Distributed Information Processing

10th Lecture

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Outline

- Possible Topics for Midterm
- Q&A
Possible Topics for Midterm

- Distributed Systems
- Lamport’s “Happened Before” Relation
- Logical Clocks vs Vector Clocks
- Properties of Vector Clocks
- Chandy’s “Snapshot” Algorithm
- Ordering Events with Vector Clocks
- Balance and Tradeoff among Communication, Processing, and Storage
- Speedup
Possible Topics for Midterm

- Layered vs Middleware Communication Approaches
- Communication Types
- RMI Components
- RPC Steps
- Asynchronous RPC
- Passing Value Parameters in RPC
- Connection-Oriented Socket Communication
- Using a Buffer to Reduce Jitter
- Interleaved Communication
Possible Topics (Cont’d)

- Memory Consistency Models
- Memory Coherence
- DSM vs Message Passing
- False Sharing
- Choosing the DSM Page Size
- Page Sync Methods (Update Options)
- Copy Set (in Memory Coherence)
- Dynamic Page Ownership Approaches
- Lazy Diff Creation in TreadMarks
- Lazy vs Eager Release Consistency
Possible Topics (Cont’d)

- Location Transparency vs Independence
- Sharing Semantics
- Choosing the Cache Unit Size
- Cached File Modification Policies
- Stateful vs Stateless Service
- AFS Scalability
- AFS Callback
- Large Cluster vs SM Machines
Possible Topics (Cont’d)

- Reducing the GFS Master & Client Interaction
- Choosing the GFS Chunk Size
- GFS Consistency Model
- GFS Lease
- GFS Fault Tolerance