

Research Computing Facility

David Goldberg

781-271-3887 • dsg@mitre.org

Corporate

The logo for the MITRE Technology Program, featuring a stylized graphic of stacked blocks in yellow, orange, and blue to the left of the text.

MITRE
Technology
Program

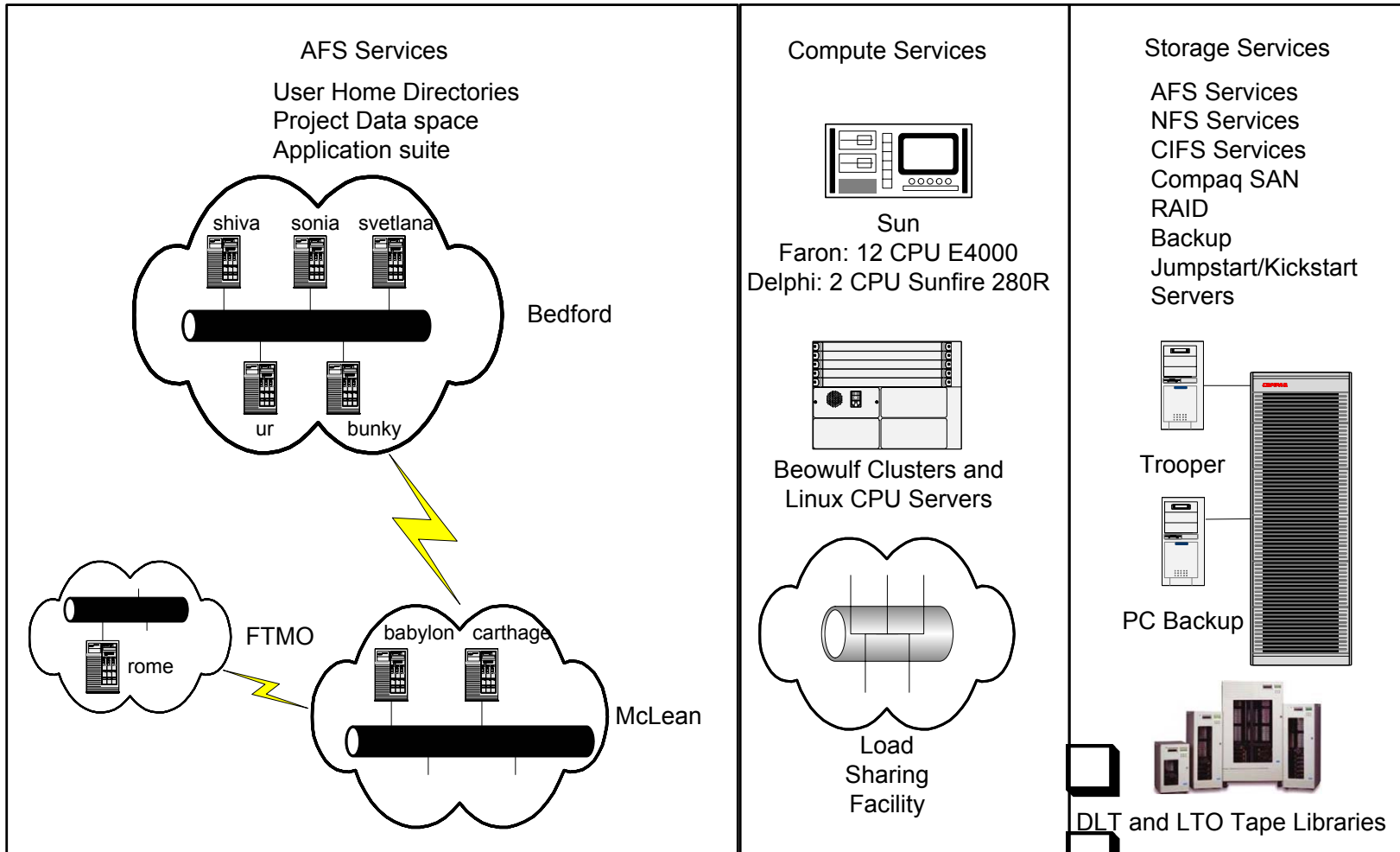
Problem

■ Storage

- Storage is cheap; managing it is not
- Backup technology not keeping up with storage vis à vis capacity
- Avoiding “shelfware”: underutilized expensive computing and storage resources

■ Applying configuration management to unique systems

Background



RCF and Other ATCC Services

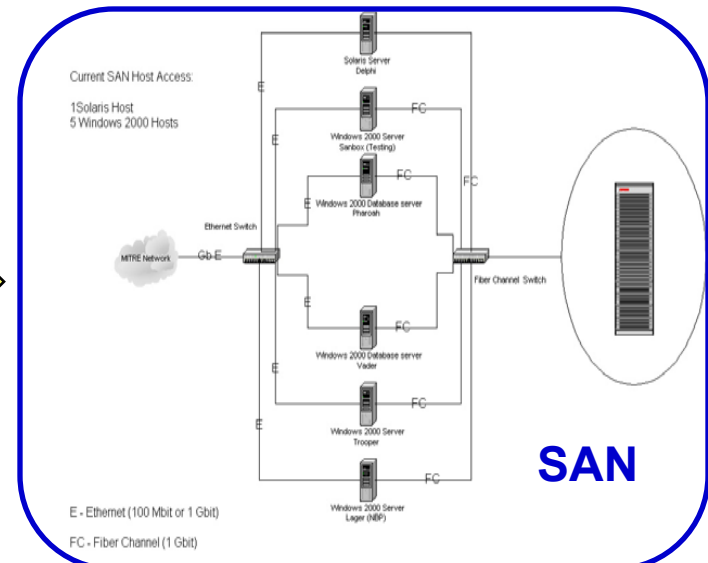
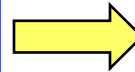
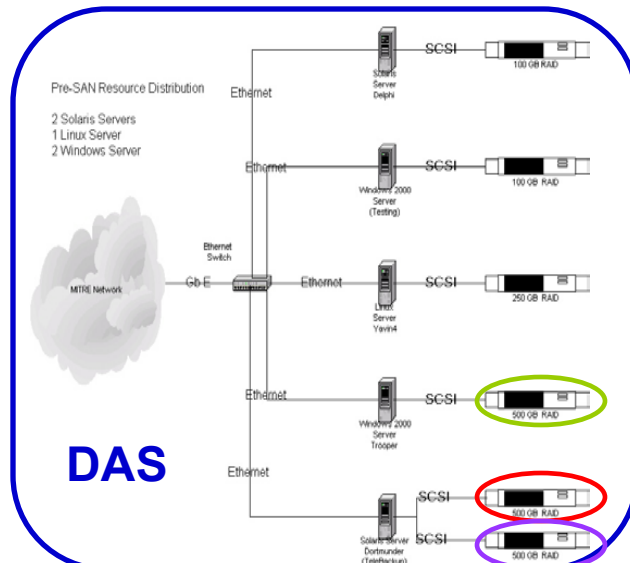
Objective

- **Storage objectives**
 - **Storage consolidation**
 - **Improve response to project storage requests**
 - **Avoid need for “rush” purchases**
 - **Back it all up**
- **Apply RCF techniques to other systems**
 - **DMZ, labs, etc.**

Activities

- **Storage/backup activities**
 - SAN fully deployed in McLean
 - Several critical services attached to it
 - Transition to LTO tape technology
 - Evaluate Quantum DX30 backup system
- **Set up “mini” RCF for ARDA NRRC**
- **Design standard system images**
- **Tripwire Manager, cfengine on DMZ**

Highlight

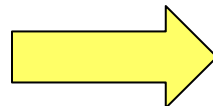
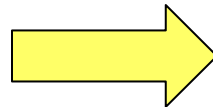
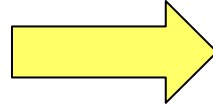
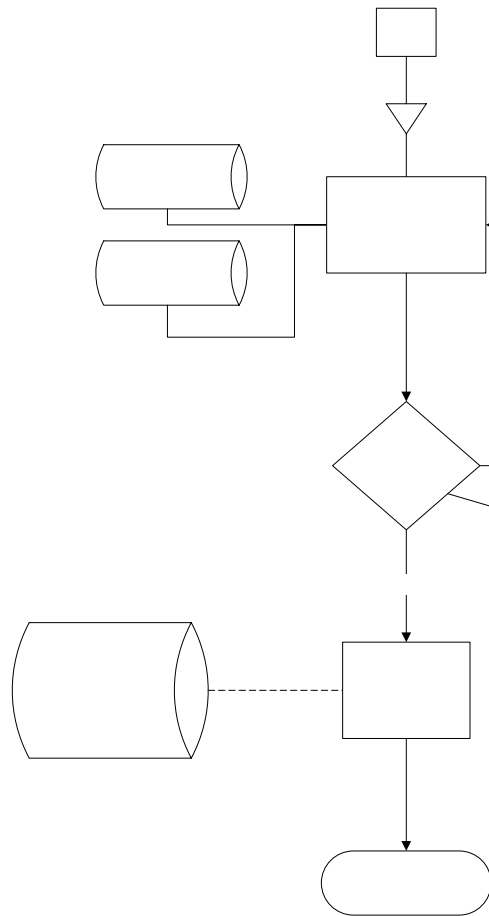


- Using Direct Attach Storage:
- Need separate storage per system
- Unused storage on one system unavailable to system in need
- additional storage purchased

- Using Storage Area Network:
- All systems provided storage from pool
- Allocations made according to needs and can be resized as needed
- Support for more projects at lower cost

Benefits of Consolidating Storage into a SAN

Highlight



Applying RCF CM to Other Projects

Impacts

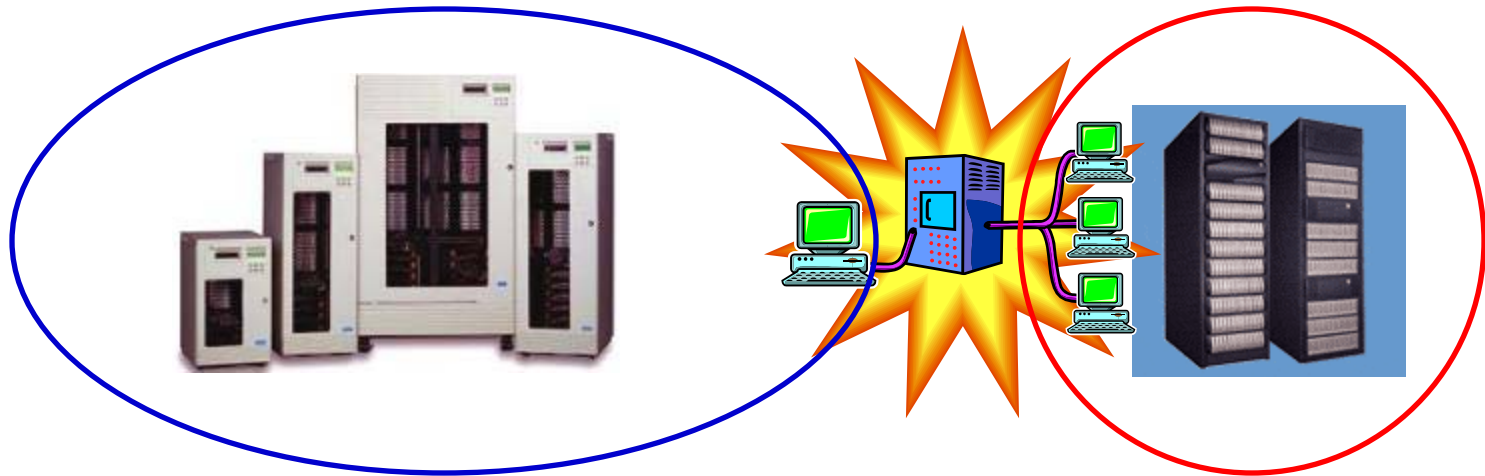
■ Storage Activities

- Improved central management of storage
- Improved response to storage requests
- Reclaimed underutilized storage resources
- Increased backup capacity (for now)

■ Configuration Management Activities

- Improved ability to take on DMZ projects
- Improved response to SECOM alerts

Future Plans



Backups through the firewall

SAN on the DMZ

SAN support for standardizing system images

Future Storage and CM Related Efforts