

File Virtualization at Merrill Lynch

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September 25, 2007

Who We Are

Merrill Lynch is a leader in wealth management, capital markets and advisory services

- **Founded:** 1914 (Charles E. Merrill & Co)
- **Employees:** 61,900
- **Q2 2007 Net Revenue:** \$9.7 billion
- **Total Client Assets:** Approx. \$1.7 trillion
- **Total Stockholders' Equity:** \$41 billion
- **Fortune 500:** Ranked No.22
- **Stock Symbol:** MER
- **Global Markets:** 38 countries

Goals

- ❑ Windows file servers elimination
 - Reduce data center resources (Space and Power)
 - Streamline management & support
- ❑ Manage rapid storage growth
 - Current demands
 - Anticipated future growth
- ❑ Cost reduction
 - Usage of premium / SAN storage
 - Systems Administration resources

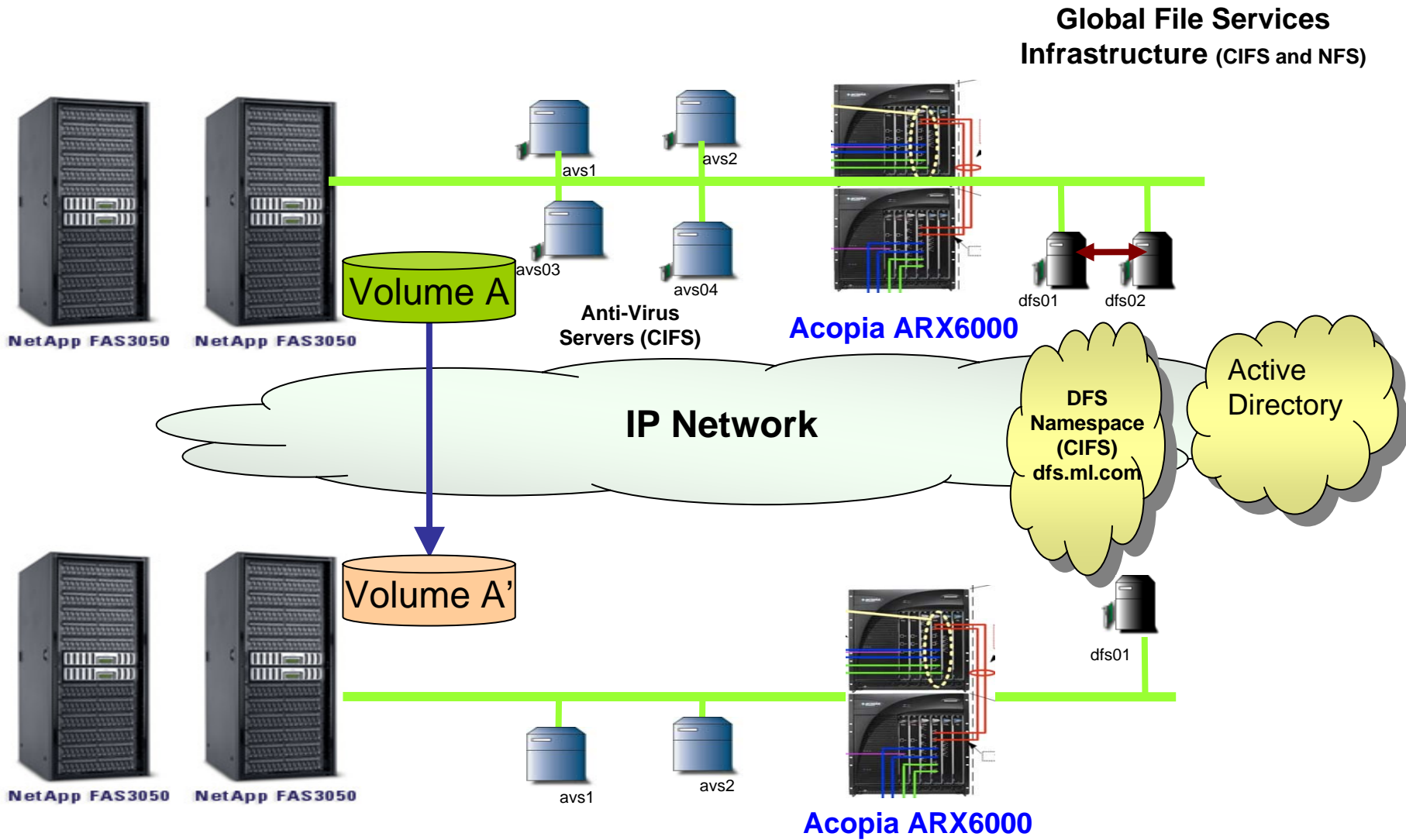
Defined Requirements

- ❑ Ability to move significant amounts of less critical data to a new storage tier quickly without disruption
 - ~50,000 users, ~200TB
- ❑ Be storage independent
 - Not only for initial migration, but other future migrations as well
- ❑ Preserve the user namespace
 - Past experience using manual migration techniques proved costly and broke embedded links, applications, etc.
- ❑ Enable us to implement ILM in the future

Strategy

- ❑ Phase 1
 - Selection and implementation of NAS storage
- ❑ Phase 2
 - Selection and implementation of virtualization tool
- ❑ Phase 3
 - Data migration
 - Pause, monitor and review
- ❑ Phase 4
 - ILM implementation

Solution



Benefits

- ❑ Features rich NAS offerings
 - Quota
 - Snap-shots
 - Snap-mirror
- ❑ Virtualization
 - Heterogeneous support
 - Global users name space
 - Transparent data migration
- ❑ Near Future
 - Multi tiers NAS plant
 - Policy based file migration (ILM)

Challenges

- ❑ Support Roles and Responsibilities (who does what?)
- ❑ Unplanned storage requirements
- ❑ File restoration and tracking
- ❑ RTO Impact
- ❑ Lack of integrated management tools

Summary

- ❑ Virtualization is a key component in the Merrill Lynch global file services strategy
- ❑ We have focused our operations and engineering resources to implement and embrace the strategy
- ❑ Advice:
 - Expect challenges
 - Plan, test, and communicate
 - Transition slowly
 - Revise your strategy if required