



Data Management Service Challenge

Scope

- Networking, file transfer, data management
- Storage management - interoperability
- Fully functional storage element (SE)

Layered Services

- Network
- Robust file transfer
- Storage interfaces and functionality
- Replica location service
- Data management tools





Layered Services (i)

- Network layer:
 - Proposed set of network milestones already in draft
 - Peter Clark, David Foster, Harvey Newman
- Robust File Transfer service layer:
 - Move a file from A to B, with high reliability and target performance
 - This service would normally only be visible via the data movement service
 - Only app that can access/schedule/control this network
 - E.g. of this is gridftp, bbftp, etc.
 - Reliability - the service must detect failure, retry, etc.
 - Interfaces to storage systems (SRM)





Layered Services (ii)

- **Data movement service layer:**
 - Builds on top of file transfer and network layers
 - To provide an absolutely reliable and dependable service with good performance
 - Implement queuing, priorities, etc.
 - Initiates file transfers using file transfer service
 - Acts on application's behalf - a file handed to the service will be guaranteed to arrive
- **Replica Management Service:**
 - Makes use of data movement
 - Maintains distributed grid catalogue





General Approach

- Evolve towards a **sustainable service**
 - Permanent service infrastructure
 - Workload generator - simulating realistic data traffic
 - Identify problems, develop solid (long-term) fixes
 - Frequent performance limits tests
 - 1-2 week periods with extra resources brought in
 - But the goal is to **integrate** this in the **standard** LCG service as soon as practicable
- Focus on
 - Service operability - minimal interventions, automated problem discovery and recovery
 - Reliable data transfer service
 - End-to-end performance





Short Term Targets

- Now (or next week) -
 - Participating sites with contact names
- End June -
 - Agreed ramp-up plan, with milestones - 2-year horizon
- Targets for end 2004 -
 1. SRM-SRM (disk) on 10 Gbps links between CERN, Triumf, FZK, FNAL, NIKHEF/SARA → **500 MB/sec (?)** sustained for **days**
 2. Reliable data transfer service
 3. Mass storage system <-> mass storage system
 1. **SRM v.1 at all sites**
 2. **disk-disk, disk-tape, tape-tape**
 4. Permanent service in operation
 - **sustained load (mixed user and generated workload)**
 - **> 10 sites**
 - **key target is reliability**
 - **load level targets to be set**

