY_ENH=Y. If LSB_QUERY_ENH=N or the bread '-a' command option is run (requiring data transfer), the main mbatchd will fork a child to handle the query request.
	Component	mbatchd bread bstatus

RFE#124587	Date	2019-3-31
	Description	This enhancement allows users to submit a job with over 2048G memory limit regardless if LSF_UNIT_FOR_LIMITS is set or not. The swap limit, core file size limit, stack limit, data segment size limit, and file size limit are also extended to 64bit.

	Component	mbatchd mbschd sbatchd lim res pim pam TaskStarter bsub bmod bjobs bhist bacct bapps bqueues lsbatch.h lsf.h libbat.a liblsf.a liblsbstream.a libbat.so liblsf.so liblsbstream.so
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RFE#125752	Date	2019-3-29
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	Description	<p>LSF has the keyword for bsub -gpu "mps=yes", which only starts one MPS control daemon on each host of a job. This enhancement introduces additional mps options that allow LSF to create more daemons for GPU jobs to use.</p> <p>1) mps=per_socket: Creates MPS daemons for the GPU job per socket. If the job allocates multiple GPUs on a particular host and the GPU is located at a different socket, LSF creates one MPS control daemon for each socket on this host.</p> <p>2) mps=per_gpu: Creates MPS daemons for the GPU job per GPU. If the job allocates multiple GPUs on a particular host, LSF creates one MPS control daemon for each GPU on this host.</p>
	Component	mbatchd sbatchd res bjobs bhist bsub bmod

RFE#127198	Date	2019-3-22
	Description	This enhancement adds "aff=no" to the bsub -gpu option to relax GPU affinity while maintaining CPU affinity.
	Component	mbatchd, mbschd, bsub bmod

210323	Date	2019-3-21
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	Description	This enhancement enables LSF to try a different template when AWS returns certain server API errors for a template (for example, not enough instances are available for the requested VM type), and the LSF resource connector will not generate demand on that template for a configurable time period.
	Component	ebrokerd mbatchd mbschd schmod_demand.so

210884	Date	2019-3-17
	Description	This enhancement resolves an MPS job race condition problem that, if more than one MPS job is submitted, GPU jobs exit immediately due to the last running jobs' MPS daemons not being cleaned.
	Component	sbd res

212409	Date	2019-2-25
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	Description	<p>This enhancement enables lim and elim.gpu.topology to detect the GPU properly on hosts that have two sibling GPUs under one PCI, where the first GPU is not an Nvidia GPU, but the second GPU is an Nvidia GPU.</p> <p>Note: For the LSF resource connector on AWS, you must apply this patch to both the LSF master and LSF slave GPU instances, create an updated image, then use the new AMI ID to borrow the GPU instance from AWS.</p>
	Component	lim elim.gpu.topology elim.gpu.topology.c

211899	Date	2019-2-11
	Description	<p>This enhancement follows the official Azure documentation for http/https proxy by calling the API from Azure native library instead of Java system library. This is transparent to end user.</p>
	Component	All azure jar, and all azure RC scripts

211403	Date	2019-2-11
	Description	<p>This enhancement modifies how the scheduler sorts candidate host groups when multiple templates are defined in RC. Originally the order of these groups was undefined. They are now sorted based on template priority.</p> <p>Note: The template priority is determined from the first host within the candidate host group.</p>

	Component	schmod_demad.so
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212358	Date	2019-1-30
	Description	This fix prevents LSF from being vulnerable to security risks in 3rd party components.
	Component	All azure jar, all azure jar, all google jar and all softlayer jar.

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 7

The following enhancements have been done in LSF Version 10.1 Fix Pack 7 between 24

May 2018 and 18 Dec 2018:

192888	Date	2018-12-10
	Description	LSF GPU jobs now support preemptive scheduling so that a lower priority GPU job can release GPU resources for higher priority GPU jobs. GPU jobs must be either using exclusive_process mode or have j_exclusive=yes set to be preempted by other GPU jobs. Non-GPU jobs cannot preempt GPU jobs.
	Component	mbatchd mbschd

199251	Date	2018-12-5
	Description	This fix offers a new tool "bimages" to help users get information on Docker images and containers in the LSF environment. This fix adds two new parameters into Isf.conf: LSF_IMAGE_INFO_PUBLISH_INTERVAL and LSF_IMAGE_INFO_EXPIRE_INTERVAL.
	Component	bsub, bmod, lim, mbatchd, bimages

196013	Date	2018-12-4
	Description	This enhancement adds one more factor in the formula for GPU runtime (GPU_RUN_TIME_FACTOR).
	Component	mbatchd mbschd bqueues bhpart bmod bparams

RFE#104547	Date	2018-11-30
	Description	The solution enhances the bjobs -o option to show the total number of requested slots for jobs by specifying the nreq_slot field.
	Component	bjobs mbatchd

196533	Date	2018-11-30
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	Description	<p>This solution introduces a new parameter KILL_JOBS_OVER_RUNLIMIT in the lsb.params file, which enables mbatchd to kill jobs that run over the defined RUNLIMIT for a long period of time.</p>
	Component	mbatchd mbschd sbatchd res bparams bjobs bhist

196222	Date	2018-11-29
	Description	<p>LSF now supports the backfill of direct data staging jobs that use the burst buffer but do not require LSF to handle the file transfer. That is, LSF manages the storage (burst buffer), but the job itself handles the file transfer. Since LSF is not handling the file transfer, LSF creates plans for the data staging jobs and reserves the necessary resources to prevent other jobs from using the resources.</p>

	Component	mbatchd mbschd
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RFE#119940	Date	2018-05-10
	Description	This enhancement extends the LSF compute unit functionality to support a bestfit sorting option. This policy (pref=bestfit) places a job to span across as few CUs as possible, while using already occupied CUs to avoid fragmentation. In multi-level CU hierarchy, LSF first finds the highest CU level that contains a job in a single CU. Furthermore, LSF tries to refine the allocation from the top level to the lowest level by grouping CUs by minimum availability while using as few CUs as possible.
	Component	mbatchd mbschd

198147	Date	2018-11-26
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	Description	<p>This enhancement adds four new fields about GPU information for the <code>bjobs -o</code> command when <code>LSB_GPU_NEW_SYNTAX=extend</code> is defined in <code>lsf.conf</code>:</p> <ol style="list-style-type: none"> 1. <code>gpu_num</code>: The number of physical GPUs that the jobs are using. 2. <code>gpu_mode</code>: The compute mode that the jobs are using (shared or <code>exclusive_process</code>). 3. <code>gpu_alloc</code>: Job-based GPU allocation information. 4. <code>j_exclusive</code>: Whether the job requested exclusive GPUs (yes or no).
	Component	bjobs mbatchd

197721	Date	2018-11-24
	Description	The solution enhances LSF security of authorizing user credentials to prevent attacking by preloading getuid function. It addresses CVE-2018-1724.
	Component	<p>badmin eauth.cve ladmin mbatchd res sbatchd bsub bmod hostsetup lim mbschd pim bmgrou bstatus bmig bstop bmod bapp lseligible lsreconfig lsreghost lsrestart bapp lsrtasks bswitch lsfsshutdown lsrn bparams btop bbot bpeek bugroup bchkpnt bpost busers bclusters lsstartup bconf bqueues bread lsgrun bgadd lshosts bgbroker breconfig egoconfig lsid bgdel brequeue egoenv lsinfo bgmod bresize egoexec lsload bgpinfo bresources lsloadadj bhist brestart egosh lslockhost bhosts bresume lslogin bhpart brlainfo bjdepinf brsvadd bjgroup brsvdel bjobs brsvmod bkill brsvs lsacct lsmon blaunch blimits bsia ladmin bmg bslots lsclusters lsrcp nios melim ego_client egosc libbat.a libbat.so liblsf.a liblsf.so lsbatch.h lsf.h</p>

205706	Date	2018-11-15
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	Description	This enhancement adds one field EXIT_REASON in 'bjobs -l -pac' to display exit reason of jobs. .
	Component	bjobs mbatchd

196131	Date	2018-11-12
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	Description	<p>This enhancement includes four enhancements for a flexible control of advance reservation (AR) and its jobs.</p> <p>1. Force delete of an AR:</p> <p>brsvdel '-f' option is introduced to force delete an AR with jobs in it. The AR jobs would be suspended and treated as regular jobs. If this is enabled, the AR running jobs are not suspended and continue running as regular jobs once the AR is force deleted.</p> <p>2. AR creation on the available hosts defined by the parameter 'AR_AVAILABLE_STATUS':</p> <p>AR_AVAILABLE_STATUS is introduced in lsb.params with default available batch statuses like ok, closed_Wind, closed_Busy, closed_Full. This allows the user to create an AR on available hosts based on their batch status.</p> <p>3. Ineligible pending of AR jobs when they are expected to run past the AR end time.</p> <p>When enabled, LSF does not dispatch the AR jobs if their estimated runtime or runlimit exceeds the AR end time.</p> <p>4. User ACL check at AR job dispatch:</p> <p>Ineligible pending of AR jobs when the submission user/usergroup does not have access permissions to the AR anymore.</p>
	Component	mbschd mbatchd brsvdel bparams bjobs

187277	Date	2018-11-08
	Description	<p>This solution supports Variable Use licensing for dynamic compute workloads that extend to the cloud, enabling you to optimize cloud-based resource usage with cost-effective pay-as-you-go licensing.</p> <p>With this enhancement, administrators can configure their IBM Spectrum LSF cluster to upload CPU core, CPU socket, GPU socket, and host count through an external load index monitor (ELIM) to a metering service in IBM Cloud Private 3.1. They can then audit IBM Spectrum LSF resource usage from the metering dashboard in IBM Cloud Private.</p>
	Component	elim.icp.uploader

196963	Date	2018-10-30
	Description	<p>If enabled, this solution allows you to use the bsub command to load, parse, and run job script files directly from the command line.</p> <p>Submit a job with the job script as a command. The job script must be an ASCII text file and not a binary file.</p>
	Component	bsub mbatchd sbatchd

124587	Date	2018-10-30
	Description	This solution changes how fairshare is calculated in APS. The previous APS algorithm was a bug because it did not compare the leaf nodes of a fairshare tree in any meaningful way. This frequently resulted in the wrong user being selected. After applying this fix LSF chooses the correct user based off its fairshare values and displays a normalized value for each fairshare user that can be used to determine the magnitude of a user's priority over another.
	Component	mbatchd mbschd

203825	Date	2018-10-29
	Description	This enhancement adds an alias to JOBS_PER_SCHED_CYCLE, so that the keyword ELIGIBLE_PEND_JOBS matches closer to the actual function of the parameter.
	Component	blimits mbatchd

RFE#123214	Date	2018-10-26
	Description	<p>This solution introduces the new <code>-o</code> and <code>-json</code> command option for <code>lshosts</code>. This allows you to create a specific output format, allowing you to easily parse the information by using custom scripts or to display the information in a predefined format.</p> <p>You can also specify the default output formatting of the <code>lshosts</code> command by specifying the <code>LSF_LSHOSTS_FORMAT</code> parameter in the <code>lsf.conf</code> file, or by specifying the <code>LSF_LSHOSTS_FORMAT</code> environment variable.</p>
	Component	<code>lshosts</code>

196224	Date	2018-10-05
	Description	<p>This solution allows jobs with affinity requirements to trigger resource connector demand, fixing the indefinite hang from unknown topology information.</p>
	Component	<code>mbschd schmod_demand.so daemonlists.tbl</code>

RFE#100524	Date	2018-09-30
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	Description	This enhancement allows egroups to update host groups dynamically at an interval specified by the EGROUPE_UPDATE_INTERVAL parameter in hours, or in minutes by specifying 'm' suffix.
	Component	mbatchd, mbschd, bparams

191834	Date	2018-09-27
	Description	LSF resource connector now allows LSF to create instances with GPU resources. This solution allows LSF to run GPU jobs on supported host providers. When using Google Cloud as the host provider, you can also define the specific type and number of GPUs for the instance.
	Component	mbd mbschd ebrokerd GcloudTool.jar

RFE#115280	Date	2018-09-20
	Description	This enhancement adds the ability for the output of 'badmin perfmon view' to be in JSON forma.
	Component	badmin

RFE#98241	Date	2018-08-31
	Description	This enhancement provides the exit codes of commands invoked by the blaunch command when other commands fail and blaunch exits.
	Component	blaunch nios

196281	Date	2018-08-30
	Description	When enabling the new GPU syntax (LSB_GPU_NEW_SYNTAX=Y extend), LSF does not support a general GPU number limit to limit the number of ngpus_physical resources. This fix adds support for a limit on the ngpus_physical resource.
	Component	blimit mbatchd mbschd

196281	Date	2018-08-30
	Description	In this solution, a new option "-C" in the bkill command allows users to add a reason when killing a job or job array. The kill reason is shown in the bjobs -l, bhist -l, and bjobs -o "kill_reason" commands.
	Component	mbatchd bkill bjobs bhist lsbatch.h lsf.h libbat.a libbat.so liblsf.a liblsf.so liblsbstream.a liblsbstream.so

RFE#117826	Date	2018-08-08
	Description	<p>This solution allows the bsla command to display guarantee used hosts for every guarantee SLA.</p> <p>It introduces the new parameter LSB_GSLA_DISPLAY_ALLOC_HOSTS in the lsf.conf file to enable LSF to decide whether or not display the guarantee used hosts.</p>
	Component	bsla mbatchd mbschd

RFE#103091	Date	2018-08-02
	Description	<p>This enhancement introduces a new configuration parameter INELIGIBLE to the Limit section of the ls.resources file.</p> <p>If this is enabled and the job has a main limit pending reason due to this limit, the LSF scheduler puts the job into ineligible pending state. LSF calculates ineligible pending time for this job and the job's priority does not increase.</p>
	Component	mbatchd mbschd

RFE#117832	Date	2018-07-26
	Description	<p>This solution introduces a new parameter ADMINISTRATORS in GuaranteedResourcePool in the ls.resources file, which allows the administrator to manage the corresponding GuaranteedResourcePool by using the bconf command.</p>

	Component	mbatchd mbschd bkill bjobs bhist bresources bsln lsbatch.h lsfn libbat.a libbat.so liblsf.a liblsf.so liblsbstream.a liblsbstream.so
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196751	Date	2018-07-26
	Description	In this solution, a new parameter, LSB_UPDATE_CONTAINER_IMAGE is introduced in the lsfn.conf file. If this parameter is defined, LSF updates the docker image before execution.
	Component	docker-starter.py

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 6

The following enhancements have been done in LSF Version 10.1 Fix Pack 6 between 27

March 2018 and 24 May 2018:

RFE#94529	Date	2018-05-10
	Description	This enhancement increases the maximum length of the project name from 59 to 511 characters.
	Component	mbatchd sbatchd mbschd bjobs bsub bhist bmod bparams bconf bacct blimits bresources brestart

174585	Date	2018-05-04
174584		

	Description	<ul style="list-style-type: none"> ● Simplify the GPU resource requirement by adding a new option -gpu for bsub and also support GPU_REQ at app/queue level, LSF_GPU_REQ at cluster level. ● Add the new parameter LSB_GPU_NEW_SYNTAX which control whether can use the new syntax ● Support dynamic mode switching for GPU compute mode. ● Refine the GPU resource release mechanism. ● Add environment variable CUDA_VISIBLE_DEVICES to host-based pre proc. ● Support set CUDA_MPS_PIPE_DIRECTORY to shared directory. ● Remove CUDA call in LSF. ● Separate the physical GPUs allocated to different MPI tasks using CUDA_VISIBLE_DEVICES environmental variables. ● Support CPU-GPU affinity, choose GPUs close to the allocated CPUs for the same task using best-effort policy. ● Support cluster-wide, queue, application and job level GPU resource requirement. <p>Add a new parameter to control the new syntax for GPU resource requirement:</p> <p>LSB_GPU_NEW_SYNTAX = Y N extend</p> <p>Default</p> <p>N.</p>
	Component	<p>mbatchd sbatchd lim mbschd res bsub bmod bjobs bhist bacct</p> <p>bhosts lshosts brestart badmin lsadmin linfo melim lsload</p> <p>elim.gpu elim.gpu.topology elim.gpu.ext</p>

159700	Date	2018-04-20
	Description	<p>This solution enhances the LSF daemons to generate a cluster-wide DNS host cache to improve cluster startup performance.</p> <p>Set the LSF_DNS_CACHE parameter to Y in lsf.conf to enable this feature.</p> <ul style="list-style-type: none"> - LSF daemons use the shared DNS host cache file to reduce the number of times that LSF daemons directly call the DNS server. - For shared installation, the master LIM creates the DNS host cache file \$LSF_ENVDIR/.hosts.dnscache. Every 24 hours, the mbatchd daemon flushes local host cache information into the DNS host cache file. - For non-shared installation, LIM creates the DNS host cache file \$LSF_TMPDIR/.hosts.dnscache. Every 24 hours LIM flushes local host cache information into the DNS host cache file. - When the IP address or hostname is changed on the DNS server side, LSF daemons can directly call the DNS server to obtain the updated information and automatically flush the DNS host cache file with the updated information.
	Component	lim, mbatchd, sbatchd, res, mbschd pim pam, lsadmin, badmin, TaskStarter

177448	Date	2018-04-10
	Description	This enhancement integrates LSF with LSF Explorer for IBM Spectrum Scale disk I/O accounting.
	Component	mbatchd, bjobs, badmin, bacct

157078	Date	2018-03-25
	Description	Extend resource connector policy and enforce it through demand calculation; support template priority; support AWS dedicated instance; create an AWS instance with user tags.
	Component	schmod_demand.so resource_connector/policy/Main.py resource_connector/aws/lib/AwsTool.jar resource_connector/aws/lib/aws-java-sdk-1.11.323.jar resource_connector/azure/lib/AzureTool.jar resource_connector/softlayer/lib/SoftLayerTool.jar resource_connector/ego/scripts/Main.py ebrokerd

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 5

The following enhancements have been done in LSF Version 10.1 Fix Pack 5 between 20 November 2017 and 27 March 2018:

177419	Date	2018-03-26
	Description	Support direct data staging method based on job resource plan; data stage in and out processes are managed by transfer jobs, which can run without job resources.

	Component	bsub bmod bqueues bparams bread bslot bhist bacct bapp bpost bjobs badmin schmod_csm.so, mbschd schmod_bluegene.so schmod_cpuset.so schmod_craylinux.so schmod_crayx1.so schmod_csm.so schmod_dc.so schmod_de mand.so schmod_dist.so schmod_jobweight.so schmod_pset.so schmod_rms.so schmod_xl.so mbatchd rla sbatchd lsbatch.h, libbat.a, libbat.so, liblsf.a, liblsf.so
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RFE#110114 RFE#109028	Date	2018-03-26
	Description	Addresses several issues with the current reservation feature in LSF. Instead of looking only at current resource availability, the scheduler plans job placements into the near future. Reservations are based on these planned allocations.
	Component	bjobs mbatchd mbschd schmod_aps.so busers bugroup bconf bapp

187887	Date	2018-03-26
	Description	Integration with CSM (Cluster System Management).

	Component	lim mbatchd sbatchd mbschd schmod_csm.so rla bsub bmod bjobs bhist bacct bapp bqueues bugroup brsvadd brsvmod blimits bconf bpost bread
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RFE#97012	Date	2018-03-22
	Description	This enhancement adds one parameter LSF_UDP_PORT_RANGE in lsf.conf to define the UDP port range used by LSF daemons.
	Component	res lim mbatchd sbatchd mbschd

RFE#114548	Date	2018-03-20
	Description	When creating custom pending reasons, a user can only use the pending reason IDs that are pre-defined in the lsbatch.h file, which uses IDs 0 - 20000. If the reason ID is larger than 20000, LSF returns an error. This fix removes this limitation and allows the use of reason IDs between 20001 - 25000. This range of reason IDs are reserved for the end user.
	Component	mbatchd, bjobs

RFE#101408	Date	2018-03-09
	Description	This enhancement allows advance reservations to support the "same" keyword in resource requirement strings when adding or modifying advance reservations with the brsvadd or brsvmod commands.
	Component	mbatchd

178285	Date	2018-03-05
	Description	Adds a new option "-u" to btop and bbot commands in this enhancement. It allows LSF administrators to move the job as if the command was invoked by the user who owns the job.
	Component	bhist btop bbot

RFE#110972	Date	2018-02-28
	Description	This fix adds the support for default ebsub scripts, similar to the behavior of default esub scripts.
	Component	mesub bsub bmod brestart

119110	Date	2018-02-01
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	Description	Support an extendable run limit policy on jobs. When a job is dispatched, it is assigned a soft run limit. Whenever the soft run limit is hit, it may be extended if the job's resources are not needed by other jobs.
	Component	mbatchd bparams bconf eadmin

RFE#98754	Date	2018-01-24
	Description	This fix adds a new "-a" option to the blimits command to show all limit information in a vertical tabular format.
	Component	blimits

RFE#112115	Date	2018-01-23
	Description	In this solution, the #include directive can be placed anywhere in the configuration file and is not limited to the head of the configuration file. This solution also enhances LSF to allow the configuration files to use the #include directive: lsb.users, lsb.queueues, lsb.hosts, lsb.resources, lsb.reasons, lsb.applications.
	Component	mbatchd

RFE#100797	Date	2018-01-18
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	Description	<p>This enhancement provides a method to prevent certain users' or user groups' jobs from being forwarded to an execution cluster, and to set the limit on the submission cluster.</p> <p>In LSF, jobs that are to be forwarded to a remote cluster must be submitted to a queue that has the "SNDJOBS_TO" parameter configured. To set forward user limits, this enhancement introduces the FWD_USERS parameter in lsb.queues to define which users/groups can forward jobs in this queue. The syntax of the FWD_USERS parameter is similar to the syntax of the USERS parameter.</p>
	Component	mbschd bsub bjobs bqueues bmod bswitch bconf

RFE#91419	Date	2018-01-18
	Description	<p>This fix enables jobs in the execution side to use the UNIX group information that is set by the user on the client side.</p> <p>This fix introduces a new parameter LSF_UGROUP_TRANSFER that enables users to specify a supplementary group from the client side. When set to "Y y", users can specify the UNIX group for job execution. Users can specify a maximum of 16 supplementary UNIX groups. If more than 16 groups are set, only the first 16 groups are used. When using the LSF multicluster capability, you must set this parameter to Y y on each cluster.</p>
	Component	mbatchd bsub bhist sbatchd res

RFE#113602	Date	2018-01-18
	Description	This fix enables interactive jobs to also apply pending reason level like "bjobs -p" if LSB_BJOBS_PENDREASON_LEVEL is enabled in lsf.conf.
	Component	nios

RFE#111403	Date	2018-01-18
	Description	This fix enables interactive jobs to show exit reasons when the jobs are killed due to conditions such as reaching memory or runtime limit. The exit reason is same as the message in the output of the "bhist -l" and "bjobs -l" commands.
	Component	res nios

169117	Date	2017-12-12
	Description	The -l option of the bjobs, bqueues, and bhosts commands have a "scheduling parameters" section in the output that display load thresholds on various resources. This fix ensures that the -l option does not display non-system load thresholds to reduce the amount of irrelevant information when these commands are run.
	Component	bjobs, bqueues, bhosts

62562	Date	2017-11-30
	Description	<p>With this enhancement, you can set additional priority factors for LSF to calculate the job priority for absolute priority scheduling (APS). These additional priority factors allow you to modify the priority for the application profile, submission user, or user group, which are all used as factors in the APS calculation. You can also view the APS and fairshare user priority values for pending jobs by <code>bjobs -prio</code>.</p> <p>To set the priority factor for an application profile, define the <code>PRIORITY</code> parameter in the <code>lsb.applications</code> file. To set the priority factor for a user or user group, define the <code>PRIORITY</code> parameter in the <code>User</code> or <code>UserGroup</code> section of the <code>lsb.users</code> file.</p>
	Component	<code>bjobs mbatchd mbschd schmod_aps.so busers bugroup bconf bapp</code>

57789	Date	2017-11-30
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	Description	Support limits on the number of jobs that will be considered by the scheduler (for example, look at only the top 10 jobs in a queue). If these jobs cannot run, LSF does not consider any lower priority jobs in the queue.
	Component	bconf mbatchd mbschd blimits bjobs.

63292	Date	2017-11-29
	Description	RATS and SLURM databases are used as a central place to set resource allocation policies (for example, limits and cluster shares), and LSF enforces these limit policies. This solution enhances LSF to allow for a smoother integration with these components.
	Component	mbatchd bparams bconf eadmin

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 4

The following enhancements have been done in LSF Version 10.1 Fix Pack 4 between 06 July 2017 and 20 November 2017:

RFE#108771		
RFE#109259	Date	2017-11-19
132199		
	Description	<p>Extend LSF Resource Connector AWS template to specify an Amazon EBS-Optimized instance.</p> <p>Extend LSF Resource Connector template to support LSF exclusive resource syntax (!resource) in the instance "attributes".</p> <p>LSF considers demand on the template only if a job explicitly asks for the resource in its combined resource requirement.</p>
	Component	<p>ebrokerd mbatchd mbschd schmod_demand.so bhosts</p> <p>AwsTool.jar</p> <p>openstack/scripts/OpenStackClient.py</p> <p>openstack/scripts/Main.py</p> <p>"example_hostProviders.json"</p> <p>"example_policy_config.json"</p>

172789	Date	2017-11-10
	Description	<p>LSF integrates with hardware locality to detect host hardware information. This enhancement upgrades the integration to use hwloc v1.11.8 instead of v1.8.</p> <p>This enhancement also provides a way to dynamically load the hwloc library. This feature allows you to upgrade the hwloc integration if hwloc has no compatibility issues between the 1.11.8 header and libraries in Versions 1.11.8, or later. Enable this feature with the parameter LSF_HWLOC_DYNAMIC in lsf.conf.</p>
	Component	lim, elim.gpu.topology, hwloc_nvml.so

162673	Date	2017-11-10
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	Description	<p>This enhancement introduces the <code>lsfbeat</code> tool, which calls the <code>ipmitool</code> to collect the energy data of each host and to send the data to the IBM Spectrum LSF Explorer ("LSF Explorer") Elasticsearch component. The <code>bjobs</code> and <code>bhosts</code> commands get the energy data from LSF Explorer and display it.</p> <p>To use this feature, LSF Explorer must be deployed in your LSF cluster.</p> <p>To enable the <code>lsfbeat</code> energy service, configure <code>LSF_ENABLE_BEAT_SERVICE="energy"</code> in the <code>lsf.conf</code> file, then run the <code>'lsadmin limrestart all'</code> command to start up the <code>lsfbeat</code> service.</p> <p>To query energy data with the <code>bhosts</code> and <code>bjobs</code> commands, configure <code>LSF_QUERY_ES_FUNCTIONS="energy"</code> and <code>LSF_QUERY_ES_SERVERS="ip:port"</code> in <code>lsf.conf</code>.</p>
	Component	<p><code>bjobs</code> <code>bhosts</code></p>

161189	Date	2017-11-09
	Description	<p>This solution addresses the following issue:</p> <p>1) Check the GPU status to filter out unhealthy GPUs when the job allocates GPUs. Users want to make sure that the job is running on healthy GPUs. DCGM provides mechanisms to check the GPU health. LSF integrates this feature to check the GPU status before, during, and after the job is running to meet such requirements.</p> <p>2) Synchronize GPU auto-boost. For jobs across multiple GPUs in one host, the auto-boost could impact the job's result. Disabling GPU auto-boost can avoid the failure of such jobs. DCGM provides a feature to synchronize GPU auto-boost to handle such problems. LSF leverages DCGM to meet such a requirement.</p> <p>3) LSF automatically eliminates bad GPUs and automatically adds back a GPU if its status becomes healthy again.</p>
	Component	mbatchd res sbatchd mbschd lsload elim.gpu elim.gpu.ext bjobs bhist

RFE#106642	Date	2017-11-08
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	Description	<p>LSF users can select different esub applications by using the "bsub -a" or "bmod -a" command. LSF has a number of different esub/esub applications that users can select, but the bjobs and bhist commands do not show details about these applications. This enhancement enables the bjobs and bhist commands to show detailed information about esub and esub applications.</p>
	Component	<p>bsub bmod bjobs bhist mesub brestart mbatchd lsbatch.h libbat.a libbat.so liblsf.a liblsf.so</p>

<p>RFE#72978 RFE#71086</p>	Date	2017-11-06
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	Description	<p>This solution adds a new option "-a" to the bswitch command. This new option specifies one or more application-specific eswitch executable files that you want LSF to associate with the switch request.</p> <p>The arguments of the -a option must correspond to the application name of an actual eswitch executable file.</p> <p>For example, to use the bswitch -a test command, the "eswitch.test" executable file must exist in the LSF_SERVERDIR directory.</p> <p>Application-specific eswitch programs can specify their own job switch queue.</p> <p>Similar to the default esub feature, this solution also introduces the default eswitch feature. If an executable file named "eswitch" exists in the LSF_SERVERDIR directory, bswitch always invokes this "eswitch" application before switching a job.</p> <p>Use the LSB_ESWITCH_METHOD parameter in lsf.conf or the LSB_ESWITCH_METHOD environment variable to define specific eswitch applications.</p>
	Component	mesub bswitch lsbatch.h libbat.a libbat.so

174162	Date	2017-07-06
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	Description	<p>This enhancement adds LSF data provenance tools, which allows users to trace files that are generated by LSF jobs. You can use LSF data provenance tools to navigate your data - to find where the data is coming from and how it is generated. In addition, with help of data provenance information, you can reproduce your data results with exactly the same input and steps.</p>
	Component	<p>sbatchd misc/examples/data_prov</p>

164807	Date	2017-07-06
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	Description	<p>This enhancement adds support for Docker jobs when the systemd daemon is used as the Docker cgroup driver. It enables users to run Docker jobs regardless of which cgroup driver is used. It also supports an execution driver framework to use scripts for easy integration of 3rd party runtimes.</p> <p>This enhancement adds the new parameter EXEC_DRIVER to the lsb.applications file for the execution driver framework. For Docker jobs to work, the LSF administrator must configure EXEC_DRIVER together with the CONTAINER parameter in the lsb.applications file.</p> <p>The execution driver scripts are used to start a job, monitor the resource usage of a job, and send a signal to a job. This enhancement provides 3 scripts for Docker jobs: docker-stater.py, docker-monitor.py, and docker-control.py. These scripts are located in the \$LSF_BINDIR directory.</p> <p>Change the owner of the script files to context user and change the file permissions to 700 or 500 before using them in the EXEC_DRIVER parameter.</p>
	Component	bapp mbatchd sbatchd res docker-control.py docker-starter.py docker-monitor.py

162524	Date	2017-11-03
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	Description	This solution integrates the bhist and bacct commands with IBM Spectrum LSF Explorer, which enables bhist and bacct to query LSF Explorer instead of parsing event files to improve the speed of the query action.
	Component	bhist bacct

65999	Date	2017-10-19
	Description	Advanced reservations (ARs) can be configured, based on a queue, to allow non AR jobs to continue to run on AR hosts after the AR starts. ARs can be configured to run a script just before the AR starts, and just before the AR ends.
	Component	mbatchd mbschd ebrokerd brsvs brsvadd brsvmod

154515	Date	2017-10-19
	Description	This solution enables LSF clusters to launch instances from Google Cloud to satisfy pending workload. The instances will join the LSF cluster. If instances become idle, LSF resource connector automatically deletes them.

	Component	resource_connector/google resource_connector/google/conf resource_connector/google/conf/googlerprov_templates.json resource_connector/google/conf/googleprov_config.json resource_connector/connector/google/service_acount_secret.json resource_connector/google/scripts resource_connector/google/scripts/getAvailableMachines.sh resource_connector/google/scripts/getRequestStatus.sh resource_connector/google/scripts/requestReturnMachines.sh resource_connector/google/scripts/requestMachines.sh resource_connector/google/scripts/getReturnRequests.sh resource_connector/google/scripts/getAvailableTemplates.sh resource_connector/google/scripts/user_data.sh resource_connector/google/lib/GcloudTool.jar
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142180	Date	2017-10-19
	Description	This enhancement adds support for bhosts "-rc" and "-rconly" options to display extra host information inside LSF resource connector and the cloud provider.
	Component	lim ebrokerd bhosts AwsTools.jar mbatchd SoftLayerTool.jar mosquito.so

RFE109019	Date	2017-10-16
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	Description	This enhancement improves performance in the instance where there are too many "hname" or "!hname" equations in a resource requirement selection string.
	Component	mbschd

154329	Date	2017-10-05
	Description	To achieve LSF multicluster job forward fairness, this enhancement provides an option to charge each job forward decision like job dispatch in the fairshare formula.
	Component	mbatchd mbschd bparams bqueues

RFE#103504 RFE#101384	Date	2017-09-07
	Description	This enhancement support the deleting of empty implicit job groups automatically even if they have limits. It adds a new option "all" to the JOB_GROUP_CLEAN parameter in the lsb.params file, to delete empty implicit job groups automatically even if they have limits.
	Component	mbatchd bparams

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 3

The following enhancements have been done in LSF Version 10.1 Fix Pack 3 between 16 February 2017 and 06 July 2017:

RFE#105189	Date	2017-07-06
	Description	This integration allows LSF users to use nvidia-docker to run a job using GPU resources in Docker containers through LSF.
	Component	mbatchd sbatchd res

142210	Date	2017-07-05
	Description	<p>The RC_DEMAND_POLICY parameter in the lsb.queues file defines threshold conditions to determine whether demand is triggered to borrow resources through resource connector for all the jobs in the queue. As long as pending jobs at the queue meet at least one threshold condition, LSF expresses the demand to resource connector to trigger borrowing.</p> <p>The demand policy defined by the RC_DEMAND_POLICY parameter can contain multiple conditions, in an OR relationship. A condition is defined as [num_pend_jobs[,duration]]. The queue has more than the specified number of eligible pending jobs that are expected to run at least the specified duration in minutes. The num_pend_jobs option is required, and the duration is optional. The default duration is 0 minutes.</p>
	Component	bqueues, mbatchd, mbschd, schmod_demand.so

148682	Date	2017-07-05
	Description	<p>This feature enables LSF clusters to borrow virtual compute hosts from the IBM SoftLayer (Bluemix) service if the workload demand exceeds cluster capacity. The Resource Connector generates requests for additional hosts from SoftLayer and dispatches jobs to dynamic hosts that join the LSF cluster. When the demand reduces, the Resource Connector shuts down slave LSF daemons and cancels allocated SoftLayer virtual servers.</p>
	Component	<p>resource_connector/softlayer/lib/SoftLayerTool.jar resource_connector/softlayer/scripts/requestReturnMachines.sh resource_connector/softlayer/scripts/requestMachines.sh resource_connector/softlayer/scripts/postprovision.sh resource_connector/softlayer/scripts/getRequestStatus.sh resource_connector/softlayer/scripts/getAvailableTemplates.sh resource_connector/softlayer/conf/credentials resource_connector/softlayer/conf/softlayerprov_config.json resource_connector/softlayer/conf/softlayerprov_templates.json</p>

152022	Date	2017-06-29
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	Description	The new bresize request subcommand option allows you to request additional tasks to be allocated to a running resizable job, which grows the resizable job. This means that you can both grow and shrink a resizable job by using the bresize command.
	Component	bacct badmin bhist bresize mbatchd mbschd

142185	Date	2017-06-29
	Description	<p>The instanceTags attribute in the awsprov_templates.json file can tag EBS volumes with the same tag as the instance. EBS volumes in AWS are persistent block storage volumes used with an EC2 instance. EBS volumes are expensive, so you can use the instance ID that tags the volumes for the accounting purposes.</p> <p>Note: The tags cannot start with the string aws:. This prefix is reserved for internal AWS tags. AWS gives an error if an instance or EBS volume is tagged with a keyword starting with aws:.</p> <p>Resource connector removes and ignores user-defined tags that start with aws:.</p>
	Component	AwsTool.jar

142216	Date	2017-06-28
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	Description	<p>Resource connector supports federated accounts for LSF resource connector as an option instead of requiring permanent AWS IAM account credentials. Federated users are external identities that are granted temporary credentials with secure access to resources in AWS without requiring creation of IAM users. Users are authenticated outside of AWS (for example, through Windows Active Directory).</p> <p>Use the <code>AWS_CREDENTIAL_SCRIPT</code> parameter in the <code>awsprov_config.json</code> file to specify a path to the script that generates temporary credentials for federated accounts. For example,</p> <pre>AWS_CREDENTIAL_SCRIPT=/shared/dir/generateCredentials.py</pre> <p>LSF executes the script as the primary LSF administrator to generate a temporary credentials before it creates the EC2 instance.</p>
	Component	AwsTool.jar

148740	Date	2017-06-28
	Description	<p>This feature enables LSF clusters to launch instances from Azure to satisfy pending workload. The instances will join the LSF cluster. If instances become idle, LSF resource connector terminates them.</p>

	Component	resource_connector/azure/lib/AzureTool.jar resource_connector/azure/scripts/getAvailableMachines.sh resource_connector/azure/scripts/getAvailableTemplates.sh resource_connector/azure/scripts/getRequestStatus.sh resource_connector/azure/scripts/getReturnRequests.sh resource_connector/azure/scripts/post_provision.sh resource_connector/azure/scripts/pre_provision.sh resource_connector/azure/scripts/requestMachines.sh resource_connector/azure/scripts/requestReturnMachines.sh resource_connector/azure/scripts/user_data.sh resource_connector/azure/conf/azureprov_config.json resource_connector/azure/conf/azureprov_templates.json
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RFE#98501	Date	2017-06-21
	Description	This solution allows the end user to submit jobs with remote hosts using the "-m remote_host@remote_cluster ..." option to send-jobs queues in the job forwarding model when using the LSF multicluster capability.
	Component	mbatchd mbschd

139905	Date	2017-06-21
	Description	<p>LSF provides a feature to log profiling information for the mbatchd and mbschd daemons to track the time that the daemons spend on key functions. This can assist IBM Support with diagnosing daemon performance problems.</p> <p>To enable daemon profiling with the default settings, edit the lsf.conf file, then specify LSB_PROFILE_MBD=Y for the mbatchd daemon or specify LSB_PROFILE_SCH=Y for the mbschd daemon. You can also add keywords within these parameters to further customize the daemon profilers.</p>
	Component	mbatchd mbschd

RFE#101255	Date	2017-06-09
	Description	<p>This solution provides a way to directly get a list of jobs using a particular reservation ID by using the new bjobs -U option.</p> <p>This solution also adds the "rsvid" field to the bjobs -o option to display individual advance reservation IDs.</p>
	Component	mbatchd bjobs

RFE#92852	Date	2017-06-07
	Description	<p>This enhancement enlarges bsub -u email address from 63 to 511 characters.</p>

	Component	sbatchd, bsub, bmod, brestart, bacct
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127032	Date	2017-05-30
	Description	<p>IAM roles group AWS access control privileges together. A role can be assigned to an IAM user or an IAM instance profile. IAM Instance Profiles are containers for IAM roles that allow you to associate an EC2 instance with a role through the profile. The EC2 runtime environment contains temporary credentials that have the access control permissions of the profile role.</p> <p>To make the roles available for resource connector to create instances, use the instanceProfile attribute in the awsprov_templates.json file to specify an AWS IAM instance profile to assign to the requested instance. Jobs running in that instance can use the instance profile credentials to access other AWS resources. Resource connector uses that information to request EC2 compute instances with particular instance profiles. Jobs that run on those hosts use temporary credentials provided by AWS to access the AWS resources that the specified role has privileges for.</p>
	Component	AWSTool.jar ebrokerd

RFE#75418	Date	2017-05-26
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	Description	<p>This fix enables the bpeek -f command to exit when the peeked job is completed.</p> <p>If the peeked job is requeued or migrated, the bpeek command only exits if the job is completed again. In addition, the bpeek command cannot get the new output of the job. To avoid these issues, abort the previous bpeek -f command and rerun the bpeek -f command after the job is requeued or migrated.</p>
	Component	bpeek

141430	Date	2017-05-20
	Description	<p>Use Spot instances to bid on spare Amazon EC2 computing capacity. Since Spot instances are often available at a discount compared to the pricing of On-Demand instances, you can significantly reduce the cost of running your applications, grow your application's compute capacity and throughput for the same budget, and enable new types of cloud computing applications.</p> <p>With Spot instances you can reduce your operating costs by up to 50-90%, compared to on-demand instances. Since Spot instances typically cost 50-90% less, you can increase your compute capacity by 2-10 times within the same budget.</p> <p>Spot instances are supported on any Linux x86 system that is supported by LSF.</p>
	Component	AwsTool.jar

RFE#94879 RFE#82487	Date	2017-05-15
	Description	This enhancement modifies the MAX_PEND_JOBS parameter to limit the maximum number of pending jobs. This enhancement also adds the new MAX_PEND_SLOTS parameter to replace the current MAX_PEND_JOBS parameter. Both of these parameters provide ways to protect cluster service globally across the cluster or at the user level.
	Component	mbatchd bconf busers bqueues bparams bsub

RFE#79255 RFE#92576 RFE#98712	Date	2017-05-15
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	Description	<p>This solution improves the performance of daemons.wrap by not checking the ClearCase view and provides the failure reason of "cleartool setview" called by daemons.wrap in bjobs -l, bhist -l, bstatus and bread. This solution also adds pid in daemons.wrap.log.</p> <p>After applying this solution, the ClearCase view set by CLEARCASE_ROOT will not be checked under any condition. This means NOCHECKVIEW_POSTEXEC will be unused from now on.</p> <p>The ClearCase environment will be set directly by "cleartool setview" in daemons.wrap. And the failure reason will be passed to mbatchd by the bpost command. Using bjobs -l, bhist -l, bstatus, or bread will display the message.</p>
	Component	daemons.wrap daemons.wrap.c

146129	Date	2017-05-10
	Description	<p>This enhancement enables users to create and schedule advance reservations in the same way as a job. Once the reservation is active, the jobs submitted to the reservation can run within it.</p> <p>This fix provides 3 script to create schedulable advance reservation and query advance reservation jobs. The scripts are are installed under \$LSF_BINDIR.</p> <ul style="list-style-type: none"> - brsvsub: create a schedulable advance reservation. - lsfrsv: part of brsvsub. Submit a job to run lsfrsv to update the time window and hosts to in an advance reservation. - brsvjob: query the job information submitted with advance reservation name. <p>To write your own script to create schedulable advance reservation, you need to know the following information:</p> <ul style="list-style-type: none"> - This fix adds a new option -p to brsvadd to create an advance reservation without a time window or hosts. This is referred to as a placeholder advance reservation. - Use brsvmod to add a time window and hosts to the placeholder advance reservation. - Submit job to the placeholder advance reservation. After the advance reservation is filled and active, jobs can run within it.
	Component	mbatchd, brsvadd, brsvs, brsvsub, lsfrsv, brsvjob

146128	Date	2017-04-20
	Description	This solution allows you to configure a script in the options field of the CONTAINER parameter in the lsb.applications file. Before the container job runs, LSF first runs a script with LSF administrator privileges. While the script is running, all the jobs' environment variables are passed to the script in run time. When the script finishes running, the output is used in the container startup options.
	Component	mbatchd sbatchd res

P102156	Date	2017-04-20
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	Description	<p>This enhancement adds new functionalities to LSF:</p> <ul style="list-style-type: none"> - Adds the new option "-o" to the lsload command to set the customized output format. - Adds the new parameter LSF_LSLOAD_FORMAT to the lsf.conf file and new runtime environment variable LSF_LSLOAD_FORMAT to define the default lsload output format. - Adds the new option "-json" to the lsload command to display the customized output in JSON format. This option must be used together with "-o" or LSF_LSLOAD_FORMAT.
	Component	lsload

142500	Date	2017-04-14
	Description	<p>This fix adds additional resources to elim.gpu.ext, including gpu_mut, gpu_mtotal, gpu_mused, gpu_pstate and gpu_shared_avg_mut.</p>
	Component	elim.gpu.ext

RFE#98823	Date	2017-04-13
	Description	<p>For jobs that are pending because there are not enough licenses available, the bjobs -p, -p1, -p2, and -p3 options only show which licenses do not have enough available, and do not display the project or cluster to which the licenses belong. This might be confusing because this can show that the license server has free licenses, but jobs cannot run, without showing that the project or cluster has limits on the licenses that are available.</p> <p>After this enhancement, the bjobs -p, -p1, -p2, -p3 options also show the project name for jobs that request project mode or fast dispatch mode features, and the bjobs -p options also show the cluster name for jobs that request cluster mode features. The bjobs -p0 and bjobs -l output are not affected by this enhancement.</p>
	Component	mbatchd mbschd

The following enhancements have been done in LSF Version 10.1 Fix Pack 2 between 21 October 2016 and 15 February 2017:

117458	Date	2017-02-10
	Description	<p>This enhancement adds three new features to LSF Resource Connector:</p> <ol style="list-style-type: none"> 1. The cluster administrator can configure LSF Resource Connector to run a custom pre-script before a new cloud instance is created and a post script after the instance has been terminated. The scripts are executed on the LSF master host. Refer to https://www.ibm.com/support/knowledgecenter/en/SSWRJV_10.1.0/l_sf_resource_connector/l_sf_rc_pre_post_prov.html. 2. Additional configuration options are provided to control the rate at which new cloud instances are created. Refer to https://www.ibm.com/support/knowledgecenter/en/SSWRJV_10.1.0/l_sf_resource_connector/l_sf_rc_custom_policy.html. 3. Removal of cloud instances will align with billing periods. For example, AWS instances will be kept for the full billing hour.
	Component	<p>ebrokerd mbatchd, resource_connector/aws/lib/AwsTool.jar resource_connector/openstack/scripts/Main.py resource_connector/openstack/scripts/MachineFile.py resource_connector/openstack/scripts/OpenStackClient.py</p>

RFE#77671 RFE#96098 RFE#87525 RFE#98593 RFE#99791 RFE#100341	Date	2017-02-10
	Description	<p>This enhancement to the LSF command UI adds new options and output modifications to the bjobs command as follows:</p> <ul style="list-style-type: none"> - Support for more fields in the customized output format. - Adds a PSUSP column to the -sum option output. - Adds a new option -json for use with the -o option to display the customized output in JSON format. - Adds a new option -ignorebadjobid to remove unmatched jobs from the output. - Adds a new option -hms to format display time in the customized output as hh:mm:ss. - Adds LSB_HMS_TIME_FORMAT to lsf.conf and an environment variable to format display times in the customized output as hh:mm:ss. This affects fields that display the time, including the following: plimit_remain, eplimit_remain, action_warning_time, pend_time, ependtime, ipendtime, estimated_run_time, ru_utime, ru_stime, run_time, runtimelimit, effective_plimit, effective_eplimit, plimit, eplimit, cpu_used, time_left.
	Component	bjobs mbatchd

RFE#83517 RFE#82474 RFE#66061 RFE#73061 RFE#86691	Date	2017-02-10
	Description	<p>This enhancement to the LSF command UI adds new options and output modifications to the bacct, bclusters, bhist, bhosts, bqueues, and linfo commands as follows:</p> <ul style="list-style-type: none"> - Adds a new option -o to bqueues and bhosts to support a customized output format. - Adds a new option -json to bqueues and bhosts for use with the -o option to display the customized output in JSON format. - Adds a new option -noheader to bqueues and bhosts to remove column headings from the output. - Adds LSB_BQUEUES_FORMAT and LSB_BHOSTS_FORMAT to lsf.conf and an environment variable to support customized output format. - Adds a new option -UF to bhist and bacct to display non-formatted job detail information. - Adds a new option -w to linfo and bclusters to display the information in wide format.
	Component	bacct bclusters bhist bhosts bqueues linfo mbatchd

RFE#85943	Date	2017-01-26
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	Description	This solution adds useful information to the preemption suspend reason by adding the job ID of the preemptive job to the suspend reason of the preempted job. This allows users to determine who preempted the job by running the bjobs -l and bjobs -s commands.
	Component	mbschd mbatchd bjobs, schmod_preemption.so

RFE#98596	Date	2017-01-25
	Description	This solution introduces a new parameter LSB_JOB_REPORT_FILTER to lsf.conf, and a corresponding environment variable, to allow users to select the information added to a job's report. Valid values are: all, jobinfo, rusage, stdout, stderr.
	Component	sbatchd

RFE#83087	Date	2017-01-18
	Description	This solution allows certain users (root, the primary LSF administrator, the parent group owner, and the current group owner) to change the job group owner in LSF by using the bgmod command. To change the job group owner, use the new -u option in bgmod.
	Component	bgmod mbatchd libbat.so libbat.a lsbatch.h

RFE#77813 RFE#93489	Date	2017-01-17
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	Description	This solution enables LSF_UNIT_FOR_LIMITS to define a unit for "tmp", and supports the specified unit in resource requirements and limits in configuration files and on the command line. A new parameter LSF_ENABLE_TMP_UNIT in lsf.conf enables LSF_UNIT_FOR_LIMITS to support limits on "tmp".
	Component	lim bsub bmod brestart bjobs bqueues bhosts lsload lshosts lsmon mbatchd brsvadd brsvmod bslots bconf lsgrun lsloadadj

127009	Date	2017-01-10
	Description	This enhancement adds a new parameter EVALUATE_JOB_DEPENDENCY_TIMEOUT in lsb.params. It limits the amount of time mbatchd spends on evaluating job dependencies in an mbatchd session. If you define both EVALUATE_JOB_DEPENDENCY and EVALUATE_JOB_DEPENDENCY_TIMEOUT, only EVALUATE_JOB_DEPENDENCY_TIMEOUT takes effect and EVALUATE_JOB_DEPENDENCY is ignored.
	Component	mbatchd bparams

127013	Date	2017-01-10
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	Description	The default value of the LSF_HOST_CACHE_NTTL parameter in the lsf.conf file is 20 seconds, which is too small in most cases. This solution increases the default value from 20 seconds to 60 seconds.
	Component	lim mbatchd

127010	Date	2017-01-10
	Description	This fix includes the intelligent CPU binding feature, which enables LSF to automatically bind critical LSF master daemons (lim, mbatchd, mbschd) to the CPU cores based on the detected hardware information on the LSF master or master candidate host. Enable this feature by setting the LSF_INTELLIGENT_CPU_BIND parameter to Y in the lsf.conf file.
	Component	lim sbatchd mbatch mbschd

P102016	Date	2017-01-10
	Description	This solution allows LSF to run jobs in either Singularity or Shifter containers on demand. LSF manages the entire life cycle of jobs running in these containers as common jobs.
	Component	mbatchd sbatchd res nios bapp blaunch badmin lsadmin

114275	Date	2017-01-08
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	Description	This enhancement introduces the new API <code>lsb_wait</code> and the new command <code>bwait</code> to get notifications from LSF when the wait condition changes. The wait condition that is specified in the new API and command uses the same syntax as the existing job dependency syntax.
	Component	<code>bwait mbatchd</code>

RFE#81801	Date	2017-01-05
	Description	This enhancement allows LSF to accurately account the number of slots consumed by jobs with affinity requirements. LSF automatically adjusts the number of slots based on the number of affinity CPUs that are allocated for the job.
	Component	<code>mbatchd mbschd</code>

127012	Date	2016-12-06
	Description	This enhancement makes <code>mbatchd</code> parallel restart the default <code>mbatchd</code> restart behavior (instead of serial restart). When using <code>badmin mbdrestart</code> , LSF uses parallel <code>mbatchd</code> restart. This fix adds a new option <code>-s</code> (<code>badmin mbdrestart -s</code>) to use <code>mbatchd</code> serial restart instead.
	Component	<code>badmin</code>

P102015	Date	2016-12-20
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	Description	<p>This enhancement introduces a new keyword "\$LSB_CONTAINER_IMAGE" that is defined in the CONTAINER parameter of the lsb.applications file. When this keyword is defined, an LSF user replaces this value by defining the LSB_CONTAINER_IMAGE environment variable at job submission time. The job fails if this environment variable is not defined.</p>
	Component	sbatchd

RFE#92854	Date	2016-12-01
	Description	<p>In the current LSF job mail report for job start mail and job done mails, some action times (such as submission time and terminate time) are missing.</p> <p>This solution adds the submission time, start time, and terminate time for job start/done mail and supports the epoch second format display in start/done/post-exec mail.</p> <p>The parameter "LSB_MAIL_TIMESTAMP_EPOCH_SECONDS" is added to lsf.conf. When the value is "Y" or "y", the epoch second time is used.</p>
	Component	sbatchd

112279	Date	2016-11-30
	Description	<p>This solution integrates DCGM (Data Center GPU Manager) with LSF to report a job's GPU utilization and to check the DCGM status before the job starts.</p> <p>The parameter LSF_DCGM_PORT is introduced to the lsf.conf file. LSF uses this port to communicate with the DCGM daemon. Define this parameter to enable DCGM features with LSF.</p>
	Component	mbatchd sbatchd res bjobs bhist bacct

Solutions for IBM Spectrum LSF Version 10.1 Fix Pack 1

The following enhancements have been done in LSF Version 10.1 Fix Pack 1 between 22 July 2016 and 20 October 2016:

RFE#90287	Date	2016-10-16
	Description	<p>The fix pack simplifies job submission with affinity requirements on PPC64(LE) platform. Specifically, the following new functionalities are included in the fix pack.</p> <ul style="list-style-type: none">- An esub.p8aff is provided to automatically generate the optimal job-level affinity requirements- Support per-job SMT mode configurations on job execution hosts in LSF- Integration with OpenMP thread affinity

	Component	mbatchd sbatchd res esub.p8aff
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RFE#88294	Date	2016-7-26
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	Description	<p>The LSF external scheduler API now allows an external plugin to register checkAlloc and notifyAlloc callback functions. Essentially the LSF scheduling framework calls all registered checkAlloc functions while an allocation is being created for a job. Within a checkAlloc callback function a plugin can examine the allocation and optionally limit the allocation while specifying a reason. The LSF scheduling framework calls all registered notifyAlloc functions once an allocation has been created (or destroyed) for a job. Within a notifyAlloc callback function a plugin can examine the allocation, and update its own state accordingly.</p> <p>Besides the enhanced external scheduler plugin API, LSF will now support jobs submitted with resource requirement strings up to 4095 characters in length. This behavior must be configured by setting LSB_EXTENDED_RSRCREQ_STR=Y in the lsf.conf configuration file, otherwise the limit of 511 characters is used. Regardless of the setting for LSB_EXTENDED_RSRCREQ_STR the value of the environment variable LSB_SUB_RES_REQ set within a job's environment will be truncated to 511 characters.</p> <p>lsf.conf</p> <p>LSB_EXTENDED_RSRCREQ_STR</p> <p>Normally within LSF the job-level resource requirement string is limited to 511 characters. With LSB_EXTENDED_RSRCREQ_STR=Y y this limit is increased 4095 characters.</p> <p>Syntax:</p>
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		<p>LSB_EXTENDED_RSRCREQ_STR=Y y N n</p> <p>Default:</p> <p>N</p>
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	Component	<p>bmod, brestart, bsub, mbatchd, mbschd, mesub</p> <p>All scheduling modules:</p> <ul style="list-style-type: none">cal_jobweight.soschmod_advrsv.soschmod_affinity.soschmod_aps.soschmod_bluegene.soschmod_cpuset.soschmod_craylinux.soschmod_crayx1.soschmod_dc.soschmod_default.soschmod_demand.soschmod_dist.soschmod_fairshare.soschmod_fcfs.soschmod_jobweight.soschmod_limit.soschmod_mc.soschmod_parallel.soschmod_preemption.soschmod_pset.soschmod_ps.soschmod_reserve.soschmod_rms.soschmod_xl.so <p>lssched.h</p> <p>misc/examples/external_plugin/allocexample.c</p>
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		<code>misc/examples/external_plugin/Makefile</code> <code>misc/examples/external_plugin/matchexample.c</code> <code>misc/examples/external_plugin/myplugin.c</code> <code>misc/examples/external_plugin/README</code> <code>misc/examples/external_plugin/sch.mod.fcfs.c</code>
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<code>RFE#84881</code>	<code>Date</code>	<code>2016-9-26</code>
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	Description	<p>This feature enables bsub and bmod to export mem and swp values in the rusage[] string to corresponding variables for esub.</p> <p>This allows you to match the memory and swap limit (-M/-v) with the mem and swp value in the rusage[] string. This also allows you to check if the mem and swap resource are correctly defined for the mem and swap limit for the job, queue, or application. If not, LSF rejects the job.</p> <p>This feature exports the following environment variables:</p> <ul style="list-style-type: none"> - If bsub or bmod has a mem value in the rusage[] string, this feature sets the LSB_SUB_MEM_RUSAGE variable to this value in the temporary file (pointed to by the LSB_SUB_PARM_FILE environment variable). For example, if bsub has the option -R "rusage[mem=512]", sets LSB_SUB_MEM_RUSAGE=512 in the temporary file. - If bsub or bmod has a swp value in the rusage[] string, this feature sets the LSB_SUB_SWP_RUSAGE variable to this value in the temporary file (pointed to by the LSB_SUB_PARM_FILE environment variable). For example, if bsub has the option -R "rusage[swp=1024]", sets LSB_SUB_SWP_RUSAGE=1024 in the temporary file.
	Component	bmod bsub

P101924	Date	2016-10-15
	Description	<p>This enhancement will allow some queues to ignore the RETAIN and DURATION in guarantee host policy which enable LOAN_POLICIES. You can precede the queue name with a '!' in the LOAN_POLICIES line, then the RETAIN and DURATION policies are ignored for the queue when deciding whether a job in the queue can borrow unused guaranteed resources.</p>
	Component	mbschd schmod_default.so

P101871	Date	2016-9-20
	Description	<p>LIM periodically reads CPU and NUMA information through the HWLOC APIs. Each call takes 1-2 seconds on Intel® Xeon Phi™ processors. The LIM CPU usage might impact the application benchmark performance.</p> <p>To control LIM CPU consumption, the fix increases CPU and NUMA information update interval to 20 minutes. This fix also increases host load update interval to at least 15 seconds.</p>
	Component	lim

117970	Date	2016-8-24
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	Description	This enhancement allows LSF to run jobs in Docker containers on demand. LSF manages the entire life cycle of jobs running in the container as common jobs.
	Component	mbatchd, mbschd, sbatchd, res, bapp, blaunch, lsadmin, badmin

110037	Date	2016-9-22
	Description	<ul style="list-style-type: none"> • Feature that enables LSF to demand resources from any external resource provider (EGO, OpenStack, EC2, etc....) • Available for use at no additional cost for all LSF editions. • Supported platforms: <ul style="list-style-type: none"> – x64 and ppc64le master – Any non-Windows compute host • Currently supported providers: <ul style="list-style-type: none"> – EGO / Conductor – OpenStack – AWS • New providers can be implemented through scripting without change to the LSF core. <p>Internally referred to as the “Host Factory”</p>
	Component	<p>conf/resource_connector/aws/conf/awsprov_templates.json</p> <p>conf/resource_connector/aws/conf/awsprov_config.json</p>

		<p>conf/resource_connector/aws/conf/credentials</p> <p>conf/resource_connector/OpenStack/conf/osprov_config.json</p> <p>conf/resource_connector/hostProviders.json</p> <p>bapp</p> <p>bjobs</p> <p>bqueues</p> <p>badmin</p> <p>mbatchd</p> <p>ebrokerd</p> <p>mbschd</p> <p>lim</p> <p>ego_client</p> <p>schmod_demand.so</p> <p>schmod_default.so</p> <p>/resource_connector/aws/lib/AwsTool.jar</p> <p>/resource_connector/aws/scripts/user_data.sh</p> <p>/resource_connector/aws/scripts/getAvailableMachines.sh</p> <p>/resource_connector/aws/scripts/getAvailableTemplates.sh</p> <p>/resource_connector/aws/scripts/getRequestStatus.sh</p> <p>/resource_connector/aws/scripts/getReturnRequests.sh</p> <p>/resource_connector/aws/scripts/requestMachines.sh</p> <p>/resource_connector/aws/scripts/requestReturnMachines.sh</p> <p>/resource_connector/openstack/scripts/Main.py</p> <p>/resource_connector/openstack/scripts/OpenStackClient.py</p> <p>/resource_connector/openstack/scripts/userscript.sh</p> <p>/resource_connector/ego/scripts/Main.py</p>
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105023	Date	2016-9-22
	Description	<p>Enhance the performance for following job array cases:</p> <ol style="list-style-type: none"> 1. mbschd recovery is slow when many array elements are split during scheduling. 2. mbschd hangs when handling the events of stopping, resuming, or moving a large array job whose elements are split. 3. When an array job has dependency conditions, mbschd splits array elements after the condition is satisfied.
	Component	mbatchd mbschd

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