

CS 550: Advanced Operating Systems

Synchronization

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Advanced Operating Systems
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Outline

- Clock synchronization
 - Physical clocks
 - Synchronization algorithms
- Logical clock
 - Lamport timestamps
- Election algorithms
 - Bully algorithm
 - Ring algorithm
- Distributed mutual exclusion
 - Centralized algorithm
 - Distributed algorithm
 - Token ring algorithm
- Distributed deadlocks

Canonical Problems in Distributed Systems

- Time ordering and clock synchronization
- Leader election
- Mutual exclusion
- Distributed transactions
- Deadlock detection