



IBM COLLABORATION SUMMIT

Barcelona, 3 de octubre
Madrid, 10 de octubre



Elementos de Infraestructura

Fernando Rodríguez Cobo
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Estrategia de colaboración de IBM Lotus

Cliente rico Windows/Office Navegador eForms Portal RSS/Atom Disp. Móviles



Servicios de interacción y de cliente (online u off-line)

Lotus Domino

Correo, calendario y aplicaciones de colaboración.

Lotus Sametime

Comunicaciones unificadas y servicios de colaboración en tiempo real

Lotus Quickr

Servicios de contenidos colaborativos y trabajo en equipo

Lotus Connections

Software Social para la empresa

WebSphere Portal

Servicios de aplicaciones compuestas e integración

Framework de aplicaciones compuestas



Procesos de negocio

Información



Soluciones de colaboración multiplataforma

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Wintel

Blades

Unix

System i

Mainframes



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The IBM Systems Family



System x™

BladeCenter®

System p™

System i™

System z™



The IBM Systems family

Innovative, proven technology providing platform choice to match unique business needs



System z™

The flagship for IBM Systems innovation and the heart of a highly secure, resilient and integrated infrastructure.



System Storage™

Connected. Protected. Complete.



BladeCenter®

Simplify data center complexity.

IBM Systems



System i™

Install faster, Maintain easier.

System i solutions provide reliable and secure ways to simplify your IT so you can invest the savings in business innovation



System x™

Innovation comes standard.

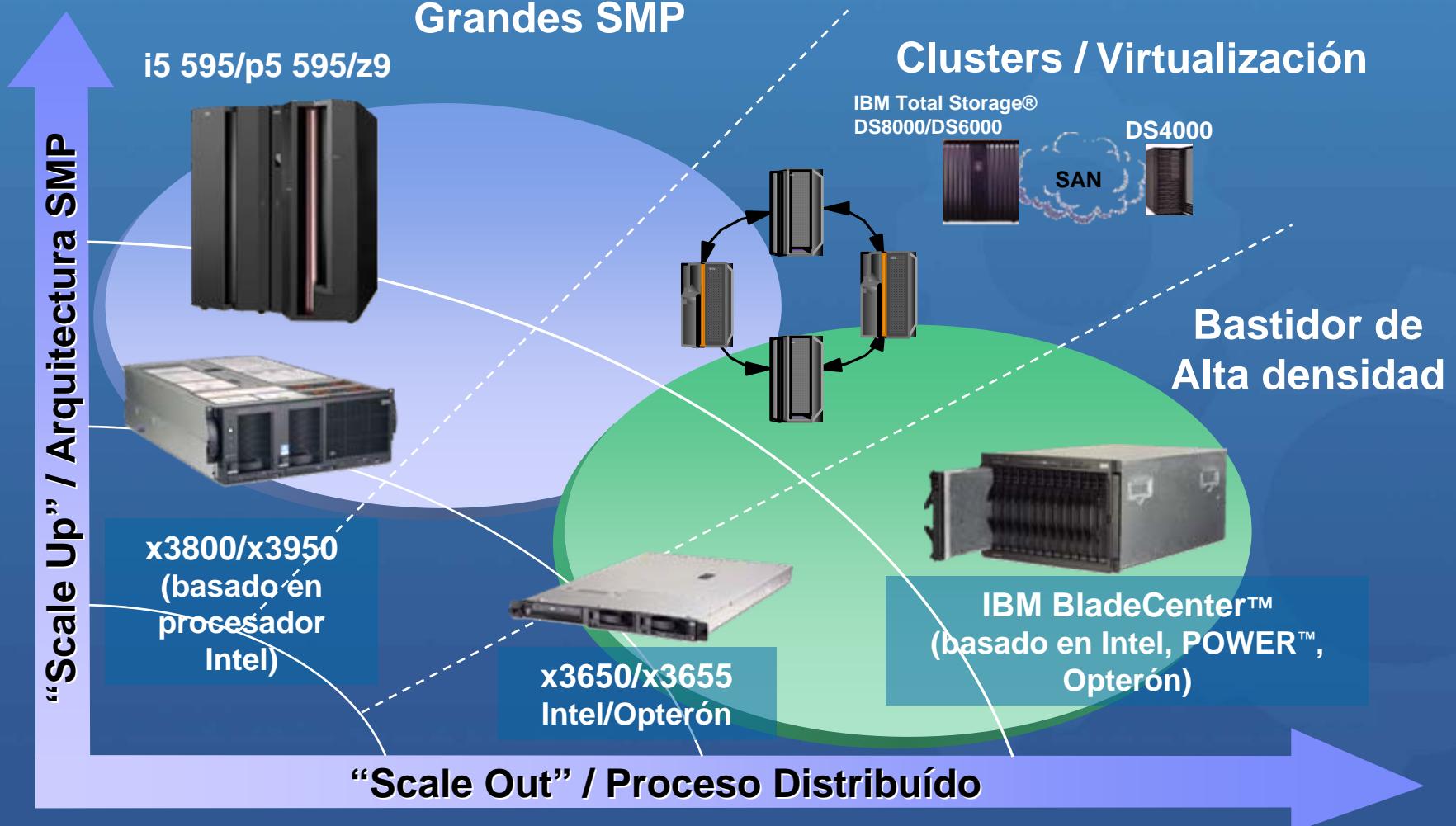


System p™

Get the power to do more, spend less.



Aproximación a soluciones de infraestructura Escalabilidad Vertical y Horizontal



System z9 (EC & BC): unique functions and features

Five New Hardware Models

Faster Uni Processor

Up to 54 CPs

Up to 512 GB Memory

Up to 60 LPARs

CBU for IFL, ICF and zAAP

Separate PU Pool Management

Redundant I/O Interconnect

Enhanced Driver Maintenance

Enhanced Book Availability

Dynamic Oscillator Switchover

Preview*
Server Time Protocol



Faster 2.7 GB STI and
more of them

MIDAW facility

Multiple Subchannel Sets
per LCSS

63.75K Subchannels for
Set-0

Up to 336 FICON® Express2
Channels

N_Port ID Virtualization

IPv6 Support for HiperSockets™

OSA-Express2 1000BASE-T

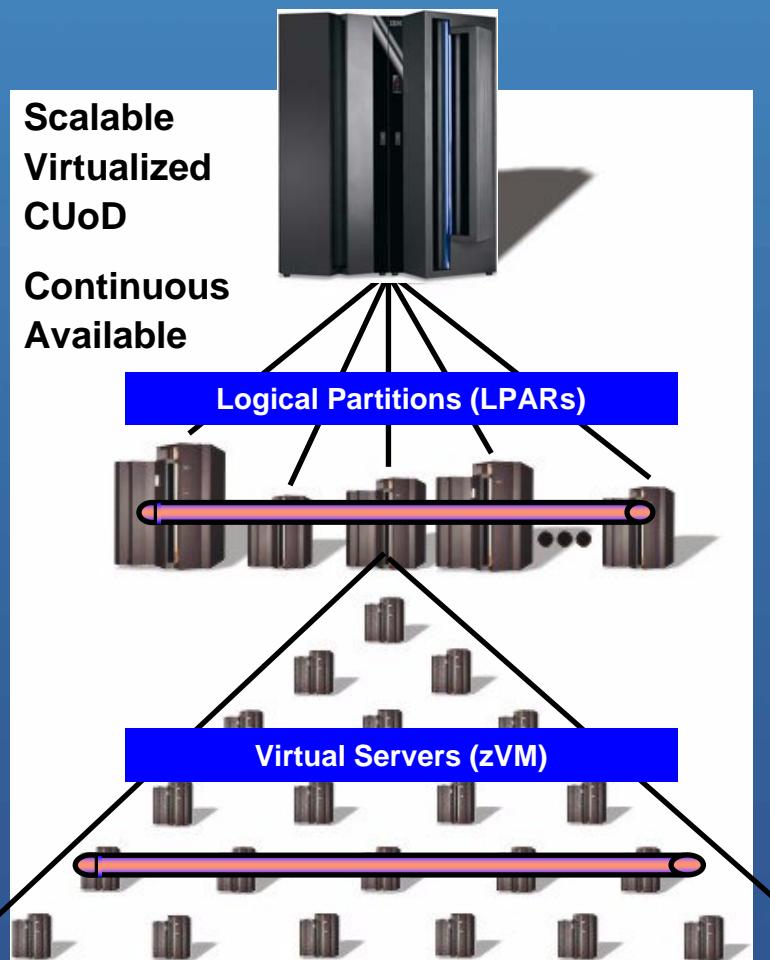
OSA-Express2 OSN (OSA for NCP)

Enhanced CPACF with AES,
PRNG and SHA-256

Configurable Crypto Express2

System z9 - Logical Partitions and Virtual Servers

flexible and cost effective for server consolidation, integration and on demand



Logical Partitioning (PR/SM) - up to 60 partitions
Multiple applications (100's) per logical partition

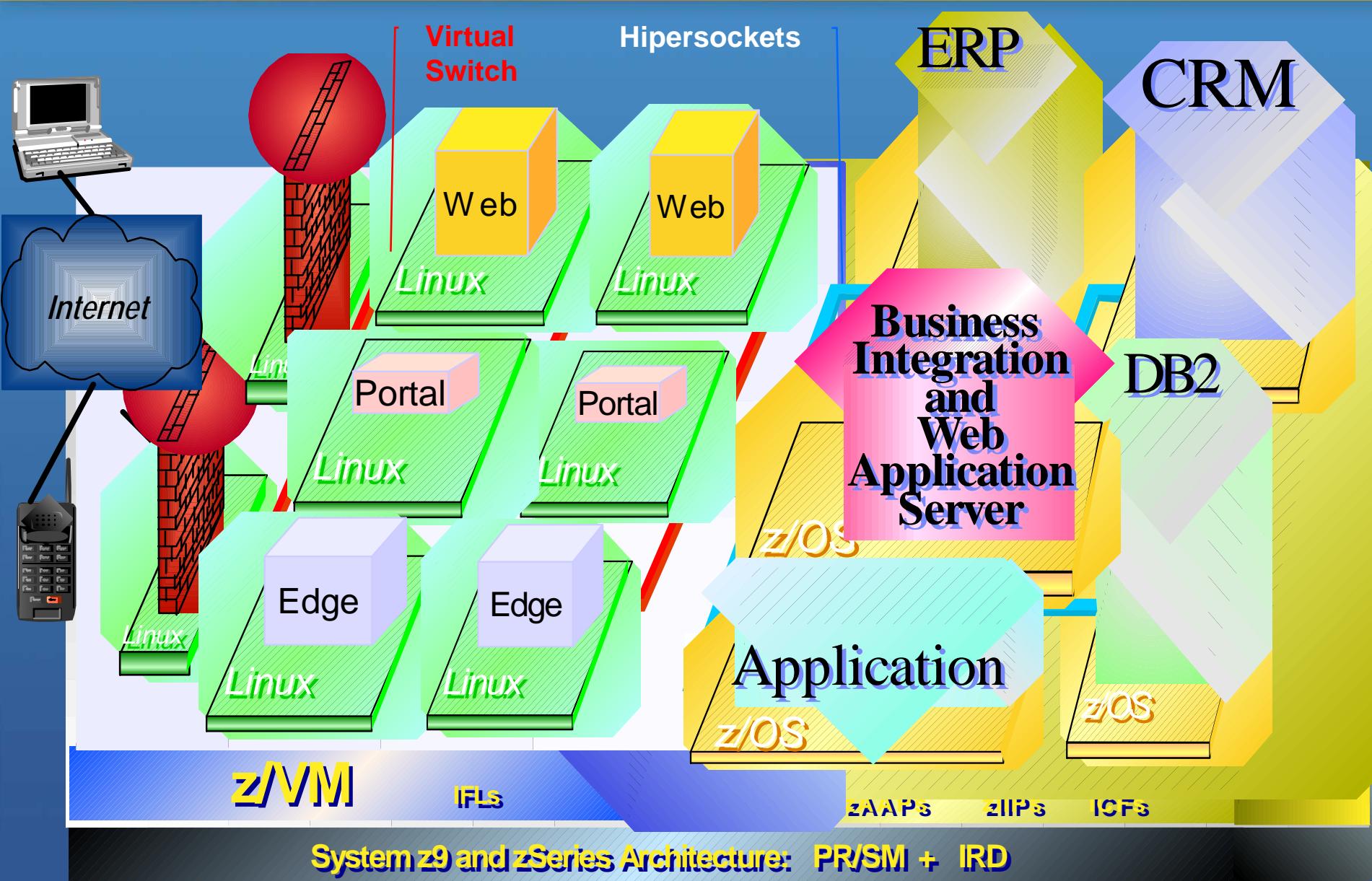
z/VM Virtualization – processors, memory and I/O
Self-Managed Workload Management (Autonomic)
across partitions (Intelligent Resource Director)
Virtual I/O and Shared I/O

Hundreds to Thousands of Virtual Servers

Integration - **HiperSockets** (Virtual LAN)

Up to 32 System Images in a Cluster (**Parallel Sysplex**)

First partitioning implementation in the 1967 time frame
LPAR delivered in 1987
Virtual Servers first implemented in 1967



IBM System p: p5 systems highlights

 IBM POWER5™ processors	5 th generation POWER™ technology Simultaneous multi-threading Advanced POWER Virtualization* and autonomic features
 IBM System p systems	IBM System p p5 510, 520, 550, 570, 575, 590 and 595 IBM System p p5 510, 510, 550 and 570 Express
 AIX 5L™ V5.3	Support for IBM Virtualization Engine™ systems technologies like Micro-Partitioning™ and virtual I/O
 Linux®	Expanded offerings with new functionality
 i5/OS™**	New OS support for p5 systems
 HMC support / options	Support for IBM System p p5 systems New attachment capabilities
 I/O options	7311-D11 remote I/O drawer 10 Gigabit Ethernet and 2 Gigabit Fibre Channel



IBM System p p5 Servers

p5-520

2-way

1.65 GHz POWER5™



p5-520 Express

Up to 2-way

1.5 GHz POWER5

p5-550

Up to 4-way
1.65 GHz POWER5



p5-550 Express

Up to 4-way

1.5 GHz POWER5

p5-570

Up to 16-way
1.65 GHz POWER5
1.9GHz POWER5



p5-570 Express

Up to 8-way

1.5 GHz POWER5

p5-590

Up to 32-way



p5-595

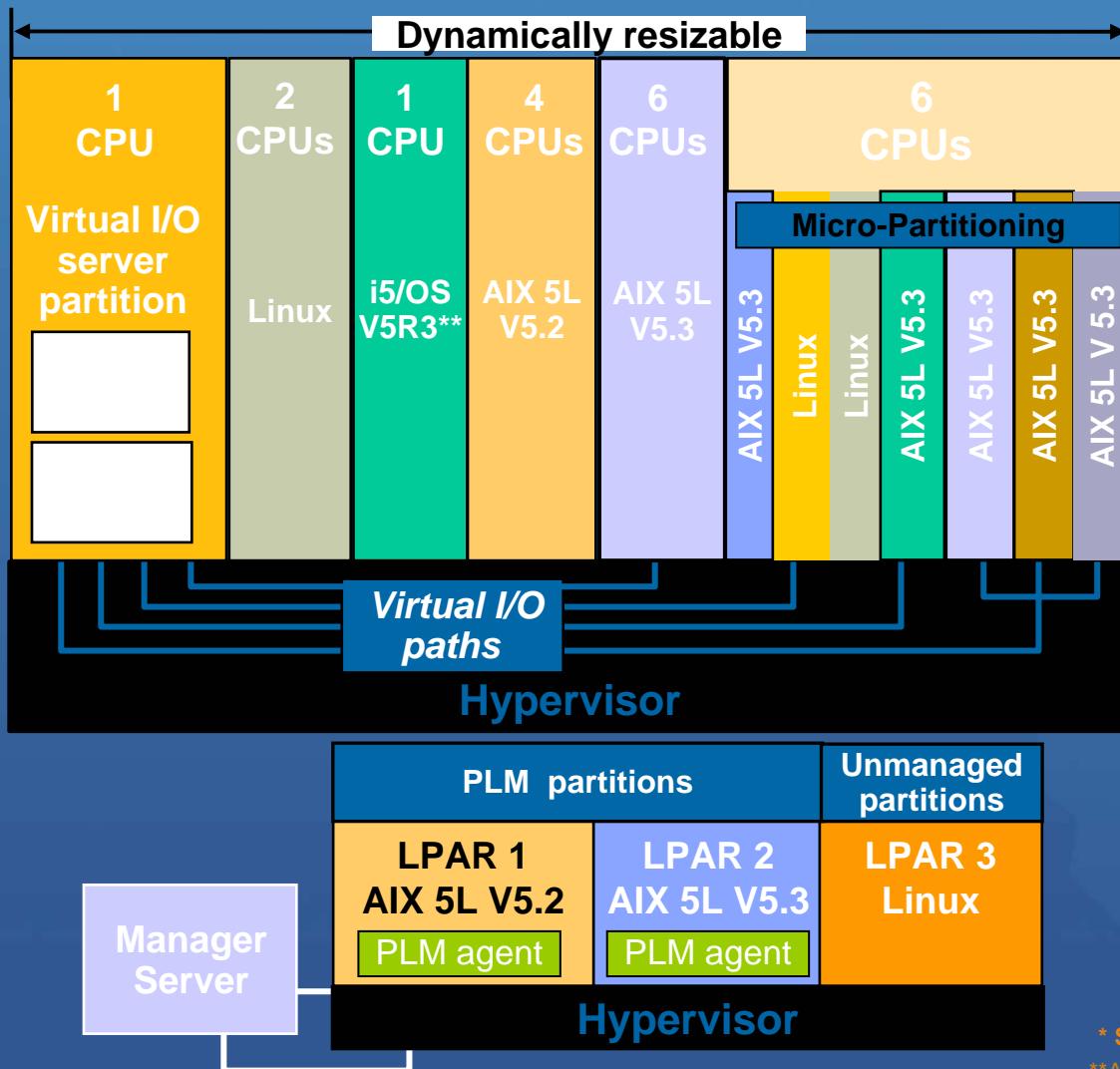
Up to 64-way



- 8-way to 32-way
- 1.65 GHz IBM POWER5
- Up to 1TB memory
- Advanced POWER™
- Virtualization [Standard]
- Up to 8 I/O drawers
- Capacity on Demand*

- 16-way to 64-way
- 1.65 GHz POWER5
- 1.9 GHz POWER5
- Up to 2TB memory
- Advanced POWER
- Virtualization [Standard]
- Up to 12 I/O drawers
- Capacity on Demand*

IBM System p: advanced virtualization option



Virtual I/O Server

- Shared Ethernet
- Shared SCSI and Fibre Channel-attached disk subsystems
- Supports AIX 5L V5.3 and Linux* partitions

Micro-Partitioning

- Share processors across multiple partitions
- Minimum partition 1/10th processor
- AIX 5L V5.3, Linux*, or i5/OS**

Partition Load Manager

- Both AIX 5L V5.2 and AIX 5L V5.3 supported
- Balances processor and memory request

* SLES 9 or RHEL AS 2

**Available on 1.65 GHz p5-570, p5-590 and p5-595 models



Transaction Performance - Single System TPC-C V5



System	Chip/Core/Thread	Avail.	\$/tpmC	Database	OS	tpmC	tpmC/Core
IBM p570 (4.7 GHz POWER6)	2/4/8	11/26/07	\$3.50	Oracle 10g	AIX 5L V5.3	404,462	101,115
IBM p570 (4.7 GHz POWER6)	8/16/32	11/21/07	\$3.54	IBM DB2 9	AIX 5L V5.3	1,616,162	101,010
IBM p5-570 (2.2 GHz POWER5+)	8/16/32	05/31/06	\$4.42	IBM DB2 v8.2	AIX 5L V5.3	1,025,169	64,073
IBM p5-595 (2.3 GHz POWER5+)	32/64/128	01/22/07	\$2.97	IBM DB2 9	AIX 5L V5.3	4,033,378	63,021
IBM p5-570 (1.9 GHz POWER5)	8-core	09/30/04	\$4.99	IBM DB2 v8.1	AIX 5L V5.3	429,899	53,737
IBM p5-570 (1.9 GHz POWER5)	4-core	10/17/05	\$3.93	Oracle 10g	AIX 5L V5.3	203,439	50,859
IBM p5-570 (1.9 GHz POWER5)	16-core	09/30/04	\$4.95	IBM DB2 v8.1	AIX 5L V5.3	809,144	50,571
HP rx4640 (1.6 GHz Itanium 2)	2/4/8	09/01/06	\$2.75	Oracle 10g	HP-UX 11.iv2	200,829	50,207
IBM p5-595 (1.9 GHz POWER5)	64-core	05/14/05	\$5.07	IBM DB2 v8.1	AIX 5L V5.3	3,210,540	50,164
IBM p5-595 (1.9 GHz POWER5)	32-core	04/20/05	\$5.05	Oracle 10g	AIX 5L V5.3	1,601,784	50,055
IBM p5-570 (1.9 GHz POWER5)	4-core	09/30/04	\$5.62	Oracle 10g	AIX 5L V5.3	194,391	48,597
IBM p5-570 (1.9 GHz POWER5)	8-core	09/30/04	\$5.26	Oracle 10g	AIX 5L V5.3	371,044	46,380
HP rx6600 (1.6 GHz Itanium 2)	4/8/16	12/16/06	\$1.99	Oracle 10g	Red Hat Linux	359,440	44,930
HP rx4640 (1.6 GHz Itanium 2)	4-core	12/17/04	\$3.94	Oracle 10g	Red Hat Linux	161,217	40,304
HP ProLiant DL585 (2.6 GHz Opteron)	4-core	05/06/05	\$2.80	SQL EE	Windows EE	130,623	32,655
HP Superdome (1.6 GHz Itanium 2)	64/128/256	08/23/07	\$2.93	Oracle 10g	HP-UX 11iv3	4,092,799	31,974
HP ProLiant DL585 (2.4 GHz Opteron)	8-core	12/05/05	\$2.02	IBM DB2 v8.2	Windows EE	236,054	29,506
HP ProLiant DL585 (2.2 GHz Opteron)	8-core	05/31/05	\$2.04	SQL EE	Windows EE	187,296	23,412
HP Superdome (1.6 GHz Itanium 2)	64-core	06/05/06	\$4.82	SQL EE	Windows DE	1,231,433	19,241
HP rx5670 (1.5 GHz Itanium 2)	16-core	04/15/04	\$4.56	SQL DE	Windows EE	301,225	18,826
HP Superdome (1.5 GHz Itanium 2)	64-core	04/14/04	\$8.33	Oracle 10g	HP-UX 11.i	1,008,144	15,752
Fujitsu PP2500 (SPARC64 1.3 GHz)	64-core	04/30/04	\$12.43	Oracle 10g	Solaris 8	595,702	9,307
Sun Fire	No Published Results						?



SAP SD 2-Tier (Rankings by Users/Core)



Configuration	Software Releases	Certification #	Processor /Cores/ Threads	Number of Benchmark Users	Users/Core
IBM System p 570 (4.7 GHz POWER6) 128 GB Memory	SAP ECC Release 6.0 AIX 5L V5.3, DB29	2007039	8/16/32	8000 @ 1.98 sec	500
IBM System p5 595 (2.3 GHz POWER5+) 512 Memory	SAP ECC 5.0 AIX 5L V5.3, DB2 UDB v9.1	2006045	64/64/128	23,456 @ 1.98 sec	366
IBM eServer p5 570 (1.9 GHz POWER5) 32GB Memory	SAP R/S 4.70 AIX 5L V5.3, DB2 UDB v8.1	2004042	4	1,313 @ 1.97 sec	328
IBM eServer p5 570 (1.9 GHz POWER5) 64GB Memory	SAP R/S 4.70 AIX 5L V5.3, DB2 UDB v8.1	2004041	8	2,600 @ 1.99 sec	325
IBM eServer p5 570 (1.9 GHz POWER5) 128GB Memory	SAP R/S 4.70 AIX 5L V5.3, DB2 UDB v8.1	2004040	16	5,056 @ 1.99 sec	316
IBM eServer p5 595 (1.9 GHz POWER5) 512GB Memory	SAP R/S 4.70 AIX 5L V5.3, DB2 UDB v8.2	2004062	64	20,000 @ 1.98 sec	312
HP rx6600 (1.6 GHz Itanium 2) 48GB Memory	SAP Version 6.0 HP-UX 11, Oracle 10g	2006083	4/8/16	2,150 @ 1.97 sec	268
HP DL585 (2.6 GHz Opteron 852) 16GB Memory	SAP R/3 4.70 Windows 2003, SQL Server	2005008	4	1,017 @ 1.98 sec	254
HP Superdome (1.6 GHz Itanium 2) 512GB Memory	SAP Version 6.0 HP-UX 11, Oracle 10g	2006089	64/128/256	30,000 @ 1.80 sec	234
HP DL585 (2.2 GHz Dual Core Opteron 852) 32GB Memory	SAP R/3 4.70 Windows 2003, SQL Server	2005017	8	1,772 @ 1.96 sec	221
HP rx4640 (1.5 GHz Itanium 2) 32GB Memory	SAP R/3 4.70 HP-UX 11, Oracle 9i	2004030	4	880 @ 1.89 sec	220
Sun V40z (2.4 GHz Opteron 850) 32GB Memory	SAP R/3 4.70 SUSE LINUX, Oracle 9i	2004044	4	820 @ 1.95 sec	205
HP rx8620 (1.5 GHz Itanium 2) 64GB Memory	SAP R/3 4.70 HP-UX 11, Oracle 9i	2003062	16	2,880 @ 1.95 sec	180
HP rp4440-8 (1.0 GHz PA-8900) 32GB Memory	SAP R/3 4.70 HP-UX 11, Oracle 9i	2005022	8	1,360 @ 1.98 sec	170
Fujitsu PrimePower (2.08 GHz SPARC64 V) 512GB Memory	SAP R/3 4.70 Solaris 9, Oracle 9i	2005013	128	21,000 @ 1.91 sec	164
Sun Fire V490 (1.5 GHz UltraSPARC IV+) 32 GB Memory	mySAP ERP 2004 Solaris 10, MaxDB 7.5	2005042	8	1050 @ 1.87 sec	131
Sun Fire T2000 (1.2 GHz UltraSPARC T1) 32GB Memory	SAP ECC 5.0 Solaris 10, MaxDB 7.5	2005047	8	950 @ 1.91 sec	118
Sun E25K (1.2 GHz US IV) 576GB Memory	SAP R/3 4.70 Solaris 9, Oracle 9i	2004039	144	10,175 @ 1.95 sec	71



Capacity on Demand for IBM System p systems

Capacity Upgrade on Demand

- Upgrade system with processors and/or memory
- No special contracts, no required monitoring (no ability to turn off the capacity)
- Purchase agreement

On/Off Capacity on Demand

- Temporary use of requested number of processors or amount of memory
- Client selects the capacity and activates the resource (registered system)
- Capacity can be turned on and off by the client
- Information captured by IBM (or reported to IBM)
- Rental agreement

Reserve Capacity on Demand

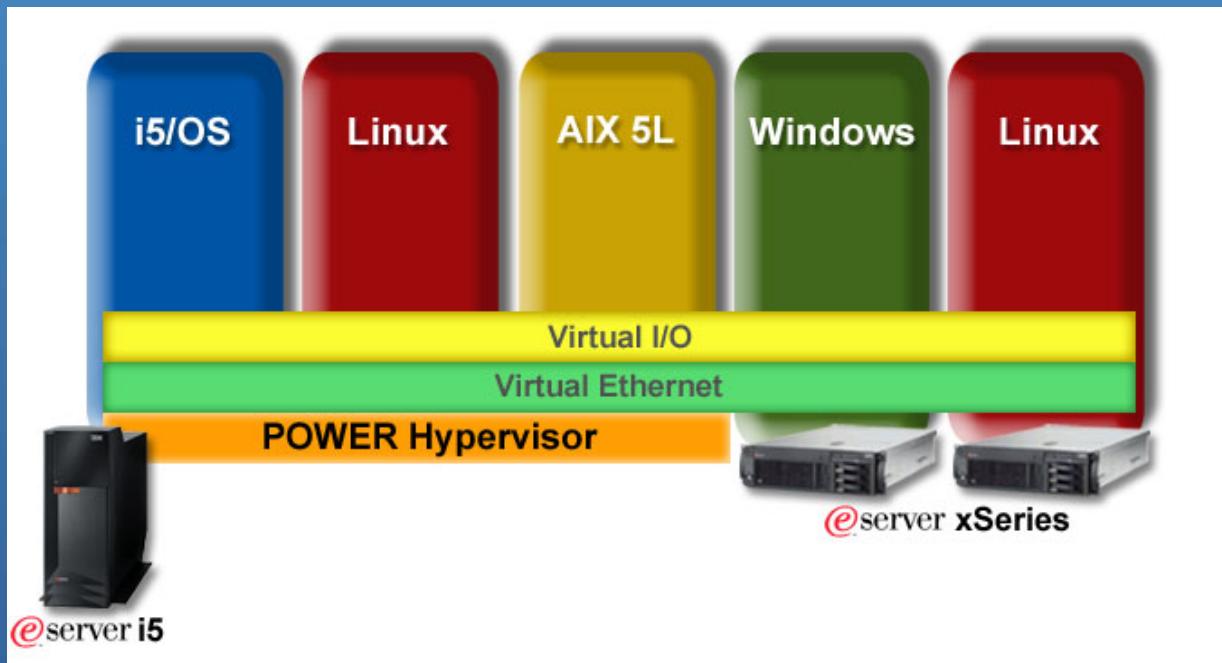
- Processor resources only (processor days)
- Capacity can be turned on and off by the client
- Prepaid debit agreement
- Requires AIX 5L V5.3 and APV

Trial Capacity on Demand

- Allow clients to test the effects of additional processors and/or memory
- Partial or total activation of processors and memory
- Resources available for fixed time
- No formal commitment required



IBM System i: Entorno operativo “on demand”



- El POWER Hypervisor™ soporta i5/OS, AIX 5L, Linux
- Mejora los ratios de utilización del servidor con cargas de trabajo variadas con balanceo de procesador automático con particiones sin limitación de capacidad.

“Además de para consolidar servidores físicos, el iSeries proporciona una vía fácil para integrar entornos múltiples. iSeries es el servidor más completo para la integración, y ha proporcionado ventajas evidentes e inmediatas.”

Jan van de Straat, Director of R&D
Gemeente Harlem

System i 570 Performance

Providing up to 2x performance over 570 with POWER5 1.65 GHz

Workload	POWER4	POWER5 1.65GHz	POWER5+ 2.2 GHz	POWER6 4.7 GHz
CPW 16-core	20,000 CPW	44,700 CPW	58,500 CPW +31% POWER5	76,900 CPW +72% POWER5 +31% POWER5+
Trade 6 JDBC 2-tier (WebSphere, 32 bit J9) 4-core	N/A	1,517 tx/s	2,045 tx/s +35% POWER5	2,980 tx/s +96% POWER5 +46% POWER5+
SAP BI Datamart* 4-core	N/A	N/A	51,875	92,716 +79% POWER5+
MCU (Domino Mail and Calendar Users) 4-core	N/A	26,600 MCU	34,500 MCU +30% POWER5	47,500 MCU +79% POWER5 +38% POWER5+

IBM System i 570, 2 processors / 4 cores / 8 threads, POWER6, 4.7 GHz, 128 KB L1 cache and 4 MB L2 cache per core, 32 MB L3 cache per processor, 64 GB main memory i5/OS V5R4M5 with DB2 for i5/OS. SAP BI Data Mart standard NetWeaver 7.0 (2004s) two tier application benchmark performed June 1, 2007 in Rochester MN 92716 Query Navigation Steps The SAP certification number was not available at press time and can be found at the following Web page: www.sap.com/benchmark.



Flexible System x Portfolio for Your Critical Workloads

Enterprise X-Architecture



Xtended Design Architecture



IBM BladeCenter



**Up to 4 processors
per blade**



**Up to 14 blades
per chassis**



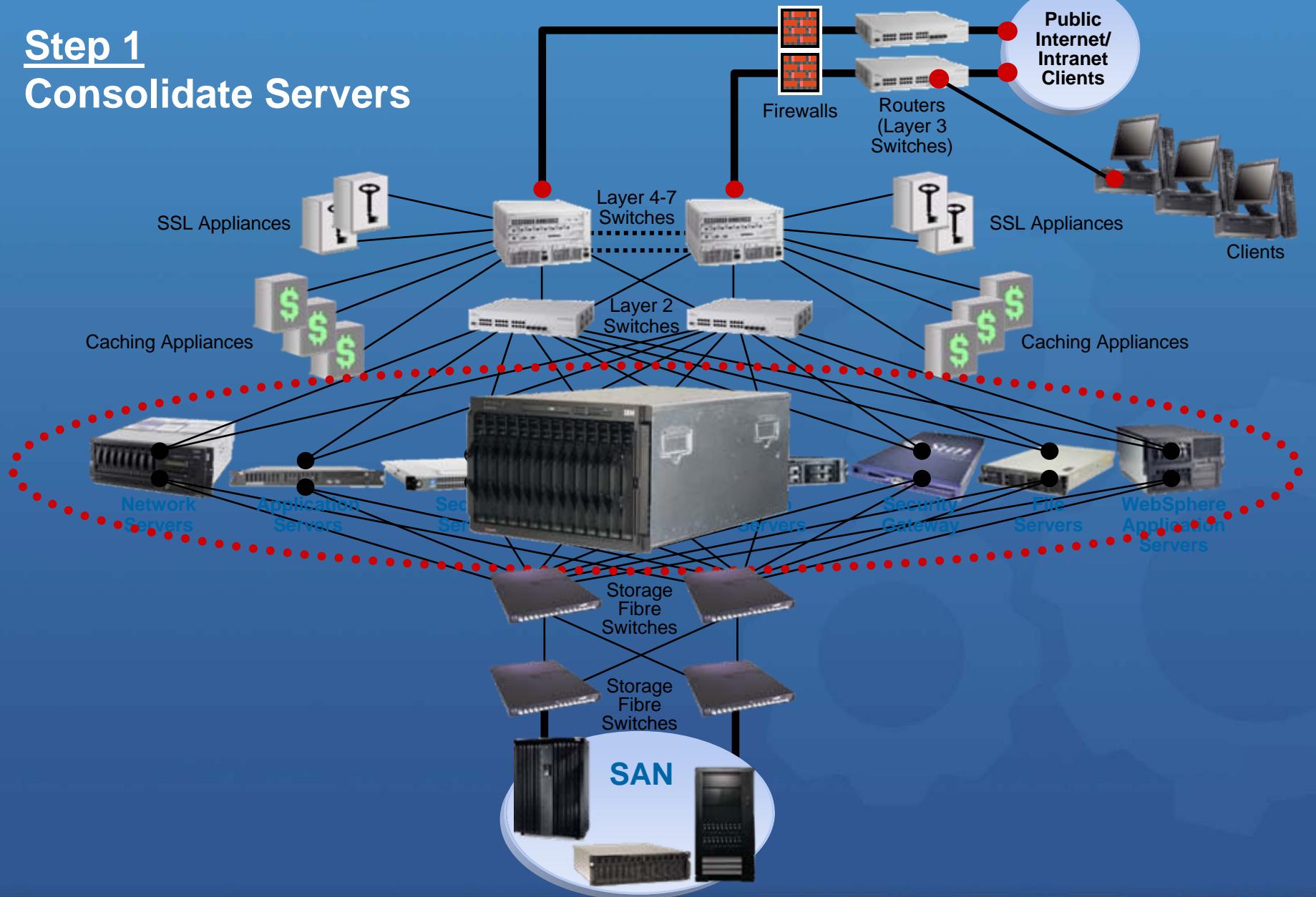
**Up to Six 7U
chassis per rack**

*Full performance and manageability of rack-optimized platforms ...
... at TWICE the density of most comparable non-blade 1U servers*



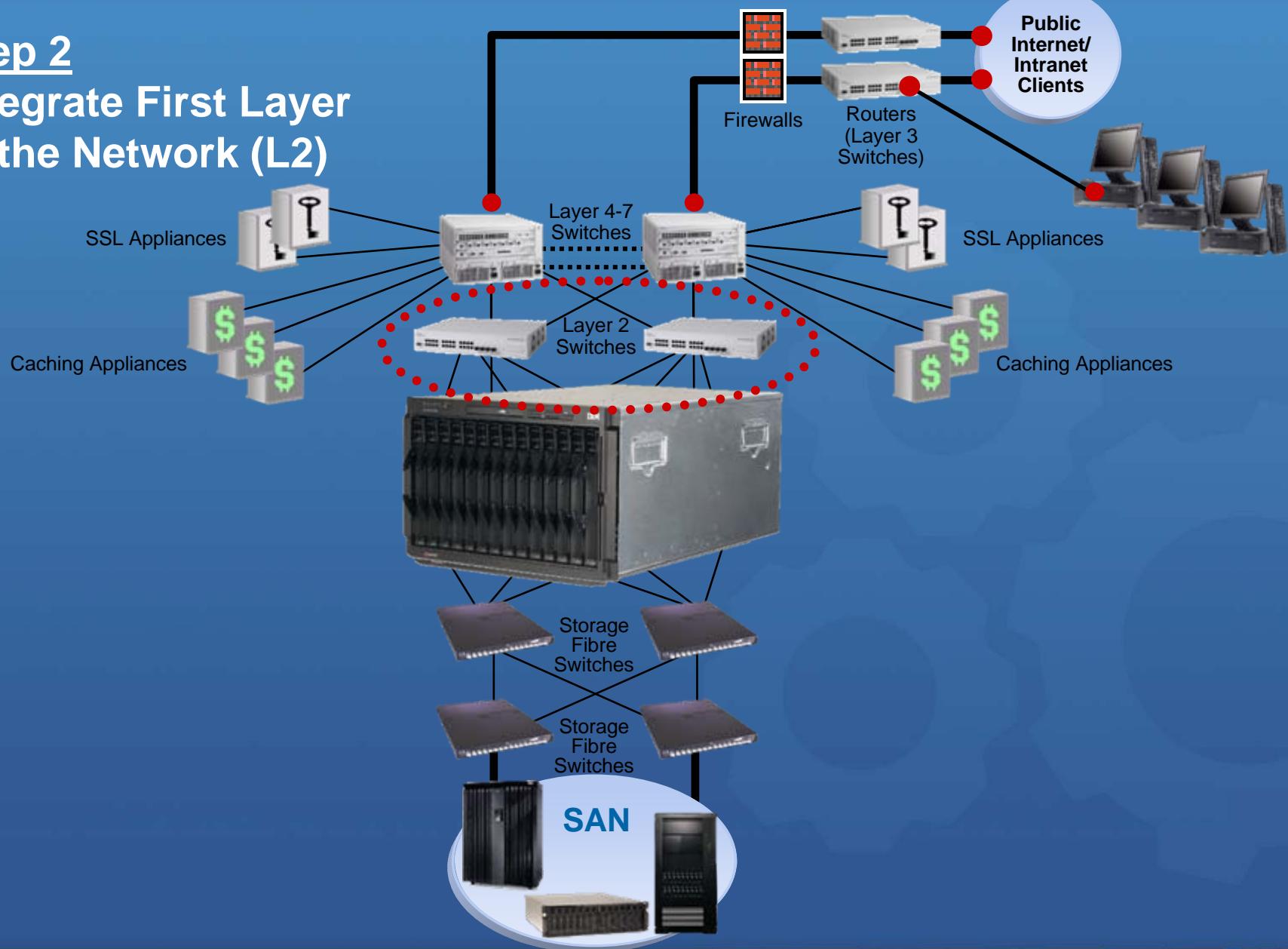
Step 1

Consolidate Servers



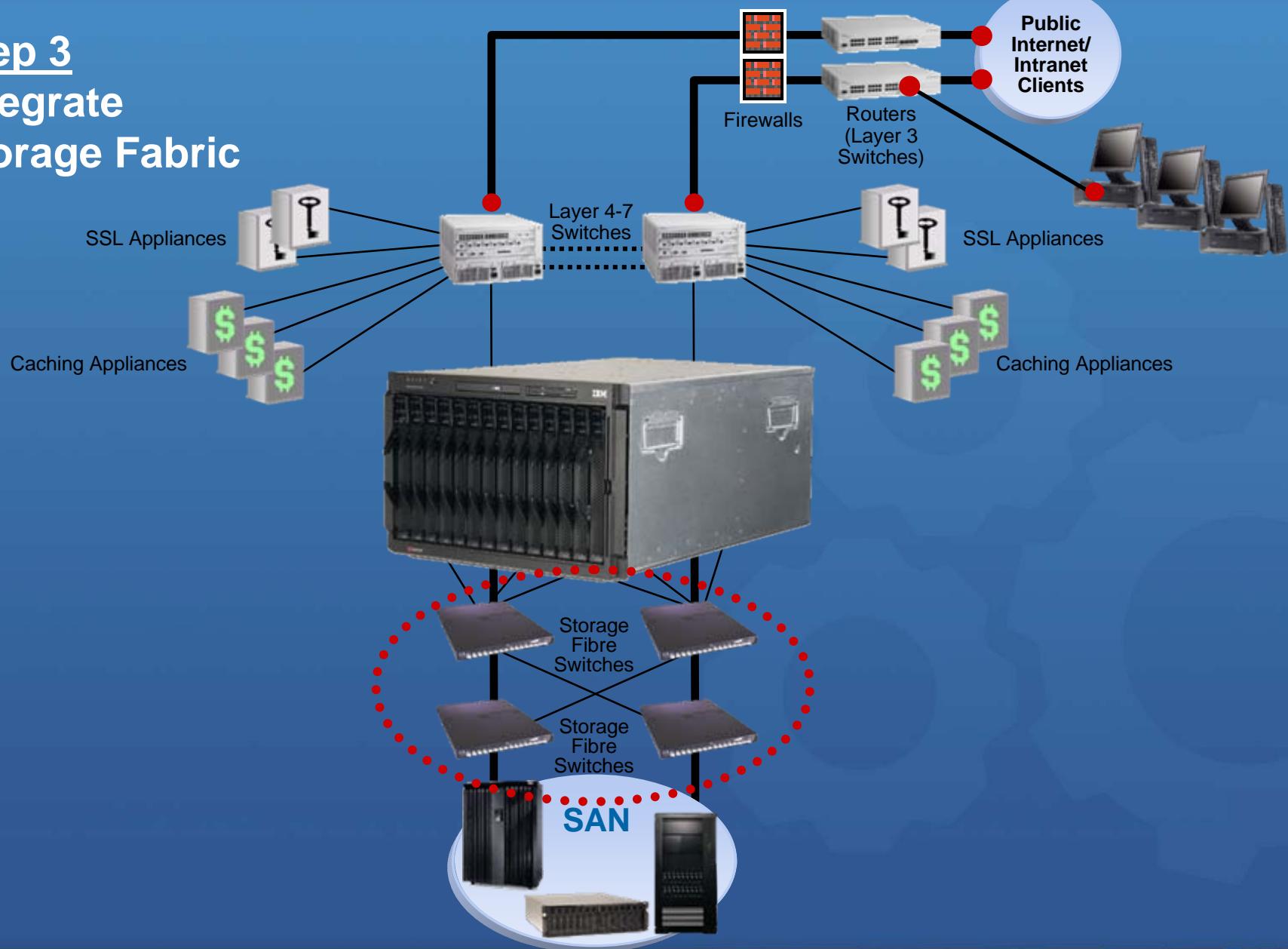
Step 2

Integrate First Layer of the Network (L2)



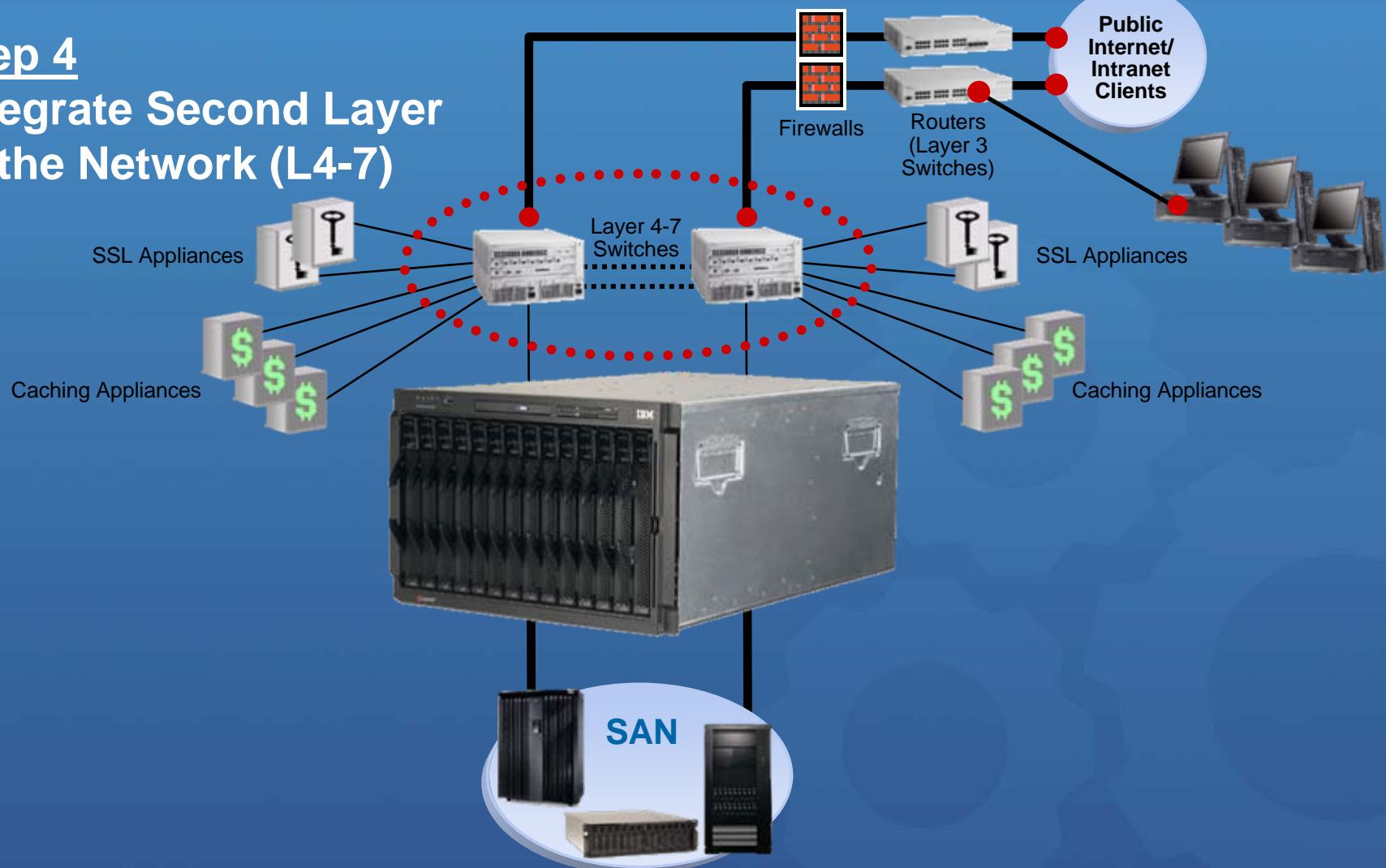
Step 3

Integrate Storage Fabric



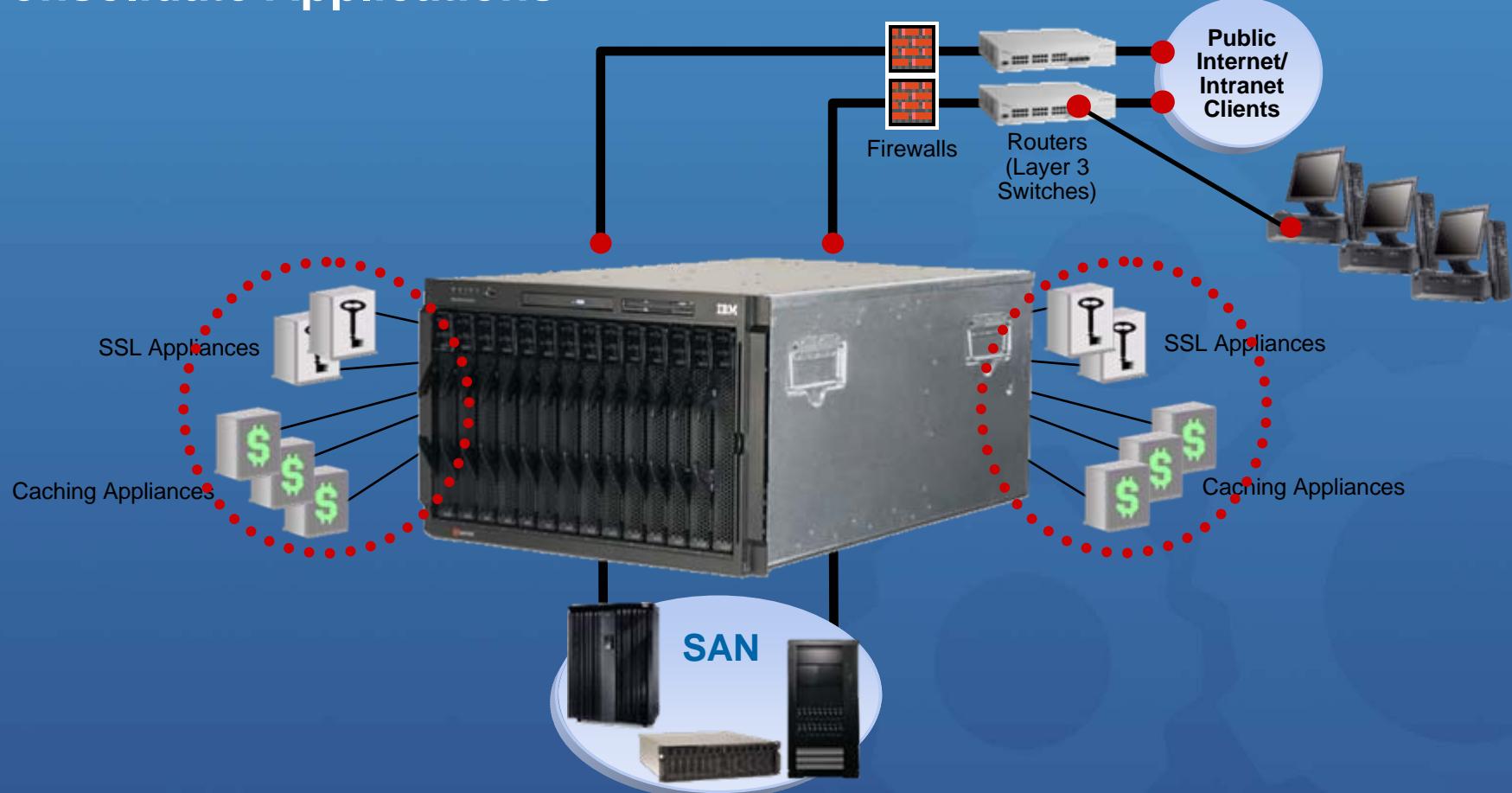
Step 4

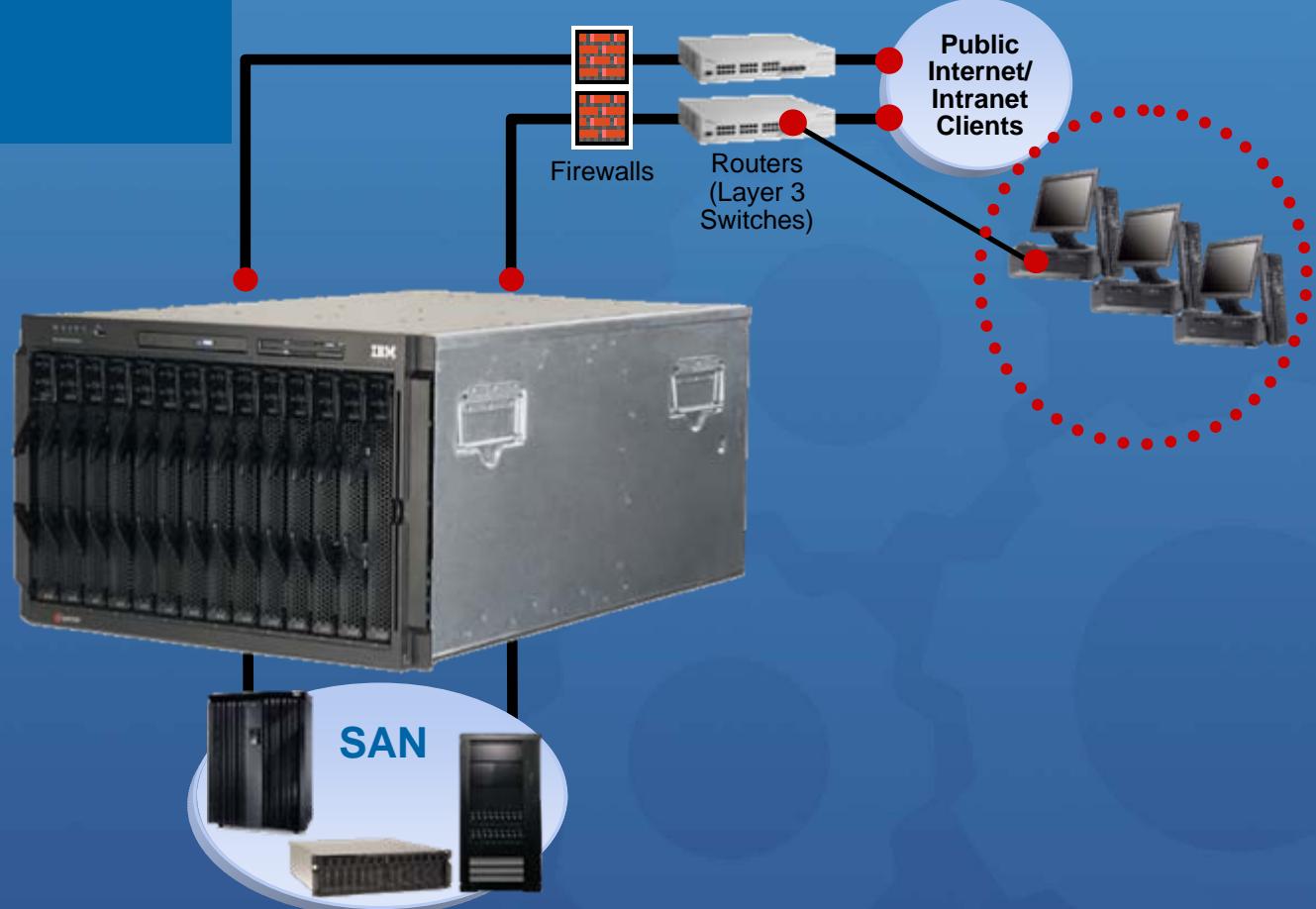
Integrate Second Layer of the Network (L4-7)



Step 5

Consolidate Applications





BladeCenter Server Portfolio Continues to Build

Features

HS21 2-way Xeon

- Intel Xeon DP
- EM64T
- Mainstream rack dense blade
- High availability apps
- Optional HS HDD

HS41 4-way Xeon

- Intel Xeon MP processors
- 4-way SMP capability
- Supports Windows, Linux, and NetWare

JS21 POWER-based

- Two PowerPC® 970 processors
- 32-bit/64-bit solution for Linux & AIX 5L™
- Performance for deep computing clusters

LS21/41 2/4-way Opteron

- Two socket AMD
- Single and Dual core
- Similar feature set to HS20

Target Apps

- Edge and mid-tier workloads
- Collaboration
- Web serving



- Back-end workloads
- Large mid-tier apps



- 32- or 64-bit HPC, VMX acceleration
- UNIX server consolidation



- 32- or 64-bit HPC
- High memory bandwidth apps



One Common Chassis and Infrastructure



Extend blade benefits to your entire business

Chassis tailored to your specific needs...



IBM BladeCenter S
Distributed, small office,
easy to configure



IBM BladeCenter E
Enterprise, best energy,
best density



IBM BladeCenter H
High performance



IBM BladeCenter T
Ruggedized



IBM BladeCenter HT
Ruggedized, high
performance

- A common set of blades
- A common set of industry-standard switches and I/O fabrics
- A common management infrastructure

Expanding BladeCenter Ecosystem



Myricom

- Wide range of companies convinced that BladeCenter architecture will add value to their customers' solutions
- Industry-leading technology companies delivering innovative business solutions running on Windows, Linux, Novell
- More choices for customers



La familia IBM System Storage DS



Common management platform

Common suite of copy services

Virtualization

Compelling price points

Industry leading service and support

Enterprise-class Storage Continuum

IBM System Storage DS Family innovations help you:

Simplify the underlying IT infrastructure of storage and its management to lower cost and complexity while increasing the ability to respond to changing needs.

- Assure **business continuity**, security and data durability.
- Efficiently manage information **throughout its lifecycle**, relative to its business value.



N series Hardware Portfolio

All Systems share the same:

	N5200 Gateway	N5500 Gateway	
N series270	V3020 N5200	V3050 N5500	N5600
N3700	N5200	N5500	N5600
			 NEW
16TB	84TB	168TB	252TB

N7600 Gateway	N7800 Gateway
	
V6030 N7600	V6070 N series6070
N7600	N7800
	
336TB (non-clustered) 420TB (clustered)	336TB (non-clustered) 504TB (clustered)

- Network Protocols: NAS, iSCSI, FC SAN ... *simultaneously*
 - Operating system
 - System management tools
 - Storage management tools
 - Multiple RAID levels ... *including double parity*
 - High availability features ... *hot swap and redundancy*
 - Disk Drives: FC & SATA ... *intermixed on all systems*
 - Non-erasable, Non-rewritable WORM data protection
 - Advanced software features and functions*

* Some features not available on gateway models

IBM LTO4 Product Family

Drive-throughput Performance,
Advanced Features

**TS2340 or TS2230
External Tape Drives**

- One LTO3, LTO4, or HH LTO3 Drive
- SCSI LVD attach and/or 3 GB SAS (LTO4 only)
- Desktop or Rack Mount



TS3100 Tape Library

- One LTO3 or LTO4 Drive or up to two HH LTO3 drives
- SCSI LVD, 4 Gbps FC and/or 3 GB SAS (LTO4 only) attach
- Desktop or Rack Mount



TS3200 Tape Library

- One or two LTO3 or LTO4 Drive or up to four HH LTO3 drives
- SCSI LVD, 4 Gbps FC and/or 3 GB SAS (LTO4 only) attach
- Desktop or Rack Mount



Entry

TS3310 Tape Library

- Up to 18 LTO3 or LTO4 Drives
- SCSI LVD (LTO3 only), 4 Gbps FC and/or 3 GB SAS (LTO4 only) attach
- Modular Scalable, up to 4 expansion units with base library
- Desktop or Rack Mount



*Capacity Requirements,
Exponential Data Growth*



TS3500 Tape Library

- Up to 192 LTO3 or LTO4 Drives
- 4 Gbps FC attach
- Scalable, up to 15 expansion frames with base library
- High availability
- Advanced features and functions
- Support for mixing LTO drives with TS1120 technology
- Direct attach support for Tape Virtualization Engines

Enterprise

Midrange





Lotusphere 2008: del 20 al 24 de Enero, ¡nos vemos en Orlando!



Software Multiplataforma

Lotus Domino Server - Microsoft Windows

Plataforma	Microsoft Windows 2003
Sistemas operativos	Standard, Enterprise y x64 Editions.
Procesadores	Intel Pentium o superior y compatibles

Lotus Notes client

- Windows
- Linux

Lotus Domino Server – AIX, Linux, y Solaris

Plataforma	IBM AIX	Linux	Sun Solaris
Sistemas Operativos	IBM AIX 5.3 ⁽⁴⁾ (64-bit)	Novell SuSE Linux Enterprise Server (SLES) 10 x86 (32-bit) y (SLES) 10 x86_64 (64-bit); Red Hat Enterprise Linux (RHEL) 5 (32-bit) y (RHEL) 5 (64-bit)	Sun Solaris 10 ⁽⁴⁾ (64-bit kernel)
Procesadores	PowerPC®	Intel Pentium o superior y compatibles	UltraSPARC III y superiores

Lotus Domino Server - iSeries, zseries, Linux on System z™

Plataforma	IBM System i⁵	IBM System z	Linux on System z
Sistemas Operativos	IBM i5/OS®, V5R4	IBM z/OS® Version 1, Release 7 o posterior IBM z/OSe Version 1, Release 7 o posterior	Novell SuSE Linux Enterprise Server (SLES) 10 on System z (64-bit); Red Hat Enterprise Linux (RHEL) 5 on System z (64-bit) –
Procesadores	IBM eServer™ iSeries™ 270, 810, 820, 825, 800-2464 and above, 520-0901 and above iSeries 270, 800-2464, 810-2465, and eServer i5 520-0901; models with 3100 CPW or higher are recommended.	Cualquiera de los soportados por la versión de system z utilizada	Cualquiera de los soportados por la versión de Linux en System z utilizada.



Software Multiplataforma

Lotus Sametime

Sistema Operativo	Procesador
Linux x86 <ul style="list-style-type: none">▪ Red Hat Enterprise Linux 4.0 Update 4▪ SUSE Linux Enterprise Server 10.0	Intel Pentium III 800 MHz, or higher, recommended
Microsoft Windows <ul style="list-style-type: none">▪ Windows 2000 server Service Pack 4 or later▪ Windows 2000 Advanced Server Service Pack 3 or later▪ Windows 2003 Standard and Windows 2003 Enterprise Editions Service Pack 1 or later	Intel Pentium III 800 MHz, or higher, recommended
Sun Solaris <ul style="list-style-type: none">▪ Solaris 9 and 10	UltraSPARC III 1 GHz processor, or higher recommended; UltraSPARC III 550 MHz processor minimum.
IBM i5/OS, 5722SS1, Version 5 Release 3 or later	IBM eServer iSeries, IBM eServer i5, or IBM System i5 server models capable of running IBM i5/OS V5R3
IBM eServer pSeries (AIX) <ul style="list-style-type: none">▪ AIX 5.3 Technical Level 5 (for 7.5.1 release)	Dual 475 MHz, or higher, IBM PowerPC processor recommended; Dual 375 MHz PowerPC processor minimum.



Software Multiplataforma

Lotus Quickr

Services for WebSphere Portal	Linux on x86 Windows
Services for Lotus Domino	AIX I5/OS Solaris Windows

Lotus Connections

Servidor	Red Hat Enterprise Linux® ES release 4 (Nahant Update 4) Windows 2003 server EE Windows 2003 Server SE
Cliente	Windows XP Professional SP2 SUSE Linux Enterprise Desktop 10XGL

