Scalable Linux Systems

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SCALI

Scalable System Requirements

- **Balanced Hardware Resources**
  - **High Processor Speed**
  - **Scalable Memory and Storage**
  - **High Bandwidth Interconnect**
  - **Low latency Communication**
- **Efficient Middleware, Standard APIs**
- **Ease of Use**
- **Easy and Flexible System Administration**

Dolphin INTERCONNECT SOLUTIONS

SCALI

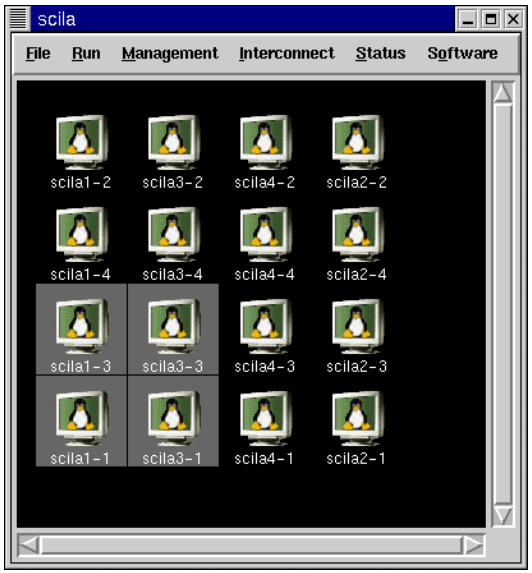
Northern Lights
www.nlcomputer.com

The Value Chain

Interconnect Hardware

WulfKit™

Interconnect Software (MPI, SCI-SAN) System Management-Tools



Complete-Integrated Systems Support

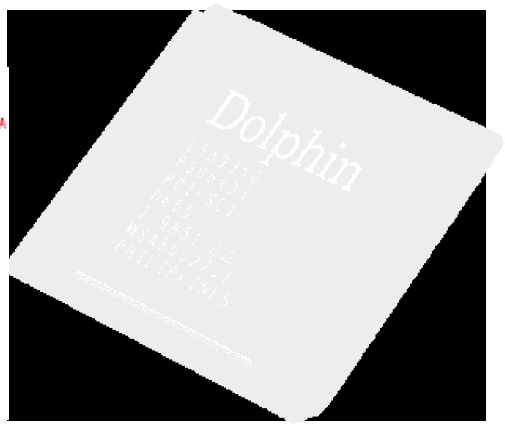
NL Server 2000

Scalable Linux Systems

Dolphin Technology

- Based on SCI, the only bus extension technology
- Proven over years in applicatio
  - Clustering of SUN's high availability ser
  - Fujitsu Siemens large scale IO system
  - Data General AViiON ccNUMA servers
  - Mirage and Rafale flight computers
  - Scali and Nothern Lights ISP, ASP and I
- Solutions for Serversand Embedded Computing
- 2µs ° Application Latency, 500 Mbytes/s Link Speed
- Dolphin sells Chips, Cards, Switches and licenses technology
- Dolphin makes the Scali and WulfkKit card assembly and sells the WulfKit to system buidlers

WulfKit™



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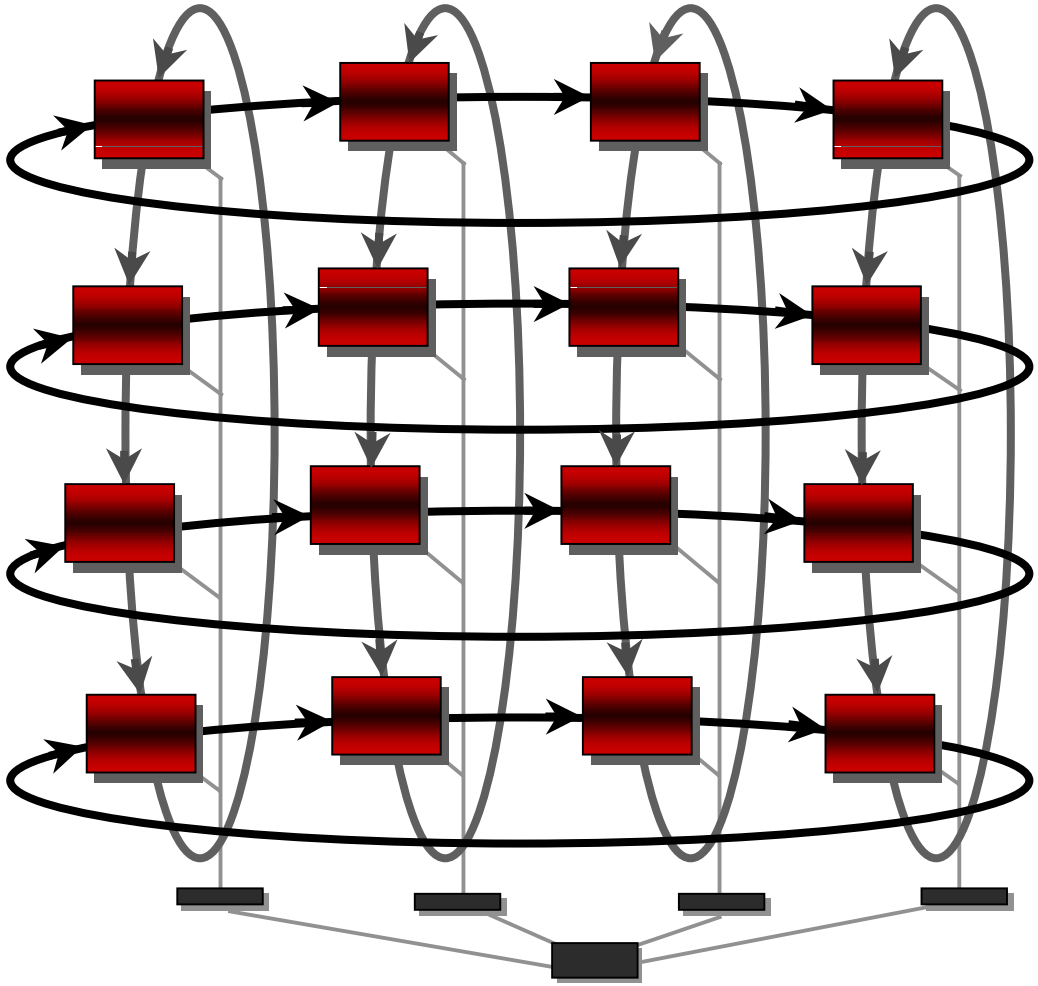
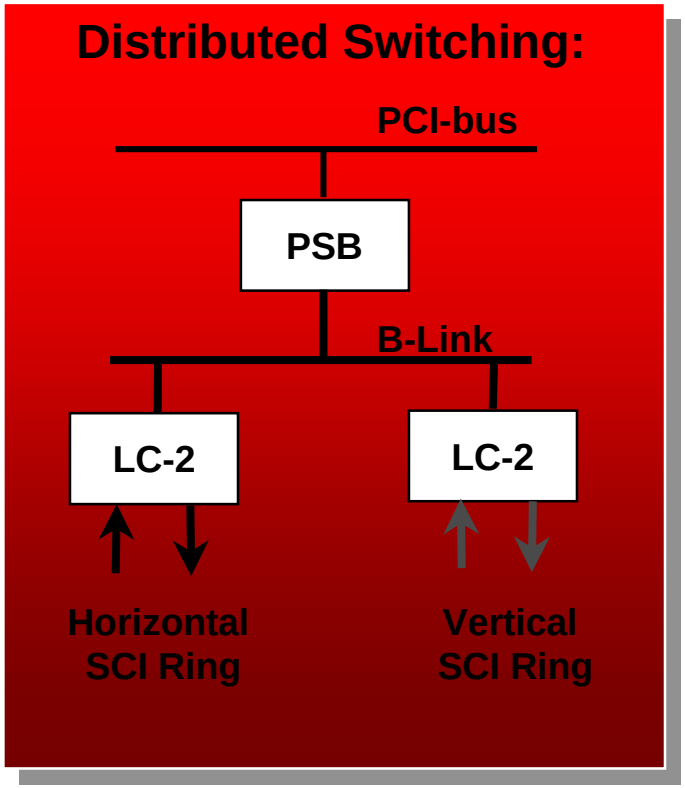
Scalable Linux Systems Advantages

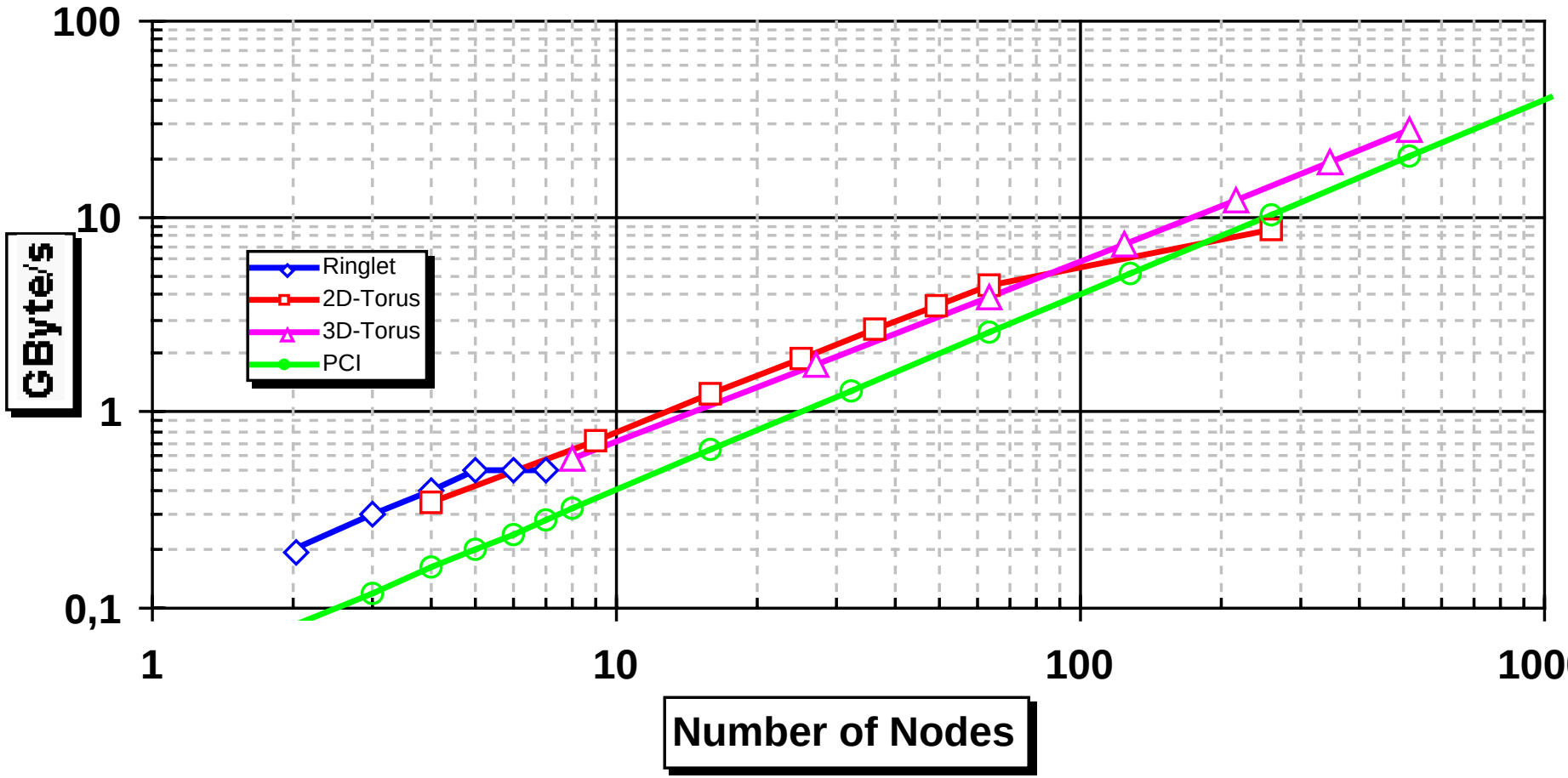
- Industry Standard Programming Model - MPI
  - Porting = Recompilation
- Lower Cost
  - COTS based Hardware = lower system price
  - Lower Total Cost of Ownership
- Better Performance
  - Always ”Latest & Greatest” Processors
  - Superior Standard Interconnect - SCI
- Scalability
  - Scalable to thousands of Processors
- Redundancy
- Single System Image to users and administrator
- Choice of Front-End OS
  - Linux
  - Solaris
  - Windows NT

Torus Topology - Distributed Switching

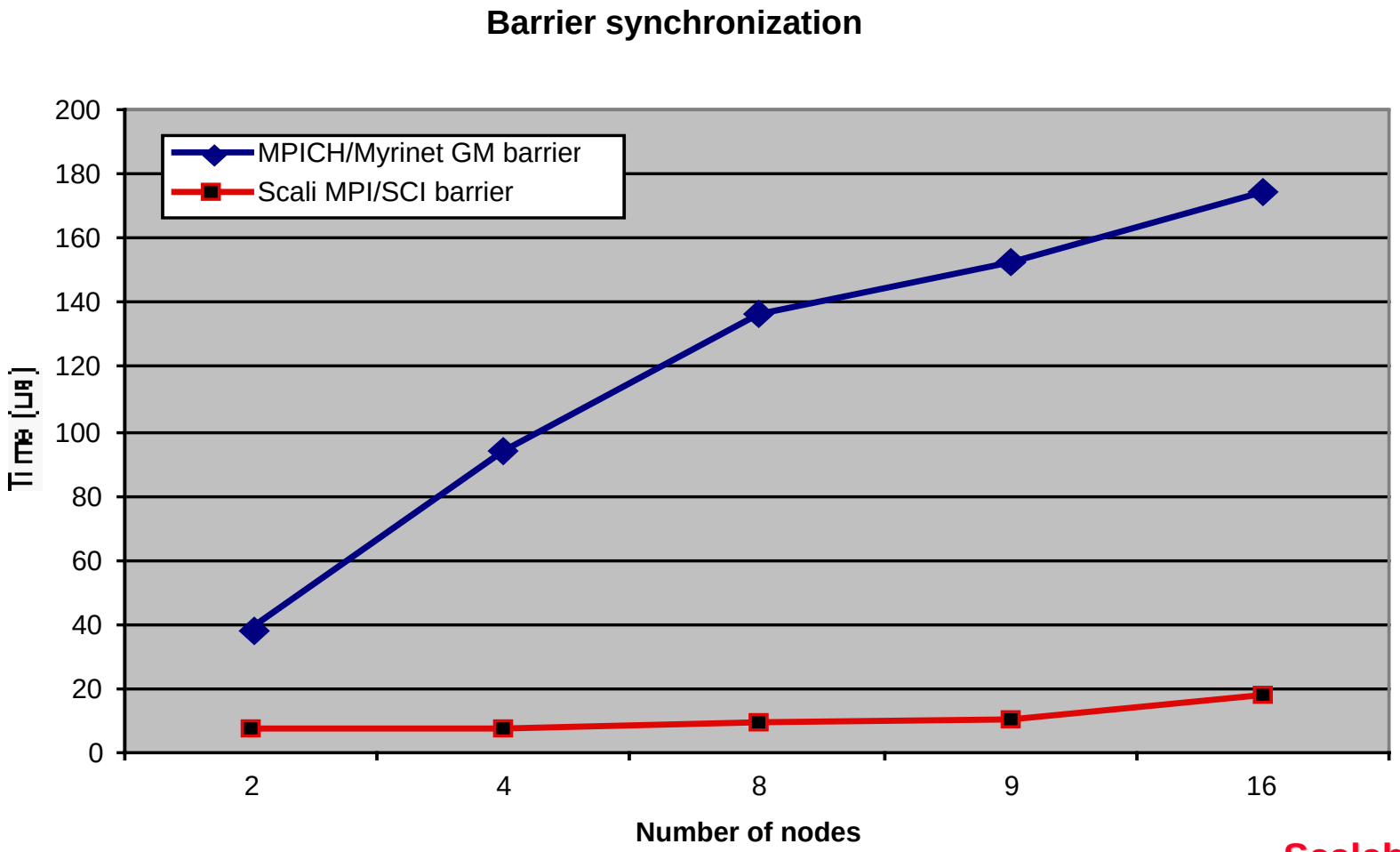




Theoretical Scalability



Versus Myrinet (1)



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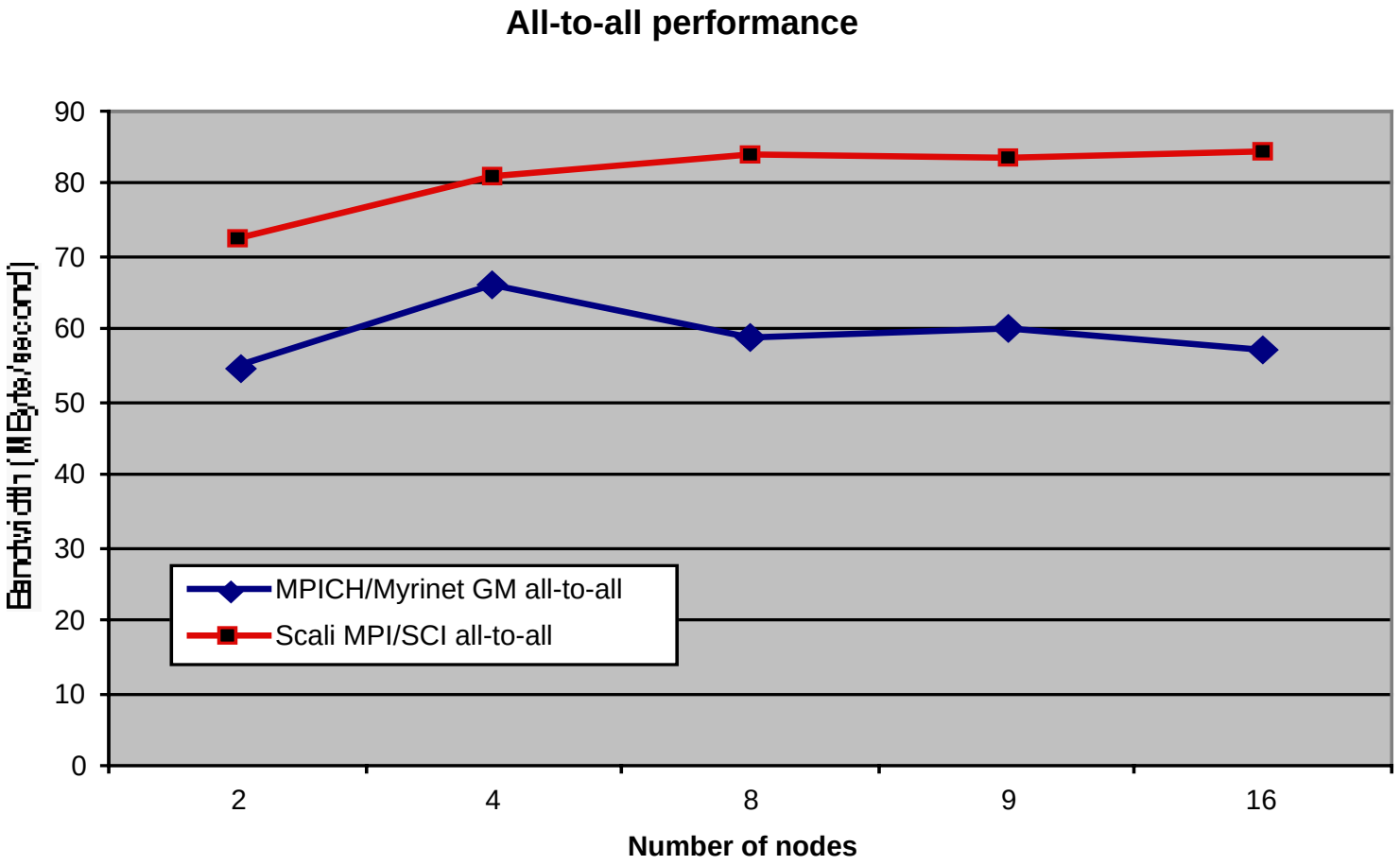

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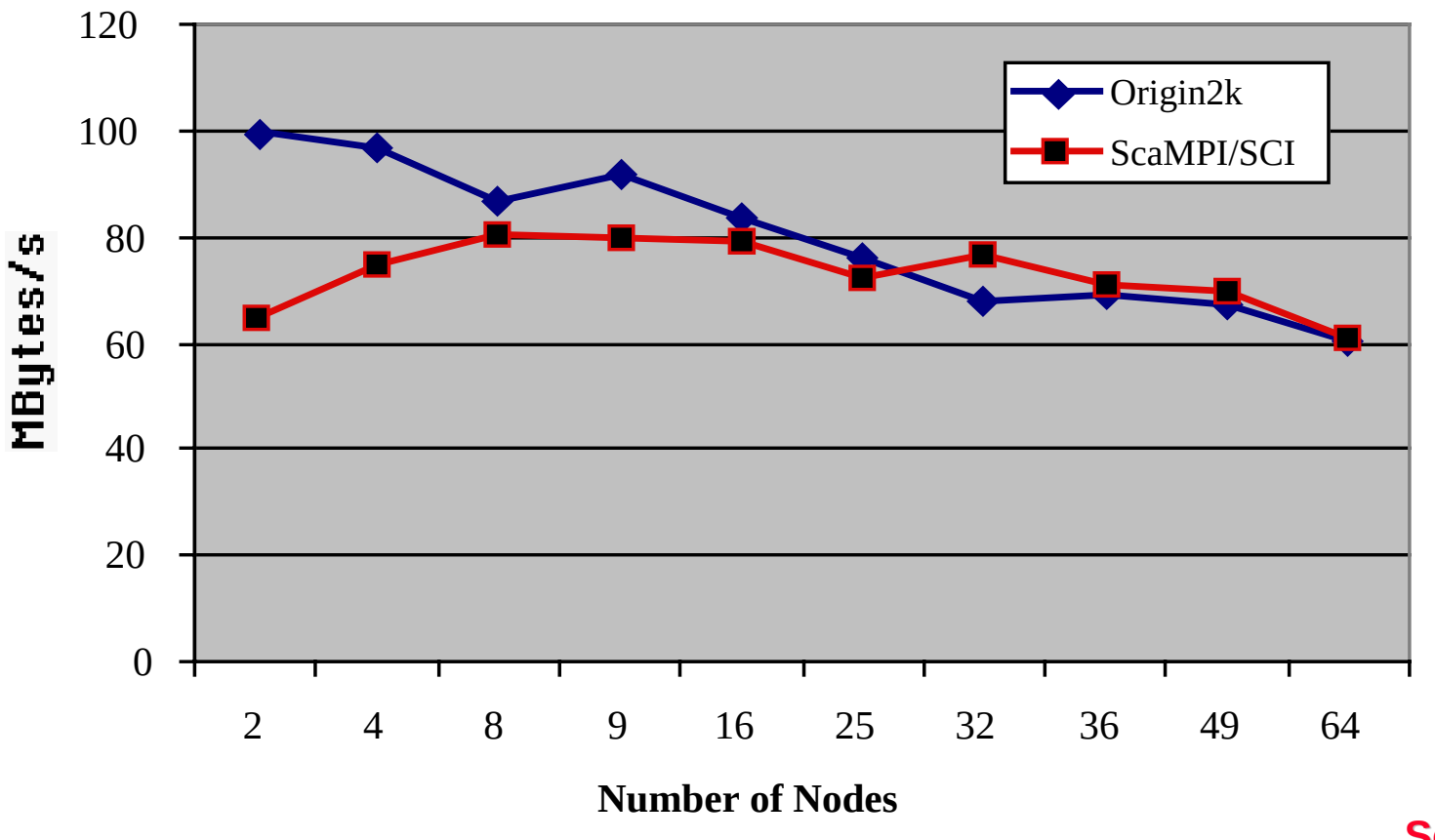
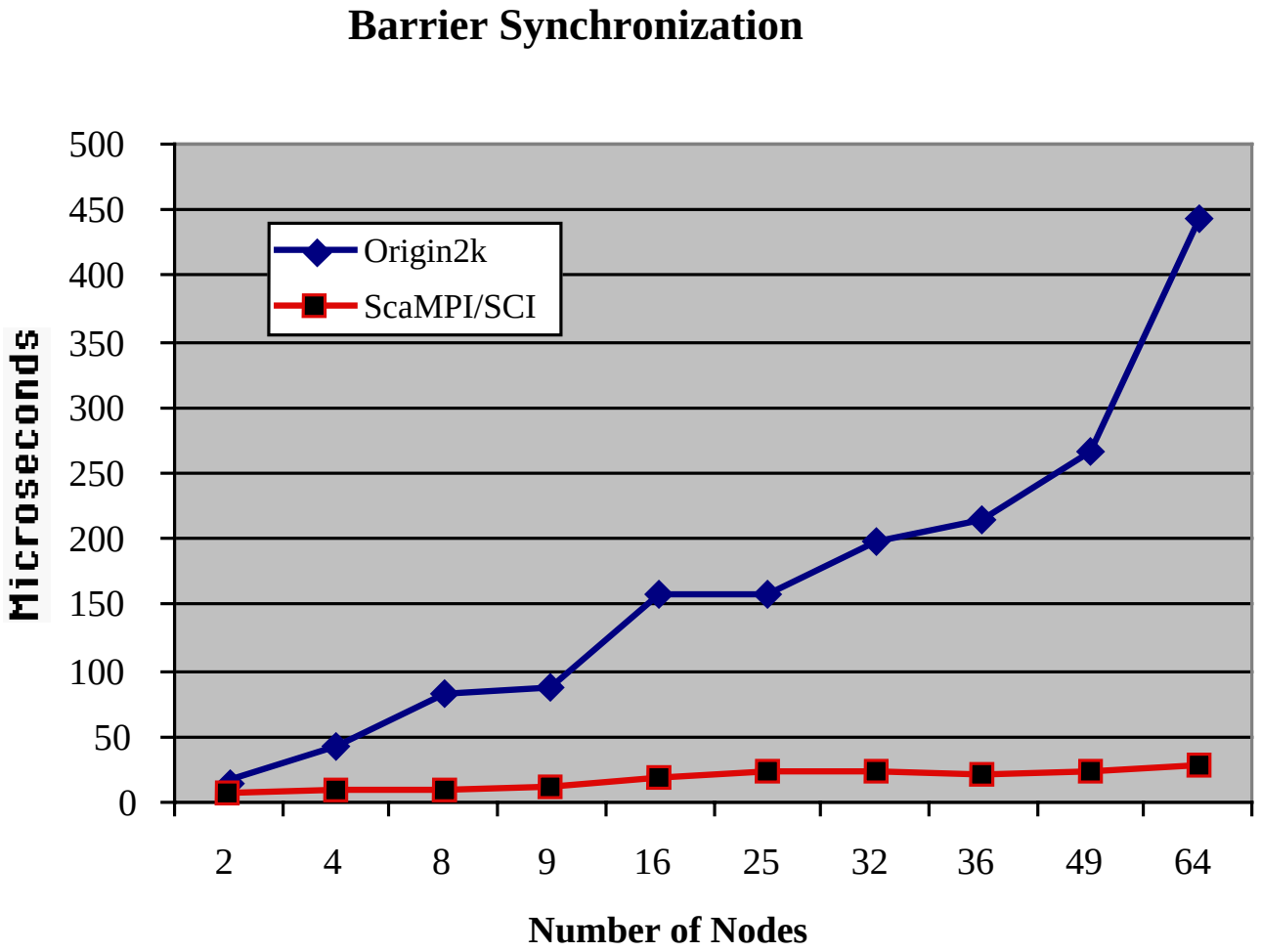
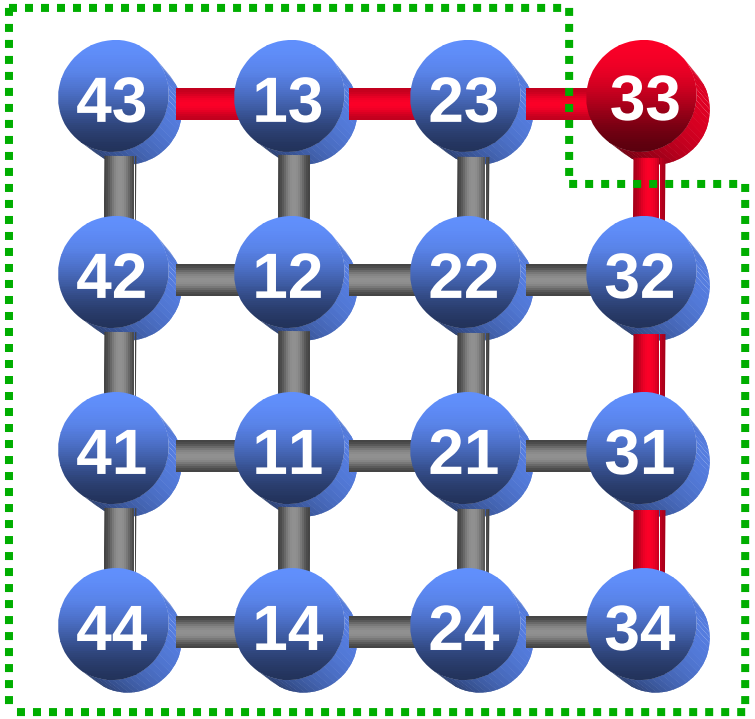


Versus Origin 2000 (2)

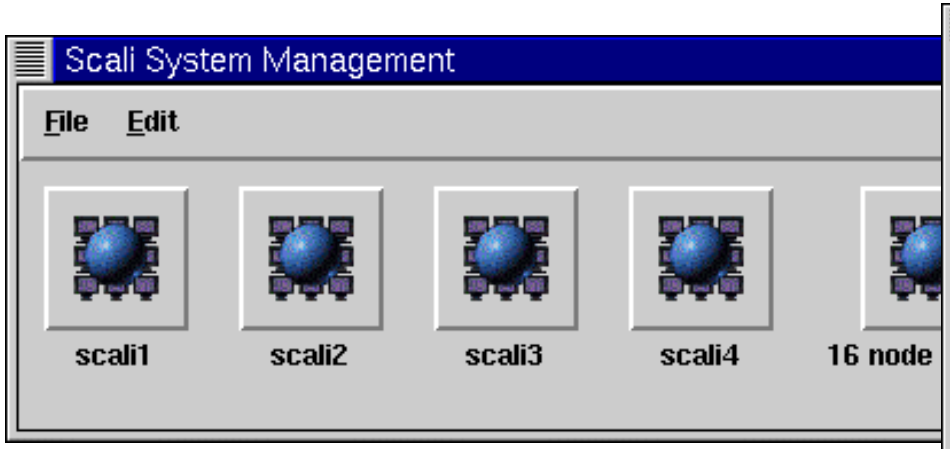


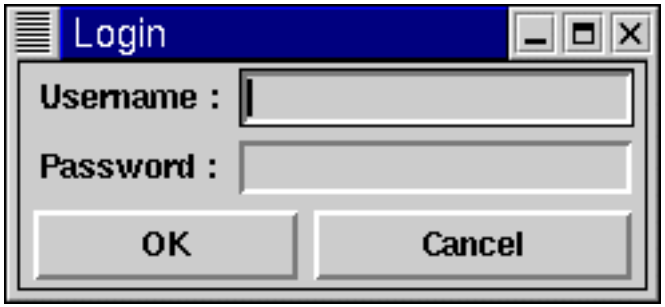
Fault Tolerance

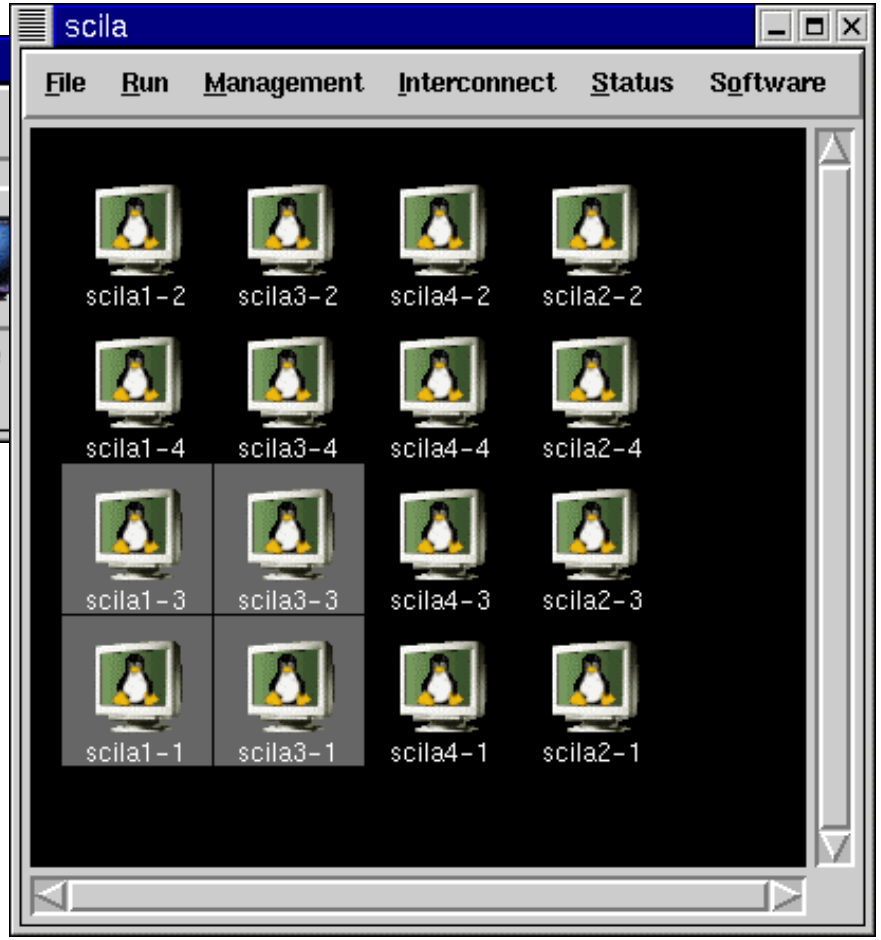
- Automatic Rerouting
- Scali advanced routing algorithm:
  - From the Turn Model family of routing algorithms
- All nodes but the failing ones can be utilised as one big partition



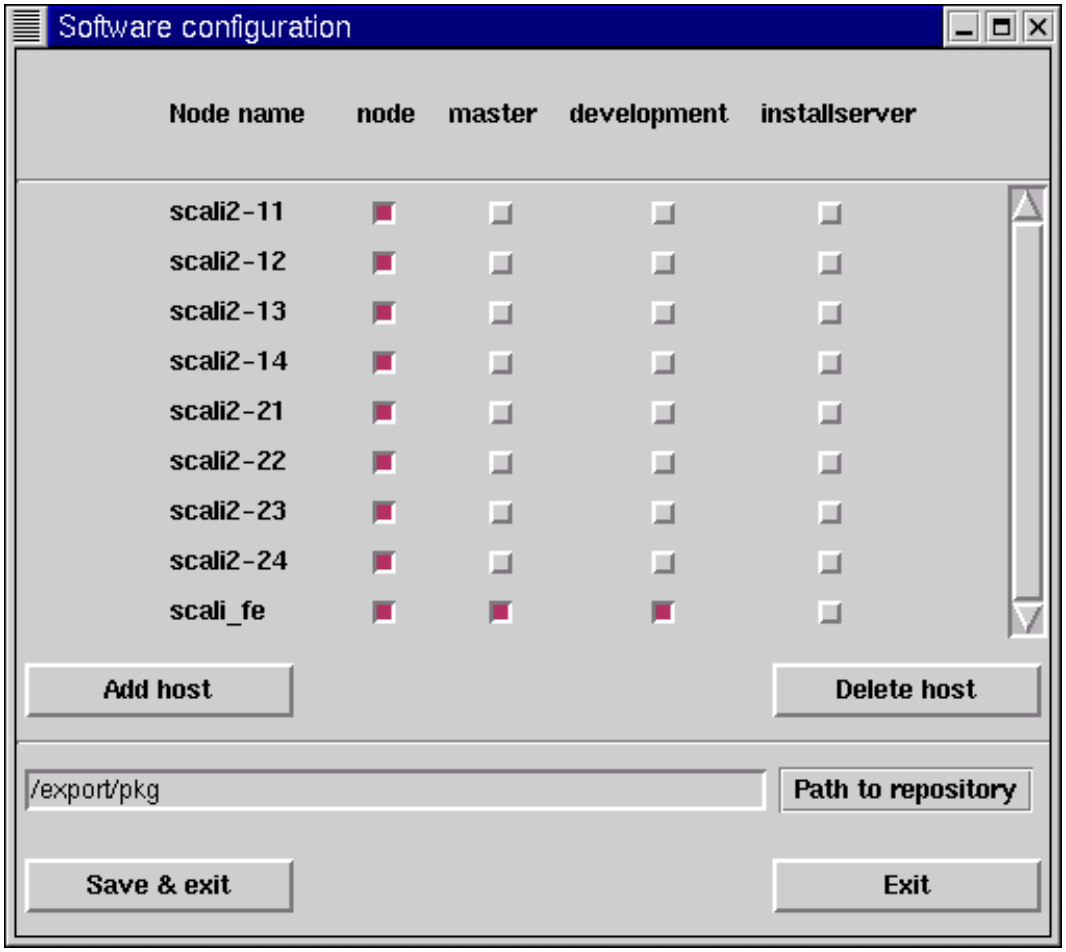
The Scali Universe



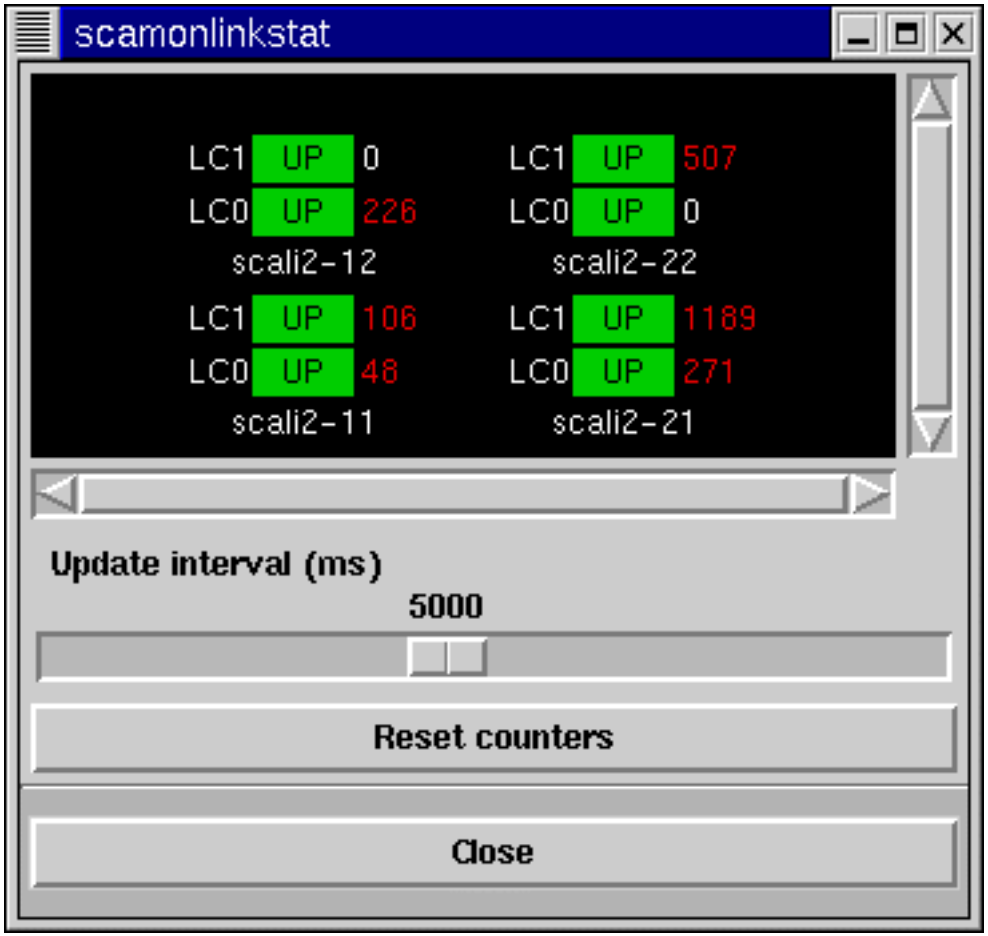


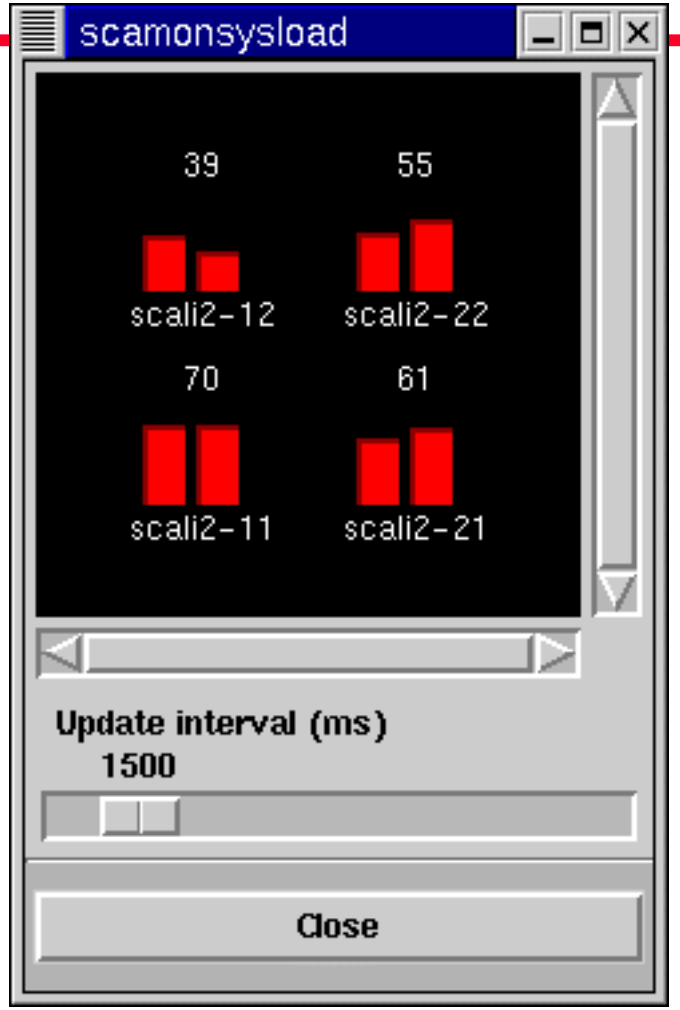


Software Configuration Management



System Monitoring





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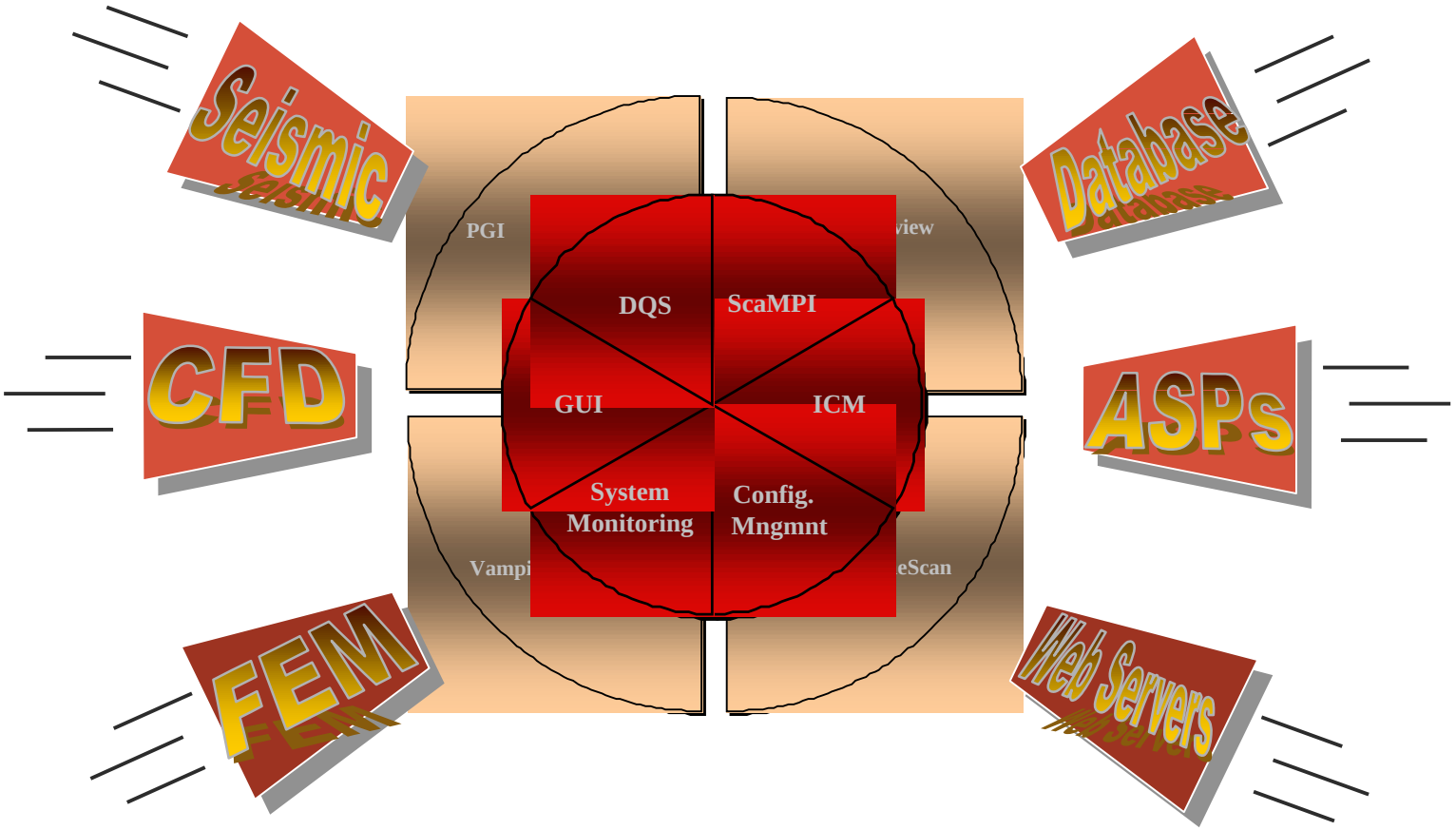
Platform Attraction



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