

Policy 2004
June 7-9
Yorktown Heights, NY



Policy: an AI Perspective

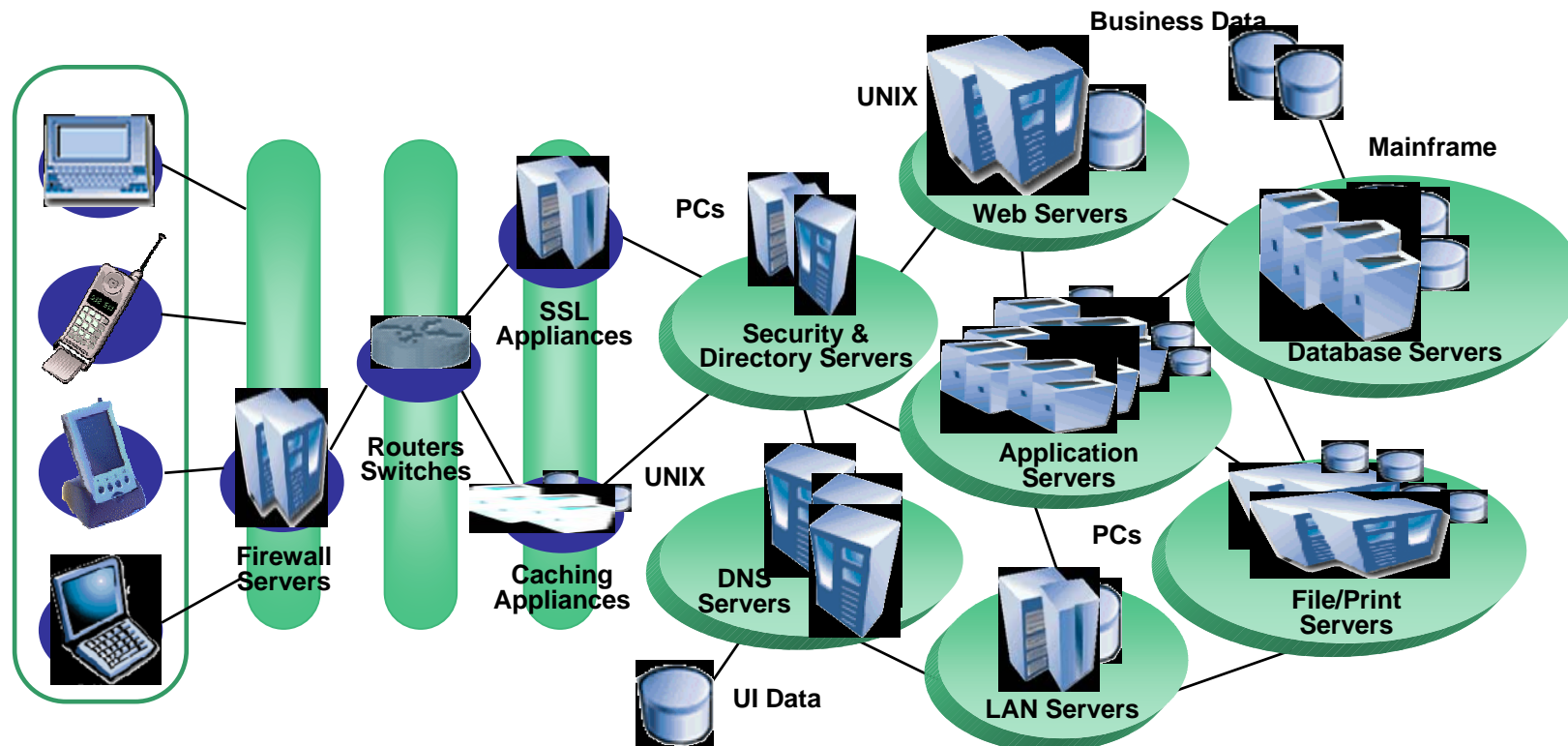
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Autonomic Computing

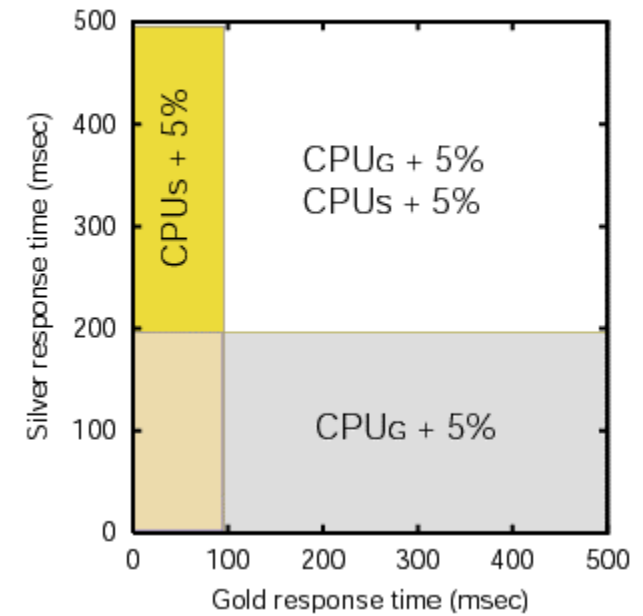
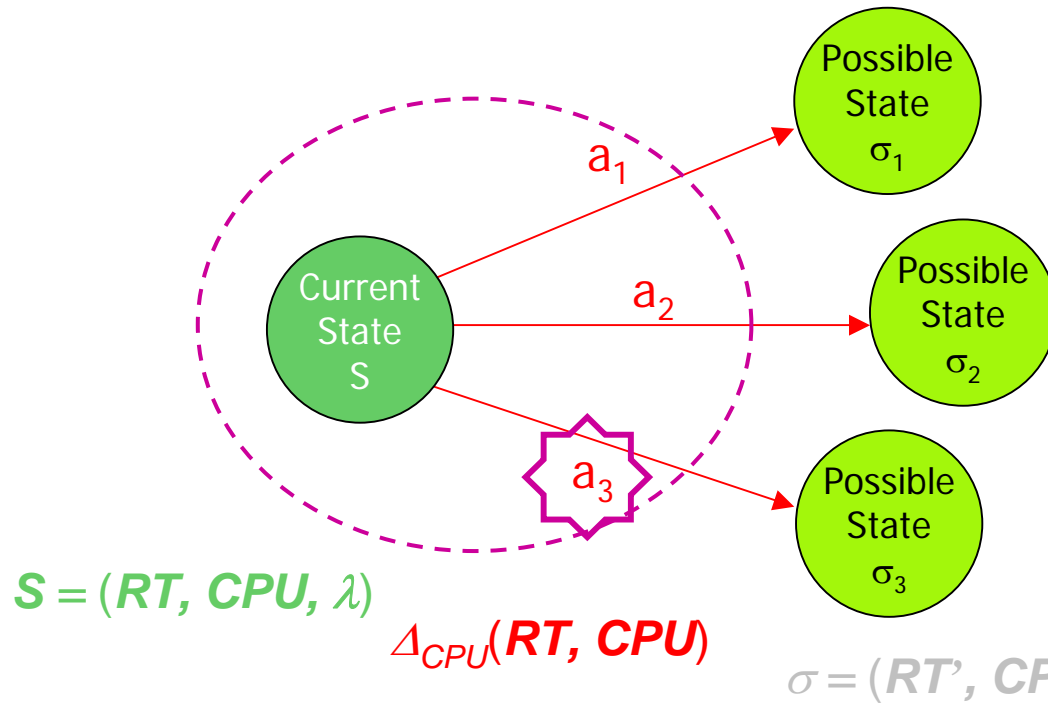
Self-management based on high-level guidance from humans

AI = automated decision-making

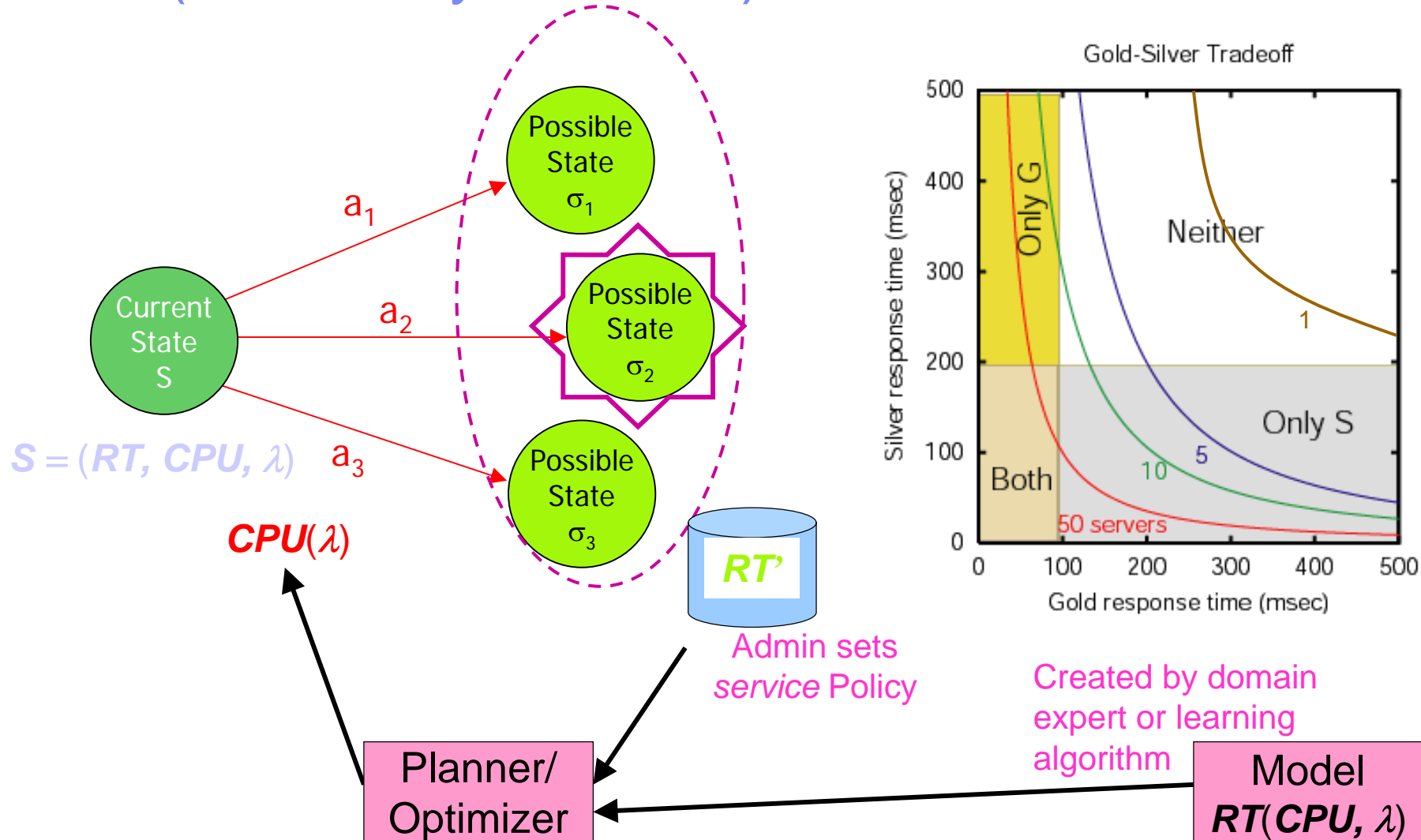
Policy



Action Policies

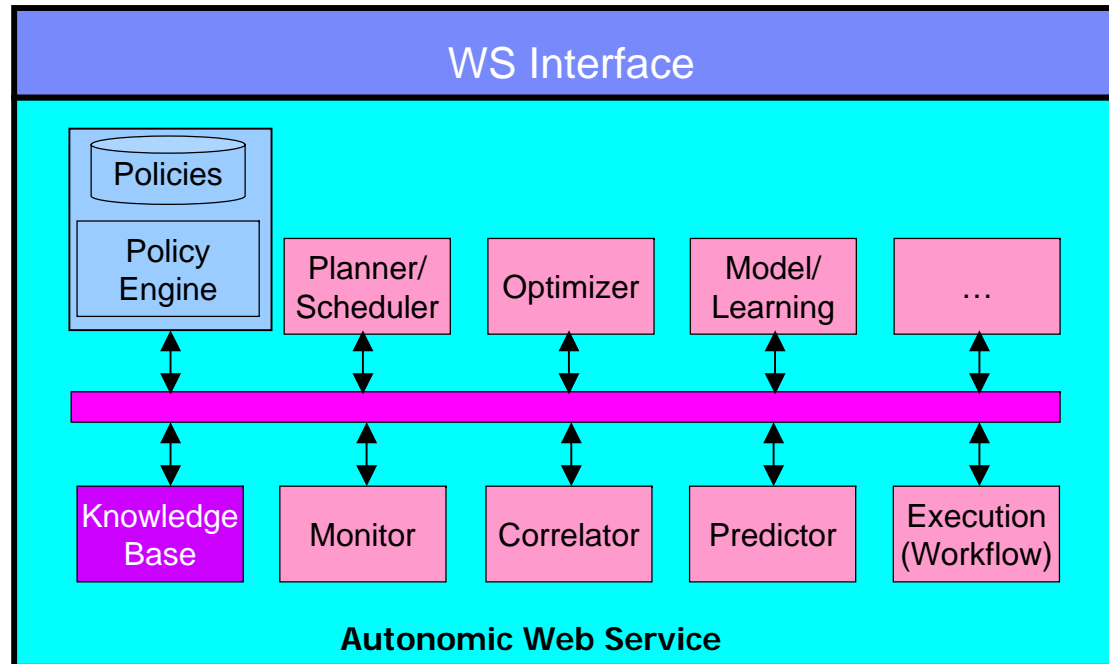


Goal (and Utility-function) Policies



Policy and Autonomic Agents

Architecture and Technologies

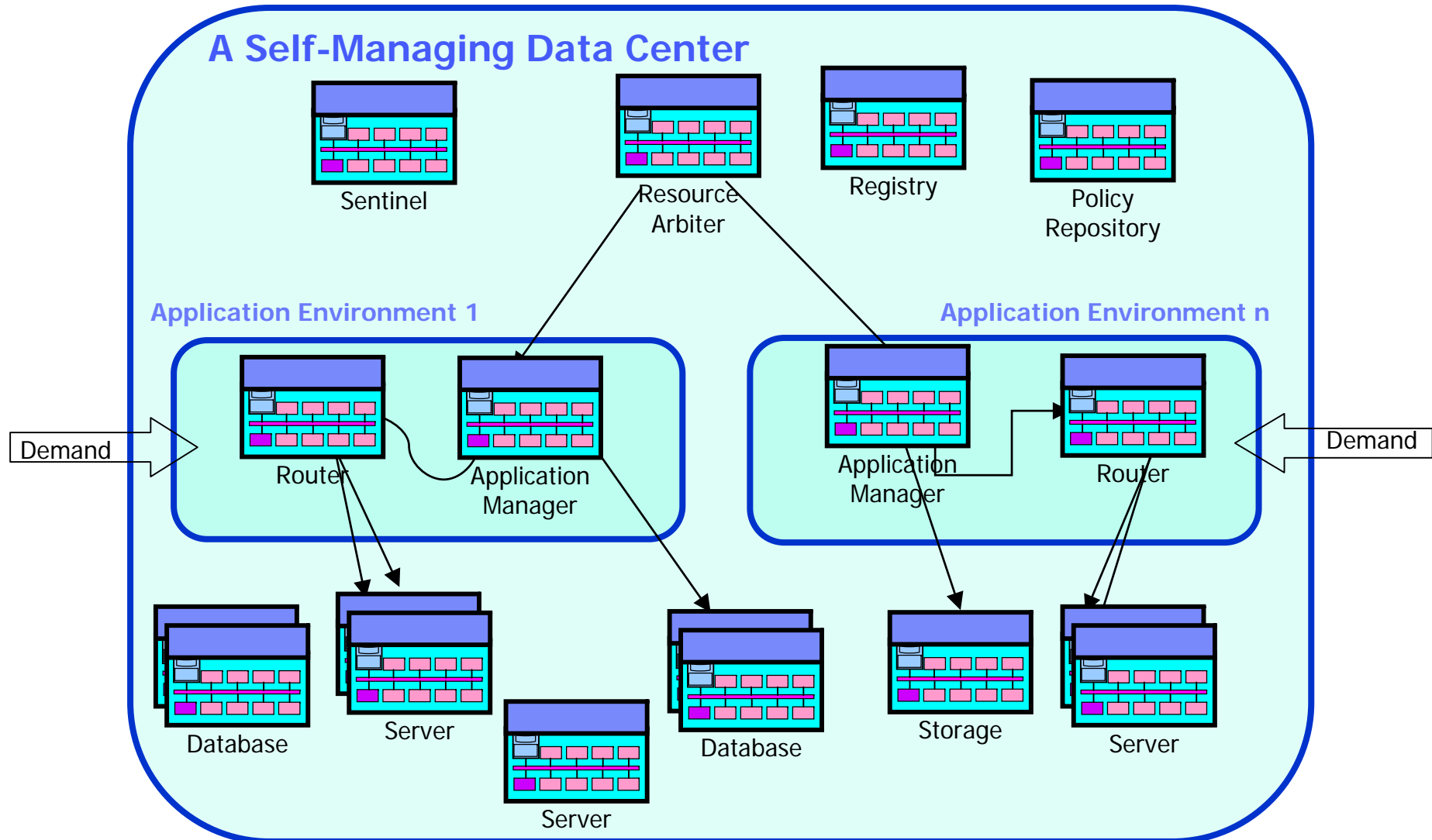


Agent: “Encapsulated computer system, situated in some environment, capable of flexible autonomous action in that environment in order to meet its design objectives”

Autonomic agent architecture includes

- **Policy**
- **AI technologies**
- Mathematical modeling and analysis algorithms
- Workflow
- Web service interfaces

Policy and Autonomic Systems



Policy and AI: Research Challenges

- ◆ **Interfaces** between humans and systems
 - How do we elicit goals and utility functions from people?
 - How do we support iterated interactions between humans and autonomic systems?

- ◆ **Algorithms** and mechanisms that operate upon and support policies
 - Automated derivation of actions (e.g. planning, optimization)
 - Modeling tools and technologies; domain representation languages
 - Simulation tools

- ◆ **Architectures** that incorporate and support policy
 - Individual agents: how does policy fit in with modeling, optimization, planning?
 - Multi-agent systems: how do policies get distributed and transformed?

- ◆ **Put it all together:** Build a prototype self-managing system of moderate complexity that uses policy effectively
 - **Demonstrate the value** of policy!

Should we aim for a Policy workshop at a major AI conference in 2005?