PGDBG® Debugger
Release Notes

Version 13.10

The Portland Group®

PGDBG® Release Notes

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Contents

Chapter 1. Release Overview

Welcome to Release 2013 of the PGDBG debugger for 32-bit and 64-bit x86-compatible processor-based workstations, servers, and clusters running versions of the Linux or Apple OS X operating systems. This document describes late-breaking information not included in the current printing of the PGI Debugger Guide.

Product Overview

PGDBG is licensed software available from The Portland Group. PGDBG supports debugging programs running on local and remote systems. The PGI license keys that enable PGDBG to debug must be located on the same system where the program you want to debug is running.

Local debugging
> If you want to debug a program running on the system where you have launched PGDBG, you are doing local debugging and you need license keys on that local system.

Remote debugging
> If you want to debug a program running on a system other than the one on which PGDBG is launched, then you are doing remote debugging and you need license keys on the remote system. The remote system also needs an installed copy of PGI Workstation, PGI Server, or PGI CDK.

Release Components

Release 2013 includes the multi-thread graphical debugger for debugging applications.

Supported Platforms and Operating Systems

There are six platforms that PGDBG supports:

- *32-bit Linux* - supported on *32-bit Linux operating systems* running on either a 32-bit *x86* compatible or an *x64* compatible processor.

- *64-bit/32-bit Linux* – includes all features and capabilities of the 32-bit Linux version, and is also supported on *64-bit Linux operating systems* running an *x64* compatible processor.

- *32-bit Windows* – supported on *32-bit Windows operating systems* running on either a 32-bit *x86* compatible or an *x64* compatible processor.

- *64-bit/32-bit Windows* – includes all features and capabilities of the 32-bit Windows version, and is also supported on *64-bit Windows operating systems* running an *x64* compatible processor.

- *32-bit OS X* – supported on 32-bit Apple OS X operating systems running on either a 32-bit or 64-bit Intel-based Mac system.

- *64-bit OS X* – supported on 64-bit Apple OS X operating systems running on a 64-bit Intel-based Mac system.

Chapter 2. New or Modified Features

This chapter provides information about the new or modified features of Release 2013 of the PGI Remote Debugger Client.

What's New in Release 2013

13.10 Updates and Additions

- A number of problems are corrected in this release. Refer to `www.pgroup.com/support/release_tprs.htm` for a complete and up-to-date table of technical problem reports, TPRs, fixed in recent releases of the PGI compilers and tools.

13.7 Updates and Additions

- Debugger support for hardware data watchpoints on Linux kernels greater than 2.6.32.

13.6 Updates and Additions

- Added support for the F2008 *impure* attribute. Fortran 2008 removed the restriction of Fortran 95 that elemental procedures be implicitly pure. Elemental procedures permit writing procedures as many as 16 times, once for each possible rank. In Fortran 2008, elemental procedures must now be explicitly declared with the prefix *impure*.

13.5 Updates and Additions

- PGI 13.5 PGDBG and PGPROF added support for debugging and profiling of MPI programs built with SGI MPI. To debug an SGI MPI program, use the PGDBG `-sgimpi` option, which has the same syntax as the `-mpi` option. To profile an SGI MPI program, build it with `-Mprof=func,sgimpi,-Mprof=lines,sgimpi,` or `-Mprof=time,sgimpi.` You must specify `sgimpi` even if you use `mpicc` or `mpif90` to build your program.

- Added support for two F2008 features:
  - Finding a unit when opening a file
  - Derived-type-style accesses of the real and imaginary parts of a complex number.

- Made several performance improvements for complex arithmetic, for all languages.

- A number of problems have been corrected in this release. Refer to `www.pgroup.com/support/release_tprs.htm` for a complete and up-to-date table of technical problem reports, TPRs, fixed in recent releases of the PGI compilers and tools.

13.4 Updates and Additions

- PGI no longer requires the system configuration for debugging on Apple OS X that was required in previous releases. The debugger data collector no longer needs to run using "group procmod" privileges. However, to use PGDBG to attach to a running process, users must be able to enter the authentication credentials of a user who is a member of the unix group "_developer". For more information, refer to the section System Configuration to Enable Debugger 'Attach' in the PGI 2013 Installation Guide.

Chapter 3. Troubleshooting Tips and Known Limitations

This chapter contains information about known limitations, documentation errors, and corrections.

For up-to-date information about the state of the current release, visit the frequently asked questions (FAQ) section on pgroup.com at: www.pgroup.com/support/index.htm.

Debugging Issues

The following are known debugging issues across platforms.

- Before *PGDBG* can set a breakpoint in code contained in a shared library, `.so` or `.dll`, the shared library must be loaded.

- Breakpoints in processes other than the process with rank 0 may be ignored when debugging MPICH-1 applications when the loading of shared libraries to randomized addresses is enabled.

- Debugging of PGI Unified Binaries™, that is, 64-bit programs built with more than one `-tp` option, is not fully supported. The names of some subprograms are modified during compilation, and *PGDBG* does not translate these names back to the names used in the application source code. For detailed information on how to debug PGI Unified Binary files, see www.pgroup.com/support/tools.htm.

Corrections

A number of problems have been corrected in the PGI 2013 release. Refer to www.pgroup.com/support/release_tprs.htm for a complete and up-to-date table of technical problem reports, TPRs, fixed in recent releases of the PGI compilers and tools. This table contains a summary description of each problem as well as the version in which it was fixed.

Chapter 4. Contact Information

You can contact The Portland Group at:

The Portland Group
Two Centerpointe Drive, Suite 320
Lake Oswego, OR 97035 USA

The PGI User Forum is monitored by members of the PGI engineering and support teams as well as other PGI customers. The forum newsgroups may contain answers to commonly asked questions. Log in to the PGI website to access the forum:

www.pgroup.com/userforum/index.php

Or contact us electronically using any of the following means:

Fax	+1-503-682-2637
Sales	sales@pgroup.com
Support	trs@pgroup.com
WWW	www.pgroup.com

All technical support is by email or submissions using an online form at www.pgroup.com/support. Phone support is not currently available.

Many questions and problems can be resolved at our frequently asked questions (FAQ) site at www.pgroup.com/support/faq.htm.

PGI documentation is available at www.pgroup.com/resources/docs.htm or in your local copy of the documentation in the release directory doc/index.htm.

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