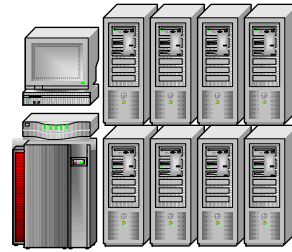


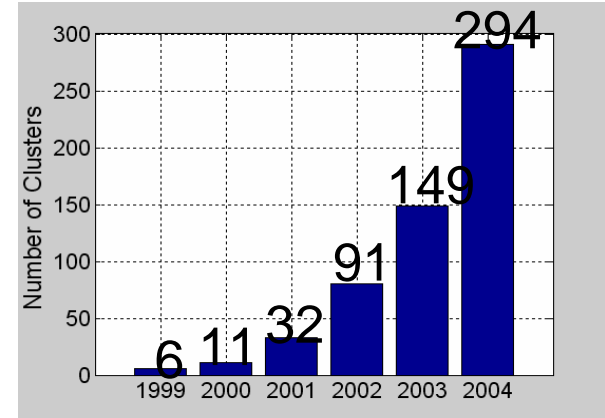
Hong Jiang: Parallel & Distributed Computer Architectures – Cluster & Grid Computing



MPP Supercomputers



Cluster Supercomputers



Cluster dominates Top 500.

- Middleware Support for
 - Heterogeneity (OS, HW, SW)
 - Scalability (Resource & Jobs)
 - Availability (performance & reliability)

■ Distributed Storage & Parallel I/O

- Data/Metadata Management at the Peta-scale
- Object-based Storage Systems at Peta-scale
- Virtual File Systems for Super-clusters
- Adaptive & power-aware buffer-cache management

- Parallel Programmability
 - Transparent (automatic)
 - Distributed Shared Address/Object Space
- Resource Sharing & Discovery in the Grid
 - Adaptive inconsistency detection and resolution
 - Adaptive consistency control
 - Efficient & fair multicasting