

digital

## DIGITAL AlphaServer™ 4000 and 4100 Systems

### Powerful servers offering unparalleled application performance

For your growing enterprise or organization facing challenges such as the need to migrate legacy systems, accommodate applications growth, or meet diverse business demands, DIGITAL AlphaServer 4000 and 4100 systems meet your needs now and provide the flexibility you need to grow in the future.

#### Benefits

- Unprecedented performance and headroom powered by DIGITAL 64-bit Alpha technology
- Exceptional complex database applications capacity and performance using VLM64™ (Very Large Memory) support
- Unmatched I/O scalability and investment protection with *next-generation* 64-bit PCI
- Optimized flexibility and application migration with a choice of three operating systems: DIGITAL UNIX®, Microsoft® Windows NT™, or OpenVMS™
- Innovative configuration flexibility with system drawer design and DIGITAL UltraSCSI StorageWorks™
- Uncompromised reliability and high availability, backed by a three-year warranty supported by a world-class service organization



## High availability

### Redefining the midrange

The DIGITAL AlphaServer 4000 and 4100 systems bring the latest high-performance, high-availability power of the 64-bit Alpha processor to your business at an affordable price.

Start out with the DIGITAL AlphaServer 4000 systems for I/O-intensive applications. Offering symmetric multiprocessing (SMP) – up to 2 SMP processors, 4 GB of memory and 16 slots of 64-bit PCI power for more I/O bandwidth. There's no longer a need to choose between what you need or can afford today and the scalability and application growth you'll need for tomorrow. That's because the AlphaServer 4000 system is engineered to provide a clear upgrade path to more power and capacity – right up to an AlphaServer 4100 system with up to 4 SMP processors and 8 GB of memory. This combination of choice and flexibility lets you buy what you need today and build for future growth, with no trade-offs.

What's more, the DIGITAL AlphaServer 4000 and 4100 systems are the only midrange servers on the market to offer VLM64 capability. Using the power of VLM64, these systems

offer outstanding performance and value. Now you can have four-processor leadership performance and a synchronous system bus that gives a boost to speed and performance, providing up to 1.1 GB/sec. bandwidth.

High availability and data integrity for memory-intensive applications also set them apart from other midrange systems. The DIGITAL AlphaServer 4000 and 4100 systems provide 64-bit PCI I/O bandwidth – capable of supporting even the most demanding applications. This balanced design results in higher speed, capacity, scalability, efficiency, and throughput to make the most of Alpha technology. And that means fast, predictable response time and maximum application performance.

### For an array of applications

For commercial environments, the DIGITAL AlphaServer 4000 and 4100 systems can be used as high-performance database servers, business application servers, for LAN server consolidation, or for communications applications.

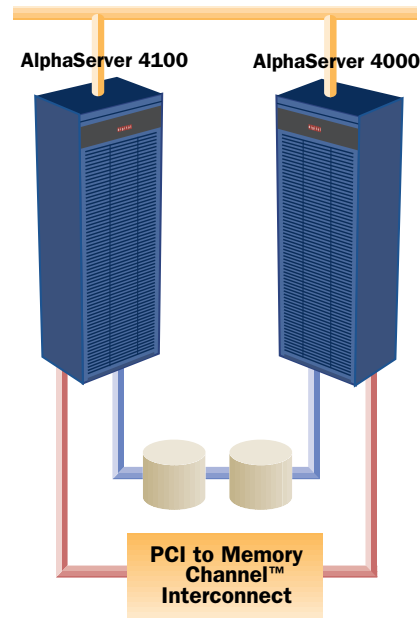
The comprehensive range of DIGITAL software partners, including Microsoft, INFORMIX®,

Oracle®, SYBASE®, and SAP® Software AG® ensure the availability of complete solutions for the AlphaServer 4000 and 4100 systems.

For enterprise applications, the DIGITAL exclusive VLM64 capability addresses up to 8 GB of data. This allows you to place entire applications and huge portions of your database into physical memory. With minimal disk I/O, you can perform data acquisition, financial modeling, and data mining quickly and efficiently. The

VLM64 capability makes database operations occur hundreds of times faster than they would on other midrange servers.

In addition, the DIGITAL AlphaServer 4000 and 4100 systems provide advanced performance features that are demanded for technical/scientific environments. VLM64, 64-bit PCI, low-memory latency, advanced 3D graphics, and 64-bit Alpha power combine to support 3D rendering, publishing prepress, CAD, GIS, and CASE applications.



*Cluster DIGITAL AlphaServer systems to set up a highly reliable, highly available environment with outstanding growth capability.*

# Reliability

*"DIGITAL systems deliver the scalability, reliability, and flexibility we need for growth... We're able to keep the same infrastructure in place while increasing performance, uptime and productivity."*

Doug Suriano  
Global Information Systems Support Manager  
QAD Inc.



**DIGITAL UltraSCSI StorageWorks shelves:**

- Standard components
- 764 GB maximum in-cab storage
- Over 15 TB external
- Up to 6 shelves/rack

**Standard drawer (up to 4 per rack):**

- Up to 4 processors (2 on 4000)
- Up to 8 GB memory (4 GB on 4000)
- 8 or 16 64-bit PCI slots (16 on 4000)
- Up to 3 power supplies (N+1)

**Operator Control Panel:**

- 3.5" 1.44 MB floppy
- CD-ROM

*Fully scalable in flexible packages, the DIGITAL AlphaServer 4000 and 4100 systems are powerhouses for future growth.*

#### **Flexible, unbounded design**

All DIGITAL AlphaServer 4000 and 4100 system components fit in a rackmounted system drawer in both cabinet and pedestal configurations. This offers you the capability of expanding to meet a variety of needs, including additional RAID storage. And to meet growing demand for I/O performance and expansion, the 4000 models now come standard with the I/O expansion option to *double I/O* bandwidth and slots.

#### **Investment protection**

The DIGITAL AlphaServer 4000 and 4100 systems provide investment protection by offering easy, cost-effective processor and component upgrades.

The Alpha EV6 performance upgrade program provides today's customers with a direct path to the dramatic performance gains provided by Alpha's next generation of processors.

#### **Systems management**

All AlphaServer systems include DIGITAL ServerWORKS™ Manager software, a complete package of integrated system and network software tools. These tools enable proactive control and management of your network and server resources, improving uptime and user productivity while also reducing overall cost of ownership.

#### **Rely on them**

DIGITAL AlphaServer 4000 and 4100 systems are fully clusterable from departmental to enterprise clusters. Their advanced ECC-protected memory, cache, and system bus capabilities, redundant power supply, and optional hot-swap RAID subsystems, make clustered computing environments highly available. And now AlphaServer 4100 systems are available as factory integrated, pre-tested DIGITAL Ready to Go Clusters – the one-cabinet solution for high availability.

#### **Leading the standard in PCI**

Each system provides eight or sixteen industry-standard expansion slots. That means you can configure the DIGITAL AlphaServer 4000 and 4100 systems using low-cost, industry-standard I/O devices to provide the performance and availability your mission-critical applications require.

#### **Internet-Energized**

Every DIGITAL AlphaServer system ships with a complete suite of Web server software. From the robust DIGITAL UNIX platform – featuring the industry's leading Web content and authoring tool, Netscape® Enterprise – to the Windows NT and OpenVMS offerings with premier Web authoring, security, and management tools, AlphaServer systems facilitate your business' migration to future Internet applications. Prepared to deliver on the additional system demands of Internet applications, such as the performance and availability to handle peak loads and constant access with predictable and consistent

user response time, DIGITAL Internet-Energized AlphaServer systems help you win in a networked world.

#### **3-year on-site warranty**

The DIGITAL AlphaServer 4000 and 4100 systems come standard with a 3-year hardware warranty. If your system should need service, you can count on DIGITAL to be there with one of the most highly acclaimed service organizations in the industry.

#### **A range of services**

DIGITAL and its partners offer the broadest range of multi-vendor support services in the industry. For training, consulting, network integration, software support, and comprehensive system maintenance, DIGITAL, with its partners, is the single-source solution to meet your needs.

#### **Your next step**

To learn more about the DIGITAL AlphaServer 4000 and 4100 systems, visit our AlphaServer Web site at <http://www.digital.com/alphaserver> or call 1-800-DIGITAL via a touchtone phone in the U.S. and Canada, or 1-908-885-6426 from other regions.



**Performance**





## DIGITAL AlphaServer 4000/4100 systems

CPU features	5/466	5/533	5/600
Number of processors for 4000 for 4100	Up to 4	Up to 2 Up to 4	Up to 2 Up to 4
CPU/clock speed	21164/466 MHz	21164/533 MHz	21164/600 MHz
Cache size (on-chip/on-board)	8 KB I-cache, 8 KB D-cache, 96 KB secondary/ 4 MB per processor	8 KB I-cache, 8 KB D-cache, 96 KB secondary/ 4 MB per processor	8 KB I-cache, 8 KB D-cache, 96 KB secondary/ 8 MB per processor
In-cabinet CPU upgrade	Yes	Yes	Yes
Performance			
tpmC @ \$/tpmC	-	12,971@\$91	15,100@\$72
SPECint95*	14.1	16.6	18.8
SPECfp95*	19.2	21.9	29.2
SPECfp95* SMP	56.1	42.1	51.4
SPECint_rate95*	485	575	657
SPECfp_rate95*	466	565	858
LINPACK 1000 x 1000	1,934	2,088	2,634
SPECweb96*	2,504 (4 CPUs) 1,700 (2 CPUs)	4100 (4 CPUs) -	4,587 (4 CPUs)
* Only for 4100, see Web site at <a href="http://www.digital.com/alphaserver">http://www.digital.com/alphaserver</a> for 4000 performance			
Configurations			
Maximum memory for 4000 for 4100	8 GB	4 GB 8 GB	4 GB 8 GB
Maximum disk capacity (in-cabinet/total)	Pedestal: 380 GB/over 15 TB Cabinet: 760 GB/over 15 TB		
Maximum I/O bandwidth	500 MB/s (1 GB/s with I/O expansion)		
I/O support (max. config.) for 4000 for 4100	16 64-bit PCI slots (including 3 shared PCI/EISA slots), 2-4 64-bit PCI channels 8 64-bit PCI slots (including 3 shared PCI/EISA slots), 2 64-bit PCI channels		
Standard features			
1.44 MB diskette drive, CD-ROM drive, integral FNSE SCSI-2 bus for removable media (CD-ROM and tape), S3 TRIO graphics adapter, 2 serial ports, 1 parallel port, keyboard and mouse, integral remote system console, operating system license and customer documentation, Internet software, server management software			
Reliability/high-availability features			
OpenVMS Clusters	Ethernet, DSSI, FDDI, SCSI, CI		
UNIX Clusters (DIGITAL UNIX)	TruCluster Available Server, TruCluster Production Server, Parallel Software Environment (PCI to Memory Channel Interconnect)		
DIGITAL Clusters for Windows NT	Supported		
High-availability features	DIGITAL ServerWORKS systems management software, auto reboot, thermal management, optional redundant power system, remote system management, RAID, disk hot swap, memory failover, ECC memory, ECC cache, ECC system bus, SMP CPU failover, error logging, UPS Power Management Software, optional uninterruptible power supply (UPS). Also with a CAB: multiple systems, multiple power sources, dual-ported storage		
Storage			
UltraSCSI StorageWorks			
Software features			
Operating systems	DIGITAL UNIX, Windows NT, OpenVMS		
Options			
Networking	Ethernet, Fast Ethernet, FDDI, Token Ring, synchronous communications, ATM		
Storage	Fast SCSI-2, FW SCSI-2, FWD SCSI-2, UltraSCSI, RAID, CI, DSSI (OpenVMS only), Prestoserve		
Operating environment			
Temperature	Pedestal/Cabinet 10°C to 35°C (50°F to 95°F)		
Relative humidity	20% to 90% (non-condensing)		
Power supply	450W		
Enclosure characteristics			
Height	Pedestal 75 cm (29.5 in.)	Cabinet H9A10 170.2 cm (67.0 in.)	Cabinet H9A15 200.0 cm (69.0 in.)
Width	49 cm (19.3 in.)	60.0 cm (23.6 in.)	60.0 cm (23.6 in.)
Depth	90 cm (35.4 in.)	97 cm (38.2 in.)	97.0 cm (38.2 in.)
Weight	113.6 kg (250 lbs.)	350.9 kg (772 lbs.)	450 kg (1,000 lbs)
Warranty			
Hardware: three-year, on-site, with 5x9, 24-hour response Software: 90-day SPD conformance, with advisory telephone support			

Features may differ among operating environments. Performance may vary depending on configuration, application, and operating environment.

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