Compaq AlphaServer GS60E and GS140 Systems

Top-of-the-Line Technology to Power Your Most Demanding Applications

***Compaq AlphaServer* GS Systems at a Glance:**

- **Choice of 2 – 14 *Alpha* 21264 processors**
- **Existing applications run right out of the box**
- **Unmatched flexibility to build your system from the ground up**
- **Very Large Memory (*VLM64*) — up to 28 GB of ECC memory**
- **Investment protection with seamless upgrade path to next-generation *AlphaServer* systems**
- **Up to three instances of *Compaq Tru64 UNIX* or *Compaq OpenVMS* on a single system**
- **Start with the leader, stay with the leader** — If you need to push productivity through the roof, and give your best people more time to create new solutions, start with a two to eight processor *Compaq AlphaServer* GS60E system. Or, hit hard now with a 14-processor *Compaq AlphaServer* GS140 system.
- **Investment protection for years to come** — With new packaging, more bus slots, and a lower software tier, you get more power for every IT dollar with *Alpha*. Plus, you are in perfect position to ride the continuing wave of *Alpha* technology breakthroughs.
- **Profit from unmatched experience** — The stability of the *AlphaServer* line means everything to a business trying to compete. No excuses, ultra-high availability. Scalability to meet explosive demand. Legendary reliability.
- **More operating system choice** — All the choices you want, plus all the applications you need, with no migration required. With Compaq, you get it all in a single package.

COMPAQ

NonStop™

Compaq AlphaServer GS60E and GS140 systems

AlphaPowered

Compaq AlphaServer GS60E

Making incredible power available with astonishing value.

If you depend on technology in your business or institution, you have to be ready for anything. The Internet. E-business. Company-wide intranets. These and other vehicles are changing the way you work. Daily. And predicting your growth has never been tougher.

That's why you need systems, software, and services from a global leader in technology that's ready to tackle your most demanding environments. You need the wisdom of experience you can trust, and fresh ideas, to survive the cutting edge.

You need powerful *Compaq AlphaServer* GS systems running the highly reliable *Compaq Tru64 UNIX* operating system — an unbeatable combination that's been proven time and again as the foundation of solutions designed to handle explosive growth in areas like e-business.

Compaq's total commitment to helping you thrive on the Internet is called *Compaq NonStop*™ eBusiness solutions. It's a collection of hardware, software, services, and experience that delivers the ultra-high availability, scalability, reliability, application performance, and security your 24 x 365 e-business will demand.

The key is the *Alpha* 21264 processor — technology that's changing the way business and collaborative computing get done. Forever.

Truly, the sum of a *Compaq AlphaServer* GS system solution is greater than its parts. If it's time for you to benefit from better-than-mainframe performance at a fraction of the cost, there is no question. It's time for you to partner with Compaq.

Global

Why *Compaq AlphaServer* GS systems?

The benefits of leadership are many.

From churning through massive data warehouses to helping you turn your data into knowledge — and your knowledge into profit. To reducing run times of enormous batch queries. To flawlessly supporting thousands of concurrent users on your most demanding enterprise applications. To transforming gene mapping from science fiction into practical science. To saving lives with better global weather forecasting.

From wherever you are now, to wherever you want to go in the brave new world of computing beyond 2000, the *Compaq AlphaServer* GS60E and GS140 systems give you the leadership position you'll need to not just survive the millennium change. But thrive. Prosper. Innovate. And change forever the way work gets done.

There was a time when you couldn't afford mainframe power to help your best people shatter the limits of what the experts said was possible. At Compaq, we believe the time has come when you can't afford not to.

Customer Successes

"I've learned that if you're going to pull a wagon, don't use teams of sled dogs; instead, use a couple of strong horses. Only AlphaServers *have the power, expandability, availability, and... operating system flexibility to meet our customers' most demanding... requirements."*

Richard Baldwin
President and CEO
Nth Generation

Look at the benefits:

- ***Better-than-mainframe performance, at a fraction of the high cost.***
- ***Maximum uptime for ultra-high availability through the world's best clustering technologies on multiple operating systems.***
- ***A cost-effective foundation for continual growth through in-cabinet processor, memory, and I/O upgrades.***
- ***A complete, mature, and proven 64-bit computing environment.***
- ***Universal operating system support providing timely access to thousands of cutting-edge applications through your choice of operating systems:*** **Compaq Tru64 UNIX *or* Compaq OpenVMS.**

Save time and money with top-of-the-line performance.

A combination of breakthroughs in three significant areas of development makes the *AlphaServer* GS systems' performance truly outstanding.

First off, it's the raw speed and power of the new-generation *Alpha* 21264 6/700 processor delivering 30-40% more performance than their market-leading predecessors.

Second, *Compaq VLM64* capabilities will help you speed through applications hundreds of times faster by loading applications and portions of your database into physical memory. With up to 28 GB of *VLM64* in the *AlphaServer* GS140 — you have the ability to make applications absolutely fly, increasing productivity and strengthening your bottom line.

Third, *AlphaServer* GS systems are specifically engineered as balanced systems that can fire on all cylinders to meet growing, often unpredictable, performance demands. Today's *Alpha* architecture is optimized for extreme performance by allowing CPUs, Very Large Memory, terabytes of storage, and massive I/O capacity to work in concert toward getting your work done faster, and better, than ever before.

So what's new about the *Compaq AlphaServer* GS series... why are we talking?

The *Compaq AlphaServer* GS60E system is the new, enhanced member of the *AlphaServer* GS family with seven system bus slots, bringing computing performance, memory capabilities, and I/O throughput into a perfect balance.

Now, the *Compaq AlphaServer* GS60E can expand up to eight CPUs and 8 GB of memory or 6 CPUs and 12 GB of memory, with bus slots available for I/O expansion. That means we've eliminated the contention for resources that can artificially limit the performance of other systems.

And in a move that will further protect your investment, we've updated the *AlphaServer* GS60E cabinet to the new-generation *Alpha* look and feel, helping you take full advantage of continued *AlphaServer* breakthroughs in the years ahead. Plus, the *AlphaServer* GS60E is designed to run in an office environment.

Yet there's more.

Both *Compaq AlphaServer* GS60E and GS140 systems support partitioning, which allows you to run multiple instances of the *Tru64 UNIX* or *OpenVMS* operating systems on one hardware platform. This advancement can help you consolidate several different computing resources into one hardware system, thereby reducing floor space requirements, power consumption, and heat dissipation — or it can allow you to reallocate your resources to separate environments.

Without question, the *Compaq AlphaServer* GS60E system is your best entry point into the *AlphaServer* GS series, providing you with the enterprise-class reliability, scalability, serviceability, and better-than-mainframe power your business and applications demand.

Serious Scalability. Do I have to start at the top?

Absolutely not. You may choose to begin with an entry-level two-processor *AlphaServer* GS60E or *AlphaServer* GS140 system with 4 GBs of memory today. Then, expand either system when you experience the explosive growth that is pushing businesses past accepted standards into a new world of computing.

Whenever you need to grow, you can add more capacity because the *AlphaServer* architecture is designed for very high expansion and throughput, with single-system capacity of up to 14 processors, 28 GB of memory, 85 TB of disk storage, and beyond-mainframe-class I/O bandwidth at 1200 MB/sec.

When you purchase a *Compaq AlphaServer* system, the roadblocks to growth are removed. The only limit now is how many ways you can find to put that awesome power to work for you. In essence, buying into the *Compaq AlphaServer* GS series means you get systems growth insurance — free.

Moreover, you'll never have to worry about whether your hardware can keep pace with you. Everything you need to grow is in the server you buy up front. You can evolve your environment as you grow. Dynamically. Quickly. Easily. With no downtime. No "tweaking" of the operating system and applications.

And don't get caught up in claims from other vendors that more is better when it comes to CPUs. It's proven that a smaller number of faster processors will scale better than a larger number of slower processors.

Look at it another way. Would you rather have a team of 8 or 14 thoroughbred horses pulling your wagon... or 64 chickens?

So what's my next step?

For more information on *Compaq AlphaServer* GS60E and GS140 systems:

- ***Visit our*** **AlphaServer** ***Web site at www.compaq.com/alphaserver***
- ***Call us at 1-800-282-6627***
- ***Call your Compaq sales representative or reseller***

Compaq AlphaServer GS60E and GS140 systems facts and features

	Compaq AlphaServer GS60E	*Compaq AlphaServer* GS140
CPU	*Alpha* 21264 6/525 and 6/700	*Alpha* 21264 6/525 and 6/700
Number of processors	Up to 8	Up to 14
Cache size on chip	64 KB I-cache, 64 KB D-cache	64 KB I-cache, 64 KB D-cache
Cache size on board	4 MB per *Alpha* 21264 6/525 processor, 8 MB per *Alpha* 21264 6/700 processor	4 MB per *Alpha* 21264 6/525 processor, 8 MB per *Alpha* 21264 6/700 processor
In-cabinet upgrades	CPU, I/O, memory, storage	CPU, I/O, memory, storage
Configurations		
Maximum memory	12 GB	28 GB
Maximum internal disk storage	1019 GB	1747 GB
Maximum total disk storage	85 TB	85 TB
Maximum I/O bandwidth	1.2 GB/s	1.2 GB/s
Maximum I/O support	Up to 132 PCI slots	Up to 144 PCI slots, 48 XMI slots
Operating Environment		
Temperature	5° to 35°C 41° to 95°F	15° to 28°C 59° to 82°F
Relative humidity	10% to 90% (non-condensing)	20% to 80% (non-condensing)
Power supply	Three-phase, N+1 hot-swap power supplies standard	Three-phase, N+1 power optional
Enclosure Characteristics		
Height	170.0 cm (67.0 in)	170.0 cm (67.0 in)
Width	60.0 cm (23.6 in)	80.0 cm (31.5 in)
Depth	100 cm (39.4 in)	87.5 cm (34.4 in)
Approximate weight full configuration*		
without batteries	350 kg (775 lbs)	408 kg (900 lbs)
with batteries	N/A	545 kg (1200 lbs)
Warranty/Service		
Hardware	One-year, on-site, four-hour response time	
Software	90-day SPD conformance, with advisory telephone support Supplemental hardware and software services are also available	
Reliability/High-Availability Features		
OpenVMS Clusters	Ethernet, DSSI, FDDI, CI, Memory Channel Interconnect	
UNIX Clusters *(Tru64 UNIX)*	*TruCluster* Available Server, *TruCluster* Production Server, Parallel Software Environment (PCI to Memory Channel Interconnect)	
High-availability features	Auto reboot, thermal management, optional redundant power system, RAID, disk and power hot-swap, memory failover, ECC memory, ECC cache, ECC system bus, SMP CPU failover, error logging, optional battery backup, and optional Uninterruptible Power Supply (UPS)	
I/O options	Fast Ethernet, Ethernet, Gigabit Ethernet, FDDI, Token Ring, sync.comm, async.comm, ATM, UltraSCSI, FWD SCSI-2, RAID, HiPPI, Fibre Channel, CI (*OpenVMS*), IPI, DSSI (*OpenVMS*), Prestoserve (*Tru64 UNIX*), Mainframe Channel Connect	
Software Features		
Operating systems	*Tru64 UNIX* and *OpenVMS*	
Standard software	Internet-energized, *ServerWORKS* Manager, UPS Power Management	
Performance		

For the latest information on performance, visit www.compaq.com/alphaserver

*For more configuration details, please see the *AlphaServer* GS family QuickSpecs on www.compaq.com/alphaserver

AlphaServer GS60E and GS140 part numbers

Systems

Alpha *21264 6/525-Based Systems*

Tru64 UNIX 1 GB *AlphaServer* GS60E	DA-483GE-AA/AB
OpenVMS 1 GB *AlphaServer* GS60E	DY-483GE-AA/AB
Tru64 UNIX 4 GB *AlphaServer* GS60E	DA-483GG-AA/AB
OpenVMS 4 GB *AlphaServer* GS60E	DY-483GG-AA/AB
Tru64 UNIX 4 GB *AlphaServer* GS140	DA-393GG-AA/AB/AC
OpenVMS 4 GB *AlphaServer* GS140	DY-393GG-AA/AB/AC

Alpha *21264 6/700-Based Systems*

Tru64 UNIX 1 GB *AlphaServer* GS60E	DA-484GE-AA/AB
OpenVMS 1 GB *AlphaServer* GS60E	DY-484GE-AA/AB
Tru64 UNIX 4 GB *AlphaServer* GS60E	DA-484GG-AA/AB
OpenVMS 4 GB *AlphaServer* GS60E	DY-484GG-AA/AB
Tru64 UNIX 4 GB *AlphaServer* GS140	DA-394GG-AA/AB/AC
OpenVMS 4 GB *AlphaServer* GS140	DY-394GG-AA/AB/AC

Key Options

Memory

1 GB Memory Module	MS7CC-EA
2 GB Memory Module	MS7CC-FA
4 GB Memory Module	MS7CC-GA

Pluggable Hard Drives

9.1 GB 7200 RPM 16-bit Wide UltraSCSI disk drive	DS-RZ1DA-VW
18.2 GB 7200 RPM 16-bit Wide UltraSCSI disk drive	DS-RZ1EA-VW
36.4 GB 7200 RPM 16-bit Wide UltraSCSI disk drive	DS-RZ1FB-VW
9.1 GB 10,000 RPM 16-bit Wide UltraSCSI disk drive	DS-RZ1DD-VW
18.2 GB 10,000 RPM 16-bit Wide UltraSCSI disk drive	DS-RZ1ED-VW

Drive Controllers

Single (UWSE) Ultra SCSI Channel PCI Backplane RAID Controller w/4 MB cache memory for *Alpha* systems	KZPAC-AA
Three (UWSE) Ultra SCSI Channel PCI Backplane RAID Controller w/8 MB cache memory for *Alpha* systems	KZPAC-CB
PCI-based one port Ultra SCSI Single-ended how adapter	KZPBA-CA
PCI-based one port Ultra SCSI Single-ended how adapter	KZPBA-CB

I/O Expansion Buses

12-slot PCI shelf mount box for *AlphaServer* GS60E system and expansion cabinet	DWLPB-DA
PCI plug-in unit with one 12-slot PCI box for *AlphaServer* GS140 system cabinet	DWLPB-AA
PCI plug-in unit with one 12-slot PCI box for *AlphaServer* GS140 expansion cabinet	DWLPB-AB

Dual CPU Processor Modules

AlphaServer GS60E 21264 6/525	
AlphaServer GS140 21264 6/525	
Tru64 UNIX	762P2-AX
OpenVMS	762P1-AX
AlphaServer GS60E 21264 6/700	
AlphaServer GS140 21264 6/700	
Tru64 UNIX	3X-764P2-AX
OpenVMS	3X-764P1-AX

External Storage

ESA 10,000 high capacity base unit	DS-SWXES-AA/AB
ESA 10,000 high bandwidth base unit	DS-SWXES-BA/BB
ESA 10,000 dual expansion base unit	DS-SWXES-CA/CB
ESA 10,000 single expansion base unit	DS-SWXES-DA/DB
RAID Array 7000 with dual controllers	DS-SWXRA-HA
RAID Array 7000 with single controllers	DS-SWXRA-HC

ESA 12,000 and RAID Array 8000 options are also supported

Communications

PCI-based Asynchronous Communications Adapter	PBXDA-AX
PCI-based Asynchronous Communications Controller	PBXDP-AX
PCI-based ATMworks 351 Bus Adapter	DGLPB-FA/UA
PCI-based Token Ring Adapter	SN-PBXNP-AC
PCI-based FDDI controller Fiber	DEFPA-AB/DB
PCI-based Gigabit External Adapter	DEGPA-SA

Other

I/O expansion cabinet (GS60E) Single Phase power, max 2/system	3X-H9A22-BA/BB
I/O expansion cabinet (GS140) Three Phase power, max 2/system	
60 Hz, 208V	H9F00-JC
50 Hz, 380/416V	H9F00-JD
50/60 Hz, 202V	H9F00-JE

COMPAQ

www.compaq.com/alphaserver

Compaq, Tru64, and the Compaq logo are trademarks of Compaq Computer Corporation. AlphaServer, Alpha, the AlphaPowered logo, NonStop, VLM64, Alpha Warehouse, OpenVMS, TruCluster Available Server, TruCluster Production Server, ServerWORKS, and StorageWORKS registered in U.S. Patent and Trademark Office. UNIX is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company, Ltd. Other product and company names mentioned herein may be trademarks and/or service marks of their respective owners. Compaq believes the information in this publication is accurate as of its publication date; such information is subject to change without notice. Compaq is not responsible for any inadvertent errors. Compaq conducts its business in a manner that conserves the environment and protects the safety and health of its employees, customers, and the community. Copyright ©1999 Compaq Computer Corporation. All rights reserved. Printed in U.S.A. Project No. 0004-0799-B Rel.# ???????