

**TOTALVIEW,
MEMORYSCAPE, AND
REPLAYENGINE
PLATFORMS AND SYSTEM
REQUIREMENTS**



**TOTALVIEW 8.8
MEMORYSCAPE 3.1**



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TotalView Debugger uses a modified version of the Microline widget library. Under the terms of its license, you are entitled to use these modifications. The source code is available at:

ftp://ftp.totalviewtech.com/support/toolworks/Microline_totalview.tar.Z.

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Platforms, Compilers, and Environments



Requirements

To run TotalView® or MemoryScape on your system, you must have the correct hardware configuration and the correct software installed.

The following table shows the supported computers and operating systems.

Platform

Vendor-based Systems

"Apple Macintosh" (see page 3)

"Cray XT Series" (see page 4)

"IBM Blue Gene/l and Blue Gene/P" (see page 5)

"IBM Cell Broadband Engine" (see page 5)

"IBM Power Linux" (see page 6)

"IBM RS/6000 Power AIX" (see page 7)

"SiCortex" (see page 9) (Memory debugging not supported)

"Sun SPARC Solaris" (see page 10)

"Sun Solaris Opteron" (see page 11)

Linux-based Systems

"32-Bit x86 Linux" (see page 13)

"64-Bit x86-64 Linux" (see page 15)

"Intel IA-64 Linux" (see page 17)

"Other Linux x86 Computers" (see page 18)



ReplayEngine is supported on Linux x86 and x86-64 platforms only.



Memory debugging Red Zones are supported on Linux, Solaris, and Mac OS X.

When you install TotalView or MemoryScape, you also need to install the FLEXlm license manager. The following list contains the computers upon which it runs and the minimum operating system version for each. You may, of course, use later versions of these operating systems.

Platform	Operating System Version
Apple Mac OS X	OS X 10.4
IBM Linux Power	SuSE Linux Enterprise Server 9
IBM RS/6000 Power AIX	5.1L
Intel em64t/AMD Athlon	See "64-Bit x86-64 Linux" on page 15. In all cases, the server can run on any of these versions.
Intel IA-64 Linux	See "Intel IA-64 Linux" on page 17. In all cases, the server can run on any of these versions.
Intel x86/AMD Athlon	See "32-Bit x86 Linux" on page 13. In all cases, the server can run on any of these versions.
Sun SPARC Solaris	8.0

Apple Macintosh

General Information

Operating Systems	Apple Macintosh 10.4, 10.4.5, 10.4.8, 10.4.9, 10.5, 10.5.2, and 10.6
Hardware Requirements	Macintosh Intel-based systems

Compiler or Environment Product

C and C++	4.01 Apple Build 5250 Intel C/C++ for Mac OS X 9.1, 10.0, 11, and 11.1
FORTRAN 77 and 90	Absoft Pro Compiler 10.0 Intel Fortran for Mac OS X 9.1, 10.0, 11, and 11.1
MPI	Argonne MPICH version 1.2.7 Argonne MPICH2, version 1.07 and 1.1 LAM MPI 7.1.1 Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2
OpenMP C and C++	Intel C/C++ for Mac OS X 9.1 and 10.0
OpenMP FORTRAN 77 and Fortran 90	Intel Fortran for Mac OS X 9.1 and 10.0



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.

Special Requirements

X11 must be installed in order to run the TotalView GUI. Before starting TotalView, the server must be running. We recommend that you use the free "X11 for Mac OS X". You can obtain it at <http://www.apple.com/downloads/macosx/apple/x11formacosx.html>. You can read about this version of X11 by going to: <http://www.apple.com/macosx/features/x11/>.

Cray XT Series

General Information

Operating Systems	The UNICOS/lc environment provides a front-end node environment based on SuSE Linux Enterprise Server 9. The back-end uses either Catamount or Compute Node Linux (CNL).
Hardware Requirements	Cray XT Catamount and Cray XT CNL A computer can be booted in either of these modes.

Compiler or Environment Product

C and C++	GNU GCC 3.4.6 and 4.2.0 quadcore PGI Workstation 7.2-1,8.0, 9.0, and 10.1 PathScale EKOPath 3.1
FORTRAN 77 and 90	GNU GCC 3.4.6 (FORTRAN 77 only) PGI Workstation 7.2-1,8.0, 9.0, and 10.1 PathScale EKOPath 3.1
MPI	Argonne MPICH 1.2.7 Cray XT-MPT 2.0

IBM Power Linux

General Information

Operating Systems	<ul style="list-style-type: none"> ■ Novell SuSE Linux Enterprise Server 9, 10, and 11 ■ Red Hat Enterprise Linux AS 3 update 9, and 5 update 3
Hardware Requirements	Any IBM Pseries hardware supporting Linux

Compiler or Environment Product

C and C++	GNU GCC 3.4.6, 4.1, and 4.2 IBM XL 7.0 and 8.0
FORTRAN 77	Absoft Pro Compiler 9.0 GNU GCC 3.4.6 IBM XL Fortran 9.1 and 10.1
Fortran 90	Absoft Pro Compiler 9.0 IBM XL Fortran 9.1 and 10.1
MPI	Argonne MPICH 1.2.7 Argonne MPICH2 1.0.7 and 1.1 Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2 Scali MPI 4.4.2



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.

Restrictions

- Debugging threaded programs (pthreads) that call **exec()** is not yet supported.
- TotalView cannot obtain pointer arguments from the Lahey/Fujitsu Fortran 90 compiler.
- For additional information, see the *TotalView Release Notes*.

IBM RS/6000 Power AIX

General Information

Operating Systems	AIX version 5.1L, 5.2L, 5.3L, and 6.1 (see Restrictions below)
Hardware Requirements	Any RS/6000 or RS/6000SP machine

Compiler or Environment Product

C and C++	GNU GCC 3.4.6 and 4.1 IBM XL 6.0, 7.0, 8.0, 9.0, and 10.1
FORTRAN 77	GNU GCC 3.4.6 IBM XL Fortran 8.1, 9.1, 10.1, 11.1, and 12.1
Fortran 90	IBM XL Fortran 8.1, 9.1, 10.1, and 11.1
MPI	Argonne MPICH, version 1.2.7 Argonne MPICH2, version 1.0, 1.0.7, and 1.1 IBM Parallel Environment 3.2, 4.1, and 4.2 Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2 See <i>Restrictions</i> below
OpenMP C/C++	IBM XL C/C++ 6.0, 7.0, 8.0, 9.0, and 10.1
OpenMP FORTRAN 77 and 90	IBM XL Fortran 8.1, 9.1, 10.1, 11.1, and 12.1
PVM	ORNL PVM, version 3.4.4 Note: PVM support may be withdrawn in a future release.



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.

Restrictions

- IBM PVME is not supported.
- To use the Message Queue Display (MOD) feature of TotalView with applications using IBM MPI Parallel Environment (PE), you must have PE version 3.2 or 4.1 and higher, and you must be using the threaded version of the MPI library.
- For additional information, see the *TotalView Release Notes*.

Myrinet Support

Version 1.1.3 of the Myrinet GM software supports TotalView. (GM is a message-passing system for Myrinet networks. The GM system includes a driver, Myrinet-interface control program, a network mapping program, and the GM API, library, and header files.) You can obtain this software from <http://www.myrinet.com/scs/index.html>.

SiCortex

Memory debugging is not supported on this platform.

General Information

Operating Systems	Gentoo Linux 1.12.18
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Compiler or Environment Product

C and C++	GNU GCC 4.1.1 Pathscale EKOPath 1.0 and 3.1
FORTRAN 77 and Fortran 90	Pathscale EKOPath 1.0 and 3.1
MPI	SiCortex MPI (based on MPICH 2)

Sun Solaris

Sun SPARC Solaris

General Information

Operating Systems	Solaris 9 or 10
Hardware Requirements	Any SPARC processor-based computer

Compiler or Environment Product

C and C++	Apogee Compiler Suite 4.013 (C only) GNU GCC 3.4.6 and 4.1 Sun One Studio 9, 10, 11, and 12
FORTRAN 77	GNU GCC 3.4.6 Sun Studio 9, 10, 11, and 12
Fortran 90	Sun Studio 9, 10, 11, and 12
OpenMP C, C++, FORTRAN 77, and Fortran 90	Sun Studio 11 and 12
MPI	Argonne MPICH, version 1.2.7 Argonne MPICH2, version 1.0.7 and 1.1 Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2 Sun Cluster Tools 6 and 7
PVM	ORNL PVM, version 3.4.4 Note: PVM support may be withdrawn in a future release.



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.

Restrictions

For additional information, consult the *TotalView Release Notes*.

Sun Solaris Opteron

General Information

Operating Systems Solaris 10

Compiler or Environment Product

C and C++	GNU GCC 3.4.6, 4.1, and 4.2 Sun One Studio 10, 11, and 12
FORTRAN 77	GNU GCC 3.4.6 Sun Studio 10, 11, and 12
Fortran 90	Sun Studio 10, 11, and 12
OpenMP C, C++, FORTRAN 77, and Fortran 90	Sun Studio 11 and 12
MPI	Argonne MPICH, version 1.2.7 Argonne MPICH2 1.0.7 and 1.1 Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2 OSU MVAPICH2 1.0 Sun Clustertools 6 and 7



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.

Restrictions

For additional information, see the *TotalView Release Notes*.

Linux

Heterogeneous and Cross-Debugging on Linux

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 Cell.

This table shows the supported combinations:

Host System	Target System
Linux x86-64	Linux x86 Linux x86-64 Linux Power 32 Linux Power 64 / Cell SiCortex Cray XT
Linux x86	Linux x86 Linux Power 32 Linux Power 64 / Cell
Linux Power 64 (including Linux Cell)	Linux Power 32 Linux Power 64 / Cell Blue Gene
SiCortex Linux x86-64	Linux MIPS 64

32-Bit x86 Linux

General Information

Operating Systems	<ul style="list-style-type: none"> ■ Novell SuSE Linux 10, 10.1, and 10.2 and Novell OpenSuSE 11.1 ■ Novell SuSE Linux Enterprise Server 9, 9 SP 3, 10, and 11 ■ Red Hat Enterprise AS 3 update 9, 4, 4 update 5, 5, and 5 update 3 ■ Red Hat Fedora 10, 11, and 12 ■ Ubuntu Linux 8.04
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Compiler or Environment Product

C and C++	<p>GNU GCC 3.4.6, 4.1, and 4.2</p> <p>Intel C/C++ Compiler for Linux 9.0, 9.1, 10.0, 10.1, 11, and 11.1</p> <p>PGI Workstation 7.2-1, 8.0, 9.0, and 10.1</p> <p>Pathscale EKO 3.1 and 3.2</p> <p>Sun Studio 12</p>
FORTRAN 77 and Fortran 90	<p>Absoft Pro 9.0 and 10</p> <p>GNU GCC 3.4.6 (FORTRAN 77 only)</p> <p>GNU gfortran 4.1.2-4 2 (RH ES 5u2), 4.3, and 4.4</p> <p>Intel Fortran Compiler for Linux 9.0, 9.1, 10.0, 10.1, 11, and 11.1</p> <p>Lahey Fortran 9 for Linux 62 (Fortran 95)</p> <p>PGI Workstation 8.0, 9.0, and 10.1</p> <p>Pathscale EKO 3.1 and 3.2</p> <p>Sun Studio 12</p>
MPI	<p>Argonne MPICH, version 1.2.7</p> <p>Argonne MPICH2 1.0.7 and 1.1</p> <p>GNU SLURM 1.2</p> <p>HP MPI 2.1</p> <p>Intel MPI 2.0, and 3.0</p> <p>LAM-MPI 7.1.1</p> <p>Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2</p> <p>OSU MVAPICH, version 0.9; MVAPICH2, version 1.0</p> <p>Quadrics RMS 2.8</p> <p>Scali MPI 4.4.2</p> <p>Verari MPI/Pro for Linux, version 1.6.4</p>
OpenMP C and C++	<p>Intel C/C++ Compiler for Linux 9.0, 9.1, 10.0, and 10.1</p> <p>PGI Workstation 7.2, 8.0, 9.0, and 10.1</p> <p>GNU GCC 4.1.2, 4.2.0, and 4.2.3</p> <p>Sun Studio 12</p>
OpenMP FORTRAN 77 and Fortran 90	<p>GNU gfortran 4.1.2-4 2 (RH ES 5u2)</p> <p>Intel Fortran Compiler for Linux 9.0, 9.1, 10.0, and 10.1</p> <p>PGI Workstation 7.2 and 10.1</p>
PVM	<p>ORNL PVM, version 3.4.4 (PVM support may be withdrawn in a future release)</p>
UPC	<p>Berkeley UPC 2.8</p>



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.

Restrictions

For additional information, consult the *TotalView Release Notes*.

64-Bit x86-64 Linux

General Information

Operating Systems	<ul style="list-style-type: none"> ■ Cray HPC Enhanced Linux 1.1 ■ Novell Open SuSE 11.1 ■ Novell SuSE Linux Enterprise Server 9, 9 SP 3, 10, and 11 ■ Red Hat Enterprise Linux AS 3, 3 update 9, 4, 4 update 5, 5, and 5 update 3 ■ Red Hat Fedora 10 and 11 ■ SGI Altix SLES 10 SP1 and ProPack 5 SP3 ■ Ubuntu 8.04
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Compiler or Environment Product

C and C++	GNU GCC 3.4.6, 4.0, 4.1, and 4.2 Intel C/C++ Compiler for Linux 9.0, 9.1, 10.0, 10.1, 11, and 11.1 Pathscale EKO 3.1 and 3.2 PGI Workstation C/C++ 7.2-1, 8.0, 9.0, and 10.1.0
FORTRAN 77 and Fortran 90	Absoft Pro 9.0 and 10.0 GNU GCC3.4.6 (FORTRAN 77 only) GNU gfortran 4.1.2-4 2 (RH ES 5u2), 4.3, and 4.4 Intel Fortran Compiler for Linux 9.0, 9.1, 10.0, 10.1, 11, and 11.1 PGI Workstation 8.0, 9.0, and 10.1 Pathscale EKO 3.1 and 3.2 Lahey Linux 64 Fortran Pro (64-bit) 8.0 Sun Studio 12
MPI	Argonne MPICH 1.2.7 Argonne MPICH2 1.0.7 and 1.1 GNU SLURM 1.2 HP MPI 2.1 Intel MPI 2.0 and 3.0 LAM MPI 7.1.1 Open-MPI.org Open MPI 1.2.8, 1.3, and 1.3.2 OSU MVAPICH, version 0.9; MVAPICH2, version 1.0 Scali MPI 4.4.2 SGI MPT 1.17 and 1.2 SGI Propack 5 SP 3 and 6
OpenMP C/C++	Intel C/C++ Compiler for Linux 9.0, 9.1, 10.0, and 10.1 PGI Workstation 7.2-1, 8.0, 9.0, and 10.1 Sun Studio 12 GNU GCC 4.1.2, 4.2.0, and 4.2.3
OpenMP FORTRAN 77 and Fortran 90	GNU gfortran 4.1.2-4 2 (RH ES 5u2) Intel Fortran Compiler for Linux 9.0, 9.1, 10.0, and 10.1 PGI Workstation 7.2, 8.0, 9.0, and 10.1 Sun Studio 12



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.

Restrictions For additional information, consult the *TotalView Release Notes*.

Intel IA-64 Linux

General Information

Operating Systems	<ul style="list-style-type: none"> ■ Novell SuSE Enterprise Server 9, 9 SP 3, and 10 ■ Red Hat Enterprise AS 3 update 9, 4 update 5, 5, and 5 update 3 ■ SGI Altix (AL 3 and ProPack 3, RHEL 4, SLES 9, and SLES 9 SP 1 and ProPack 4), SGI (SLES 10 SP 1 and ProPack 5, SP 3) ■ SGI Advanced Linux Environment 3
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Compiler or Environment Product

C and C++	GNU GCC 3.4.6, 4.1, and 4.2 Intel C/C++ Compiler for Linux 9.0, 9.1, 10.0, 11, and 11.1
FORTRAN 77	GNU GCC 3.4.6 Intel Fortran Compiler for Linux 9.0, 9.1, 10.0, 11, and 11.1
Fortran 90	Intel Fortran Compiler for Linux 9.0, 9.1, 10.0, 11, and 11.1
MPI	Argonne MPICH, version 1.2.7 Argonne MPICH2 1.0.7 and 1.1 HP MPI 2.1 Intel MPI 2.0, and 3.0 Open-MPI.org Open MPI 1.2.8 1.3, and 1.3.2 OSU MVAPICH, version 0.9; MVAPICH2, version 1.0 Quadrics RMS, version 2.8 Scali MPI 4.4.2 SGI MPT 1.17 and 1.20 SGI ProPack for Linux 3, 4, 5 SP 3, and 6
OpenMP C and C++	Intel C/C++ Compiler for Linux 9.0, 9.1, 10.0
OpenMP FORTRAN 77 and Fortran 90	Intel Fortran Compiler for Linux 9.0, 9.1, and 10.0



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.

Restrictions

For additional information, consult the *TotalView Release Notes*.

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 S0 | head -5
```

Here's an example.

```
% objdump --stabs /lib/libc.so.6 | grep S0 | head -5
0  S0 0 0 0000000000017a10 9  /usr/src/bs/BUILD/glibc/ elf/
1  S0 0 0 0000000000017a10 0  soinit.c
96 S0 0 0 0000000000017a58 954
97 S0 0 0 0000000000017a60 2340 /usr/src/bs/BUILD/glibc/csu/
98 S0 0 0 0000000000017a60 2369 ../sysdeps/unix/sysv/linux/init-first.c
```

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

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