

PRIMEPOWER 450 Pedestal 4-way Floorstand Server – Peace of mind server solution for corporate workgroups and small enterprises

Issue May 2006

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PRIMEPOWER servers are proven Unix computers based on the latest high performance processor architecture (SPARC64™V) and running the worldwide number 1 Solaris™ Operating Environment. PRIMEPOWER gives you the confidence that your IT business processes are always up and running. PRIMEPOWER servers make sure that dynamic IT production loads will always finish in time, by using all of the system resources with no resources wasted and with unique flexibility to adopt changing priorities.

PRIMEPOWER Pedestal servers ensure continuous operation based on proven datacenter technology. As your business grows, so do our PRIMEPOWER servers, and by providing plenty of headroom for expansion they let you benefit longer from your investments. The PRIMEPOWER ServerView Suite management functions care for less troubleshooting efforts and access from anywhere at any time, to provide a stable and reliable system performance.

PRIMEPOWER 450 Pedestal

Especially for smaller enterprises and corporate workgroups a fail-safe system architecture which cares for continuous operation of business processes is of highest importance, because usually they do not have technical staff. The PRIMEPOWER 450 Pedestal server combines great 4-way performance with fail-safe system architecture, inherited from the datacenter proven PRIMEPOWER eXtended architecture. All its features care for continuous server operation and give you the peace of mind to concentrate on your business- and not on your server. As independently usable system the PW 450 Pedestal can handle almost every business application and gets the job done in time, making use of up to four SPARC64™ V processors, up to 32 GB main memory and internal disk capacity of more than 800 Gigabyte. This server is designed to keep pace with your expanding business demands: plenty of expansion options for connectivity, external disks and I/O boxes or backup media provide confidence to cope for growth and a long usage lifecycle. Intelligent system control features provided by an independent service processor (XSCF) improve continuous operation through early recognition and preventive diagnostics. Remote Management Control using secure LAN connections cut operational costs with remote central services, whenever specialists are not at hand.



Key Features	Benefits
<ul style="list-style-type: none"> Redundant components (power supply/fan) and disk-mirroring features allow vital components (power supply/fan/disk drive/built-in tape drive) to have hot-swap capability 	<ul style="list-style-type: none"> Improved uptime for business applications
<ul style="list-style-type: none"> Scalability is possible with memory of up to 32 Gbyte, 9 PCI slots and up to 19.4 TB storage capacities (if external disc boxes are added) 	<ul style="list-style-type: none"> Expansion for growth and long lifecycle usage
<ul style="list-style-type: none"> With the new extended system control facility it is possible to connect a LAN for LAN consoles, to switch power on/off, and to have an enhanced diagnostics/control environment 	<ul style="list-style-type: none"> Remote management features for enhanced error avoidance

PRIMEPOWER 450 Technical characteristics

- XA system architecture with up to 4 SPARC64™V processors with 1.65GHz or 1.98 GHz and 3MB level-2 cache on-chip
- Up to 32 GB DDR-SDRAM main memory conditioned to system versions, 4-way
- Up to 9 PCI hot-plug controllers
- High-speed interconnect (crossbar) with 4 processors.
- Redundant hard disks (as option), fans(standard), power supply units (as option) and/or power phases(optional)
- Hot-swap components: hard disks, DAT drive, power supply units, fans and PCI
- Monitoring of operating status of system units in real time on system management console.
- New eXtended System Control Facility, XSCF, with:
 - Controlling and diagnostics when power is on.
 - Diagnostics when power is off.
 - Power on/off by command.
 - LAN console connection through LAN direct to XSCF LAN port.
 - Serial port (tty-a) for use with a console attached via RCA4.

SPARC64™ V – Processor Functions

- Super-scalar processing
- VIS™ – Visual Instruction Set
- 64-bit virtual address space
- 7 Execution Units (2 Load Store, 2 Fixed Point, 2 Floating Point, 1 Branch)
- Up to 4 instructions can be ended with each CPU-Clock cycle
- SMP – cache coherency support (MOESI-Protokoll)
- 2x128 KB on-chip Level1 low latency cache
- 4 way 16K entries branch history table
- optimized Branch Prediction method
- Concurrent out-of-order execution
- ECC (Error Correction Code) for
 - Level-1 data cache
 - Level-2 cache
 - High speed interconnect
 - Memory
- Parity for
 - CPU register
 - CPU core (data pathes and all ALU's)
 - TLB (Translation Look-aside Buffer)
 - Level-1 instruction cache
- Duplication of tags for level-1 instruction- and data- cache
- Automatic, in hardware implemented instruction recovery in case sporadic one-bit error of the CPU-core (AIR = Automatic Instruction Retry)
- Automatic degradation of parts of individual CPU subcomponents (ways) of level-1, level-2cache and TLB in the event of sporadic single-bit errors during operation
- Instruction TLB:
 - 1024 entry, 2 way, 8KB pages
 - + 1024 entry, 2 way, 4MB pages
 - + 32 entry, full associative 64KB, 512KB and locked page
- Data TLB:
 - 1024 entry, 2 way, 8KB pages
 - + 1024 entry, 2 way, 4MB pages
 - + 32 entry, full associative 64KB, 512KB and locked page
- 3 MB 3-way joint low latency on-chip level-2 Cache
- 400 Mio. Transistors, 90nm copper technology

Technical specifications PRIMEPOWER 450 Pedestal

Server	GP450-GF5xEy (with 1,65GHz/3MB SLC)	GP450-GF5xFy (with 1,98GHz/3MB SLC)
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Processor

Type	SPARC64™V (equivalent to SPARC V9)	
CPUs	1-4 per Server	
Level-1 Cache, (I/D)	128KB / 128KB	
Level-2 Cache	3MB / CPU	
Clock Speed	1,65 GHz	1,98 GHz
SPECint_rate2000	55,4	64,6
SPECfp_rate2000	72,7	79,9

Main memory configuration

Type	Synchronous DDR SDRAM with ECC (even single-chip failure will be corrected)	
min. capacity	1 GB / server	
max. capacity	32 GB / server	
Expansion unit	1 GB or 2 GB or 4 GB	

I/O ports (Standard)

LAN	1 x Ethernet (10baseT / 100baseTX) 1 x Ethernet (10baseT / 100baseTX / 1000base TX)	
V.24 (RS232C)	1 x	
console port	1 x RS232C (on XSCF) 1 x Ethernet (10baseT / 100baseTX on XSCF)	
SCSI bus (for int. disks)	2 per Server (LVD U320)	
RCI	1 port (RJ45 6-pin)	
UPS	1 port / Server (D-sub 9-pin)	

PCI slots

PCI (64 bit)	9 slots (7x33 MHz, 2x33/66 MHz)
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PCI-controller

Ultra Dual SCSI	Ultra SCSI, 16 bit, D, 2 channels
LVD U320 Dual SCSI	U320 SCSI, 16bit, 2 channels
Fibre Channel	2 Gbit/s, Non-OFC
Fast Ethernet	10base-T/100base-TX, 1 or 4 channels
Gigabit Ethernet	1000 base-SX, 1 channel
Gigabit Ethernet	10baseT/100baseTX/1000 base-TX, 1 channel
Token Ring	100 / 16 / 4 Mbit/s
WAN	V.24, X.21, V.35, 2 Mbps
ISDN	S ₀ , S _{2m}

Mass storage (hard disks)

Type	LVD U320
Data rate	320 MB/s (sync, max)
Min. capacity	73 GB (U320) ¹⁾
Expansion unit	73 GB / 147 GB (U320) ¹⁾
Total capacity	882 GB (internal) / 19.4 TB (incl. 9 DN4x disk boxes) ¹⁾

DN4x disk box 3HU (1 per PCI adapter)

Hard disk bays	14 bays (2 x 7)
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Console

LAN-Console	1 x per server / mandatory in a network or a SMC from an Enterprise system
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Software

Operating system	Solaris™ 8 02/02, 9 und 10
Networking	ONC/NFS, TCP/IP, OSI, X.25
Compiler	C/C++, Fortran-90, COBOL, Java
System management	PRIMEPOWER ServerView Suite
Storage management	VERITAS Volume Manager & File System, PRIMECLUSTER

¹⁾ 1 MB = 10⁶ Byte, 1 GB = 10⁹ Byte

Installation specifications PRIMEPOWER 450 Pedestal

		PW450 floor-standing version Up to 4-way
Width		350 mm
Depth		740 mm (751 mm over all)
Height		520 mm
Maintenance area		
front		800mm
back		1000mm
left		800mm
right		800mm
Weight		68 kg
Rated voltage		200-240 VAC +/-10%
Mains connections		max. 3 x Schuko (IEC884-1 (CEE7-7))
Frequency		50/60Hz +2%/-4%
Power consumption, max.		1350VA (1280 Watt)
Heat output, max.		4608 kJ/h
Operating temperature / Operating altitude		from 5 to 35 ° C / 0 – 1.500 m from 5 to 31° C / 1.501 – 3.000 m
Relative humidity		20 % - 80 %, no condensation
Electrical standards:	Safety	IEC60950 ; C22.2 No.60950 ; ICES003 (CSA 108.8) ; UL60950
	EMC	EN55022 / CISPR22 Class B ; EN61000-3-2 / EN61000-3-3
	Immunity	EN55024 / CISPR24
Environmental conditions:	Operation	EN60721-3-3, 3K2, 3M2, 3C2, 3S2
	Storage	EN60721-3-1, 1K2, 1M3, 1C2, 1S2
	Transport	EN60721-3-2, 2K2, 2M2, 2C2, 2S1
Ecology		ECO ; FSC 03230