Mistral Change Log

V2.13.2

1   Mistral 2.13.2

Customer Ticket	Development Reference	Description
	3749	Fixed issue with how Mistral dealt with different stack pointer alignments.
	3766	Performance improvement when there are a large number of file descriptors open by default.
	3766	Performance improvement for short-run programs.
	3690	Add memory, cpu-time, user-time and system-time rules.
	3785	Fixed bug with traffic light report data without latency rules.
	3789	Moved large I/O and Sync calls to Medium I/O in traffic light report (consistent with Breeze).

2   Mistral 2.13.1

Customer Ticket	Development Reference	Description
	3603	Real-time signals are now wrapped by dryrun.
	3685	Support for glibc v2.28.
	3698	Stop stack traces from Mistral rule violations from being written to the Breeze trace.
	3692	Add new tool to generate a report from a Mistral log file.
	3677	Switched to new license manager – set MISTRAL_LICENSE rather than MISTRAL_RLM_LICENSE.

3   Mistral 2.13.0

Customer Ticket	Development Reference	Description
	3622	Fixed bug in network port/path matching.
	3575	Fix for bug when using longjmp to exit a signal handler.
	3584	Switch to using unversioned look-up for all wrappers.
	3623	Improved performance with small I/O.
	3634	Fixed bug triggered by installing signal handlers in library constructor.
	3649	Fixed issue with commas in environment variables for remote jobs launched with sbatch

4 Mistral 2.12.0

Customer Ticket	Development Reference	Description
	3200	New traffic light report. Statistics are aggregated during the trace and output at the end of the run to the file specified with `MISTRAL_TRAFFIC_LIGHT_LOG`.
	3345, 3421	Architecture improvement to reduce contention on memory and improve performance
	3432	Fix an issue with pread and pwrite on 32-bit systems
	3284	Improved performance when logging to file
	3460	Fixed issues when tracing DMTCP
	3389	New versions of glob and glob64 (GLIBC_2.27) now supported
	2149	Improved handling of symbolic links to the Mistral installation directory.
	2678	Fixed an issue with 64-bit inodes with 32-bit binaries which could result in temporary files being left on the system.
	2748	Duplicate messages removed from throttling log.

5 Mistral 2.11.3

Customer Ticket	Development Reference	Description
	1195	Make license error messages more descriptive.
TT1686	3261	Improve handling of missing mandatory environment variables.
TT1968	3318	Fixed an issue with interactive SSH sessions under trace not having a pseudo terminal assigned.
	3324, 3337, 3354, 3427	Various performance improvements for highly parallel workloads.
TT1968	3332	Fixed an issue where the `--remote=no` option prevented the list of programs not to trace being honoured.
	3347	Fixed a race condition where processes could be assigned the wrong parent if the original parent process exits.
	3377	Mistral will now kill plug-in processes that are still active at the end of a job after a short timeout instead of waiting indefinitely. The wait period can be altered by setting the environment variable `MISTRAL_PLUGIN_EXIT_TIMEOUT`.
TT1727	3418	Fix a problem where the IFS environment variable could be altered while under trace.

6 Mistral 2.11.2

Customer Ticket	Development Reference	Description
	2234	Added ability to record backtraces when rules are violated.
	2338	Added new call type category "sync" to track I/O related to file system synchronisation calls.
	2643	Allow mapping of network ports to dummy paths to allow monitoring of network traffic per IP address.
	2674	Mistral contracts now allow a zero threshold limit so all events are always recorded.
	2800	Fixed a bug where files that were created on open were only being counted as a create event and not an open.
	2863	Minor performance improvement to optimise initialisation to skip unnecessary steps.
	2891	Fixed some minor bugs in the contract checker.
	2989	Improved architecture detection on 64 bit ARM platforms.
	2999	Fixed a bug where the last filename accessed was not always logged.
	3014	Fixed a bug where most significant process information was not always logged correctly in a multi-threaded application.
	3035	Fixed a bug that was preventing Mistral from claiming necessary locks causing race conditions.
	3127	Updated terms and conditions distributed with the software. See `docs/SoftwareLicenceAgreement.pdf`.
TT1615	3140	Compatibility fix for older versions of `ksh`.
	3170	Fixed a bug where the significant contributor fields were not always populated during throttling.

7 Mistral 2.11.1

Customer Ticket	Development Reference	Description
	3008	Fixed a bug where a large number of mount points could cause a crash during initialisation.

8 Mistral 2.11.0

Customer Ticket	Development Reference	Description
	1321, 2619, 2904	Added support for PBS Professional.
	2560	Fixed a bug that could prevent latency measurements from being accurately recorded in some cases.
	2701	Tracing on ARM v7 and ARM v8 systems including MPI functionality is now fully supported.
TT436	2777	Improved compatibility with LSF python API.
TT1233	2862	Fixed namespace collision with client application.

9 Mistral 2.10.3

Customer Ticket	Development Reference	Description
	1322, 2446, 2477, 2698	Add support for Slurm workload manager
TT1135	2682	Improved detection of slow and failing plug-ins.
	2689	Mistral will now fall back to logging to disk if an output plug-in fails.
	2725	Fixed a bug that could cause a hang during tracing under certain conditions in process initialisation.

10 Mistral 2.10.2

Customer Ticket	Development Reference	Description
	2383	Add initial support for tracing on ARM v7 and ARM v8 systems. MPI functionality is currently not available on these platforms.
TT436	2602	Fixed a bug where a multi-threaded program being traced may not exit cleanly.

11 Mistral 2.10.1

Customer Ticket	Development Reference	Description
	2511	Fixed a bug where attempting to change the file access mode on an already open stream could fail under certain conditions.
	2531	Fixed a bug where log entries generated in the final timeframe of a job may not get sent to an output plug-in.

Customer Ticket	Development Reference	Description
	2546	Fixed a bug that prevented running MPI jobs in a sourced environment set-up.
	2547	Compatibility fix for programs that explicitly define a small stack size.
	2549	Added official support for OpenMPI 2.1.0
	2551	Fixed a bug where error messages would go to `stderr` rather than `mistral.log` in the current working directory if the `--log` option is not set.
	2555	Fixed a bug where the stderr output of a plug-in may get lost on early shutdown of that plug-in.
	2587	Fixed a bug that could prevent definition of bandwidth rules for MPI read, write and seek calls.
	2594	Fixed a bug where MPI read and write statistics were not correctly recorded if an MPI open rule was not defined.

12 Mistral 2.10.0

Customer Ticket	Development Reference	Description
TT671	658	Output can now be redirected to a log file via new `-l`/`--log` option.
	659	Support shell constructs to be directly run under trace.
	662	Added a new `--remote-job` option to prevent a trace from exiting until all child jobs are completed.
	1008	Added a new `--check` option. Used to check contracts are valid.
	1237	Fixed a potential race condition in plug-in control and enhanced plug-in failure logging.
	1248, 1944, 1945	Improved signal handling.
	1290	Improved throttling log precision.
	1570	Fixed a bug where global contract updates were not always being detected correctly.
	1895	Added script to generate graphs based on Mistral log files.
	2028	Fixed an issue where Mistral could potentially use the same working directory for multiple jobs in some configurations.
TT436	2032	The exit code of the program under trace is now properly propagated.
	2059	Increased the maximum size of the captured command line and file name log fields.
DT-69791	2107	Added support for job submissions via LSF C API.

Customer Ticket	Development Reference	Description
	2127	Added new -c/--post-trace option allowing user to execute a command once the trace is finished.
	2145	Altered UGE job ids so that they only include an array index when part of an array job.
	2170	Enabled tracing of MPI I/O for the following implementations: MPICH, MVAPICH, OpenMPI
	2187	The '#' character is now properly escaped in remote trace commands.
	2219, 2248	Mistral will now always gather information about stat calls if an access rule is defined.
TT431	2259	Improved error checking related to non-seekable streams.
	2286	Added support for LSF job submission via lsgrun, lsrun and blaunch.
	2303	Fixed an issue where Mistral environment variables were not correctly propagated to remote execution hosts.
	2327	Enabled throttling for total latency rules.
TT696	2388, 2413	Improved compatibility with other LD_PRELOAD libraries.
TT704	2419	Fixed an issue where the wrong errno value could be reported to an application while under trace.

13 Mistral 2.9.5

Customer Ticket	Development Reference	Description
TT633	2266	Fixed an issue where a program registering a signal handler in a non-standard way would cause a crash.

14 Mistral 2.9.4

Customer Ticket	Development Reference	Description
TT564, TT584	2231	Fixed an issue where an internal error check could generate a false positive during signal handling.

15 Mistral 2.9.3

Customer Ticket	Development Reference	Description
	891, 1227, 1228, 1892, 1910, 2038, 2039, 2040, 2048	Various performance improvements.
	1222	Added support for following `rsh` commands to new execution hosts.
	1559	Compatibility fix for programs that use libraries which override standard `glibc` functions.
	1865	Altered Mistral contract parsing error messages to use the exact field names as listed in the user guide.
	1868	Fixed issue where Mistral would not delete temporary working files when following a job to a new execution node.
	2002	Fixed issue where LSF job IDs were always recorded with a zero array index when the job was not part of an array.
	2008	PID and filename are now correctly recorded for all latency rules.
TT434	2077	Added support for `jemalloc` and other similar `malloc` replacement `LD_PRELOAD` libraries.

16 Mistral 2.9.2

Internal development release.

17 Mistral 2.9.1

Customer Ticket	Development Reference	Description
	1524	Throttling and monitoring rules may now be specified for "seek" calls (fseek, lseek, etc.).
	1553	Throttling and monitoring rules for "read", "write" and "seek" calls may now specify the range of operation sizes that the rule matches. The contract rule format has been updated to include an additional field to specify this value. Old style contracts will continue to match all matching operations regardless of size as before. See the user guide for more information on the new contract format. Also see development item 1649 below.
	1647	Added version number field to contract headers and the current contract version set to "2". Old style, version 1, contracts are deprecated and will be removed in a future release. See the user guide for more information on the new contract format. Also see development item 1649 below.

Customer Ticket	Development Reference	Description
	1648	Plug-in API version 2 introduced, deprecating version 1.
	1649	Created a migration script to convert old contracts to the new format. The script can be found in: <installation dir>/migration/v2_contract_update.sh Run the script with the -? option for usage instructions.
	1808	Added support for Gigabytes as a unit for size based measurements.