

# iSeries. mySeries.



Introducing IBM ~  
& i5/OS™

® i5

Common Belgium  
June 2, 2004



# IBM ~ i5 and i5/OS V5R3 - Highlights

<b>IBM ^ i5</b>	<ul style="list-style-type: none"> <li>◆ The next generation of iSeries™ servers</li> <li>◆ First POWER5 processor-based servers in industry</li> </ul>
<b>IBM i5/OS V5R3</b>	<ul style="list-style-type: none"> <li>◆ The next generation of OS/400®</li> <li>◆ Builds on and extends the capabilities of OS/400 V5R2</li> </ul>
<b>Simplify Your Infrastructure</b>	<ul style="list-style-type: none"> <li>◆ Run i5/OS, Linux, AIX 5L™ and Windows® in a single server</li> <li>◆ Share resources, maximize utilization with IBM Virtualization Engine™</li> <li>◆ Manage infrastructure with IBM Director Multiplatform</li> </ul>
<b>Integrate to Innovate</b>	<ul style="list-style-type: none"> <li>◆ Exploit i5/OS integration with IBM software</li> <li>◆ Personalize application access with WebSphere® Portal</li> <li>◆ Foster interaction and collaboration with Lotus® Workplace</li> </ul>
<b>Deliver Without Disruption</b>	<ul style="list-style-type: none"> <li>◆ Extend Capacity on Demand leadership with Memory &amp; Reserve CoD</li> <li>◆ Strive for continuous operations with fault tolerant technologies</li> <li>◆ Deliver robust, open database solutions with IBM DB2® UDB</li> </ul>

# Power Architecture™: A Platform for Innovation

Power Architecture™

Power Everywhere™

POWER™

POWER4™

POWER5™

PowerPC®

Exploiting the industry's most successful  
64-bit processor technology



*“Power Architecture is more than just a technology, but rather a movement for change. It's time for an architecture that enables innovation to flourish. It's time for Power Everywhere™.”*

Nick Donofrio, IBM Senior Vice President  
IBM Technology & Manufacturing

# Power Architecture and IBM POWER5

*The POWER5 design should boost individual processor performance and aggregate system bandwidth in a way that Intel will not be able to match until the Montecito and Tanglewood processors appear. POWER5 should provide IBM with an edge during 2004 and 2005.*

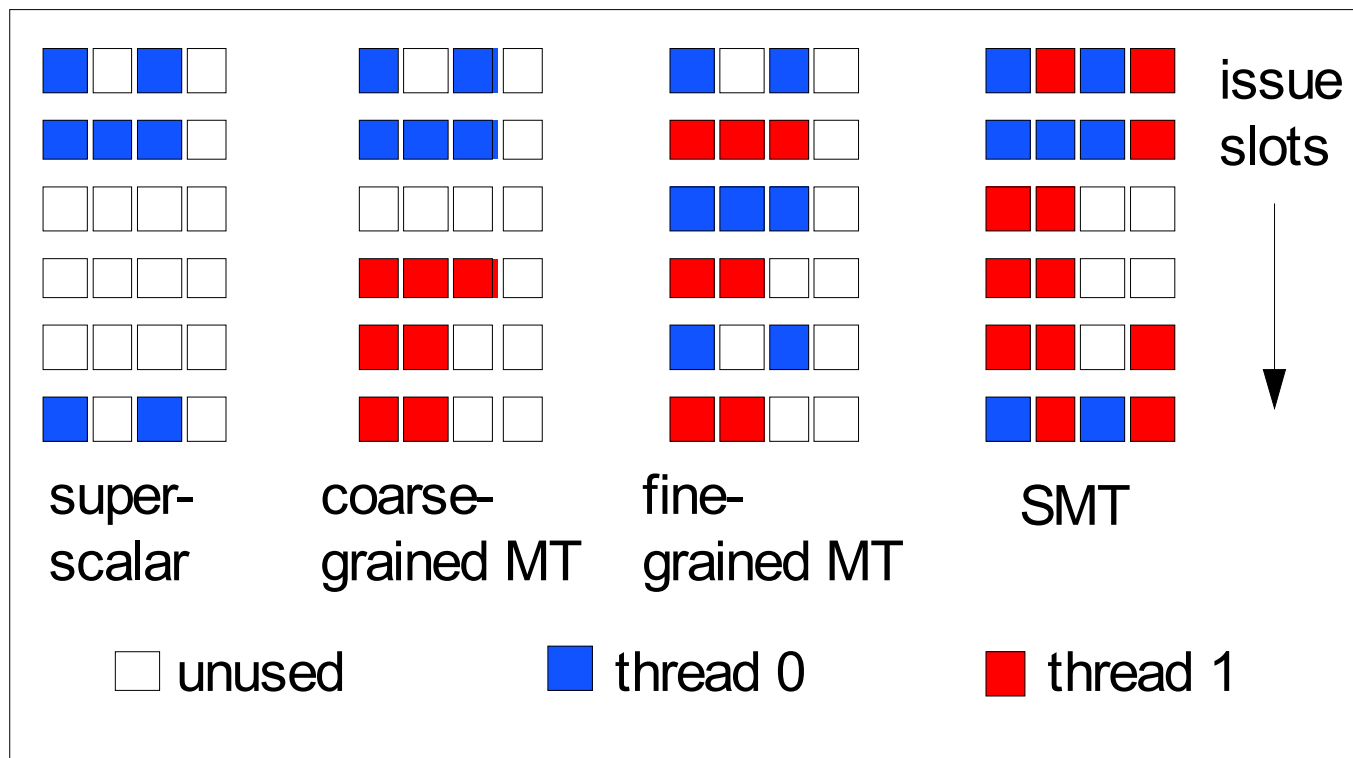
Source: POWER5 Tops on Bandwidth, Kevin Krewell  
IN-STAT/MDR Microprocessor Report, Dec 2003



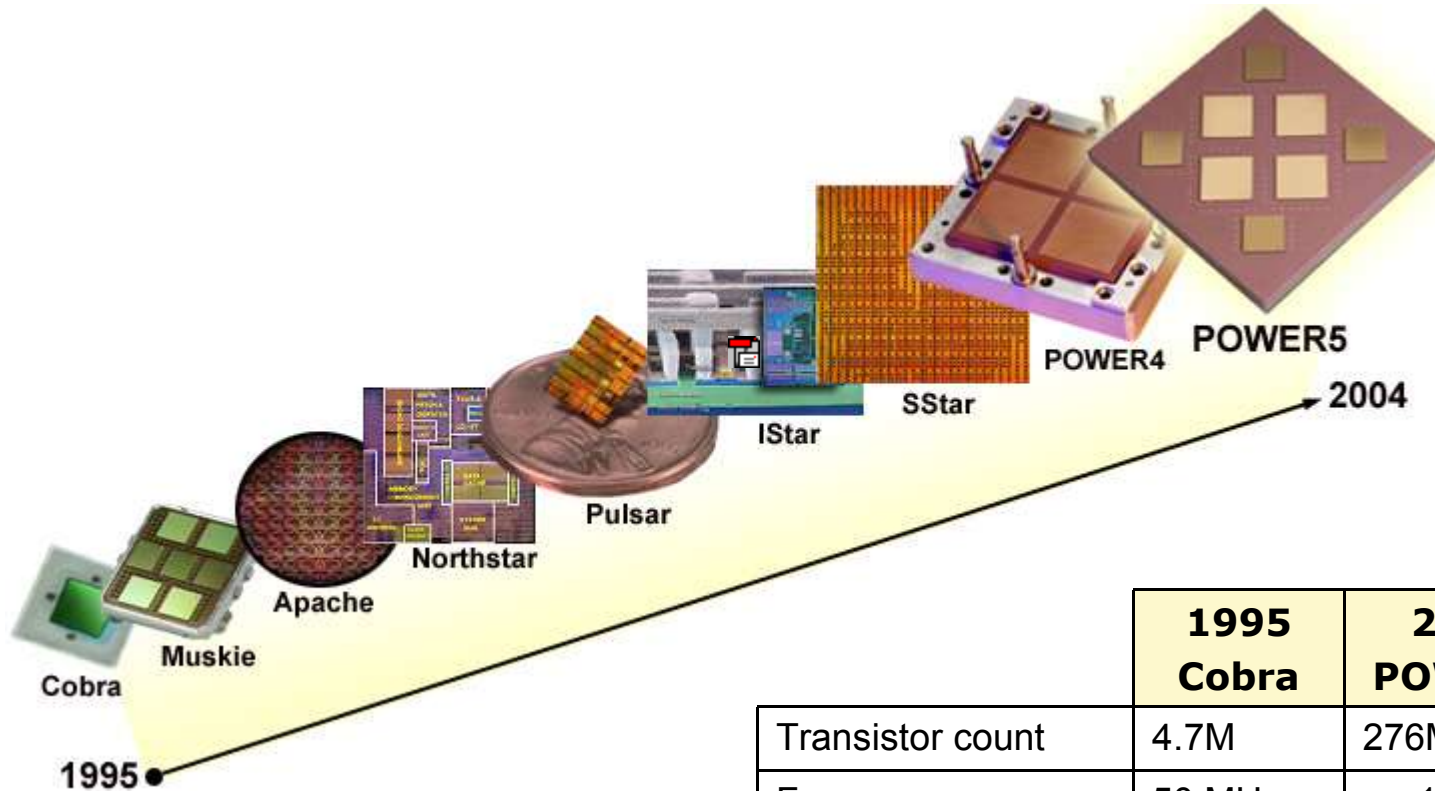
	POWER4™	POWER5
Lithography	180 nm	130 nm
Transistors	174 million	276 million
Cores / logical processors per chip	2 / 2	2 / 4
Area	415 mm <sup>2</sup>	389 mm <sup>2</sup>
Frequency	1.1 / 1.3 GHz	>= 1.5 GHz
L2 / L3 cache	1.4 / 32MB	1.9 / 36MB
Max memory	256 GB	1 TB*
Multi-threading	No	SMT

# Simultaneous Multithreading (SMT)

A microprocessor design technique to increase pipeline utilization by maximizing flexibility of the scheduling of instructions onto functional units



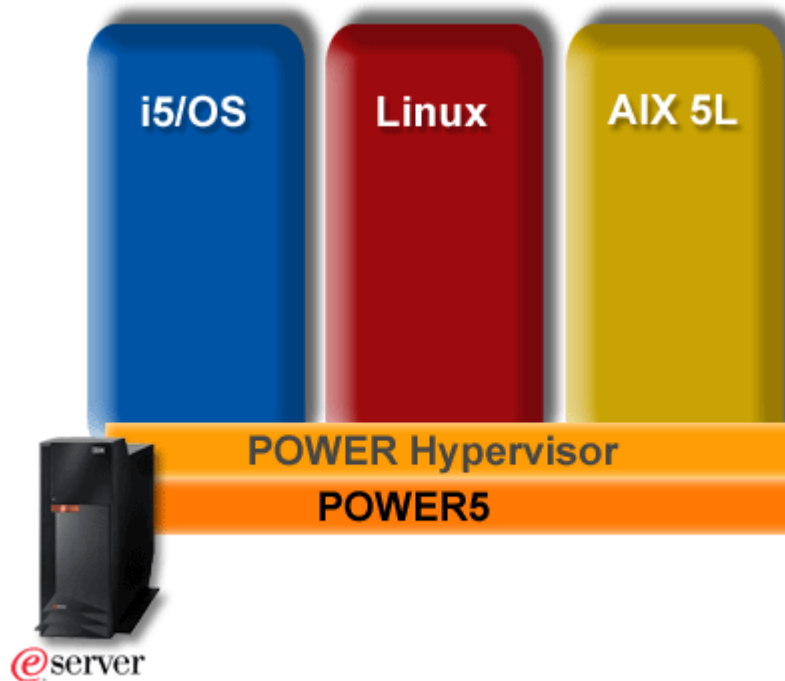
# A Decade of 64-bit Microprocessor Excellence



	1995 Cobra	2004 POWER5
Transistor count	4.7M	276M
Frequency	50 MHz	>= 1.5 GHz
Logical Partitions	None	Up to 254

# POWER5 Common Platform

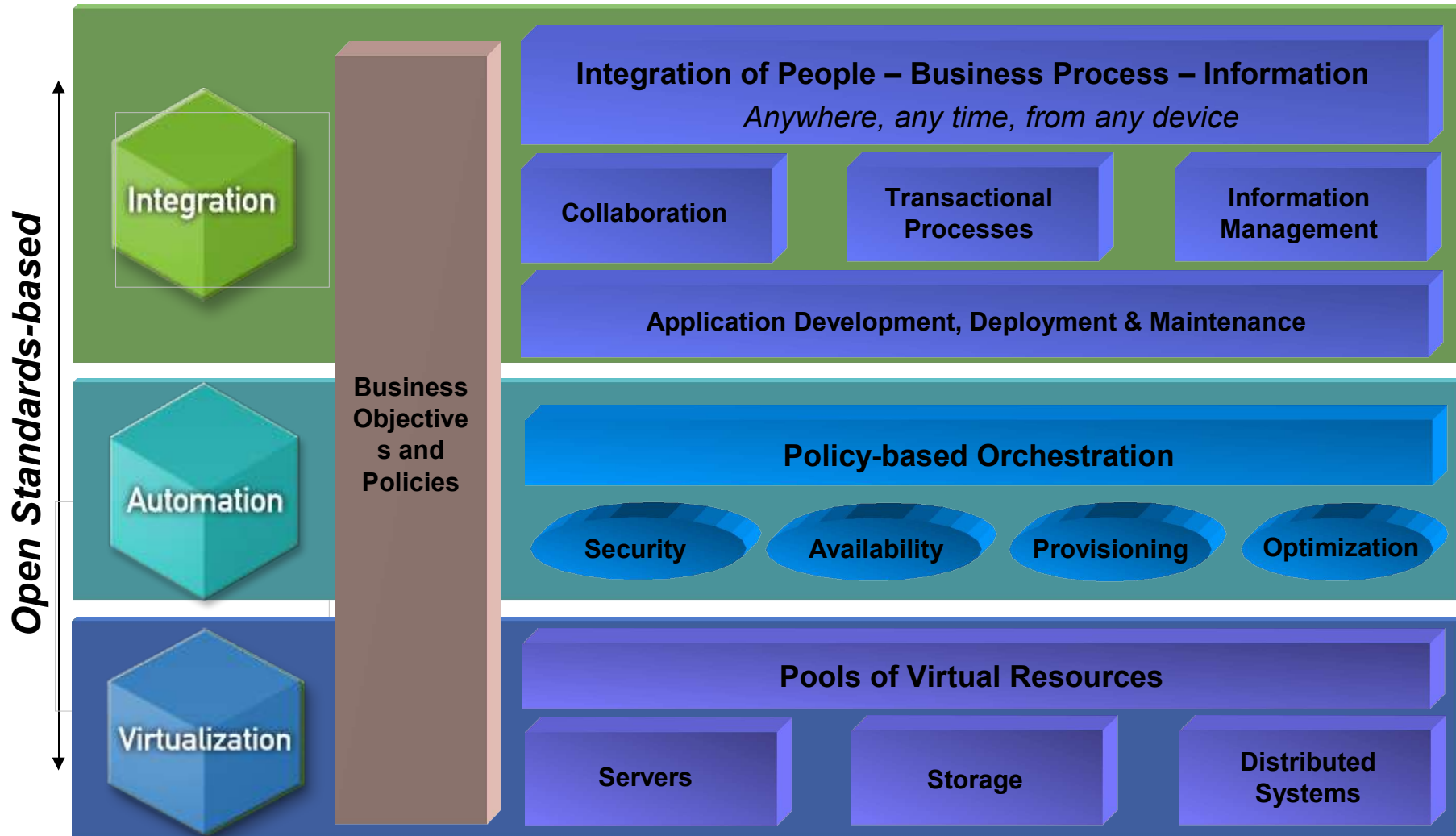
Leading the server industry with:  
 pSeries performance  
 iSeries integration



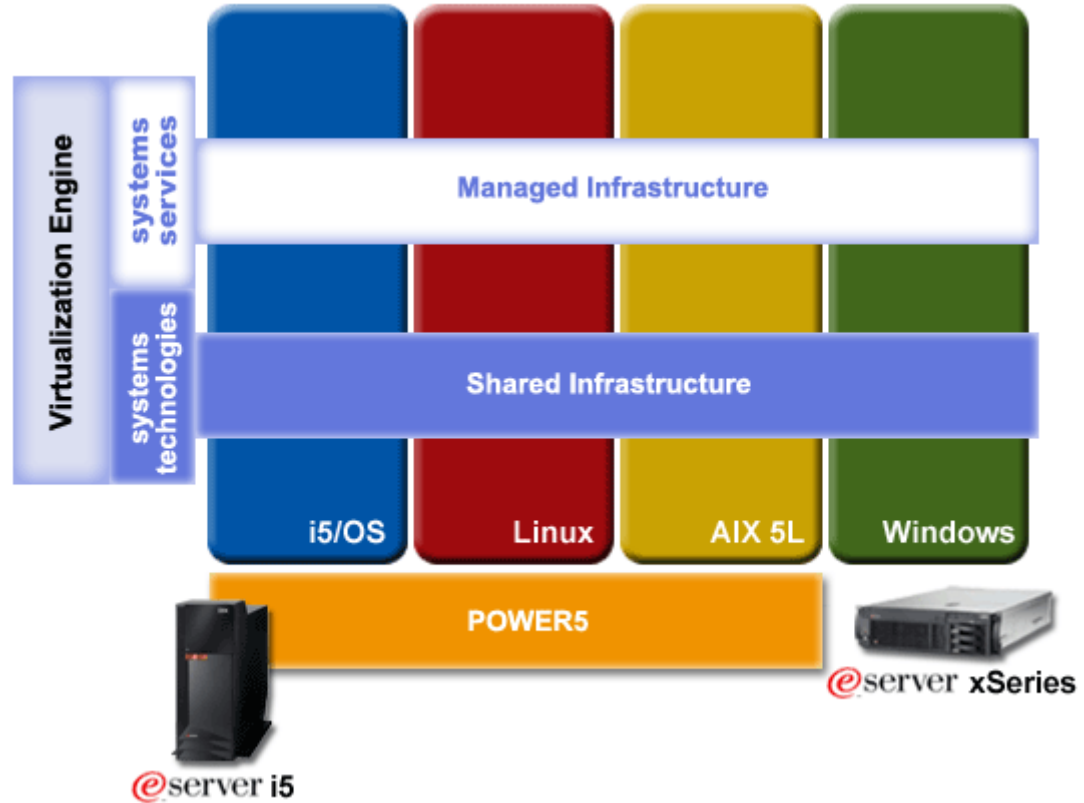
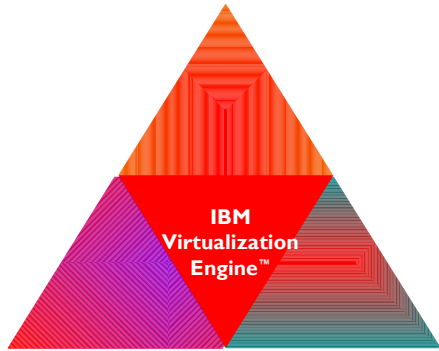
## Current IT State

- Today's infrastructures are largely static
  - Application layers are tightly bound to physical layers
  - Deployment of new apps is complex and time-consuming
- Significant under-utilization of distributed servers
  - E-business scenarios drive 10:1 peak to average utilization ratios
- Significant time required to re-purpose new applications and servers
  - Requires intensive manual intervention
  - Complexity impedes change management
- No I/T Virtualization
  - No application insulation to disruptions in the I/T infrastructure
  - No seamless systems mgmt across heterogeneous layers
  - No dynamic binding

# On Demand Operating Environment (ODOE)



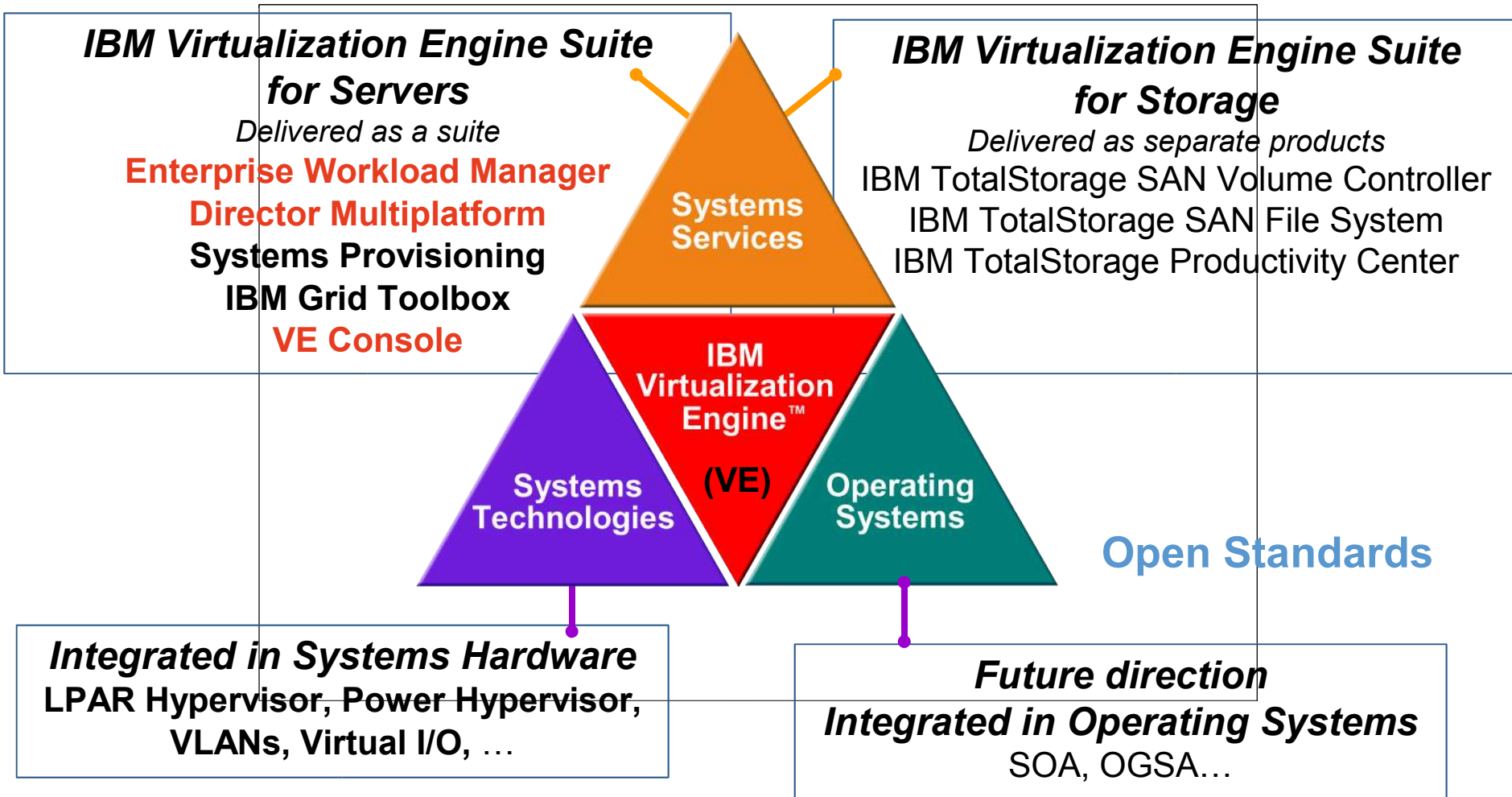
# IBM Virtualization Engine



## Extending IBM's virtualization leadership

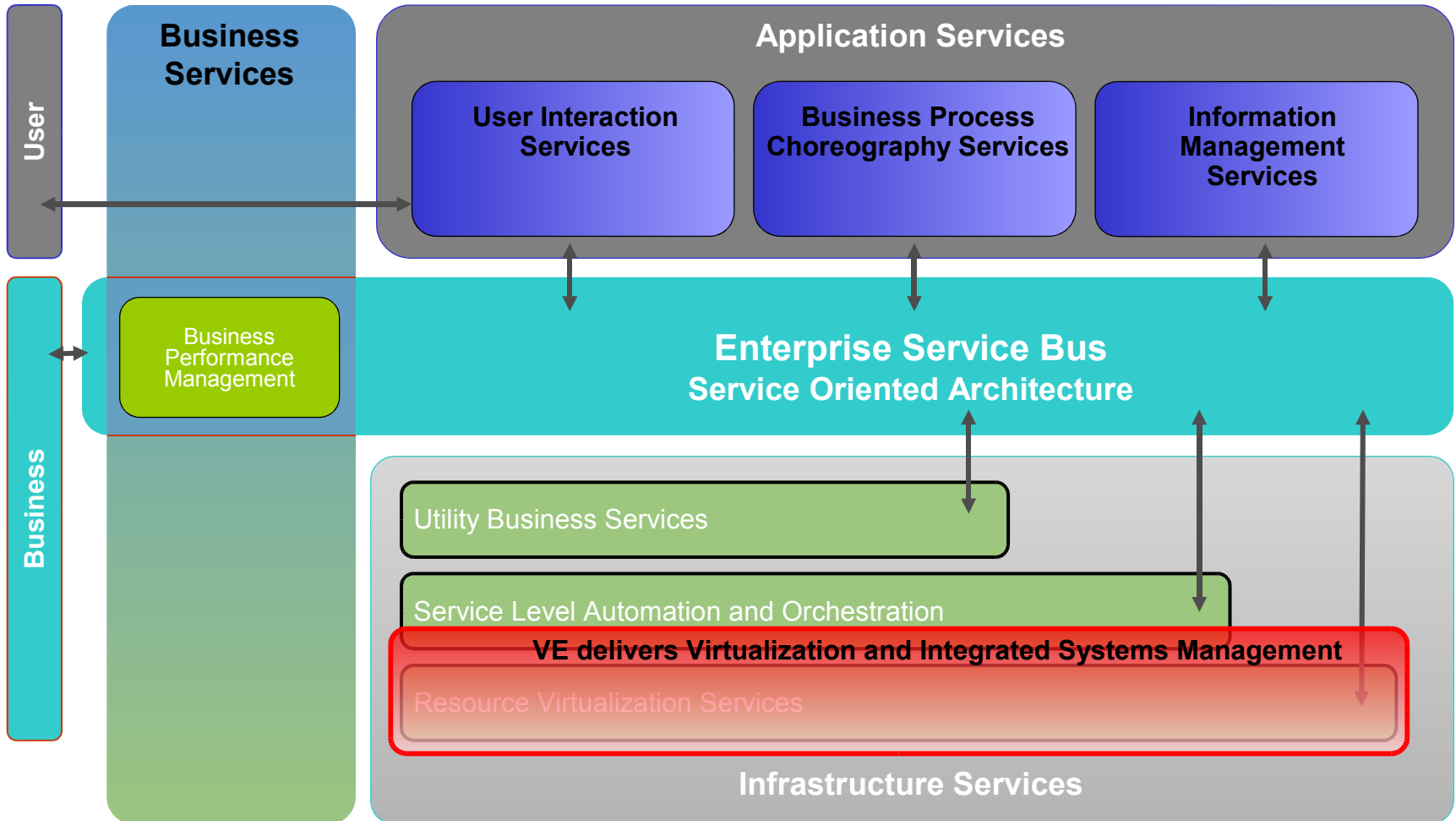
Product Preview: Planned availability for IBM Virtualization Engine platform services is 3Q 2004.  
 This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

# IBM Virtualization Engine

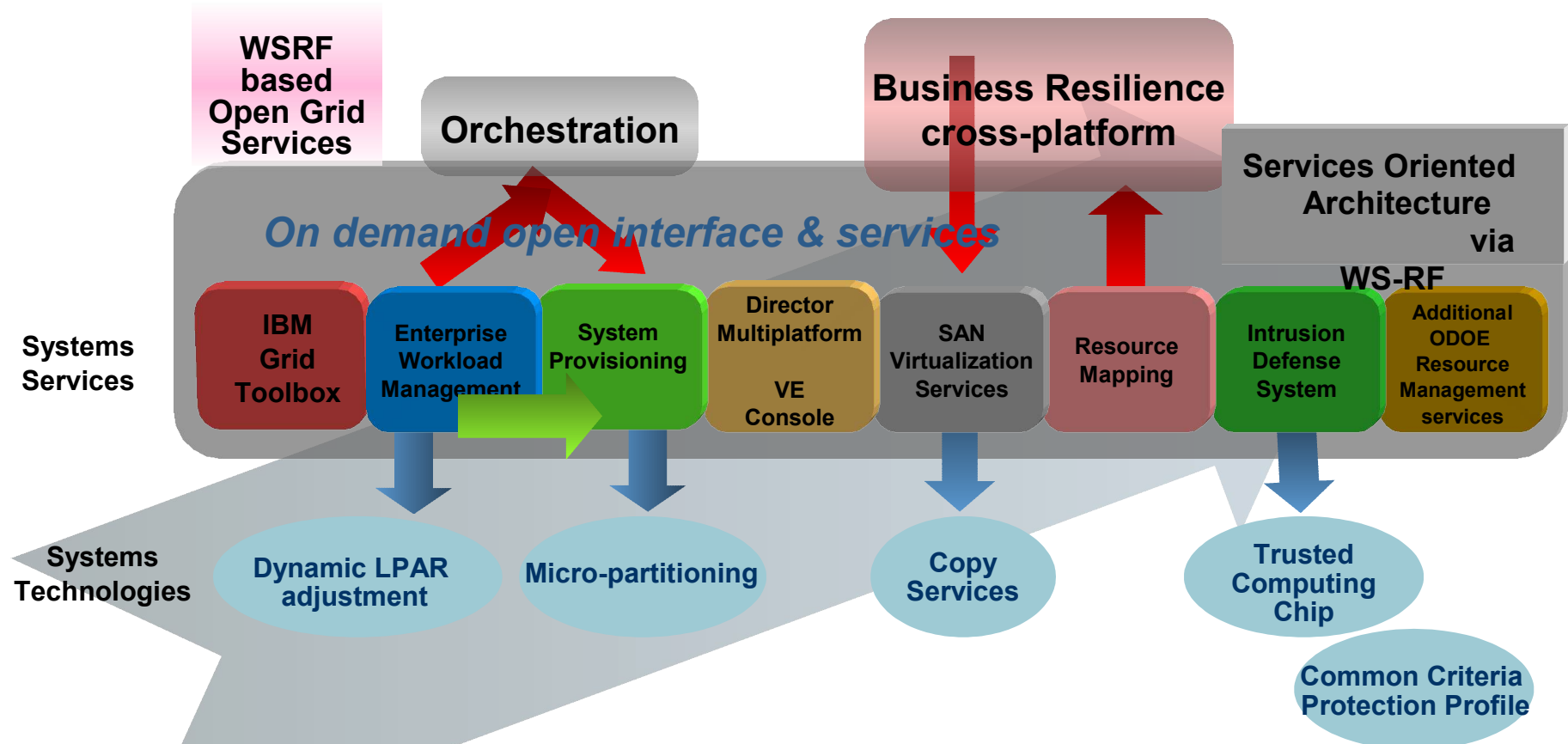


# ODOE and VE

*ODOE is based upon the concepts of a Service Oriented Architecture.  
Each element is a service that together implement the ODOE capabilities*



# What's next in Virtualization Innovation



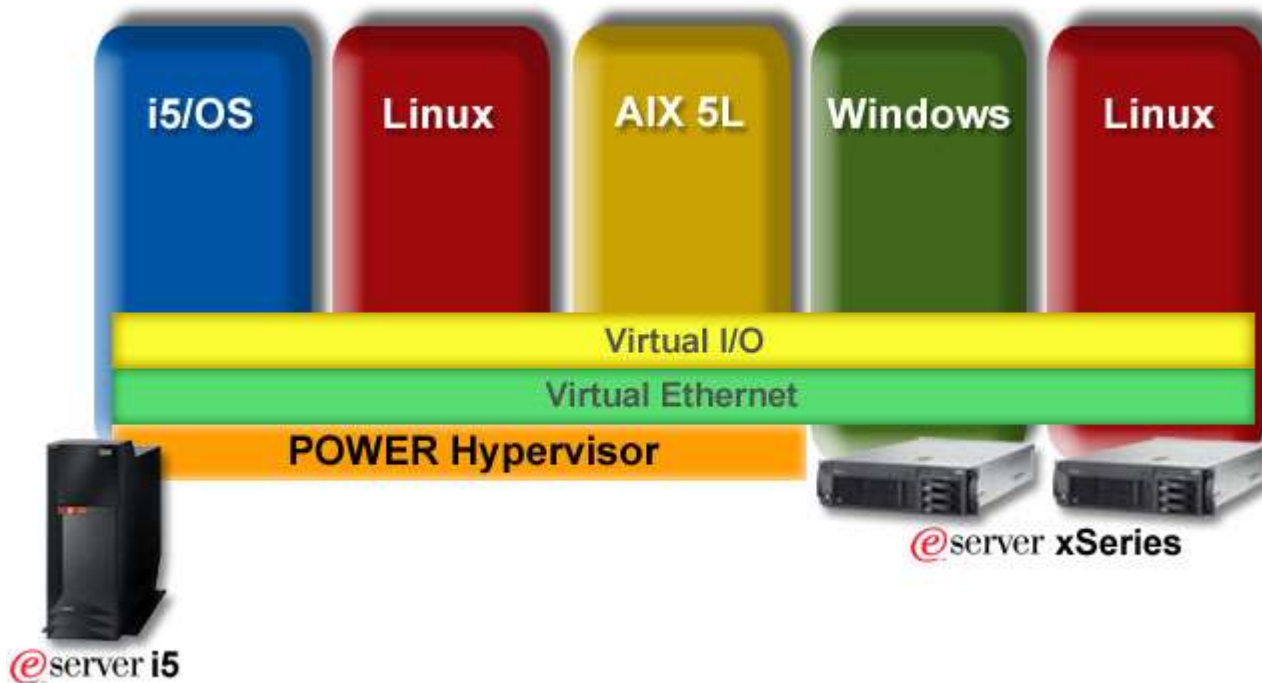
- Increased linkage across VE System Services
- Additional VE System Technologies
- Additional VE System Services
- Expand the linkage between Services and

- Create solutions founded upon VE Services and Technologies
- Increased integration of components in the package
- Broadening usage of the Web Services Reference Framework (WSRF)

Technologies

IBM ~

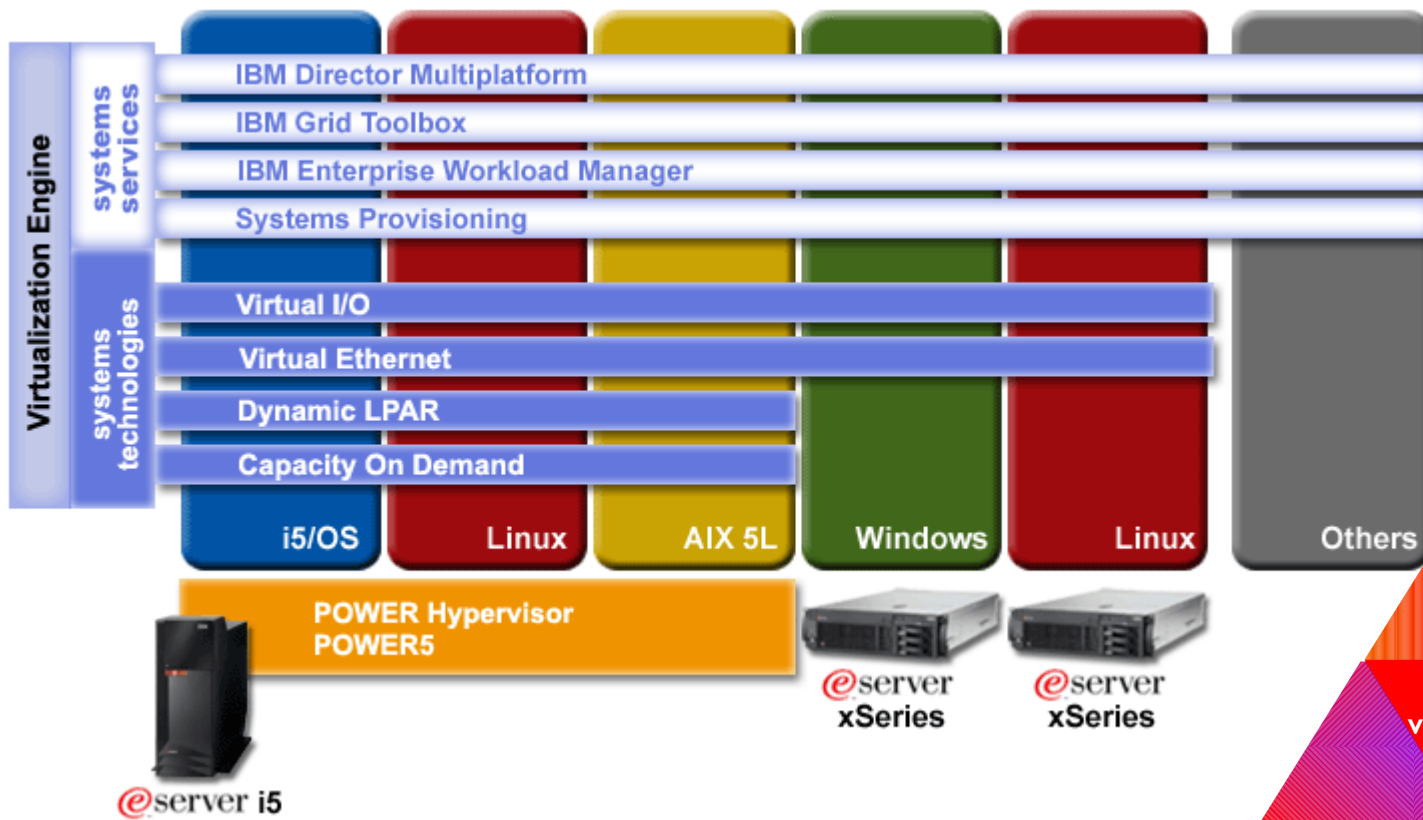
# i5 On Demand Operating Environment



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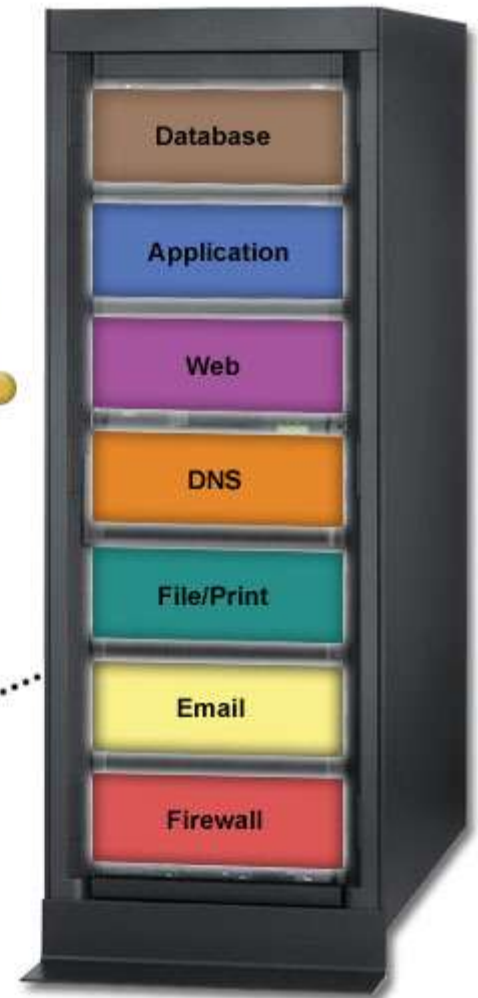
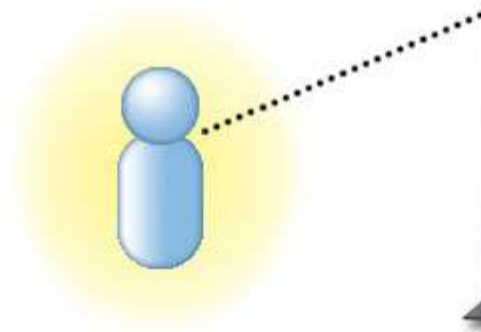
# IBM Virtualization Engine and <sup>^</sup> i5

*Delivered first on <sup>^</sup> i5*



# The Value of Virtualization

- Reduce costs by increasing asset utilization
- Redeploy talent to manage your business, not your infrastructure
- Rapidly provision new servers
- Drive new levels of IT staff productivity
- Consolidate storage & backup
- Simplify server management and operations
- Communicate more securely with virtual Ethernet

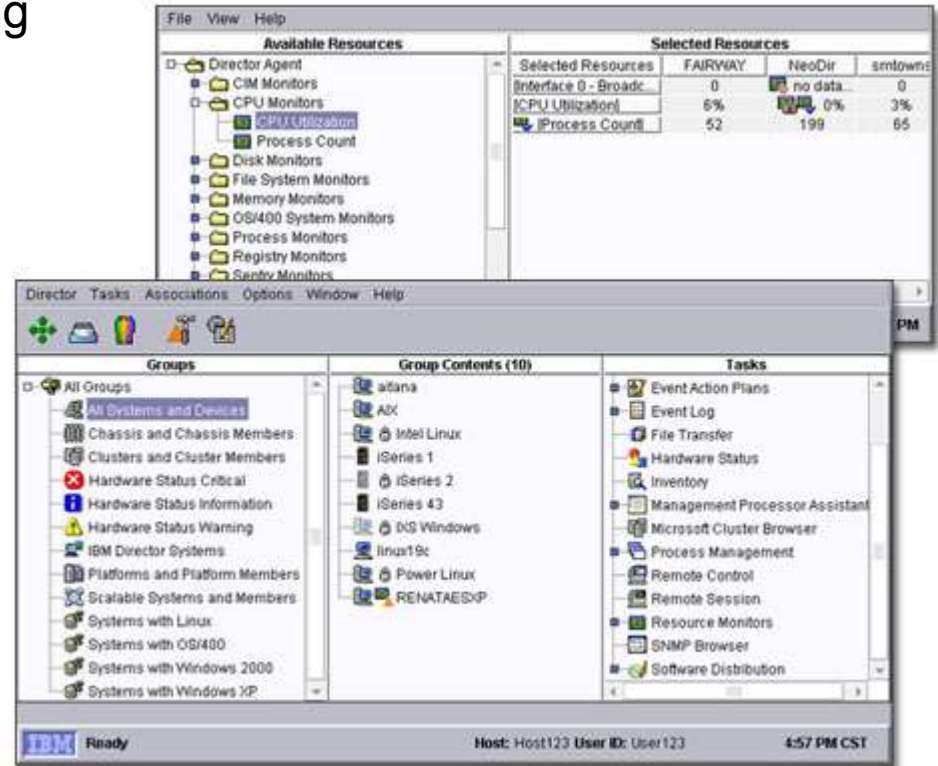


# IBM VE Release 1 Systems Services Platform Support

Platform	Systems Service	Linux Based OS	Native OS
iSeries	EWLM Domain Manager	Future Potential	i5/OS V5R3
	EWLM Managed Node	Future Potential	i5/OS V5R3
	Systems Provisioning Management Server	SLES 8	Future Potential
	Systems Provisioning – Managed thru	Future Potential	OS/400 V5R2 & i5/OS V5R3
	Systems Provisioning Provisioned Node	SLES 8	SLES 8 & W2000/W2003 on IXS/IXA
	IBM Director MP Management Server	Future Potential	i5/OS V5R3
	IBM Director MP Agent	SLES 8 & RHEL 3	i5/OS V5R3
	IBM Grid Toolbox	SLES 8	i5/OS V5R3
	IBM Grid Toolbox	Future Potential	i5/OS V5R3
VE Console – Client	Future Potential	i5/OS V5R3 with IBM Director MP	
VE Console – Adapter	Future Potential	Server or Management Central	
pSeries	EWLM Domain Manager	Future Potential	AIX 5.2F
	EWLM Managed Node	Future Potential	AIX 5.2F
	Systems Provisioning Management Server	Future Potential	AIX 5.2F
	Systems Provisioning – Managed thru	SLES 8 thru CSM	AIX 5.2F thru NIM
	Systems Provisioning Provisioned Node	SLES 8 (64 bit)	AIX 5.1 & 5.2
	IBM Director MP Management Server	Future Potential	Future Potential
	IBM Director MP Agent	SLES 8 & RHEL 3	AIX 5.2F
	IBM Grid Toolbox	SLES 8	AIX 5.2F
	IBM Grid Toolbox	Future Potential	AIX 5.2F
VE Console – Client	Future Potential	AIX 5.2F	
VE Console – Adapter	Future Potential	AIX 5.2F with CSM	

# IBM Director Multiplatform\*

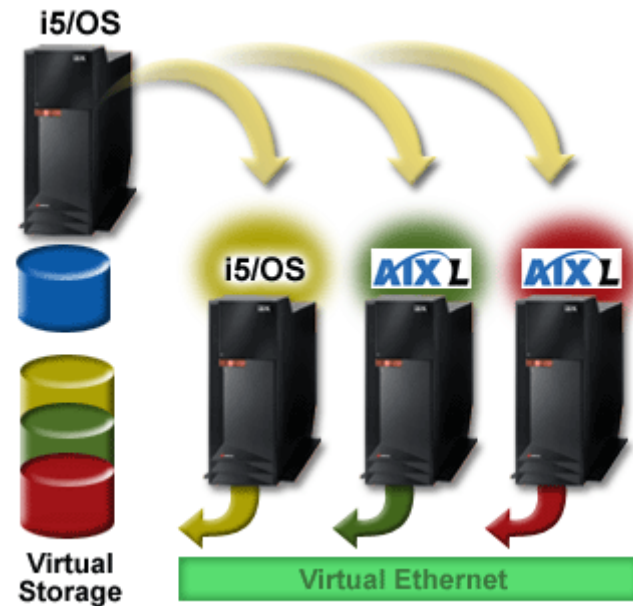
- Centralize management and monitoring for multiple operating environments
  - i5/OS, AIX 5L, Linux, and Windows operating systems
- Open standards-based heterogeneous management tool
- Complements iSeries Navigator
- Integrated with PM iSeries for collecting and reporting multi-OS CPU utilization and capacity planning
- *An IBM Virtualization Engine systems service*



\* Product Preview. Planned availability 3Q 2004. This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

# AIX 5L and IBM <sup>^</sup> i5<sup>+</sup>

- Consolidate and manage UNIX<sup>®</sup> solutions
- Extend i5/OS with complementary AIX 5L applications
- Available on all <sup>^</sup> i5 servers
- Run standard AIX 5L with native performance
- IBM Director Multiplatform provides management & monitoring tools

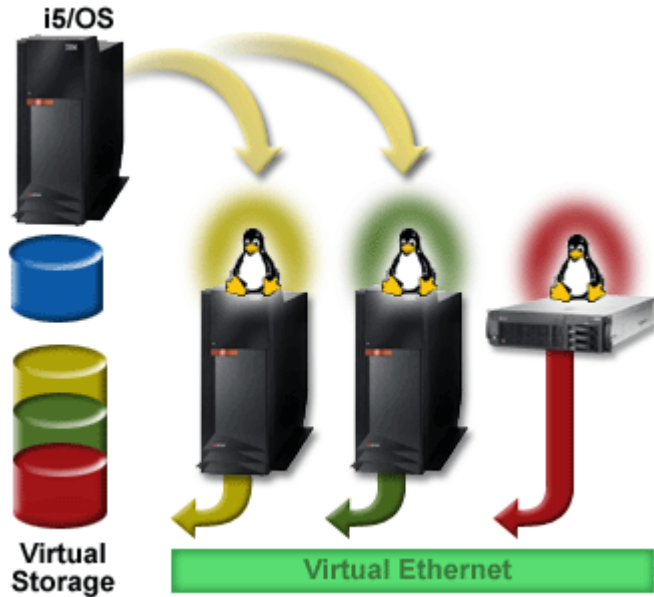


•Product Preview. Planned availability for AIX5L 5.2 on <sup>^</sup> Such plans are subject to change without notice.

i5 is 3Q 2004 This presentation contains information about IBM's plans and directions.

# Linux and IBM ^

# i5\*

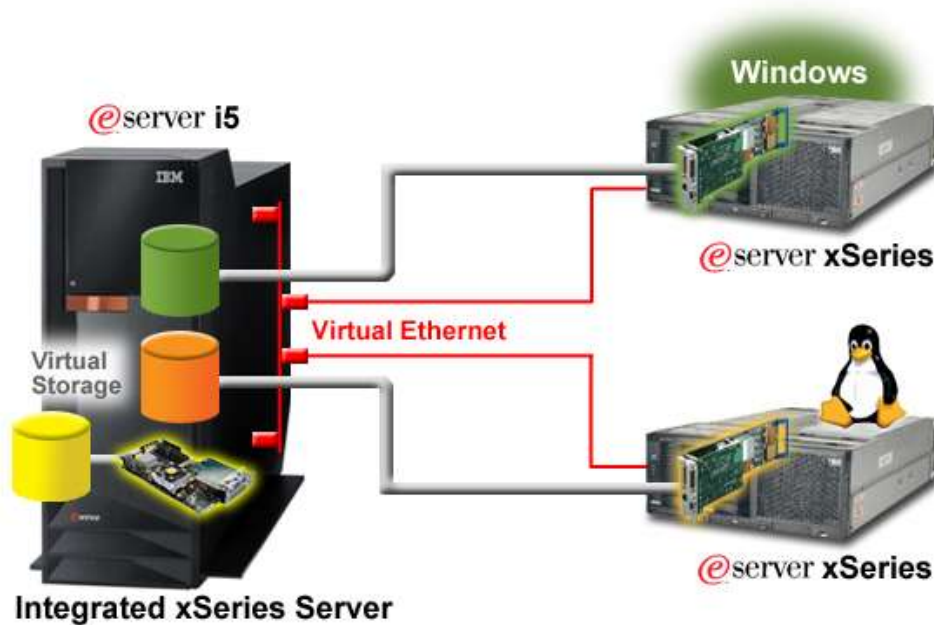


- Common Linux distribution for POWER5 processor – based servers
  - Automatic processor balancing with uncapped partitions
- iSeries Navigator V5R3 enhancements
  - Start up, shut down Linux servers
  - Create/manage virtual storage spaces
- IBM Director Multiplatform provides management & monitoring tools



Planned availability 3Q 2004 This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

# Integrating Windows & Linux Servers



- Consolidate Intel® processor-based Windows & Linux servers with the Integrated xSeries® Server & Integrated xSeries Adapter
- Windows Server™ 2003
  - Flexible options to manage passwords for OS/400 and Windows users
  - Increase storage space size up to 1TB, with maximum of 32TB per server
- Linux
  - IBM intends to provide support on selected IXS and xSeries servers attached to i5 via the IXA\*
  - Extends Linux application options
- IBM Director Multiplatform provides management & monitoring tools

\* Product Preview. Planned availability 3Q 2004. This presentation contains information about IBM's plans and directions. Such plans are subject to change without notice.

# Lower Cost, More Secure Single Signon

- i5/OS V5R3 can be native Kerberos Server KDC (Key Distribution Center)
  - Enables single signon deployment without requiring a Windows KDC
  - Eliminates password caching in Windows servers
  - Management Central Kerberos, EIM configuration distribution
  
- i5/OS single sign on (SSO) can be extended to WAS-based applications
  - Portlets, Servlets
  - WebFaced applications
  - iSeries Access for Web
  - WebSphere Development Studio Advanced Edition



For Domino <-> WebSphere, see Integrating Lotus Domino 6 and WebSphere Express V5 on the IBM eServer iSeries Server, SG24-6998-00

# IBM Enterprise Workload Manager (EWLM)\*

- Provides cross platform end-to-end view of goal oriented performance management for enterprise applications
- i5/OS V5R3 enables monitoring of applications instrumented with Application Response Measurement (ARM) standards
  - WebSphere Application Server
  - IBM HTTP Server (Powered by Apache)
  - DB2 UDB



- *An IBM Virtualization Engine systems service*

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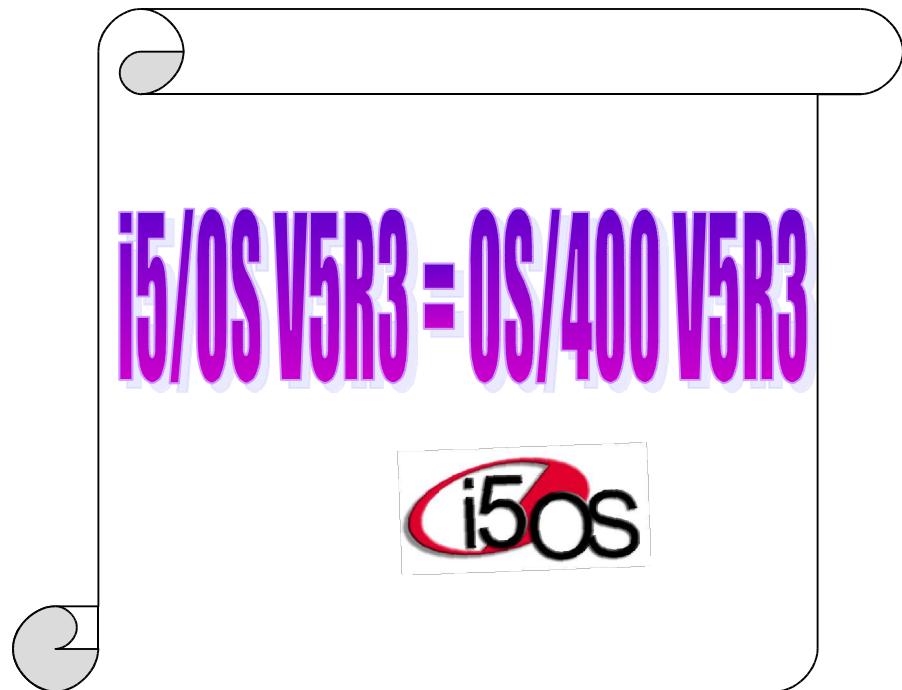
# Systems Provisioning

- Simplifies the deployment of multiple infrastructure servers
- Automates the installation Linux and Windows servers
- Provisions hot spare IXA/IXS failover, and Linux on POWER cloning
- Supports deployment of Windows on IXS/IXA and Linux on POWER
- *An IBM Virtualization Engine systems service*

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# i5/OS – The next generation of OS/400

- i5/OS V5R3 is an integrated operating system that builds on and extends the capabilities of OS/400 V5R2
- i5/OS V5R3 runs on IBM  $\wedge$  i5 servers, IBM  $\wedge$  iSeries servers and IBM AS/400<sup>®</sup> models 720, 730, 740, 170, 250 and 270
- Upgrades to i5/OS V5R3 are available from OS/400 V5R2 and V5R1



<http://www.ibm.com/servers/eserver/series/support/planning/nav.html>