



IBM Systems and Technology Group University 2005

IBM Systems and Technology Group University 2005

DRAFT 1800



This presentation is intended for IBM and IBM Business Partners internal use only

© 2005 IBM Corporation



IBM Systems and Technology Group University 2005

Competing with pSeries servers against Sun

Course P12

Stig Ridler, IBM EMEA
Rick Kearns, IBM Americas

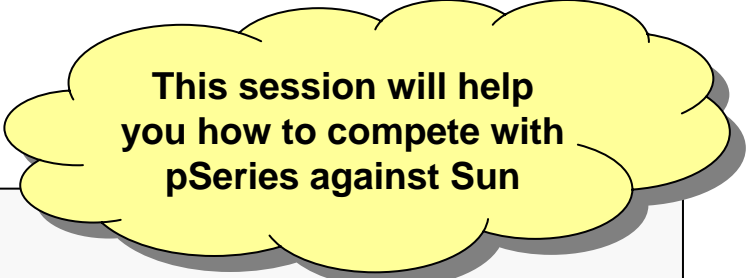


This presentation is intended for IBM and IBM Business Partners internal use only

© 2005 IBM Corporation

Why should you still bother

about Sun as a competitor in UNIX systems?



**This session will help
you how to compete with
pSeries against Sun**

Because ...

- Despite its current troubles, Sun remains a formidable player in the sale of UNIX servers
- Sun is still viewed as a technology leader - and its image is recovering
- Sun has a strong presence with key customers - specifically financial services and telecommunications
- Sun has an extremely loyal customer base – and their advocates are widespread throughout IT with the primary base of support among system administrators and programmers
- Sun is not afraid to change the “rules of the game” when competing to avoid straight up technology comparisons (e.g. performance, reliability, services and support)
- Sun is a master at marketing “futures” to freeze server sales, making it more difficult for competitors to sway technology buyers away from Sun servers. Thus, competitors become reactive rather than proactive!
- And Sun is extremely good at translating even the most trivial functionality into compelling marketing messages!
- Sun operates more effectively and aggressively when faced with adversity – a desperate company in survival mode
- Sun looks to create market trends, willing to change, willing to aggressively discount to maintain - and win - footprint
- And more than 6.000 iForce partners are strong paid to bring added value to Sun

Agenda

- **Understanding Sun's new business model and market strategy**
 - Fujitsu and AMD partnerships for hardware delivery
 - Other partnerships
- **Sun sales terminologies you need to know**
 - Solaris 10, JES/JDE, Janus, Containers, N1, Throughput Computing, etc.
- **Selling against Sun claims**
 - Sun talking points and IBM responses
 - IBM pSeries selling points
- **TCA examples of IBM p5 vs. current Sun Fire offerings**
 - Sun's processor core confusion
- **Where to get help**
- **Summary and Q&A**

Sun's new business model and market strategy

Business model

- Continued focus on operating expense reduction
- Shift away from one time to recurring revenue streams
 - Internal sales incentives on software, services, maintenance
- Provide choice in hardware and software offerings
- Rebuild partner relationships and channels
- Focus on existing customer install base

Market strategy

- Hardware has become a commodity
- Solaris 10 is a “game changer”
 - Open, free, flexible, efficient, better than Redhat
- Focus on low cost, “good enough, why change?” sales approach
- Bundle components to structure deals and push technologies
- Convince the industry that “the bad times are over”

Strategic partnerships of Sun

Fujitsu

- An expansion of the relationship between Sun and Fujitsu was announced in June 2004

AMD

- November 2003: AMD's Dirk Meyer has publicly stated that
"What we're announcing ... is a long-term strategic alliance ... which will go far beyond a relationship where we simply sell microprocessor components to Sun. We will be collaborating on a range of fronts, starting at the customer, (where) we will be engaged in joint sales and marketing activities. In addition, we will be collaborating directly on the creation of an AMD 64 or Opteron software ecosystem."

Texas Instrument

- TI is the manufacturer of Sun's UltraSPARC chips. In 2003 Sun and TI celebrated 15-year anniversary of their relationship


Other partners

- Oracle, BEA, Veritas and Hitachi

The expanded Sun/Fujitsu alliance

What is it?

- An expansion of an existing relationship between Sun Microsystems and its long-time partner and SPARC system competitor, Fujitsu Ltd.
- A joint development and delivery of future Solaris and SPARC-based systems
- The upcoming technology will predominantly be based on Fujitsu's current SPARC64 architecture
- To bring together their Solaris and SPARC-based server product lines by mid-2006 by creating a new systems family, code named Advanced Product Line (APL)
- The goal is that APL will replace today's Sun Fire and PRIMEPOWER families
- APL may be manufactured and sold by both companies. But since it mainly designed by Fujitsu, it's more likely that it will be manufactured by this company only
- The APL processor and APL servers would probably have some throughput computing concepts, but much less aggressive than the concepts embodied in the eight-core, 32 thread Niagara chip due sometime within the next 2 years
- During the transition period leading up to APL, Sun and Fujitsu will work together to quickly implement arrangements to make each other's current Sun Fire and PRIMEPOWER product lines available for distribution through both companies



Announced
June 2004

Agenda

- **Understanding Sun's new business model and market strategy**
 - Fujitsu and AMD partnerships for hardware delivery
 - Other partnerships
- **Sun sales terminologies you need to know**
 - Solaris 10, JES/JDE, Janus, Containers, N1, Throughput Computing, etc.
- **Selling against Sun claims**
 - Sun talking points and IBM responses
 - IBM pSeries selling points
- **TCA examples of IBM p5 vs. current Sun Fire offerings**
 - Sun's processor core confusion
- **Where to get help**
- **Summary and Q&A**

Sun terminology (1)

that you need to know

Throughput Computing

→ **Chip Multi-Threading (CMT)**

→ Sun's term for running multiple software threads on a single core in a processor chip, combined with having multiple cores on a single chip

→ **Niagara and Rock**

→ Future processors designed for dense core count per chip

Advanced Product Line (APL)

→ **Future replacement of current SPARC architecture**

→ Designed by Sun/Fujitsu, will (presumably) be built by Fujitsu

Sun technology (software) bundling

→ **Java Enterprise Systems (JES)**

→ Combines middleware and services as a single entity, for a single price, per employee, per year

→ **Java Desktop System (JDS)**

→ Integrated open source desktop and Sun development tools. Linux (and soon also Solaris) based alternative to Windows

→ **Free HW with SW license purchase**

→ Buy 1 year license of JES, get a free low end Opteron system

Java Card Technology

→ **Enables smart card technologies to run Java applets**

Sun terminology (2)

N1

N1 Grid is Sun's vision for optimizing network computing

- The vision is to transform the data center work into a single entity, where N1 turns siloed resources into a pool of virtual resources
- The ultimate goal of N1 is to get to service level automation based on policy
- In reality N1 is a small subset of IBM's On Demand strategy mainly focusing on the operating environment

→ **N1 Grid Blueprint article**

- Article describing the potential routes to an N1 Grid system

→ **N1 Grid Provisioning Server**

- Manage physical devices as pool of virtual resources

→ **N1 Grid Engine**

- Sun's standard grid offering

→ **N1 Grid Computing**

- Pay-Per-Use for compute resource at USD 1 / CPU / hour



On Demand

Business Transformation

Operating Environment

Application Environment

Systems Environment

Utilization

SalesPack for IBMers,
please click here!

**IBM's
e-business on demand**

SalesPack for IBM BPs,
please click here!

Sun terminology (3)

Solaris 10

New multi HW platform O/S perceived to be a potential “game changer” by installed Sun accounts (1Q05)

→ Containers

- Hybrid of partitioning and resource management tool allows physical resources to be shared by one single Solaris instance with levels of security and fault isolation

→ DTrace

- Tool for developers (and potentially administrators) to trouble shoot and tune applications in real time

→ Predictive Self Healing

- Initial delivery of error monitoring and dynamic deallocation of CPU, memory and I/O components
- SW based with no integrated hardware assist

→ FireEngine

- New network (TCP/IP) stack rewritten for improved performance

→ Security

- Some “Trusted Solaris” security features integrated into standard Solaris 10

→ Linux Interoperability (Janus)

- Run native Linux application binaries on Solaris 10 (2H05)

→ ZFS

- Integrated file system providing new automated administration, data corruption protection and virtual storage pools (2H05)

Sun terminology (4)

Solaris 10 for free - Pay for support

Subscription Based Pricing

→ Free right to use (RTU) license

- Includes an RTU license for the Solaris 10 OS for end-user commercial use
- Security fixes and update releases via web download
- Pricing: USD 0 per central processing unit (CPU) per year with registration

→ Basic Service

- Includes all free RTU features plus: all Solaris 10 updates, upgrades and fixes
- 90-days installation and configuration

→ Standard Service

- Includes all Basic Service features plus:
 - 12 x 5 phone support, one web course and optional training credits
- Pricing is USD 240 per CPU per year

→ Premium Service

- Includes all Standard Service features plus: 7x24 phone support and additional advanced technical and educational services
- Pricing is USD 360 per CPU per year

Sun

To download the Solaris Subscription Services FAQ, please click here!

IBM response

Sunrise or Sunset? Be alert for "Free" Solaris 10 attacks on Linux migrations, please click here!

Agenda

- **Understanding Sun's new business model and market strategy**
 - Fujitsu and AMD partnerships for hardware delivery
 - Other partnerships
- **Sun sales terminologies you need to know**
 - Solaris 10, JES/JDE, Janus, Containers, N1, Throughput Computing, etc.
- **Selling against Sun claims**
 - Sun talking points and IBM responses
 - IBM pSeries selling points
- **TCA examples of IBM p5 vs. current Sun Fire offerings**
 - Sun's processor core confusion
- **Where to get help**
- **Summary and Q&A**

Why Sun over IBM

Sun talking points

Many of Sun's sales tactics take a technology approach.

The objective of this session is to teach you how to respond to these messages!

Top reasons to choose Sun over IBM

- Investment protection
- Large application portfolio
- Better prototyping of solutions
- Better partitioning
- Predictable performance
- Reduce complexity
- Better RAS

Original Sun claims

Source: Sun Microsystems, June 2004

Investment protection

Sun talking point #1

Sun Investment Protection means protecting the

- **Entire Application Lifecycle**
- **Maintains 100% SW binary compatibility across server generations**
 - Sun US-III → US-IV → US-IV+ → Future UltraSPARC CMT Processors
- **Offers the Solaris Application Guarantee Program**
 - IBM does not offer
- **Sun supports Mixed Speed and Mixed Generation processors**
 - IBM does not support
- **Easy upgrade of existing hardware**
 - Upgrade to US-IV with no box swap required
 - IBM often requires a box swap

Original Sun claims

Source: Sun Microsystems, June 2004

Investment protection

IBM response to Sun talking point #1

- **IBM maintains 100% AIX and Linux SW binary compatibility across server generations**
 - POWER4 → POWER4+ → POWER5 → Future POWER6, POWER7, etc.
- **Installing slower and older generation processors takes up valuable server capacity**
 - Sun's approach penalizes the introduction of faster processors
 - IBM's balanced architecture design reduces resource count and promotes resource virtualization
- **Easy upgrades to UltraSPARC IV makes a bad problem worse**
 - Increasing processor speed without changing the infrastructure - bad
 - Doubling the core count without changing the infrastructure - worse

Throughput Computing

Sun talking point #2

- **Leap forward in throughput performance by an order of magnitude**
 - Niagara and Rock
- **Single thread performance competitive with industry leaders**
- **Sun benchmarks reflect real-world apps**
 - IBM chooses its best benchmark results regardless of relevance
- **Sun does not run single CPU benchmarks on stripped down enterprise servers**
 - IBM compares systems with different functions
- **Sun does not top every benchmark, but still reports results**
 - IBM ignores poor benchmark results
 - IBM does not compare their own systems using their same rules
 - IBM does not report a competitor's better value per benchmark
- **Sun does not design systems to be benchmarking machines.**
- **Sun's real-world application performance is its best benchmark**

Original Sun claims

Source: Sun Microsystems, June 2004

Throughput Computing

IBM response to Sun talking point #2

→ CMT - A desperate attempt

→ UltraSPARC IV is not multi-processor

→ It's just a primitive dual-core

→ Performance per core is worse per

→ Only a marketing promise! What can Sun customers really count on?

→ What value does CMT provide Sun customers between now and 2006 - 2008?

→ The first ever attempt at such an advanced architecture design

→ Does Sun have a good history of success at introducing new technology?

→ Why should customers believe that Sun can deliver what Intel, IBM and AMD consider unrealistic technology designs?

→ Real world performance

→ IBM has earned the right to promote performance results - Sun has not!

→ 50 published benchmarks on POWER5, none have been beaten!

→ Performance results across all workloads types, not selective!

For example, the performance of the new POWER5 systems wowed Sun:

"We've had folks in labs trying to tear apart their benchmarks, thinking they're doing benchmarking, not benchmarking. But the reality is the benchmarks are looking damned good," said Larry Singer, Sun's chief competitive officer.

Please see → http://techrepublic.com.com/5100-22_11-5411449.html

Industry benchmarks

Top 3 positions - December 2004

Solution	Benchmark	1st	2nd	3rd
OLTP	TPC-C V5 Single System	IBM p5 595	IBM p690	HP
BI	TPC-H 100GB v2	IBM e325	IBM OpenPower 720	Langchao
	TPC-H 300GB v2	IBM 325	HP	SGI
	TPC-H 1TB v2	HP	Fujitsu	IBM p5 570
	TPC-H 3TB v2	HP	Fujitsu	Sun
	TPC-H 10TB v2	HP	IBM p690	HP
ERP	SAP APO DP	Unisys	IBM p690	HP
	SAP SD 2 Tier R/3	IBM p5 595	Fujitsu	Sun
	SAP SD 3 Tier R/3	HP	HP	IBM p690
	SAP SD 4 Tier R/3	IBM p5 570	HP	IBM p5 570
	SAP SD 5 Tier R/3	IBM p5 570		
	SAP SD 6 Tier R/3	IBM x365	IBM p5 520	
	SAP SD 7 Tier R/3	IBM p680	IBM p680	Bull
	SAP SD 8 Tier R/3	IBM S80	IBM S80	Bull
	SAP SD 9 Tier R/3	IBM S80	IBM i840	HP
	SAP SD 10 Tier R/3	IBM x440	Dell	Dell
	SAP SD 11 Tier R/3	Unisys	Dell	IBM x430
	SAP SD 12 Tier R/3	HP	IBM p690	HP
	SAP SD 13 Tier R/3	Sun	HP	HP
	SAP SD 14 Tier R/3	IBM p5 595	Fujitsu	HP
	NotesBench R6 Mail	IBM p5 595	IBM p5 570	HP
	NotesBench R6 iNotes	IBM i890	IBM p5 570	Sun
	Microsoft Exchange 2000	Fujitsu	Racksaver	HP
	SPECsfs97_R1 V2.0	IBM p690	HP	IBM p690
	SPECsfs97_R1 V3.0	Panasas	Exanet	Exanet
Sci/Tech	SPEC OMPM2001	IBM p5 595	Fujitsu	HP
	Linpack	IBM Blue Gene/L	SGI Columbia	NEC Earthsimulator

Of the top 3 performance slots in the benchmarks tracked in the included standings **IBM has 40%**, HP has 25%, Fujitsu has 7%, Sun has 5% and Dell has 4%

For the #1 position in the benchmarks tracked in the included standings, **IBM has 63%**

For the #1 position in the tracked e-business benchmarks, **IBM has 50%**

For the #1 position in the tracked ERP benchmarks, **IBM has 77%**

Source: [IBM STG Benchmarking](#), www.ideasinternational.com/benchmark/bench.html, www.tpc.org and www.spec.org

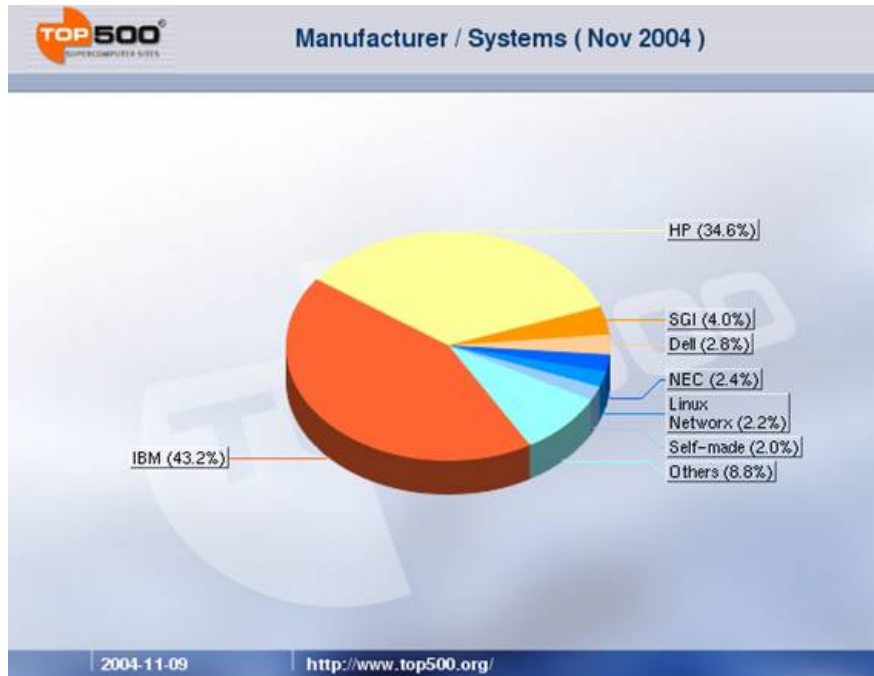
Top500

Sun's collapse

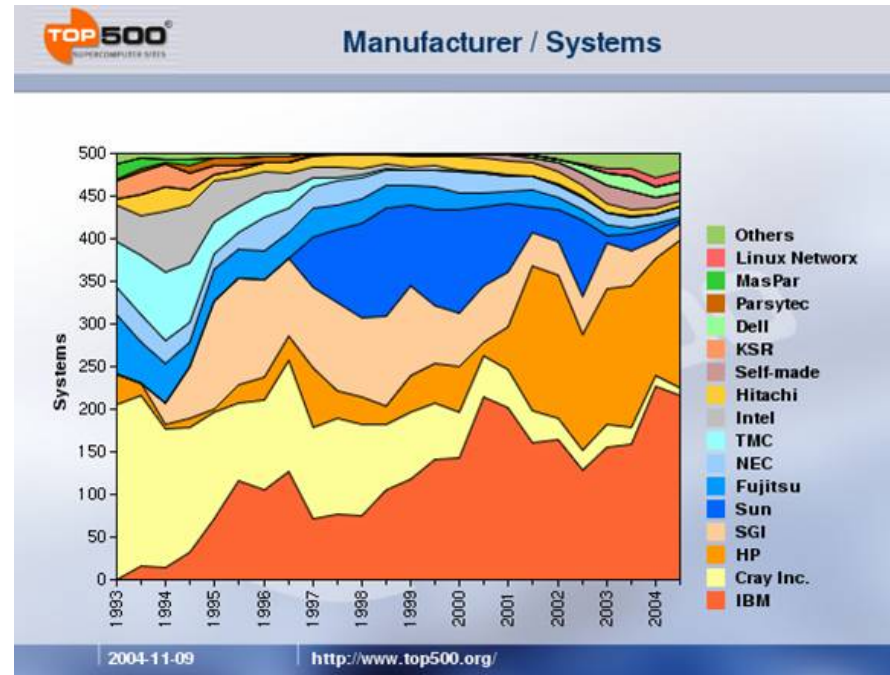
Sun once had a predominant position on the Top500 list of the world's fastest supercomputers!

Today, IBM continues to dominate the latest list with 216 of the systems.

And Sun has just about vanished from the list.



IBM reclaimed the number one spot on Top500 with a Blue Gene/L system that isn't even finished yet !



Source: www.top500.org

Solaris 10

Sun talking point #3

- **Innovation Pays**
- **Relentless Availability**
- **Extreme Performance**
- **Optimal Utilization**
- **Unparalleled Security**
- **Platform Choice**
- **Interoperable**
- **Guaranteed Application Compatibility**
- **More Than an OS**
- **World-Class Resources, Services, and Support**

- Containers
- DTrace
- Predictive Self Healing
- FireEngine (revised TCP/IP stack)
- Security
- Linux Interoperability (Janus)
- ZFS

Original Sun claims

Source: Sun Microsystems, November 2004

Solaris 10

IBM response to Sun's talking point #3

IBMers:
Selling IBM AIX 5L
Over Sun Solaris 10,
please click here!

IBM BPs:
Selling IBM AIX 5L
Over Sun Solaris 10,
please click here!

Facts

- Solaris 10 includes a number of interesting enhancements, but ...
- From an overall perspective, none of these enhancements do exceed any functionality in AIX or Linux¹⁾
- AIX offers the most advanced partitioning capabilities available today in any UNIX environment
- AIX 5.3 combined with the IBM eServer p5 family offers the best performing systems available today in any UNIX environment
- **Gartner (CIO Update March 2004):**

“By year-end 2008, AIX will increase market share and approach or pass Solaris as the No. 1 Unix operating system”

1) In particular the Linux 2.6 kernel on pSeries

Advices

- Don't let your customers get dazzled by Sun's specious Solaris 10 messages
- Acknowledge that for many operations executives the OS environment remains one of the key decision parameters
- Focus on the proven strengths of AIX and Linux on pSeries
- Refer to the overwhelming sources of third party statements who applaud the achievements of our pSeries and p5 in combination with AIX and Linux
- Be ready to talk about the future of AIX on pSeries
 - Adalio Sanchez on AIX 5L - Customer Letter (January 2004)
- **Technology**
 - Refer to interesting documents like Gartner's
 - Magic Quadrants
 - ASEM Enterprise Server Update, 2004
- **Costs**
 - Refer to ITG's reports: Value Proposition for IBM eServer p5 (This is also customer deliverables)

Gartner: 2004 ASEM Update
pSeries is ranked #2 (after zSeries)
Sun Fire is ranked #7

Source: [IBM's Worldwide Competitive Portal](#)

Why IBM over Sun

IBM response to the “Why Sun over IBM” claims

Recommended reading:
Analyst sparklers covering
pSeries, AIX and OpenPower
Please click here!

→ Large Application Portfolio

- AIX 5.2 vs. Solaris 9 **(IBM is in a good position)**
- AIX 5.3 vs. Solaris 10 **(Advantage IBM)**
- Linux on Power vs. Linux on Solaris 10 **(Clear IBM advantage vs. SPARC)** (Minor Sun (x86) advantage vs. POWER)

→ Prototyping of solutions (iForce Ready Centers)

- IBM cannot do this? Tell that to our Worldwide IBM Innovation Centers in
 - **EMEA:** Amsterdam, Bratislava, Budapest, Helsinki, Hursley, La Gaude, Moscow, Paris, Petach-Tikva, Prague, Stuttgart and Warsaw
 - **Americas:** Austin (TX), Chicago (IL), Dallas (TX), Pittsburgh (PA), San Mateo (CA), Toronto (Canada) and Waltham (MA)

→ Predictable performance

- Sun can predict that IBM will continue to dominate their SPARC based performance for years to come

→ Reduce complexity

- Sun connects IGS billable hours to pSeries complexity
- Hmmmm - isn't IGS Sun's largest customer?

→ RAS

- Sun is just getting into the game with error detection (via software) announcements in Solaris 10
- Ask Sun to show their numbers!

IBM pSeries

Selling points summary

→ General

- IBM's pSeries is by many analysts, industry watchers and customers perceived as the leading server platform in the UNIX space
- IBM pSeries is a proven on demand platform based on POWER technology, a stable roadmap and ongoing R&D investments
- The pSeries family represents a superb platform for server consolidation
- AIX is predicted to outgrow Solaris within a few years (Gartner, March 2004)



→ Performance

- IBM's POWER processors are far more powerful than Sun's ailing UltraSPARC technology
- IBM's pSeries has demonstrated excellent performance with a large number of standard industry benchmarks while Sun avoids publishing results that are comparable to competitor systems
- IBM pSeries provides well-balanced system performance opposed to Sun's old fixed-speed bus architecture
- POWER5 supports simultaneous multi-threading which helps utilizing unused CPU cycles



→ Virtualization and partitioning

- IBM pSeries provides a rich virtualization environment for on demand computing with the Virtualization Engine and micro-partitions (up to 254 LPARs)
- Virtual Ethernet (VLAN), Virtual Storage, Shared Ethernet adapters and Partition Load Manager



→ Reliability, availability and serviceability (RAS)

- IBM's POWER based systems feature mainframe-inspired autonomic computing functionality such as First Failure Data Capture (FFDC) and many other self-healing capabilities
- All these features together make the members of the p5 family highly reliable and minimize costly unplanned downtime
- The p5 systems have capability to determine which part or component needs repair and can phone IBM Global Service to provide precise parts for maintenance at a time acceptable to the client



→ Operating systems and applications

- All members of the pSeries family concurrently supports AIX 5L and Linux and applications at varying OS release levels
- A rapidly growing number of over 4,500 applications are certified on AIX 5L 5.2 today
- AIX 5L 5.3 has an aggressive ISV adoption plan and is already supported on application solutions from leading ISVs such as: Oracle, IBM DB2, SAP, SAS, BEA, Tuxedo, Tivoli, DB for Siebel and PeopleSoft



→ Prices and Total Costs of Acquisition (TCA)

- All the members of the pSeries family provide competitive total costs of acquisition (TCA)
- As IBM's per processor performance is by far higher than Sun's, this results in significant software savings compared to equivalent Sun configurations
- The p5 570 offers a "Pay as you grow" modular architecture and with a few exceptions all pSeries systems offers various forms of CoD programs that are far more comprehensive compared to Sun



Agenda

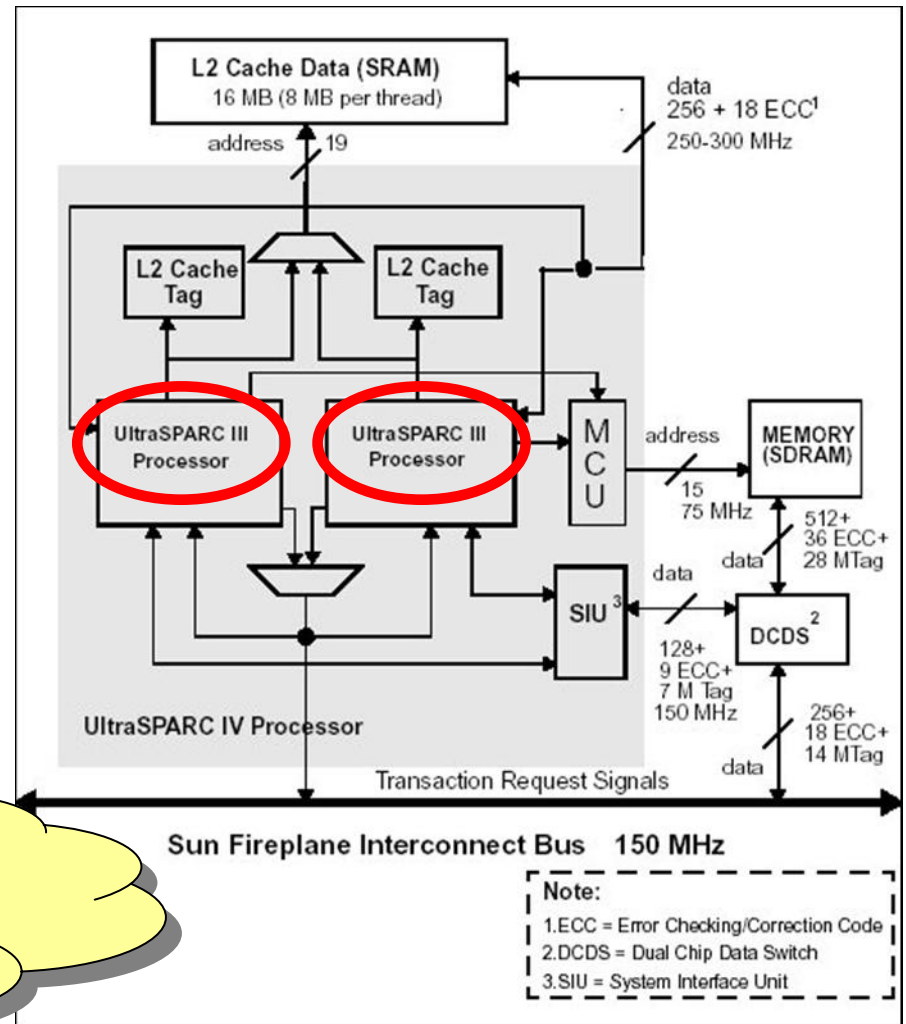
- **Understanding Sun's new business model and market strategy**
 - Fujitsu and AMD partnerships for hardware delivery
 - Other partnerships
- **Sun sales terminologies you need to know**
 - Solaris 10, JES/JDE, Janus, Containers, N1, Throughput Computing, etc.
- **Selling against Sun claims**
 - Sun talking points and IBM responses
 - IBM pSeries selling points
- **TCA examples of IBM p5 vs. current Sun Fire offerings**
 - Sun's processor core confusion
- **Where to get help**
- **Summary and Q&A**

Sun's processor core confusion (1)

The UltraSPARC IV architecture

US-IV compared to US-III

- The first US-III based Sun server was introduced in September 2000 while the first Sun servers that used the so-called Sun Fireplane (bus interconnect) were introduced in March 2001
- Today, Sun is reusing this old bus interconnect running at a fixed speed of 150 MHz in the US-IV architecture
- On one US-IV chip, there are two US-III processor cores
- Sun claims that their dual core chip is a single processor with two threads (pipelines)
- Many ISVs charge per-processor
- In the US-III there are 8 MB L2 cache available to the processor on the chip
- In the US-IV processor the L2 cache is now 16 MB but it is not shared between the US-III cores. Each core can only access 8MB of this L2 cache
- Another key point: There is only one path from the chip to the cache. So where each US-III processor had its own path to its own cache, each US-III core in the US-IV processor has to share a path while accessing its own cache. This is a potential bottleneck!



Oracle's Jacqueline Woods on licensing, multicore servers in Computerworld (October 2004)

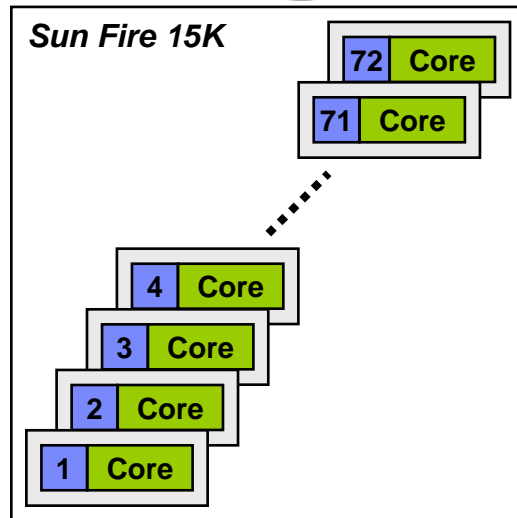
"A core is equal to a CPU, and all cores are required to be licensed. Therefore, if you have a dual-core processor, you are required to have two processor licenses"

Source: Sun Microsystems, February 2004

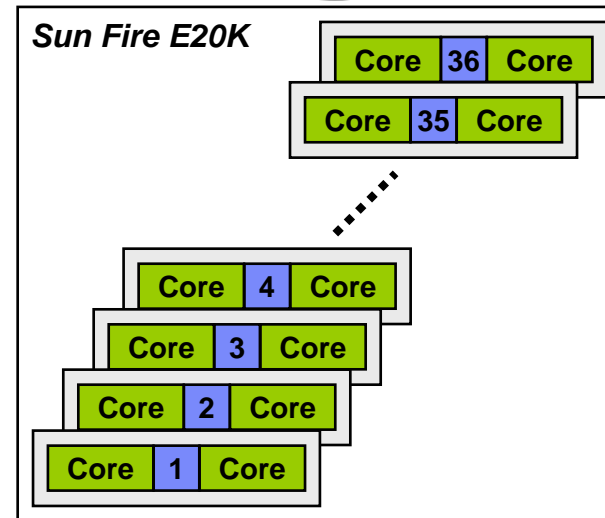
Sun's processor core confusion (2)

In conjunction with benchmarks

In 2003, Sun published an SAP SD 2-tier result of **5.775** users on a 72-way US-III based Sun Fire 15K



In 2004, Sun published an SAP SD 2-tier result of **5.050** users on a so-called 36-way US-IV based Sun Fire E20K



In the first result, each core was identical to an US-III processor
 In the second result, each core is now called an US-III pipeline
 Sun claims that US-IV doubled the per-processor performance of US-III
 The fact is that the per-core performance appears to be less

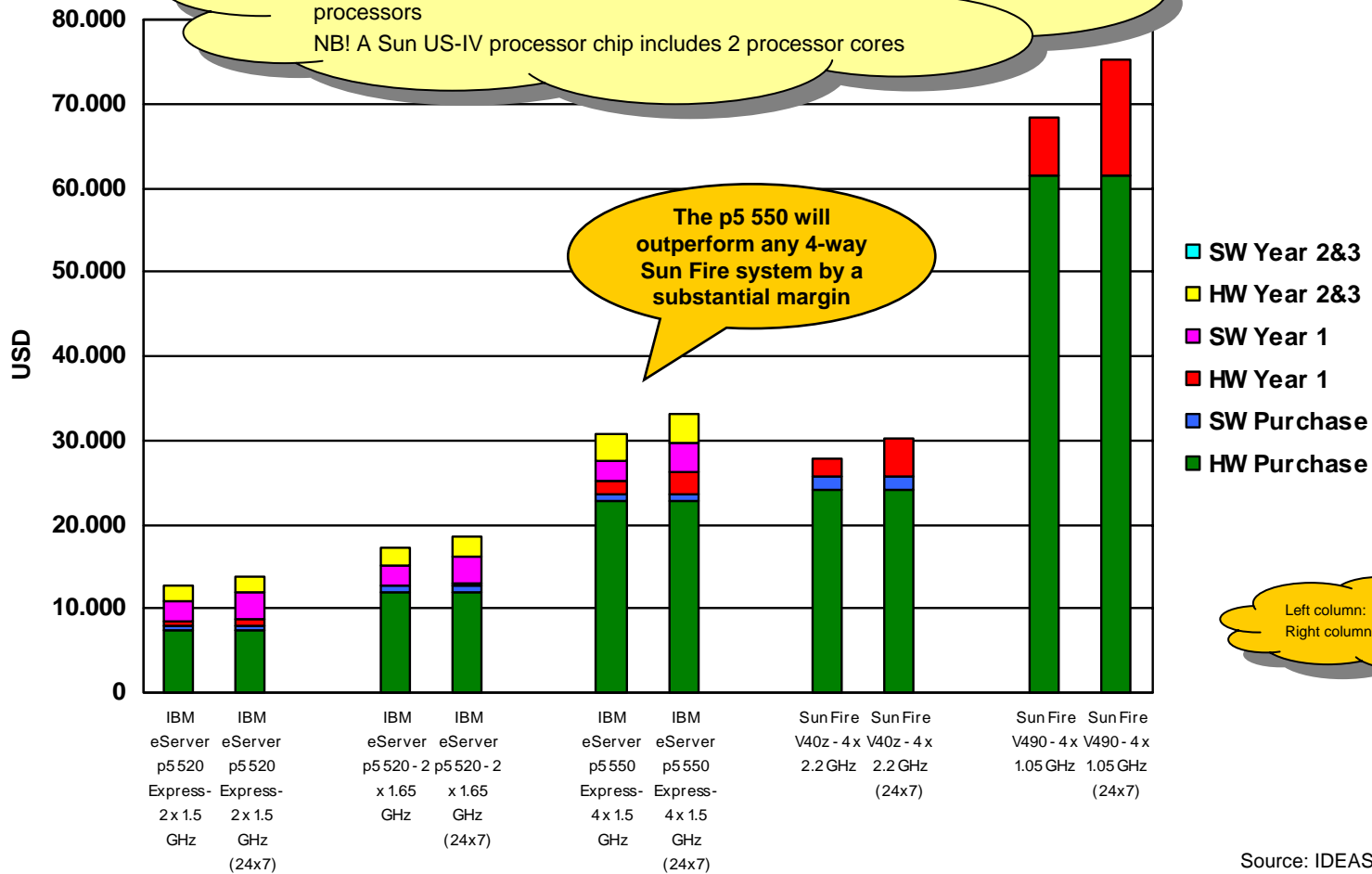
Source: www.sap.com/benchmark

3-year Costs Of Acquisition

IBM eServer p5 (2 and 4-way) vs. Sun Fire (4-way)

Comparison criteria:
Equivalent performance

According to a majority of industry benchmarks it's reasonable to assume that every time we need one POWER5 processor to meet a designated performance requirement, Sun will need 2 processors
NB! A Sun US-IV processor chip includes 2 processor cores



Left column: SLA = Same day
Right column: SLA = 24x7

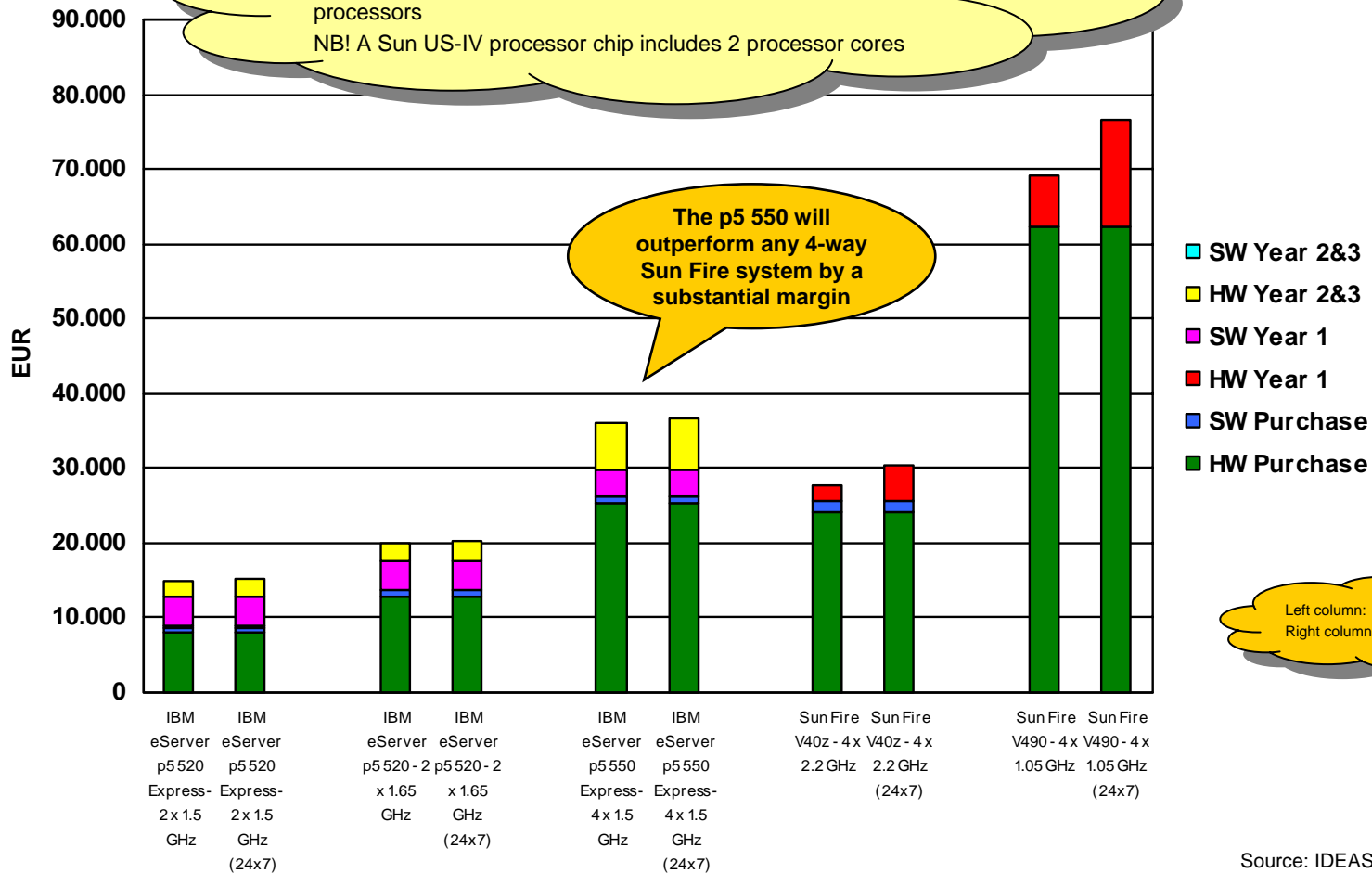
Source: IDEAS International, November 2004

3-year Costs Of Acquisition

IBM eServer p5 (2 and 4-way) vs. Sun Fire (4-way)

Comparison criteria:
Equivalent performance

According to a majority of industry benchmarks it's reasonable to assume that every time we need one POWER5 processor to meet a designated performance requirement, Sun will need 2 processors
NB! A Sun US-IV processor chip includes 2 processor cores



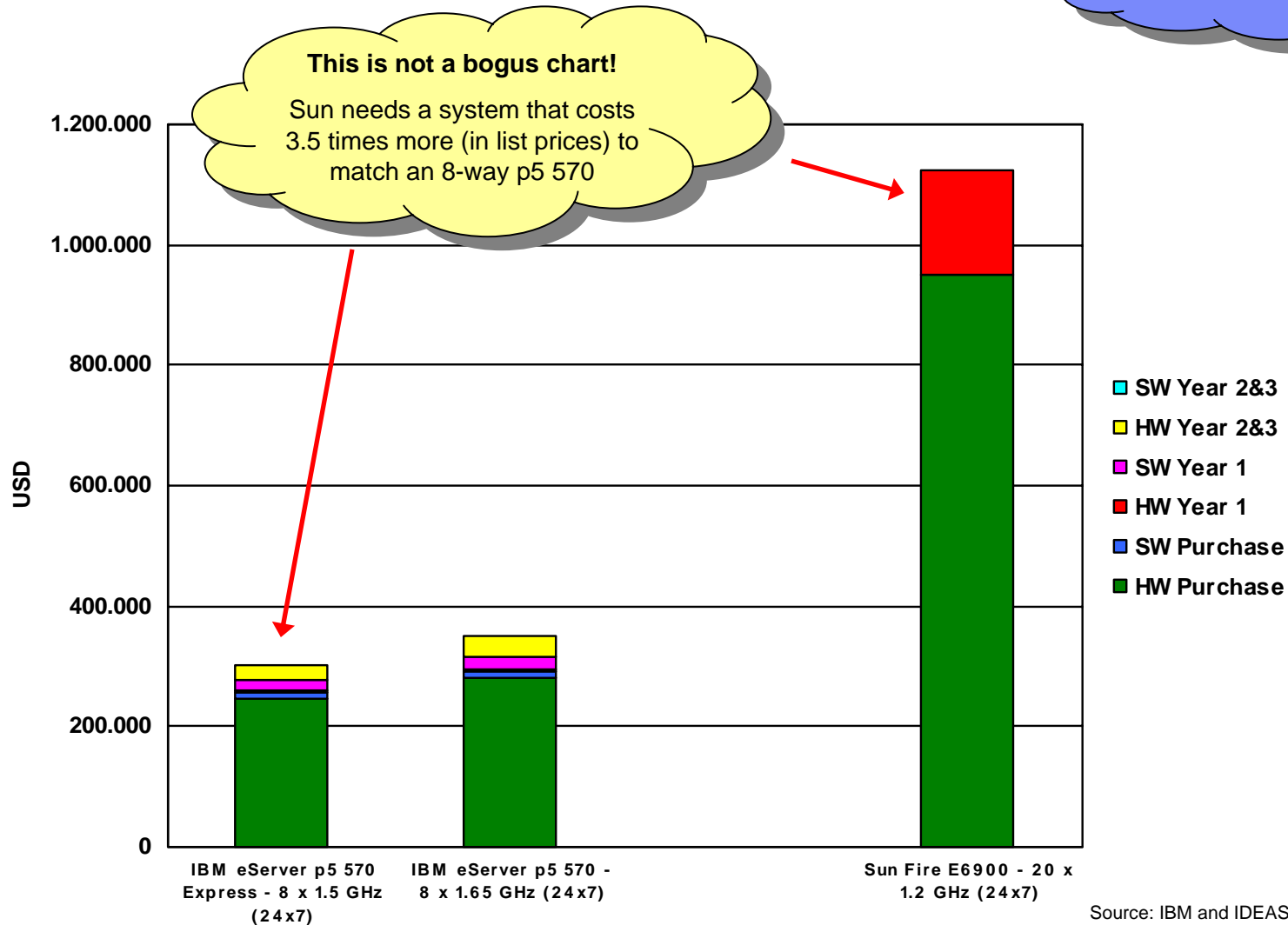
Left column: SLA = Same day
Right column: SLA = 24x7

Source: IDEAS International, November 2004

3-year Costs Of Acquisition

IBM eServer p5 570 vs. Sun Fire E6900

Comparison criteria:
Equivalent performance

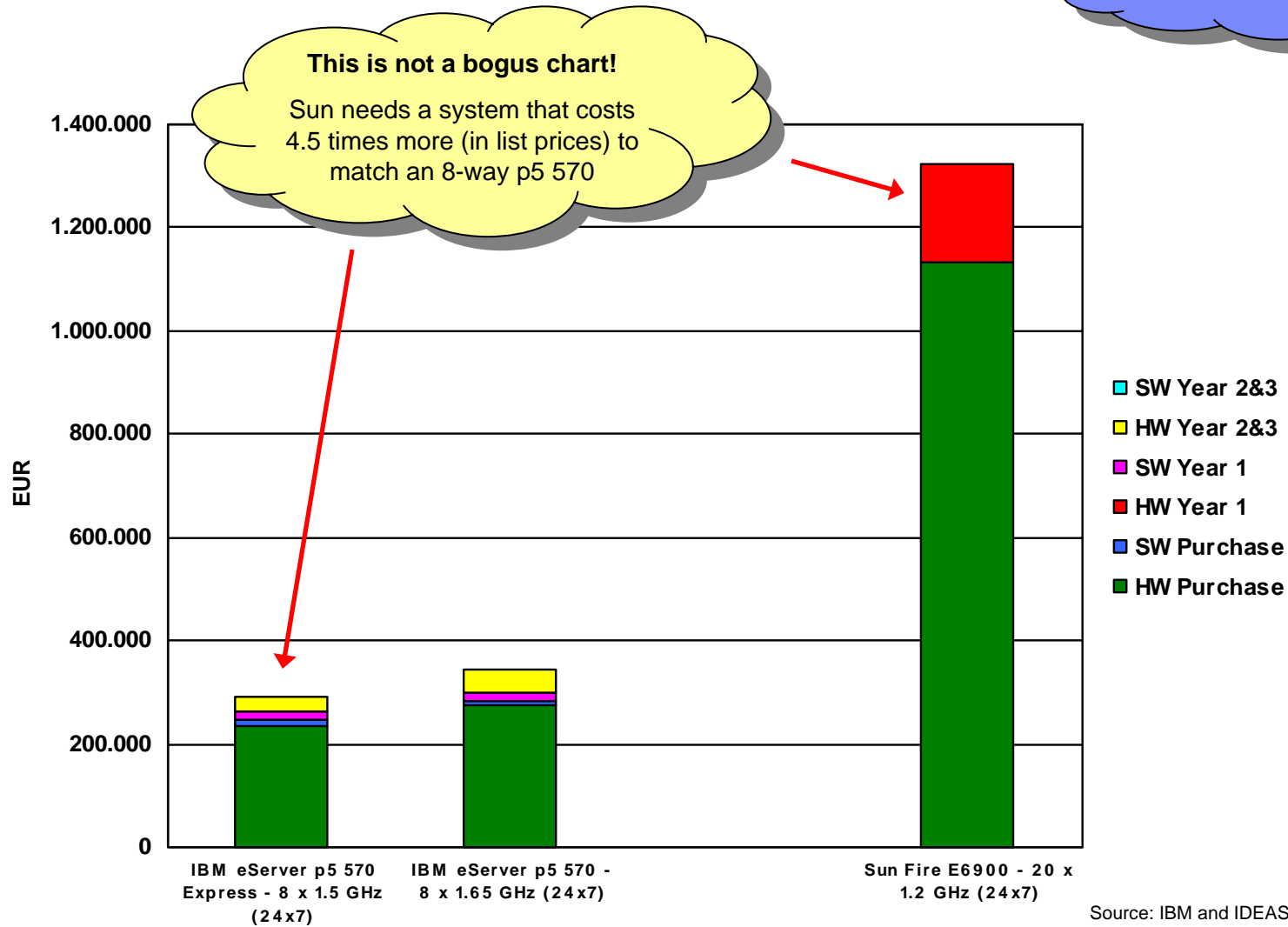


Source: IBM and IDEAS International, November 2004

3-year Costs Of Acquisition

IBM eServer p5 570 vs. Sun Fire E6900

Comparison criteria:
Equivalent performance



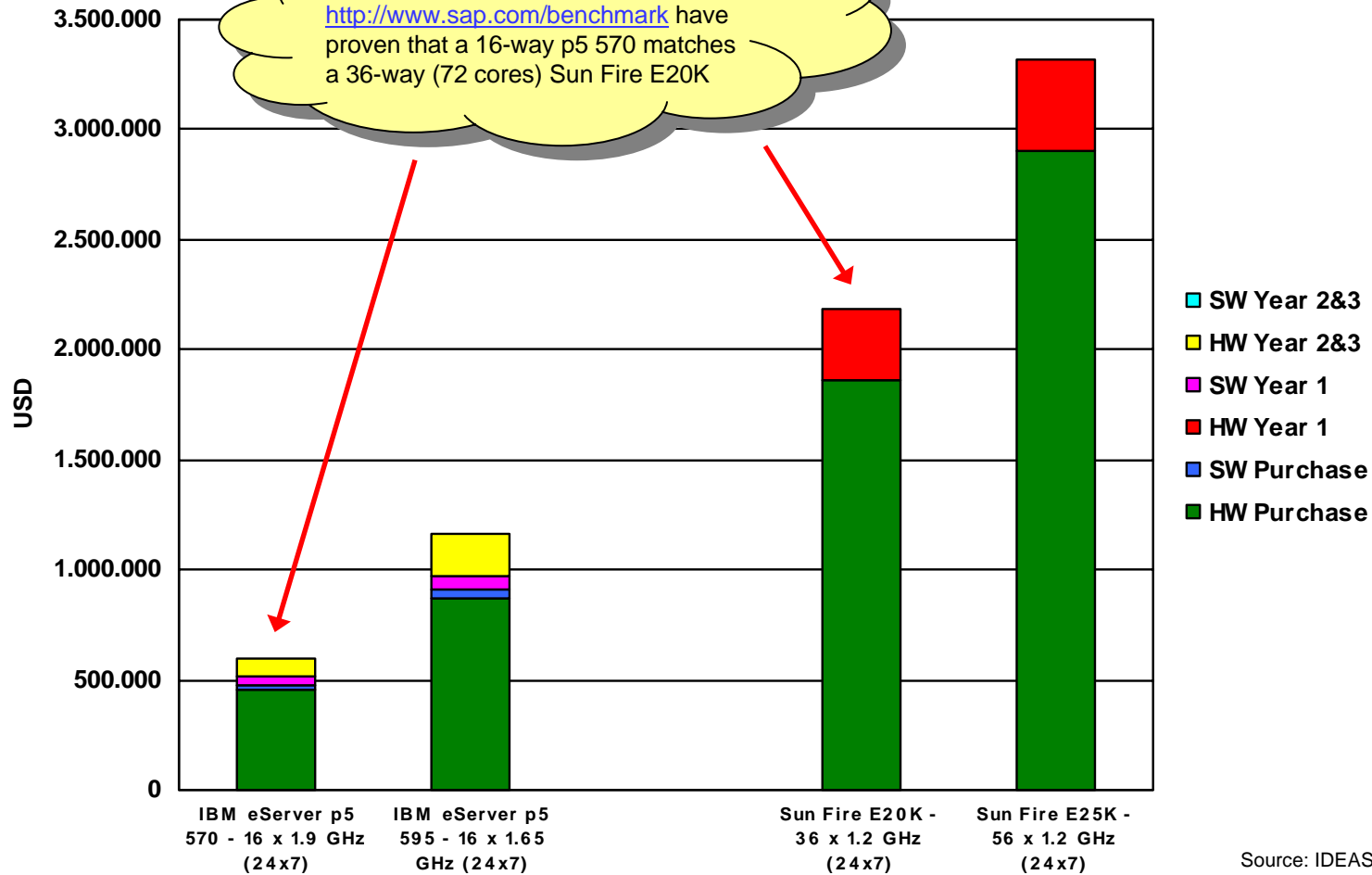
Source: IBM and IDEAS International, November 2004

3-year Costs Of Acquisition

IBM eServer p5 570 and p5 595 vs. Sun Fire E20K

Comparison criteria:
Equivalent performance

SAP SD 2-tier results published on <http://www.sap.com/benchmark> have proven that a 16-way p5 570 matches a 36-way (72 cores) Sun Fire E20K



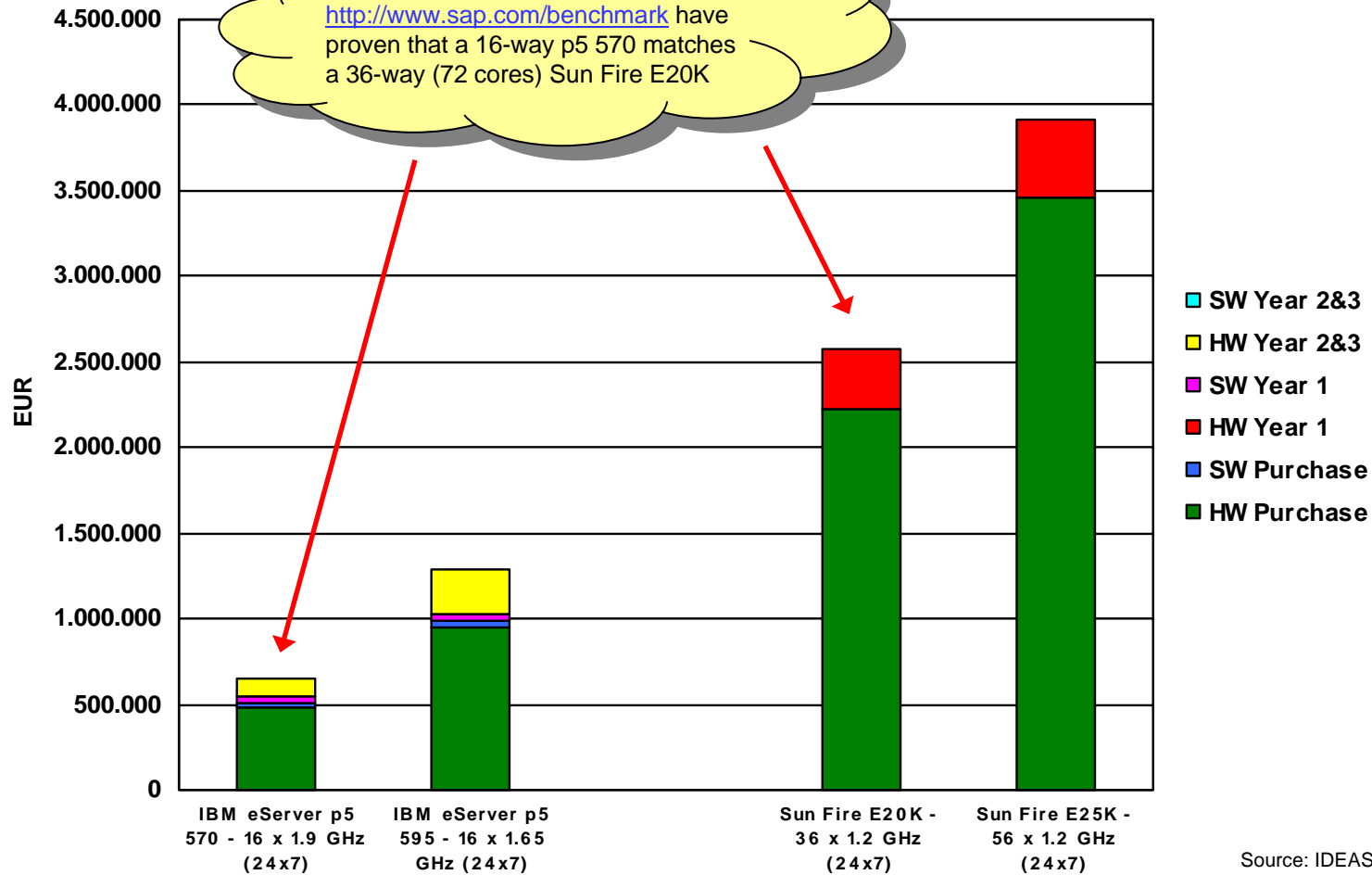
Source: IDEAS International, November 2004

3-year Costs Of Acquisition

IBM eServer p5 570 and p5 595 vs. Sun Fire E20K

Comparison criteria:
Equivalent performance

SAP SD 2-tier results published on <http://www.sap.com/benchmark> have proven that a 16-way p5 570 matches a 36-way (72 cores) Sun Fire E20K



Source: IDEAS International, November 2004

Agenda

- **Understanding Sun's new business model and market strategy**
 - Fujitsu and AMD partnerships for hardware delivery
 - Other partnerships
- **Sun sales terminologies you need to know**
 - Solaris 10, JES/JDE, Janus, Containers, N1, Throughput Computing, etc.
- **Selling against Sun claims**
 - Sun talking points and IBM responses
 - IBM pSeries selling points
- **TCA examples of IBM p5 vs. current Sun Fire offerings**
 - Sun's processor core confusion
- **Where to get help**
- **Summary and Q&A**

How to use "Competitive Profiles"

Product Name	Date
Xeon Processors	15-Oct-03
3GHz and 3.2GHz Xeon Processors	15-Oct-03
WER4+ Processors	15-Oct-03
ARC-III Cu Processors	15-Oct-03
...	14-Oct-03
3GHz Xeon Processors	13-Oct-03
...	10-Oct-03
...	7-Oct-03
...	7-Oct-03
...	29-Sep-03
...	26-Sep-03
...	23-Sep-03

10 steps

- Step 1: Connect to the "Third Party Tools" on IBM's WW Competitive Portal
 IBMers → <http://w3-3.ibm.com/sales/competition/compdlib.nsf/pages/third+party+tools>
 BPs → <http://partners.boulder.ibm.com/src/compdlib.nsf/pages/BPThirdPartyTools>
- Step 2: When you are connected to the third party tools webpage, please click on the CPSystems icon and follow the procedure described below (IBM BPs will connect directly to CPSystems and can go to step 4)
- Step 3: Under the Full Analysis Interface please click on Servers
- Step 4: You may change the country in the menu bar
- Step 5: Click on Products in the menu bar
- Step 6: Point at Product Families and expand the submenu Sun followed by e.g. Workgroup Server
- Step 7: Select e.g. the Sun - Fire V440
- Step 8: You may change the configuration concerning the number and the type of the processors
- Step 9: Add or deselect competitive systems
- Step 10: Press the Analyse button

IBM pSeries

Competitive sales tool

Up-to-date competitive information at your fingertips, no matter where you are. Provides links to more competitive information!

IBMers:

To download the tool, please click here!

IBM BPs:

To download the tool, please click here!

→ pSeries product overview

- Systems management
- BladeCenter
- Options and services

→ Provides sales tips by product

- Overcoming objections
- Selling up and options
- Selling solutions and key solutions by product

→ Covers

- Competing vs. Sun and HP
- pSeries AIX and Linux advantages

IBM information repositories

Including competitive information



→ IBM EMEA: Competitive e-Learning modules

Recent examples:

→ Sun's and HP's February 2004 announcements

<http://lt.be.ibm.com/services/weblectures/dlv/Gate.wss?handler=Component&sequence=7&action=load&customer=ibmintra&offering=silv&category=&itemCode=ltu5168f>

→ Microsoft Sales Kit Q4 2004

<http://w3-03.ibm.com/sales/competition/compdlib.nsf/67a4d5eda4eb7e11c1256ad50036e9f0/74c9aab4de3ba1a4c1256f4700570873>

→ IBM Americas: Competitive Lunch & Learn call series

Recent example:

→ Competing against Sun

http://w3-1.ibm.com/sales/systems/portal/_s.155/254?navID=f220s240&geoID=All&prodID=pSeries&docID=esedamcomp1104

→ IBM's Worldwide Competitive Portal (COMP)

→ Intranet: <http://w3.ibm.com/sales/competition>

Third party tools: <http://w3.ibm.com/sales/competition/compdlib.nsf/pages/third+party+tools>

Business partners: <http://partners.boulder.ibm.com/src/compdlib.nsf/Pages/BPCOMP>

→ IBM Systems Sales

→ Intranet: <http://w3.ibm.com/sales/systems>

Business partners: <http://www-1.ibm.com/partnerworld/sales/systems>

Where to get help

- In EMEA, BPs and IBM sales can contact the EMEA CompeteCenter

Phone: +45 4523 4450

Mail: comp@dk.ibm.com

Intranet IBM: <http://cmisc.dk.ibm.com>

- In the Americas, contact Competeline for sales support

Phone: 1-888-426-5525 Option 4

Mail: compline@us.ibm.com

Intranet: <http://w3-1.ibm.com/support/americas/competeline.html>

BPs: Phone: 1-800-426-9990

Mail: pwcs@us.ibm.com (Subject: Competeline Request)

Summary

- Sun will give away hardware to create recurring revenue streams
- When forced to discuss hardware, Sun will talk CMT futures or AMD
- Solaris 10 will be the focal point of conversation with customers
- When forced to discuss Linux, Sun will position Solaris as a better alternative
- When IBM sets the focus points of the sales evaluation, we win
 - Performance
 - Virtualization
 - RAS



stig.ridler@dk.ibm.com

rkearns@us.ibm.com

Backup charts

DHBA documents of particular interest

pSeries versus HP, Sun and Fujitsu systems

→ ***HP Servers vs pSeries: Attack Points*** (August 2004)

Intranet: <http://w3-3.ibm.com/sales/competition/compdlib.nsf/67a4d5eda4eb7e11c1256ad50036e9f0/32e673e2d43529dc87256981005da04a>

Business partners: <http://partners.boulder.ibm.com/src/compdlib.nsf/e76114986a71a6b3c1256afd002167a7/32e673e2d43529dc87256981005da04a>

→ ***Sun Servers vs pSeries: Attack Points*** (August 2004)

Intranet: <http://w3-3.ibm.com/sales/competition/compdlib.nsf/67a4d5eda4eb7e11c1256ad50036e9f0/1e1d88979a27f84585256c980056ee58>

Business partners: <http://partners.boulder.ibm.com/src/compdlib.nsf/e76114986a71a6b3c1256afd002167a7/1e1d88979a27f84585256c980056ee58>

→ ***Fujitsu PRIMEPOWER vs IBM pSeries Offerings*** (November 2004)

Intranet: <http://w3-03.ibm.com/sales/competition/compdlib.nsf/67a4d5eda4eb7e11c1256ad50036e9f0/2c4865d888fa2a5485256f4200541190>

Business partners: <http://partners.boulder.ibm.com/src/compdlib.nsf/b1de31203d77e106c1256afc003f0863/2c4865d888fa2a5485256f4200541190>

Useful information

For system administrators and developers

- **White paper: *Migrating Solaris to AIX*** (July 2003)
http://www-106.ibm.com/developerworks/eserver/pdfs/solaris_AIX22.pdf

- **Red book: *AIX Reference for Sun Solaris Administrators*** (September 2002)
<http://www.redbooks.ibm.com/redbooks/pdfs/sg246584.pdf>

- **Red book: *AIX 5L Porting Guide*** (July 2001)
<http://www.redbooks.ibm.com/redbooks/pdfs/sg246034.pdf>

- **Red book: *Developing and Porting C and C++ Applications on AIX*** (June 2003)
<http://www.redbooks.ibm.com/redbooks/pdfs/sg245674.pdf>

- **Competitive "command" overview - *UNIXguide.net*** (August 2003)
<http://www.unixguide.net/cgi-bin/unixguide.cgi>

pSeries versus Sun Fire

Key features - Overview (Mid-range and high-end)

System	IBM eServer p5 550	IBM eServer p5 570	IBM eServer p5 590/595	Sun Fire E2900	Sun Fire E4900	Sun Fire E6900	Sun Fire E20K / E25K
<i>Form Factor</i>	4U	4 - 16U	System cabinet	12U	18U	System cabinet	System cabinet
<i># of CPUs</i>	4	2 - 16	32 / 64	12	12	24	36 / 72
<i>Processor Clock Speeds</i>	POWER5 1.65 GHz	POWER5 1.5, 1.65 and 1.9 GHz	POWER5 1.65 and 1.9 GHz	US-IV 1.05 and 1.2 GHz	US-IV 1.05 and 1.2 GHz	US-IV 1.05 and 1.2 GHz	US-IV 1.05 and 1.2 GHz
<i>Memory</i>	1 - 64 GB	2 - 512 GB	8 GB - 1 TB / 2 TB	8 - 96 GB	8 - 96 GB	8 - 192 GB	8 - 288 / 16 - 576 GB
<i>Internal Storage</i>	1.17 - 15 TB 8 - 104 disks	0.8 - 38 TB 6 - 264	9.3 / 14 TB 128 / 192 disks	144 GB 2 disks	144 GB 2 - 4 disks	144 GB 2 - 4 disks	219 GB 2 or 3 disks
<i>PCI Slots</i>	5 - 61 PCI-X	6 - 164 PCI-X	20 - 160 PCI/PCI-X	6 PCI	8 - 16 PCI	8 - 32 PCI	4 - 36 / 4 - 72 PCI
<i>I/O Drawers</i>	8	8 - 20	1 + 7 / 11	No	No	No	No
<i>Native Linux Support</i>	Yes	Yes	Yes (LPAR)	No	No	No	No
<i>Partitioning</i>	40 LPARs ¹⁾	160 LPARs ¹⁾	254 LPARs ¹⁾	No	2 domains	4 domains	9 / 18 domains
<i>Announced</i>	July 2004	July 2004	October 2004	February 2003 February 2004	March 2001 February 2004	March 2001 February 2004	October 2001 February 2004

¹⁾ Micro-Partitions

Source: IBM and Sun, November 2004

pSeries versus Sun Fire

Key features - Overview (Low-end)

<i>System</i>	IBM eServer p5 520	IBM eServer p5 550	Sun Fire V210	Sun Fire V240	Sun Fire V440	Sun Fire V490	Sun Fire V20z	Sun Fire V40z
<i>Form Factor</i>	4U	4U	1U	2U	4U	5U	1U	3U
<i># of CPUs</i>	2	4	2	2	4	4	2	4
<i>Processor Clock Speeds</i>	POWER5 1.65 GHz	POWER5 1.65 GHz	US-IIIi 1.0 GHz	US-IIIi 1.0 and 1.28 GHz	US-IIIi 1.0, 1.28 and 1.593 GHz	US-IV 1.05 GHz	Opteron 1.6, 1.8, 2.2 and 2.4 GHz	Opteron 1.6, 1.8, 2.2 and 2.4 GHz
<i>Memory</i>	1 - 32 GB	1 - 64 GB	0.5 - 8 GB	0.5 - 8 GB	4 - 16 GB	Up to 32 GB	1 - 16 GB	1 - 32 GB
<i>Internal Storage</i>	1.17 - 8 TB 8 - 56 disks	1.17 - 15 TB 8 - 104 disks	292 GB 2 disks	584 GB 4 disks	292 GB 4 disks	292 GB 2 disks	292 GB 2 disks	876 GB 6 disks
<i>PCI Slots</i>	7 - 34 PCI-X	5 - 61 PCI-X	1 PCI	3 PCI	6 PCI	6 PCI	2 PCI-X	7 PCI-X
<i>I/O Drawers</i>	4	8	No	No	No	No	No	No
<i>Native Linux Support</i>	Yes	Yes	No	No	No	No	No	No
<i>Partitioning</i>	20 LPARs ¹⁾	40 LPARs ¹⁾	No	No	No	No	No	No
<i>Announced</i>	July 2004	July 2004	April 2003	April 2003	September 2003	September 2004	February 2004	July 2004

¹⁾ Micro-Partitions

Source: IBM and Sun, November 2004

Server partitioning

Competitive overview

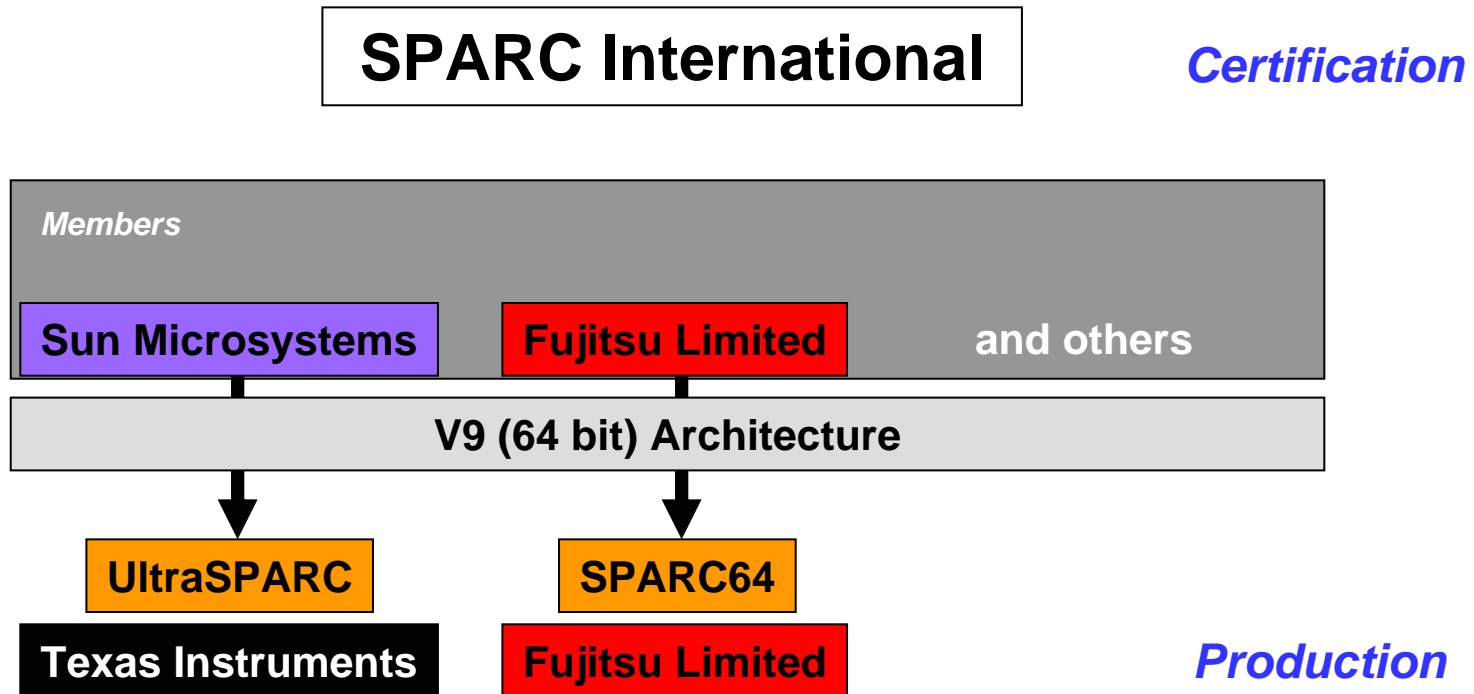
Vendor	IBM					HP		Sun	Sun	Fujitsu	Unisys	VMware
Family	xSeries (x4x5)	pSeries	iSeries	zSeries		rp, rx and Superdome		E4900, E6900, E20K and E25K	Solaris based platforms	PRIMEPOWER 900, 1500 and 2500	ES7000	Intel based servers
Solution		LPARs	LPARs	LPARs		nPars	vPars	Domains	Containers	XPARs		
Implementation	HW	Hyper-visor	Hyper-visor	Hyper-visor	SW	HW	SW	HW	SW	HW	HW	SW
Operating system	Windows, Linux	AIX, Linux	OS/400, Linux	z/OS, z/VM, Linux	z/VM, z/OS, Linux	HP-UX		Solaris	Solaris ¹⁾	Solaris	Windows, SCO UnixWare	Windows, Linux, FreeBSD
Maximum number of partitions	2	20 - 160	32	30	> 10.000	2 - 16	4 - 128	2 - 18	2 - 18	8 - 15	8	Up to 64
Granularity (Minimum number of processors per partition)	2	One-tenth	One-tenth	Small fraction of one		4 (1)	1	2 - 4	Small fraction of one (sharing the same OS instance)	2 or 4	4	Small fraction of one
Dynamic reconfiguration	No	Yes	Yes	Yes		No	Yes	Yes	Yes	Yes	No	Yes
Shared resources	None	CPUs, I/O	CPUs, I/O	CPUs, memory, I/O channels		None	None	None	None	None	None	CPUs, memory, I/O
Interpartition communication	No	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes

¹⁾ Solaris 10 and above

Source: Gartner, February 2003
IBM, HP, Sun, Fujitsu, Unisys and VMware 2004

Why was the Sun/Fujitsu agreement so obvious

The SPARC V9 architecture



Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM Trademarks, see www.ibm.com/legal/copytrade.shtml: AS/400, DBE, e-business logo, ESCO, eServer, FICON, IBM, IBM Logo, iSeries, MVS, OS/390, pSeries, RS/6000, S/30, VM/ESA, VSE/ESA, Websphere, xSeries, z/OS, zSeries, z/VM

The following are trademarks or registered trademarks of other companies

Lotus, Notes, and Domino are trademarks or registered trademarks of Lotus Development Corporation
Java and all Java-related trademarks and logos are trademarks of Sun Microsystems, Inc., in the United States and other countries
LINUX is a registered trademark of Linux Torvalds
UNIX is a registered trademark of The Open Group in the United States and other countries.
Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.
SET and Secure Electronic Transaction are trademarks owned by SET Secure Electronic Transaction LLC.
Intel is a registered trademark of Intel Corporation
* All other products may be trademarks or registered trademarks of their respective companies.

NOTES:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.

All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

References in this document to IBM products or services do not imply that IBM intends to make them available in every country.

Any proposed use of claims in this presentation outside of the United States must be reviewed by local IBM country counsel prior to such use.

The information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.