



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

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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