



HP OpenVMS Release update



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Agenda

- Server Platform Directions
- OpenVMS Directions & Roadmaps
- Customer Support Services Update
- OpenVMS Version 8.2 Release Plans
 - OpenVMS Licensing, Packaging & Services on Integrity Servers
 - OpenVMS Integrity V8.2 rollout plans
 - Version 8.2 Features
- OpenVMS V8.3 Potential Projects
- Futures

OpenVMS in the Adaptive Enterprise

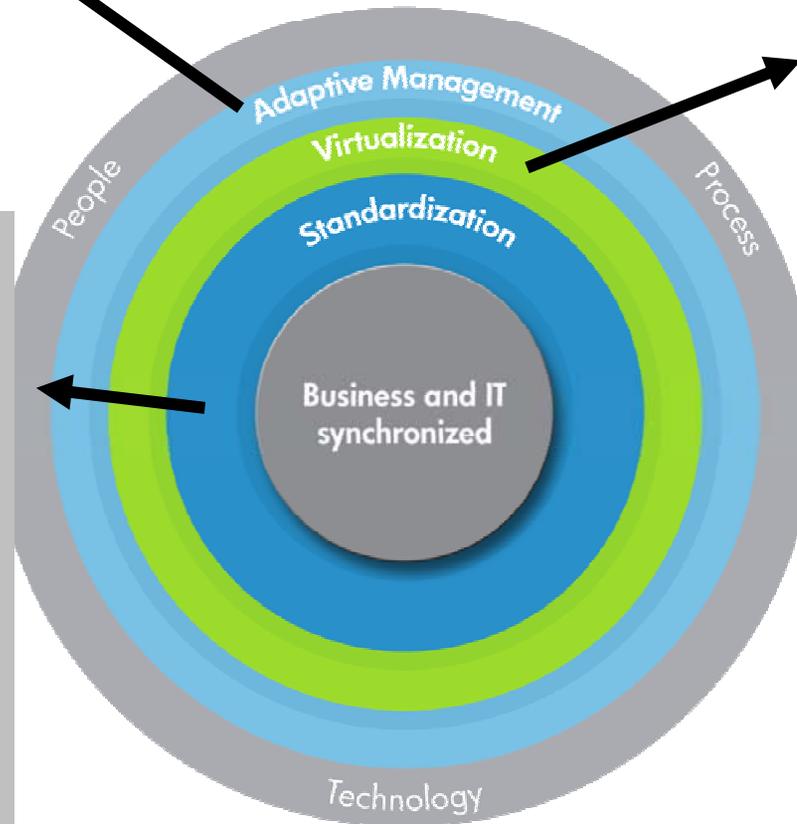


ADAPTIVE MANAGEMENT

Insight Manager
OpenView

STANDARDIZATION

Integrity leadership
ROIT, performance, HA
J2EE, .NET infrastructure, solutions
Security
TCP/IP V6
LINUX Interoperability
Global Services
Better Together: Printers, OS, Storage



VIRTUALIZATION

Clusters
Storage Solutions
Partitions
Disaster Tolerant Solutions
HP Managed Services
PPU
Workload Manager

HP OpenVMS Roadmap



2004

2005

2006

2007

2008

HP AlphaServer

EV7z

EV7z

EV7z

Support until at least 2011

HP
Integrity
Server

Madison,
Deerfield
Systems

Itanium[®]-2
Madison 9
systems

Montecito
systems

Next Generation
Itanium[®]-based
system upgrades

Next Generation
Itanium[®]-based
system upgrades

HP OpenVMS
Integrity and
Alpha Release

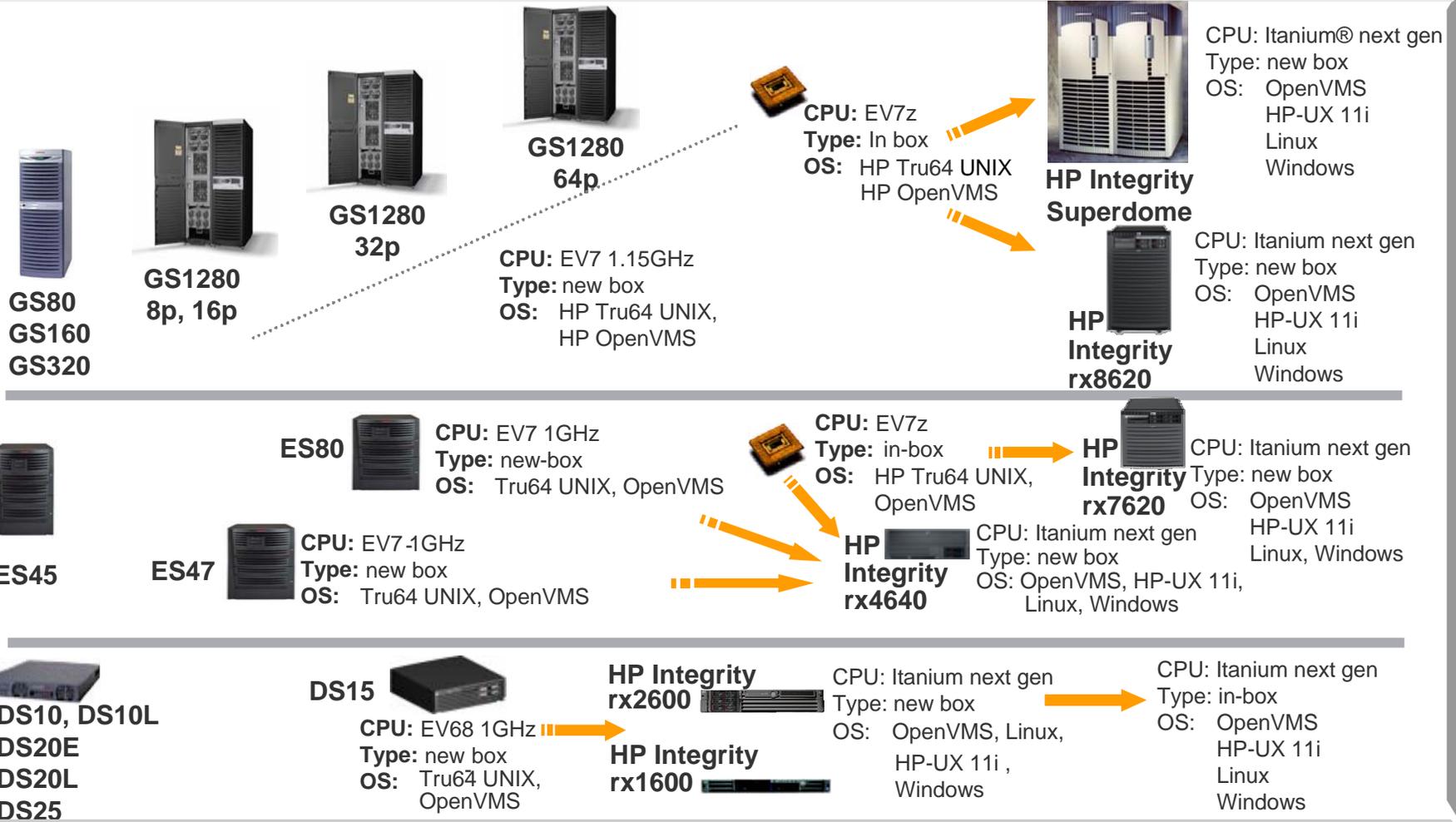
V8.2
• Production
Quality
• Mixed
Alpha and
Integrity
clusters

V8.3
• >8CPU,
Superdome
• hard and soft
partitioning
• Security, J2EE,
.Net, LINUX
interop standards

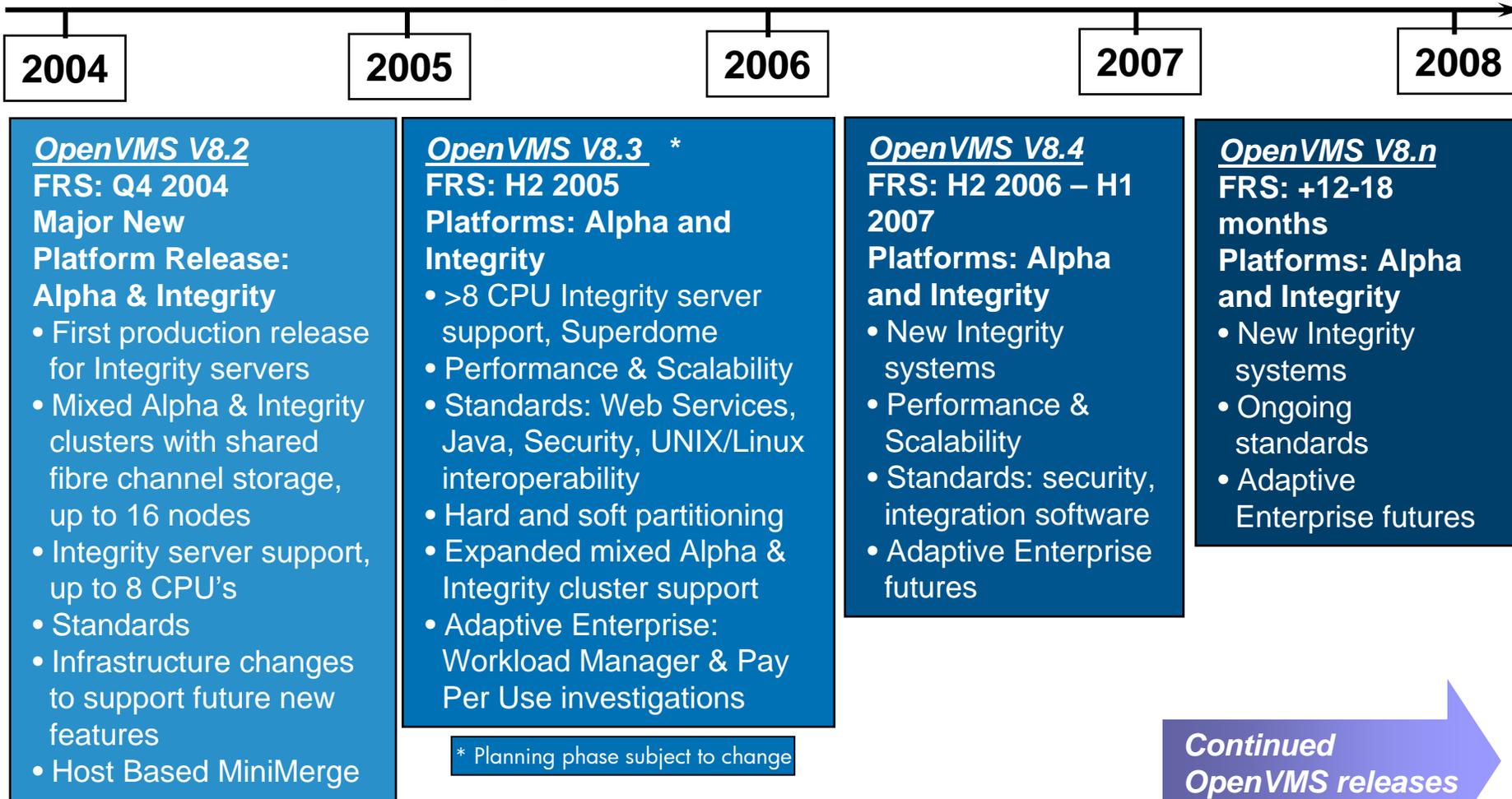
V8.4
• new Integrity
systems
• Performance
• Scalability
• Ongoing
standards

V8.n
• new Integrity
systems
• Ongoing
standards
• Adaptive
Enterprise futures

HP AlphaServer evolution

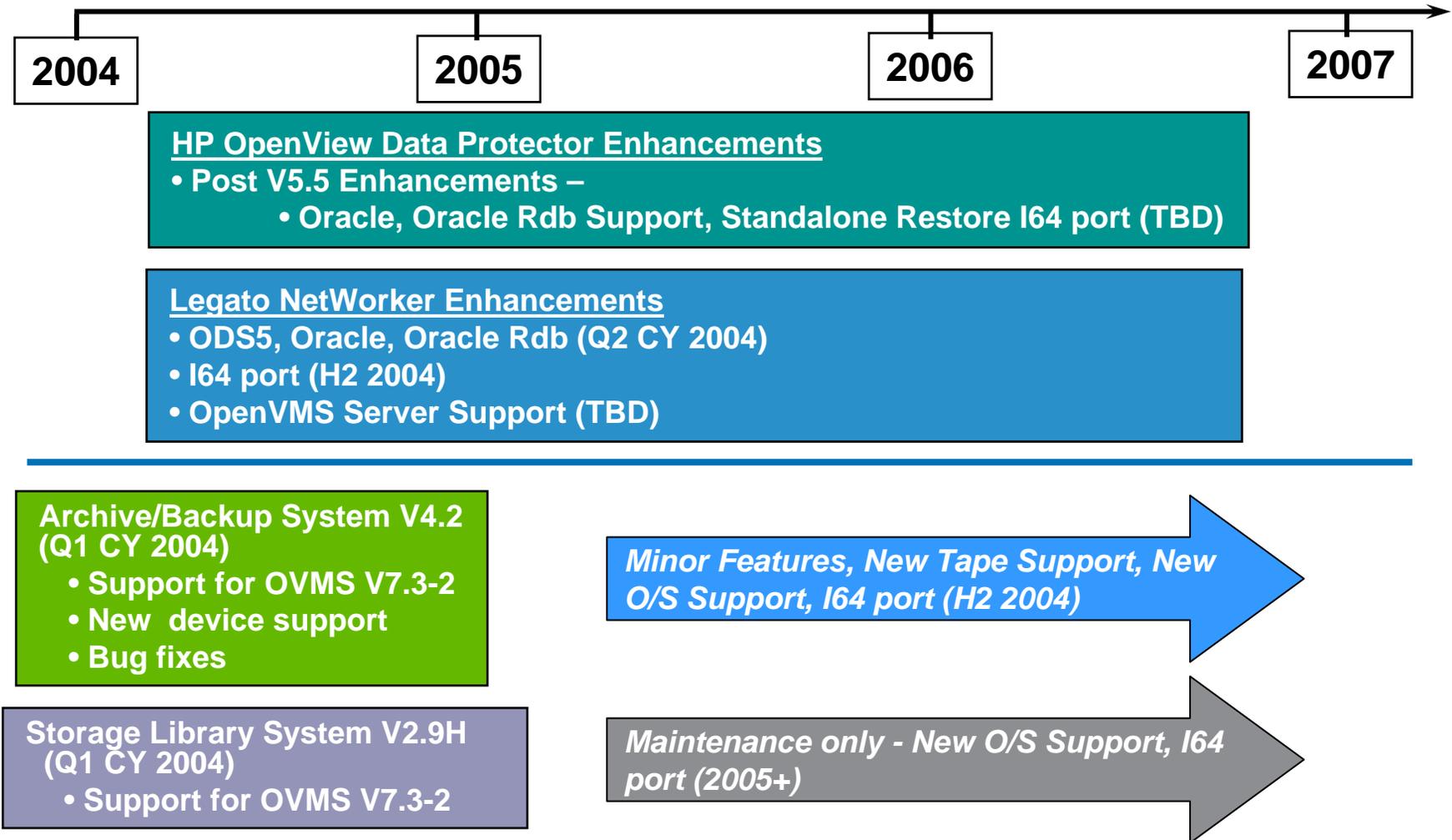


HP OpenVMS Operating System 4 Year Rolling Roadmap



**Continued
OpenVMS releases**

OpenVMS Enterprise Backup Solutions Roadmap



OpenVMS Cluster Roadmap



Version 7.3-2

- Dynamic Volume Expansion
- Dissimilar Device Shadowing (DDS) support
- Cluster Performance Enhancements
- PE Driver Fastpath

V8.2 - Mixed-Architecture Alpha/Integrity Clusters

- Add-in new systems to existing clusters!
- Tap into existing FC storage fabrics

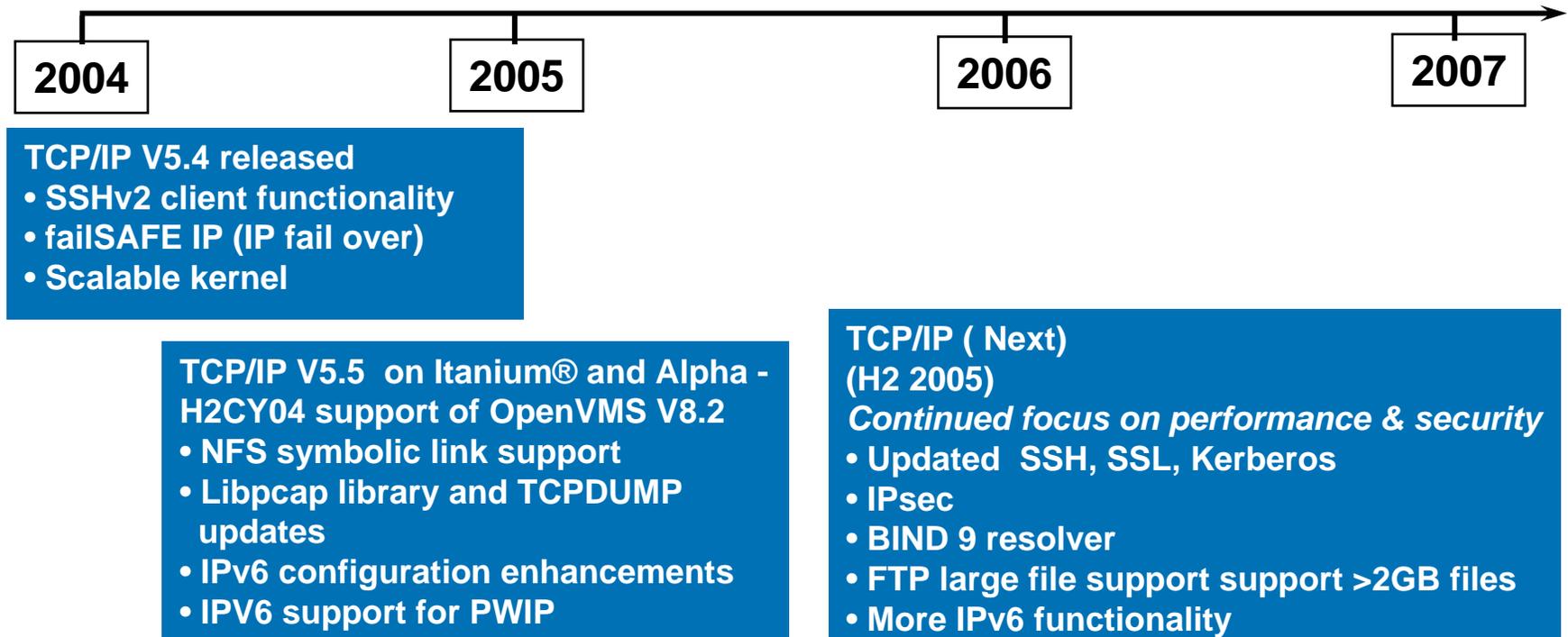
Mini Merge Support for HBVS

- New Host-Based MiniMerge
 - V8.2 Release, V7.3-2 Remedial Kit
 - Will support HSG, HSV, MSA, XP

New Cluster Interconnects (Post V8.2)

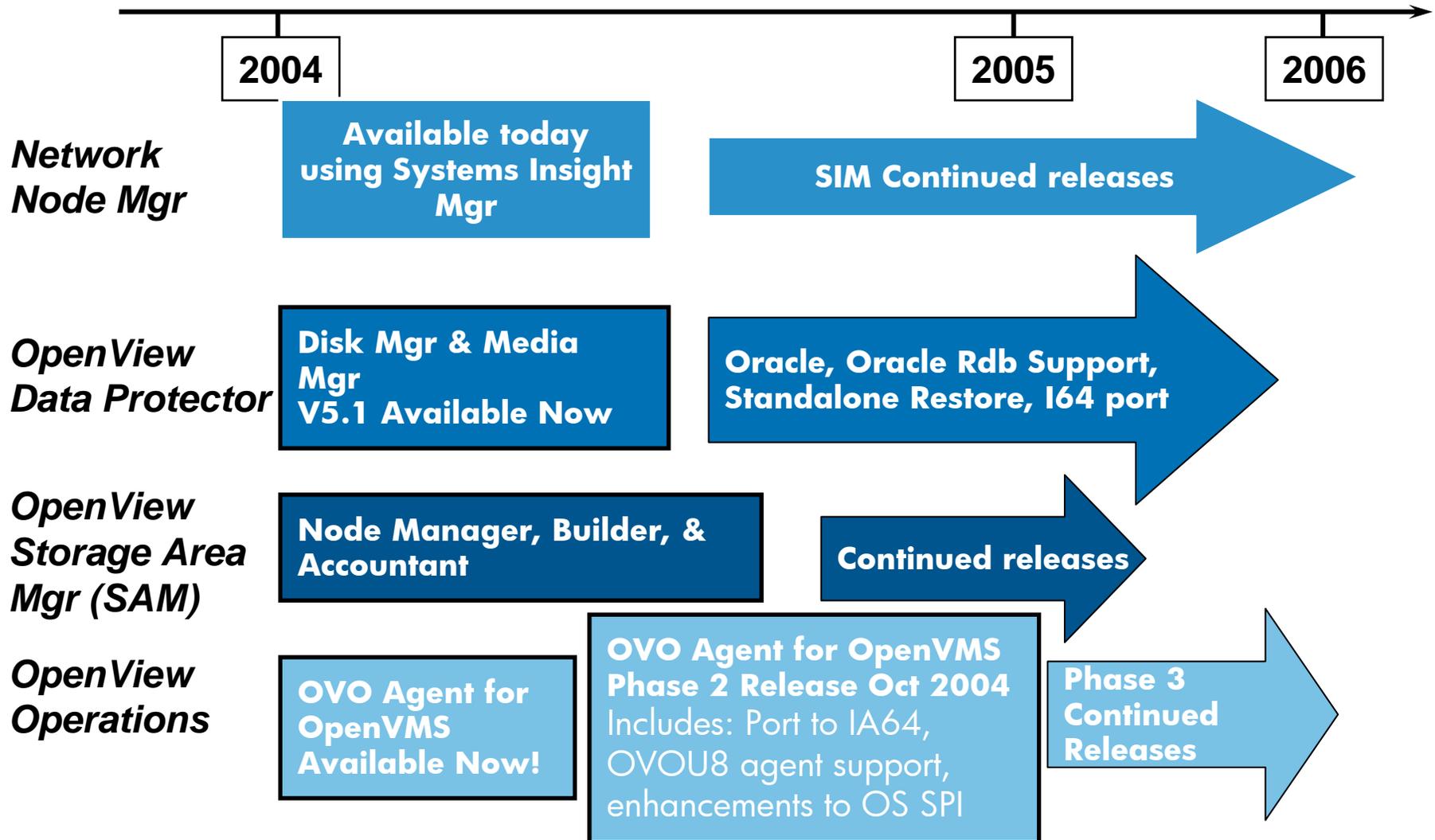
- LAN over FC Adapter (DT Capabilities)
- Next-generation Low-Latency Interconnect (Integrity Servers Only)

TCP/IP Services for OpenVMS

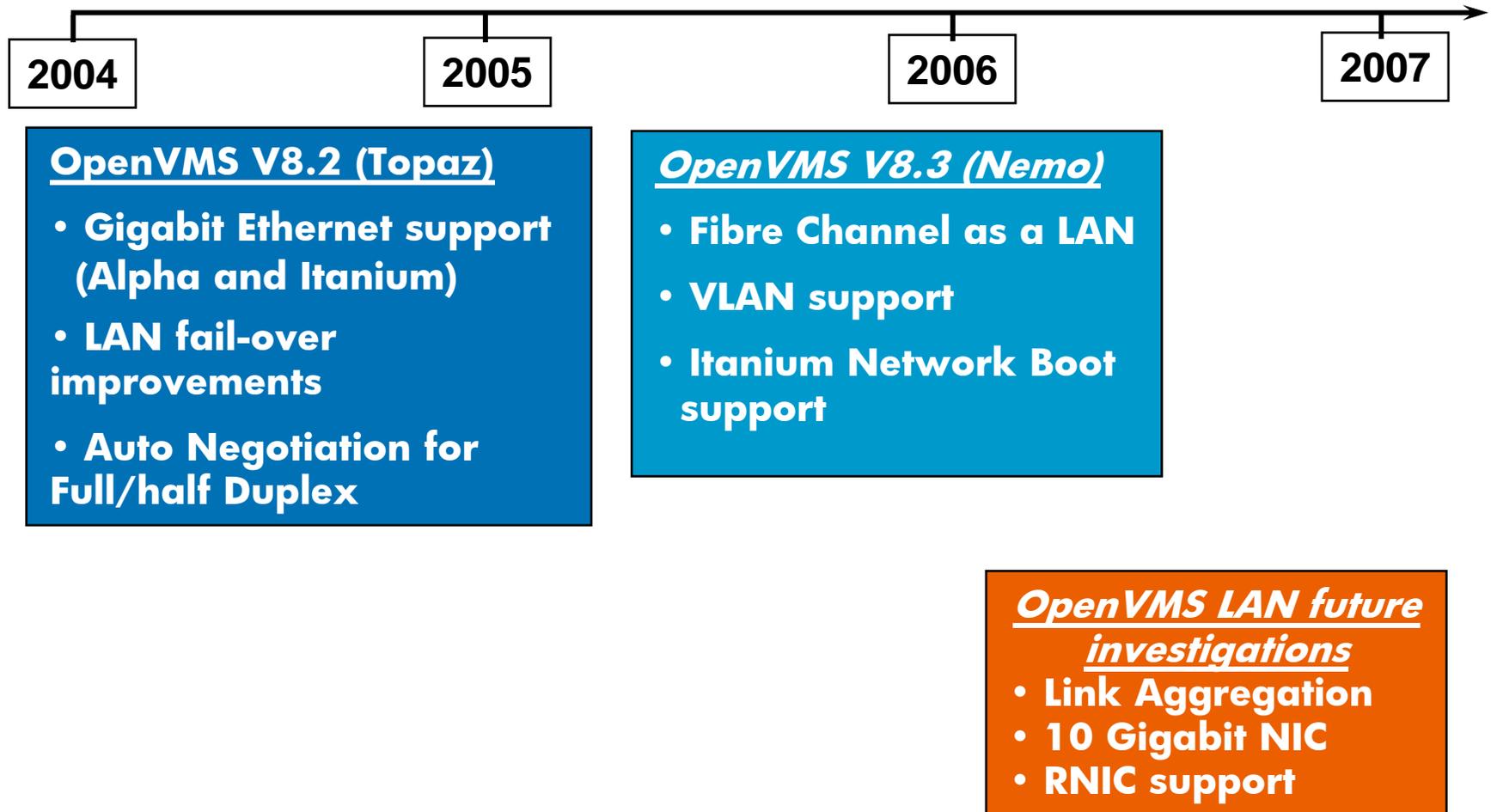


**IPSEC EAK
H2 CY04**

HP OpenView & OpenVMS Integration Planning

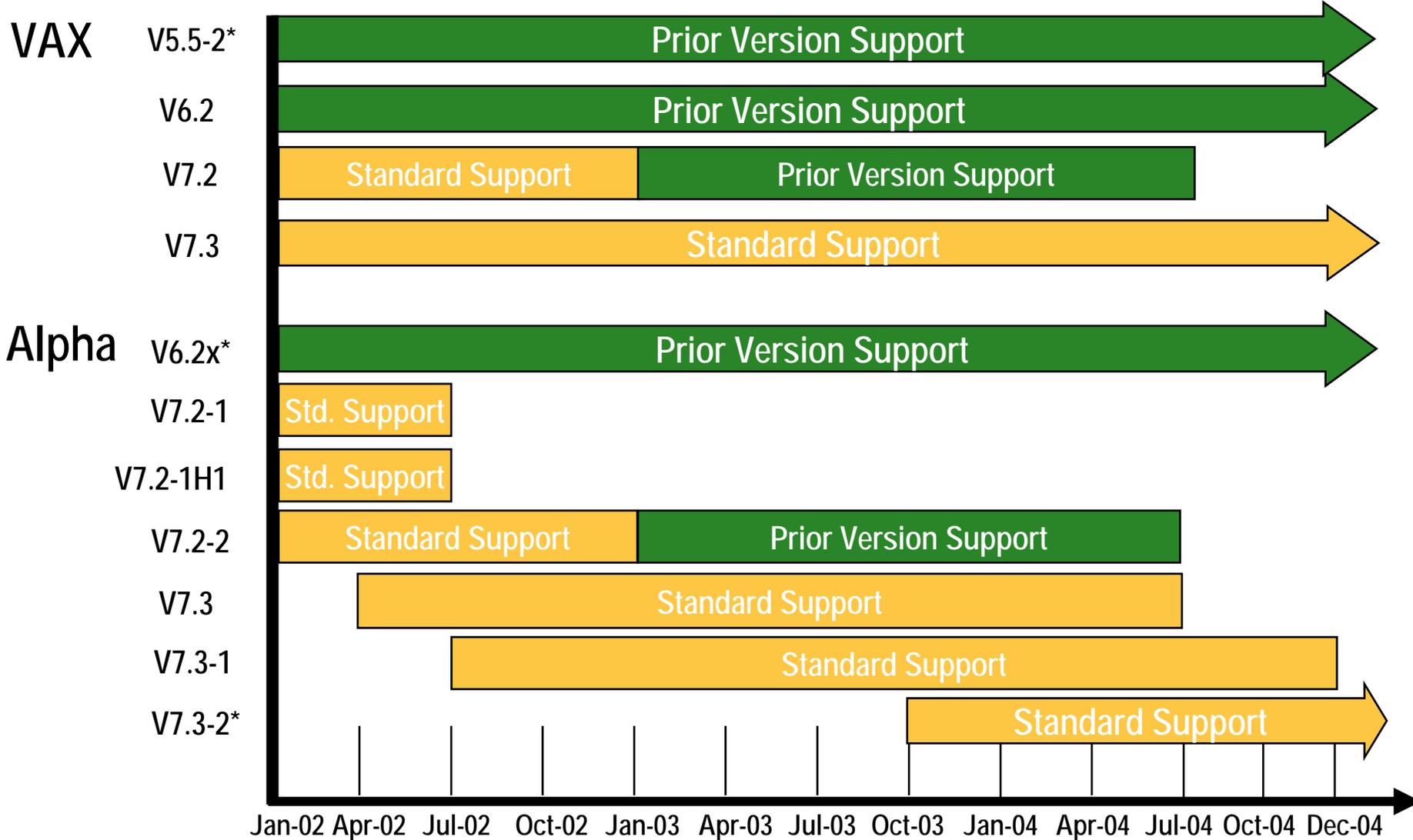


OpenVMS LAN HW Roadmap





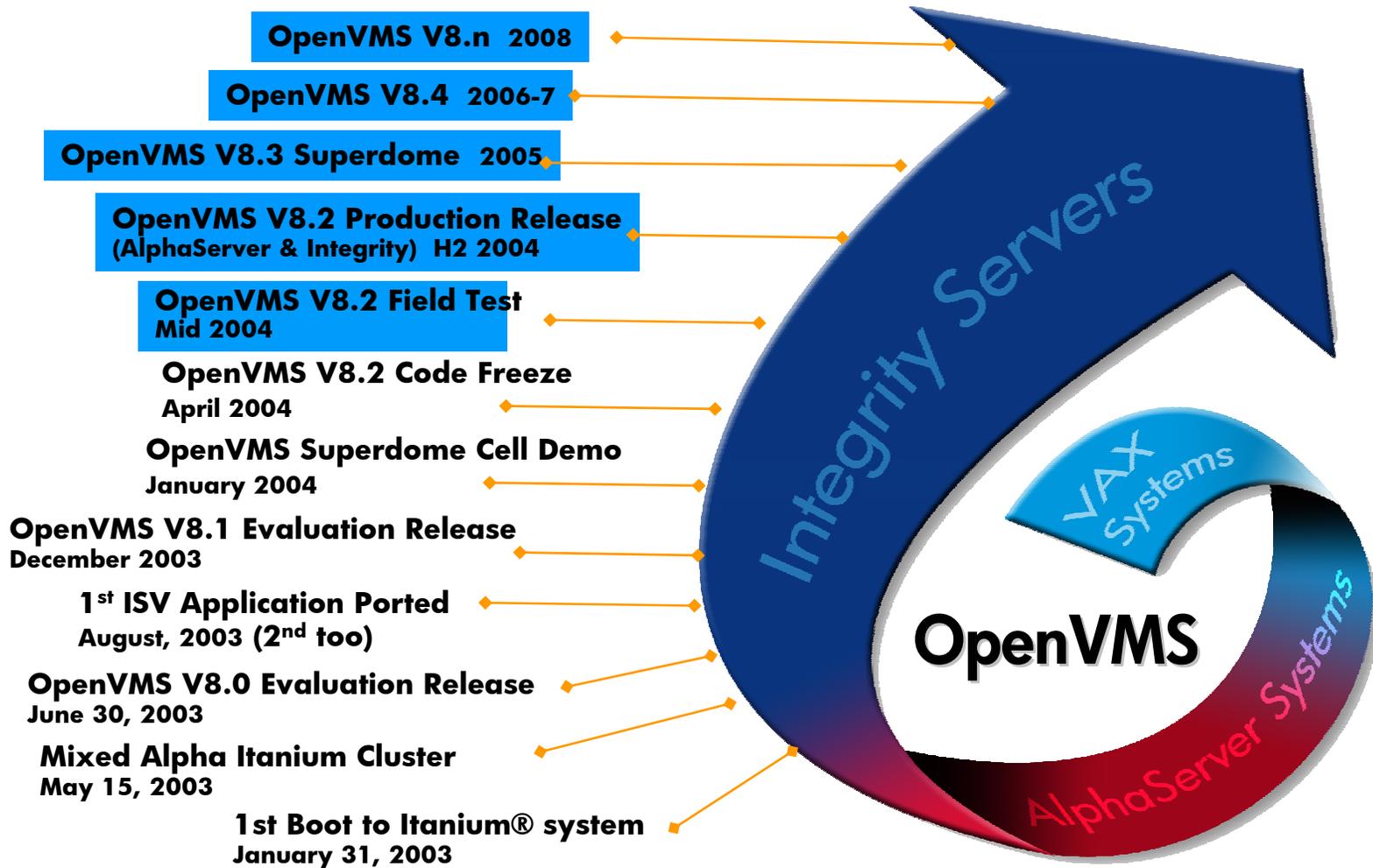
OpenVMS Service Support Roadmap



Introducing HP OpenVMS for Integrity servers Licensing/Packaging Platform & Software rollout plans Alpha & Integrity



HP OpenVMS – the road to Itanium



HP OpenVMS Integrity Packaging

New Operating Environment Options

- **HP OpenVMS Mission Critical OE**
- **HP OpenVMS Enterprise OE**
- **HP OpenVMS Foundation OE**

OE Bundle Benefits:

Easier to order

Easier license management

Straight forward
installation of OE's from a
single DVD

Simpler support contracts

OpenVMS Integrity Licensing/Packaging



- Operating Environment Licensing:
 - Per Processor Licensing (PPL) model for each operating environment
 - One LMF PAK for each OE bundle purchased.
 - The Foundation Operating Environment (FOE) is required.
 - Component products of the EOE and MCOE are also available separately
 - Delivered on one OE DVD
- HP OpenVMS layered products
 - Per Processor Licensing (PPL)
 - Concurrent Use license for compilers only
 - Products are on the Layered Product Library Media
- Service Update contract changes on Integrity platform:
 - Service Update contract required to receive operating system and/or layered product release updates.
 - Non-service customers are required to repurchase the product license (at full price) to obtain updates.

HP OpenVMS Integrity Packaging

OpenVMS Integrity Foundation Operating Environment

- OpenVMS Operating System
- **OpenVMS Unlimited User Licensing**
- TCP/IP Services for OpenVMS
- DECnet-Plus for OpenVMS End System
- DECwindows Motif for OpenVMS
- DECnet IV
- Performance Data Collector
- Web Agents
- WEBM / CIM

Integration Technologies

- BridgeWorks
- COM for OpenVMS
- Secure Web Server (SWS)
- Secure Web Browser (SWB)
- SDK for the Java™ Platform
- XML Technology
- NetBeans
- Simple Object Access Protocol (SOAP) Toolkit
- Kerberos
- Enterprise Directory
- CDSA
- SSL
- OpenSource Tools

HP OpenVMS Integrity Packaging

OpenVMS Integrity Enterprise Operating Environment

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Add to Foundation:

- **RMS journaling**
- **Volume Shadowing**
- **DECram**
- **OpenVMS Management Station**
- **Enterprise Capacity Planner – ECP**
- **Availability Manager-AM**

Note: Products listed in yellow are available as separately licensable products outside of OE package if desired.

HP OpenVMS Integrity Packaging

OpenVMS Integrity Mission Critical Operating Environment

OpenVMS Integrity Enterprise Operating Environment

OpenVMS Integrity Foundation OE

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Add to Foundation:

- **RMSjournaling**
- **VolumeShadowing**
- **DECram**
- **VMS Management Station**
- **Enterprise Capacity Planner - ECP**
- **Availability Manager - AM**

Add to Enterprise:

- **OpenVMS Clusters**
- **OpenVMS RTR Backend**

Note: Products listed in yellow are available as separately licensable products outside of OE package if desired.



One DVD media for all 3 OE's

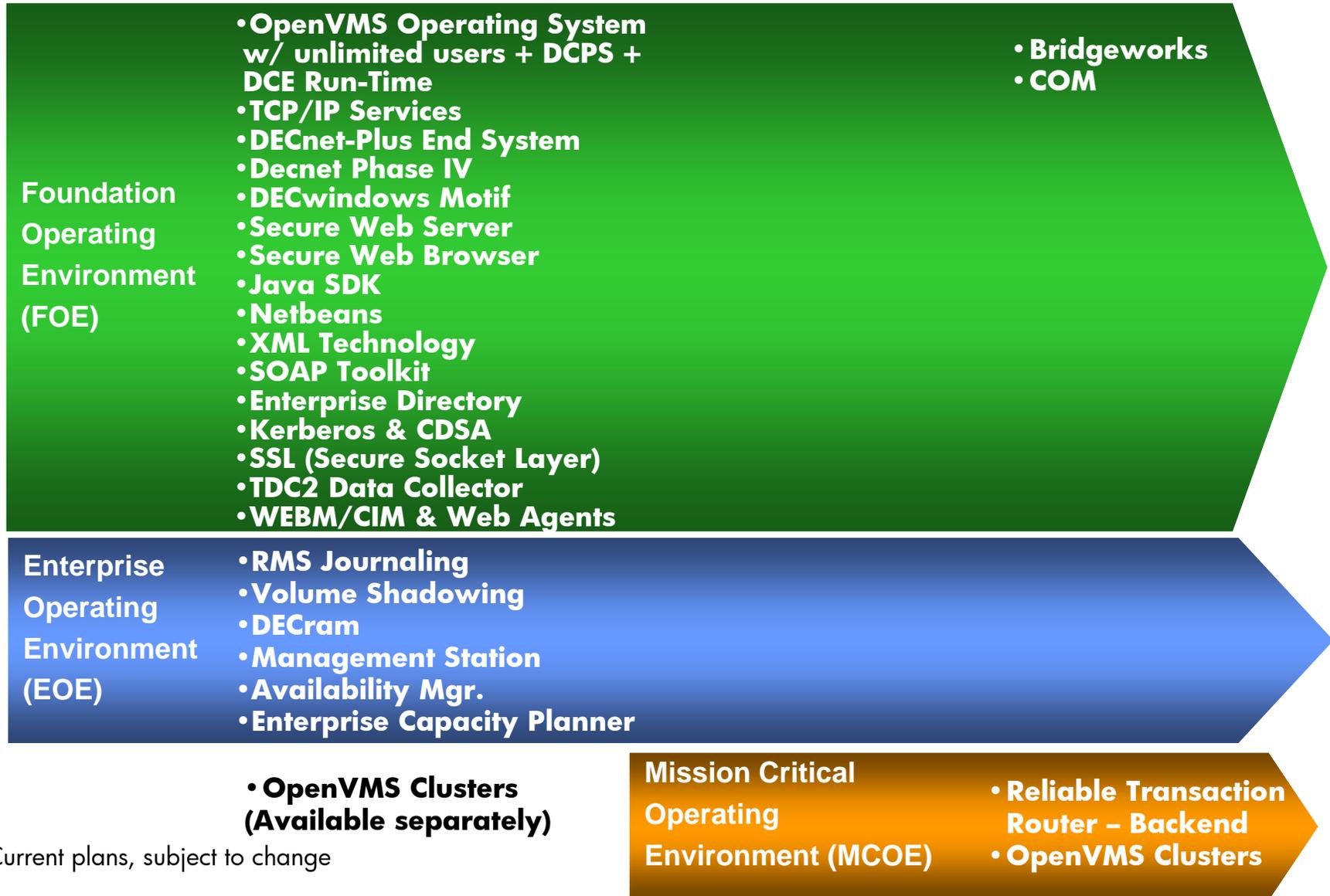
OpenVMS Integrity OE Phased Rollout



Q4 2004

Q1 2005

Q2 2005



Current plans, subject to change

OpenVMS Integrity Layered Product Phase Rollout Plan



Q4/2004	Q1/2005	Q2/2005	Q3/2005
<ul style="list-style-type: none"> • Compilers: <ul style="list-style-type: none"> • BASIC • C • C++ • COBOL • Fortran • Pascal • DECset: CMS, MMS, LSE, DTM, PCA & SCA • DQS • DCE • WEBES 	<ul style="list-style-type: none"> • Archive Backup System • BASEstar Family • Data Cartridge Server • Datatrieve • Device Access Software • Disk File Optimizer (DFO) • Distributed File System • FMS • Hierarchical Storage Mgmt. • Media Robot Utility • OpenView OVO Agent • RAID Software • Save Set Manager (SSM) 	<ul style="list-style-type: none"> • GKS • OpenView Data Protector • Phigs • Reliable Transaction Router (RTR) Front & Back End • X.25 	<ul style="list-style-type: none"> • ACMS (including TP Web & TP Desktop Connectors) • Advanced Server • DECforms
			Q4/2005
			<ul style="list-style-type: none"> • Soft Partitioning (ie. Galaxy/vPars) • Storage Library System (SLS)

All products, dates, and figures are preliminary and are subject to change without notice.

OpenVMS for Integrity Servers Rollout Plan



Mid 2004

Version V8.2 (Field Test release)

- rx1600
- rx2600
- rx4640

Note: Last Release to support McKinley

Q4 2004

Version V8.2

- rx1600
 - rx2600
 - Rx4640 up to 8 CPU's
- All speed variants supported on these platforms

CPU: Deerfield, Madison 9

Note: No McKinley support

2005

Version V8.3

- rx1600
- rx2600
- rx4640
- rx76xx
- rx86xx
- Superdome

CPU: Montecito

*Dual Core, 24MB,
90nm Technology*

Note: OpenVMS will not be supported on the rx5670

All products, dates, and figures are preliminary and are subject to change without notice.

OpenVMS Integrity Clusters Rollout Plan



Mid 2004

Version 8.2 Field Test

- ❖ 2-4 Node Clusters
- ❖ Cluster Interconnect
 - Gigabit Ethernet
 - 10/100 Ethernet

Q4 2004

Version 8.2

- ❖ Up to 16 Nodes
 - Expanded Functionality
- ❖ Cluster Interconnect
 - Gigabit Ethernet
 - 10/100 Ethernet

V8.2 (Warranted)
V8.2 & V7.3-2 Alpha
(Warranted)

2005

Version 8.3

- ❖ Full Functionality
 - Cluster Satellite Boot
- ❖ Cluster Interconnect
 - Gigabit Ethernet
 - 10/100 Ethernet
 - Fibre Channel LAN
 - 10 Gigabit Ethernet*
 - Next-Generation Interconnect – post V8.3

V8.x (Warranted)
V8.x & V8.2 & V7.3-2
Alpha (Migration)

* - If HP Program is Ready

All products, dates, and figures are preliminary and are subject to change without notice.

OpenVMS Integrity Option Rollout Plan



2004

Version 8.2

❖ Storage

- U160 & U320 SCSI (non-shared)
- Fibre Channel
- SmartArray Backplane RAID

❖ Storage Solutions

- HSG, EVA, MSA1000, XP

❖ LAN

- 5701(10/100/1000)
- 8255x (10/100/1000)

❖ Graphics

- ATI Radeon 7000 equiv.
- ATI Radeon 7500/3D

❖ Audio

2005

Version 8.3

❖ Storage

- U160 & U320 SCSI (non-shared)
- Fibre Channel
- SmartArray Backplane RAID

❖ Storage Solutions

- HSG, EVA, MSA1000, XP

❖ LAN

- 5701(10/100/1000)
- 8255x (10/100/1000)

❖ Graphics

- Yes (tbd)

❖ Audio (tbd)

All products, dates, and figures are preliminary and are subject to change without notice.



Migration Tool

- New software available: hp OpenVMS Migration Software for Alpha to Itanium Servers
 - Provides the capability to translate executable and shareable OpenVMS/Alpha images to functionally equivalent images that run on OpenVMS/Integrity servers
 - Includes language support for C, C++, Fortran and Cobol
 - No additional license required for software installation or use
 - Support will be on best-effort basis by OpenVMS engineering
 - Will be available on the OpenVMS distribution media DVDs, and on OpenVMS external website (location is TBD)
 - Contact pat.stlaurent@hp.com

OpenVMS Alpha & Integrity2004 Coming Attractions





OpenVMS V8.2 (Topaz)

- Field test kit available Now!!!
- SDK kit available mid-August
- FRS = Q4 2004
- Version 8.2 Highlights
 - System and Hardware Support
 - General User Features
 - Performance & Scalability Infrastructure Changes
 - RAS features
 - Security Enhancements
 - More UNIX Portability features
 - Networking Enhancements
 - System Management

General User Features

- DCL Enhancements
 - New qualifiers: Show System, Directory, Search, Delete
 - New Features: Create/Mailbox, Show Fastpath
 - New Functions: F\$LICENSE, F\$FID_TO_NAME
- LMF Enhancements
 - Add support for Integrity OE packages - FOE, EOE, MCOE
 - Support upgrading/downgrading/changing the content of an OE without reboot on Integrity platforms
 - New command - SHOW LICENSE/OE, for Integrity platforms
 - New tools - Compliance manager (produces compliance reports), units assignment tool - help manage and distribute units across the cluster.
 - Full PAKGEN support for new option keywords
- Time zone – allows customer to update time zone files
- MONITOR updated to be a native image
 - Numerous performance improvements to reduce overhead

Infrastructure changes in V8.2

- We're making changes to some system level data structures in OpenVMS V8.2 (Alpha and I64)
- Benefits
 - Laying the foundation for scalability and performance improvements in future releases of OpenVMS
- Impact to applications
 - Non-privileged applications are not affected
 - Applications that access the modified data structures in non-standard ways may need to be modified
 - Examples: hard-coded data structure sizes and assumptions about the relative locations of fields within a data structure

Infrastructure changes in V8.2

- Impact to applications (continued)
 - Some privileged applications (such as device drivers) will need to be recompiled and relinked
 - Privileged applications in this case are images linked against the system using the /SYSEXE qualifier and reference the changed data structures or related structures and routines
 - Attempting to execute or load such an image that has not been rebuilt will result in an error during image activation of SYSVERDIF – “System Version Mismatch”.

RAS Features

- Shadowing Host Based Mini-Merge
 - Support on V7.3-2 in H204
 - Integrated in OpenVMS Alpha and Integrity V8.2
- LAN failover improvements
 - Adds support for DE500 and Jumbo Frame support for gigabit Ethernet
- Performance
 - Pthreads Shared Objects
 - Extended Value Blocks in the Lock Manager
 - KP Threads – new threading feature



Security Enhancements

- ACME Login EAK
 - with LDAP support
- Kerberos (including VAX)
- OpenSSL (including VAX)
- CDSA
 - Secure Delivery SDK allowing verification of authenticity of downloads and installations of OpenVMS software
- Buffer Overflow Protection (Itanium only)
 - Prevents against unauthorized code execution

Unix Portability (UP)

OpenVMS will be like any other “UNIX flavor” for easy application portability

- CRTL APIs
- DCL support
- NFS support
- CRTL – delivering UNIX style API's on OpenVMS
- File Lock APIs
- statvfs/fstatvfs
- Stnd stat struct
- GNV 1.6 – providing a UNIX style shell and utilities
- VI, gnuTAR and configure/Make improvements
- Symbolic Links



Network TCP/IP Services V5.5

- *Supports Alpha and Integrity V8.2 only*
- NFS symbolic link support
- Libpcap library and TCPDUMP updates
- IPv6 configuration enhancements
- IPV6 support for PWIP

System Management

- The Data Collector (TDC)
 - Version 2.1 will be available in the V8.2 kit and on the web
 - Can be used to gather performance data for systems running V7.3-2 or later
 - Collect and stores the following types of data
 - Cluster configurations and communications
 - CPU utilization
 - Disk performance
 - System wide performance metrics
 - System parameters
 - Process utilization
- OpenVMS is a managed node by OpenView Operations

Applications Shipping With OpenVMS Alpha V8.2



- TCP/IP Services for OpenVMS V5.5
- DECnet-Plus V8.2
- DECnet Phase IV V8.2
- Advanced Server V7.3A
- DECwindows V1.5

Note: The Pathworks server product will move into Mature Product support and will not be supported on OpenVMS V8.2. Advanced Server replaces Pathworks Server.

Upgrading OpenVMS Alpha & Integrity Environments



- System Software Upgrade Paths to V8.2
- Alpha Direct Upgrade Paths:
 - V7.3-2 to V8.2
 - V7.3-1 to V8.2
- Integrity Direct Upgrade Paths:
 - Fresh install required
- Cluster Upgrade Paths – Alpha & Integrity
 - Cluster rolling upgrades are supported from V7.3-2
 - Warranted pairs are V8.2/V8.2 and V8.2/V7.3-2

OpenVMS2005 Coming Attractions





OpenVMS V8.3 (Nemo)

- Target shipment date = H2 2005
- Candidates:
 - Greater than 8 CPU platforms support, including Superdome
 - Hard and soft partitioning
 - Fibre Channel as a LAN
 - VLAN support
 - Cluster Satellite boot on Integrity systems
 - New security features: Secure Delivery, full external authentication including Kerberos and LDAP support
 - Continued Java, web services updates
 - Backup enhancements
 - Potential for more Adaptive Enterprise features such as Pay Per Use (PPU) and Work Load Manager (WLM)

