Security-Aware Resource Management for Real-Time Applications on Clusters

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Time: 4 hours

Outline:

1. Motivation
   Problem Statement
   Motivations

2. A Security-Aware Middleware Model
   Architecture of the Security Middleware Model
   Quality of Security Control Manager
   Security Service Requirements Specification

3. Security Overhead Models
   Confidentiality Overhead
   Integrity Overhead
   Authentication Overhead

4. A Task Allocation Scheme
   Mathematical Models
   System Models
   Task Models
The TAPADS Task Allocation Scheme
Performance Evaluation

5. Improving Security for Local Disk Systems
   Motivation
   Architecture and Disk Requests with Security Requirements
   An Adaptive Write Strategy
   Performance Evaluation
   Synthetic Benchmarks
   Real I/O-Intensive Applications

6. Quality of Security Adaptation for Cluster Storage Systems
   System Architecture
   The Framework
   Data Partitioning
   Estimating Response Times
   The Quality of Security Control Algorithm
   Performance Evaluation

7. Conclusions