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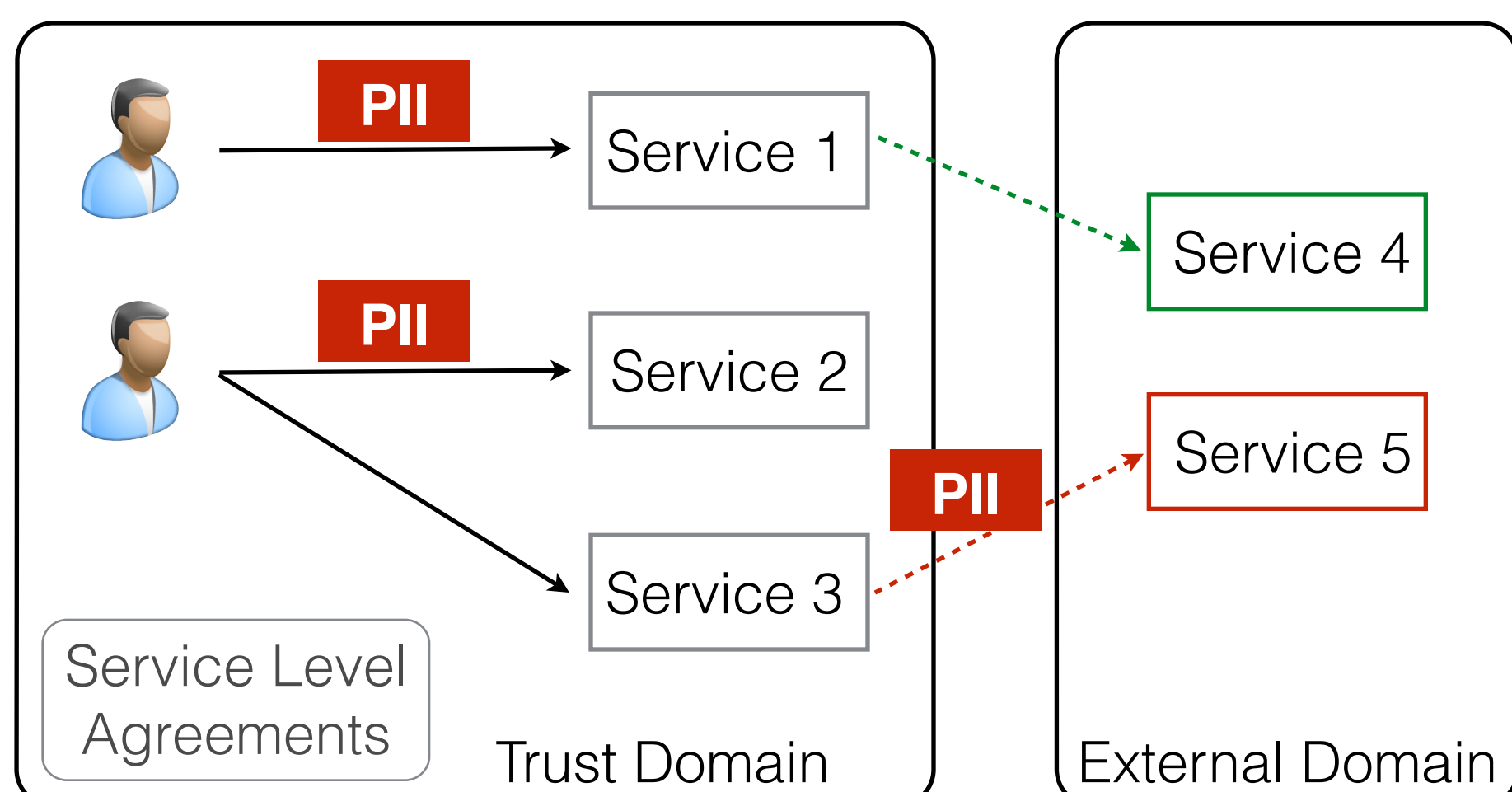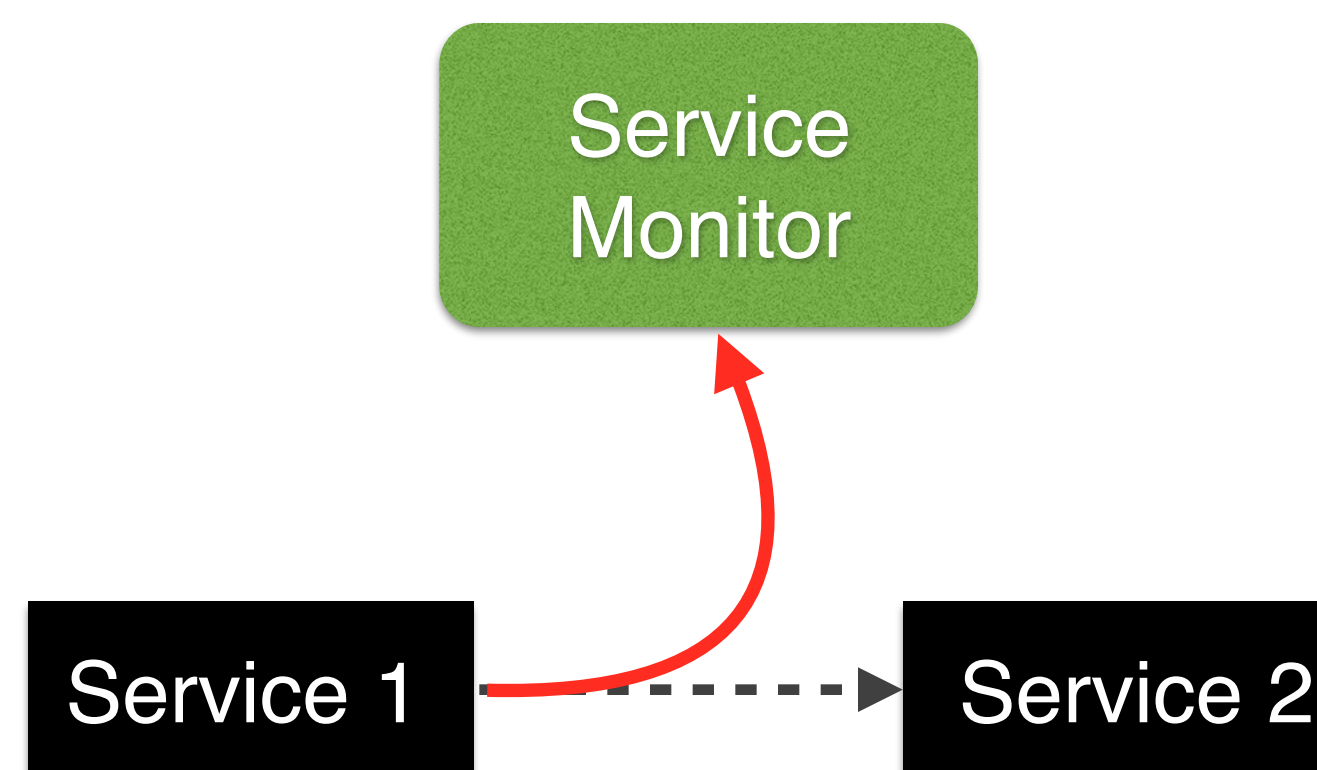The Center for Education and Research in Information Assurance and Security

A Framework for Service Activity Monitoring

Ruchith Fernando, Rohit Ranchal, Pelin Angin, Raghav Shankar, Bharat Bhargava
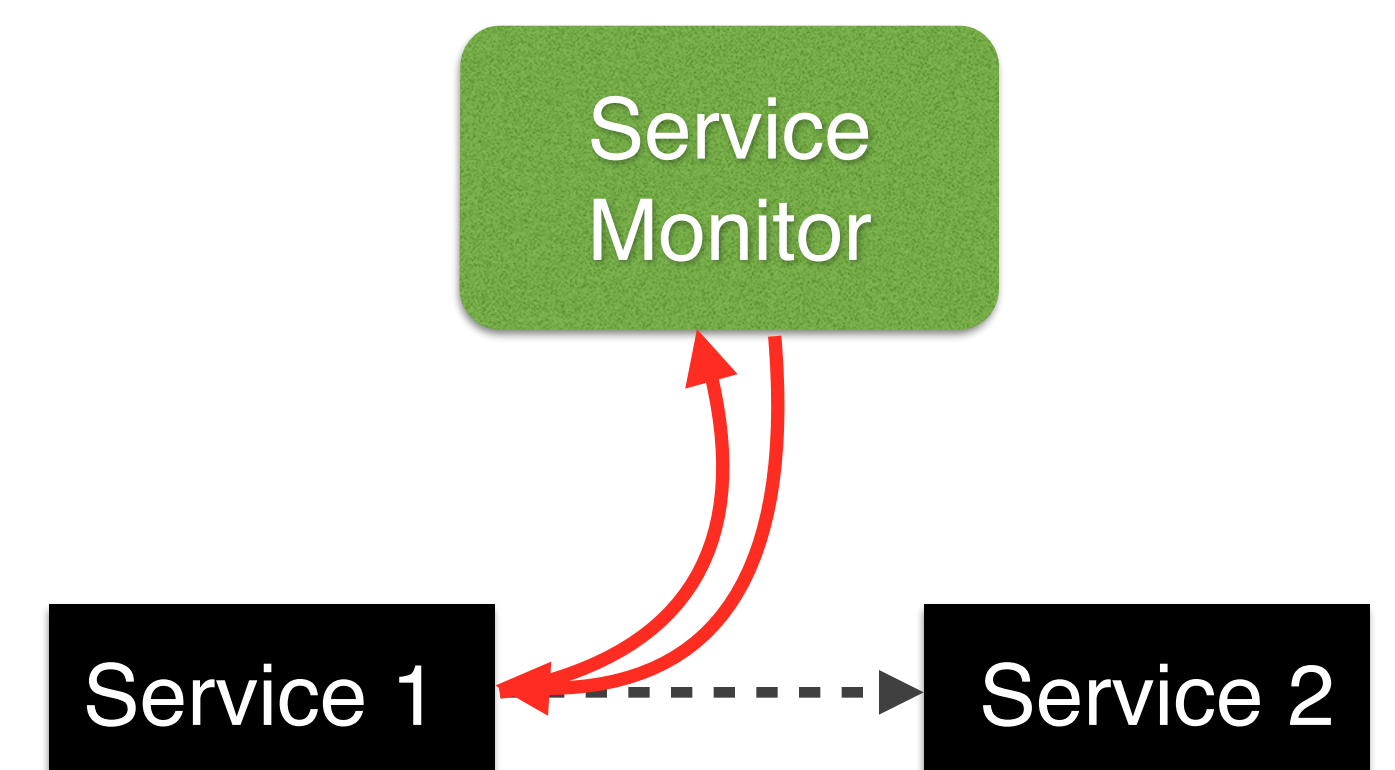Department of Computer Science and CERIAS, Purdue University
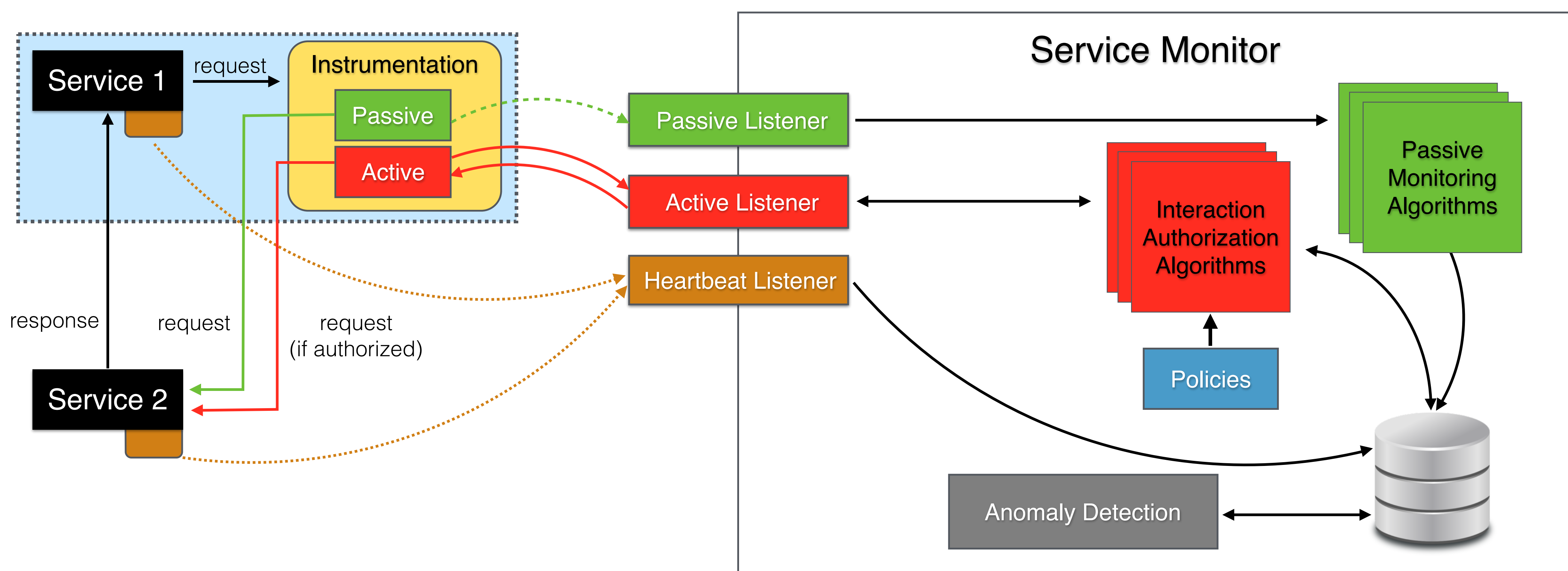
Motivation

Service Monitoring Modes

Passive Monitoring

Active Monitoring

System Architecture

System Features

- Pluggable service topologies
- Passive monitoring
- Active monitoring for service interaction authorization
- Pluggable trust management algorithms
- Pluggable service interaction authorization policies
- Service Monitor management console
- Service Heartbeat module

Implementation

- Node.js based implementation
- RESTful services
- XACML policy integration
- Instrumented "request" Modules
  - Blocking and Non-Blocking
- Management Console

https://code.google.com/p/end-to-end-soa

Future Work

- Service health analysis
- Context based service criticality rating
- Context based service orchestration management
- Scenario trust level analysis
- Attack detection
- System performance analysis

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