IBM Spectrum LSF Process Manager
Version 10 Release 2

Release Notes

IBM

Note

Before using this information and the product it supports, read the information in "Notices" on page 11.

Contents

Chapter 1. What's new in 10.2

The following sections summarize the new and changed behavior in each version and fix pack of IBM Spectrum LSF Process Manager 10.2.

What's new and changed in IBM Spectrum LSF Process Manager Version 10.2 Fix Pack 9

The following topics summarize the new and changed behavior in IBM Spectrum LSF Process Manager ("LSF Process Manager") 10.2 Fix Pack 9.

Email notification for a flow

In previous releases, notifications were sent only for the first run of the flow. As of 10.2 Fix Pack 9, notifications are sent whether it is the first run or rerun.

Dynamic Calendar-based time events

This fix pack introduces dynamic, calendar-based time events for flows and work items. This feature solves an issue that occurred when a user updated some calendars, they had to resubmit their flow definitions to use the new updated calendars. Flow definitions that were already submitted continued to use the old calendars. With this feature, the submitted flow definitions' dependent calendars will get the latest calendar automatically, so the flow and work items inside the flow can be scheduled according to the updated calendar-based time events. Updating calendars takes effect after Save & Apply, to make all flow and work items use the updated calendars.

Dynamic update of Time Zone Data

Time zone and daylight savings time (DST) are often adjusted by individual governments around the world according to their local rules.

This feature provides a build method for International Components for Unicode (ICU) data and adds a dynamic method for applying ICU data updates. It also provides a parameter to offset all time events in LSF Process Manager, if necessary.

Updating time zone data
js.conf

Upgraded JRE

LSF Process Manager 10.2 Fix Pack 9 has been bundled with IBM Java version 8.0.6.0 to take advantage of security enhancements.

What's new and changed in IBM Spectrum LSF Process Manager Version 10.2 Fix Pack 8

The following topics summarize the new and changed behavior in IBM Spectrum LSF Process Manager ("LSF Process Manager") 10.2 Fix Pack 8.

Dynamic calendar update

After upgrading the LSF Process Manager server to 10.2 Fix Pack 8, calendars are updated automatically. When the LSF Process Manager server is updated, the enhancement and fix is applied automatically. The new 10.2 Fix Pack 8 Calendar Editor action is **Save & Apply**. However, if an old Calendar Editor is used, the text still reads **Save** but the calendar will still be applied automatically using the new 10.2 Fix Pack 8

server. This means the new LSF Process Manager calendar editor will dynamically display a different menu according to the LSF Process Manager server it's connected to.

Upgraded JRE

LSF Process Manager 10.2 Fix Pack 8 has been bundled with IBM Java version 8.0.5.0 to take advantage of security enhancements.

Additional support

Support has been added for:

- RHEL 8
- SLES 15

What's new and changed in IBM Spectrum LSF Process Manager Version 10.2 Fix Pack 7

The following topics summarize the new and changed behavior in IBM Spectrum LSF Process Manager ("LSF Process Manager") 10.2 Fix Pack 7.

Job script definition can now accept parameters

Previously, providing a parameter for a job script caused an error, LSF Process Manager would exit, and the job was not submitted. This has been fixed in Fix Pack 7 so that parameters are now accepted by job scripts.

Accurate job state from LSF reflected in Process Manager

Previously, job status was inconsistent between LSF Application Center and LSF Process Manager. When a flow within a long time job is submittted and then this job is suspeneded in LSF, the status changes to USUSP. However, if the flow is viewed from LSF Application Center (Flow Instance > Jobs), the job status is still RUNNING. But if the job id is viewed from LSF Application Center, the job status is Suspended.

This has been fixed in Fix Pack 7 so that LSF Process Manager accurately reflects the suspended job status.

Project names assigned to flows

In Fix Pack 7, you can now add a PROJECT attribute to a flow as you would to a single job.

When viewing an LSF Application Center workload, a Project column allows you to filter workloads using the PROJECT attribute, if one has been assigned to a flow definition, specified when submitting a flow, or if it is entered into a submission form.

To assign Project names, the flow variable JS_FLOW_PROJECT has been introduced for this release.

Built-in variables you can use in flows

Calendars updated automatically

After upgrading the LSF Process Manager server to Fix Pack 7, calendars are updated automatically. The Calendar Editor action in Fix Pack 7 is "Save & Apply". However, if an old Calendar Editor is used, the text still reads "Save" but the calendar will automatically be applied with the new Fix Pack 7 server.

New RESTful Web Services APIs

The following RESTful Web Services APIs for flows have been introduced as part of the LSF Application Center Version 10.2 Fix Pack 7 feature set:

- Getting a specified flow instance by filter (GET)

- Flow instance operations (POST)
- Getting a specified flow definition by filter (GET)
- Flow definition operations (POST, DELETE)

What's new and changed in IBM Spectrum LSF Process Manager Version 10.2 Fix Pack 6

The following topics summarize the new and changed behavior in IBM Spectrum LSF Process Manager ("LSF Process Manager") 10.2 Fix Pack 6.

Support for SMTP protocol

Installations of LSF Process Manager on Unix platforms can use the **JS_MAILHOST** parameter to support sending emails from a remote SMTP server instead of from the localhost.

pmportcheck utility

A new **pmportcheck** utility has been added to Process Manager. This utility can be used to check the required ports for PM and include detailed information, whether it is being used or not.

The portcheck utility only checks ports on the host for availability. It discovers the ports by reading the configuration files. If the line is commented out or if there is no value, it will use the default values.

Before running this tool, you must source the profile or set the environment variable JS_TOP

The utility is installed at `<JS_TOP>/<VERSION>/bin/`, for example, `/opt/ppm/10.2/bin/`.

Usage:

`pmportcheck`

`pmportcheck -h`

`pmportcheck -l`

Description:

Without arguments will output command usage and exit.

`-h` Output command usage and exit.

`-l` List TCP and UDP ports.

Note: The portcheck utility must be executed by the root user.

Source the relative IBM Spectrum LSF Process Manager shell script after installation:

For csh or tcsh: 'source $JS_ENVDIR/cshrc.js'

For sh, ksh, or bash: 'source $JS_ENVDIR/profile.js'

Example output:

Example of the output using command **pmportcheck -l** on **Process Manager server** displaying the PID and program name:

```
Checking ports required on host [server1]
----------------------------------------------------------------
Program Name  Port Number  Protocol  Binding Address  PID/Status
----------------------------------------------------------------
jfd           1966         TCP       0.0.0.0          31821
jfd           1967         TCP       0.0.0.0          31821
eem.local     1968         TCP       0.0.0.0          32128
fod           1999         TCP       0.0.0.0          [Not used]
fod           1999         UDP       0.0.0.0          [Not used]
```

lsportcheck in LSF Command Reference

CWL workflow integration

LSF Process Manager now supports CWL (Common Workflow Language) workflows on IBM Spectrum LSF. To use CWL workflows, download the **cwlexec** integration package from the cwl-engine website on GitHub.

Flow rerun states

Flow re-run is enhanced to include work items in states other than Done and Exited. It now includes work items in Killed, Waiting, and Running states.

Starting points can also now be set on work items in Done, Exited, Killed, Waiting, Running, and Pending states.

What's new and changed in IBM Spectrum LSF Process Manager Version 10.2

The following topics summarize the new and changed behavior in IBM Spectrum LSF Process Manager ("LSF Process Manager") 10.2.

Improvements to rerunning a flow

You can now use the Flow Editor to set the following work items as the starting point when rerunning a test job in the flow:

- Start from work items in running, pending, killed, or waiting states (in addition to done or exit states).
- Start from job-based submission forms.
- When starting from a job array, start from failed elements or user-specified elements (in addition to starting the whole array).
- When starting from a flow array, start from current, failed, or user-specified elements (in addition to starting all elements).

LSF Process Manager server now works if the /tmp directory is mounted as NOEXEC

Due to security concerns, some environments do not allow execute permission on /tmp directories. The LSF Process Manager server now works correctly even if the /tmp directory is mounted with the NOEXEC flag to restrict the execution of binary files. The LSF Process Manager server accomplishes this by using the JS_HOME/work/tmp directory as the temporary directory to run temporary scripts intead of /tmp.

Reevaluate file size as a triggering event when the file is modified

LSF Process Manager now reevaluates the conditions for the file size triggering event for flows that are scheduled with multiple triggers (such as a combination of file size, time, and the last modified date) whenever the corresponding file is modified. To enable this new behavior, specify JS_FILE_SIZE_EVENT_UPDATE=true in the js.conf file.

By default, LSF Process Manager reevaluates the file size condition when a user deletes, then recreates the file.

Chapter 2. Known issues

Process Manager 10.2.0.9 has the following known issues:

Category	Issue
Process Manager does not support user names containing white space, '\', or '\t'	If your user accounts have Domain specification (for example, using Microsoft Windows Active Directory service for user management), and your Process Manager server is running on a Linux server, you will encounter problems with the server rejecting an invalid user name if the user names contain white space, '\', or '\t'.
	For example, do not use "DOMAIN\john smith".
	Also, if LSF is used as the job scheduler, the LSF configurations should comply with the above rule as well, since Process Manager will retrieve some user name information from LSF.
Flow Editor, user variables.	In Flow Editor, if a user variable is used for the work item name (for example, #{MYJOBNAME}):
	• Submitting a test flow with a variable value for the work item name (for example, MYJOBNAME=J1) succeeds, but the work item name is updated to the variable value (that is, J1).
	• Rerunning a test flow with a variable value for the work item name (for example, MYJOBNAME=J1) does not work.
	To prevent this issue, do not use user variables for any work item names.
	If you must use user variables, you can work around this issue by first designing and testing your flows without using user variables for any work item names. After the flow definition is working correctly, change the appropriate work item names to use user variables just before committing the flow.
Flow Editor, test flow, submission forms.	In Flow Editor, if you submit a test flow to debug a draft flow step by step, submission forms might fail on the first run. Subsequent test flows work after the first run and committed flows are not affected.
	To work around this issue, if a submission form fails in a test flow, rerun the test flow to see if it succeeds. If the test flow still fails, the problem is with the draft flow itself and you need to debug the test flow further.

Category	Issue
Flow Editor, subflow arrays, completion criteria.	In Flow Editor, the **Ignore work items in the waiting state that will never run, or that depend on...** completion criteria for subflow arrays does not work as expected.
	To work around this issue before you run the flow, edit the flow in one of the following ways:
	1. Clear the **Ignore work items in the waiting state that will never run, or that depend on...** checkbox in the list of completion criteria. That is, do not use this particular completion criteria.
	2. Have a separate job that can make sure that the flow is in a running state before the subflow array execution is complete.
	To work around this issue for a flow that is in progress, perform one of the following actions:
	1. Change the flow state immediately and continue running the flow.
	2. Continue running the flow and when the flow is complete, change the flow state to ensure that the job item that occurs after the subflow array can run.
	If you are running a single branched flow with this criteria, the work around is to clear the **Ignore work items in the waiting state that will never run, or that depend on...** checkbox in the list of completion criteria (that is, do not use this particular completion criteria).
Calendar Editor update	When using an old Process Manager Calendar Editor application with the newer Process Manager Fix Pack 7 server, the text still reads "Save" when the action will implicitly automatically save and apply the calendar. The user should update their Process Manager Calendar Editor and client package.

Chapter 3. Learn more about IBM Spectrum LSF Process Manager

Information about IBM Spectrum LSF Process Manager (LSF Process Manager) is available from several sources.

- The IBM Spectrum Computing website www.ibm.com/systems/spectrum-computing/
- The IBM Spectrum LSF Product Family Developer Center on IBM® developerWorks
- The IBM Spectrum LSF product wiki on IBM developerWorks

Access technical support information for all IBM products from the IBM Support Portal.

Chapter 4. IBM Spectrum LSF Process Manager documentation

IBM Knowledge Center is the home for IBM Spectrum LSF Process Manager product documentation.

IBM Spectrum LSF Process Manager documentation on IBM Knowledge Center

Find the most up-to-date IBM Spectrum LSF Process Manager documentation on IBM Knowledge Center on the IBM website: www.ibm.com/support/knowledgecenter/SSZSHQ.

Search all the content in IBM Knowledge Center for subjects that interest you, or search within a product, or restrict your search to one version of a product. Sign in with your *IBMid* to take full advantage of the customization and personalization features available in IBM Knowledge Center.

Documentation available through IBM Knowledge Center is updated and regenerated frequently after the original release of IBM Spectrum LSF Process Manager 10.2.

We'd like to hear from you

For technical support, contact IBM or your IBM Spectrum LSF Process Manager vendor. Or go to the IBM Support Portal: www.ibm.com/support

If you find an error in any IBM Spectrum LSF family documentation, or you have a suggestion for improving it, please let us know.

In the IBM Knowledge Center, add your comments and feedback to any topic.

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