MPE/iX Update and Review
HP World, Chicago, IL 2001

The most recent release of MPE/iX 7.0, Express Release 1, which occurred during the summer of 2001will direct the e3000 enterprise systems to new speed and performance thresholds, unprecedented on this platform. Additionally, MPE/iX 7.0 Express 1 launch is the fulfillment of a promise of increased system speed and performance, that CSY made to its world wide customers during the Feb/March 2001 MPE/iX 7.0 release.

The new Internet-ready MPE/iX Release 7.0, Express 1 is the latest version of the HP e3000 operating system, specifically designed to take advantage of the power and performance of the new HP e3000 A- and N-Class servers. These systems are the latest additions to the HP e3000 family of enterprise servers, built upon HP PA-RISC chip-set architecture.

MPE/iX Release 7.0 Express 1 enables the new A- and N-Class systems to higher speed and performance as provided by multi-way PCI processing architecture. Further, this release provides the functionality that was provided on MPE/iX Release 6.5 express 2, that did not get included in the 7.0 Base release.

MPE/iX 7.0 Express 1 high-end focus is achieved through the new functionality it offers as well as through the new HAFO and I&I products that will be launched at the same time as Express 1.

Increased Processing Speed and Performance unprecedented on the HP e3000:

- **35% processing speed and performance increase**. High-end customers running MPE/iX 7.0 Express Release 1 can expect even higher processing performance from their systems. (Relative HP performance units, based on N4000-400-550 vs. 997/1200)
- **140% processing speed and performance increase**. Mid-range customers running MPE/iX 7.0 Express Release 1 can expect even higher processing performance from their systems. (Relative HP performance units, based on N4000-100-220 vs.929KS/030)
- **65% processing speed and performance increase**. Entry-level customers running MPE/iX 7.0 Express Release 1 can expect even higher processing performance from their systems. (Relative HP performance units, based on N4000-100-110 vs. 917/927/937/947)

Long known for being the most reliable and stable operating system for commercial applications, MPE/iX Release 7.0 Express 1 has evolved to unlock new hardware performance technology that will revolutionize the current HP e3000 platform. In particular, MPE/iX 7.0 Express 1 offers brand new support for PCI I/O devices on the A and N-Class servers. These servers are designed to solve customer solution needs, from entry level, departmental and workgroup servers to mainframe-class servers within the data centers of large enterprises.

With the constant pressure on your business to “stay connected,” and the advances of Internet technologies, MPE/iX 7.0 Express 1 is enabled to do just that. MPE/iX 7.0 Express 1 provides a strong, solid and reliable foundation for always-on businesses with three levels of availability:

basic system availability with built-in fault avoidance, high availability for rapid recovery and disaster tolerance.

Performance and Capacity Improvements:

- **Reduced planned or unplanned downtime** – High Availability Cluster/iX provides increased up time by moving the mission critical data from the unavailable system to a secondary system that is up and running.
- **Protection against loss of server accesses to data.**
- **Support for N-way systems -** High Availability Cluster/iX is not limited to 2-way topologies. It can manage N-way systems.
- **Improved switch over from failed I/O path to active I/O path –** High Availability FailOver/iX (HAFO) continually monitors SCSI reply messages for failed data path components and allows MPE to switch to another active I/O path connected to the same array.
- **TurboIMAGE/iX Support for databases with dataset size greater than 80GB**- this enhancement in TurboIMAGE/iX removes the current 80 GB limit on the size of a dataset so as to allow users to have really large datasets. Old and new format databases can co-exist in the same system.
- **Increased TurboIMAGE Limits** - Number of items limit raised to 1200, number of sets per database increased to 240, and number of paths for master supported up to 64. The new limits will not be applicable for old databases created under previous versions of TurboIMAGE/iX. However, these databases will continue to function with the old limits and applications will be compatible.
- **Improved and user friendly ALLBASE ANSI AS Clause** - This enhancement builds support for AS clause in SELECT statements to help the user to give a more meaningful name to the column headings.

Basic system availability needs include data integrity, hardware and software reliability, and system resiliency, which are built into the MPE/iX 7.0 Express 1 operating system at no extra charge. MPE/iX 7.0 Express 1 continues to have excellent built in high availability (HA) that you have come to rely on such as file system resiliency, subsystem dump, and online maintenance. For even higher levels of availability, MPE/iX Release 7.0 Express 1 features numerous tools, services, and products that keep your mission-critical applications running, your data safe and deliver fast recovery, should any problems arise.

MPE/iX 7.0 Express 1 also provides heterogeneous computing compatibility with other systems within your environment and across the vast reaches of the Internet by using Internet services. These new web-enabling technologies running on the A- and N-class servers deliver just this kind of seamless interoperability with UNIX, Windows NT, Linux and other major Internet and intranet platforms. Additionally, MPE/iX 7.0 Express 1 supports POSIX, SQL, Java and ANSI standard compilers that enable application portability.

Internet and Interoperability:

- **Solid Java offering** - With the new MPE/iX Software Developer's Kit for Java 2 Platform, version 1.3, the implementation of Java on the HP e3000 just got a lot faster. Thanks to the new technology included in the HotSpot Virtual Machine the Java offering on the e3000 provides for a major boost (2x to 5x the performance of the classic VM with JIT) in Java performance!
- **Popular, open source Apache Web Server** - Version 1.3.14, with the Dynamic Shared Object (DSO) module for easy customization and overall enhanced functionality, helps to evolve the HP e3000 as a viable web server.
- **Open source Samba**. - Version 2.0.7, provides for enhanced interoperability with NT environments.
- **ODBC and JDBC continue to be the prime database connectivity**. Updated ODBC access is provided via MB Foster Associates, ODBC/Link SE and is bundled at no additional cost with IMAGE/SQL and ALLBASE/SQL.
- **HotSpot Virtual Machine-** The HotSpot VM is a completely compatible alternative to the Classic Java Virtual Machine. The latest Software Developer's Kit (SDK) for Java, which is included with this release, contains both the HotSpot and the Classic JVMs. The primary advantage of the HotSpot VM is performance. Benchmarks show typical performance improvements of from 2 to 5 times when using the HotSpot VM compared to the 'Classic' virtual machine shipped in all versions of Java to date.

To achieve higher data throughput and transactional capabilities on the PCI-bus subsystem, HP has make significant changes and additions to networking capabilities such as new MPE/iX N-class Console, PCI WAN Sync Mux (ACC Card and Driver), Multi-function core-I/O card and PCI 100-Base-T Link product. These changes will extend the speed and performance for your e3000 enterprise solution, all powered by MPE/iX Release 7.0 Express 1.

Further, MPE/iX 7.0 Express 1 enables a variety of industry standard network link products for building a network infrastructure. The network links supported on HP e3000 A- and N-class servers provide customers with cost-effective, flexible network access solutions that support multiple network connections and multiple protocols.

High End Functionality

- **100 Base-T on Core I/O card-** PCI 100-BaseT, LAN support available on core I/O module for MPE/iX Release 7.0 Express 1. This will eliminate the need for integrating LAN card A5230AY, and free up an additional I/O slot.

- **BIGPIN Support-** Now enabled on MPE/iX Release 7.0 Express 1, and running only on the N-Class servers, is support for additional concurrent processes. Previous releases of MPE/iX supported up to 8190 concurrent processes, and now with MPE/iX 7.0 Express 1, that limit is now up to 12,000. This improvement provides MPE/iX high-end customers the ability to support additional users and process intensive applications.

- **HP Predictive Support software**- (Predictive) provides proactive hardware support and helps increase the uptime of your systems by monitoring system memory and disk/tape

drives. When Predictive detects a potential problem, it sends a message to the HP Response Center. The Response Center portion of the system screens the data and forwards problems requiring further analysis to a Response Center Engineer. If action is needed at your site, the Response Center Engineer and a Customer Engineer will work with you to resolve the problem. This proactive hardware support is provided as part of your HP Hardware and Software Support Services Agreement.

Overall, Hewlett-Packard has committed to evolving the e3000 product family by developing MPE/iX. MPE/iX Release 7.0 Express 1 coupled with the new A- and N-class solutions, support industry-wide computing standards and have been developed by an engineering team that has years of experience in designing best-of-class solutions.