



Basic SCI Products

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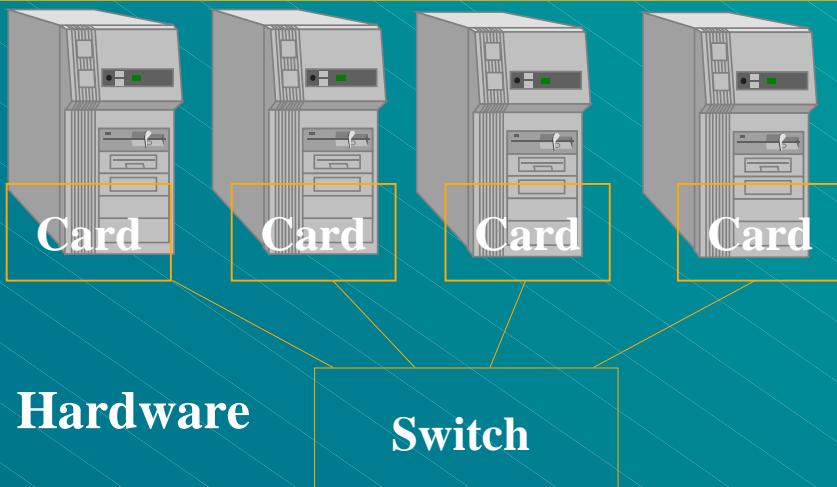
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DOLPHIN'S PRODUCTS

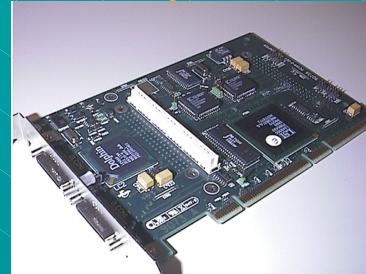


NT, Solaris, Linux, Lynx, VxWorks

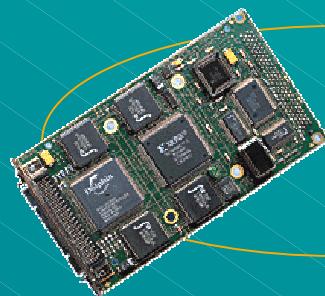
IRM, SISCI API, VI, NDIS, DLPI



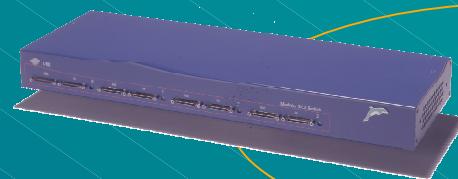
PMC SCI Adapter Card
I/O Subsystem Modules
Paroli SCI Parallel Optical Cable



PCI SCI
Adapter Card

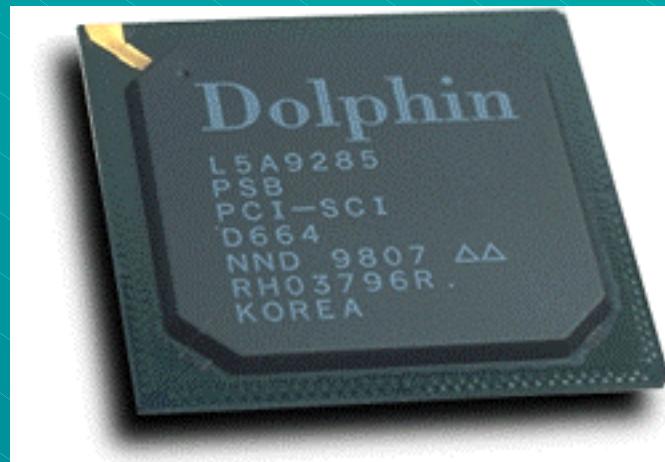
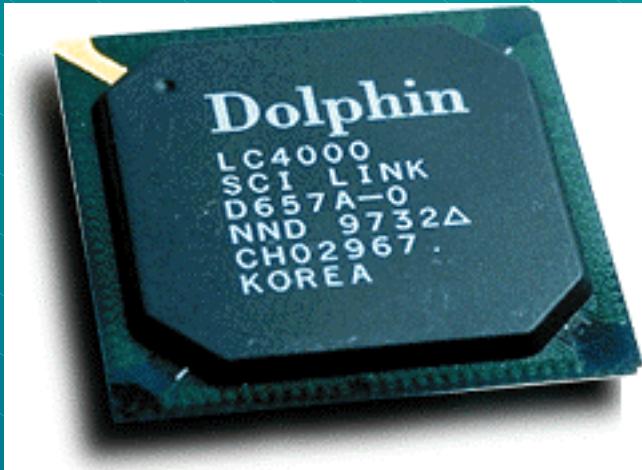


SBus SCI
Adapter Card



SCI Modular
Switch

Dolphin Technology, Chips



- LC3
- LinkController family
- SCI Link Interface Chip
- 800 Mbytes/s input and output Link
- SCC SCI Cache Controller Chip
- PSB
- PCI Protocol Chip family
- PCI to LC Protocol Chip
- Supports Clustering, I/O Expansion

LC3 LinkController Chip



- **FEATURES**

- Two unidirectional links at 800 MBytes/s
- 48 ns bypass latency
- Low Voltage Differential Signaling (LVDS) link
- Guaranteed data delivery, error detection and recovery
- Hot pluggable
- Compliant to Standards
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface
 - ANSI/IEEE 1212 Computer Status Register compliant
 - ANSI/IEEE 1159.1 (JTAG)

- **BENEFITS**

- Very high bandwidth
- Lowest latency in the industry
- Low power, reliability and noise immunity
- Highly reliable
- Based on Standards



LC3 is an economical, reliable and powerful link interface for high performance distributed applications

PSB66 Chip



- **FEATURES**

- 304 MB/s sustained throughput
- Direct Memory Access (DMA), chained READ and WRITE
- Remote Memory Access (RMA)
- Hostbridge capability
- Built-in address translation
- Error detection and protection mechanisms
- Compliant to ANSI/IEEE 1596-1992 (SCI) standard
- PCI 2.1 compliant

PSB66 provides powerful mechanisms and highly reliable message passing for high-throughput distributed applications

- **BENEFITS**

- Greatly reduces CPU overhead associated with data transfer
- Allows applications to reliably exchange data without the use of operating system services
- Enables ultra-low latency messaging
- Enables transparent I/O transfers
- Based on Standards



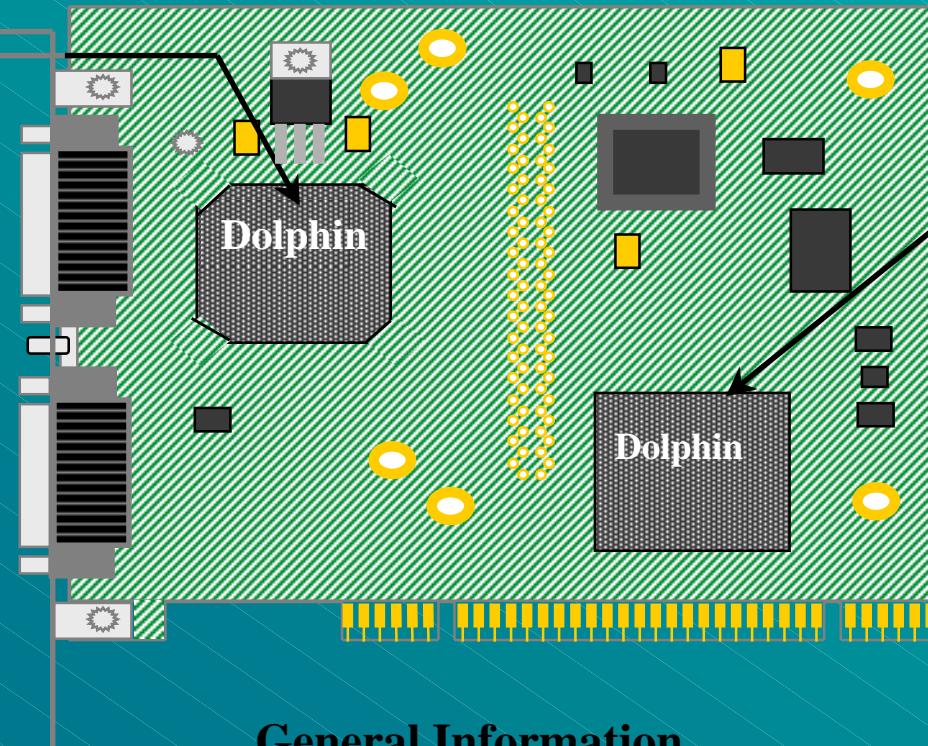
SCI Adapter Hardware Overview



LINK
CONTROLLER

Performance

- 2 μ s one-way application latency
- 667 Megabytes/s links input AND output



PCI-SCI
BRIDGE

Programming Model

- Read and Write RMA
- Read and Write DMA
- Remote Interrupts
- Remote Locking

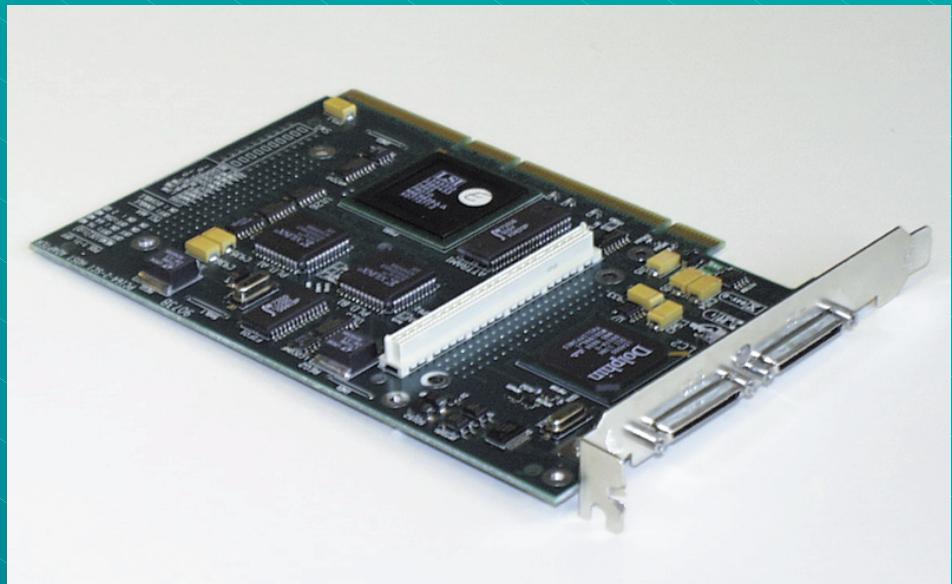
General Information

- SCI is an IEEE Standard for Reliable Interconnects

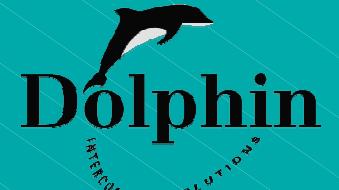
PCI-SCI Adapter Card - PCI-64



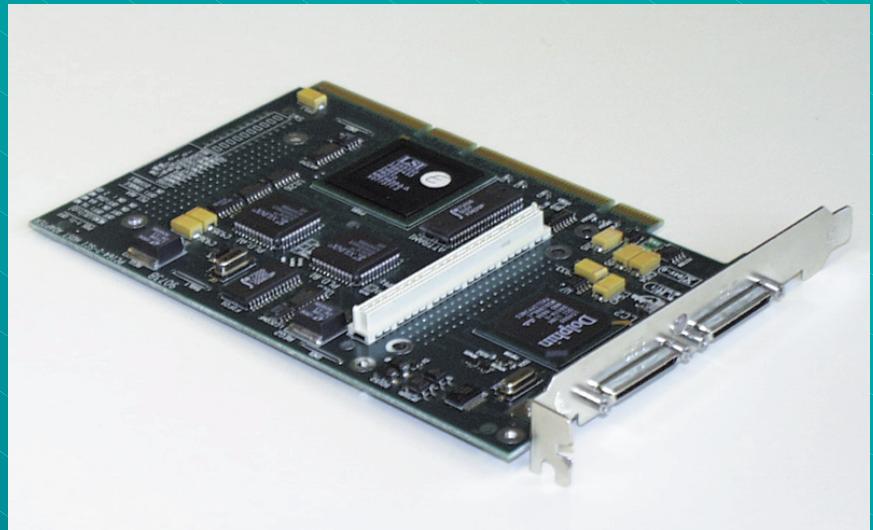
- **SCI ADAPTERS (64 bit - 33 MHz)**
 - PCI / SCI ADAPTER (D320)
 - Industry-best latency (~ 2 us)
 - High data throughput (~ 120 MBytes/sec)
 - Supports both:
 - Direct Memory Access (DMA)
 - Remote Memory Access (RMA)
 - Hot-pluggable adapter
 - Redundant SCI adapters can be used for Fault-tolerance
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant



PCI-SCI Adapter Card - PCI-66



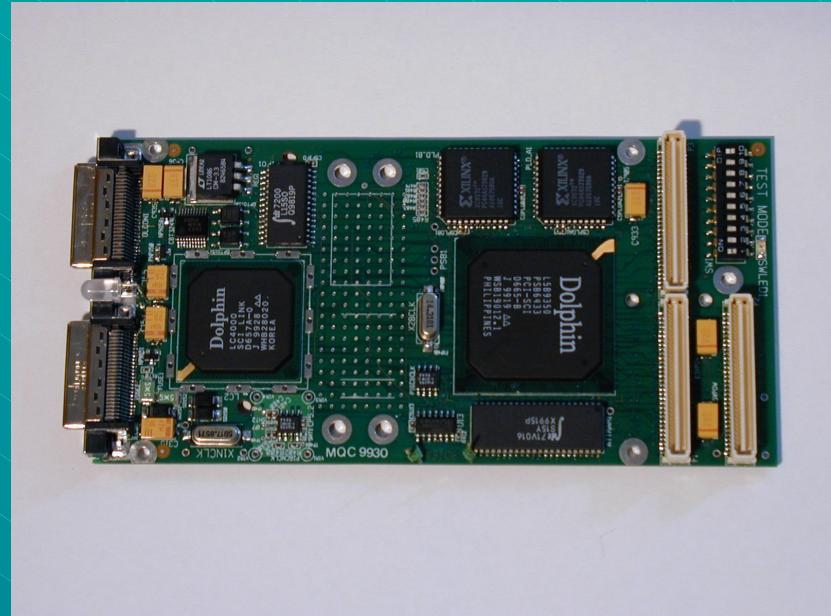
- **SCI ADAPTERS (64 bit - 66 MHz)**
 - PCI / SCI ADAPTER (D330)
 - Industry-best latency (2 microseconds)
 - High data throughput (250 ~ 300 MBytes/sec)
 - Supports both:
 - Direct Memory Access (DMA)
 - Remote Memory Access (RMA)
 - Hot-pluggable adapter
 - Redundant SCI adapters can be used for Fault-tolerance
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant
 - Available now - Volume in Dec. 2000



PMC-SCI Adapter Card - PMC-66



- **SCI ADAPTERS (64 bit - 33 MHz)**
 - PCI / SCI ADAPTER (D323)
 - Industry-best latency (2 microseconds)
 - High data throughput (~ 120 MBytes/sec)
 - Supports both:
 - Direct Memory Access (DMA)
 - Remote Memory Access (RMA)
 - Hot-pluggable adapter
 - Redundant SCI adapters can be used for Fault-tolerance
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant



PMC-SCI Adapter Card - PMC-66

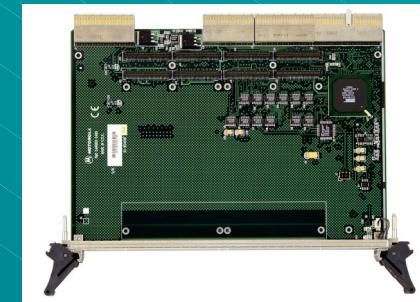


- **SCI ADAPTERS (64 bit - 66 MHz)**
 - PCI / SCI ADAPTER (D333)
 - Industry-best latency (2 microseconds)
 - High data throughput (250 ~ 300 MBytes/sec)
 - Supports both:
 - Direct Memory Access (DMA)
 - Remote Memory Access (RMA)
 - Hot-pluggable adapter
 - Redundant SCI adapters can be used for Fault-tolerance
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant
 - Available in December 2000
-

Hot Swap cPCI - SCI



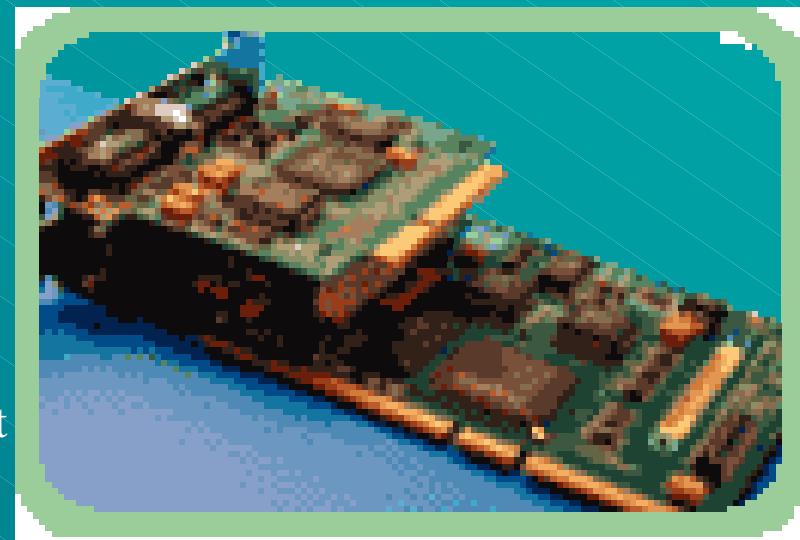
- **PCI / SCI ADAPTER D333 and Motorola CPV8540**
- **Compliance**
 - Software PCI Local Bus Specification, Revision 2.1
 - CompactPCI Specification, PICMG 2.0, Revision 2.1
 - CompactPCI Hot Swap Specification PICMG 2.1, Revision 1.0
 - IEEE P1386.1 PMC Specification
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard



PCI-SCI Adapter Card - Dual SCI Link



- **DUAL SCI ADAPTERS (64 bit - 66 MHz)**
 - PCI / SCI ADAPTER (D331)
 - Industry-best latency (2 microseconds)
 - High data throughput (250 ~ 300 MBytes/sec)
 - Supports both:
 - Direct Memory Access (DMA)
 - Remote Memory Access (RMA)
 - Hot-pluggable adapter
 - Dual SCI adapters can be used for Fault-tolerance or 2D topologies
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant
 - Occupies one PCI slot
 - Available in December 2000



PCI-SCI Adapter Card - Dual SCI Link



- **TRIPPEL SCI ADAPTERS (64 bit - 66 MHz)**
 - PCI / SCI ADAPTER (D337)
 - Industry-best latency (2 microseconds)
 - High data throughput (250 ~ 300 MBytes/sec)
 - Supports both:
 - Direct Memory Access (DMA)
 - Remote Memory Access (RMA)
 - Hot-pluggable adapter
 - Dual SCI adapters can be used for Fault-tolerance or 3D topologies
 - ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant
 - Occupies 2 PCI slots
 - Available in December 2000

6 Port Expandable Modular SCI Switch - D515



- **SCI Modular Switch-6E**

- Expandable 6-port Switch (D515)
 - 6 User ports
 - Expandable to 8-12 and 16 ports
 - Port fencing (problem isolation)
 - Hot pluggable connections
 - Rack mountable (19")
 - Transparent In-Band Management by IRM
 - Based on LC2
 - Available now



8 Port Expandable Modular SCI Switch - D535

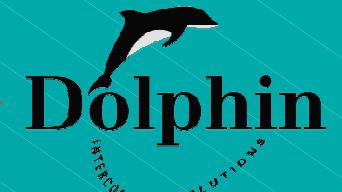


- **SCI Modular Switch-8E**

- Expandable 8-port Switch (D535)
 - 8 User ports
 - Expandable to large configurations
 - Performance:
 - Raw/port: 667 MBytes/s
 - Aggregate (8 ports): 2.8 GigaBytes/s
 - Latency port to port: 150 ns.
 - Port fencing (problem isolation)
 - Hot pluggable connections
 - Rack mountable (19")
 - Out of band SNMP management
 - Based on LC3 - BxBar Technology



Copper Cables



- **Parallel STP Copper Cable**
 - 1 - 10 meter
 - 0.4 meter flexible print cable
- **50-pin AMP connectors**



Optical Links



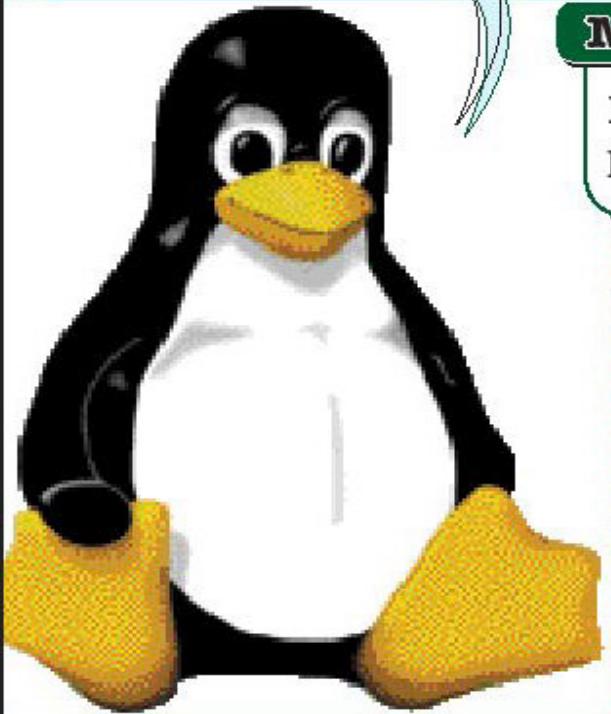
- Parallel Optical Link PAROLI-SCI Cable
 - 10 Parallel fiber's
 - 1-150m Full bandwidth
- 50-pin AMP connectors



- **Application Programming Interface (API)**
 - Low Level SCI Programming
 - Building block for easy application development
 - **User space Access to basic SCI and Adapter properties**
 - High Bandwidth
 - Low Latency
 - Memory Mapped Remote Access
 - DMA Engine
 - Interrupts
 - Callbacks
-

Dolphin+Scali wulfkit™ Parallel Processor Solutions

WOW!
I can build
my own
Supercomputer!



Mission:

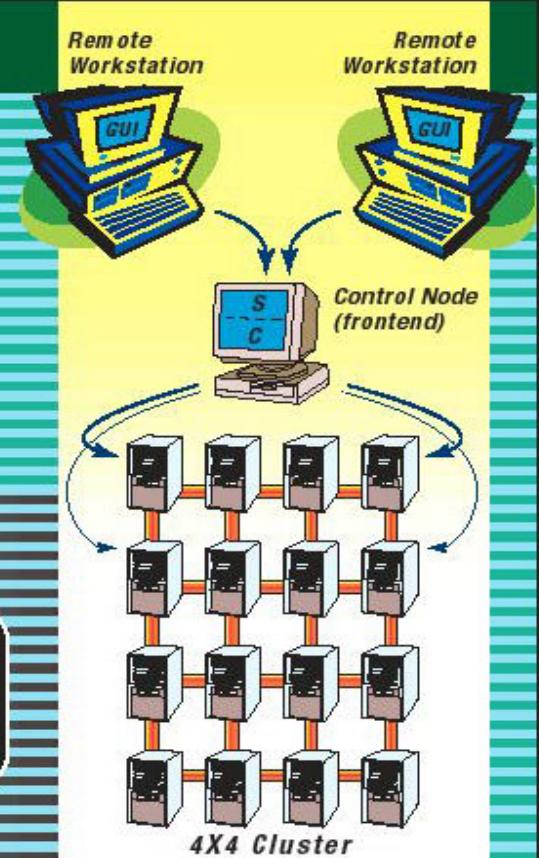
Enable the construction of powerful, scalable, parallel processor systems (like Beowulf) at affordable prices.

Support:

Native support for Linux, Sun Solaris, WinNT
with configurations from 4 to 100's of nodes.

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