A Sensor-Cloud Simulation Platform with Slow Intelligent System

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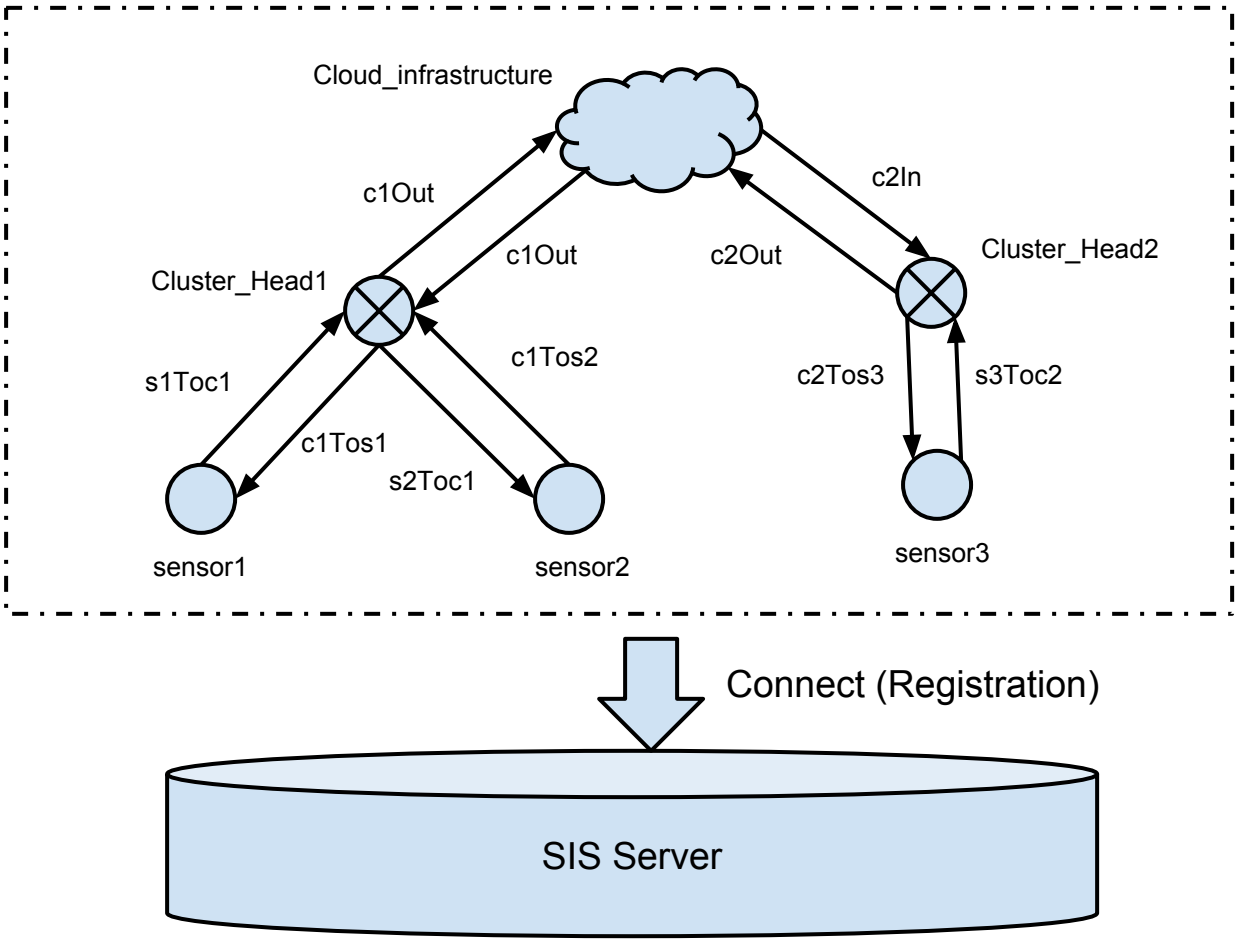
Outline

- Motivation
- System Architecture
- Application
- Demo
- Conclusion

Motivation

- Early Stage Verification
  - Simulate the behavior of sensor-cloud system
    - Fetching information
- Sensor-Cloud System
  - Computation V.S Communication
- Slow Intelligent System
  - Components V.S. Messages
    - Component-based design approach
    - Less modeling effort

System Architecture

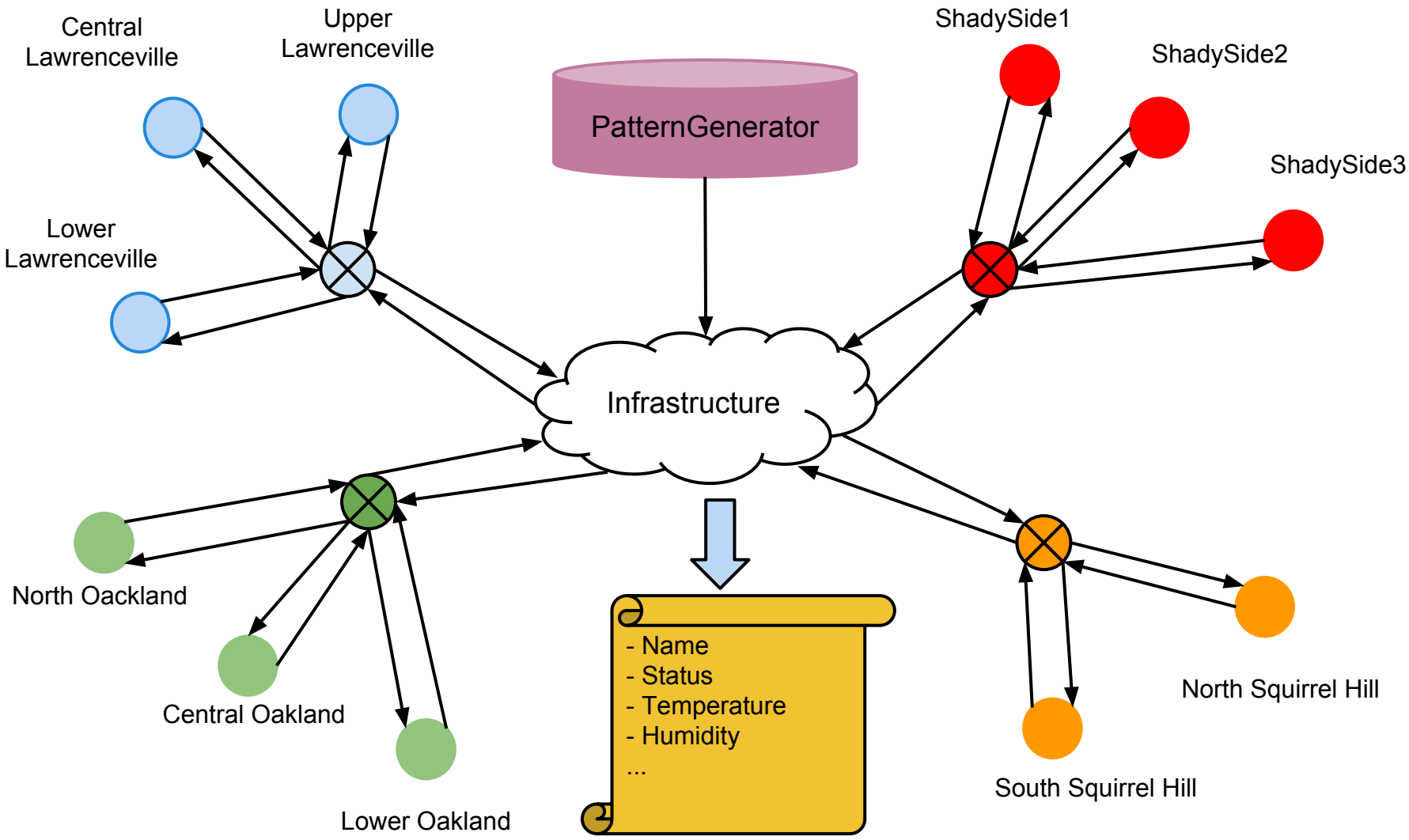


Application

- Temperature Observation
  - Shadyside
  - Lawrenceville
  - Squirrel Hill
  - Oakland

- Simulate the behavior of collecting data within sensor-cloud system.

Application Overview



Specification

Component	Input Message	Output Message
Sensor	1. Request (cluster head to sensor)	1. Data (sensor to cluster head) a. Sensor_Name b. Status c. Temperature d. Humidity
Cluster Head	1. Request (infrastructure to cluster head) 2. Data (sensor to cluster head) a. Sensor_Name b. Status c. Temperature d. Humidity	1. Request (cluster head to sensor) 2. Data (cluster head to infrastructure) A. Cluster_Name B. Status C. Temperature D. Humidity
Infrastructure	1. Data (cluster head to infrastructure) a. Cluster_Name b. Status c. Temperature d. Humidity	1. Request (infrastructure to cluster head)
Pattern Generator		1. Request (PatternGen to infrastructure)

Demo

- Execute observation application

Conclusion

- Propose a simulation platfrom for sensor-cloud system
  - Component-based design approach in SIS

- Develope an application to simulate the behavior of sensor-cloud system.

Thank You!