

# Improving Data Retrieval Rates Using Remote Data Servers

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# Project Goal

- Order of magnitude faster data delivery to client applications
- Unnoticeable ( $< 1$  sec) delays when working with live data
- Removing addressable memory constraints on 32bit client applications
- Future proofing
  - Extensible, pluggable architecture
  - Web application friendly data formats (XML, JSON)

# Solution Outline

- Thin out the clients
  - Migrate proven, tested codebase to middleware services
  - Parallelize processing (culling) with a compute grid
  - Deliver culled data to clients based on the request context
- Move closer to the data stores
  - Connect the middleware platform using high speed network to NAS and archive stores
- Cache
  - Cache resources in a distributed non-replicating memory caches across the cluster
  - Keep evicted resources in a local SSD cache

# Results

	Throughput (MB/sec)	Speedup
Client to Remote Disk-store	5.4	
Client through Data Server to Remote Disk-store	146	27x
Client through Data Server to SSD Cache	245	45x
Client through Data Server to RAM	968	180x