TotalView® 8.15.10
Platforms and System Requirements

	Linux-Based Systems	Vendor Systems	Other Support	Shading	Meaning
Links to specific platform information:	64-bit x86-64 Linux	IBM Blue Gene	CUDA on Linux 64-bit		
	32-bit x86 Linux	IBM Power Linux	Accelerators on Cray XK6		Certified, and fully supported
	Intel IA-64 Linux	IBM RS6000 Power AIX	ReplayEngine on Linux 64		
	Intel Xeon Phi	Sun SPARC Solaris	ReplayEngine on Linux 32		Tested, and fully supported
	Linux PowerLE	Sun Solaris Opteron	ReplayEngine on Cray XE		
	Other Linux Platforms	Apple Macintosh			Expected to work, and supported
		Cray XT / XE / XK / XC			

Notes:

1. **The version of this document in the product distribution is a snapshot. For the latest information, see the PDF version on the TotalView documentation page on the Rogue Wave web site.**
2. If you are using one of the compilers listed here and its version is not listed, you will usually be able to debug your programs. We will be happy to assist you if problems occur.
3. For additional information on platforms, see the latest TotalView release notes at http://www.roguewave.com/help-support/documentation/totalview#TotalView.
4. X Windows is required on all platforms to run the TotalView and MemoryScape GUIs. Systems used for remote debugging, i.e. those running only the TotalView Server, do not need X Windows installed.

Linux-Based Systems

Heterogeneous and Cross-Debugging

Several forms of heterogeneous debugging are supported, where the operating system and/or architecture differ.
For example, from a Linux x86-64 session you can debug remote processes on Linux Power.
The information below shows the supported combinations.

Host System	Target System
Linux x86-64	Linux x86 Linux x86-64 Linux Power 32 Linux Power 64 Cray XT Intel Xeon Phi coprocessor
Linux x86	Linux x86 Linux Power 32 Linux Power 64
Linux Power 64	Linux Power 32 Linux Power 64 Blue Gene

64-Bit x86-64 Linux

Operating Systems	Environment/Compiler	Product	Versions			
Novell Open SuSE 11.1 and 13.2	C and C++	GNU GCC	3.4	4.0	4.1	4.2
Novell SuSE Linux Enterprise Server 11, 11.1, and 12			4.3	4.4	4.5	4.6
			4.7	4.8	4.9	5.2
Red Hat Enterprise Linux 5, 6, and 7		Intel C/C++ Compiler for Linux	12.1	13	13.3	14.0
Red Hat Fedora 19, 20, and 21			14.0.2	15.0	15.3	16.0
ProPack 5 SP3		Pathscale EKO	3.1	3.2		
Ubuntu Linux 13.04, 14.04, and 15.04		PGI Workstation	11.2	11.9	12.1	12.8
			13.6	13.10	14.4	15.5
		Sun Studio	12			
Certification platforms:		Clang	3.3	3.4	3.5	
SuSE Linux Enterprise Server 11.1	FORTRAN 77 and Fortran 90	Absoft Pro	9.0	10.0		
RedHat Enterprise Server 6		GNU gfortran	4.1.2 - 4.2 (RH ES 5u2)			4.3
			4.4	4.5	4.6	4.7
			4.8	4.9	5.2	
		Intel Fortran Compiler for Linux	12.1	13	13.3	14.0
			14.0.2	15.0	15.3	16.0
		PGI Workstation	11.2	11.9	12.1	12.8
			13.6	13.10	14.4	15.5
		Pathscale EKO	3.1	3.2		
		Lahey Linux 64-bit and Fortran Pro 64-bit	6.2	8.0		
		Sun Studio	12.0			
	MPI	Argonne MPICH	1.2.7	3.1		
		Argonne MPICH2	1.1	1.2	1.3	1.4
		GNU SLURM	1.2			
		Intel MPI	3.0	4.0	4.1	5.0
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.2
			1.5	1.6	1.8.4	
		OSU MVAPICH	1.2			
		OSU MVAPICH2	1.4.1	1.5	1.6	1.7
		SGI MPT	1.2.6	2.0	2.12	
		SGI Propack	5 SP3	6		
		Bullx MPI	1.1.3			
		IBM Platform MPI	8.3			
	OpenMP C/C++	Intel C/C++ Compiler for Linux	12.1	13	13.1	14.0
			14.0.2	15.0	15.3	16.0
		PGI Workstation	11.2	11.9	12.1	12.8
			13.6	13.10	14.4	15.5
		Sun Studio	12			
		GNU GCC	4.1.2	4.2.0	4.2.3	4.4
			4.5	4.6	4.7	4.8
			4.9	5.2		
	Open MP FORTRAN 77 and Fortran 90	GNU gfortran	4.1.2 - 4.2 (RH ES 5u2)			
			4.4	4.5	4.6	4.7
			4.8	4.9	5.2	

Notes

ReplayEngine Support

ReplayEngine supports the OS and compiler variants listed above for 64-Bit x86-64 Linux.

ReplayEngine supports the IP transport mechanism in the following MPI versions:

- Argonne MPICH, version 1.1, 1.2, 1.3,1.4, and 3.1
- Argonne MPICH2 1.0.7, 1.1, and 1.2
- Open MPI 1.2.8, 1.3.2, 1.4.2, 1.5, 1.6, and 1.8.4
- Intel MPI 3.0, 4.0, 4.0.3, and 5.0
- SGI MPT 1.2.6, 2.0 and 2.12
- Cray XT-MPT 2.0
- OSU MVAPICH 0.9.9, 1.1, and 1.2
- OSU MVAPICH2 1.4.1, 1.5, 1.6, and 1.7
- IBM Platform MPI 8.3

ReplayEngine supports native communication over Infiniband using either the IBverbs or the QLogic PSM transport layers in the following MPI versions:

- Open MPI 1.4.2, 1.5, 1.6, and 1.8.4
- OSU MVAPICH 1.2
- OSU MVAPICH2 1.5, 1.6, and 1.7
- Intel MPI 4.0, 4.0.3, and 5.0
- IBM Platform MPI 8.3

In some circumstances, prerequisites exist for using ReplayEngine with Infiniband MPIs. See the TotalView Users Guide section “Using ReplayEngine with Infiniband MPIs”.

CUDA Support

TotalView for CUDA is available for the 64-bit version of TotalView, which supports programs built with NVIDIA CUDA SDK 6.5, 7.0 and 7.5 tool chains, running on a 64-bit Linux operating system.

Please refer to the NVIDIA website, `https://developer.nvidia.com/category/zone/cuda-zone`, for details of hardware and operating systems supported by the version of your CUDA SDK.

Please note that TotalView provides limited support for the Dynamic Parallelism feature of CUDA in 6.5, 7.0 and 7.5.

64-Bit x86-64 Linux(cont.)

Operating Systems	Environment/Compiler	Product	Versions				Notes
		Intel Fortran Compiler for Linux	12.1	13	13.1	14.0	
			14.0.2	15.0	15.3	16.0	
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		Sun Studio	12				

32-bit x86 Linux

Operating Systems	Environment/Compiler	Product	Versions				Notes
Novell OpenSuSE 11.1 and 13.2 Red Hat Enterprise Linux 5 and 6 Red Hat Fedora 19, 20, and 21 Ubuntu Linux 13.04, 14.04, and 15.04	C and C++	GNU GCC	3.4	4.1	4.2	4.3	**ReplayEngine Support** ReplayEngine supports the OS and compiler variants listed in this table for 32-bit x86 Linux. ReplayEngine supports the IP transport mechanism in the following MPI versions: • Argonne MPICH, version 1.1, 1.2, 1.3, and 1.4 • Argonne MPICH2 1.0.7, 1.1, and 1.2 • Open MPI 1.2.8, 1.3.2, 1.4.2, 1.5, 1.6, and 1.8.4 • Intel MPI 3.0, 4.0, and 4.0.3 • SGI MPT 1.26, 2.0, and 2.12 • Cray XT-MPT 2.0 • OSU MVAPICH 0.9.9, 1.1, and 1.2 • OSU MVAPICH2 1.4.1, 1.5, 1.6, and 1.7 • IBM Platform MPI 8.3 ReplayEngine supports native communication over Infiniband using either the IBverbs or the QLogic PSM transport layers in the following MPI versions: • Open MPI 1.4.2 • OSU MVAPICH 1.2 • OSU MVAPICH2 1.5, 1.6, and 1.7 • Intel MPI 4.0 and 4.0.3 • IBM Platform MPI 8.3 In some circumstances, prerequisites exist for using ReplayEngine with Infiniband MPIs. See the TotalView Users Guide section “Using ReplayEngine with Infiniband MPIs”.
			4.4	4.5	4.6	4.7	
			4.8	4.9	5.2		
		Intel C/C++ Compiler for Linux	12.1	13	13.3	14.0	
			14.0.2	15.0	15.3	16.0	
		Pathscale EKO	3.1	3.2			
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		Sun Studio	12				
		Clang	3.3	3.4	3.5		
Certification Platforms Red Hat Enterprise Linux 5.1 Ubuntu 12.04 Red Hat Fedora 19	FORTRAN 77 and Fortran 90	Absoft Pro	9.0	10.0			
		GNU gfortran	4.1.2 - 4.2 (RH ES 5u2)			4.3	
			4.4	4.5	4.6	4.7	
			4.8	4.9	5.2		
		Intel Fortran Compiler for Linux	12.1	13	13.3	14.0	
			14.0.2	15.0	15.3	16.0	
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		Pathscale EKO	3.1	3.2			
		Lahey Fortran	6.2				
		Sun Studio	12				
	MPI	Argonne MPICH	1.2.7	3.1			
		Argonne MPICH2	1.1	1.2	1.3	1.4	
		GNU SLURM	1.2				
		Intel MPI	3.0	4.0	4.1		
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.2	
			1.5	1.6	1.8.4		
		OSU MVAPICH	1.2				
		OSU MVAPICH2	1.4.1	1.5	1.6	1.7	
		Bullx MPI	1.1.3				
		IBM Platform MPI	8.3				
	OpenMP C/C++	Intel C/C++ Compiler for Linux	12.1	13	13.1	14.0	
			14.0.2	15.0	15.3	16.0	
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		Sun Studio	12				

32-bit x86 Linux(cont.)

Operating Systems	Environment/Compiler	Product	Versions				Notes
		GNU GCC	4.1.2	4.2.0	4.2.3	4.3	
			4.4	4.5	4.6	4.7	
			4.8	4.9	5.2		
	Open MP FORTRAN 77 and Fortran 90	GNU gfortran	4.1.2 - 4.2 (RH ES 5u2)				
			4.4	4.5	4.6	4.7	
			4.8	4.9	5.2		
		Intel Fortran Compiler for Linux	12.1	13	13.1	14.0	
			14.0.2	15.0	15.3	16.0	
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		Sun Studio	12				
	UPC	Berkeley UPC	2.8				

Intel IA-64 Linux

Operating Systems	Environment/Compiler	Product	Versions				Notes
Red Hat Enterprise Linux 5 and 5.2	C and C++	GNU GCC	3.4	4.1	4.2	4.3	
Novell SuSE Enterprise Server 11			4.4	4.5	4.6		
		Intel C/C++ compiler for Linux	11	11.1			
Certification Platform	FORTRAN 77	GNU GCC	3.4				
Red Hat Enterprise Linux 5.2		Intel Fortran Compiler for Linux	11	11.1			
	Fortran 90	Intel Fortran Compiler for Linux	11	11.1			
	MPI	Argonne MPICH	1.2.7	3.1			
		Argonne MPICH2	1.1	1.2	1.3	1.4	
		Intel MPI	3.0	4.0	4.0.3		
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.2	
		SGI MPT	1.17	1.20	1.26		
		SGI ProPack for Linux	3.4	4.5 SP3	6		
	OenMP C and C++	Intel C/C++ Compiler for Linux	11	11.1			
	OpenMP FORTRAN 77 and 90	Intel Fortran Compiler for Linux	11	11.1			

Intel Xeon Phi

Operating Systems	Environment/Compiler	Product	Versions				Notes
Red Hat Linux 6.0-6.3/CentOS Suse 11.1	MPSS	Supported drivers	2.1.3653	2.1-4982	2.2.1	3.1	TotalView provides full support for Xeon Phi. For more information, see the PDF document TotalView_Intel_Xeon_Phi_Debugging.pdf.
			3.4				
	C/C++/OpenMP/Fortran	Intel Compilers for Linux	13	13.1	13.3	14.0.2	
			15.0	15.3	16.0		

Linux PowerLE

Operating Systems	Environment/Compiler	Product	Versions				Notes
Ubuntu 14.04 and 14.10	C, C++ and Fortran	GNU GCC	4.8.3	4.9.1			Supports CUDA 7.0 and 7.5
	Open-MPI.org Open MPI	Argonne MPICH	3.1.4				
		Open-MPI.org Open MPI	1.8.6				

Other Linux x86 Computers

TotalView is tested using Red Hat and SuSe Linux, TotalView should not fail on other Linux x86-based systems.

The TotalView executable image uses the following dynamic libraries:

```
libX11.so.6
libm.so.6
libutil.so.1
libdl.so.2
libc.so.6
```

We would be interested to hear about your experiences in using TotalView on other Linux distributions.

Other Linux Hints

If you have source code for Linux run time libraries available on your system, TotalView should be able to display this code provided that it appears in the directory from which its debug information claims that it was compiled. On Red Hat systems, this is `/usr/src/bs/BUILD`; other systems may vary. Since the source RPMS on Red Hat installs sources under `/usr/src/redhat/BUILD`, a simple symbolic link so that `/usr/src/redhat` also appears as `/usr/src/bs` is all that is required.

To work out where your library sources claim to have been compiled you should do the following:

```
objdump --stabs library_of_interest | grep SO | head -5
```

Here's an example:

```
% objdump --stabs /lib/libc.so.6 | grep SO | head -5
0 SO 0 0 0000000000017a10 9 /usr/src/bs/BUILD/glibc/ elf/
1 SO 0 0 0000000000017a10 0 soinit.c
96 SO 0 0 0000000000017a58 954
97 SO 0 0 0000000000017a60 2340 /usr/src/bs/BUILD/glibc/csu/
98 SO 0 0 0000000000017a60 2369 ../sysdeps/unix/sysv/linux/init-first.c
```

Here you can see that the library was compiled from `/usr/src/bs`.

Vendor-Based Systems

IBM Blue Gene

Operating Systems	Environment/Compiler	Product	Versions				Notes
Linux for the front-end nodes	C/C++	IBM XL C/C++, GNU C	All versions within supported drivers				
	FORTRAN 77 and Fortran 90	IBM XL Fortran	All versions within supported drivers				
	OpenMP C, C++, and Fortran	IBM XL	All versions within supported drivers				
	Blue Gene/L	Supported drivers	V1R3M1	V1R3M0			
	Blue Gene/P	Supported drivers	V1R3M1	V1R3M0	V1R4M2	V1R4M1	
	Blue Gene/Q	Supported drivers	V1R2M0				

IBM Power Linux

Operating Systems / Hardware	Environment/Compiler	Product	Versions				Notes
Operating systems	C and C++	GNU GCC	3.4	4.1	4.2	4.3	**Restrictions**
Novell SuSE Linux Enterprise Server 10 and 11			4.5	4.6	4.7	4.8	• Debugging threaded programs (pthreads) that call exec() is not yet supported.
Red Hat Enterprise Linux AS 5, 6, and 7			4.9	5.2			• TotalView cannot obtain pointer arguments from the Lahey/Fujitsu Fortran 90 compiler.
		IBM XLC	10.1	11.1	12.1	13.1	
Hardware	FORTRAN 77	Absoft Pro Compiler	9.0				
Any IBM Pseries hardware supporting Linux		GNU gfortran	4.5	4.6	4.9	5.2	
		IBM XL Fortran	12.1	13.1	14.1	15.1	
Certification Platform	Fortran 90	Absoft Pro Compiler	9.0				
Red Hat Enterprise Linux 5.3		IBM XL Fortran	12.1	13.1	14.1	15.1	
	MPI	Argonne MPICH	1.2.7	3.1			
		Argonne MPICH2	1.1	1.2	1.3	1.4	
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.1	
			1.8.4				
		POE	1.2				

IBM RS6000 Power AIX

Operating Systems / Hardware	Environment/Compiler	Product	Versions				Notes
	C and C++	GNU GCC	3.4	4.1			**Restrictions** • To use the Message Queue Display (MQD) feature of TotalView with applications using IBM MPI Parallel Environment (PE), you must be using the threaded version of the MPI library.
Operating Systems		IBM XLC	10.1	11.1	12.1	13.1	
AIX version 5.3L, 6.1, and 7.1	FORTRAN 77	IBM XL Fortran	12.1	13.1	14.1	15.1	
(see Restrictions in Notes)	Fortran 90	IBM XL Fortran	12.1	13.1	14.1	15.1	
	MPI	POE	5.2.2	1.2			
Hardware		Argonne MPICH	1.2.7	3.1			
Any RS6000 or RS6000SP machine		Argonne MPICH2	1.1	1.2	1.3	1.4	
		Open-MPI.org Open MPI (See Restrictions in Notes)	1.2.8	1.3	1.3.2	1.4.1	
Certification Platform AIX 5.3	OpenMP C and C++	GNU GCC	3.4	4.1			
		IBM XLC	10.1	11.1	12.1	13.1	
	OpenMP FORTRAN 77 and Fortran 90	IBM XL Fortran	12.1	13.1	14.1	15.1	

Sun SPARC Solaris

Operating Systems / Hardware	Environment/Compiler	Product	Versions				Notes
Operation Systems	C and C++	GNU GCC	3.4	4.1			
Solaris 10 and 11		Sun One Studio	11	12			
	FORTRAN 77	Sun Studio	11	12			
Hardware	Fortran 90	Sun Studio	11	12			
Any SPARC processor-based computer	OpenMP C, C++, FORTRAN 77, and Fortran 90	Sun Studio	11	12			
	MPI	Argonne MPICH	1.2.7	3.1			
Certification Platform Solaris 10		Argonne MPICH2	1.1	1.2	1.3	1.4	
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.1	
		Sun Cluster Tools	6	7			

Sun Solaris Opteron

Operating Systems	Environment/Compiler	Product	Versions				Notes
Solaris 10 and 11	C and C++	GNU GCC	3.4	4.1			
		Sun One Studio	11	12			
Certification Platform Solaris 10	FORTRAN 77	Sun Studio	11	12			
	Fortran 90	Sun Studio	11	12			
	OpenMP C, C++, FORTRAN 77, and Fortran 90	Sun Studio	11	12			
	MPI	Argonne MPICH	1.2.7	3.1			
		Argonne MPICH2	1.1	1.2	1.3	1.4	
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.1	
		OSU MVAPICH2	1.0				

Apple Macintosh

Operating Systems / Hardware	Environment/Compiler	Product	Versions				Notes
Operating Systems Mac OS X 10.7, 10.8, 10.9, and 10.10 **Hardware** Intel-based systems **Certification Platform** Mac OS X 10.7	C and C++	GNU gcc	4.2	4.5	4.6	4.7	**Special Requirements** The TotalView GUI requires X11. Before starting TotalView, the server must be running. We recommend that you use the free "X11 for Mac OS X". You can read about this version of X11 as well as download the latest version at `developer.apple.com/opensource/tools/x11.html`. See the section Troubleshooting Mac OS X Installations in the *TotalView Reference Guide* for help on installing TotalView on Mac OS X machines.
			4.8	4.9	5.2		
		Apple Clang	4.1	5.1	6.0		
		Intel C/C++ for Mac OS X	12	12.1	13.3	14.0	
			15.0	15.3	16.0		
	FORTRAN 77 and Fortran 90	Absoft Pro Compiler	10.0				
		Intel Fortran for Mac OS X	12	12.1	13.3	14.0	
			15.0	15.3	16.0		
		GNU gfortran	4.5.2	4.7	4.8.1	4.9	
			5.2				
	MPI	Argonne MPICH	1.2.7	3.1			
		Argonne MPICH2	1.1	1.2	1.3	1.4	
		Open-MPI.org Open MPI	1.2.8	1.3	1.3.2	1.4.2	
	OpenMP C and C++	Intel C/C++ for Mac OS X	12	12.1	13.3	14.0	
			15.0	15.3	16.0		
	Open MP FORTRAN 77 and Fortran 90	Intel Fortran for Mac OS X	12	12.1	13.3	14.0	
			15.0	15.3	16.0		

Cray XT / XE / XK / XC

Operating Systems / Hardware	Environment/Compiler	Product	Versions				Notes
Operating Systems Front end: UNICOS/lc environment node environment based on SuSE Linux Enterprise Server. Back end: Either Catamount or Compute Node Linux (CNL) **Hardware:** Cray XT, XE, XK, and XC	C and C++	GNU gcc	3.4.x	4.5.2	4.6	4.7	Support on the XK6 platform for Cray's OpenMP Accelerator Directives and Cray's OpenACC Directives. For information on this support, see the section Directive-Based Accelerator Programming Languages in the TotalView User Guide. ReplayEngine supports debugging MPI-based programs using Cray MPI over the Gemini Interconnect found on Cray XE supercomputers. * FORTRAN 77 only
			4.8	4.9	5.2		
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		PathScale EKOPath	3.1	3.2			
		CCE	8.3.1				
	FORTRAN 77 and Fortran 90	GNU gfortran	4.5.1	4.6	4.7	4.8	
			4.9	5.2			
		PGI Workstation	11.2	11.9	12.1	12.8	
			13.6	13.10	14.4	15.5	
		Pathscale EKOPath	3.1	3.2			
		CCE	8.3.1				
	MPI	Cray MPICH	6.3.0 (ANL base 3.0.3)				