another hp invention:
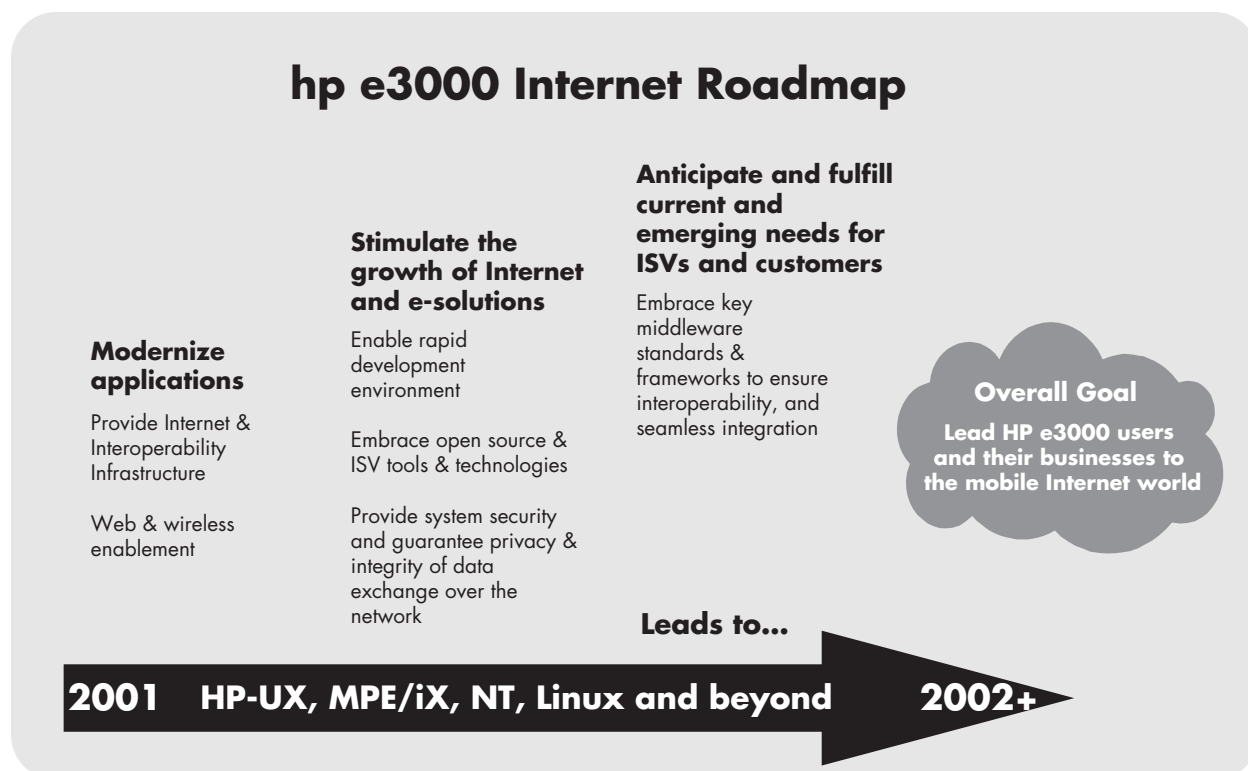# hp e3000 Internet solutions
#363

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introduction and roadmap

As markets, companies and consumers transform and evolve their tenets, businesses and personal lives with the advent of the Internet, comprehensive solutions become a necessity. The Internet has become a 24-hour place for information exchange, e-services and e-commerce. From servers and e-service/Internet solutions to peripherals and partners, from support, service and consulting to inventive financing, HP brings invention, strength, reliability and stability, along with seasoned experience to customer's needs and requirements. It all adds up to establishing another HP invention, the HP e3000 with its innovative MPE/iX operating system, as a Web enablement platform and ensuring its role in the new mobile Internet economy.

The HP e3000 is a serious Internet player in all areas of the business to business supply chain and in the business to consumer arena. This inventive platform works well with web-enabling technologies developed by HP and key partners as well as various key HP e3000 partners' application software for use in HP e3000 and multi-platform/OS (such as NT, and HP-Unix) environments to provide seamless integration of Internet and e-services solutions.

HP has a rich history of turning its visions into reality. Bill Hewlett believed in inventing "useful and significant things". In that vein, the HP e3000 Internet roadmap (as illustrated by the accompanying graphics) leads to the realization of the following vision: HP e3000 customers and their businesses are successfully using and seamlessly integrating the Internet/Intranet, wireless and e-services world.

hp e3000 Internet Roadmap

Anticipate and fulfill current and emerging needs for ISVs and customers

Stimulate the growth of Internet and e-solutions

Embrace key middleware standards & frameworks to ensure interoperability, and seamless integration

Modernize applications

Enable rapid development environment

Provide Internet & Interoperability Infrastructure

Embrace open source & ISV tools & technologies

Web & wireless enablement

Provide system security and guarantee privacy & integrity of data exchange over the network

Overall Goal

Lead HP e3000 users and their businesses to the mobile Internet world

Leads to...

2001   HP-UX, MPE/iX, NT, Linux and beyond   2002+

run it—"always on" solutions in a heterogeneous environment

In the Internet age, businesses must deliver 24 hours a day, 7 days a week from every time zone in the world. With an increasing dependence on computer systems, downtime means lost revenue, reduced productivity and higher costs. Reliability, resiliency, scalability and system availability are crucial to the survival and success of every business. To meet these goals, the HP e3000 and its portfolio of solutions set a new standard in business computing challenges. This strong, solid, and reliable foundation lets you concentrate on your business, rather than worrying about your computing environment.

Companies continue to evolve into heterogeneous computing environments with vast amounts of mission-critical data. The HP e3000 mission-critical computing environment has also evolved into a heterogeneous one, often including both UNIX and NT platforms; a combination of LAN, WAN, intranet and Internet technology; and the use of commercial network management frameworks for centralized administration.

The new Internet-ready MPE/iX Release 7.0 is the latest version of the HP e3000 operating system, specifically designed to take advantage of the power, performance and speed of PCI architecture now running the new HP e3000 A- and N-Class servers.

MPE/iX 7.0 has evolved with customers' ever-expanding Internet needs. This robust operating system has been designed to handle not only online transaction processing (OLTP) applications but also full-featured web applications and Internet connectivity. The HP e3000's proven scalability means that applications developed on an entry-level A-class server can easily be deployed to the N-class work-group or enterprise servers without having to be rewritten or modified. This saves time and money in application development costs. It also means that as you upgrade your systems, data and applications can be easily moved forward from previous releases with no risk of data corruption.

The HP e3000 is part of an "always on" infrastructure for e-services and the Internet with its high availability, system management, and storage capabilities along with the new MPE/iX Release 7.0 operating system, HP WebWise Internet Suite,and a number of development tools and Internet applications. In addition, the HP e3000 continues to provide investment protection to customers so that they can quickly and easily take advantage of web technologies and the Internet. Deploying your HP e3000 as a reliable, mission-critical transaction and data base server is just plain smart; now you can also evolve and expand your business to include the new HP e3000 servers, as cutting-edge web and application servers.

access for you at anytime

The Internet stretches the limits of today's systems and solutions with the exponential increase in the amount of information and access to it, 24 hour, worldwide accessibility, free-flowing direction, distance flexibility and just-plain-speed for everything. This emphasizes the urgent need for Internet/e-services solutions that provide high availability of critical business applications to meet the challenge of stretching and surpassing limits for today's systems. Capitalizing on the opportunities provided by the Internet means having a strong, solid, reliable infrastructure foundation. Downtime in a 24-hour uptime e-world means loss of revenue, productivity and deals, and extra costs. Don't risk your business with an unstable, unreliable Internet infrastructure. Build a strong foundation for your business that will manage, protect and support your business assets. High availability, system management, storage and backup are the key components to your data center.

high availability to meet your challenges

The HP e3000 with its three levels of availability eminently qualifies it for Internet and e-services solutions: basic system availability with built-in fault avoidance; high availability for rapid recovery, and disaster tolerance. In addition, the HP e3000 keeps pace with the growing memory needs of Internet and e-services solutions with increased memory sizes to at least 16 GB.

The basic system availability with built-in fault avoidance refers to the inherent robustness of the HP e3000 and the MPE/iX high availability operating system. Features, such as online device configuration, error correcting memory, Patch/iX, Stage/iX and electronic patch delivery, minimize downtime for routine maintenance.
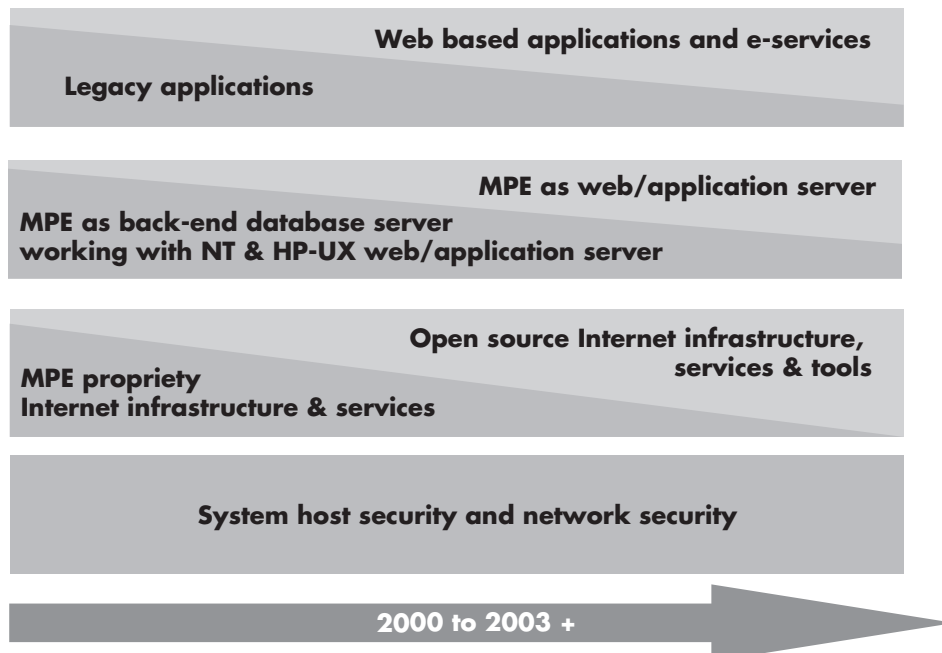
you can manage centrally and remotely

Many system management products are available to help you manage your HP e3000 data center environment in an efficient and cost-effective way.

HP also offers system management solutions such as the Secure Web Console and HP Vantage Point Operations that can help you centrally and remotely manage your environment.

Included in the operating system is Easytime/XL, which lets you easily perform day-to-day tasks such as managing system resources, starting a job, printing a report, or sending a message to another user on the system. These are just some of the HP solutions that can make managing your system so much easier.

Internet & Interoperability Compass

Web based applications and e-services

Legacy applications

MPE as web/application server

**MPE as back-end database server
working with NT & HP-UX web/application server**

**Open source Internet infrastructure,
services & tools**

**MPE propriety
Internet infrastructure & services**

System host security and network security

2000 to 2003 +

In the networked world of e-services, the monitoring and managing of heterogeneous environments is more important than ever. HP OpenView IT/Operations addresses one primary task: keeping distributed, mission-critical, multi-vendor environments up and running. It provides powerful management functionality for the server, and covers key events related to database conditions, networking and job and process management. Powerful scripts in IT/O monitor key HP e3000 system resources and processes, and cover system areas such as networking, backups and security.

HP Secure Web Console simplifies HP e3000 system management by allowing users to access multiple HP e3000 server consoles from a single location via the Internet. Through remote access, senior system managers can be available instantly to troubleshoot problems, even from home or on the road. This HP Internet appliance offers an extremely efficient and cost-effective way to manage networked HP e3000 servers remotely and securely.

Analyzing the data and getting answers to all the questions is another aspect of the Internet world.

The HP e3000's e-Intelligence solution is Decision Vault. It enables a data warehouse or data mart to be implemented easily using an IMAGE/SQL database, with high-speed access to the data through graphical end-user tools. This solution is provided by HP, DISC, Taurus Software, Quest Software, Inc. and Brio Technology.

you can store and access more data than ever

The Internet means collection and use of vast amounts of mission-critical data for companies in heterogeneous computing environments. Data protection and management are hallmarks of the new e-world. Solutions offering increased performance, capacity, protection/reliability, online backup, flexibility and fast, easy access to data are critical.

HP e3000 storage solutions are more reliable, cost-effective and flexible then ever. The new HP SureStore E Disk Array 12H combines hassle-free storage management with the best-in-class performance and capacity. The last thing an e-business needs is to worry about its storage needs. The 12H is a self-managing storage array. With its self-optimization, it automatically transfers data of one raid level to the other to maintain the highest performance and balance space availability based on the incoming data loads. E-businesses have an inherent need for high availability, and the 12H provides that with its internal mirroring of data which prevents the failure of a disk drive from impacting the daily business of today's new e-company.

The HP SureStore E Disk Array XP48 and XP512 are the ultimate high availability solution for the e-business that needs large online storage capacities, high performance and high availability. The XP512 supports capacities from 72GBs to over 24 Terabytes. Like the 12H, its components are "hot-swappable" so downtime is so no longer an issue. Because its capacity can be increased on-line, the XP48 and XP512 can grow as the requirement for capacity grows without imposing unnecessary downtime. Built for the e-services environment, the XP48 and XP512 can support multiple copies of data or host copies of the data on a second XP array for those disaster sensitive environments. To further its support of e-businesses, the XP arrays have an automatic call home feature allowing support to respond to problems, before they can impact a business.

The 12H and the XP48 and XP512 are disk arrays designed to be pillars of the e-business infrastructure. Without these kinds of storage devices in an e-services environment, it is doubtful that the business will survive or compete well against other e-businesses.

E-businesses by definition are 24x7 shops. Therefore, it is important to be able to perform storage backup online. Enhanced TurboSTORE/iX 24x7 TRUE ONLINE Backup, provides a cost-effective, high capacity hot backup solution for HP e3000 enterprise environments. TurboSTORE/iX facilitates increased efficiency, ease of use and decrease resources needed to manage the data center.

The Internet also means connecting people and systems in more than one place or area. Fibre Channel the next generation I/O interface gives customer increased flexibility (up to 500 meters) in their data center to place storage where they want it.

These HP e3000 storage solutions fold nicely into the HP Storage Area Network (SAN) strategy and will provide investment protection while evolving into and growing with the Internet and e-services world.
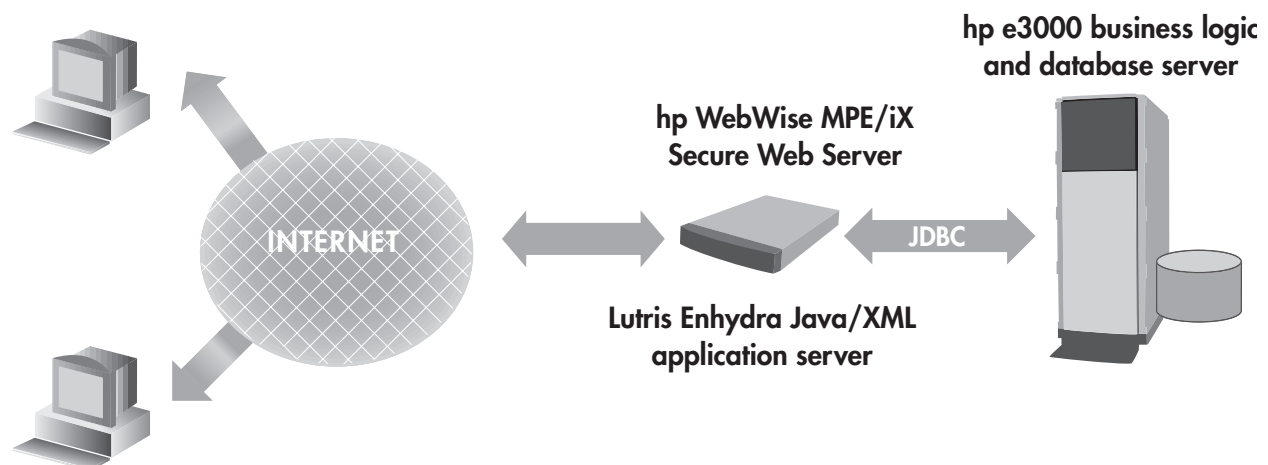
evolve it—e-solutions

communicating securely with everybody!

In today's multi-vendor, multi-OS world, it is essential that businesses have the ability to operate across platforms and applications. MPE/iX 7.0 provides OLTP performance and functionality for business-critical applications while also supporting PCI/IO interfaces for interoperability with heterogeneous platforms and applications.

Internet services included in MPE/iX 7.0 make it easy to integrate the HP e3000 into a multi-platform environment. These services from HP, the open source community (based on) and key HP partners include:

• Open Database Connectivity (ODBC) from M.B.Foster Associates for a standard interface to access a
  variety of databases using SQL such as IMAGE/SQL and ALLBASE/SQL
• Java(Database Connectivity (JDBC) allows Java applications to access data stored in databases like the
  HP e3000's IMAGE and ALLBASE
• Enhanced FTP/ix (File Transfer Protocol)
• DNS BIND/iX
• Berkeley (BSD) Sockets for program-to-program communication

deployment of the hp e3000 as a full-scale web and application server

hp e3000 business logic
and database server

hp WebWise MPE/iX
Secure Web Server

INTERNET

JDBC

Lutris Enhydra Java/XML
application server

- Telnet/iX server and Telnet/iX Client for access between the HP e3000 and computers that support Telnet, such as UNIX-based and NT-based systems
- Open source SAMBA for seamless interoperability with NT environments
- Lightweight Directory Access Protocol (LDAP) for directory access across platforms provides easy interoperability and transparent access among X.500 directories on the HP e3000
- DCE RPC provides a high-level programming model to the distributed applications and hides networking communication details from the users
- MPE/iX 7.0 also supports POSIX, SQL, Java and ANSI standard compilers that enable application portability.

In addition, HP embraces a key Internet security building block - Secure Sockets Layer (SSL)- the Internet security protocol for securing Internet data exchange. (See the HP WebWise subsection for more details).

Legacy J PERCobol, running on the HP e3000, enables legacy applications to be extended to multi-platform multi-threaded client/server computing architectures. The HP e3000 also offers the Open Database Connectivity (ODBC) API interface In addition to ODBC drivers such as ODBCLink/SE and DataExpress for Client/Server from M.B. Foster Associates, LinkWay from CSL Business Solutions; and ODBC/32 from MiniSoft are also available for the HP e3000.

The ability to operate across platforms and applications is essential. Seamless integration of disparate computer systems with enterprise-wide and Internet-styled applications is a solid, core strength of the HP e3000. Data interoperability in a web-centric enterprise-computing environment is not only between the HP e3000 and other HP e3000's or NT and the HP e3000, but also with other platforms such as UNIX, IBM, Linux and Solaris. Message-Oriented Middleware (MOM) allows applications on different computing platforms and networks exchange data reliably and securely. For example, message-oriented middleware lets mainframe, UNIX or Windows NT applications communicate by sending data messages to message queues. MOM solutions on the HP e3000 from HP partners include: Level 8's Geneva Message Queuing connecting Microsoft and non-Microsoft applications; Willow Technologies IBM MQSeries Client; and Premier Software's Active Web.

Premier Software also addresses transforming MPE/iX applications into interoperable, high-powered server objects on the HP e3000 with OSCAR (Open Services Catalog and Application Repository). Because OSCAR supports connectivity across MPE/iX, HP-UX and Win32, MPE/iX applications can be engineered as a server or client. This OSCAR messaging technology and repository also have been integrated with popular ERP solutions such as SAP R/3.

HP WebWise Internet Suite

As the Internet and e-commerce become increasingly important for many businesses, web server and application server technology provide crucial components for effectively transforming, developing, deploying and securing environments for an Internet age. HP covers your technology and business needs now and well into the future. The HP e3000's "evolve it" approach ensures that you are not trapped with an outdated answer, or left behind in a swiftly changing world.

opening up the world

Complementing the new servers and operating system, the HP WebWise Internet suite includes the current offering of the HP WebWise MPE/iX Secure Web Server, based on open source Apache, and now the new offering in the suite, the Lutris(r) Enhydra (tm) Java (tm) /XML Open Source Application Server based on open-source Enhydra. The powerful combination of the HP WebWise Internet suite, and the HP e3000 A- and N-Class servers provide you with new solutions for your business with necessary security, and rapid, flexible development and deployment of Internet, wireless or e-commerce applications. Lutris Enhydra 3.5.2 is certified and supported by Lutris Technologies on the HP e3000 and the new Lutris Enhydra EAS 4.0 J2EE version will be certified on the HP e3000 in the very near future.

mpe/ix secure web server

key features and benefits

- full-strength encryption ranging from 40-bits at the low end up to "full-strength" 128-bit RC4 and even beyond to 168-bit 3DES
- SSL v2.0, SSL v3.0, and TLS v1.0
- X.509 digital certificates authentication
- support session caching for improving SSL performance
- Support Dynamic Shared Object (DSO)
- easily installed and configured
- fully supported by HP
- online purchase and order from www.software.hp.com
- CD media with Marketing documentation and information

lutris and webwise

the application server is one component of a complete solution stack.

secure apache webserver provides security and the ability to serve static content

application server used to create data-driven dynamic web (servlets) and wireless applications

hp e3000 ebusiness solution stack

web and wireless apps

lutris enhydra

apache webserver

} Webwise suite

mpe/ix

hp e3000
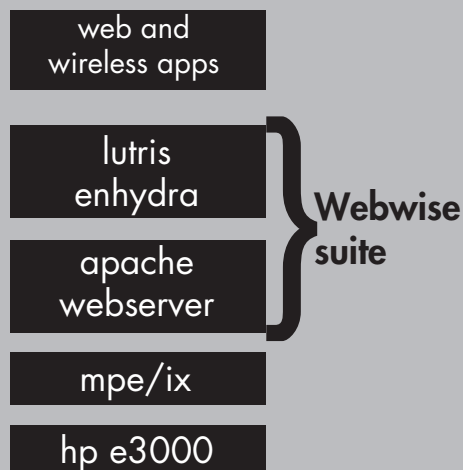
Lutris Enhydra

core features
- separates presentation, business, and data layers of an application
- leading Java IDE Integration, such as JBuilder and JDeveloper
- provides wireless and wired application support through WML, HTML, XHTML, cHTML, VoiceXML, and Java2 Platform Micro Edition (J2ME)
- allows manipulation of XML documents as Java objects through XMLC
- includes servlet 2.2 and JSP 1.1 support, with debugging
- supports popular Web servers, including open-source Apache Web Server
- features database connectivity through JDBC
- incorporates load balancing and failover capability
- includes Lutris Enhydra Getting Started and Developer Guide
- delivers professionally supported Open Source technology
- fully supported by Lutris Technologies

benefits
- enables rapid, flexible development and deployment of Internet and wireless applications
- reduced application development cost
- application investment protection
- easy integration with existing investments
- boosts productivity and enjoy smoother connectivity to back-end databases, giving you greater versatility, reduced configuration time, and rapid prototyping

Lutris Enhydra 3.5.2, is one of the springboards for the HP e3000 into the wireless, Java and Internet world. Open source has brought HP, the HP community and Lutris together. It is ideally suited for focused, rapid development projects where getting to the Web is time critical.

Java

write once, run best on hp e3000

Java (tm) is a simple, yet powerful programming language that provides the key to success in an Internet and e-services world through platform independence and portability. This means that Java applications, once written, can be executed on any computer system. This "write once, run anywhere" vision of Java has been realized on the HP e3000. The MPE/iX Software Developer's Kit for Java 2 Platform, version 1.3, enabling your IT software developers to customize Java applications and applets, is included in the current MPE/iX operating system releases. The new MPE/iX Release 7.0 operating system includes the MPE/iX HotSpot Virtual Machine for Java, which, when coupled with the performance, reliability, integration, security, and manageability of the HP e3000 A- and N-Class servers, provides the best deployment platform for Java applications.

HP believes that Java can add value to a significant number of computing environments today. Java technology is becoming pervasive so it is no longer a language or development area that only a few people or companies know about. It has been successful on the presentation or client side. Now, it is gaining ground in the middle tier, where computation or business logic is located, through application development architectures such as servlets and Enterprise Java Beans. The middle tier both interacts with database or back-end systems and updates client-side devices by downloading the latest software, as well as running new application logic. This ability to update the middle tier quickly and dynamically to accommodate changing business requirements is a huge advantage that Java provides for you and the A- and N-Class servers. MPE/iX Software Developer's Kit for Java 2 Platform, JDBC connectivity, MPE/iX Hotspot Virtual Machine (in MPE/iX 7.0) and Java servlets (available with Lutris Enhydra, the open source community, or an unsupported version of Apache Jserv located at the following HP website http://jazz.external.hp.com) along with our Java partners' offerings provide a solid Java offering on the HP e3000 A- and N-Class servers.

HP offers the following complementary products, capabilities, and partnerships, to form a complete solution for the development, deployment, and enhanced performance of Java applications:

• The HP e3000 A- and N-Class servers based on HP's high-performance PA-RISC technology and robust HP MPE/iX operating environment offer new, scalable levels of performance for Java applications.
• HP's high-availability (HA) solutions on the HP e3000 offering built-in fault avoidance; high availability for rapid recovery; and disaster tolerance along with such features as online device configuration, error correcting memory, Patch/iX and Stage/iX for electronic patch delivery.
• Partnerships with the leading developers of Java development and deployment solutions, such as Lutris Enhydra's open-source XML/Java application server; Minisoft's Web Dimension; and LegacyJ's PERCobol.
• HP WebWise MPE/iX Secure Web Server based on the popular Apache Web Server for full strength encryption, authentication, and overall Internet security to your web site.
• LDAP for directory services and access across various platforms
• SAMBA for seamless interoperability with NT environments
• Freeware class libraries such as: TurboIMAGE class Library for Java for direct interface into TurboIMAGE database systems and the MPE Class Library for Java-to-native call facility to enable code written in languages such as COBOL to be directly called from Java programs.

graphical interfaces

Graphical user-friendly interfaces (GUI) are demanded and essential in an Internet world. The traditional interface to the HP e3000 has been through a simple terminal. Today, the HP e3000 offers two design concepts: desktop-based and session-based. Once a style of access is selected, the HP e3000 offers numerous approaches to evolve the simple terminal user interface. Many HP and third-party products and tools provide enhanced user interfaces and GUIs to HP e3000 users such as:

HP Samba allows MPE/iX to act as a file and print server to PC client running on the Windows environment; GUI3000 from Omnisolutions manages files, groups and accounts; provides information about TURBO/IMAGE database, and establishes an interface to the HP e3000 for carrying out demands; Qedit from Robelle allows editing of MPE/iX or HP-UX server and local PC file from a single MS Windows application; and StarMan from Bradmark creates a point-and-click environment and a more user-friendly environment.

In addition to the technologies and tools that are mentioned above, many new emerging protocols, standards and middleware are also used to pull these heterogeneous data repositories together in a seamless fashion without burdening the user with knowledge of the access methods for each platform.

trust it—control and security solutions

In today's world of e-commerce and Internet access, data security has never been more important. As companies move business processes to the Internet, making more and more information available to outsiders, they need to protect information from unwanted intruders. Building trust in the electronic marketplace and addressing security and privacy are essential to the success of capitalizing on the Internet.

peace of mind

Even if your business is not on the Internet, you still need to know that your data is secure. With MPE/iX 7.0, system security is built into the operating system, protecting you from unauthorized access and data corruption so you can be assured that your data will remain confidential and protected as it moves through your networks.

confident data access

Data is at the heart of your business. You need to know you can securely access that data at any time, from anywhere. Numerous products and services are available to keep your mission-critical applications running, your data safe, and your recovery fast if any problems arise.

safe in the Internet

The HP WebWise MPE/iX Secure Web Server ensures that your data is protected against eavesdropping, tampering and forgery in the e-services and Internet world. Full strength encryption, secure communication between a client and web server, authentication, confidentiality, and data integrity ensure peace-of-mind when you need a secure communication link.

partner applications and tools

The HP e3000 has a rich offering of best-in-class Internet application solutions from world-class partners that span key industries such as e-commerce, order management, healthcare and manufacturing from such partners as Ecometry and Fiorvanti-Redwood International. The HP e3000 also offers a wide range of enterprise management tools from vendors such as Adager and Bradmark; application development tools from vendors such as Cognos and Speedware; combine legacy applications, data, and objects from a wide variety of computers with Web Dimension (application server and Java components collection) from Minisoft; and middleware products from partners such M.B. Foster Associates, Lutris Technologies, Advanced Network systems, Inc., Willow Technology and Level 8 Software.

summary

The HP e3000 with its Internet solutions is a serious, stable Internet player. The roadmap and compass discussed earlier are intended to lead customers and their businesses to a full realization of the business values and benefits and the vision of successfully using and seamlessly integrating the Internet/Intranet and e-services world. Embracing partnerships, standards and appropriate Internet technologies, enabling growth in an Internet world, and emphasizing and capitalizing on core strengths are the keys to success for the HP e3000 and its customers in this fast-paced, rapid-growth Internet world. The HP e3000 is ahead of the curve so leap confidently into the Internet age.