

PCI-X Bridge Performance Comparison Report

This report will provide the Fast Ethernet (Non-cascade mode) and Gigabit Ethernet performance comparison test between Pericom PI7C21P100 and The Tundra PCI-X Bridge chip tested on five different Servers Motherboards. The report will also show the SCSI RAID test performance.

Results

Performance Comparison – Fast Ethernet test (4 cards inserted on the bridge’s secondary bus)											
LAN Card	Tyan S2460 (Slot #4) PCI 33/PCI 33		Tyan S2720 (Slot #4) PCI 36/PCI 33		Super Micro X5DL8-GG (Slot #3) PCIX 133/PCI 33		Super Micro P3TDLE (Slot #6) PCI 33/PCI 33		Super Micro P4QH6 (Slot #3) PCIX 100/PCI 33		Unit
	Pericom	Tundra	Pericom	Tundra	Pericom	Tundra	Pericom	Tundra	Pericom	Tundra	
1	99	98	98	69	82	28	98	99	99	99	Mb/s
2	99	30	98	49	94	25	99	99	99	99	
3	99	19	98	7	89	6	98	11	99	93	
4	99	18	98	15	88	5	98	36	99	91	

SCSI RAID Tests

The PI7C21P100 was tested and compared against the other chips available in the market. The Bridge will get up to 32 % in performance gain, Plz see the details below.

The PCIX HP Raid controller 6400/6400 EM was used for the I/O Meter test. We used the DL 380 G3 HP server and 28 SCSI drives attached to the server.

The performance numbers below were done using the above-mentioned server and the IO Meter test.

I/O Meter Test	PI7C21P100	Tundra	% Improvement
33% Wr, 67% Rd	687MB/s	542MB/s	21 %
100 % Rd	714 MB/s	483 MB/s	32 %

CARD Used: PCIX133 HP Raid SmartArray 641 Controller

Hard Disk: Seagate Ultra320

Gigabit Ethernet Performance Test

Parameter	Tyan S2460 (Slot #4) PCI 33/PCI 66		Asus P4G8X (Slot #4) PCI 33/PCI 66	
	PI7C21P100	Tundra	PI7C21P100	Tundra
Total Transmit (Mb/s)	1025	425	510	318

CARD Used: Entrada Quad 82543GC Gigabit Ethernet PCI card.

Systems Used

- **Tyan S2460**

- AMD-760 MP Chipset
- AMD-762 North Bridge
- AMD Athelon 1.8GHz CPU
- PC2100 DDR Memory
- Expansions Slots
 - One AGP
 - Four 64-bit 33MHz (5V)
 - Two 32-bit 33MHz (5V)
- Radeon 7000 AGP card on a different PCI slot
- OS - Windows 2000
- 100Mbit/sec LAN cards (4) using full duplex
- LAN cards are inserted into the reference board
- Exerciser program to write packets from PCI card to memory and then read back. This provides maximum traffic for the LAN card.

- **Tyan S2720**

- INTEL E7500 Chipset
- Intel Xeon 1.8GHz CPU
- PC2100 DDR Memory
- Expansions Slots
 - One 32-bit 33MHz (5V)
 - Two 64-bit 66/33MHz (3.3V) PCI-X
 - Two 64-bit 100/66/33MHz (3.3V) PCI-X
- ATI Rage XL Graphics Controller
- OS - Windows 2000
- 100Mbit/sec LAN cards (4) using full duplex
- LAN cards are inserted into the reference board
- Exerciser program to write packets from PCI card to memory and then read back. This provides maximum traffic for the LAN card.

- **Super Micro P4QH6**

- ServerWorks GC-HE Chipset
- Intel Xeon MP – 2.8GHz CPU
- 400MHz Front Side Bus
- 32GB ECC DDR Memory
- Expansions Slots
 - One MEC
 - Six 64-bit 100MHz PCI-X
 - One 32-bit PCI
- ATI Rage XL 8MB Graphics Controller
- OS - Windows 2000
- 100Mbit/sec LAN cards (4) using full duplex
- LAN cards are inserted into the reference board
- Exerciser program to write packets from PCI card to memory and then read back. This provides maximum traffic for the LAN card.

- **Super Micro X5DL8-GG**
 - ServerWorks GC-HE Chipset
 - Intel Xeon MP – 2.8GHz CPU
 - 533/400MHz Front Side Bus
 - DDR-266 Memory
 - Expansions Slots
 - Six 64-bit 100MHz PCI-X
 - ATI Rage XL 8MB PCI graphics controller
 - OS - Windows 2000
 - 100Mbit/sec LAN cards (4) using full duplex
 - LAN cards are inserted into the reference board
 - Exerciser program to write packets from PCI card to memory and then read back. This provides maximum traffic for the LAN card.

- **Super Micro P3TDLE**
 - ServerWork Serverset III LE Chipset
 - Intel Pentium III 1.4GHz CPU
 - PC133 SDRAM memory
 - Expansions Slots
 - Two 64-bit 66/33MHz PCI
 - Four 32-bit 33MHz PCI
 - One 16-bit ISA
 - ATI Rage XL PCI graphics controller
 - OS - Windows 2000
 - 100Mbit/sec LAN cards (4) using full duplex
 - LAN cards are inserted into the reference board
 - Exerciser program to write packets from PCI card to memory and then read back. This provides maximum traffic for the LAN card.
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- **ASUS P4G8X**
 - Intel E7205 MCH Chipset
 - Intel Pentium 4 1.8GHz CPU
 - 533/400MHz Front Side Bus
 - PC2100 DDR Memory
 - Expansions Slots
 - One AGP Pro/8x (1.5V only)
 - Five PCI slot
 - Rage XL PCI video on a different PCI slot
 - OS - Windows 2000
 - 100Mbit/sec LAN cards (4) using full duplex
 - LAN cards are inserted into the reference board
 - Exerciser program to write packets from PCI card to memory and then read back. This provides maximum traffic for the LAN card.