

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**

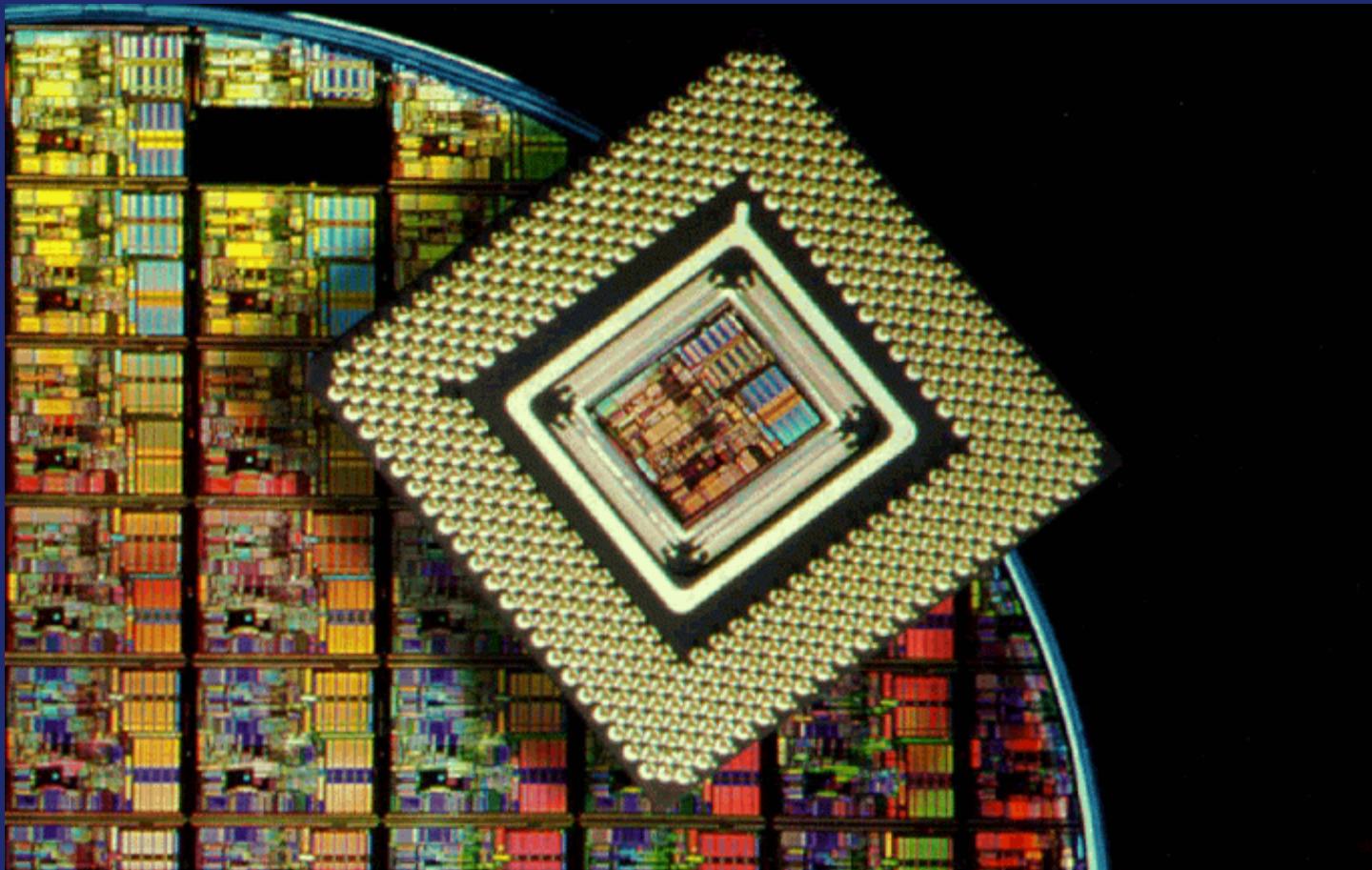
Donna Korb

Session 108
November 1999

AlphaPowered

COMPAQ

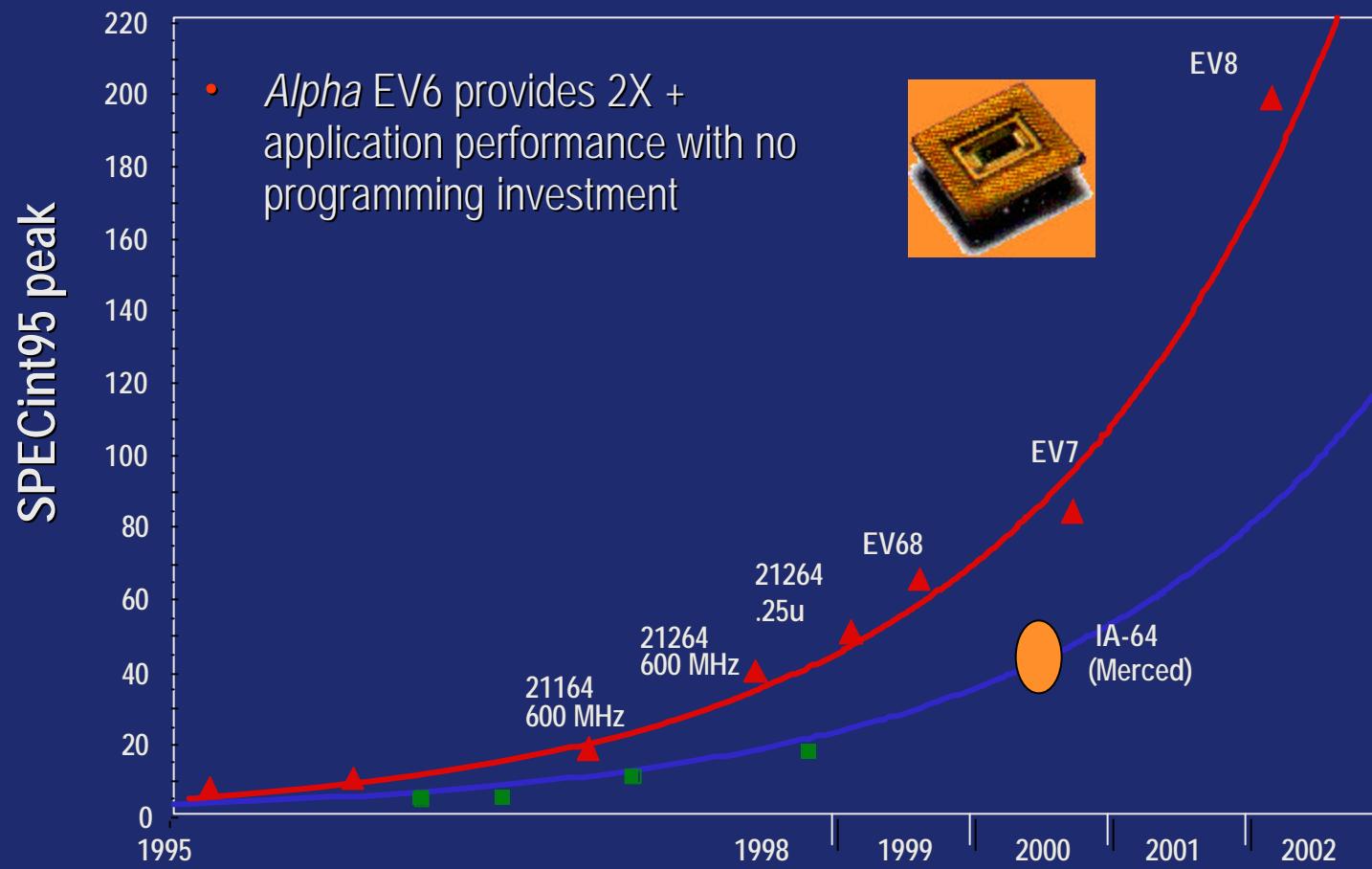
Alpha 21264 -EV6



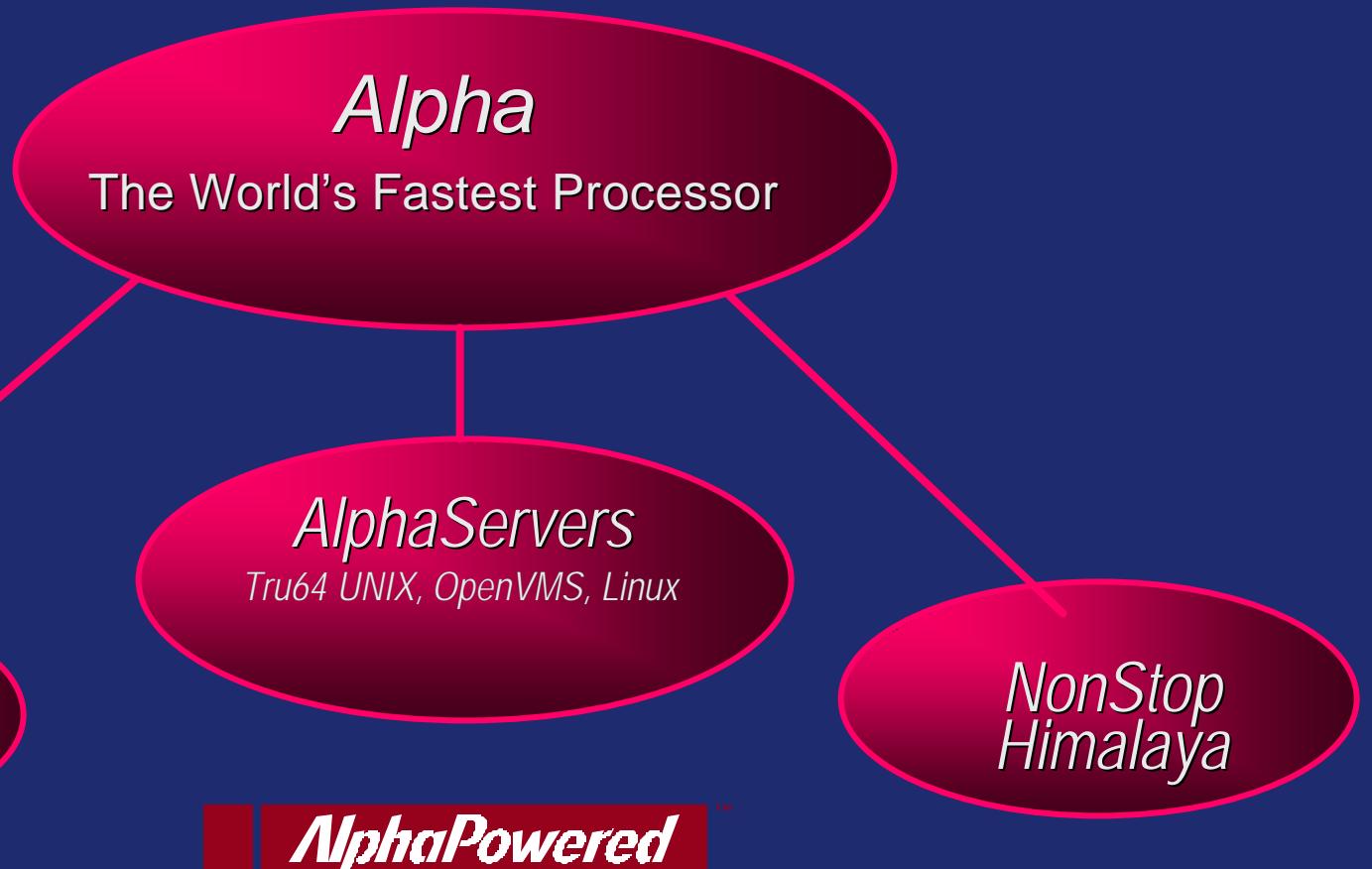
Alpha Continues To Lead

Relative Performance:

Integer (SPECint95-peak)

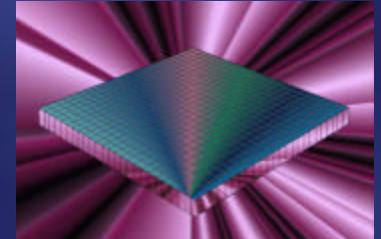


Alpha is Broadly Implemented Across Compaq Product Line





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

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



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 systems¹
- ◆ 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

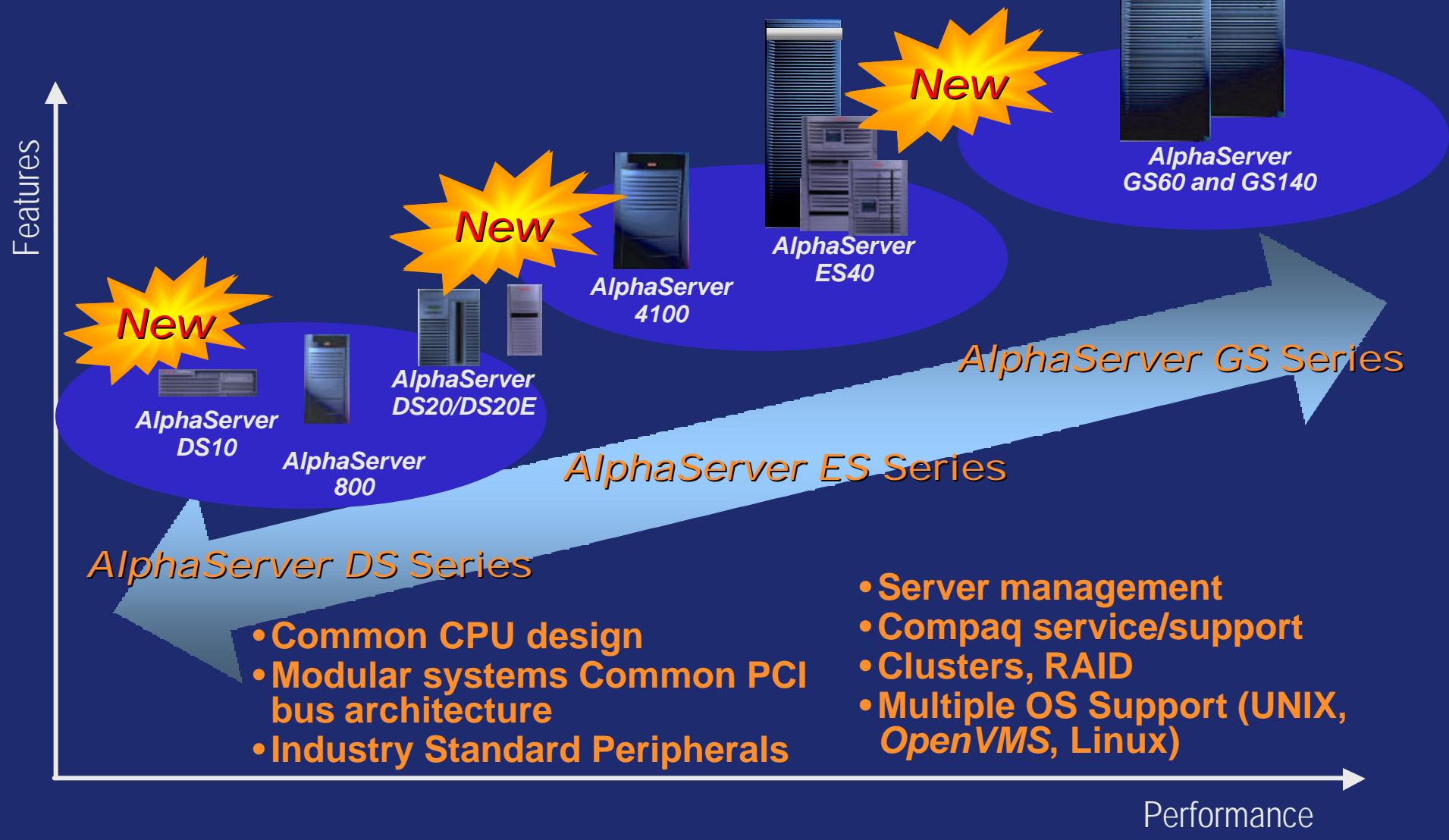


“With the powerful Alpha architecture, we’re confident we won’t be significantly changing the configuration of our systems for the foreseeable future, even if our business were to grow two-fold to more than a million customers.”

***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



AlphaServer 4100



EV6

LOD

AlphaServer ES40

DS - Low-end

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



AlphaServer 1200



AlphaServer DS20/DS20E

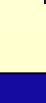


AlphaServer 800



DS20E

LOD

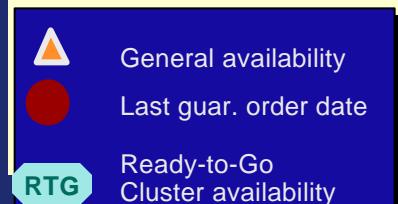


AlphaServer DS10



EV6

LOD



Q4CY98

Q1CY99

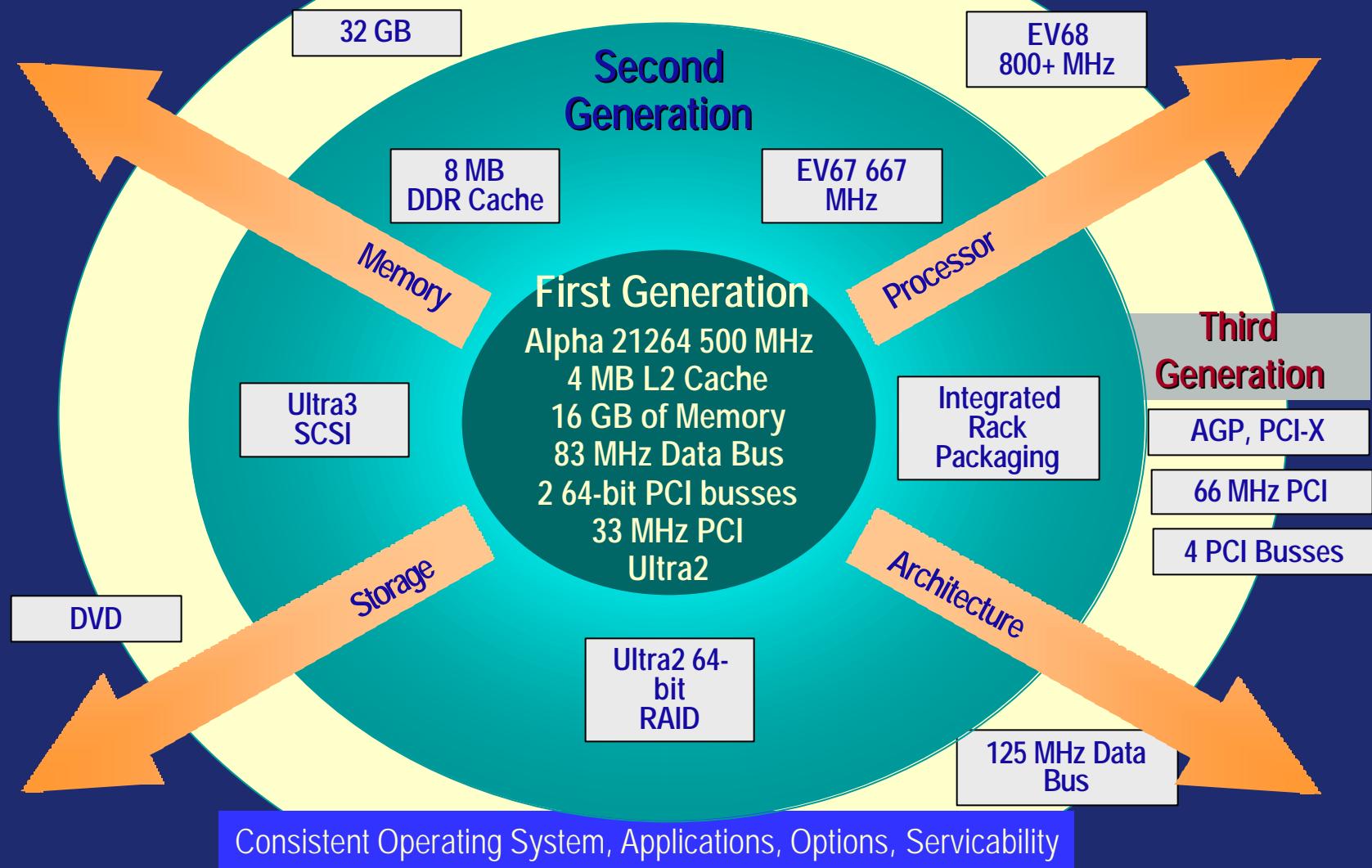
Q2CY99

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



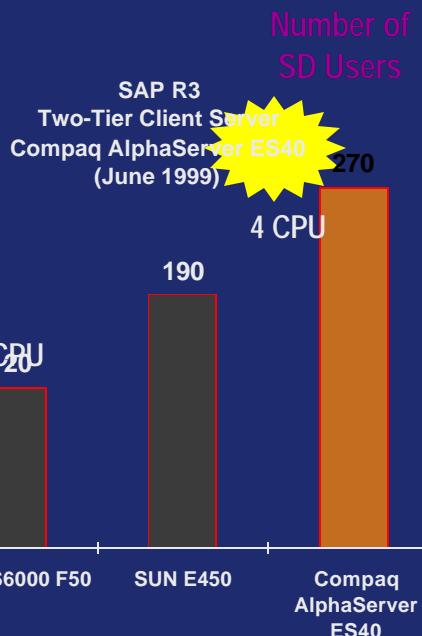
#1

AlphaServer ES40

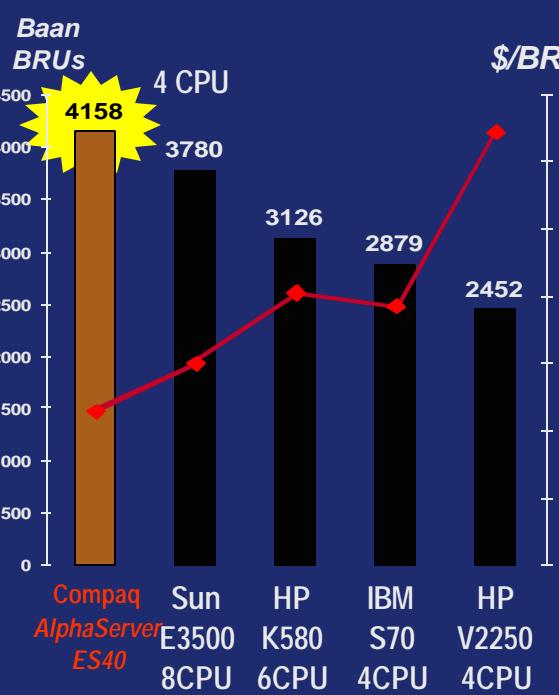
Stable Commercial Application Environment



SAP



Baan



Compaq *AlphaServer DS20E*

Unleashing the Power of the Alpha 21264 Processor



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

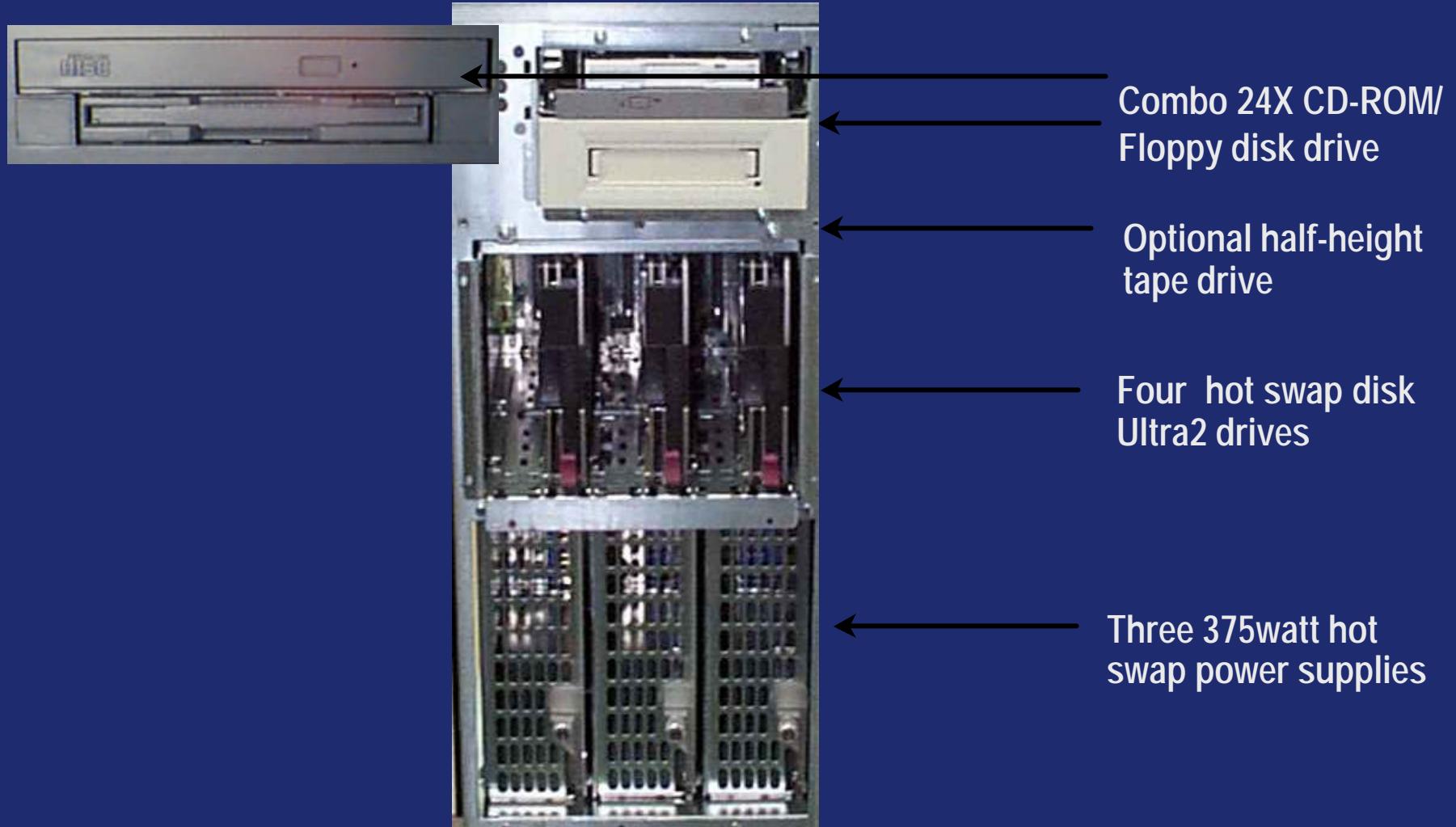
- 2-way SMP Alpha EV6 - 500 MHz w/ 4MB Cache
- Internal storage up to 72 GB
- DS20 Main Logic Board- up to 4GB memory
 - Same design as DS20
- New Enclosure - Supports both pedestal and rackmount (5U) configurations
- 6 Drive Bays (4 hot swap/2 removable)
- Combo 24X CD-ROM drive and 1.44 floppy disk 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



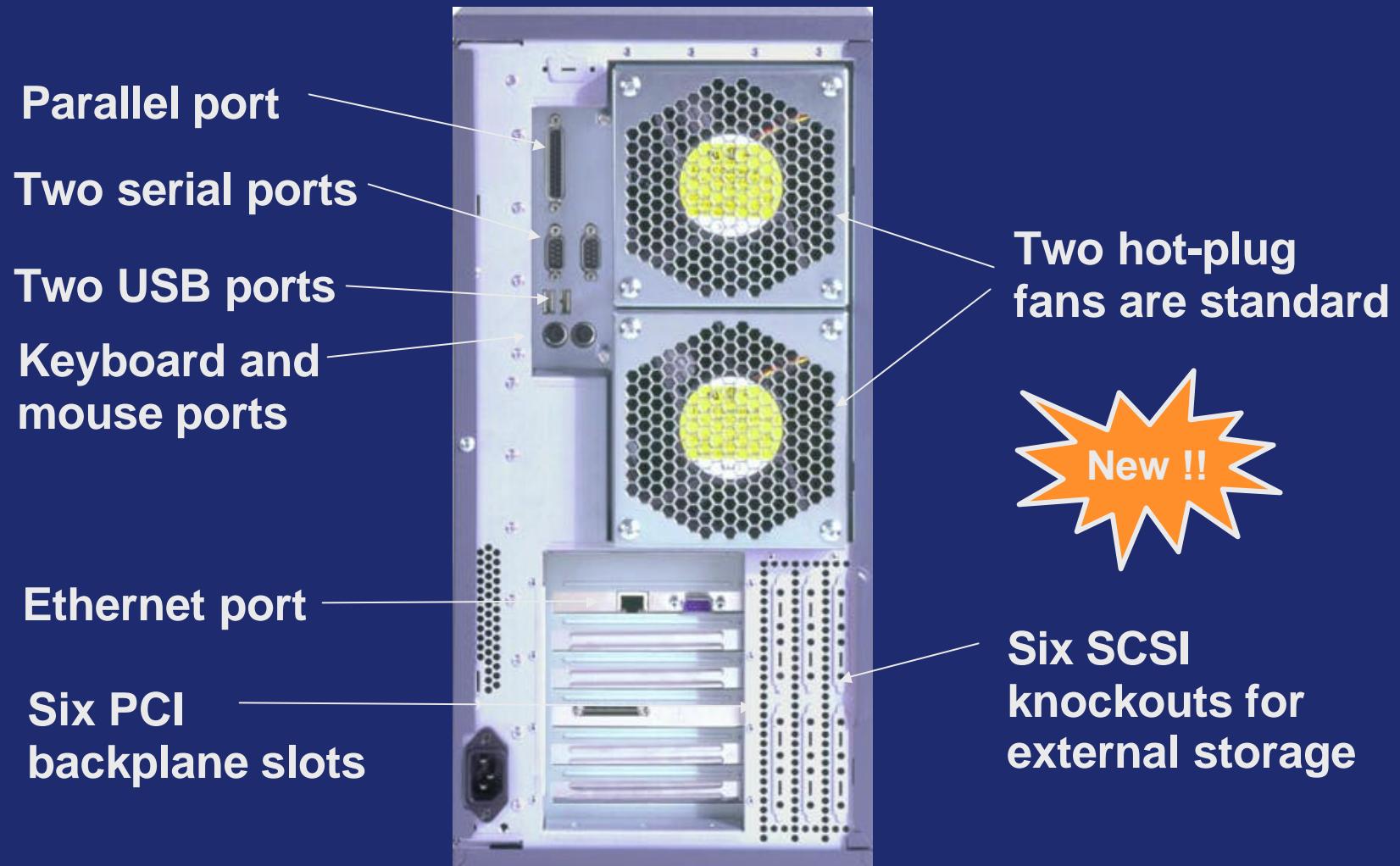
Inside the AlphaServer DS20E



AlphaServer DS20E Front View



AlphaServer DS20E - Rear view



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 compatibility 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

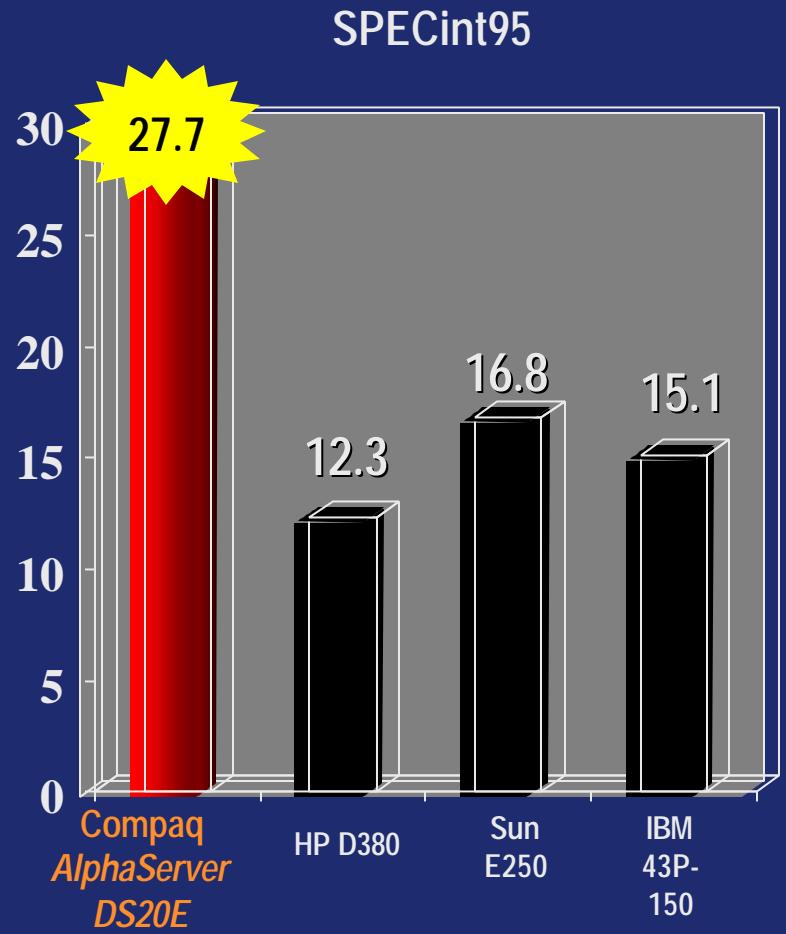
- New compact packaging
- Compact tower and efficient 5U rackmount design
- 4 new Storageworks disk drives with future LVD capabilities
- Hot swap N+1 power supplies and fans
- Same high performance capabilities
 - Dual 500MHz EV6 processors
 - 4GB maximum memory
 - 6 PCI I/O slots
 - 5.2GB/sec memory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

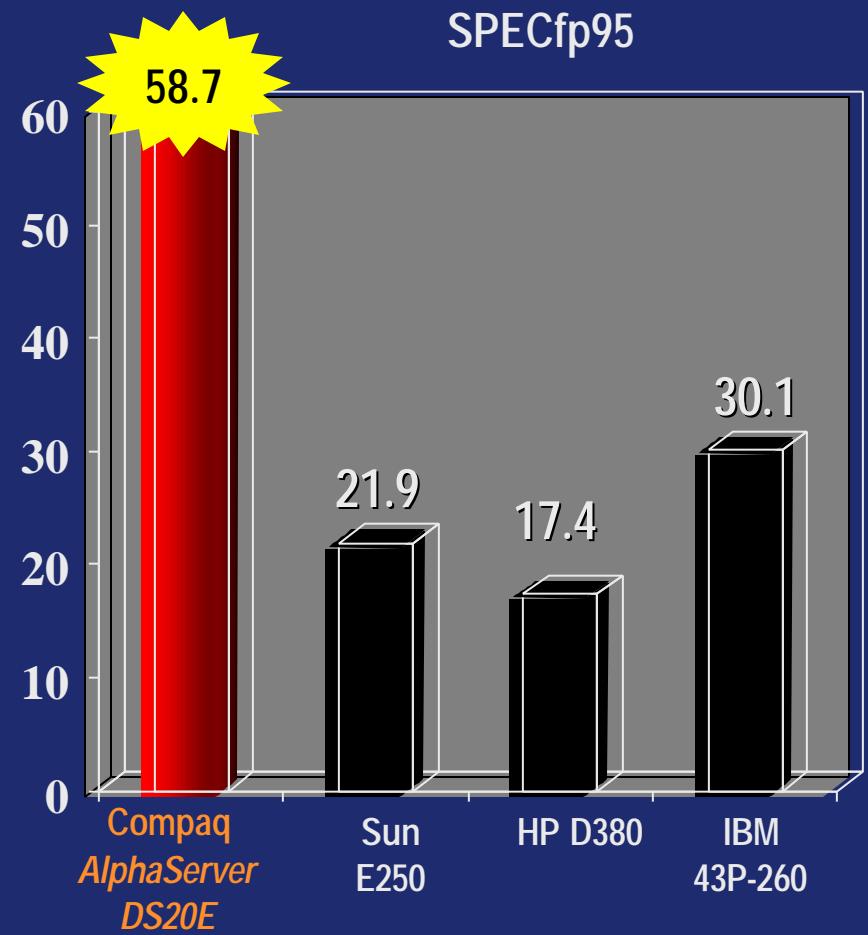


Compaq *AlphaServer DS20E*

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



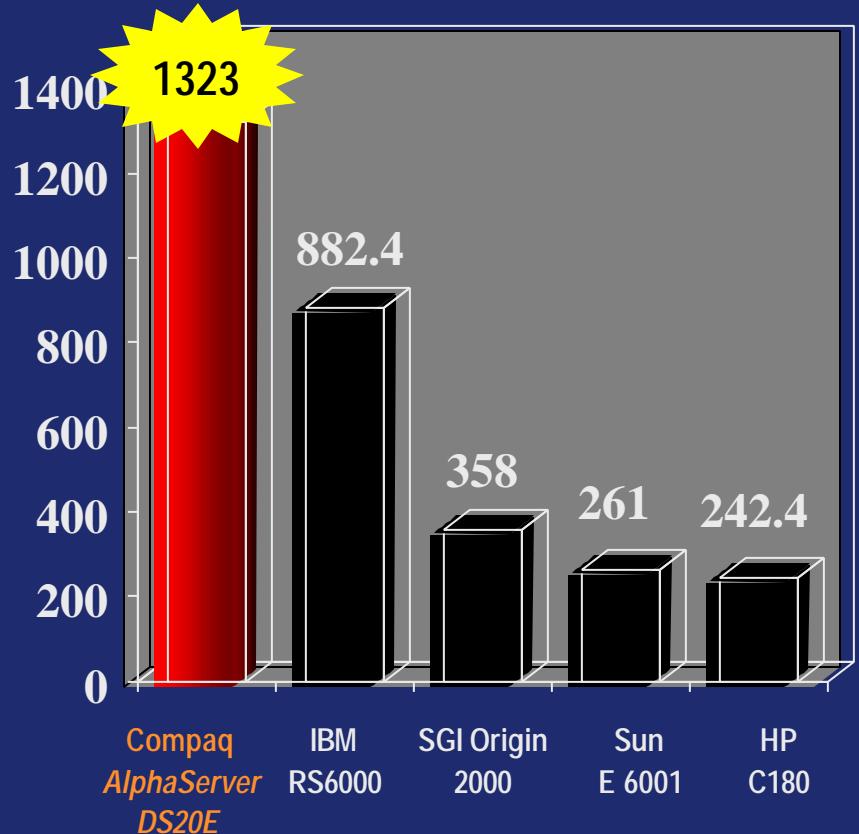
Compaq *AlphaServer DS20E*

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

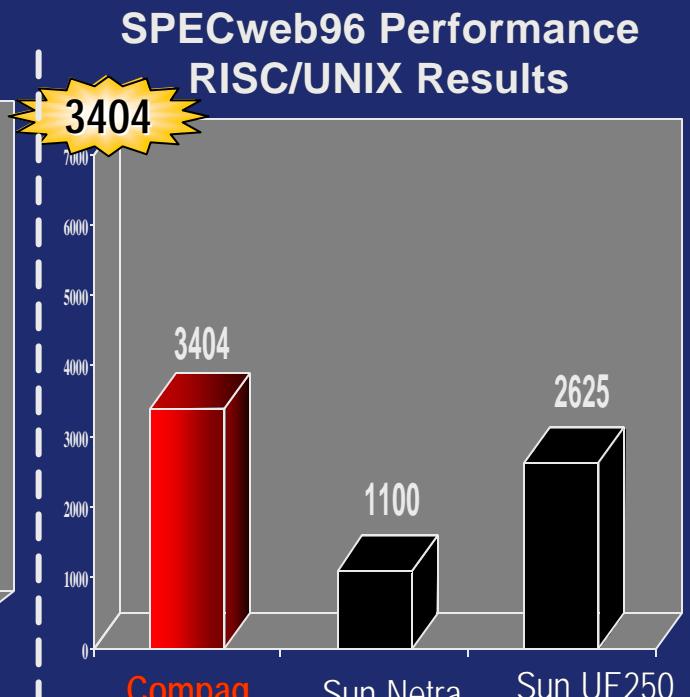
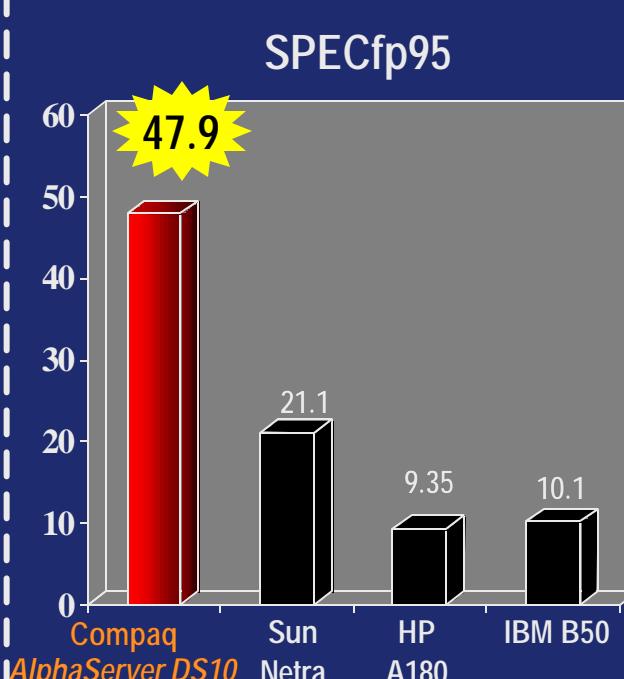
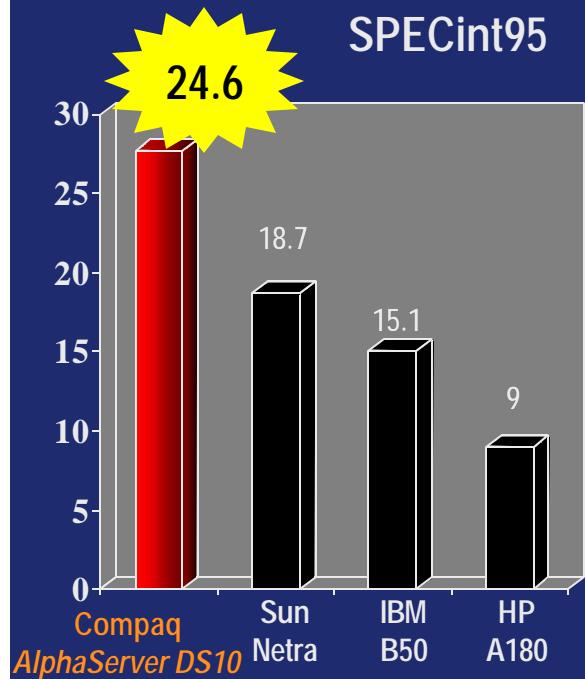
*AlphaServer DS10
Internet Performance Leader!*



#1

Compaq AlphaServer DS10

Most Powerful Single Processor System



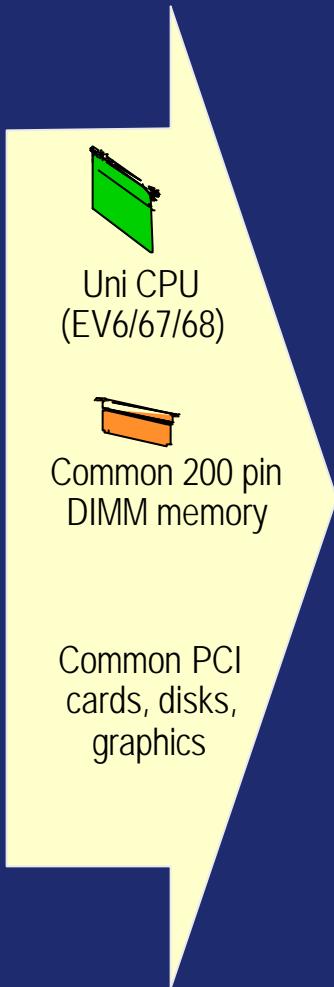
- ◆ Greatest **integer** compute power - faster than the Sun Netra t1, IBM B50, and HP A180c
- ◆ Better real world application performance with shorter time-to solution

- 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

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

Alpha Low End Offering

Common Components



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

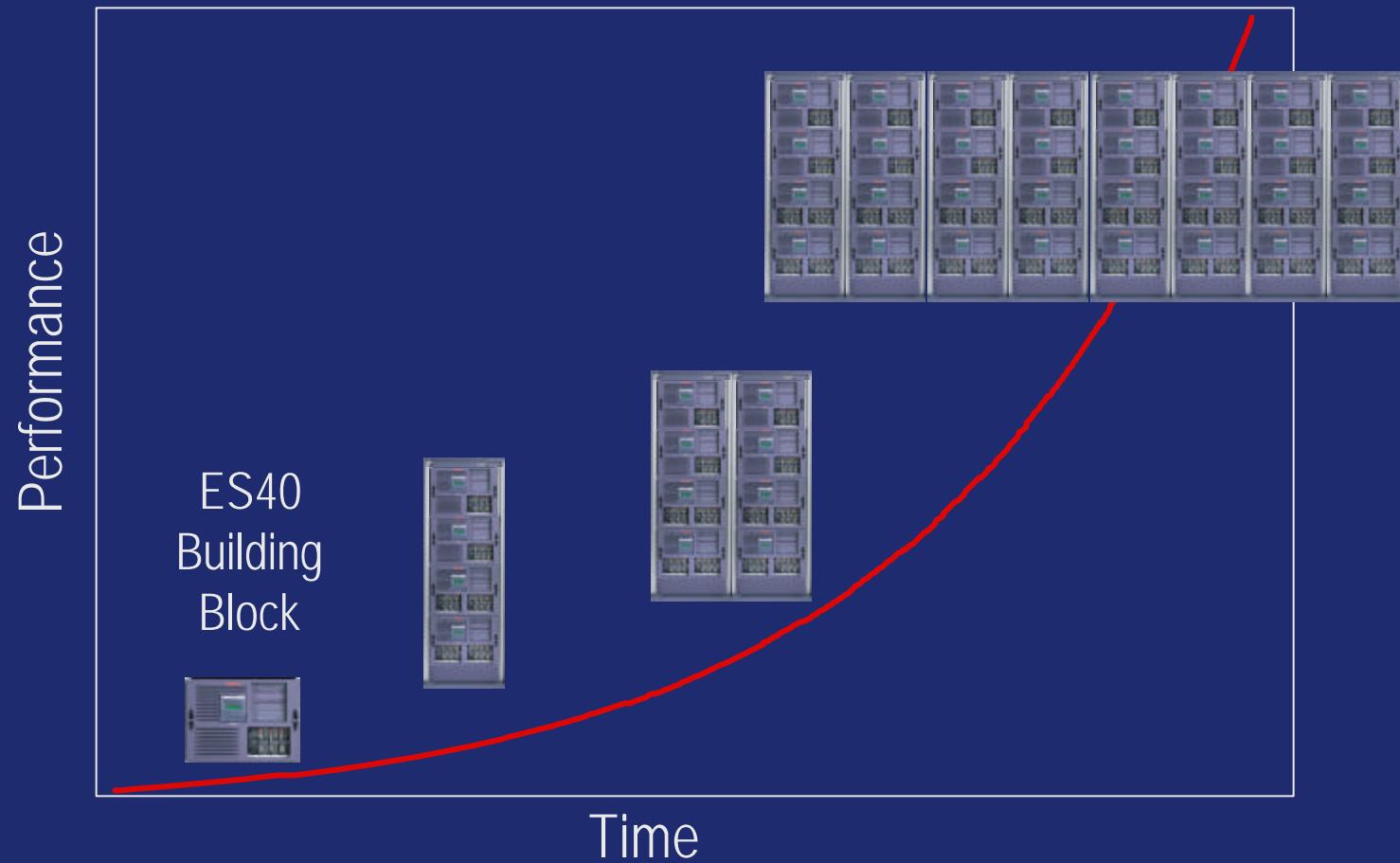
For Numerically Intensive Applications



- ◆ **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

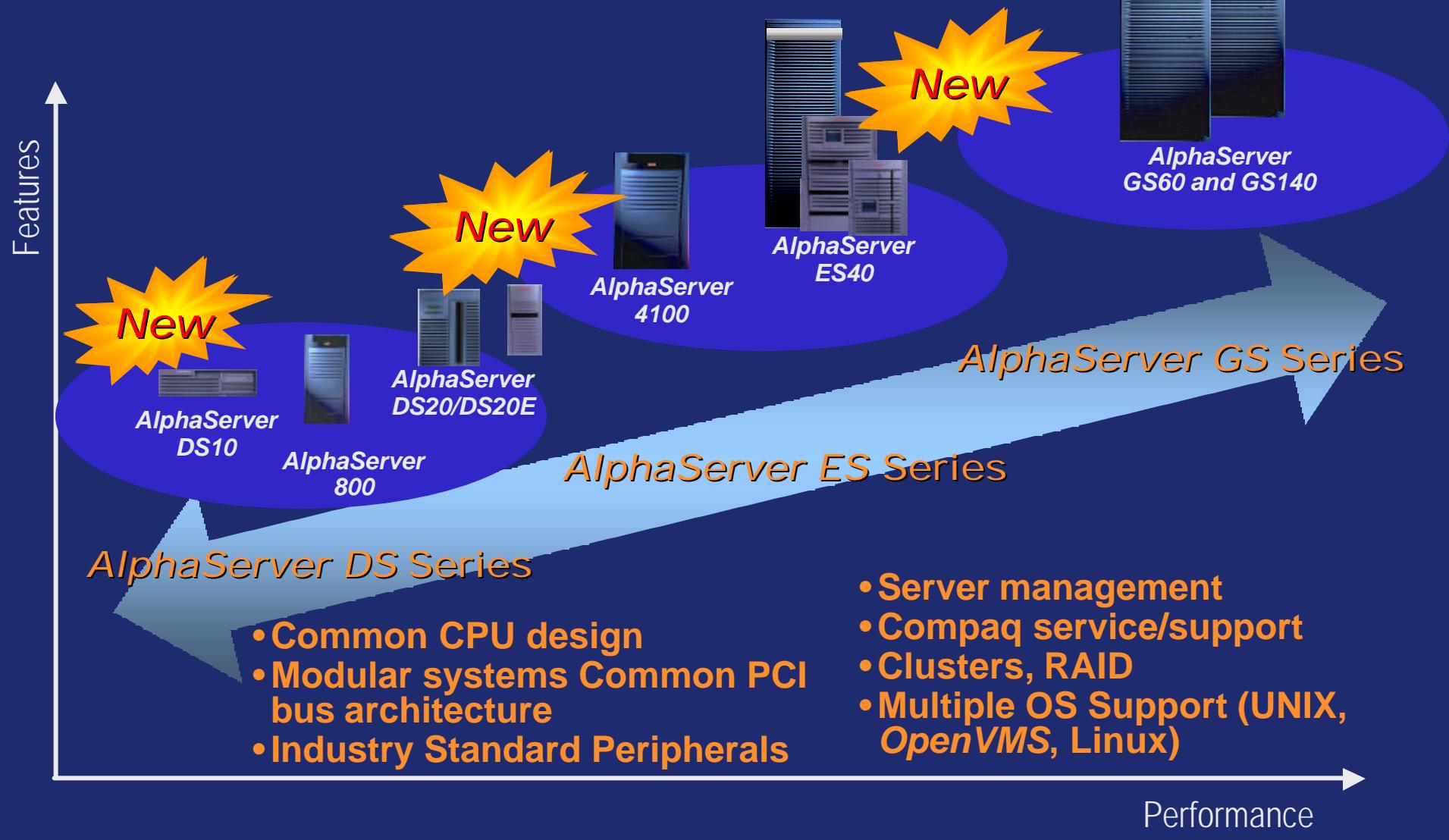
Imagine the Possibilities

Scalable HPTC Solutions with AlphaServer ES40 Systems



AlphaServer Family Today

Cross-family Product Features



VAX Systems Timeline



1992-93

Alpha announcement
Alpha-ready VAX Systems
New VAX improvements
VAX 7600
MV3140
VS4060

1994-95

Consolidation of the VAX family started
Alpha Migration programs
Improved Performance
VAX 7700
VAX 4705A
VAX 4505A
VAX4106
MV3196
MV3185
VAXstation 4096

1996-97

Prepare for YEAR 2000
Destination Alpha program
LAST VAX CHIP BUILD
New Line Introduced
VAX 7800
VAX 4108
MV 3198
MV 3188

1998-99

New option qual - 9GB and 18GB drives
FINITE Quantities of VAX Systems and Options are remaining
While Supplies LAST ---
VAX 7800
VAXstation 4096
Some options

2000

While Supplies LAST ---
MV3198
MV3188
VAX 4108
Remaining options
Field support continues beyond 2000

