Managing Performance in a Shared Storage Environment

Anne Skamarock

Senior Analyst

Enterprise Management Associates

Askamarock@enterprisemanagement.com

ENTERPRISE MANAGEMENT ASSOCIATES

Why Networked Storage?

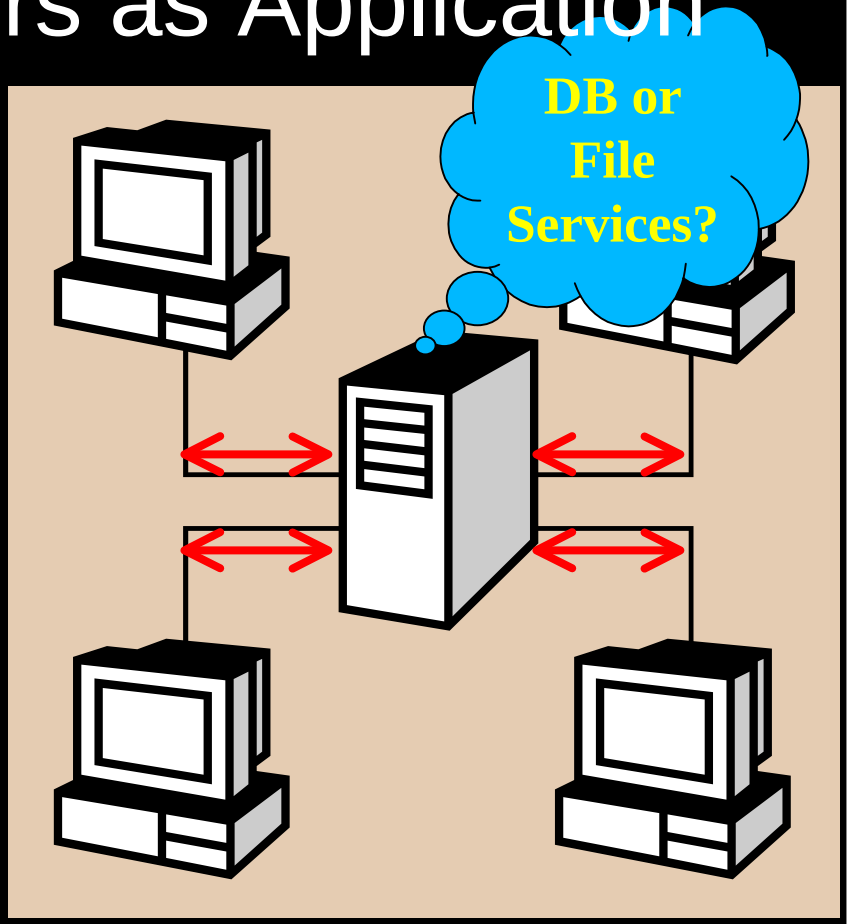
- Astronomic Data Growth
  - Consolidation of resources for more efficient management
  - Better utilization of resources
  - Sharing Data

In the Olden Days

- NFS
  - Simple Stateless Protocol
  - Used UDP
  - File Sharing to Minimize Administrative Tasks
- But…

Performance and the Filer

- NFS File Servers as Application Servers
- Local Access for High Performance Applications



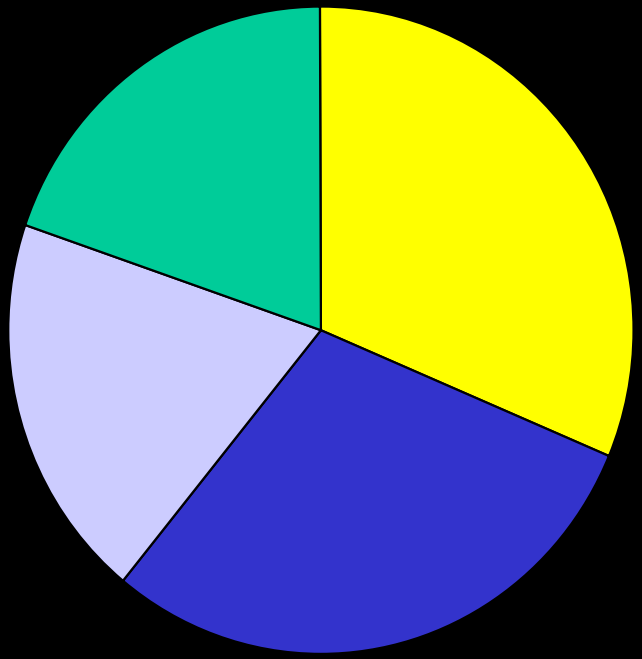
Enter – NAS

Network Attached Storage

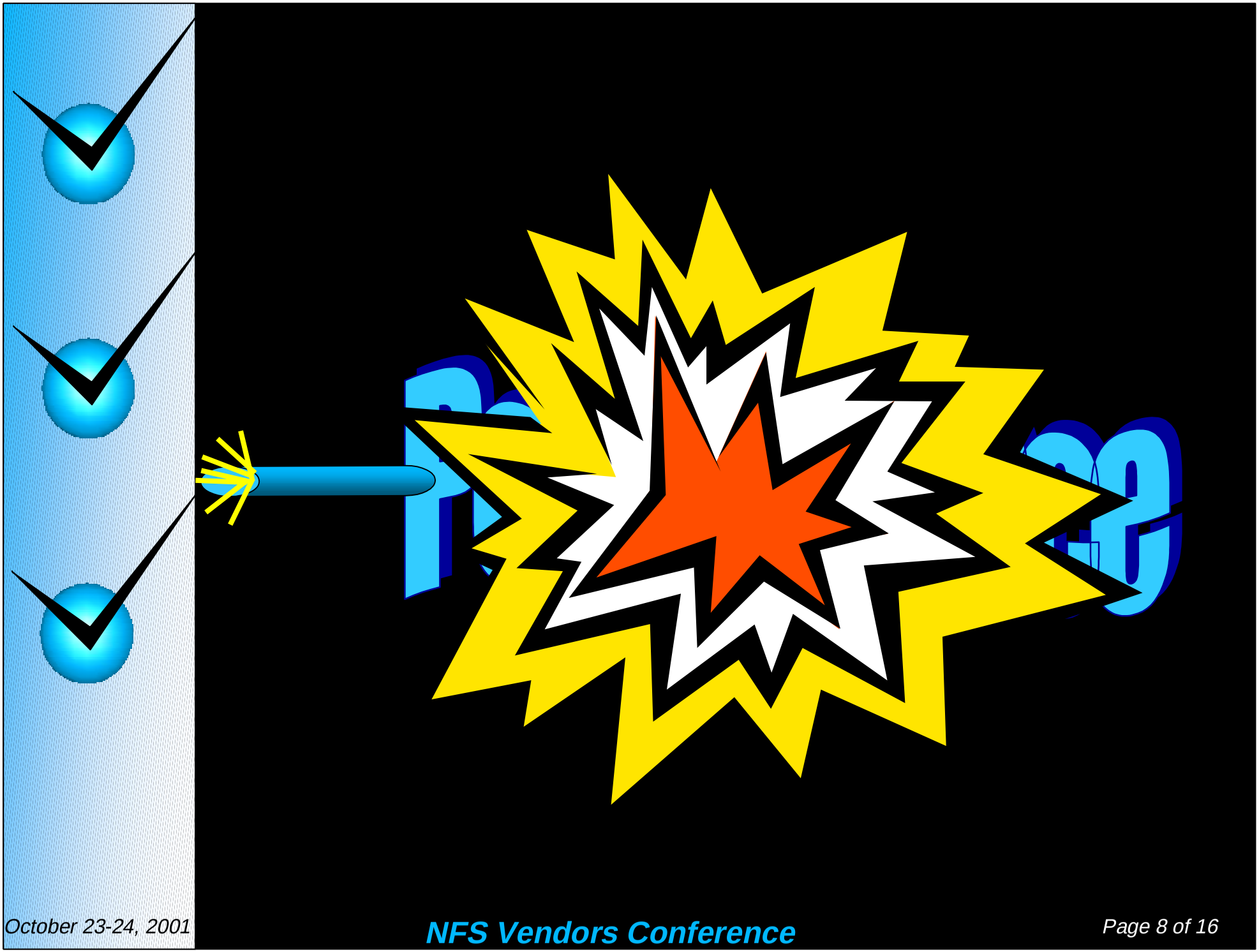
- Highly Specialized Thin Server
- Greater Performance
  - Devoted to File Serving
  - No Competition with Applications
  - Hardware and Operating System Assist

How are IT Organizations Using NAS?

- Backup/Recovery
- In-House Database
- Software Development
- Content Delivery



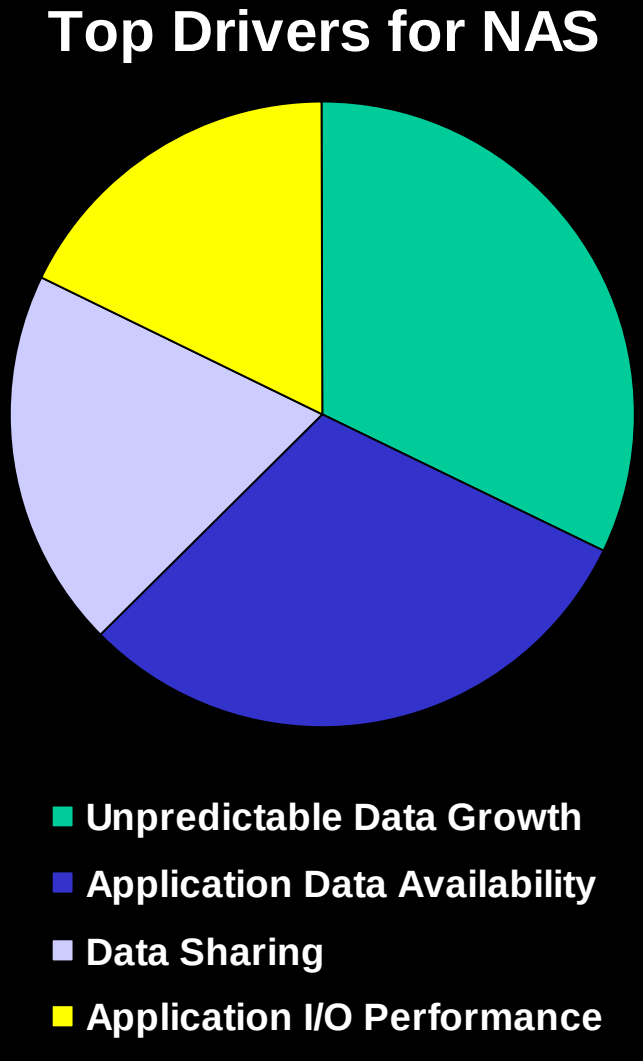
Managing Networked Storage, October 2001



Customer Drivers

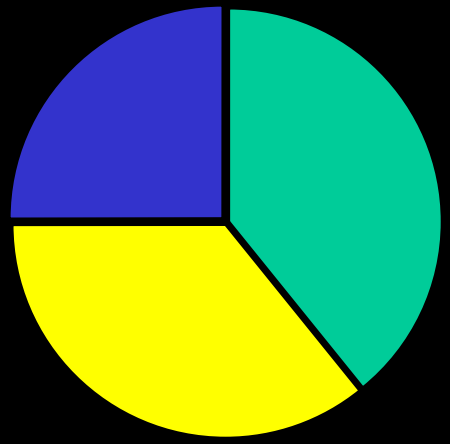
Managing Networked Storage, October 2001

- Performance in Top 4
- 2nd in Customer Expectations



Customer Concerns

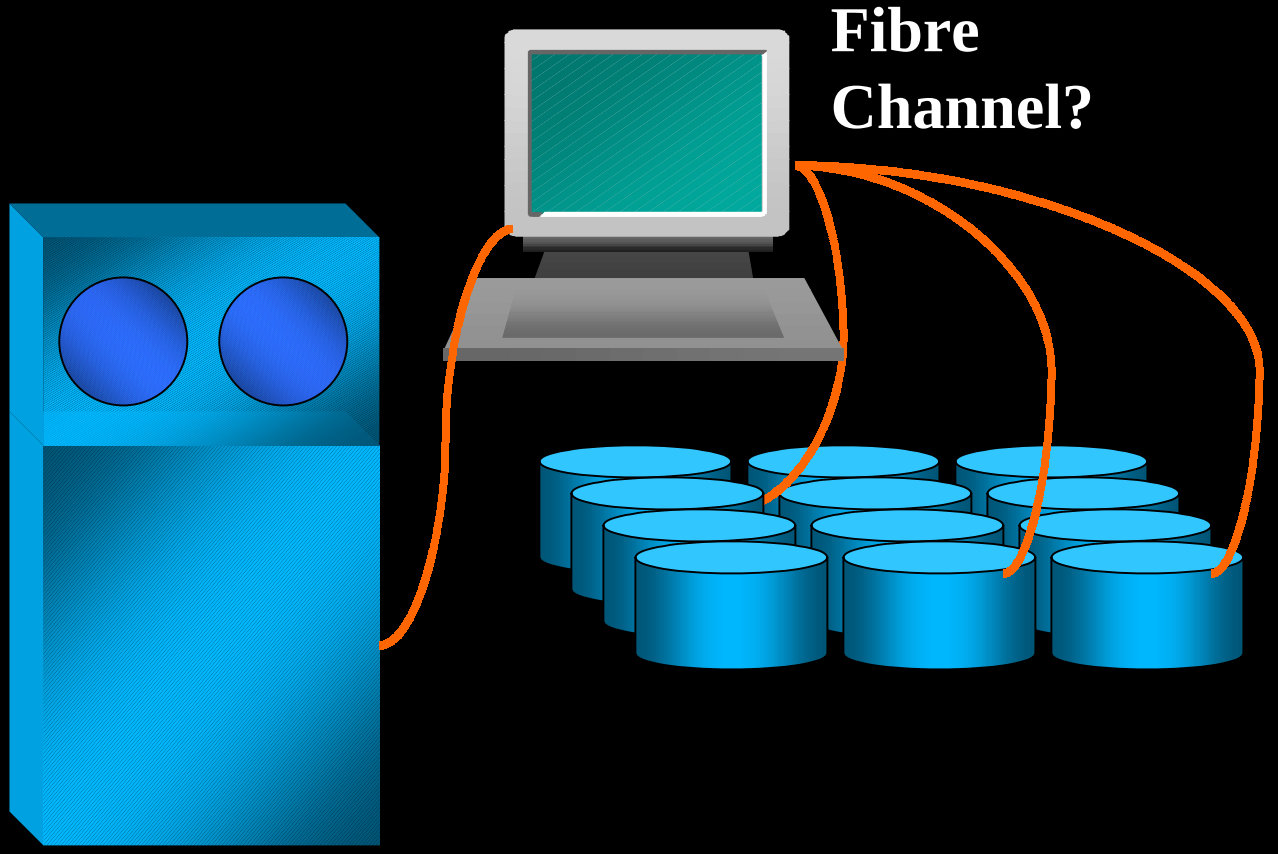
- **Security**
- **Performance**
- **Management**



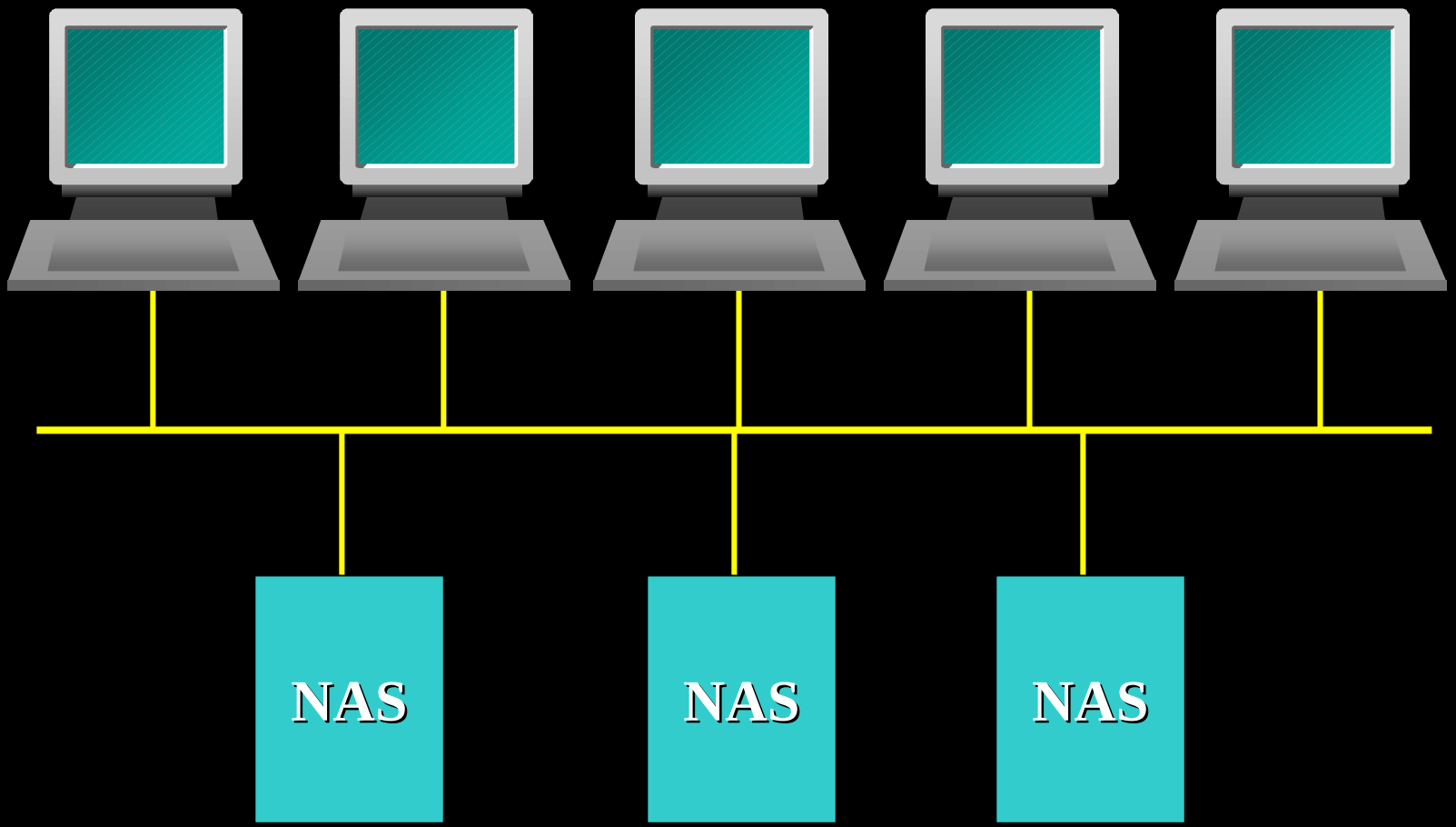
Managing Networked Storage, October 2001

Design for Performance?

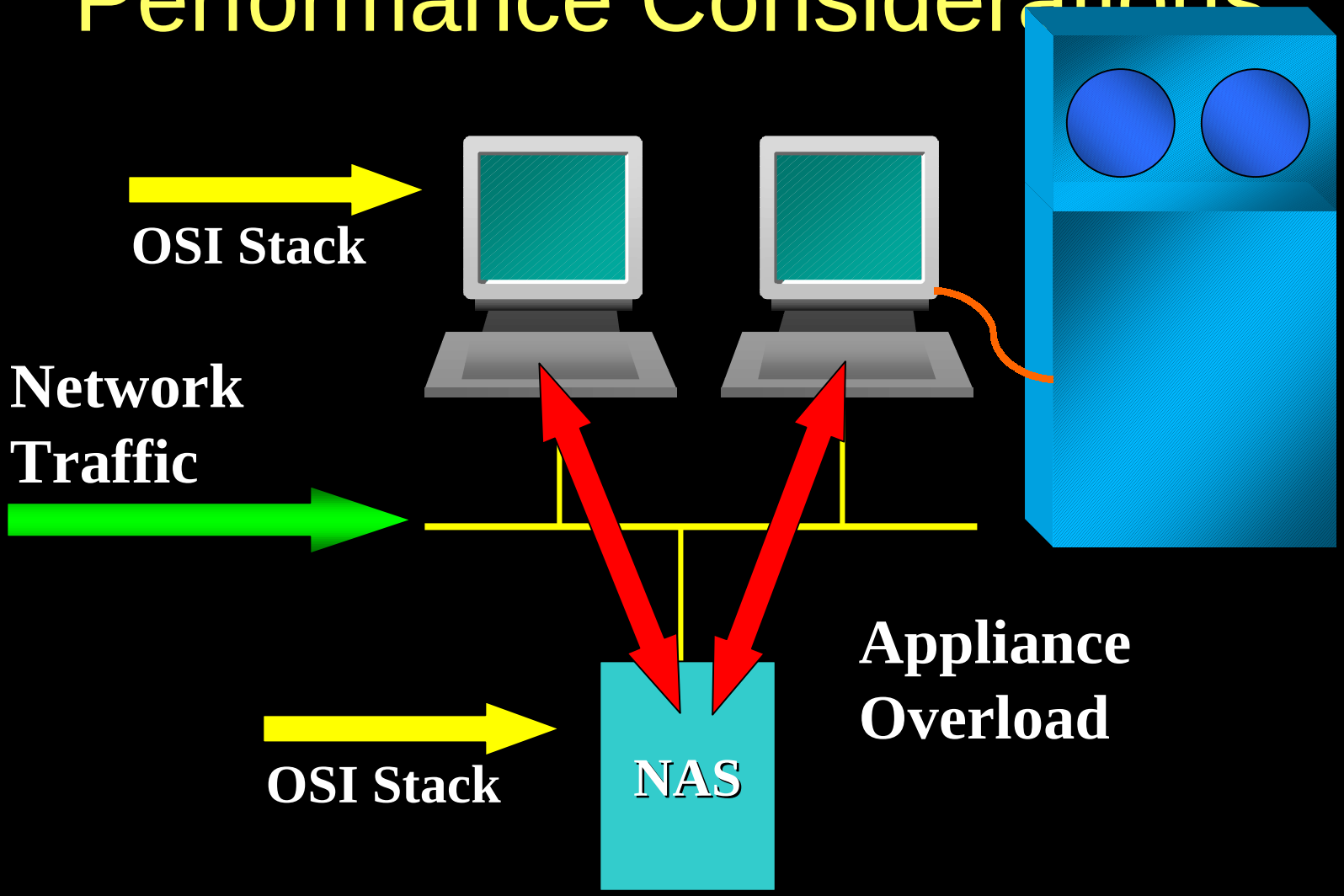
Direct Attach



Design for
Flexibility, Scalabilty, Sharing



Network Storage Performance Considerations



Performance Initiatives

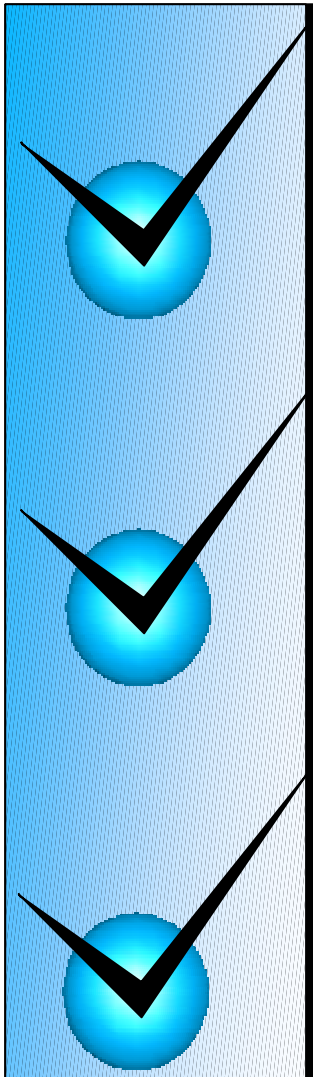
- NFS Enhancements
- Direct Attach File System (DAFS)
  - Based on NFS
  - Bypasses some of the OSI Layers
  - Requires Virtual Interface (VI) or InfiniBand

Performance Tools

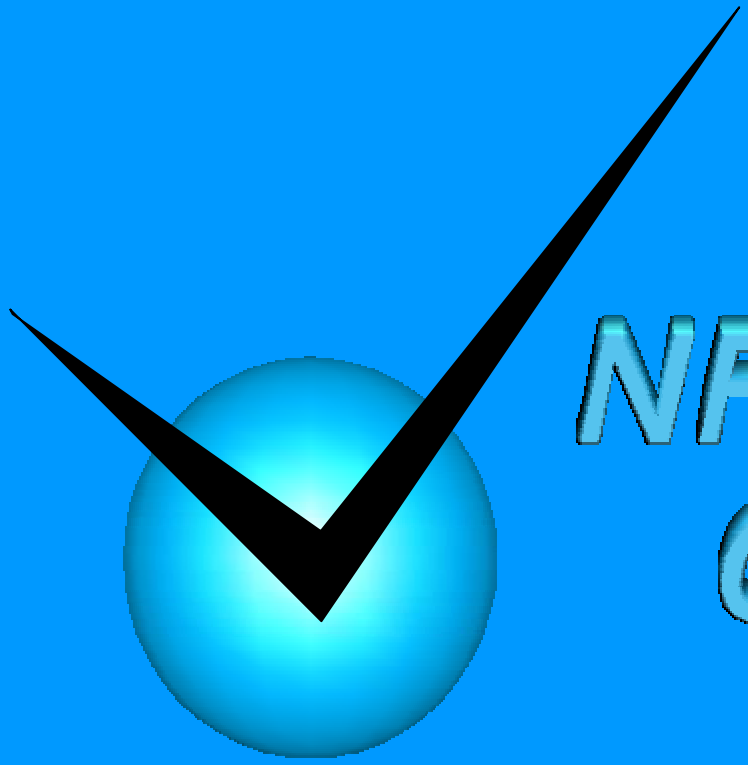
- Application Host
- Network Performance
- Network Storage

Performance Tools

- Must Integrate Monitoring and Management of Entire Ecosystem
  - Application Host
  - Network Performance
  - Network Storage



Networked Storage,
By Design,
is a Shared Environment



NFS Vendors Conference