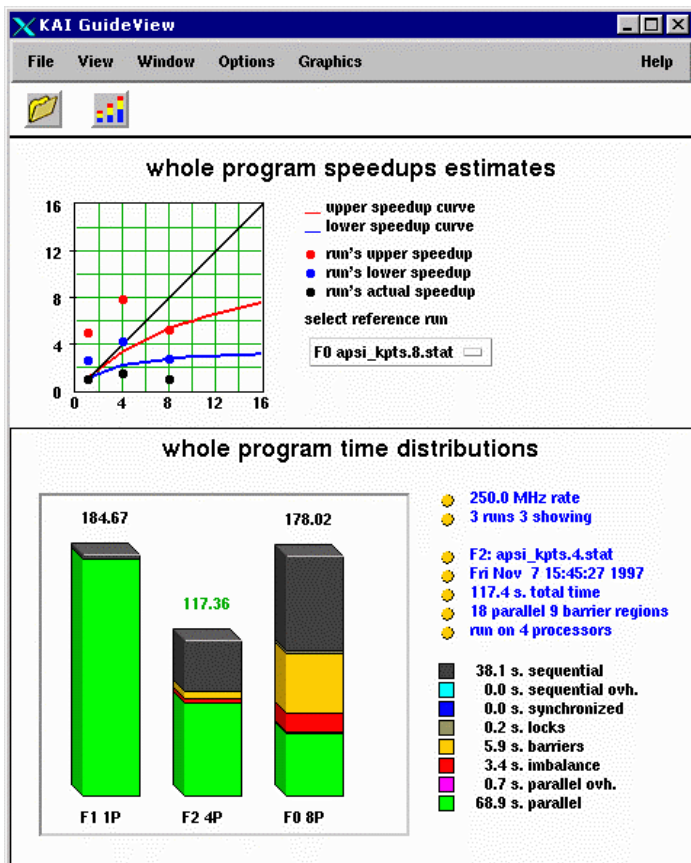


High-performance solutions: KAP tools for Compaq systems

Advanced programming tools for Compaq's parallel MP and serial systems

KAP products from Kuck & Associates, Inc., are powerful tools for automatic and directed restructuring of Fortran programs for serial and parallel execution on Compaq single-processor and SMP Professional Workstation and AlphaServer™ systems. KAP, Visual KAP, Visual KAP for OpenMP, and the KAP/Pro Toolset target Fortran compilers to enhance the performance, productivity, and portability of UNIX® and Windows NT® applications.



KAP highlights

KAP/Pro Toolset

The KAP/Pro Toolset combines a fully compliant implementation of OpenMP, an industry specification for directive-based, shared-memory parallel processing, with unique tuning and quality assurance tools that run under Compaq Digital UNIX and Windows NT on AlphaServer systems and Compaq's Professional Workstations.

Components include:

Guide, a tool that generates portable threaded code from OpenMP parallel processing directives and also translates proprietary Cray and SGI directives into OpenMP directives, which can be run on Compaq Intel™ and Alpha™ SMP systems.

The Compaq advantage

Compaq delivers the industry's widest range of systems with leading price/performance to meet your most demanding needs for developing and running technical applications. Today, Compaq offers you the industry's highest-performance UNIX and Windows NT® workstations and servers as well as storage, networking, operating environments, and the best support services to handle your most complex tasks.

Compaq systems range from single-processor Professional Workstations to AlphaServer SMP configurations containing up to 14 Alpha 21264 chips, the industry's most powerful processors.

Get it right the first time. Applications that run faster. Shorter time to market.

KAP highlights (continued)

GuideView, a performance visualization tool that graphically displays running time and analyzes parallel behavior, color-coding parallel "hot spots" and bottlenecks that need further work.

Assure, a verification tool that uses runtime analysis to detect inappropriate or misplaced OpenMP directives and hard-to-find synchronization errors.

Visual KAP

Visual KAP™ is an easy-to-use preprocessor that optimizes Digital Visual Fortran programs for Compaq Professional Workstation systems running Windows 95® and Windows NT. The parallel version analyzes serial programs and automatically splits Fortran code into multiple threads to speed execution on multiprocessor systems. The serial version uses cache blocking and loop unrolling to enhance code efficiency.

Visual KAP for OpenMP

The Visual KAP for OpenMP preprocessor contains all the parallelization, optimization, and operational features and advantages of Visual KAP on Compaq Professional Workstations running Windows NT. It offers application portability with OpenMP directive-based control of Fortran code. Visual KAP for OpenMP is highly flexible, enabling both automatic and manual insertion of OpenMP directives into Digital Visual Fortran code and processing of OpenMP directives into calls to the included parallel runtime library.

KAP

The KAP optimizer, which Compaq resells on Alpha systems, restructures Fortran or C language programs automatically for improved application performance on vector, parallel, and cache-based uniprocessor and multiprocessor systems. On Alpha systems running Digital UNIX or Windows NT, KAP boosts programmer productivity while reducing maintenance expense.

KAI C++

The KAI C++ optimizer enables C++ objects to run as fast as C or Fortran by eliminating the performance penalty of pure object-oriented designs. KAI C++ is available for Alpha systems under Digital UNIX.

KAI consulting services

Kuck & Associates also offers expert training and consulting services to Compaq's customers in all areas of parallel software engineering.

The Compaq Advantage (continued)

Compaq strengths:

- **Ultimate performance** from both development and target workstations and servers based on Alpha and Intel microprocessors, bringing to bear the power to execute up to 2.4 billion operations per second.
- **Multiple operating system support** comprising Digital UNIX, Windows NT, and fully interoperable environments of UNIX servers and Windows NT clients.
- **Digital Visual Fortran**, a Visual C++-compatible, standards-compliant Fortran 95 compiler with the industry's most advanced optimization algorithms for Alpha and Intel systems running Windows NT.
- **Investment protection** and enhancement through continued performance and quality leadership with unmatched scalability, supporting applications of any size and from one to thousands of users.

- **System support and integration services** to ensure the best application performance as well as the highest availability and most efficient use of your equipment.

KAI parallel programming and optimization tools are successfully running on Alpha systems at many institutions such as Massachusetts Institute of Technology's Laboratory for Nuclear Science, Sandia National Laboratory, Universidad Autonoma de Madrid, University of Cambridge (UK), and GEDOS. Major software producers that have used KAI tools to create parallel versions of technical applications for Alpha systems include Livermore Software Technology Corporation (LS-Dyna™), NAG (Fortran numerical library), and Fluent™, Inc. (Fluent).

Think Compaq and KAI.

See www.digital.com/info/hpc or www.kai.com



AlphaServer family

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