breeze
HPC

Breeze 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.
		Fixed bug in I/O Sizing view when using traces with no profile data.
		Added MPI Read, Write, Seek, Create and Delete to MPI View.
		Stopped using local filesystem to infer file types.
		Fixed bug added in 2.13.4 when no preferences file exists - new file is now created.
		Fixed bug in profiling view - latency counts were displayed as time rather than counts.
		Fixed modal windows not having a parent - you now have to close them to use the window behind.
		Fixed compound commands showing as files in dependencies output.
		Fixed XSD for programs and events - it now describes the output with no data correctly.
		Added program name to Profile view PID drop-down.
		Added metadata duration to Duration View.
		Added All option to CPU profiling.
		Changed CPU graph to be stacked - so total CPU usage is more obvious.
		Enabled cancel button when importing traces.
		Fixed error path does not exist error when importing remote traces from read-only file systems.
		Fixed display issues for file sizes (and seek distances) greater than 1PB.
		Fixed memory leak when clearing runs.
		Memory/CPU measurements are now taken every second, regardless of it the process is doing I/O, makes differentiating between busy/idle processes easier.

Customer Ticket	Development Reference	Description
		New view - Program Profile, shows profiling data for the selected program - bandwidth I/O counts, CPU and Memory.
		Changed column order for FileTrawls Profiling.
		Changed default start size of Breeze to fill the screen.

2 Breeze 2.13.4

Customer Ticket	Development Reference	Description
	3565	Switched from Oracle Java to Zulu OpenJDK build from Azul
	3911	Added mount point information to files XML output
	3664	Singularity Support added
	3665	Added I/O Sizing profiling graphs
	3605	Healthcheck - Added profiling graphs
	3817	Added --packages argument to trace-program.sh to allow matching of dependencies to distribution packages
	3897	Removed data from streams without a file from I/O Summary
	3898	Fixed bug in duration view – duration column had incorrect units
	3904	Reduced verbosity of Breeze on command line – warnings about deleting temporary files etc.
	3923	Program files stats bug fix, numbers were for multiple processes, not just selected node
	3920	Fixed bug in dependencies output where some programs could have been missing.
	3911	File reads/writes added to dependencies output along with a summary of file reads/writes per mount point.
	3951	Support for importing strace files has been removed.
	3999	Fixed calculation of trace size (extra files in the directory are no longer counted)
	4028	Fixed null pointer exception in event view when no node is selected
	4037	Fixed bugs in profiling view that could lead to a hang or errors with no data.
	4066	Improved handling of files with spaces in file name.
	4069	Glibc call name is now visible in the event view.

Customer Ticket	Development Reference	Description
	4094	Added deletes to files view (and related views).
	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 Sigularity 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.
		Healthcheck – output section descriptions even when no data is present
		Healthcheck – Improved description of executable duration section
		Healthcheck – Lists directories considered restricted.

3 Breze 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.
	3847	Excluded seeks from total operation sizes in I/O Summary.
	3847	Fixed bug in CPU Profiling graph - now handles values greater than 100%.

Customer Ticket	Development Reference	Description
	3849	Added program run time to I/O Summary.
	3824	Added latencies for Stat, Open, Create and Sync operations to files view and related output.
	3840	Added orphaned programs to the timeline and programs that were started as system calls.
	3821	Fixed bug where Program Files and related views did not load correctly.
	3849	Minor formatting of file size and durations in I/O Summary, Duration and Event views.
	3857	Made column headings and operation counts more clear in Event View.
	3859	Added Deletes and removed trawls from the I/O Summary.
	3869	Added network profiling data to Event View.
	3882	Fixed bug with filter date handling in Duration View.
	3883	Improved scrolling in Timeline on CentOS.
	3855	Fixed licence server check in BreezeAP and Healthcheck – no longer checks unnecessary ports.
	3881	Added support for IE11 in Healthcheck.

4 Breeze 2.13.2

Customer Ticket	Development Reference	Description
	3779	Added new views – Program Network, Program MPI and Program Directories.
	3768	Added number of mmap operations to Files view.
	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.
	3736	Fixed bug where unresolved sockets would contribute to small I/O in the traffic light reports.
	3744	Sorted drop-down of remote traces to make finding a specific trace easier.
	3761	New script to install Breeze in GNOME application menus tools/add_icon_to_gnome.sh
	3763	Fixed mis-identification of some sockets as scripts
	3769	Fixed display issue in symlink profiling graph.

Customer Ticket	Development Reference	Description
	3769	Profiling graphs now divide data by the timeframe, rather than just totalling.
	3769	Network profiling graphs no longer split by port – to reduce the number of tabs significantly.
	3771	Fixed concurrent modification exception sometimes seen in search view.
	3771	Fixed bug in files view, where size of small/large operations heading didn't update correctly.
	3771	Fixed bug when importing older traces with fast import mode
	3789	Removed potentially non-blocking network operations from I/O summary.
	3789	Moved sync operations to medium in I/O Summary.

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.
	3667	Removed outdated views – Flow, Run Information, Parent, Program Summary, Process List, Compare two runs and command line.
	3667	Renamed Traffic light report to I/O summary
	3667	Hide make files and scripts from the graph view by default.
	3670	New view – Program Files – similar to the files view but only shows the files accessed by the selected node.
	3671	A new drop-down to show/open child traces.
	3671	Files in the node view now shown in a tree structure.
	3671	Show mount points in files view.
	3696	New section in the traffic light report – syncs. This data previously contributed to opens.

6 Breeze 2.13.0

Customer Ticket	Development Reference	Description
	3600	New fast import mode.
	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.
	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.
	3599	New Program traffic light view.
		Network View now visible by default.
	3599	Traffic light view now has operation counts, total bytes (where appropriate), read and writes can now be split and large read and write statistics have been added.
	3609	New total latency column for profiling views.
	3566	Temporary file creations now show as both open and creates.
	3470	Search results now list each environment or library that matches a search, not just one result per program and unset environment variables are now clearer.
	3635	Improved performance of tables.
	3638	Fixed Null Pointer Execption when creating Healthcheck report.
	3638	Changed display name of ReadFileInfo to Stat and Sought By to Seek-ed by. Removed references to *Trace and removed the word view from titles.
	3652	Fixed bug when opening remote traces from PBS and SLURM job arrays.
	3638	Removed unnecessary duplicate file warning during import.

7 Breeze 2.12.0

Customer Ticket	Development Reference	Description
	3199	Added a new View (the default) to show a summary of the I/O – called the traffic light report view.
	1654	Added a new view to show the profiling data with graphs.
	3380	Fixed issue where Breeze would hang trying to import a remote trace that did not exist.
	2919	Added network service names to network view.
	2946	Fixed issue with double counting of other operations (failed operations were counted twice) in the files and directories views.
	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
	2020	Improved trace export, so that you now get progress and the ability to cancel.
	2563	Changed most numeric columns in the UI to sort descending on first click.
	3092	All licensed products now search locations for a license in the following order (when applicable): • Command line option • Environment variable • Saved configuration
	3113	Add the ability to generate Breeze AP format output from the GUI.
	3117	Default UI layout has been changed to display the Timeline View as the primary content of the main pane and not to open the Commandline View.
	3118	The Duration View contains 2 new columns that display the total I/O (read+write) in bytes and count of operations.
	3119	Enhance the Event View:

Customer Ticket	Development Reference	Description
		• The Event view now uses profiling data, if present, to estimate read, write and seek events that occur after the first when displaying a trace produced without the `--all-io` option. • Failed I/O is now displayed in red italic font in the event view. The Success column has been changed to be an icon (a red cross) with just S as the column header. • The backtrace column in the event view has been reduced to a green tick icon with B as the header. • Mouse dragging the graph or time line view no longer cause graphics corruption when attempting to scroll beyond its bounds. • The event view title can now be made larger or smaller by mouse dragging on the lower boundary. • A sash now connects the event view table with the time line allowing both to be resized by mouse dragging on the lower boundary of the table. • The target column of the event view has been split into 2 columns, Target and 'Target full path' with Target displaying only the base name. • New columns Size, Count and Failed Count have been added to the event view, populated only by profile rows, they contain the Size in bytes, a total count of the operations and the number that produced an error. • The 'Source Pid' column is now also populated when displaying events by file.
	3175	Child (remote) traces are now displayed in the timeline view.
	3222	Various performance improvements in trace import.
	3242, 3249	Various changes to optimise memory usage.
TT1686	3261	Improve handling of missing mandatory environment variables.
	3296	Make duration column in the Duration View right aligned.
TT1968	3318	Fixed an issue with interactive SSH sessions under trace not having a pseudo terminal assigned.
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.
	3374	Enable limited copy and paste of tabular data in the UI.
	3385	Bundled JRE version upgraded to Java 1.8.0_161
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
	2338	Added new call type category "sync" to record I/O related to file system synchronisation calls.
	2800	Fixed a bug where files that were created on open were only being recorded as a create event and not an open.
	2808	Enhanced handling of orphan/daemon processes so they can be connected to their original parent process.
	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`).
	2951	Changed label on Search View for Network Results from "Filename" to "Network Connection"
	2962	Changed File System I/O Counts table to display numeric data right justified.
	2989	Improved architecture detection on 64 bit ARM platforms.
	3007	Fixed a bug that caused directories to be listed both with and without a trailing slash in the I/O stats view.
	3024	Fixed a bug that could cause Breeze to hang if a process was launched using a relative path.
	3111	Tracing of `stat()` and related function calls is now enabled by default.
	3116	Added new `--licqueue` option to force Breeze to wait for the next available license rather than exiting immediately.
	3127	Updated terms and conditions distributed with the software. See `docs/SoftwareLicenceAgreement.pdf`.
TT1615	3140	Compatibility fix for older versions of `ksh`.
	3145	Fixed a bug where `exec()` 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
	1286	Fixed a bug in the Program Summary view where program nodes could be removed from the graph if they shared an executable name.
	1321, 2619, 2904	Added support for PBS Professional.
	1904, 2882	Upgrade to Java 8 run time environment. This change is known to prevent use of the UI on stock RHEL 4 systems.
	2527, 2864, 2867	Upgrade graph drawing library for compatibility with newer systems.
	2554	Breeze has been updated to use the correct suffix `µs` rather than `us` for all time measurements.
	2568	Increase the available zoom levels in the UI.
	2701	Tracing on ARM v7 and ARM v8 systems including MPI functionality is now fully supported.
	2720	Fixed a bug that would cause the Event Timeline view to scroll to the top whenever the zoom level was changed by using `Ctrl + MouseWheel`.
	2733	Fixed a bug that could cause the UI to hang if the user attempted to exit while updating the graph e.g. during a trace import.
	2760	Fixed a bug where the count of zero I/O MPI operations was always 0.
	2763	The Symlink View no longer lists duplicate targets.
	2765	Fixed a bug where the trace information was loaded in the wrong order potentially causing network operations to be mistakenly categorised as file operations.
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.
	2742	Fixed a bug that prevented the Files View from being correctly populated when loading traces generated with Breeze versions 2.9.5 and older.

13 Breeze 2.10.2

Customer Ticket	Development Reference	Description
	1690	Fixed a bug where a previously decoded trace was decoded a second time if reloaded in the UI.
DT-71887	2345	Added new Network View.
	2383	Add initial support for tracing on ARM v7 and ARM v8 systems. MPI functionality is currently not available on these platforms.
	2469	Removed unnecessary "pid_" prefix from PID values.
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
	1529	The potential libraries list no longer includes the Breeze dryrun library.
	1542	Added units to the time heading of the File I/O statistics.
	1586	Fixed a bug where a second copy of the root node could be displayed on the graph in certain error cases.
	1609	Fixed a bug that could prevent Symbolic links created by a traced application from being displayed.
	1627	Allow Enter to initiate a search in the search text box of the Event View.
	1629	Search View has been altered to show both base filename and full path columns in the results.

Customer Ticket	Development Reference	Description
	1636	In the Graph View bi-directional links now only show the relevant call types for that direction.
	1691	The Commandline view will now wait until a command has completed before displaying the prompt.
	1816	Fixed bug where the Event View may appear blank until the active node is re-selected.
	1840	The time line in the Event View now selects the closest record in the table rather than the preceding one.
	2172	Added support for MPI operations in the Breeze UI. MPI operations are now reported in the existing views. New MPIView shows information about files that were accessed through MPI. MPI I/O stats are merged with their existing POSIX counterparts.
	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
	603, 894	Added `Close` buttons to windows that were missing one.
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.
	818	Added an ignore case option in the SearchView.
	1248, 1944, 1945	Improved signal handling.
	1516	Fixed an issue where the command line prompt did not always track the current directory correctly.
	1656	Changed the behaviour of the mouse scroll: - scroll with no modifier, the selected view scrolls vertically; - Ctrl+scroll, adjust the zoom of the selected view; - Shift+scroll, the selected view scrolls horizontally.

Customer Ticket	Development Reference	Description
	1754	More detailed I/O statistics are gathered for each open file and recorded on file close. The FilesView has been updated to display the new data.
	1754	Added a new DirectoriesView. This displays similar data to the FilesView, but aggregated per directory.
	1785	Fixed an issue where export of a trace to an existing directory was not permitted.
	1802, 2069	Various performance improvements.
	1804	Pipes and sockets are now excluded from filesystem trawl measurements.
	1874	Fixed bug where some views showed inconsistent process end times.
	1882	Added a new right-click option to rows in the DurationView table to copy the selected process start and end times to the filter box.
	1897	Enabled PID searching of small traces in the CompareView.
	2007	Removed unnecessary `Apply` button in Preferences page.
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.
	2123	Fixed an issue where a NullPointerException could occur during import of an strace.
	2127	New `-c`/`--post-trace` option allowing user to execute a command once the trace is finished.
	2151	Fixed an issue where Breeze would report an exception when program under trace could not find a library.
	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 `lsgrun`, `lsrun` and `blaunch`.
	2331	Untraced programs are no longer marked as failed.
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.
	2489	Fixed an issue where using a Unix timestamp in the DurationView filter did not works correctly.

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.
	930	Node centric views currently in the background now have their titles updated to highlight when new information is available.
	1222	Added support for following `rsh` commands to new execution hosts.
	1559	Compatibility fix for programs that use libraries which override standard `glibc` functions.
	1696	The duration and timeline views have both been updated to filter processes displayed based on selections in the program summary view.
TT434	2077	Added support for `jemalloc` and other similar `malloc` replacement `LD_PRELOAD` libraries.

19 Breeze 2.9.2

Customer Ticket	Development Reference	Description
	872	Performance improvements to Event View table rendering
	1705	Added a checkbox to the Event View to hide read, write and seek events for use with large traces.
	1706	Bug Fix: Breeze now correctly identifies special file types such as pipes, sockets etc. in all record types
	1800	The value displayed in the Read/Seek ratio column in Files View is now limited to a maximum of 2 decimal places.
	1823	Remove close counts from Files View, these events are not currently tracked.
	1885	Bug Fix: running the "trace" command in the UI command line window no longer adds an obsolete option to the underlying command.
	2003	Button labels and default actions updated in the I/O stats View for usability.
	2051	Bug Fix: sorting by filename in the Files View now works correctly.

20 Breeze 2.9.1

Internal development release.

21 Breeze 2.9.0

Customer Ticket	Development Reference	Description
	1442	Duration View now displays the programs in a table with sortable columns.
	1442	Added filter to Duration View that allows the user to only display programs that were active at the specified time in the table. Standard date and unix time formats are supported.
	1442	Added an option to switch from the IO Stats View to Duration View which sets the selected time as filter.
	1443	It is now possible to export Profile IO data if a BreezeAP license is available.
	1490	Files View now displays the programs in a table with sortable columns.
	1524	Tracing and profiling is now supported for "seek" calls (fseek, lseek, etc.).

Customer Ticket	Development Reference	Description
	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 GLOB_NOMAGIC or GLOB_NOCHECK flags set that do not find matching files are considered failing.
	1628	The Program Information View, which is available as a pop-up by double clicking on a node, is now also opened in the right hand panel of Breeze by default.