

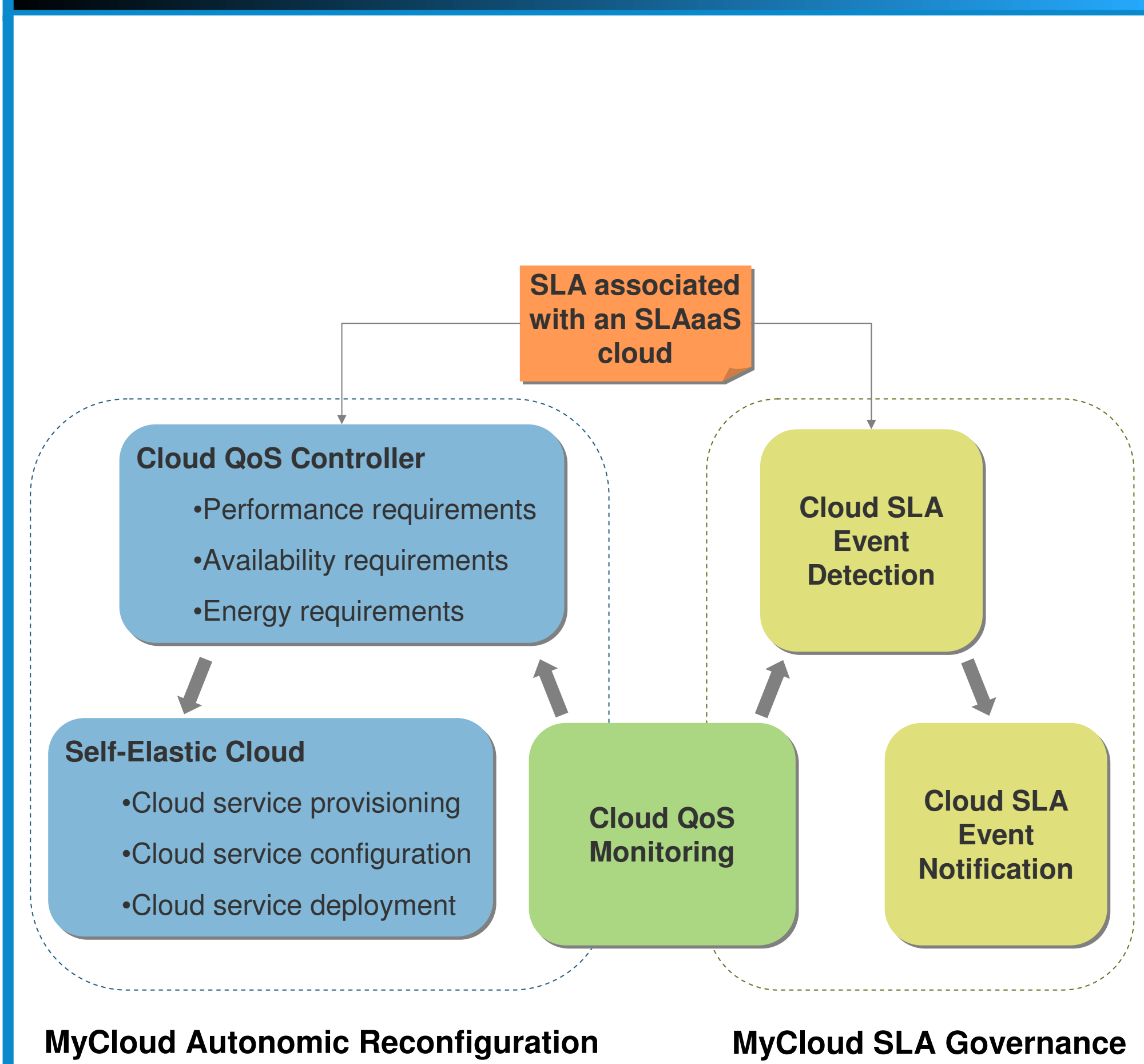
MOTIVATION AND CHALLENGES

- Clouds ad-hoc management in terms of Quality-of-Service (QoS) and Service Level Agreement (SLA) poses significant challenges to the performance, availability, energy consumption and economical costs of the cloud.
- Existing public clouds provide very few guarantees in terms of performance and dependability (e.g., Amazon, Rackspace, and Azure).
- QoS and SLA will be differentiating elements between Cloud Computing environments.
- Challenges:**
 - How to consider SLA in a general way for different cloud environments?
 - How to describe the SLA terms between cloud provider and cloud customer, such as service levels, penalties in case of SLA violation, etc.
 - How to provide guarantees on cloud QoS and provide better than best-effort behavior for clouds?

OBJECTIVES

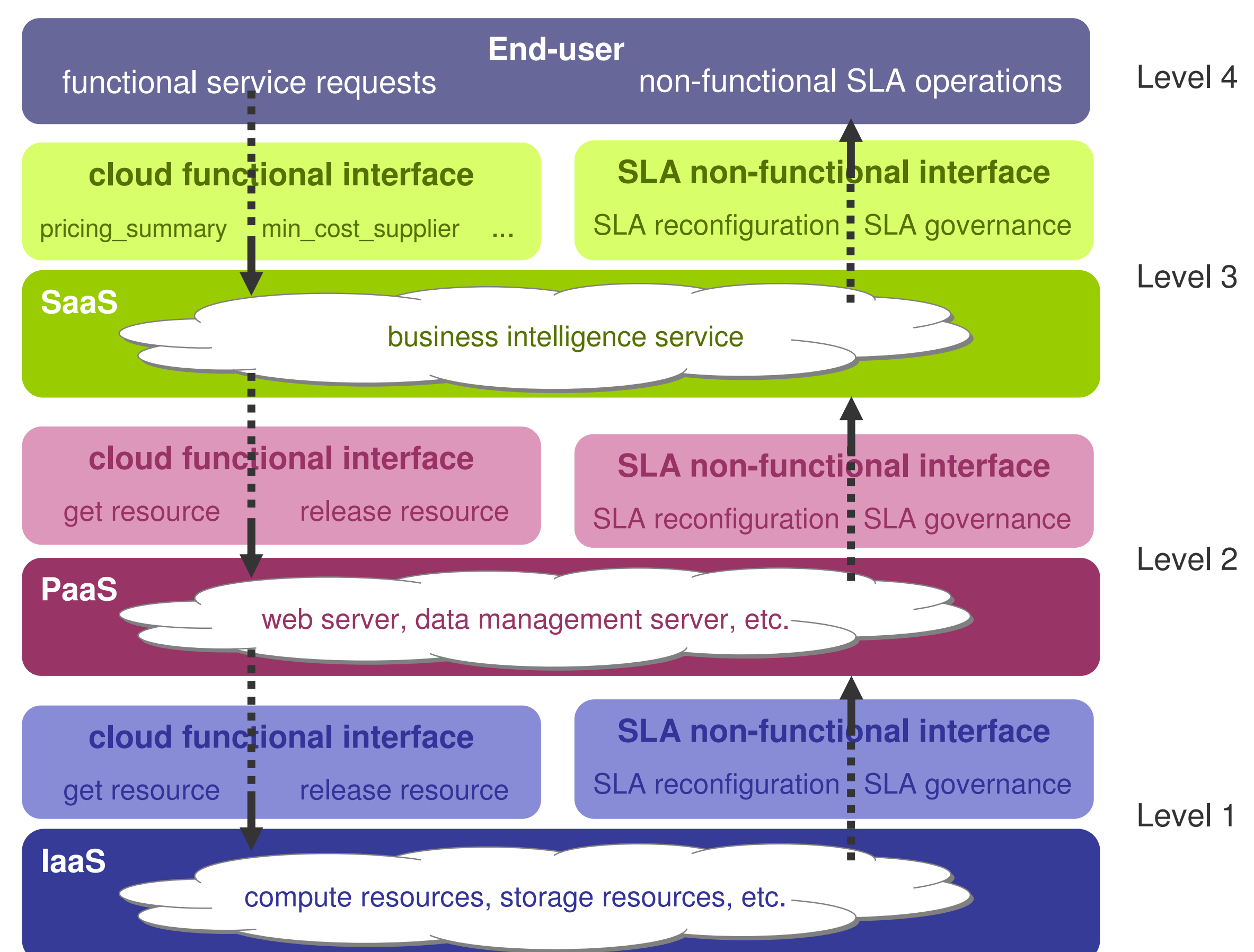
- New Cloud model that integrates QoS and SLA
- Autonomic Cloud management to guarantee SLA
- Cloud SLA governance

MYCLOUD ARCHITECTURE



SLAaaS CLOUD MODEL

- SLAaaS: SLA aware Service
- Defines a non-functional interface which exposes the SLA with a cloud functional service
- Allows a user to select the QoS aspects he/she is interested in (e.g., performance, cost) and the QoS metrics for these aspects (e.g., response time, financial cost)



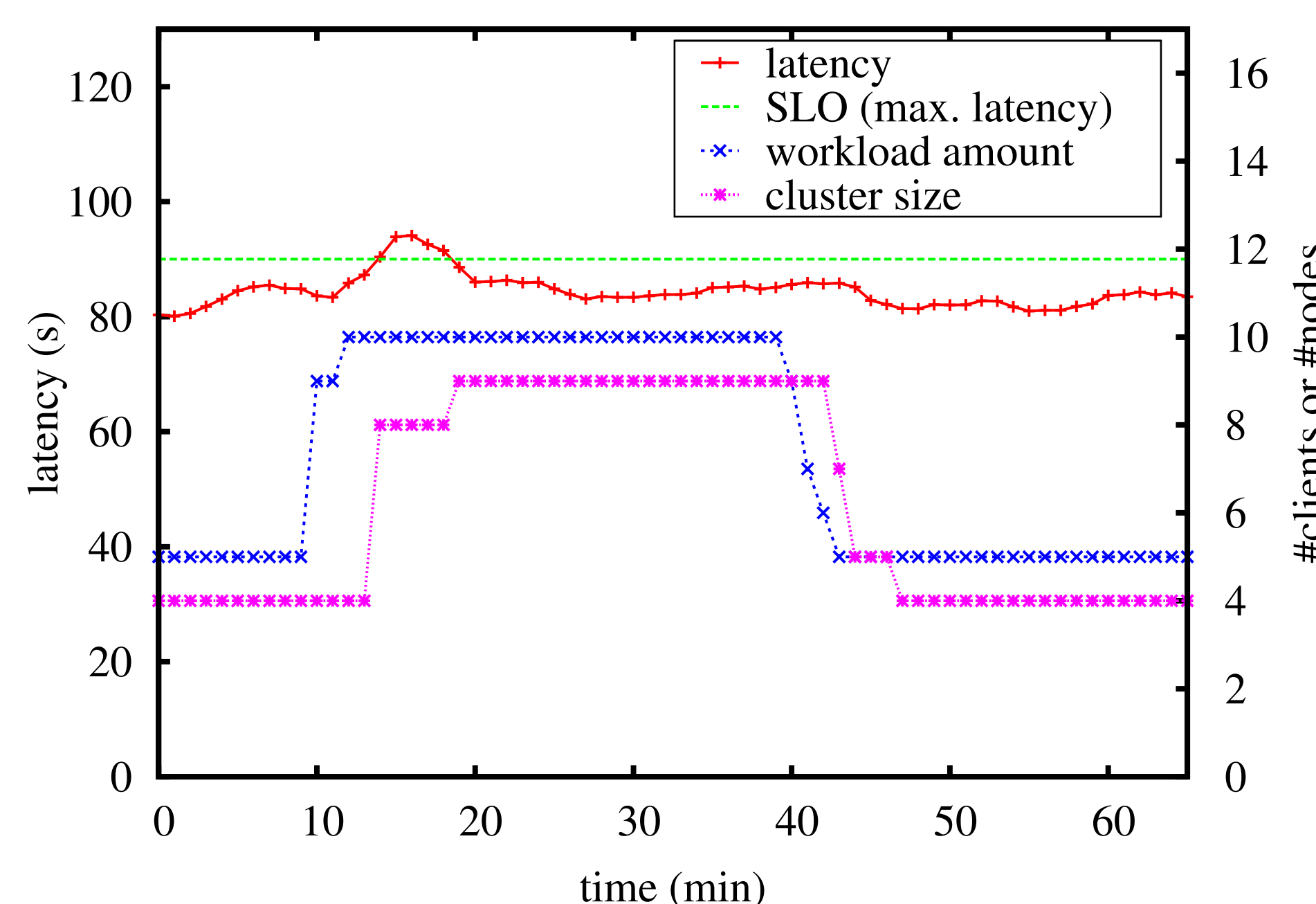
SLA DEFINITION LANGUAGE

- CSLA: Cloud SLA language
- SLA description between cloud provider and cloud customer
- QoS guarantees in terms of Service Level Objectives (SLO)
- Confidence, penalty and fuzziness

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MYCLOUD AUTONOMIC RECONFIGURATION

- Use case: SLAaaS MapReduce PaaS
- Adapt number of cloud service instances to workload variations



MYCLOUD SLA GOVERNANCE

- Monitor Cloud SLOs defined in SLA
- Automatic detection of SLA violations
- Notifications of SLA violations

Average Resp. Time

