



i n v e n t

mpe/ix

features and benefits



"MPE/iX Release 7.0 provides a strong, solid and reliable foundation for always-on businesses"

"MPE/iX Release 7.0 Express 1 is the fulfillment of a promise of increased system speed and performance, that HP made to its world wide customers"

mpe/iX 7.0 highlights

"mpe/ix 7.0
provides a strong,
solid and reliable
foundation for
always-on
businesses"



features

- new support for pci i/o devices
- hp image/sql and allbase/sql
- samba and ldap provide heterogeneous computing ability
- new internet-ready functionality and performance

benefit

- enables enhanced hardware performance and scalability
- trusted database functionality and proven performance
- efficient communications with business servers
- application mobility, development ease and enhanced web presence



mpe/iX 7.0 express 1 highlights

MPE/iX 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



features

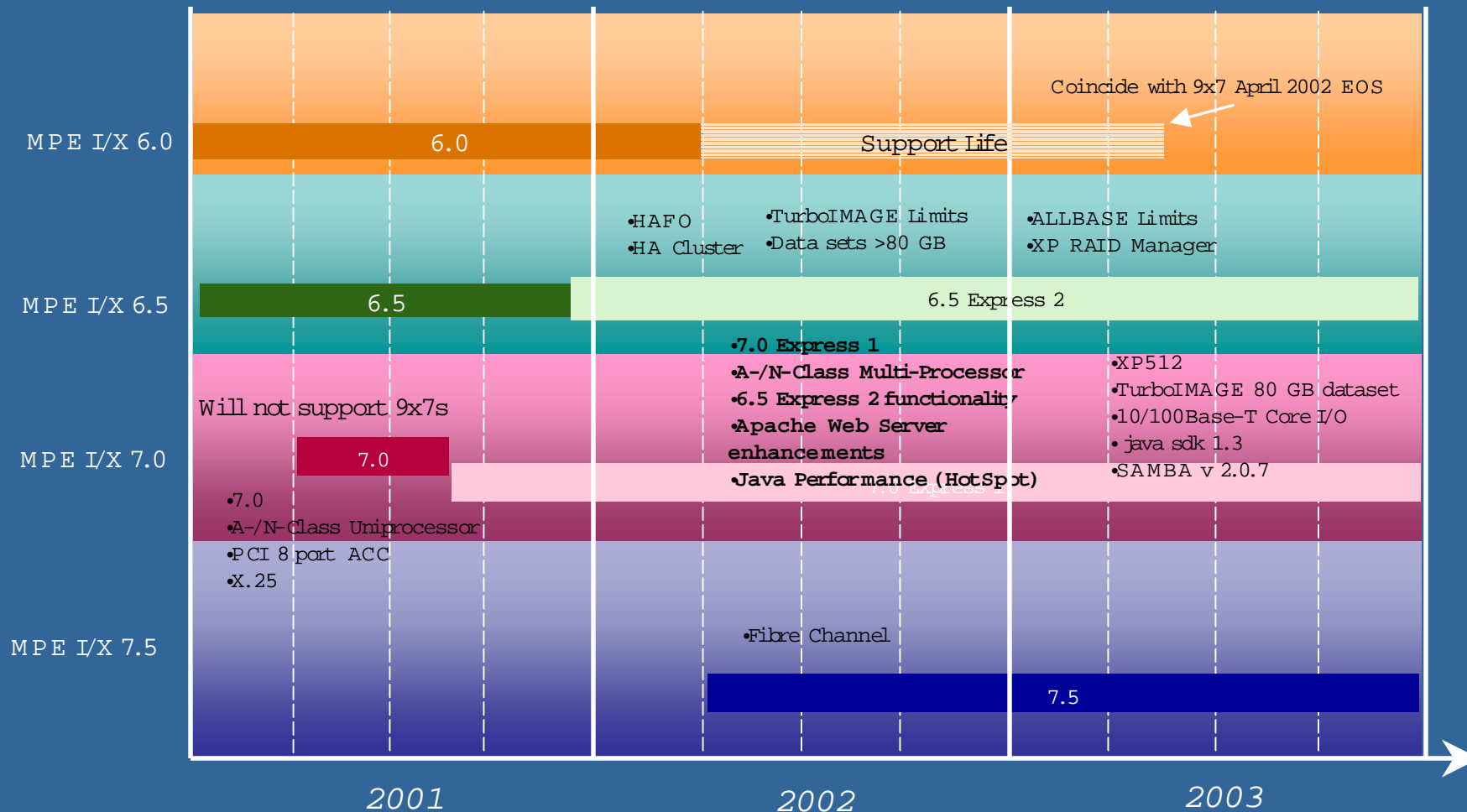
- support for multi-way pci architecture on A- and N-Class systems
- comprehensive high availability solutions such as Cluster/iX and HAF0
- improved Java offering and open source web enabling products
- increase high end functionality

benefit

- improved processing speed, performance and data throughput
- increase in up-time in mission critical environment
- 2x-5x Java performance when using HotSpot
- more support for high end customers running concurrent processes



mpe/ix roadmap



"HP continues to listen to our customer needs and invest in new functionality and technology based on customer feedback"

Scalability/Performance

Solid Internet and
Interoperability
Offering

- Upgraded Java offering
 - SDK v 1.3
- Apache Web Server
- Open Source Samba
- ODBC & JDBC
- HotSpot Virtual Machine
- IP improvement initiatives
- Continued language portability and improvements

High End
Performance

- Multi-way processor support/PCI
- 100 B-T on Core I/O card for A & N Class
- BIGPIN support for concurrent processes
- HP Predictive Support

Enterprise
Customer Needs,
Desires and Future
Opportunities

- Fibre Channel

MPE iX 7.0

MPE iX 7.0 Express 1

MPE/iX 7.5+

future
mpe/ix products
mpe/ix 7.5

fibre channel

- provides high-end growth path for our installed base
- available first calendar half 2002
- enhanced performance and scaling for high end customers

- fibre channel products support:
- next Generation FC arrays
 - XP512
 - XP48
- supported on PCI based systems
 - A- and N- Class



	MPE/iX 7.0 Express 1	MPE/iX 7.0	MPE/iX 6.5 Express 2	MPE/iX 6.5	MPE/iX 6.0
platform functionality					
HP e3000 A400, A500, N4000 (uni-processor support)	Ⓢ	Ⓢ			
HP e3000 A500, N4000 (multi-processor support)	Ⓢ				
HP e3000 9x7			Ⓢ	Ⓢ	Ⓢ
HP e3000 9x8, 9x9, 99x	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Support for PA-RISC chips in the 997/600-800 servers and 989KS servers, with support for up to 6-way symmetric multi-processing (SMP)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Support for 10 and 12-way 997 Servers	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
performance					
2 Gbytes of supported memory on HP e3000 A400, A500 and N4000 Servers	Ⓢ	Ⓢ			
8 Gbytes of supported memory on HP e3000 A500 and 16 Gbytes of supported memory on N4000 Servers	Ⓢ				
Support for memory configurations larger than 3.75 Gbytes (16 Gbytes in 997 Servers, 8 Gbytes in 989KS, 979KS, 939KS/030 and 929KS/030 Servers)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support for up to a maximum of 3300 users	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support for fixed length record and KSAM file sizes of up to 128 Gbytes	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support for larger disk capacities via support of up to 511 disk spindles	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support of up to 20,000 TCP network connections	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Increase in the number of job queues for dispatching jobs from one to 255, each user controlled	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
2 to 5 x increased performance of classic Java Virtual Machine	Ⓢ				

	MPE/iX 7.0 Express 1	MPE/iX 7.0	MPE/iX 6.5 Express 2	MPE/iX 6.5	MPE/iX 6.0
internet and interoperability					
Open-Source Apache Web Server	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
JDBC (Java Database Connectivity)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
32-bit ODBC bundled	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
LDAP (Light Weight Directory Access Protocol) support	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
SAMBA, DNS BIND/iX,	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
MPE/iX Software Developers Kit for Java 2 Platform	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Support for TCP/IP, OSI, and SNA	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support for 802.3/Ethernet, 802.3u/Ethernet	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support for SNA, as well as HP-IBM SNA IMF, HP-IBM SNA DHCF	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Improved Threads performance resulting in better Java performance	Ⓢ				
Java HotSpot VM	Ⓢ				
high availability					
Support for High Availability Cluster/iX	Ⓢ		Ⓢ		
High Availability FailOver/iX (HAFO)	Ⓢ		Ⓢ		
XP Raid Manager	Ⓢ		Ⓢ with XPMLXD8		
XP Business Copy and Continuous Access	Ⓢ		Ⓢ		

	MPEXX 7.0 Express 1	MPEXX 7.0	MPEXX 6.5 Express 2	MPEXX 6.5	MPEXX 6.0
storage					
Support for HP XP256 disk array	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Support for HP XP48/512 disk arrays	Ⓢ		Ⓢ	Ⓢ	
Support for AutoRAID 12H	Ⓢ	Ⓢ	Ⓢ	Ⓢ with MPEXXD1	
Support for Nike model 20	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Support for HVD10	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Support for DLT8000 tape devices	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
database					
HP ALLBASE/SQL and HP IMAGE/SQL	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
TurboIMAGE/SQL Support for databases with dataset size greater than 80 GB	Ⓢ		Ⓢ		
Increase TurboIMAGE limits	Ⓢ		Ⓢ		
Improved and user friendly ALLBASE ANSI AS Clause	Ⓢ		Ⓢ		
networking hardware links					
PCI 10/100Base-T LAN Adapter for A- and N-Class Servers	Ⓢ	Ⓢ			
PCI 8 Port Advanced Communication Controller (ACC) WAN for A- and N-Class Servers	Ⓢ	Ⓢ			
HP-PB 10/100Base-T LAN Adapter	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Data Communications and Terminal Controllers (DTCs)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
X.25 Network Link	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
IBM SNA/SDLC Link	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
SNA/Token Ring (Series 800 only)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Fiber Data Distributed Interface (FDDI) (Series 800 only)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
IBM BSC Link (Series 800 only)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
other services					
Replacement of the Sysdiag Diagnostic System with the Support Tools Manager	Ⓢ				
HP Predictive Support	Ⓢ		Ⓢ	Ⓢ	Ⓢ
Support of DVD devices for reading software distributed on CD-ROMs	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
Year 2000 compliant	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
media delivery					
CD-ROM (option CPA, CPB)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	
DDS (option AAH)	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
1/2-inch tape 6250 BPI (option AA2)			Ⓢ	Ⓢ	Ⓢ



mpe/ix operating
system
and
image/sql database

improved price/
performance features

- unlimited license to use
- database bundled with operating system
- scalability from entry-level to work-group/enterprise servers

mpe/ix performance characteristics

- pci i/o architecture (a- and n-class systems) unlocking hardware speed and performance levels unprecedented on the hp e3000 platform
- bus speed on pci bus is 440 mb/sec as compared to 32 mb/sec on hp-pb bus

entry level system

- a-class performance features
- >65 % faster than 918 servers, 2.2 to 5.4 hp e3000 performance units
- uniprocessor and up to 2 gb memory supported in base release 7.0

high end system

- n-class performance features
- fastest hp e3000, >35 % faster than 12-way 997 servers, 9 to 72 hp e3000 performance units
- 16 gb of memory (expandable in the future)

an example of processing performance

sorting 800 mb file

- 10 million 80-byte records

<u>System</u>	<u>approx. times</u>
997	13 min
989/150	8 min
N-440	5 min
N-550	4 min

mpe/ix networking products hp-pb (nio) vs. pci

- hp-pb (nio) sna link interface card (a5563a) supports -
bsc link (32007b)
ns point-to-point 3000 (36922b)
sna/sdlc (30291b)
- connector type supported - v.35,
rs-232

- pci 10/100 base-tx lan (a5230a)
link for system to system
communications
- has rj-45 connector only
- 10/100 base-t card supplied with
each pci system until 7.0
express 1, when 10/100 base-t
port on core i/o becomes
supported

- pci acc card (z7340a) supports
ns point-to-point (36922c)
sna/sdlc (30291c) and lap-b /
- connector type supported – v.35,
rs-232

mpe/ix networking products

- pci drivers for following products not included in fos and must be purchased separately:

- ns point-to point 36922C
- sna/sdlc 30291C
- x.25 36939C

- sna connectivity offered through sdlc link and token ring link on hp-pb (nio) platforms
- sna connectivity offered through sdlc link on pci platforms

- we will not be supporting pci based connectivity for:
- token ring (both for ns and sna)
- fddi
- 100vg anylan
- bi-sync/rje

6.5 express 2
functionality is in
7.0 express 1

- hafo
- cluster/ix
- turbo image limits
- allbase limits
- xp 48 & 512 support
- internet & interoperability enhancements

why ?

- conscious trade-off made in order to get the a- and n-class systems out
- customers who need 6.5 express 2 functionality will get it in 7.0 express release 1



internet & interoperability

"the HP e3000 with
it's innovative MPE
operating system, has
established itself as a
viable Web
enablement platform
in the new mobile
internet economy"



Features

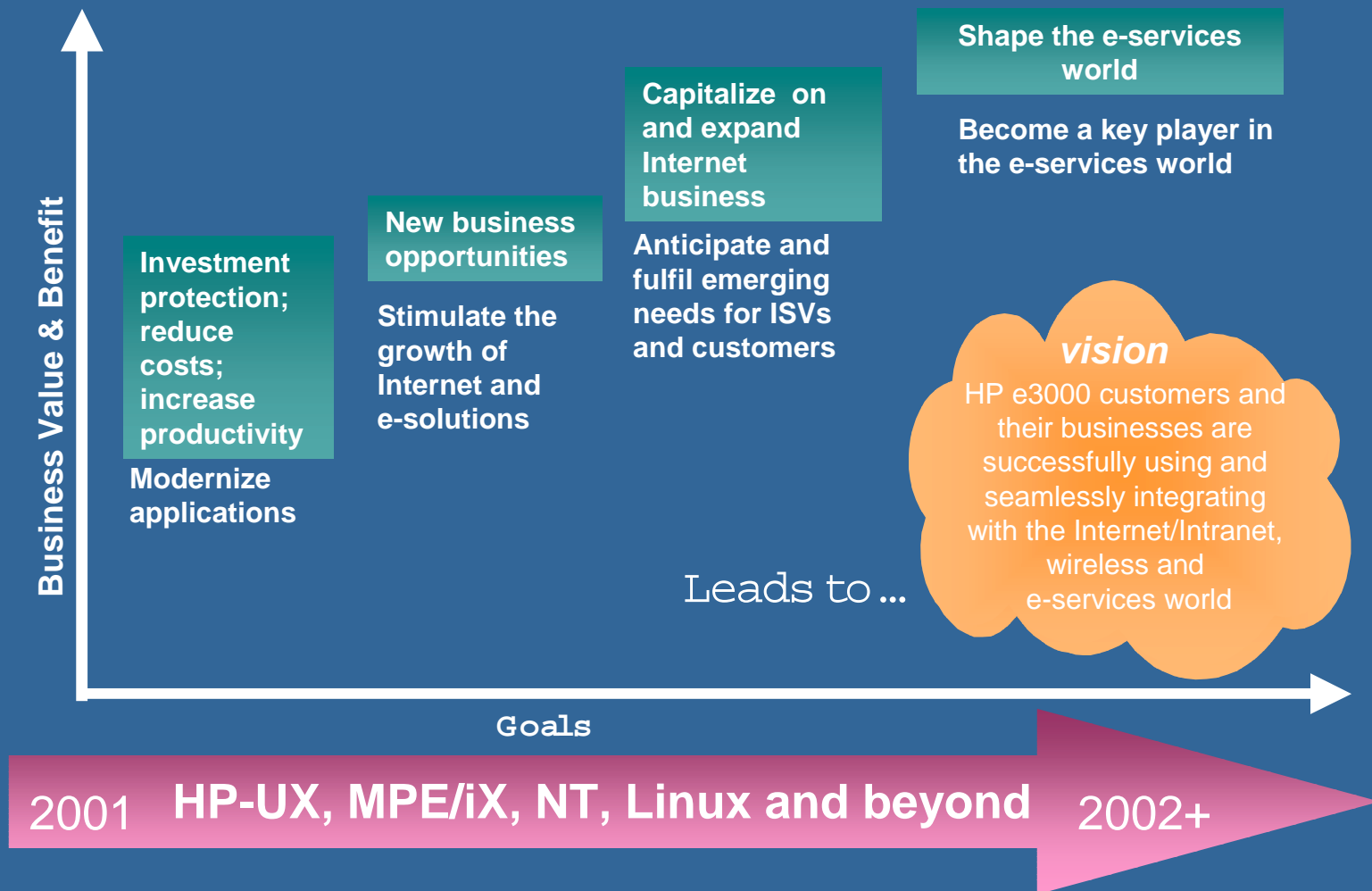
- solid Java offering – MPE/iX Software Developer's Kit for Java 2 version 1.3
- popular open source Apache Web Server – Version 1.3.14
- open source Samba – version 2.0.7
- ODBC and JDBC
- Hot Spot Virtual Machine

benefit

- 2x – 5x performance of the classic Virtual Machine
- Helping to evolve the HP e3000 as a viable web server
- Enhanced interoperability with NT environments



hp e3000 internet and interoperability roadmap



HP e3000 Internet and interoperability strategy

Modernize applications

Provide Internet & Interoperability Infrastructure

Web & wireless enablement

Stimulate the growth of Internet and e-solutions

Enable rapid development environment

Embrace open source & ISV tools & technologies

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

Anticipate and fulfil emerging needs for ISVs and customers

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

Become a key player in the e-services world

Enable key e-services technologies

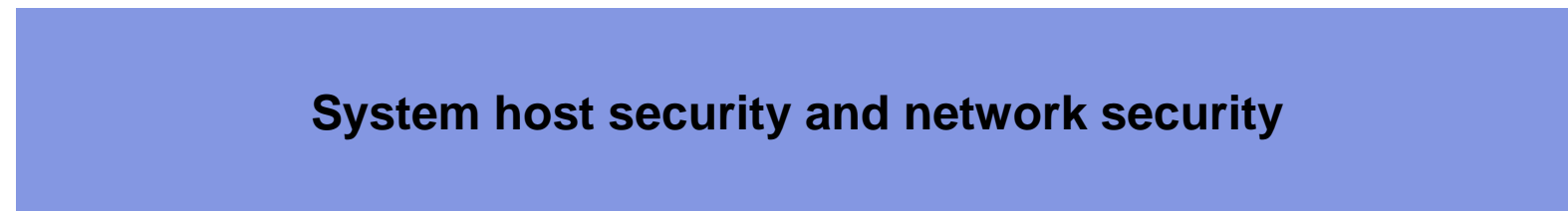
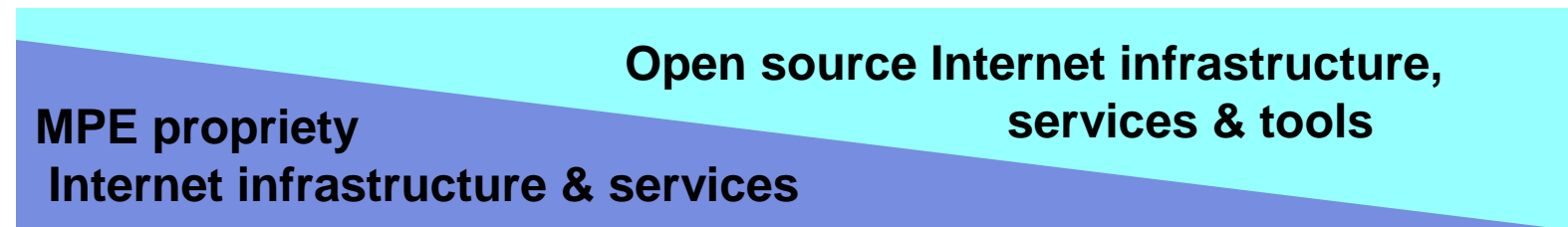
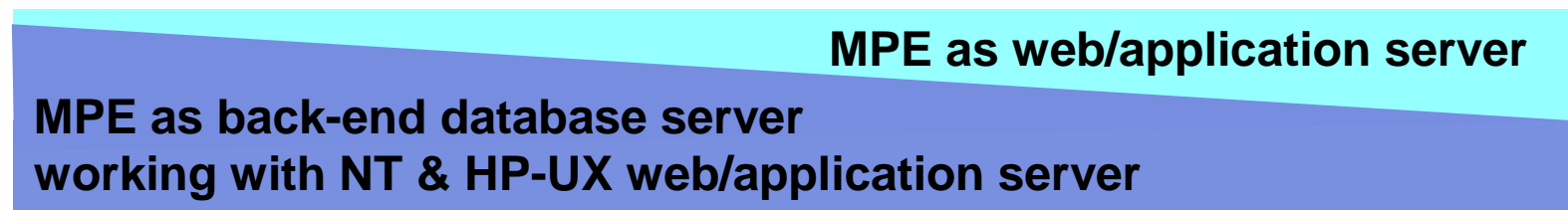
Overall Goal

Lead HP e3000 users and businesses to evolve/leap to the Internet, wireless and e-services world

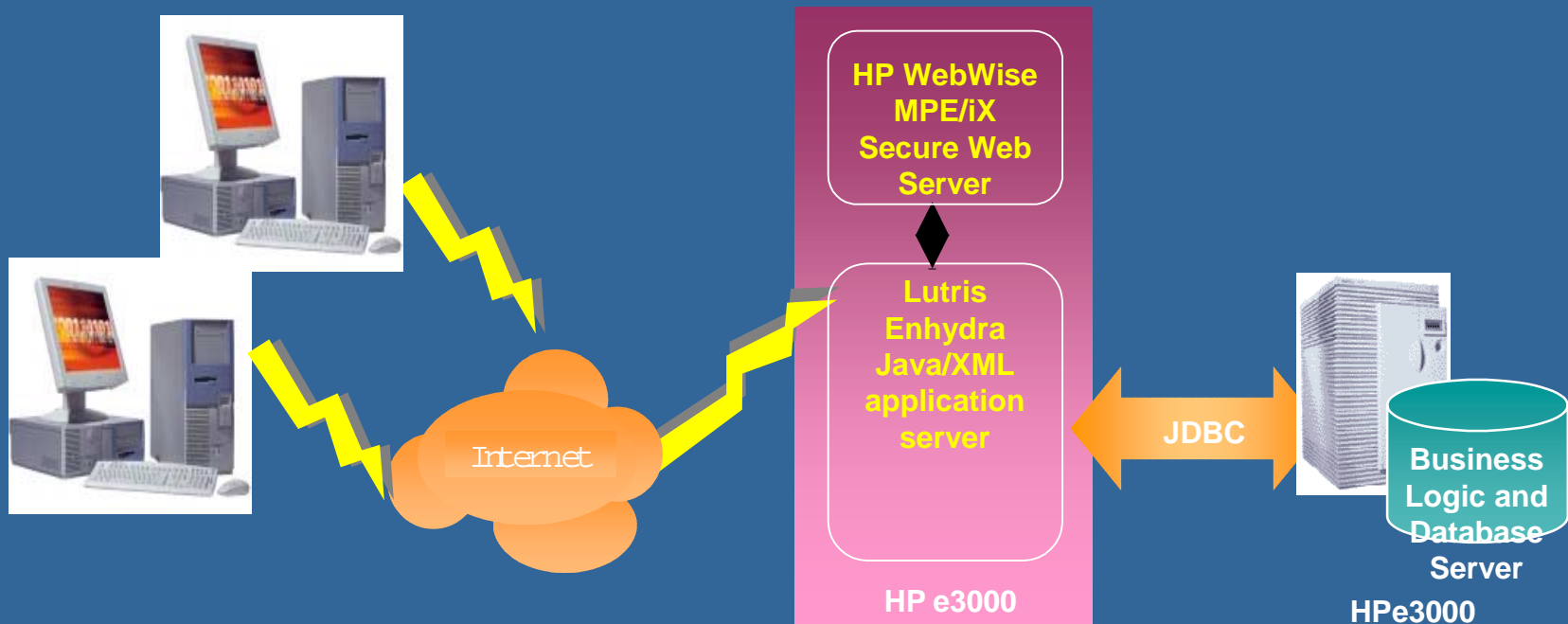
Leads to...

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

2002+



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



HP WebWise.

Internet suite of key
offerings for e-business
and web-enabling your
HP e3000

HP WebWise MPE/iX Secure Web Server based on open-source Apache

- Orderable and shipping now from an HP Reseller or Sales Rep.
- On-line order, purchase, and download available today from www.software.hp.com
- Full HP support via the Response Center
- Price ranges from **US \$1295 to US \$1995** based on system performance tier
- New features and functionality are planned for FY '2001

Lutris Enhydra 3.5 Java/XML Open Source Application Server based on open-source Enhydra

- New offering in Suite
- Orderable from Lutris online at www.lutris.com or from a Lutris Sales Rep at
- Will be certified on the HP e3000 by Lutris
- Full Support and documentation from Lutris
- Price ranges from \$695 for development and \$995 (per CPU) for deployment
- Full Internet and Enhydra-centric consulting available from Lutris Consulting

HP WebWise.

key features and benefits

- open-source apache web server is the foundation(v 1.3.9 today & 1.3.14 soon) and mod_ssl is the heart & support DSO module
- full-strength RSA encryption (ranging from 40-bits to 128-bit RC4 and beyond to 168-bit 3DES)
- easily installed and configured
- fully supported by hp
- SSL v2.0, SSL v3.0, and TLS v1.0
- X.509 digital certificates authentication
- support session caching for improving SSL performance

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

e3000 ebusiness solution stack

web and
wireless apps

lutris
enhdyra

apache
webserver

mpe/ix

hp e3000

Webwise
suite

luris enhydra – internet application server



- application servers turn web sites into dynamic, interactive wired and wireless Internet applications
- open source licensing – lower deployment cost
- leadership role in wireless application development
- comparable to BEA WebLogic and IBM WebSphere
- all java – runs on any platform with a JDK
- extensive graphical application deployment and management
- clustering support

- separates presentation, business, and data layers of an application
- provides wireless and wired app 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 and JSP support with debugging
- will be certified on the hp e3000 with the hp webwise mpe/ix secure web server
- database connectivity through jdbc
- incorporates load balancing and failover capability
- full support and documentation with guides from Lutris Technologies
- easy integration with existing investments
- based on open-source Enhydra originally developed by Lutris

lutris enhydra 3.5

core features and
benefits

rsa bsafe ssl-c toolkit

Includes

- Library libssl.c.a
- Product application interface header and configuration files
- Sample programs and source code
- Utility for key generation, certificate management etc.
- Full documentation

Availability

- Can be ordered from RSA directly or
- HP distribution
 - Available for "free" downloading from external Jazz web site
 - For development and testing purposes only
 - No support from HP
 - Requires user license from RSA for support and deploying applications that use BSAFE SSL-C toolkit

additional information

- hp.com/go/3000
- hp.com/go/3000partners
- hp.com/go/advisor
- hp.com/go/smartfriend3000
- 3kworld.com
- www.lutris.com
- www.enhydra.org



i n v e n t