

TotalView® for HPC 2016.01 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.

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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	Versio	ns			Notes		
Novell Open SuSE 11.1 and 13.2	C and C++	GNU GCC	3.4	4.0	4.1	4.2	ReplayEngine Support		
Novell SuSE Linux Enterprise Server			4.3	4.4	4.5	4.6	ReplayEngine supports the OS and compiler variants		
11, 11.1, and 12			4.7	4.8	4.9	5.2	listed above for 64-Bit x86-64 Linux.		
Red Hat Enterprise Linux 5, 6, and 7		Intel C/C++ Compiler for Linux	12.1	13	13.3	14.0	ReplayEngine supports the IP transport mechanism in		
Red Hat Fedora 21, 22, and 23		·	14.0.2	15.0	15.3	16.0	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		
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	• Open MPI 1.6, 1.8.4 and 1.10.0		
, , , , , , , , , , , , , , , , , , , ,			13.6	13.10	14.4	15.5	• Intel MPI 3.0, 4.0, 4.0.3, and 5.0		
		Sun Studio	12				• SGI MPT 1.2.6, 2.0 and 2.12		
Certification platforms:		Clang	3.3	3.4	3.5		Cray XT-MPT 2.0		
SuSE Linux Enterprise Server 11.1	FORTRAN 77 and Fortran 90	Absoft Pro	9.0	10.0	0.0		OSU MVAPICH 0.9.9, 1.1, and 1.2		
RedHat Enterprise Server 6	1 Sixtivity 77 and 1 Sittain 50	GNU gfortran		4.2 (RH E	S 5u2)	4.3	OSU MVAPICH2 1.4.1, 1.5, 1.6, and 1.7 IBM Platform MPI 8.3		
Reditat Enterprise Server 6		GIVO GIOITIAN	4.4	4.5	4.6	4.7			
			4.8	4.9	5.2	7.7	ReplayEngine supports native communication over Infiniband using either the IBverbs or the QLogic PSN		
		Intel Fortran Compiler for Linux	12.1	13	13.3	14.0	transport layers in the following MPI versions:		
		inter Fortian Compiler for Linux	14.0.2	15.0	15.3	16.0	Open MPI 1.4.2, 1.5, 1.6, and 1.8.4		
		PGI Workstation	11.2	11.9	12.1		OSU MVAPICH 1.2		
		PGI Workstation				12.8	OSU MVAPICH2 1.5, 1.6, and 1.7		
		Pathscale EKO	13.6	13.10	14.4	15.5	• Intel MPI 4.0, 4.0.3, and 5.0		
		=	3.1	3.2			IBM Platform MPI 8.3		
		Lahey Linux 64-bit and Fortran Pro 64-bit	6.2	8.0			In some circumstances, prerequisites exist for using ReplayEngine with Infiniband MPIs. See the <i>TotalView</i>		
		Sun Studio	12.0				for HPC User Guide section "Using ReplayEngine with		
	MPI	Argonne MPICH	1.2.7	3.1			Infiniband MPIs".		
		Argonne MPICH2	1.1	1.2	1.3	1.4	CUDA Support		
		GNU SLURM	1.2				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,		
		Intel MPI	3.0	4.0	4.1	5.0			
		Open-MPI.org Open MPI	1.6	1.8.4	1.10.0		running on a 64-bit Linux operating system.		
							Please refer to the NVIDIA website, https://		
		OSU MVAPICH	1.2				developer.nvidia.com/category/zone/		
		OSU MVAPICH2	1.4.1	1.5	1.6	1.7	cuda-zone, for details of hardware and operating		
		SGI MPT	1.2.6	2.0	2.12		systems supported by the version of your CUDA SDN		
		SGI Propack	5 SP3	6			Please note that TotalView provides limited support		
		Bullx MPI	1.1.3				for the Dynamic Parallelism feature of CUDA in 6.5,		
		IBM Platform MPI	8.3				7.0 and 7.5.		
	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			
		. J. Homoladon	13.6	13.10	14.4	15.5			
		Sun Studio	12	10.10	17.7	10.0			
		GNU GCC	4.1.2	4.2.0	4.2.3	4.4			
		GIAO GCC	4.1.2	4.2.0	4.2.3	4.4			
					4.7	4.0			
	Ones MD FORTDAN 77	CNILL of orthon	4.9	5.2	2 F.(2)	<u> </u>	_		
	Open MP FORTRAN 77	GNU gfortran		4.2 (RH E		4.7			
	and Fortran 90		4.4	4.5	4.6	4.7			
			4.8	4.9	5.2				

64-Bit x86-64 Linux(cont.)									
Operating Systems	perating Systems Environment/Compiler Product Versions								
		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	Versio	ns			Notes
Novell OpenSuSE 11.1 and 13.2	C and C++	GNU GCC	3.4	4.1	4.2	4.3	ReplayEngine Support
Red Hat Enterprise Linux 5 and 6			4.4	4.5	4.6	4.7	
Red Hat Fedora 21, 22, and 23			4.8	4.9	5.2		ReplayEngine supports the OS and compiler variants listed in this table for 32-bit x86 Linux. ReplayEngine
Ubuntu Linux 13.04, 14.04, and 15.04		Intel C/C++ Compiler for Linux	12.1	13	13.3	14.0	supports the IP transport mechanism in the following
			14.0.2	15.0	15.3	16.0	MPI versions:
		Pathscale EKO	3.1	3.2			Argonne MPICH, version 1.1, 1.2, 1.3, and 1.4
Certification Platforms		PGI Workstation	11.2	11.9	12.1	12.8	Argonne MPICH2 1.0.7, 1.1, and 1.2
Red Hat Enterprise Linux 5.1			13.6	13.10	14.4	15.5	Open MPI 1.6, 1.8.4, and 1.10.0 Intel MPI 3.0, 4.0, and 4.0.3
Ubuntu 12.04		Sun Studio	12				 Intel MPI 3.0, 4.0, and 4.0.3 SGI MPT 1.26, 2.0, and 2.12
Red Hat Fedora 21		Clang	3.3	3.4	3.5		• Cray XT-MPT 2.0
	FORTRAN 77 and Fortran 90	Absoft Pro	9.0	10.0			OSU MVAPICH 0.9.9, 1.1, and 1.2
		GNU gfortran	4.1.2 - 4	.2 (RH E	S 5u2)	4.3	OSU MVAPICH2 1.4.1, 1.5, 1.6, and 1.7
			4.4	4.5	4.6	4.7	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 <i>TotalView</i>
			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				for HPC User Guide section "Using ReplayEngine with Infiniband MPIs".
		Intel MPI	3.0	4.0	4.1		IIIIIIIDAIIU WFIS .
		Open-MPI.org Open MPI	1.6	1.8.4	1.10.0		
		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	Versior	Versions			
		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	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				
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			
Ī	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			
Ī	OpenMP FORTRAN 77 and 90	Intel Fortran Compiler for Linux	11	11.1			

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

Linux PowerLE						
Operating Systems	Environment/Compiler	Product	Version	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	1.10.0		

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 000000000017a10 9 /usr/src/bs/BUILD/glibc/ elf/
1 SO 0 0 000000000017a10 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
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 V1R4M3
	Blue Gene/Q	Supported drivers	V1R2M0

IBM Power Linux							
Operating Systems / Hardware	Environment/Compiler	Product	Versio	ns			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. The support of the support
Red Hat Enterprise Linux AS 5, 6,			4.9	5.2			TotalView cannot obtain pointer arguments from the Lahey/Fujitsu Fortran 90 compiler.
and 7		IBM XLC	10.1	11.1	12.1	13.1	Laney/r ujitsu r ortrari 30 compiler.
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	1.4.1	1.8.4	1.10.1		
		POE	1.2				

IBM RS6000 Power AIX							
Operating Systems / Hardware	Environment/Compiler	Product	Versior	าร			Notes
	C and C++	GNU GCC	4.1				Restrictions
Operating Systems		IBM XLC	11.1	12.1	13.1		To use the Message Queue Display (MQD) feature of
AIX version 7.1	FORTRAN 77	IBM XL Fortran	13.1	14.1	15.1		TotalView with applications using IBM MPI Parallel Environment (PE), you must be using the threaded
(see Restrictions in Notes)	Fortran 90	IBM XL Fortran	13.1	14.1	15.1		version of the MPI library.
	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	OpenMP C and C++	GNU GCC	4.1				
AIX 7.1		IBM XLC	11.1	12.1	13.1		
	OpenMP FORTRAN 77 and Fortran 90	IBM XL Fortran	13.1	14.1	15.1		

Sun SPARC Solaris							
Operating Systems / Hardware	Environment/Compiler	Product	Versions				
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	Versio	Versions		
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	C and C++	GNU gcc	4.2	4.5	4.6	4.7	Special Requirements
Mac OS X 10.8, 10.9, 10.10 and 10.11 Hardware Intel-based systems			4.8	4.9	5.2		TI T . 115 O. 11
		Apple Clang	4.1	5.1	6.0	7.0	The TotalView GUI requires X11. Before starting TotalView, the server must be running. We recomment 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
		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				developer.apple.com/opensource/
Certification Platform		Intel Fortran for Mac OS X	12	12.1	13.3	14.0	tools/x11.html.
Mac OS X 10.8			15.0	15.3	16.0		
		GNU gfortran	4.5.2	4.7	4.8.1	4.9	See the section Troubleshooting Mac OS X Installations in the <i>TotalView for HPC Reference Guide</i> for help
			5.2				on installing TotalView on Mac OS X machines.
	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++ Open MP FORTRAN 77 and Fortran 90	Intel C/C++ for Mac OS X Intel Fortran for Mac OS X	12	12.1	13.3	14.0	
			15.0	15.3	16.0		
			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
	C and C++	GNU gcc	3.4.x	4.5.2	4.6	4.7	Support on the XK6 platform for Cray's OpenMP Accel-
Operating Systems			4.8	4.9	5.2		erator Directives and Cray's OpenACC Directives. For
Front end: UNICOS/Ic environment		PGI Workstation	11.2	11.9	12.1	12.8	information on this support, see the section Directive- Based Accelerator Programming Languages in the
node environment based on SuSE			13.6	13.10	14.4	15.5	TotalView for HPC User Guide.
Linux Enterprise Server.		PathScale EKOPath	3.1	3.2			
Back end: Either Catamount or		CCE	8.3.1				ReplayEngine supports debugging MPI-based pro-
Compute Node Linux (CNL)	FORTRAN 77 and Fortran 90	GNU gfortran	4.5.1	4.6	4.7	4.8	grams using Cray MPI over the Gemini Interconnect found on Cray XE supercomputers. * FORTRAN 77 only
			4.9	5.2			
		PGI Workstation	11.2	11.9	12.1	12.8	
Hardware:			13.6	13.10	14.4	15.5	1 Sitting at 77 Siny
Cray XT, XE, XK, and XC		Pathscale EKOPath	3.1	3.2			
		CCE	8.3.1				
	MPI	Cray MPICH	6.3.0 (A	6.3.0 (ANL base 3.0.3)			