

# Superdome Implementation at a Glance



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## A Case Study

Julie J. Smith  
Wachovia Corporation



# Agenda

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- Business Challenges
- Technical Challenges
- Corporate Directives
- Strategy
- Why we chose Superdome
- Migration Phases
  - Discovery
  - Design
  - Implementation
  - Maintenance



# Business Challenges

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- Last year First Union and Wachovia merged, creating the nations Fourth largest financial services institution
- Corporate initiative to relocate remote data centers to a centralized location
- Meet and exceed OCC availability and disaster recovery objectives
- Increase stockholder value by reducing total cost of ownership, consolidating current environment, and leveraging new technologies



# Directives

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- Support the Merger
- Perform Server Consolidation
- Facilitate Data Center Move
- Meet OCC Commitments of Availability & Disaster Recovery
- Increase Customer Service
- Increase Stockholder Value



# Strategy

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- Locate projects which had the most to gain by:
  - consolidating to a new hardware platform
  - providing high availability
  - architecting a more robust disaster recovery platform



# Why we chose Superdome

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- Reduce maintenance cost by eliminating older or obsolete hardware
- Reduce number of servers to maintain while actually increasing total TPM's.
- Provide robust hardware environment and increasing high availability components.
- Provide hardware foundation for disaster recovery initiatives



# Current Hardware to Consolidate

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- (6) V Class Servers
- (10) K Class Servers
- (4) N Class Servers
- (2) T Class Servers



# Current Projects to Migrate to Superdome

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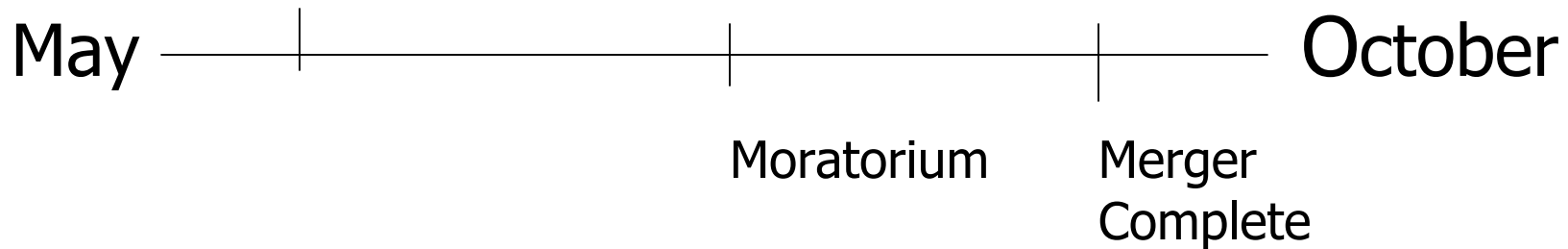
- 5 Lines of Business
- Over 30 applications in production and development
- Approximately 18 Terabytes of storage





# Project Timeline

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- Each LOB with their own migration plan and timeline
- Constraints
  - Availability of storage
  - Availability of new network infrastructure at new data center



# Migration Philosophy

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Rely on what we know works

- HP LVM
- MC Service Guard

Improve infrastructure by building redundancy and removing unnecessary components

- Network
- SAN
- Backup/Recovery software
- Volume Group and File system Layout
- MC Service Guard
- Basic DR implementation



# Phases of Migration

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1. Discovery
2. Design
3. Implementation
4. Migration
5. Support and Maintenance
6. Future



# Discovery

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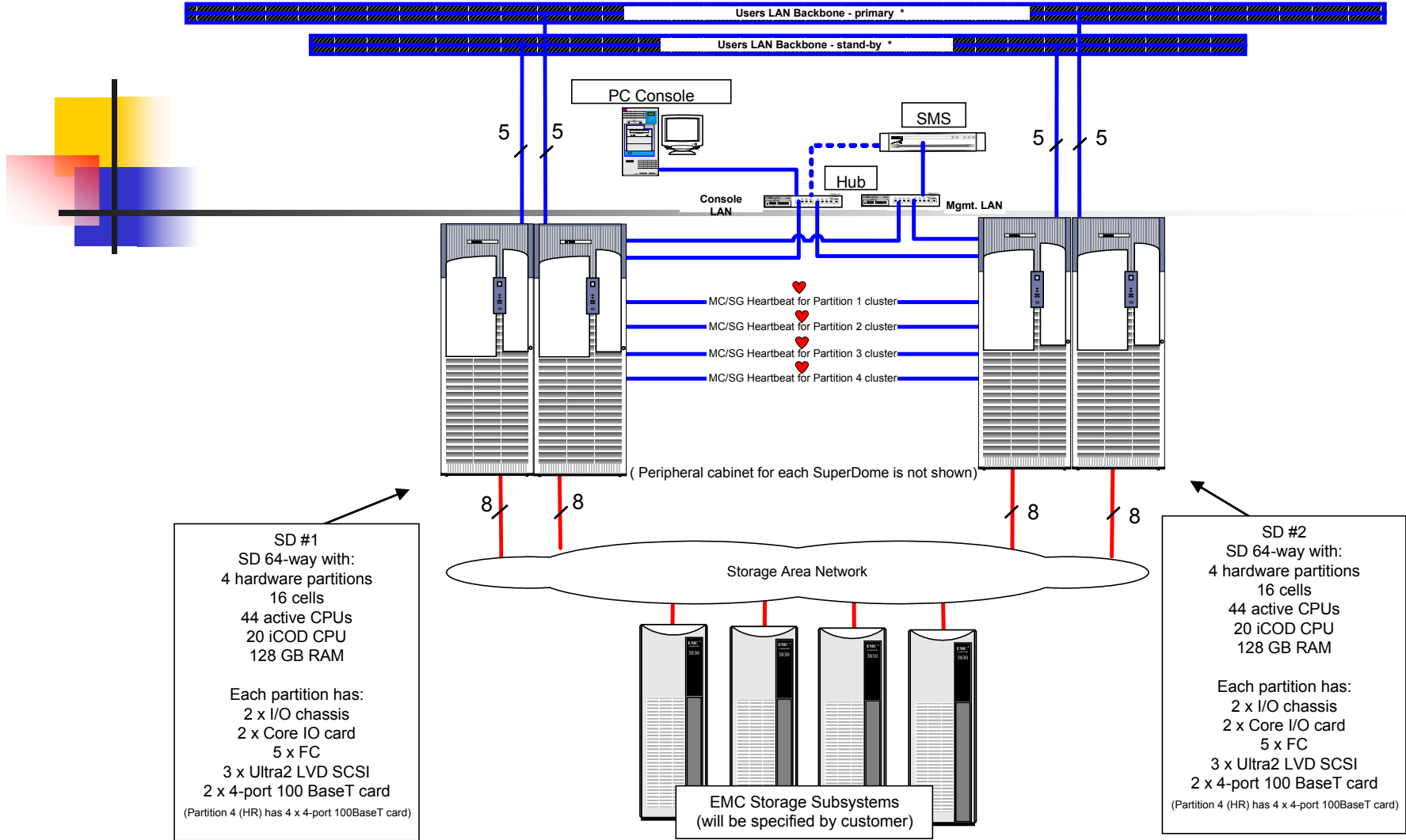
What can improve?

- performance
- availability
- disk and file system layout
- backup windows
- network infrastructure
- system standards

What works well?

Humm....

**Production SuperDome Configuration**  
 (Test/DR SuperDome has the exactly same configuration as the Production SuperDome)



— Fibre Channel  
 — 100BaseT



# Storage

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➤ Current layout

- Some direct attached arrays
- Some attachment via SAN
- Outdated EMC Timefinder version used for database replication (but not for offline file system backups)
- Logical volumes are not striped and possibly on single spindle
- Disk array is mirrored and not striped
- Only 2 fibre controllers

➤ Target layout

- All SAN attached storage
- Update EMC Timefinder version and rewrite production scripts to replicate database and to backup file systems offline
- Stripe logical volumes utilizing LVM Distributed options to optimize across multiple spindles
- Continue with mirrored array configuration
- 4 Fibre controllers



# Volume Group & Logical Volume Layout

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- Scripts are used to build each environment
  - Inq
  - Create device list
  - Pvcreate
  - Vgcreate, alternates, PVlinks (alt links)
  - Lvcreate
  - Newfs & fsck
  - Mount
  - Umount
  - Create vg map files & ftp to alt system
  - Vg export
- Volume Group and lvol naming standards
  - vgpkg10



# Maintenance Strategy

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## SUPERDOME PLANNED MAINTENANCE OUTAGES

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### **I. Schedule**

The SuperDome maintenance outages will follow along with the dates of the corporate outages that have been scheduled throughout the calendar year..... These outages will allow SA's to do and necessary upgrades, patch upgrades, hardware maintenance unless a hardware emergency occurs that cannot wait until the corporate outage. In that case the appropriate procedures and notifications will be followed. The times of the outage are normally between the hours of 2a.m. - 6a.m.....

### **II. Steps in order to Restrictive Patching**

- > Get collect Script from Remote Account Support Engineer
- > Run collect script
- > Download swdepot with latest patch bundle
- > Start with functioning system – 0 days
- > Schedule normal maintenance window – 2 days
- > Make a good system backup prior to patching - 1 day
- > Use swdepot for obtaining patches – 1 day
- > Load patches in DEV environment – 1 day
- > Once testing of DEV is complete roughly until next maint. Window – 1 week.....