

# 64-bit Applications Infrastructure Continues to Build Using Latest Release of PGI Compilers and Tools

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*The Portland Group releases PGI Workstation 5.2 featuring full Fortran 95, full 64-bit support, and significant performance improvements for Linux Workstations and Servers*

The Portland Group™, a wholly-owned subsidiary of STMicroelectronics, today announced the general availability of version 5.2 of PGI® Workstation, a suite of Fortran, C, and C++ compilers and development tools for scientists and engineers. The PGI compilers and tools are widely used on Linux workstations, servers, and clusters based on AMD64 and IA32 processors to build high-performance computing (HPC) applications for complex modeling and simulations in automotive crash testing, structural analysis, weather forecasting, geophysical processing, aerodynamic simulation, computational chemistry, and related fields.

The Portland Group has been collaborating with commercial science and engineering application vendors, the authors of several key open-source technical applications, and AMD throughout early 2004 as part of an ongoing effort to build the infrastructure of high-performance 64-bit applications available for AMD64 processor-based systems.

"Our compiler and applications teams have been working on a weekly and sometimes daily basis with several key application developers to enable porting and optimization of their software for 64-bit systems,"

said Douglas Miles, director, The Portland Group. "The feedback we've received on both performance and feature requirements from these companies and users has been invaluable during the development of our 5.2 release. The result is an integrated set of compilers and development tools that can be used to build very high performance 64-bit versions of several of the most widely used commercial applications in science and engineering."

Commercial 64-bit science and engineering applications either currently available or being ported to AMD64 processor-based systems using the PGI compilers and tools include ADINA, ANSYS, GAUSSIAN, LS-DYNA, MSC NASTRAN and RADIOSS. "The 64-bit port of LS-DYNA for AMD Opteron is being performed using PGF90 5.2.

We've observed excellent performance and scalability," said Jason Wang, Lead Software Developer, Livermore Software Technology Corporation.

"We have been collaborating with The Portland Group since late 2002 to create world-class compilers and tools for AMD Opteron™ processor-based systems," said Pat Patla, director of server/workstation marketing at AMD. "The steady performance and feature enhancements delivered by The Portland Group since that time are now contributing to the growth in high-performance 64-bit science and engineering applications available for AMD64 technology with Direct Connect Architecture. We look forward to continuing our collaboration with The Portland Group as the momentum of HPC customers migrating to AMD processor-based systems continues."

The PGI Workstation suite includes the PGF77®, PGF90™, PGCC®, and PGC++™ compilers for the FORTRAN 77, Fortran 95, C, and C++ programming languages, respectively. Version 5.2 includes full support for all Fortran 95 extensions in PGF90; full native support for OpenMP

parallel programming extensions in Fortran, C, and C++; full support for the X86-64 application binary interface (ABI) medium-memory model allowing application data sets and data objects larger than 2 GBytes; native integrated scalar and vector SSE/SSE2 code generation; and a bundled version of the ACML 2.0 library of highly optimized numeric functions for mathematical, engineering, scientific, and financial applications. PGI Workstation 5.2 is highly optimized for both 32-bit and 64-bit AMD64 and IA32 processors. Performance improvements delivered by version 5.2 average more than 10% over PGI Workstation 5.1 on several industry-standard benchmarks, including SPECfp2000, the NAS Parallel Benchmarks, and the Polyhedron benchmarks. Performance improves as much as 25% on many popular engineering and scientific applications including MM5, MOLPRO, WRF, POP, GAMESS, and others.

PGI Workstation 5.2 also includes many major enhancements to The Portland Group's parallel application development tools-the PGDBG® debugger and PGPROF® performance profiler. As with previous releases, version 5.2 of both PGDBG and PGPROF support debugging and profiling of serial, OpenMP parallel, and MPI parallel applications. Both now include all new cross-platform scalable Graphical User Interfaces (GUIs). PGDBG adds support for automatic process attach to running processes in 32-bit or 64-bit OpenMP, MPI, or hybrid OpenMP/MPI programs, dynamically-linked threads libraries, support for the new Native Posix Threads Library (NPTL) for Linux, and support for either MPI-CH or LAM MPI. PGPROF 5.2 supports gprof-style sample-based profiling and traces including both routine and source-line level correlation, traditional PGI-style instrumentation profiling, and a fully user-customizable GUI. Both tools include extensive new online help facilities as well.

The original press release can be found [here](#).

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