



## Breeze Trace Only Change log

V2.13.5

## 1 Breeze 2.13.5

Customer Ticket	Development Reference	Description
		Follows ssh commands by default, except for when called by git.
		Bug fix for stat or open calls with an invalid pointer.
		Support for qsub -shell option in Univa Grid Engine.
		Run interactive login shell when interactive ssh is traced.
		Fix bug in dlopen handling.

## 2 Breeze 2.13.4

Customer Ticket	Development Reference	Description
	3664	Singularity Support added
	4022	Moved unnecessary error messages to debug option
	4031	Renameat2 function now correctly measured
	4047	ssh commands are no longer followed by default
	4099	BREEZE_SINGULARITY_BIND_PATH environment variable added - set it to the high level directory that all of the Mistral files are stored in (including plug-in config etc) to reduce the number of bind paths used by Breeze in Singularity containers.
	4093	Bug fix for LSF API - lsb_submitPack would occasionally fail.
	3960	Mmap operation size changed from file size to page size - to reflect latency of that operation.
	3983	Fixed bug tracing sbatch scripts not on shared storage
	3962	Added support for tracing clone calls which create new namespaces
	4085	If a file within a trace can't be decoded, skip the corrupted file(s) and decode the rest of the trace.
	4061	Improved performance when writing trace files.

## 3 Breeze 2.13.3

Customer Ticket	Development Reference	Description
	3825	Tracing error messages now format the timestamp as a date and time. They also record the uid, hostname and errno value.
	3832	Fixed deadlock in multithreaded processes which called dup2 or dup3.
	3858	Remove warning when program calls vfork.
	3865	Support for glibc v2.29.

#### 4 Breeze 2.13.2

Customer Ticket	Development Reference	Description
	3749	Fixed issue with how dryrun dealt with different stack pointer alignments.
	3766	Performance improvement when tracing when there are a large number of file descriptors open by default.

#### 5 Breeze 2.13.1

Customer Ticket	Development Reference	Description
	3603	Real-time signals are now wrapped by dryrun.
	3685	Support for glibc v2.28.
	3698	Decoder improved to handle missing strings.
	3677	Switched to new license manager - set BREEZE_LICENSE rather than BREEZE_RLM_LICENSE.

#### 6 Breeze 2.13.0

Customer Ticket	Development Reference	Description
	3586	Improve detection of if a file is a directory in stat records.
	3575	Fix for bug when using longjmp to exit a signal handler.
	3584	Switch to using unversioned look-up for all wrappers.
	3621	Improved clear up code for dealing with Breeze temporary files in a trace on NFS.
	3623	Improved performance when tracing small I/O.

Customer Ticket	Development Reference	Description
	3626	Increased small I/O definition from 4kB to 32kB to better reflect impact on storage.
	3610	File usage records now include the file path used as well as the canonical path.
	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
	3653	Ensure remote trace directories are unique when tracing srun commands.

## 7 Breeze 2.12.0

Customer Ticket	Development Reference	Description
	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 Breeze 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.

## 8 Breeze 2.11.3

Customer Ticket	Development Reference	Description
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.
TT1968	3332	Fixed an issue where the <code>--remote=no</code> 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.
TT1727	3418	Fix a problem where the IFS environment variable could be altered while under trace.

## 9 Breeze 2.11.2

Customer Ticket	Development Reference	Description
	2863	Minor performance improvement to optimise initialisation to skip unnecessary steps when profiling is disabled.
	2878	Improve compatibility in the presence of other LD_PRELOAD libraries (e.g. jemalloc).
	2989	Improved architecture detection on 64 bit ARM platforms.
	3111	Tracing of <code>stat()</code> and related function calls is now enabled by default.
	3127	Updated terms and conditions distributed with the software. See <code>docs/SoftwareLicenceAgreement.pdf</code> .
TT1615	3140	Compatibility fix for older versions of <code>ksh</code> .
	3145	Fixed a bug where <code>exec()</code> and related functions did not record the path used correctly if the function call failed.
TT1615	3146	Fixed a bug that caused tracing to fail on machines with a large number of mount points.

## 10 Breeze 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.

## 11 Breeze 2.11.0

Customer Ticket	Development Reference	Description
	1321, 2619, 2904	Added support for PBS Professional.
	2701	Tracing on ARM v7 and ARM v8 systems including MPI functionality is now fully supported.
TT436	2777	Improved compatibility with LSF python API.

## 12 Breeze 2.10.3

Customer Ticket	Development Reference	Description
	1322, 2446, 2477, 2698	Added support for the Slurm workload manager.
	2725	Fixed a bug that could cause a hang during tracing under certain conditions in process initialisation.

### 13 Breeze 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.

### 14 Breeze 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.
	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

### 15 Breeze 2.10.0

Customer Ticket	Development Reference	Description
TT671	658	Output can now be redirected to a log file via new <code>-l/--log</code> option.
	659	Support shell constructs to be directly run under trace.
	662	Added a new <code>--remote-job</code> option to prevent a trace from exiting until all child jobs are completed.
	1248, 1944, 1945	Improved signal handling.
	1804	Pipes and sockets are now excluded from filesystem trawl measurements.

Customer Ticket	Development Reference	Description
TT436	2032	The exit code of the program under trace is now properly propagated.
DT-69791	2107	Added support for job submissions via LSF C API.
	2127	Added new <code>-c/--post-trace</code> option allowing user to execute a command once the trace is finished.
	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.
TT431	2259	Improved error checking related to non-seekable streams.
	2286	Added support for LSF job submission via <code>lsgrun</code> , <code>lsrun</code> and <code>blaunch</code> .
TT696	2388, 2413	Improved compatibility with other LD_PRELOAD libraries.
TT704	2419	Fixed an issue where the wrong <code>errno</code> value could be reported to an application while under trace.

## 16 Breeze 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.

## 17 Breeze 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.

## 18 Breeze 2.9.3

Customer Ticket	Development Reference	Description
	891, 1227, 1228, 1892, 1910, 2038, 2039, 2040, 2048	Various tracing performance improvements.
	1222	Added support for following <code>rsh</code> commands to new execution hosts.
	1559	Compatibility fix for programs that use libraries which override standard <code>glibc</code> functions.
TT434	2077	Added support for <code>jemalloc</code> and other similar <code>malloc</code> replacement <code>LD_PRELOAD</code> libraries.

## 19 Breeze 2.9.2

UI functionality release, no changes made to the Breeze trace-only component.

## 20 Breeze 2.9.1

Internal development release.

## 21 Breeze 2.9.0

Customer Ticket	Development Reference	Description
	1524	Tracing and profiling is now supported for "seek" calls ( <code>fseek</code> , <code>lseek</code> , etc.).
	1525	Introduced a new value "all-io" for tracing option "--trace" which collects statistics on all reads, writes, and seeks.  This option is not intended for use with large traces.
59	1534	Glob calls with <code>GLOB_NOMAGIC</code> or <code>GLOB_NOCHECK</code> flags set that do not find matching files are considered failing.