

Contributed article for April 2006 RTC magazine

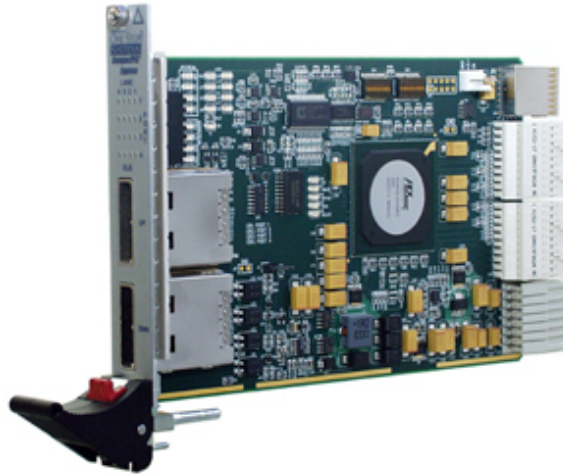
## Advanced Switching on CompactPCI Express

by

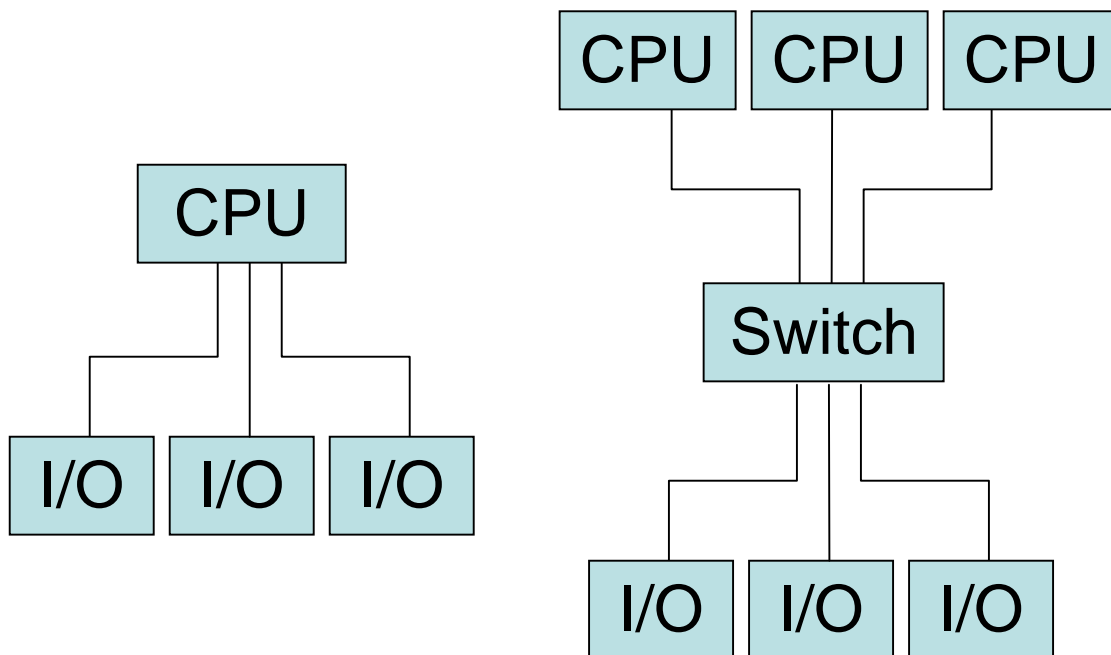
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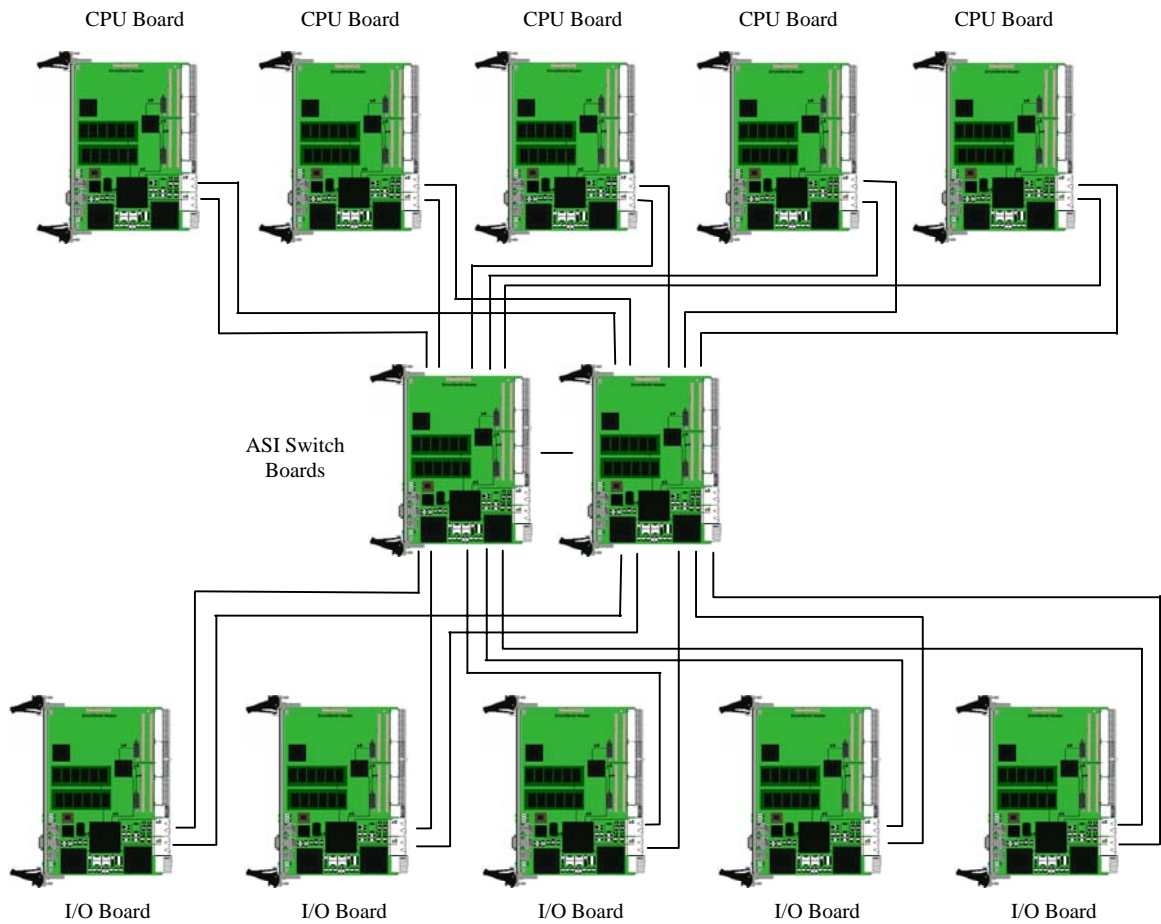
### Figures:



1. New connectors and pin outs enhance CompactPCI boards to incorporate PCIe functionality and performance.



2. a) Tree architecture for CompactPCIe; b) Network architecture for CompactPCIe with ASI. CompactPCIe supports both architectures, with CPU and I/O boards used unchanged.



3. Dual star topology for CompactPCIe with ASI provides fault-tolerance through redundancy and dynamic I/O re-mapping



4. A CompactPCIe 8U enclosure capable of incorporating the dual-star topology



5. The key elements for connecting PCIe with ASI over cable including the host interface board, cable, switch and CompactPCIe board are shown here.

**Table:**

	<b>CPCI with 2.16</b>	<b>CPCIE with ASI</b>
<b>CPU-to-CPU Bus</b>	Ethernet	CPCIE
<b>Performance</b>	1Gb/s	10Gb/s (x4)
<b>CPU-to-I/O Bus</b>	CPCI	CPCIE
<b>Performance</b>	132MB/s	1GB/s (x4)
<b>I/O Mapping</b>	Static	Dynamic

1. Comparison of CompactPCI with 2.16 versus CompactPCIE with ASI shows CPCIE/ASI to have higher performance and greater fault-tolerance.

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