

# *Alpha Servers and Systems for the Next Millennium*

*Bringing Super Performance to  
NonStop Business Solutions*

**Compaq AlphaServer ES and DS Systems  
Faster, More Flexible Than Ever Before**



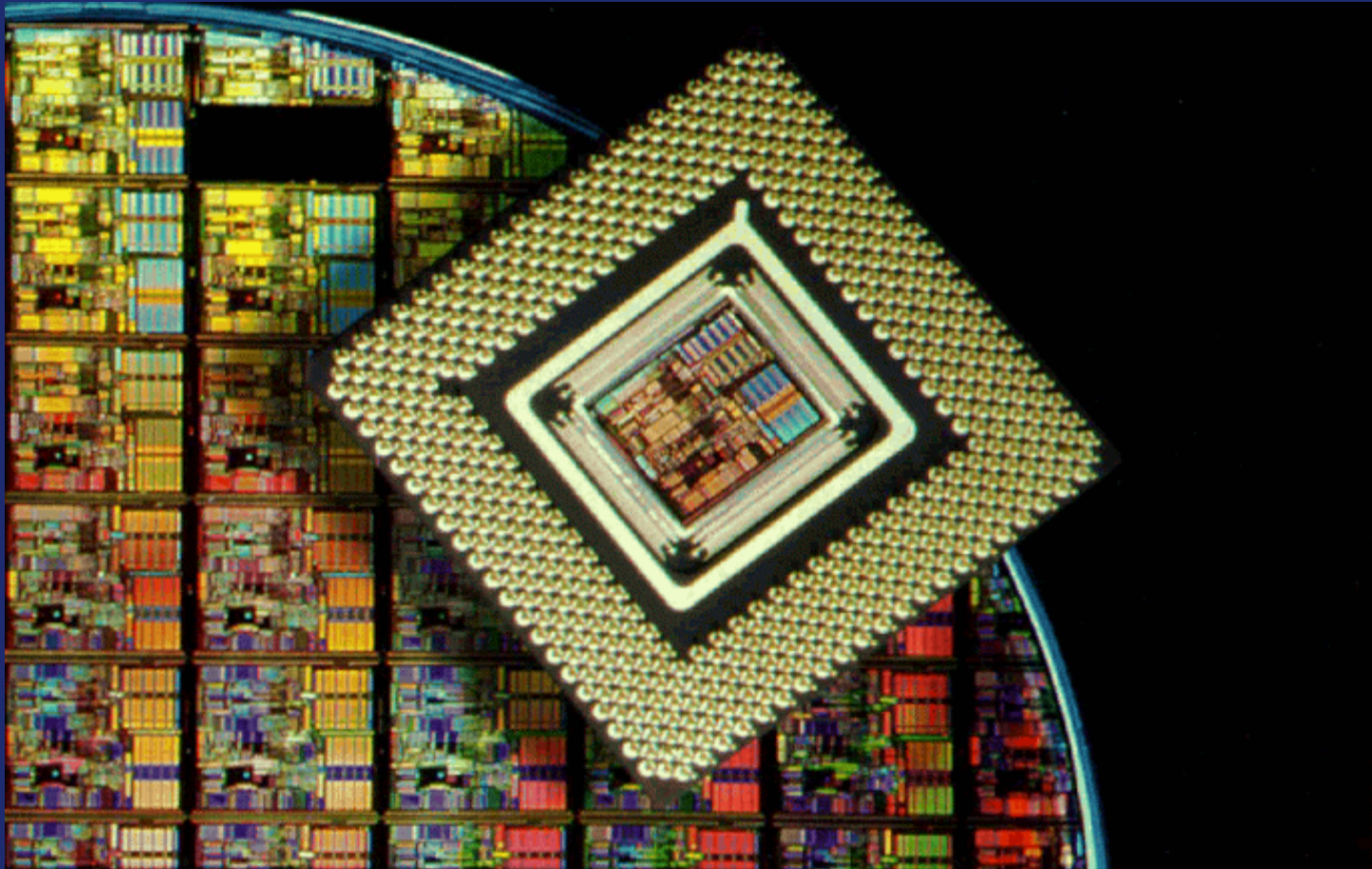
***AlphaPowered***

**COMPAQ**

Donna Korb

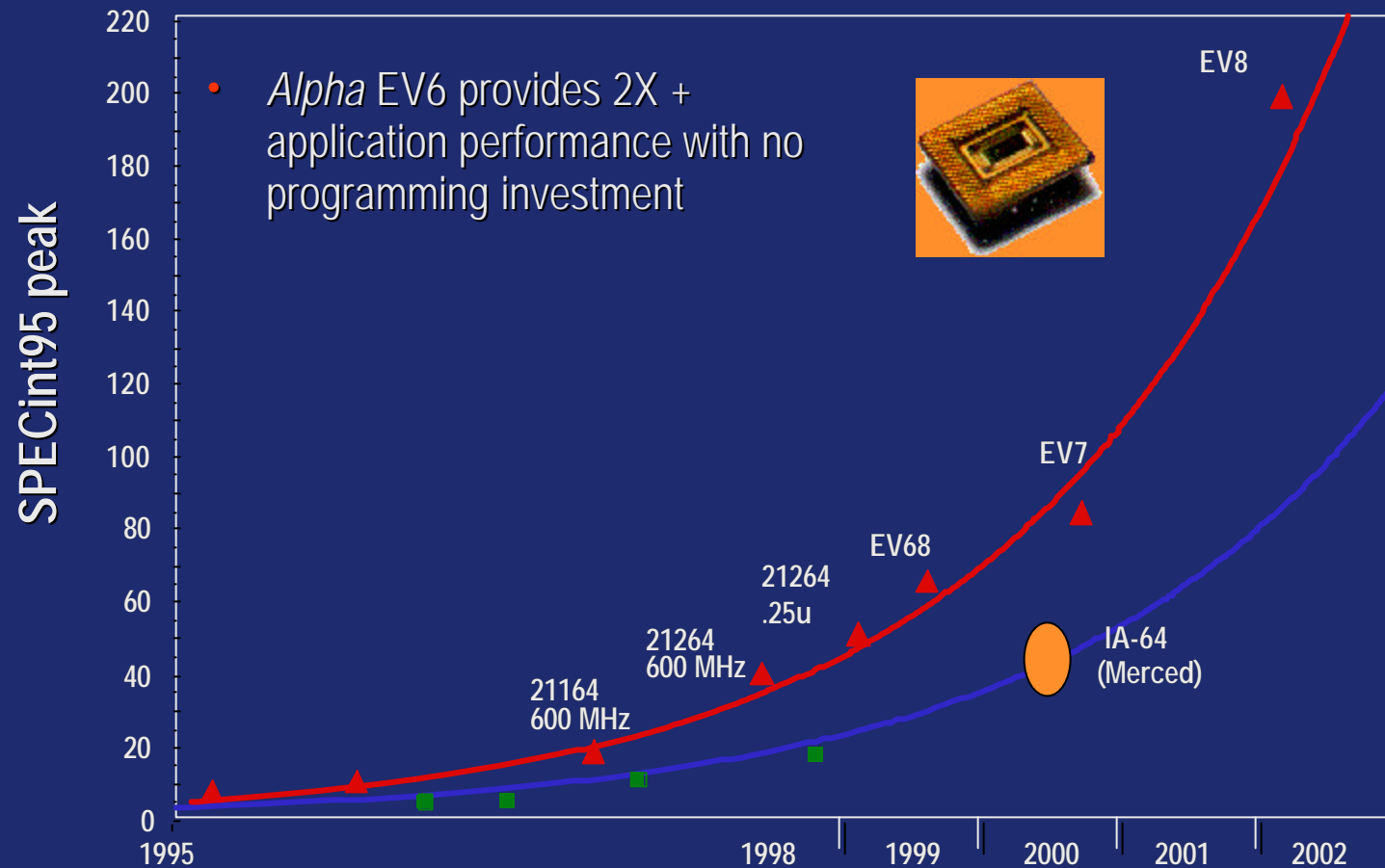
Session 108  
November 1999

# *Alpha 21264 -EV6*

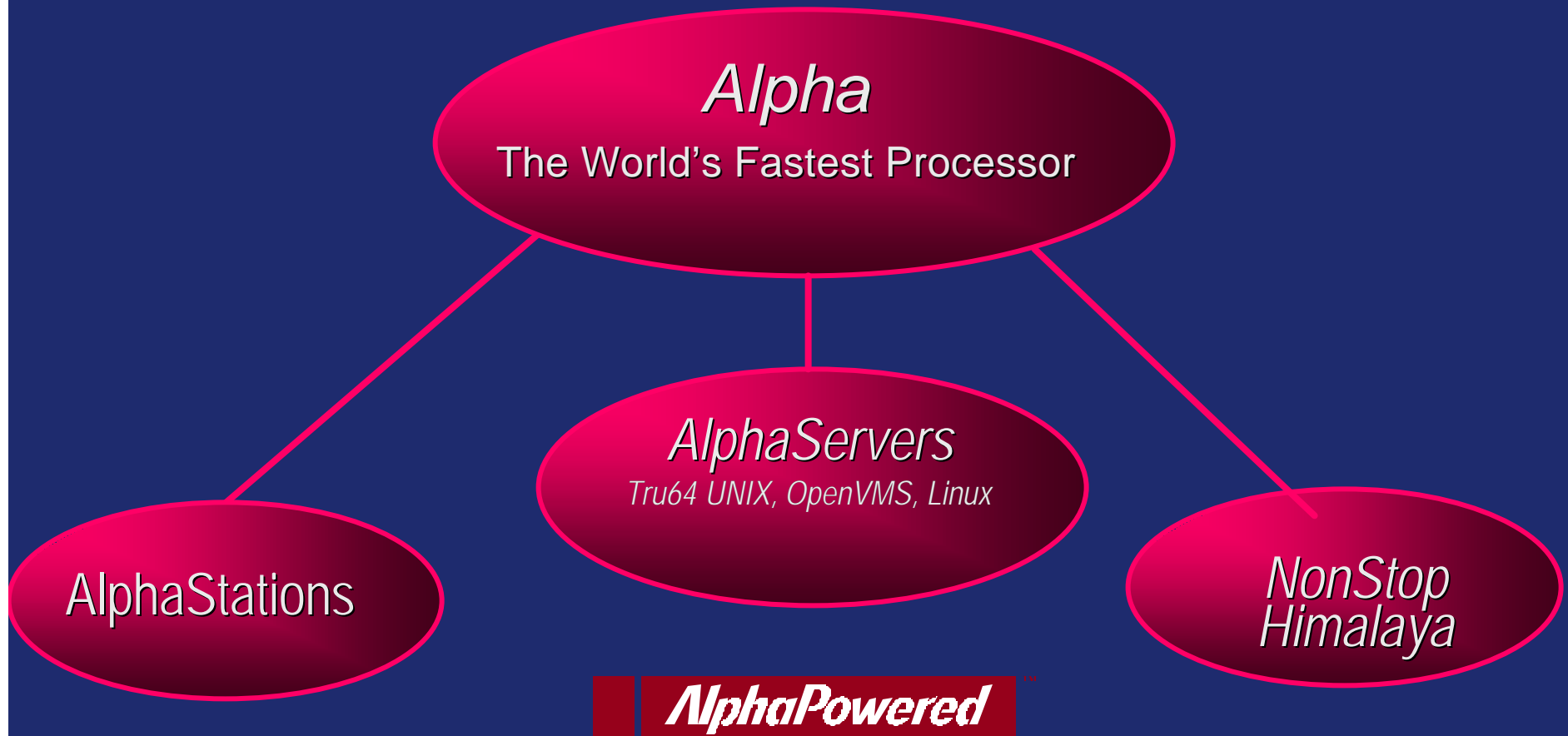


# Alpha Continues To Lead

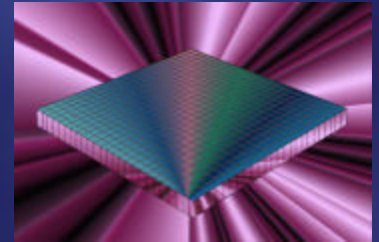
Relative Performance: Integer (SPECint95-peak)



# *Alpha is Broadly Implemented Across Compaq Product Line*



# *Q* Ongoing Alpha Momentum



- ◆ *"Over one million Alpha CPUs have been fabricated, and these processors are hard at work in more than a half a million systems."*
- ◆ *As we've said in the past, Compaq currently boasts an installed base of over 100,000 enterprise-class AlphaServers, and more than 250,000 AlphaServers in general.*
- ◆ *Our cumulative Alpha system and upgrade shipment estimate is well **above the 500,000 level.**"*

"Shannon Knows Compaq", Terry Shannon, August 1

**COMPAQ**

Better answers

# AlphaServer Strategy

- ◆ Provide family of robust, 64-bit high-performance AlphaServers, exploiting power of Alpha processor
- ◆ Meet the most demanding enterprise requirements, by offering mission-critical reliability, availability, scalability & performance
- ◆ Extend lead market share in target applications/ industries utilizing strong partnerships to optimize applications





Compaq + Alpha = Customer Success  
*Combining the strengths of the volume business model  
and leadership technology expertise*

Volume Business  
Model

- Volume business with channels and ISV's
- Simplicity and standardization
- Pricing for leadership price/performance
- Alpha chip and system partners



Customer  
Success

AlphaServer Value Proposition

- Leadership performance, reliability, & scalability
- Flexible whole product solutions with key partners
- Enterprise-class and NT-friendly UNIX and OpenVMS
- Operating system choice, including **Linux**
- Worldwide support

# Recognition for Internet Leadership

- ◆ 30% of all Internet deployments are on Compaq systems<sup>1</sup>
- ◆ Compaq Services manages the entire Microsoft Network on 1,000 ProLiant and AlphaServer systems
- ◆ Amazon.com, Netscape, Lycos, Excite, and AltaVista all run on AlphaServers



Compaq's AltaVista site holds the record for the FASTEST web server  
Compaq powers microsoft.com with 120M hits and 1.2 Tbytes of downloads everyday

Source: The Wall Street Journal, 1999



# Recognition for Internet Leadership

Compaq has the **largest Web Server** market share:



<u>Manufacturer</u>	<u>Share on 8-1-99</u>
Compaq/DEC	26.2%
Sun	12.2%
HP	10.6%
IBM	10.1%
Dell	8.7%

InfoBeads, August 1999

## *AlphaServers know growth*

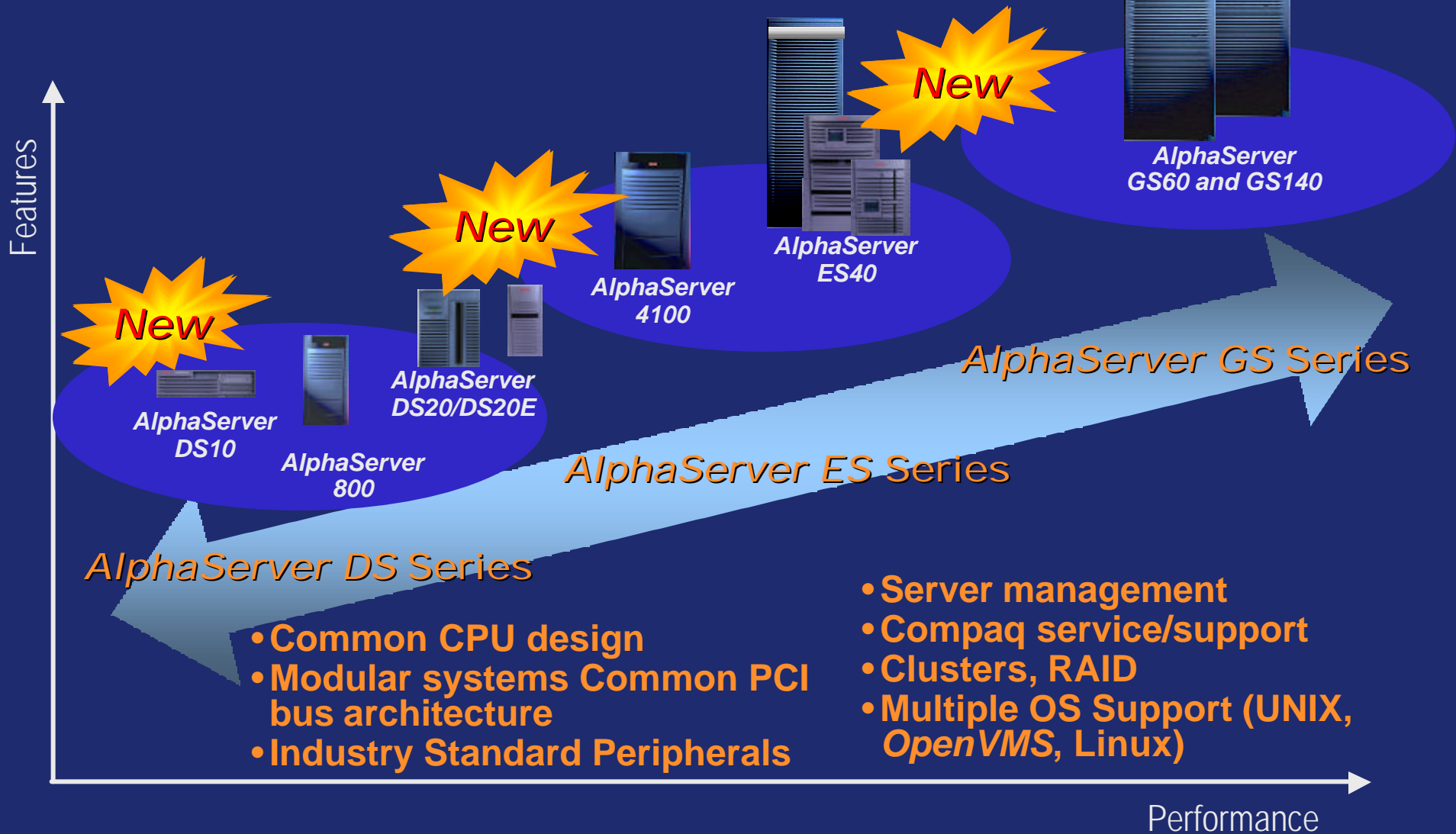


***“With the powerful Alpha architecture, we’re confident we won’t be significantly changing the configuration of our systems for the foreseeable future, even if our business were to grow two-fold to more than a million customers.”***

***Fred Nixon  
VP, Office of Technology  
Mindspring***

# AlphaServer Family Today

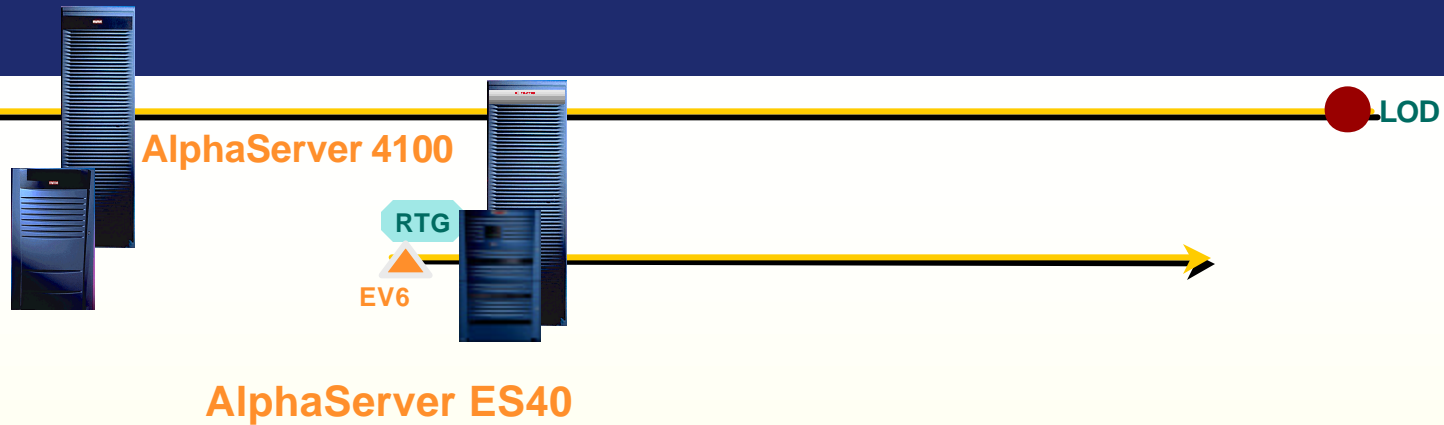
## Cross-family Product Features



# DS/ES AlphaServers Roadmap

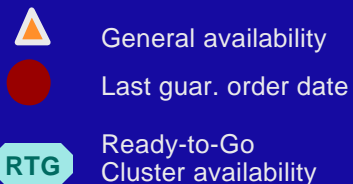
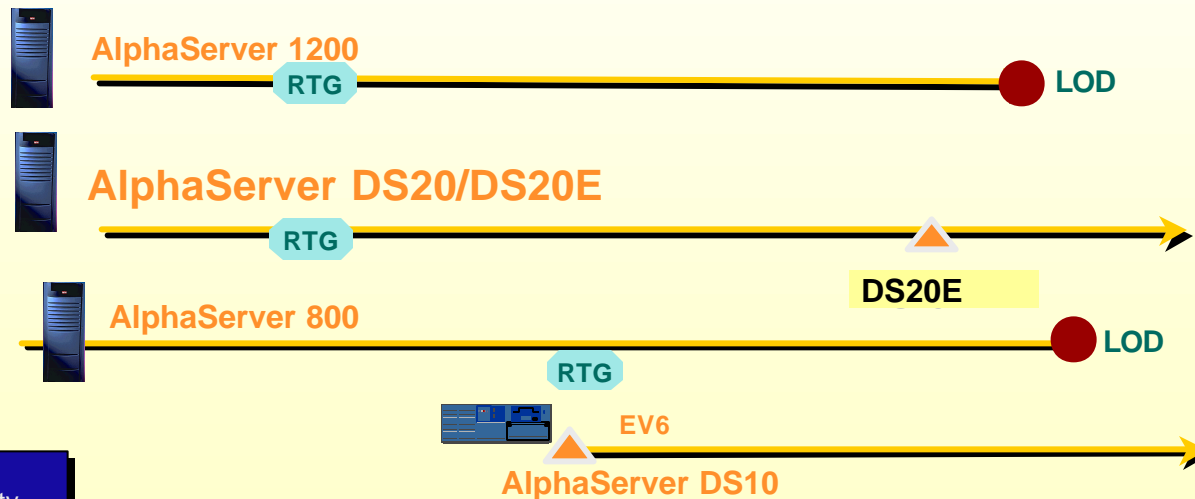
## ES - Mid-range

- 1-4 CPU systems
- Target: Enterprise applications, data warehouse, ISP and HPTC



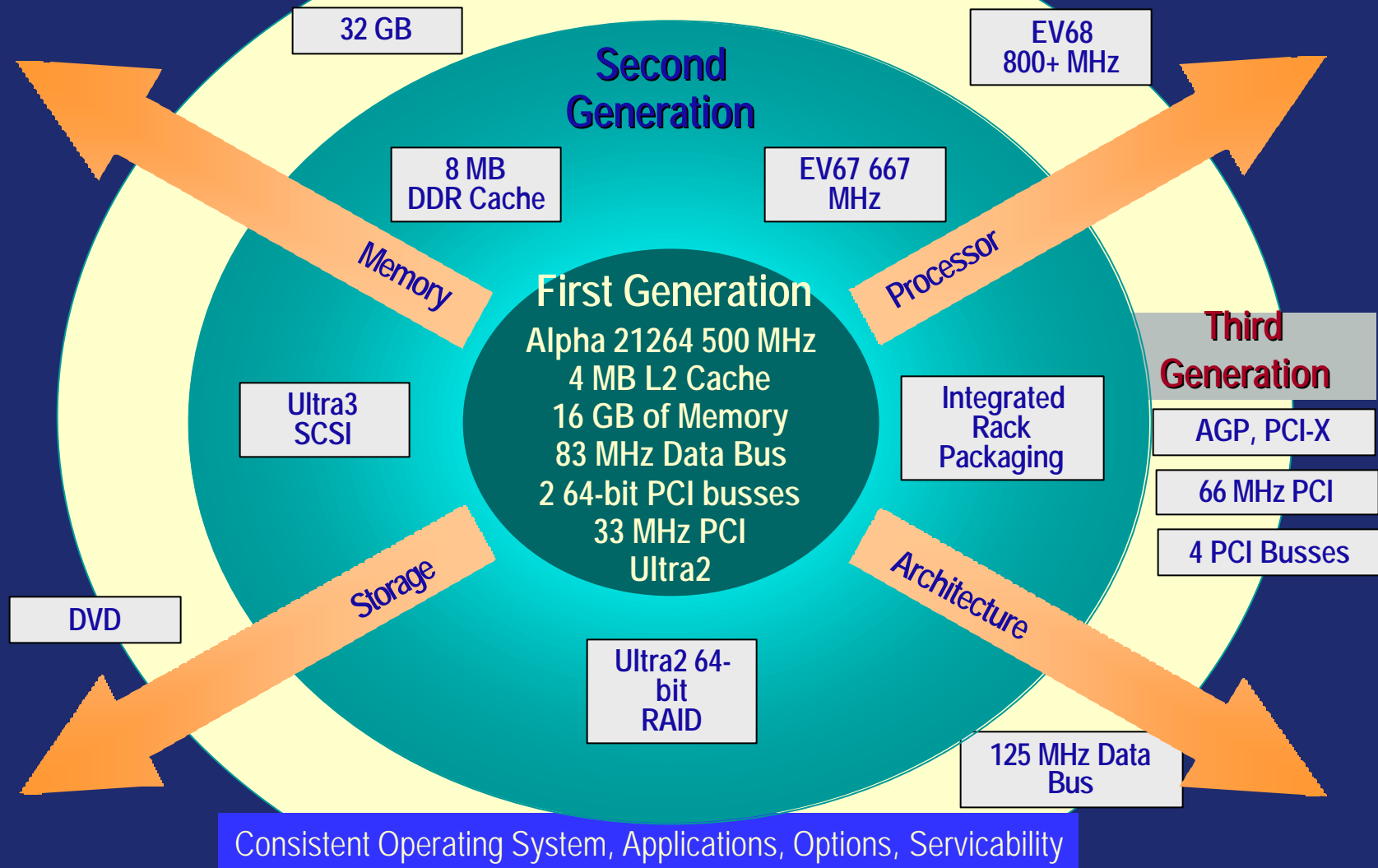
## DS - Low-end

- Uni and 1-2 CPU systems
- Target: replicated sites, dedicated applications, Internet
- HPTC
- Linux Market



Q4CY98 Q1CY99 Q2CY99 Q3CY99 Q4CY99 Q1CY00

# Starting in Q4 Second Generation Enhancements



# AlphaServer ES40

## ***Powerful Commercial Enterprise Platform***



- ◆ Manageability
  - Built-in systems management hardware and software
- ◆ High availability
  - ECC Memory
  - Hot-swap, redundant power, cooling and hot-swap disk drives
  - Remote access management
  - PCI RAID subsystems
- ◆ Flexibility
  - Start with what you need and grow
    - 1 to 4 processors
    - Up to 10 64-bit PCI slots
    - Choice of three enclosures: tower, pedestal or rack
    - Up to 1.2 TB storage in a rack
    - Up to 16 GB memory
    - Up to 66 hot-swap disk bays
    - Up to 4 chassis in a rack
  - Rack capacity for ultimate expansion and datacenter use
- ◆ Web based activeAnswers sizing and configuration tools



#1

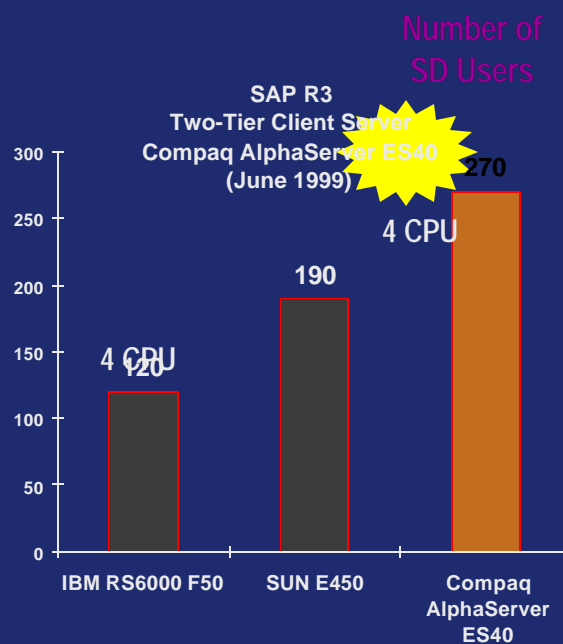
# AlphaServer ES40

*Stable Commercial Application Environment*

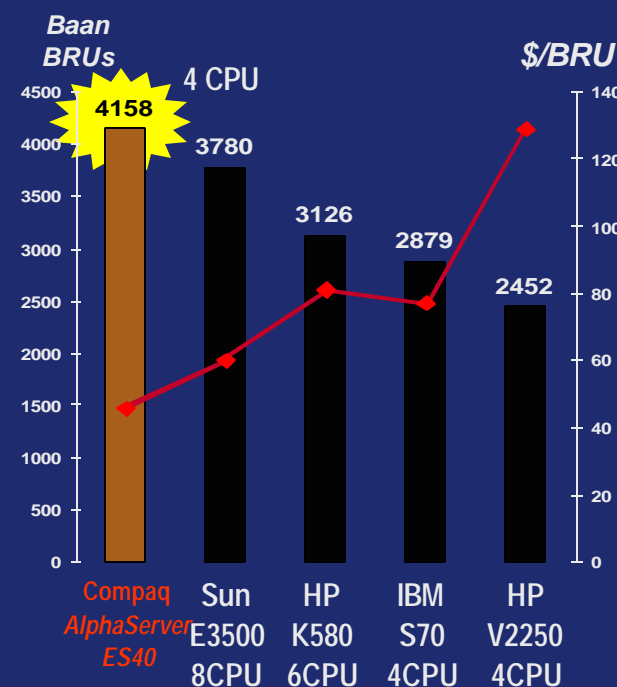
*NonStop eBusiness Platform*



SAP



Baan



# Compaq AlphaServer DS20E

## *Unleashing the Power of the Alpha 21264 Processor*



Starting under  
\$13,000

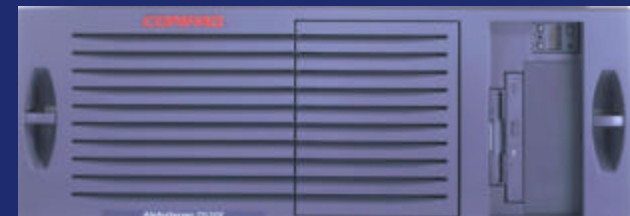
Superior performance AlphaServer in a **new standard rack & pedestal**

- 500MHz 3rd-generation Alpha 21264 processors
- Dual-processor space-saving 5U Rack or Pedestal form factor
- Performance leader for demanding compute-intensive applications
- Exceptional computing availability with hot-plug drives, fans, dual power supplies, cluster support
- *Tru64 UNIX, OpenVMS, and Linux*

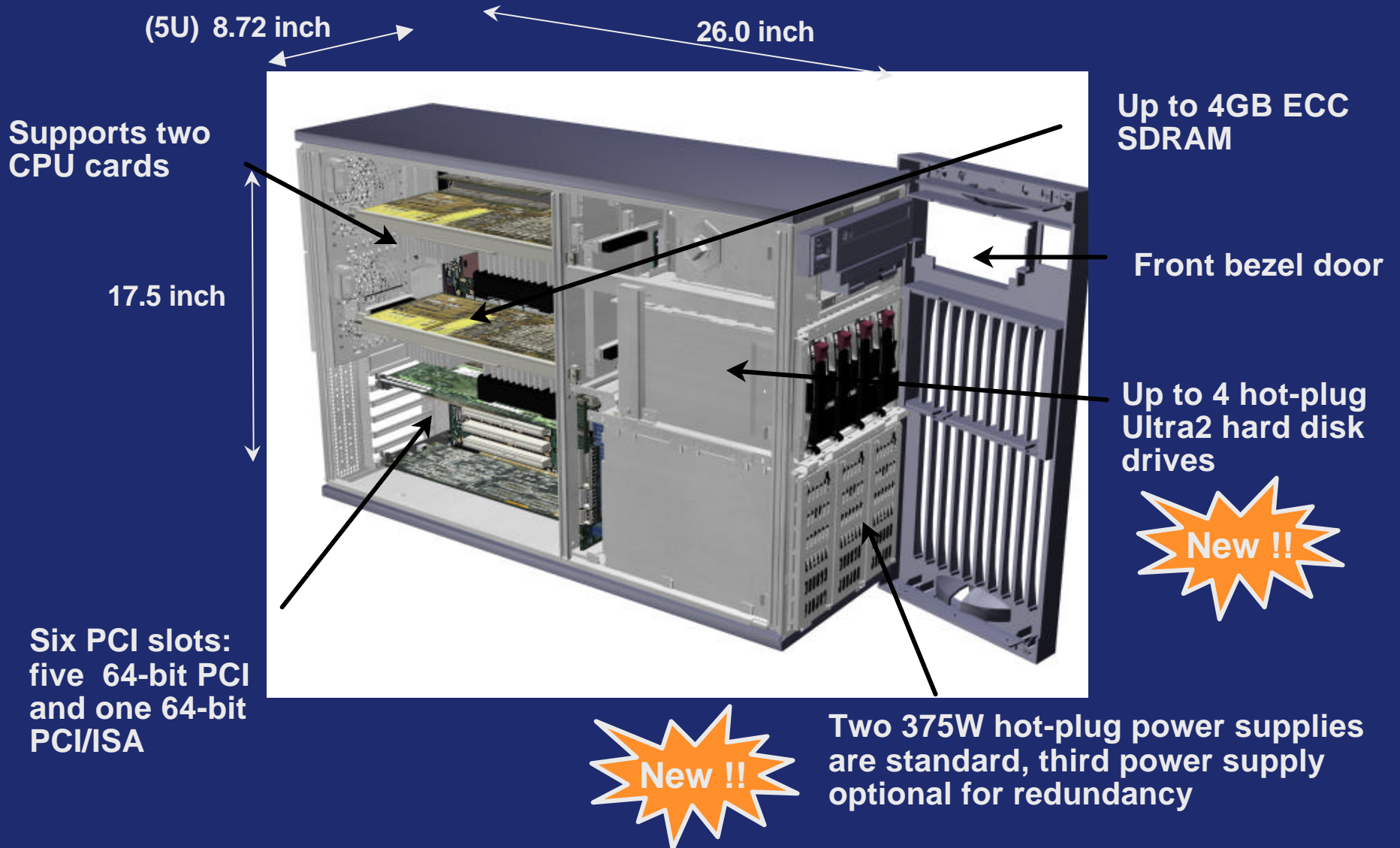
# Compaq AlphaServer DS20E

## *Large System Features at Small System Prices*

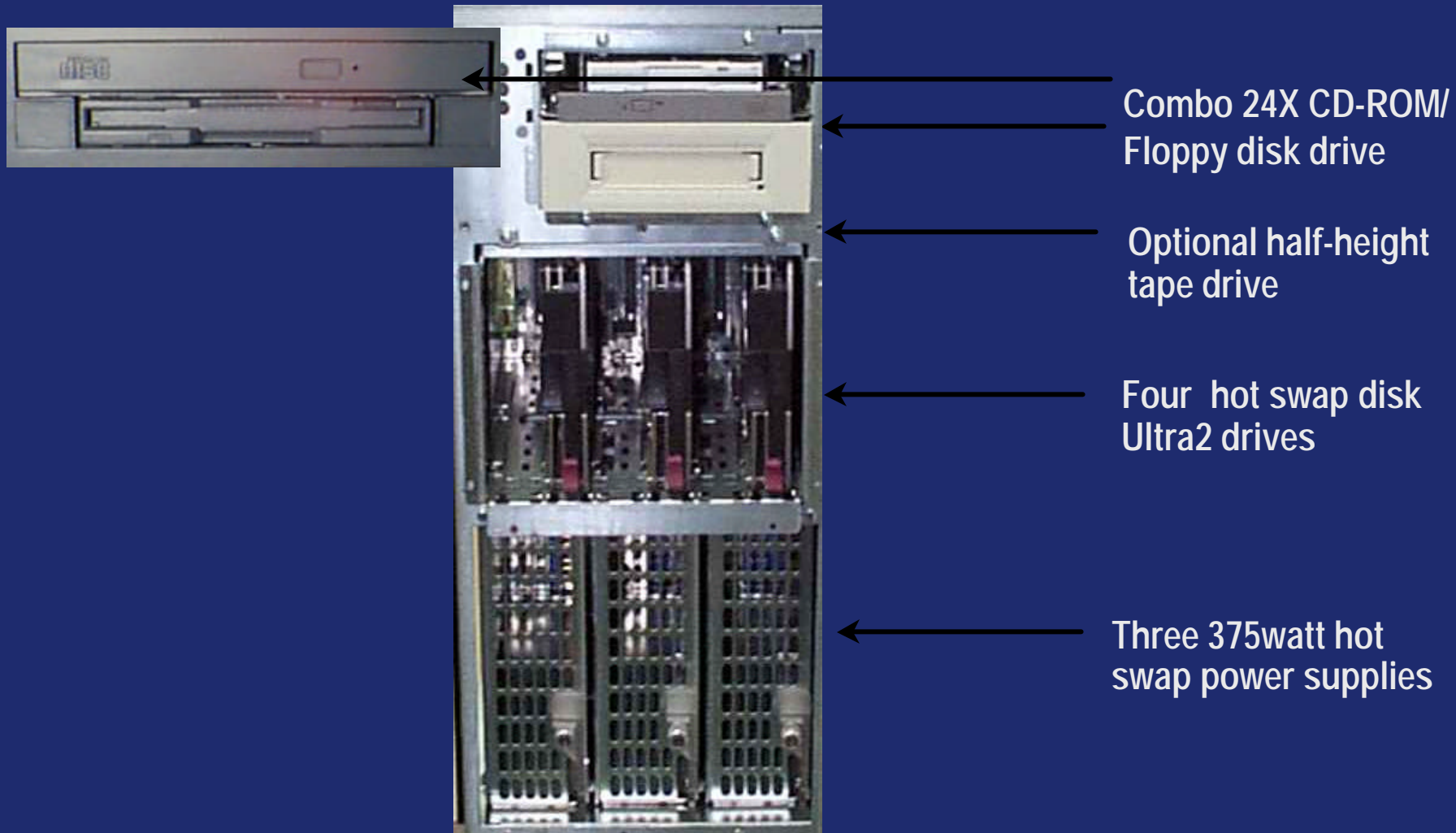
- 2-way SMP Alpha EV6 - 500 MHz w/ 4MB Cache
- Internal storage up to 72 GB
- DS20 Main Logic Board- up to 4GB memory
  - Same design as DS20
- New Enclosure - Supports both pedestal and rackmount (5U) configurations
- 6 Drive Bays (4 hot swap/2 removable)
- Combo 24X CD-ROM drive and 1.44 floppy disk drive
- Availability & Redundancy features
  - Dual Hot Swap Power Supplies (375 watt)
  - Hot Swap Cooling/Fans
  - Hot-Swap Storage, 4 HDD
- 64 bit PCI bus (5 PCI & 1 PCI/ISA Combo)
- Tru64 UNIX/OpenVMS/Linux Support



# Inside the AlphaServer DS20E



# AlphaServer DS20E Front View





# AlphaServer DS20E - Rear view

Parallel port

Two serial ports

Two USB ports

Keyboard and  
mouse ports

Ethernet port

Six PCI  
backplane slots

Two hot-plug  
fans are standard

New !!

Six SCSI  
knockouts for  
external storage





# Leadership Midrange Solutions

*Choose the solution for your business that best meets today's needs and tomorrow's challenges*



## AlphaServer DS20

- ◆ Proven office packaging
- ◆ Large pedestal with rackmount capabilities
- ◆ 7 original Storageworks disk drives for compatability and large capacity
- ◆ N+1 power supplies
- ◆ Same high performance capabilities
  - Dual 500MHz EV6 processors
  - 4GB maximum memory
  - 6 PCI I/O slots
  - 5.2GB/sec memory bandwidth



## AlphaServer DS20E

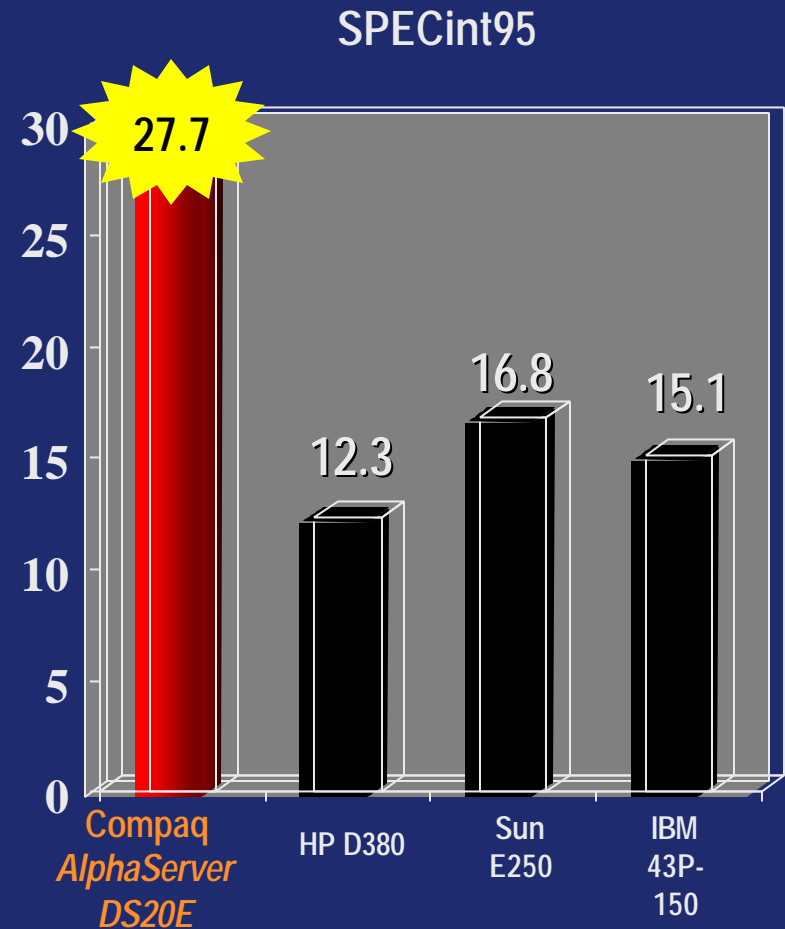
- New compact packaging
- Compact tower and efficient 5U rackmount design
- 4 new Storageworks disk drives with future LVD capabilities
- Hot swap N+1 power supplies and fans
- Same high performance capabilities
  - Dual 500MHz EV6 processors
  - 4GB maximum memory
  - 6 PCI I/O slots
  - 5.2GB/sec memory bandwidth

# Compaq AlphaServer DS20E

## Most Powerful Dual Processor System

#1

- ◆ Greatest *integer* compute power - almost 2x faster than the Sun UE250
- ◆ Better real world application performance with shorter time-to-solution
- ◆ Fastest dual CPU system for demanding transaction processing applications
- ◆ Leadership performance for mission-critical applications

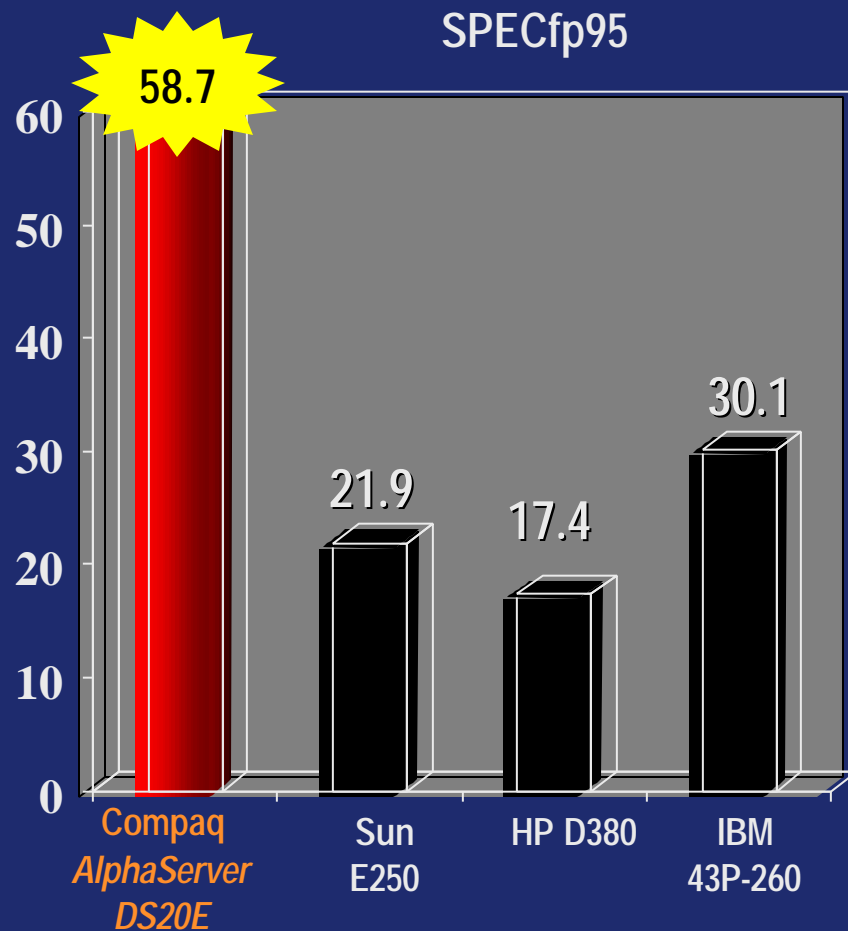


# Compaq AlphaServer DS20E

## Best Dual Processor System SPECfp95 Result!

#1

- ◆ Greatest *floating point* compute power - nearly 3x faster than the Sun UE250 dual system
  - Higher than any HP, IBM, and SUN
- ◆ Single CPU SPECfp95 result nearly double the performance of the closest competitor, IBM
- ◆ Leadership performance for compute-intensive technical applications
- ◆ The power of a personal supercomputer in an affordable, small footprint package



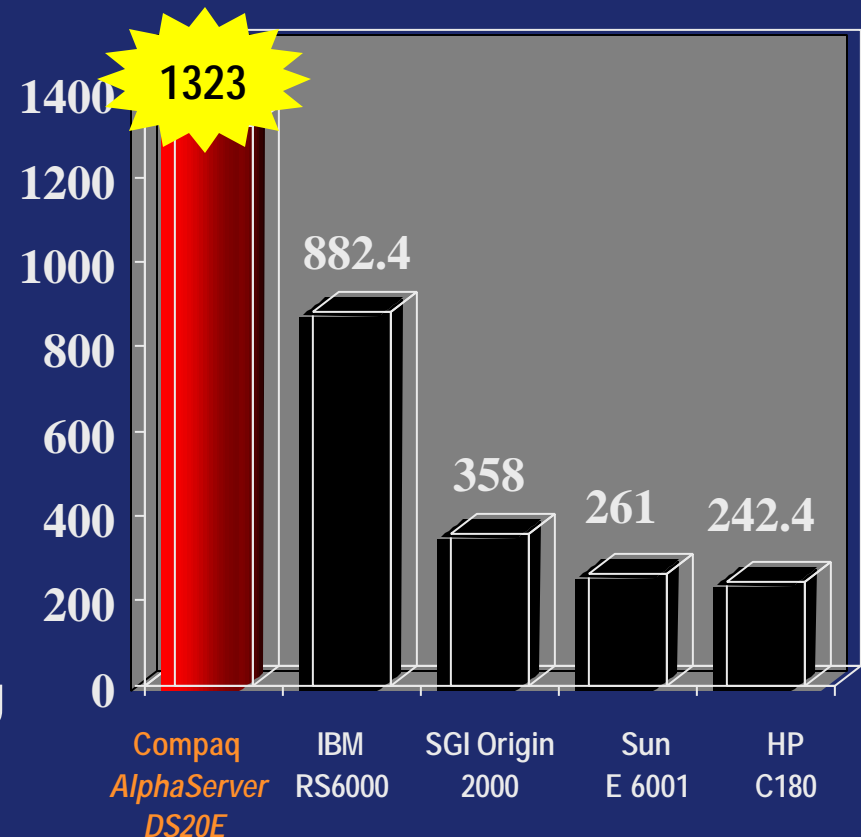
# Compaq AlphaServer DS20E

*Fastest Memory access for even more performance*

#1

- ◆ Fastest memory access of all top rated single CPU systems!
- ◆ Memory bandwidth is important in a variety of applications, for example:
  - financial modeling
  - fleet schedules
  - car crash simulation
  - fluid dynamics
  - acoustics
- ◆ Faster memory bandwidth unleashes the power of faster CPU's by removing potential bottlenecks

Memory Bandwidth in MB/Sec  
McCalpin Streams TRIAD\*



\* A memory bandwidth statistic describes the amount of traffic, measured in megabytes per second, that a computer system can move from one level of memory to another

# Compaq AlphaServer DS10

## Fast Memory Access

- Large total RAM - 128MB up to 2GB

- High bandwidth access - 1.3 GB/s

## Flexible Internal Storage

- Internal dual channel IDE storage included

- Optional SCSI adapter supported

- 3 internal disk bays

## Special Features

- 4 PCI I/O slots (3 64-bit, 1 32-bit)

- 300 watt power supply

- 3U Small footprint - Rack or Desktop

- Dual embedded 10/100 Ethernet ports



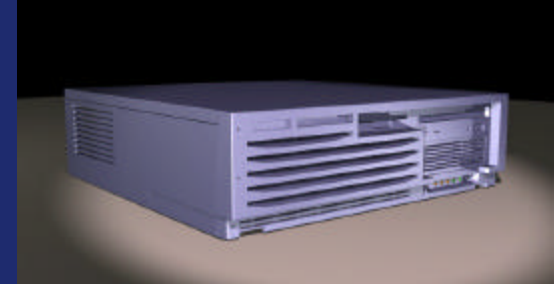
*Hot little entry  
AlphaServer  
Delivers Power  
In A Small  
Footprint*

# The Compaq Alpha Solution Designed to Match These Needs

- ◆ Enhanced manageability and rock-solid availability
  - Remote Management Console (RMC)
    - Power status management and component monitoring
    - Remote power on/off, halt, and reset
    - Dialing a pager phone number
  - Auto Reboot (AR)
    - Automatically reboot the operating system after most system failures
    - Power-up diagnostics
- ◆ Industry recognition
  - Awarded PC Week's "Winner's Circle" finalist at PC Expo '99 in the Infrastructure Hardware/Software category

*AlphaServer DS10*

***Internet Performance Leader!***



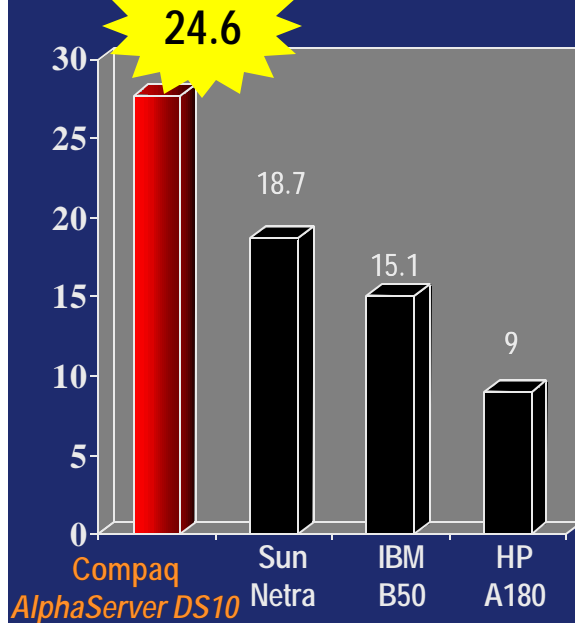


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# Compaq AlphaServer DS10

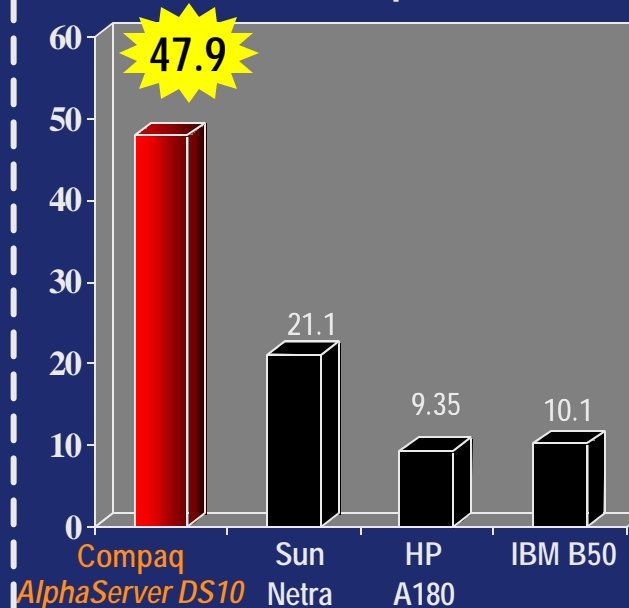
*Most Powerful Single Processor System*

SPECint95



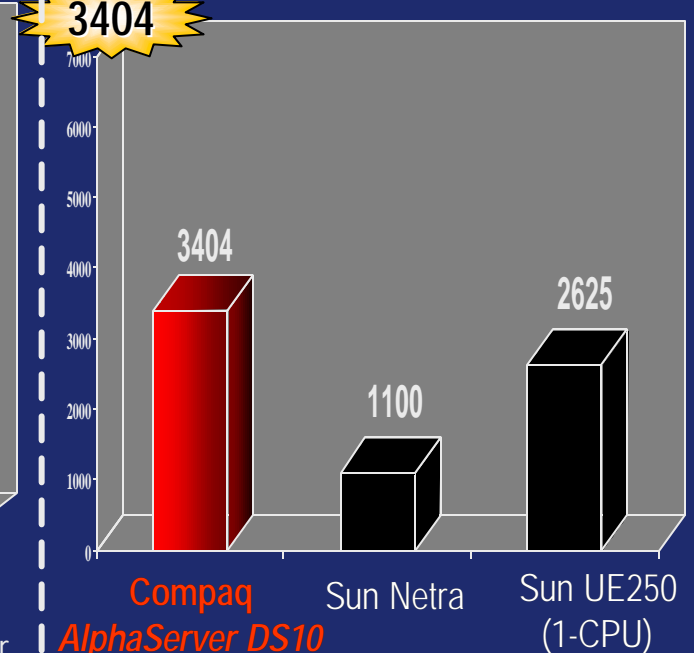
- ◆ Greatest **integer** compute power - faster than the Sun Netra t1, IBM B50, and HP A180c
- ◆ Better real world application performance with shorter time-to solution

SPECfp95



- ◆ Greatest **floating point** compute power - over twice as fast as the Sun uni processor system
- ◆ Higher than any HP, IBM, SUN
- ◆ Leadership performance for compute-intensive technical applications

SPECweb96 Performance  
RISC/UNIX Results



- ◆ Greatest WEB Performance Power – Faster than Sun Netra AND UE250!
- ◆ Leadership performance for Internet Solutions

# Alpha Low End Offering

## Common Components



Uni CPU  
(EV6/67/68)



Common 200 pin  
DIMM memory

Common PCI  
cards, disks,  
graphics

*AlphaServer DS20E*



*AlphaServer  
DS10*



Desktop Workstations



*AlphaStation DS20E  
XP 900*

Rackmount Systems for  
flexibility, efficiency,  
density and clustering!



M-Series Cabinet :  
12 DS10 systems  
• 12 CPUs  
• 12 GB of memory

# Packaged HPTC Solutions

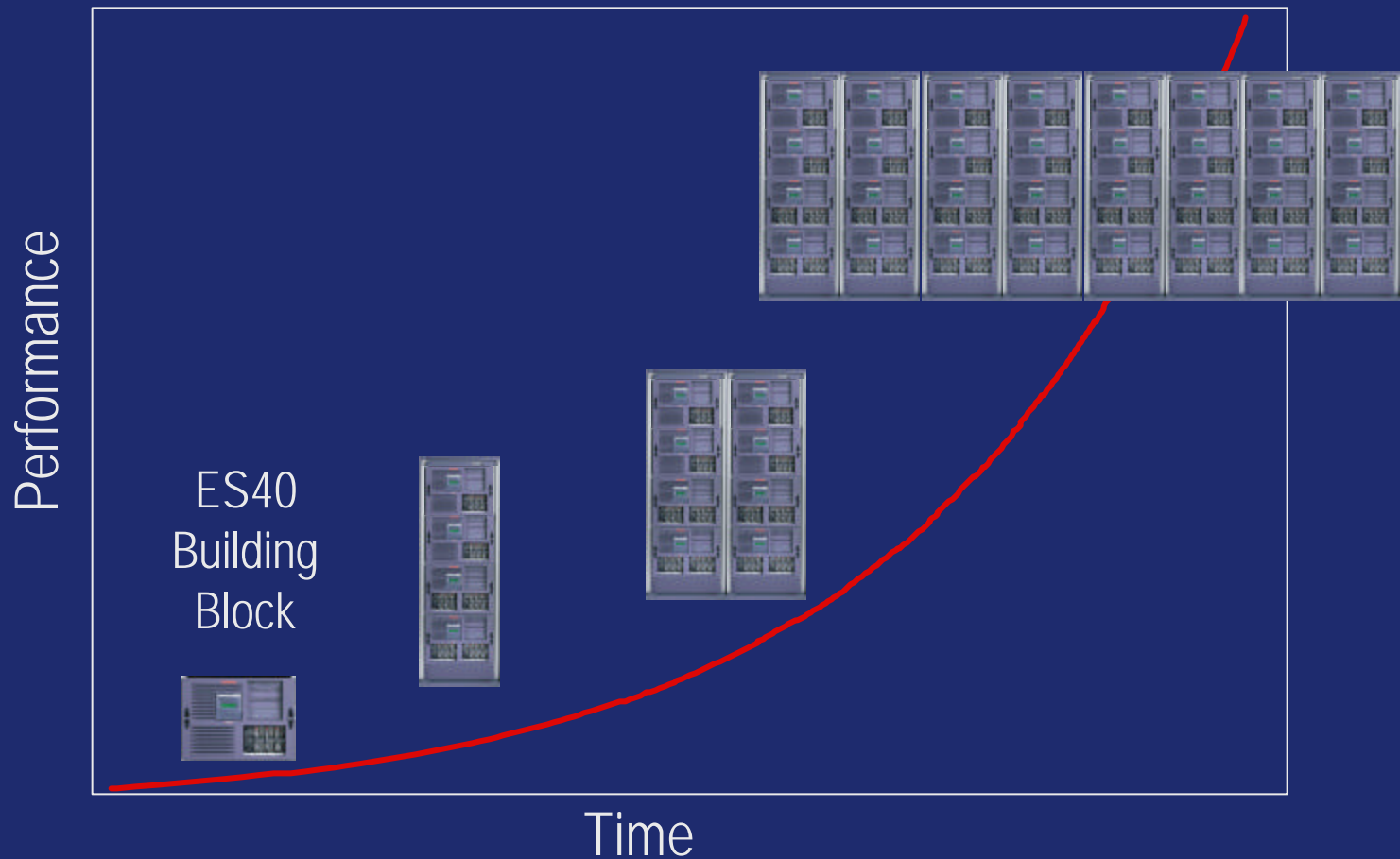
## *For Numerically Intensive Applications*



- ◆ High performance
  - ES40 configuration up to 32 CPUs in two cabs
  - Characterized for leading technical apps
- ◆ Quality
  - Factory built and tested
  - Optimized for maximum application performance
- ◆ Cost Effective
  - Easy to order; easy to install
  - Reduced management time of solution with increased efficiency

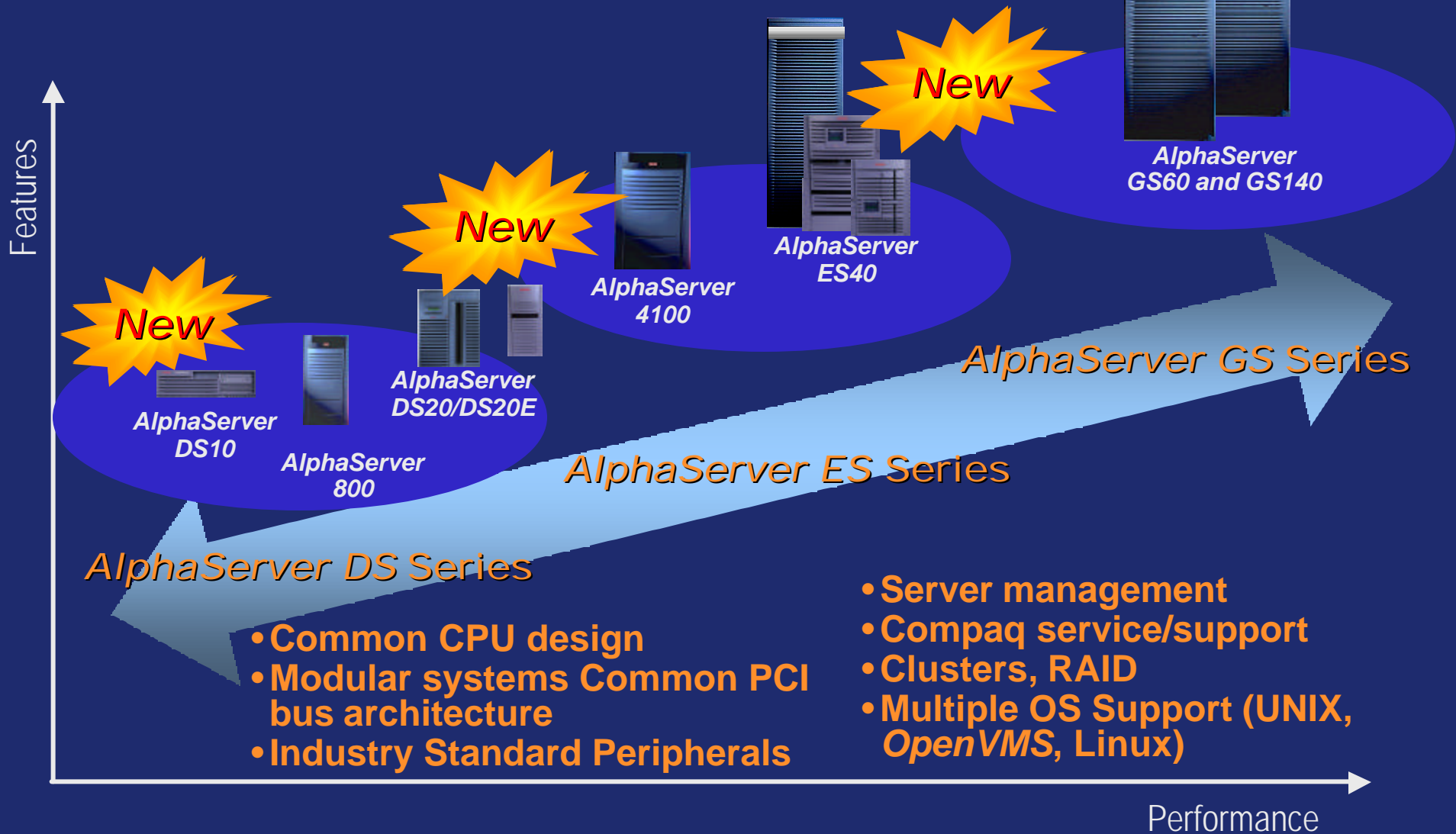
# Imagine the Possibilities

## *Scalable HPTC Solutions with AlphaServer ES40 Systems*



# AlphaServer Family Today

## Cross-family Product Features



# VAX Systems Timeline

