

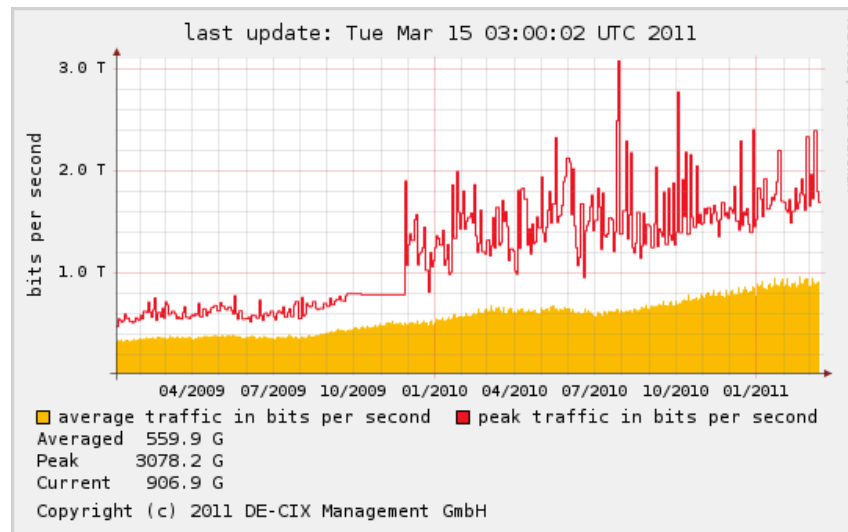


Cost and QoE Optimized Service Provisioning

**Cluster:
Resource Allocation in Cloud Computing**

Questions and Answers

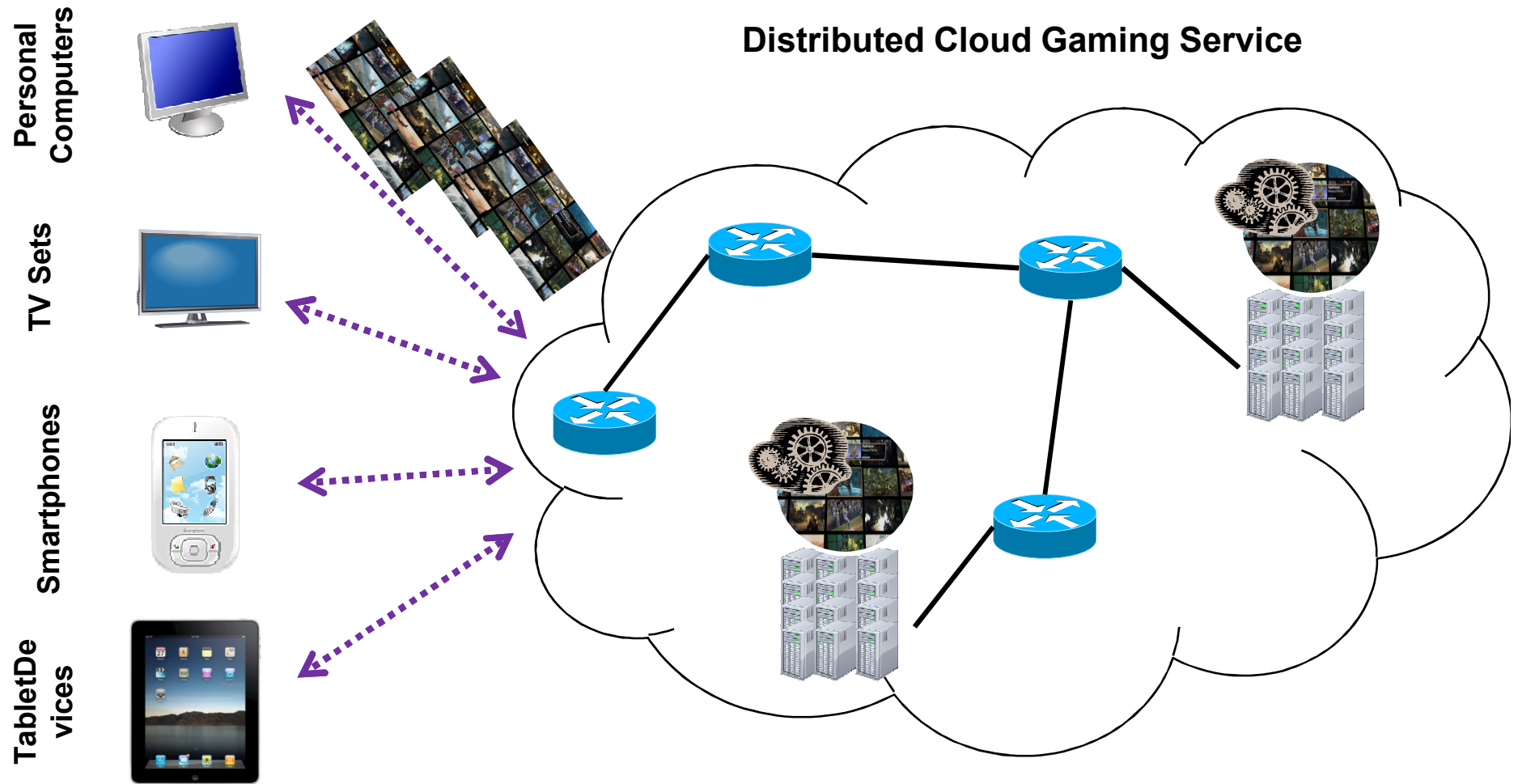
- ▶ What is your research problem?
 - How to optimize service provisioning in terms of cost and QoE?
- ▶ Why is it important?
 - The Internet is a best effort network. This proves to be more and more insufficient for services to provide a good user experience and also be cost effective



Questions and Answers

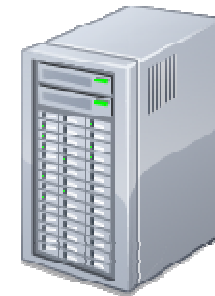
- ▶ How will you attack the problem in an experiment?
 - ▶ For a specific service:
 - ▶ Identify Key Performance Indicators
 - ▶ Evaluate approaches for cost optimization
 - ▶ Identify dependencies between cost optimization and user perception
 - ▶ Compare our solution to a best effort approach
- ▶ What are the expected results?
 - ▶ Evaluation of our approach
 - ▶ A good parameterization for the considered service
- ▶ How does it benefit from international collaboration?
 - ▶ Exchange of ideas, experiences, know-how
 - ▶ Setup of joint, distributed experiments

Use Case: Gaming in an adaptive Cloud



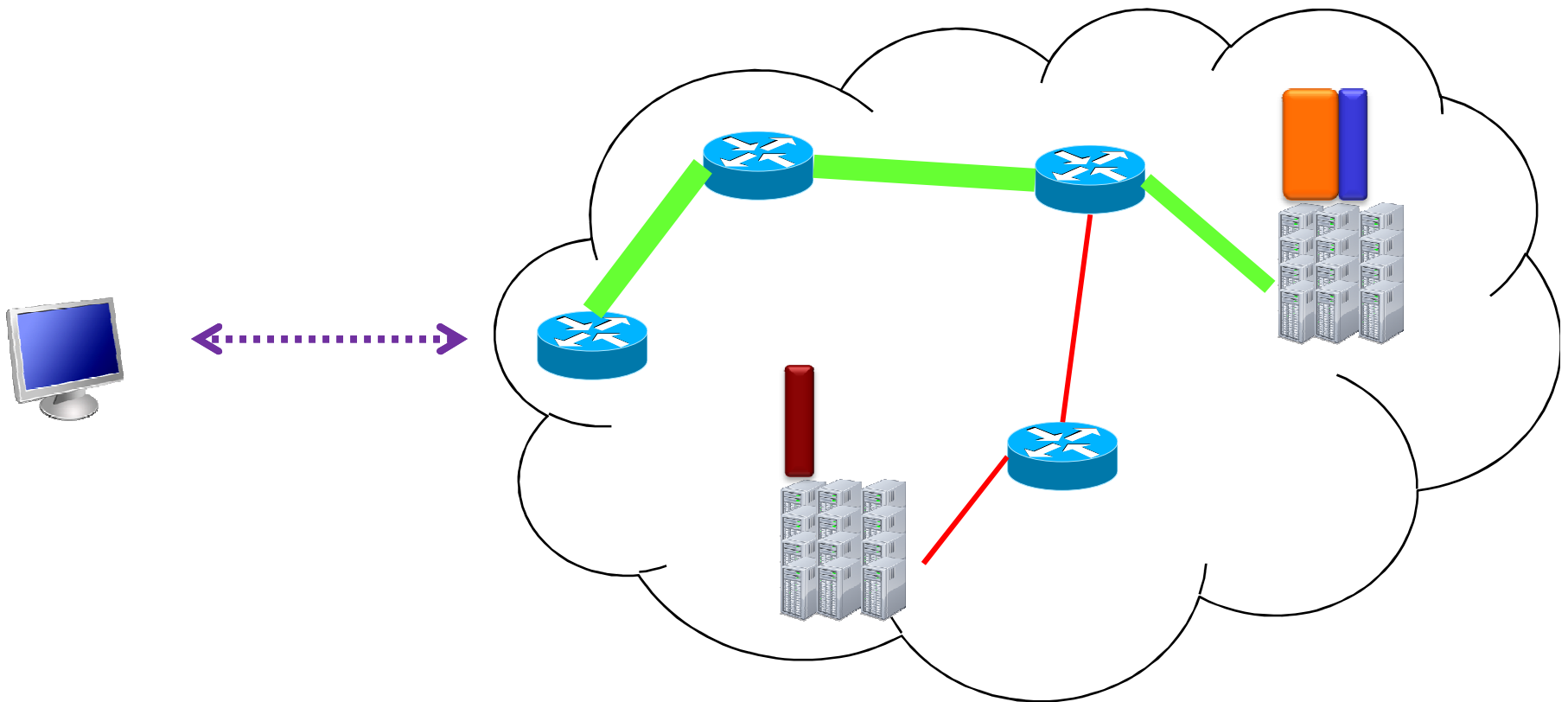
Service Decomposition

- ▶ Decompose Service into functionally independent parts to improve overall performance



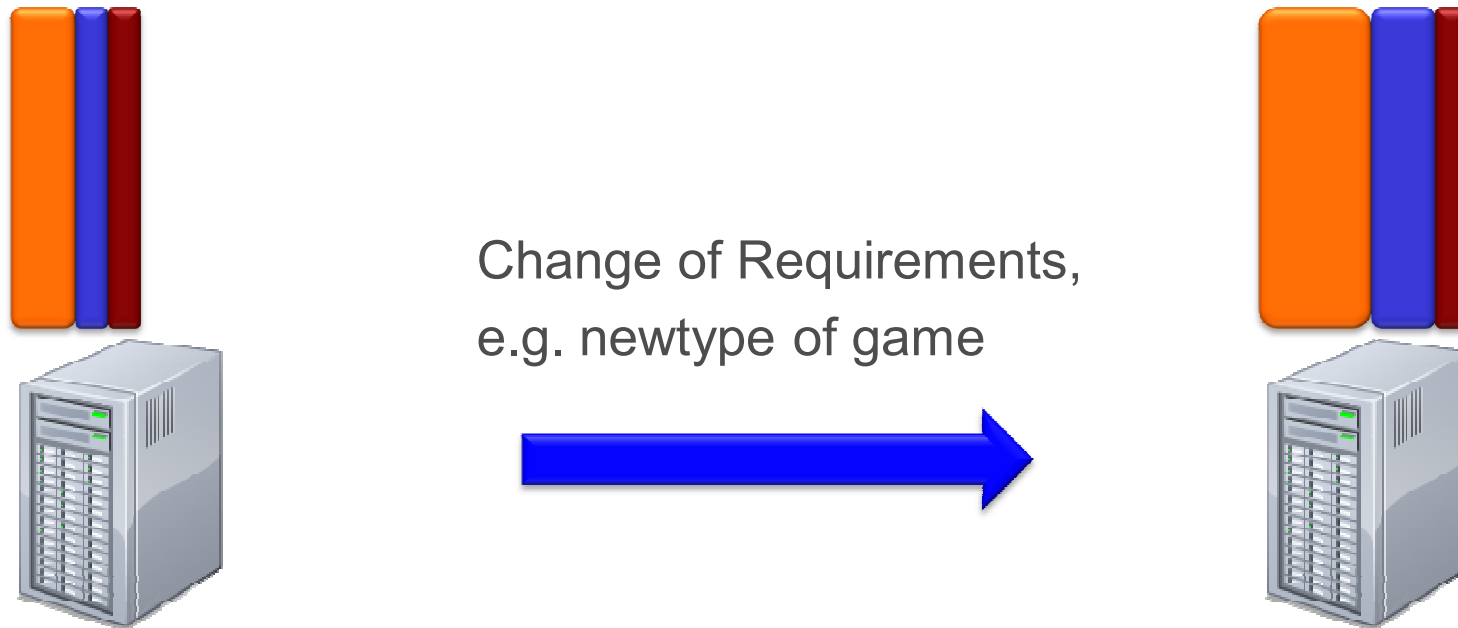
Initial Resource Allocation

- ▶ Cost optimized placement of service components
- ▶ Configuration & parameterization of the virtual network



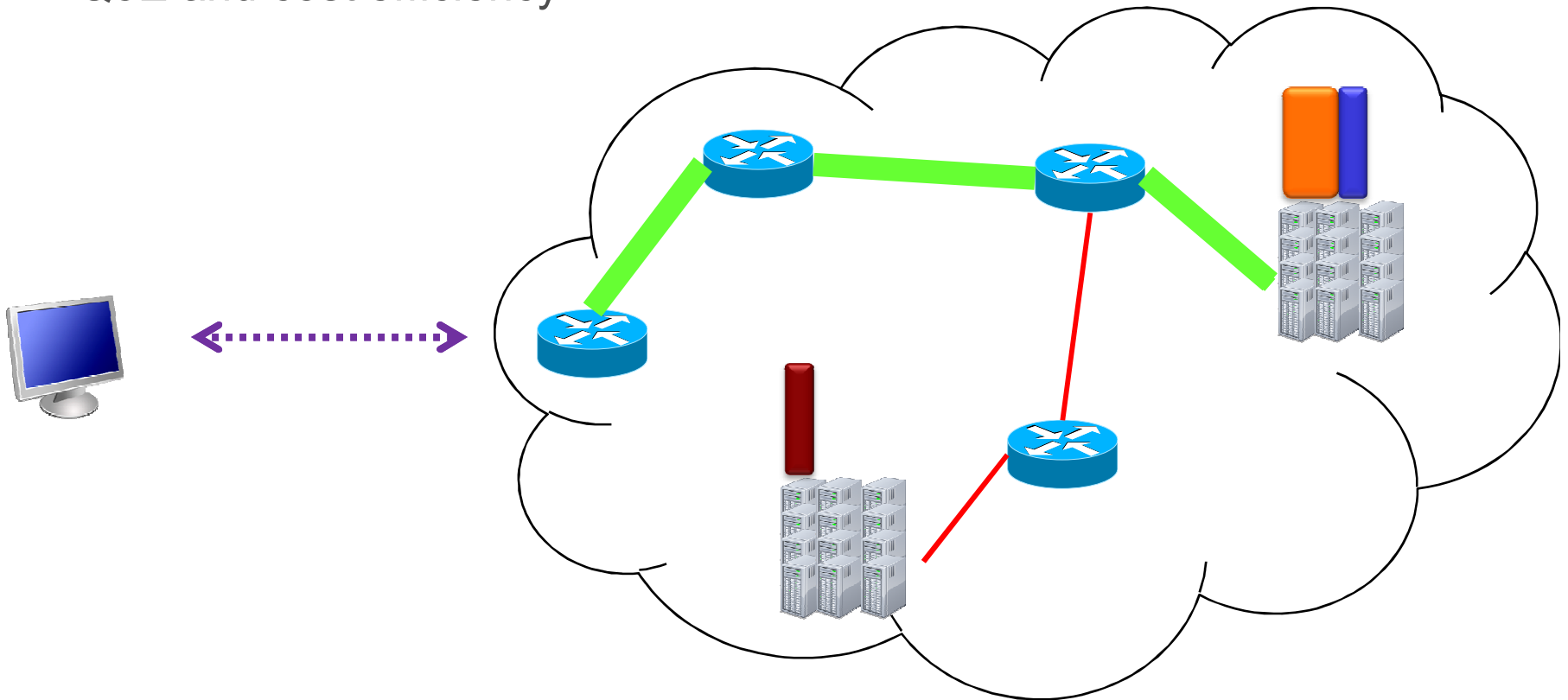
Single Node Optimization

- ▶ Dynamically optimize resources on a single host



Adaptive Resource Re-Deployment/Configuration

- ▶ Monitoring of relevant service parameters, e.g. latency, packet loss, CPU/GPU load, RAM utilization
- ▶ Dynamically adapt deployment to get a good balance between QoE and cost efficiency



Summary

- ▶ We want to optimize service provisioning with regard to cost efficiency and Quality of Experience
- ▶ We identify Key Performance Indicators for each service and finding an optimized parameterization
- ▶ We dynamically want to adapt the deployed service according to changes in the cloud but also at the user end

Thank You !

Questions?