

ReplayEngine 1.0.1 Release Notes

Dec 2nd, 2008

TotalView Technologies

Overview

ReplayEngine 1.0.1 introduces support for a number of new MPIs:

OpenMPI 1.2.5

Intel MPI 3.0, 3.1

MVAPICH2 1.0

HP-MPI 02.02.07.00

and

LAM 7.1

The versions listed above are the versions with which we have done extensive testing and that we explicitly support. Later versions of each parallel runtime are likely to behave similarly, users are encouraged to provide feedback on the behavior of ReplayEngine with earlier and later versions.

ReplayEngine 1.0.1 also includes support for 64 bit, infiniband, and (limited) shared memory when used with MPICH2 1.0.6.

Known Issues

Shared Memory

ReplayEngine may run slowly or fail with applications that make heavy use of shared memory.

Back Stepping Operations and Threads

When moving a process backward to a previously recorded time with Replay, TotalView uses the current focus thread to search the recorded history for the time when that particular thread was at the specified time. Other threads will reflect their state at the specified time – it is not possible to alter the thread sequence when examining recorded history.

Back Stepping Operations and Groups

When reverse debugging, users should perform Next operations on a single process. This can be done by simply changing the group dropdown next to the Go button from "Group" to "Process" or using the Process -> Next menu option.

MPICH2 Nemesis channel

ReplayEngine does not support debugging applications that use the ch3:nemesis channel in MPICH2. Please use the ch3:sock, ch3:ssm, or ch3:shm channels instead.

Using OpenMPI with Classic Launch

If the mpirun command is being issued directly you should disable the shared memory transport mechanism with the following mpirun flags

```
--mca btl ^ sm - mca coll ^ sm
```

This is done automatically when the program is launch via the parallel tab on the new program dialog.

Infiniband and Intel MPI

Infiniband is not yet supported in ReplayEngine when used with Intel MPI

Using Intel MPI with Classic Launch

If the mpirun command is being issued directly then shared memory must be disabled manually. This can be done by using the `-genv I_MPI_DEVICE=sock` command line option or setting the environment variable `I_MPI_DEVICE` equal to the string `sock` before running the mpirun command.

Infiniband mrail support and MVAPICH2

The `osu_ch3:mrail` channel is not supported. Please instead use `ch3:sock` instead.

Using HP-MPI with Classic Launch

If the mpirun command is being issued directly then shared memory must be disabled manually. Please use the `-intra=nic` flag if you are calling mpirun explicitly to avoid using shared memory for intra-node communications.

Infiniband and HP-MPI

Infiniband is not yet supported with HP-MPI.

TCP transports and LAM -MPI

ReplayEngine does not support the tcp, sysv or usysv transport mechanisms. Please use the “-ssi rpi lamd” command line option to force the use of the lamd as a transport.

Certain Collectives and LAM-MPI

ReplayEngine does not support the use of the following collectives in LAM MPI programs: smp, shmem, or lam_basic.