

Technical Features

A partial list of technical features supported includes the following:

- *PGF95*TM native OpenMP and auto-parallel Fortran 90/95 compiler
- *PGF77*[®] native OpenMP and auto-parallel FORTRAN 77 compiler
- *PGHPF*[®] native data parallel compiler with full HPF language support (Linux only)
- *PGCC*[®] OpenMP and auto-parallel ANSI and K&R C compiler
- *PGC++*[®] OpenMP and auto-parallel C++ compiler
- *PGDBG*[®] OpenMP and MPI parallel graphical debugger
- *PGPROF*[®] OpenMP and MPI parallel graphical performance profiler
- Full 64-bit support on multi-core AMD64 and Intel 64
- Intel 64 and AMD Opteron optimizations including SSE/SSE2/SSE3/SSSE3/SSE4.1/SSE4.2, SSE4a/ABM, prefetching, use of extended register sets, and 64-bit addressing
- PGI Unified BinaryTM combines into a single executable or object file code optimized for multiple AMD64 and Intel 64 processors
- Complete uniform development environment across 64-bit and 32-bit AMD and Intel processor-based systems running Linux, Mac OS X or Windows
- Large file (> 2GB) support in Fortran on 32-bit x86 systems
- -r8/-i8 compilation flags, 64-bit integers
- Full support for Fortran 95 extensions and [comprehensive support for Fortran 2003](#).
- Full support for ANSI C99
- Full support for OpenMP 3.0
- Includes optimized ACML (LAPACK/BLAS/FFT) math library supported on all targets
- Supports multi-threaded execution with Intel Math Kernel Libraries (MKL) 10.1 and later
- Optional PGI compiled [IMSL Fortran numerical library](#) available
- Highly tuned Intel MMX and SSE intrinsics library routines (C/C++ only)
- One pass interprocedural analysis (IPA)
- Interprocedural optimization of libraries
- Profile feedback optimization
- Function inlining including library functions
- Vectorization, loop interchange, loop splitting
- Memory heirarchy and memory allocation optimizations including huge pages support
- Loop unrolling, loop fusion, and cache tiling
- Enhanced auto-parallelization of loops specifically optimized for multi-core processors
- Concurrent subroutine call support
- Extensive vectorization/optimization directives/pragmas support
- State-of-the-art dependence analysis and global optimization
- Invariant conditional removal
- Tuning for non-uniform memory access (NUMA) architectures
- Support for creating shared objects on Linux, dynamic libraries on Mac OS X and DLLs on Windows
- Tracking ANSI C++ Standard—EDG 4.6.2 C++ front-end
- C++ Class member templates
- C++ partial specialization and ordering
- C++ explicit template qualification

- C and C++ extended *asm* support
- GNU style template instantiation
- GNU linkonce support
- Integrated *cpp* pre-processing
- Cray/DEC/IBM extensions (including Cray POINTERS & DEC STRUCTURES/UNIONS)
- Support for SGI-compatible DOACROSS in *PGF77* and *PGF95*
- Byte swapping I/O for RISC/UNIX interoperability
- Threads-based auto-parallelization using both *PGF77* and *PGF95*
- Threads-based auto-parallelization of FOR loops in *PGCC* and *PGC++*
- Full native OpenMP parallelization directives in *PGF77* and *PGF95*
- Full native OpenMP parallelization pragmas in *PGCC* and *PGC++*
- Process/CPU affinity support in SMP/OpenMP applications
- Full support for [Common Compiler Feedback Format](#) compiler optimization listings
- User modules simplify switching between multiple compiler environments/versions
- UNIX-compatible build/edit environment for Windows, including the *BASH* shell, *vi* editor, *make*, *tar*, *gzip*, *sed*, *grep*, *awk*, and over 100 other shell commands!
- Prevalidated de facto standard support libraries including NetCDF, F95 OpenGL, ATLAS, ScaLAPACK, FFTW, MPICH, MPICH2 and LAM MPI
- Interoperable with TotalView* (Linux only)
- Fully interoperable with *gcc*, *g77*, and *gdb*
- Unconditional 30 day money back guarantee

System Requirements

- **Processor:** 64-bit [AMD64](#), 64-bit [Intel 64](#) or 32-bit [x86](#) processor-based workstation or server with one or more single core or multi-core AMD Opteron, Phenom, Athlon or Turion, or Intel Pentium II/III/4/M/D, Centrino, Core, Core 2 or Xeon microprocessors.
- **Operating System:**
 - Red Hat Linux 9.0 or higher, SUSE Linux Enterprise Server (SLES) 9 or higher, SUSE 9.0 or higher, Red Hat Enterprise Linux 3 or higher, or Fedora Core 4 or higher. Fully interoperable with newer versions of Linux which use kernel revision 2.4 and *glibc* 2.3.2 or higher.
 - Apple Mac OS X version 10.4.11 or higher (64-bit and 32-bit) and [Xcode 2.5](#) or higher.
 - 64-bit: Microsoft Windows Vista, Windows Server 2008 (x64), Windows Server 2003 x64 Edition or Windows XP Professional x64 Edition.
32-bit: Vista, Server 2003, Server 2008 (x86) or XP.

Building 64-bit executables requires a 64-bit operating system.

- **Memory:** 16 MB or more.
- **Hard Disk:** 250 MB during installation, 150 MB to hold installed software.
- **Peripherals:** Mouse or compatible pointing device for use of optional graphical user interfaces. CD-ROM disk drive for installation, unless products are downloaded electronically.
- **Other:** Web browser and Adobe Acrobat Reader for viewing online documentation.