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Automated deployment of Virtual Services

based on functional, performance and data aspects

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Agenda

1. Background
2. Research
3. Service-oriented systems in practice
4. Survey & results
5. Identified constraints
6. How to remove constraints using Service Virtualization?
7. Organization Maturity Levels and ways to improve
8. Automated deployment of simulated test-environments
9. Conclusion and future work

Background

- PhD project at the University of Groningen, NL
- Started: 20 months ago

- Research interests:
  - Testing SOA systems
  - Service virtualization
  - Cloud computing
- MSc in Computer Science from the University of Sarajevo, Bosnia and Herzegovina
- Senior Quality Assurance Engineer for AtlantBH and NAVTEQ (US)

Research

Research topic:

Testing of highly distributed service-oriented systems

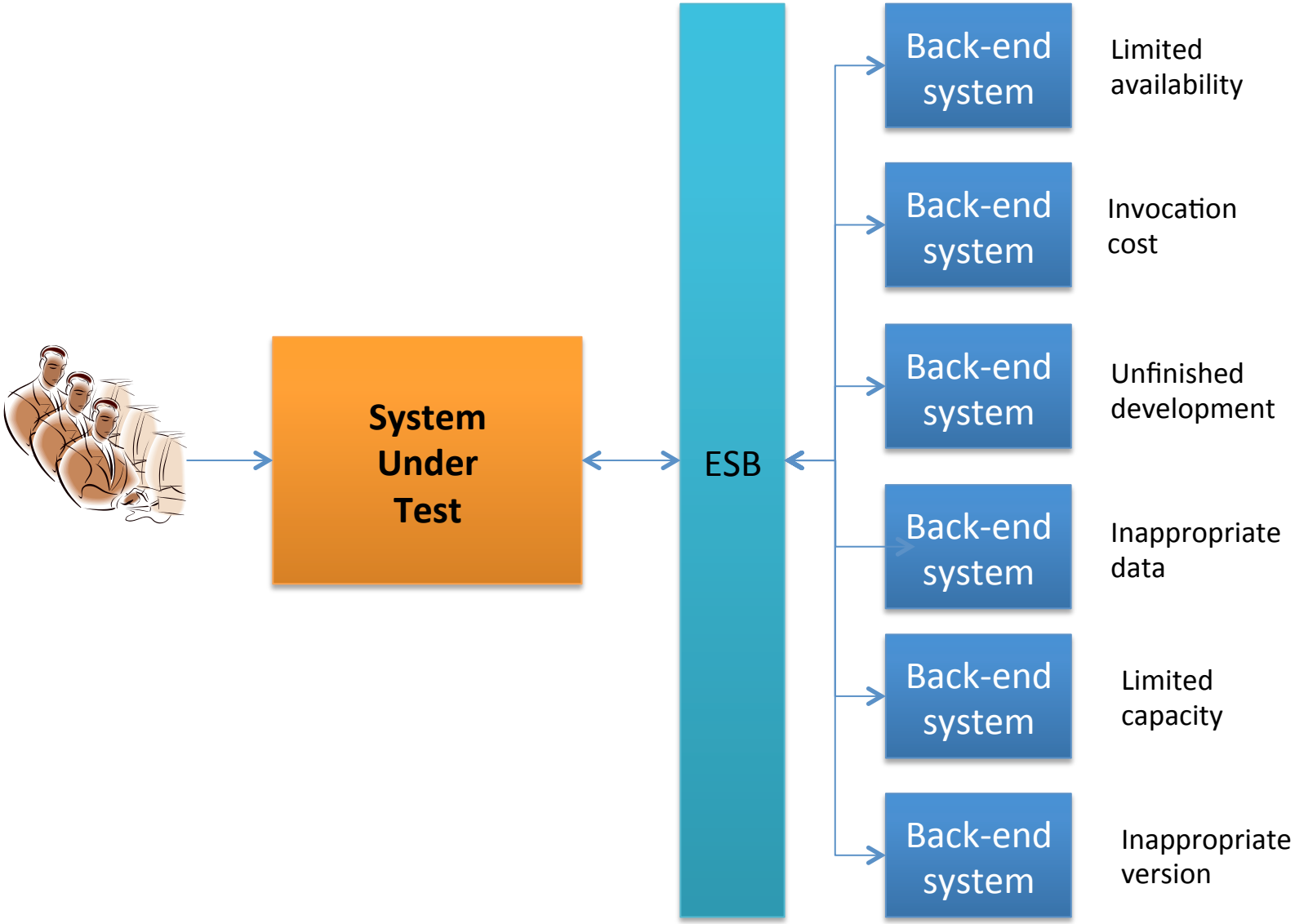
- Published papers:
  - F. Nizamic, V. Degeler, R. Groenboom, and A. Lazovik (2012). **Policy-Based Scheduling of Cloud Services**
  - F. Nizamic, R. Groenboom and A. Lazovik (2011). **Testing for Highly Distributed Service-oriented Systems using Virtual Environments**

- Work in progress:
  - F. Nizamic, R. Groenboom (2013). **Automated deployment of virtual services based on functional, performance and data aspects**
  - W. Buck, F. Nizamic, M. Antunovic, A. Rikovic and A. Lazovik (2012). **Automated deployment of scheduled cloud services**

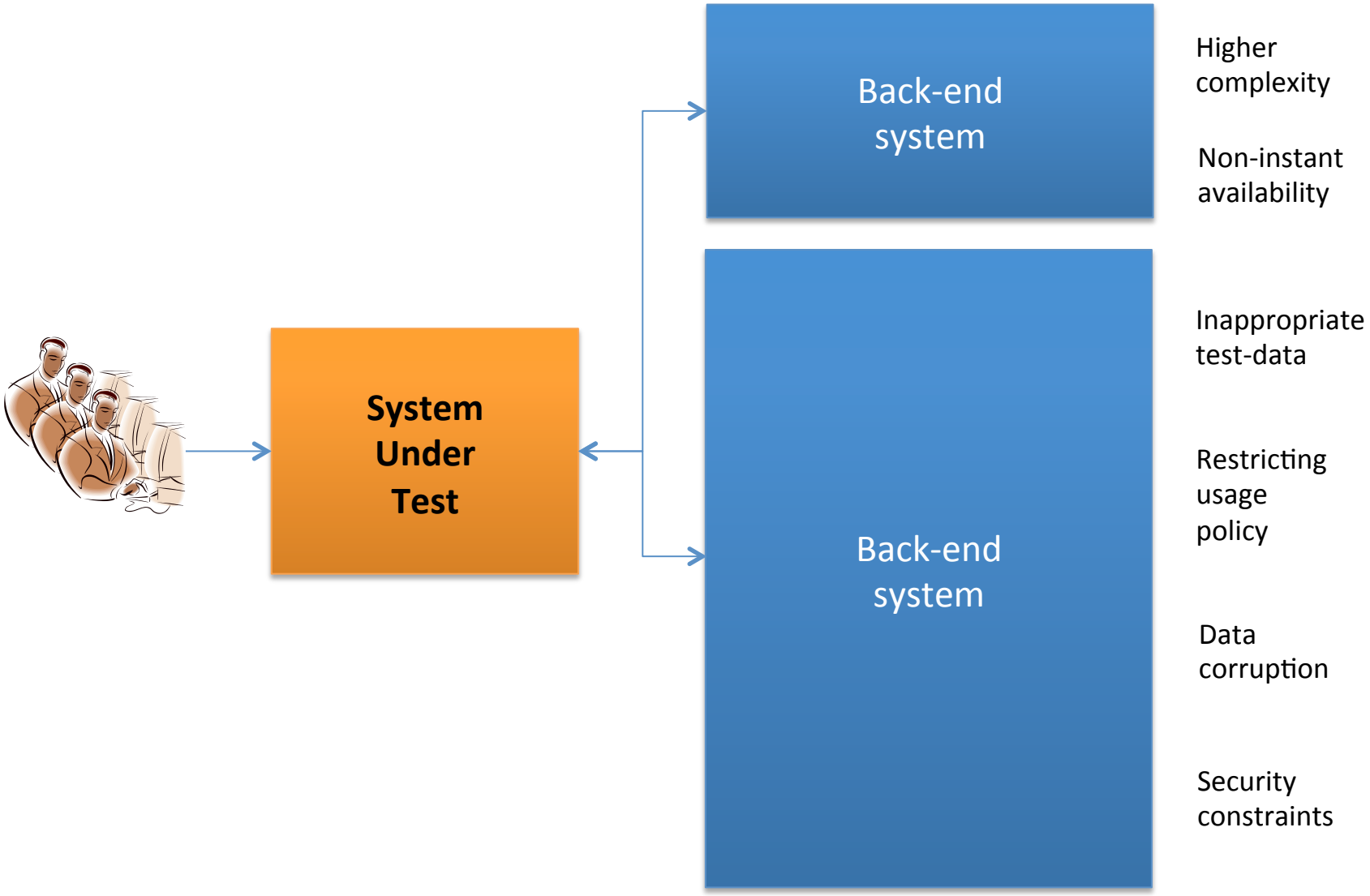
SOA systems

- Service-oriented systems
  - Functionality spread across the network
  - Interdependent services need to be tested as one system
  - No full control over a system
- Test automation reached the satisfying maturity level
  - Test automation knowledge available to test teams
  - Test tools capable supporting automation process
- Continuous delivery delayed because of number of constraints

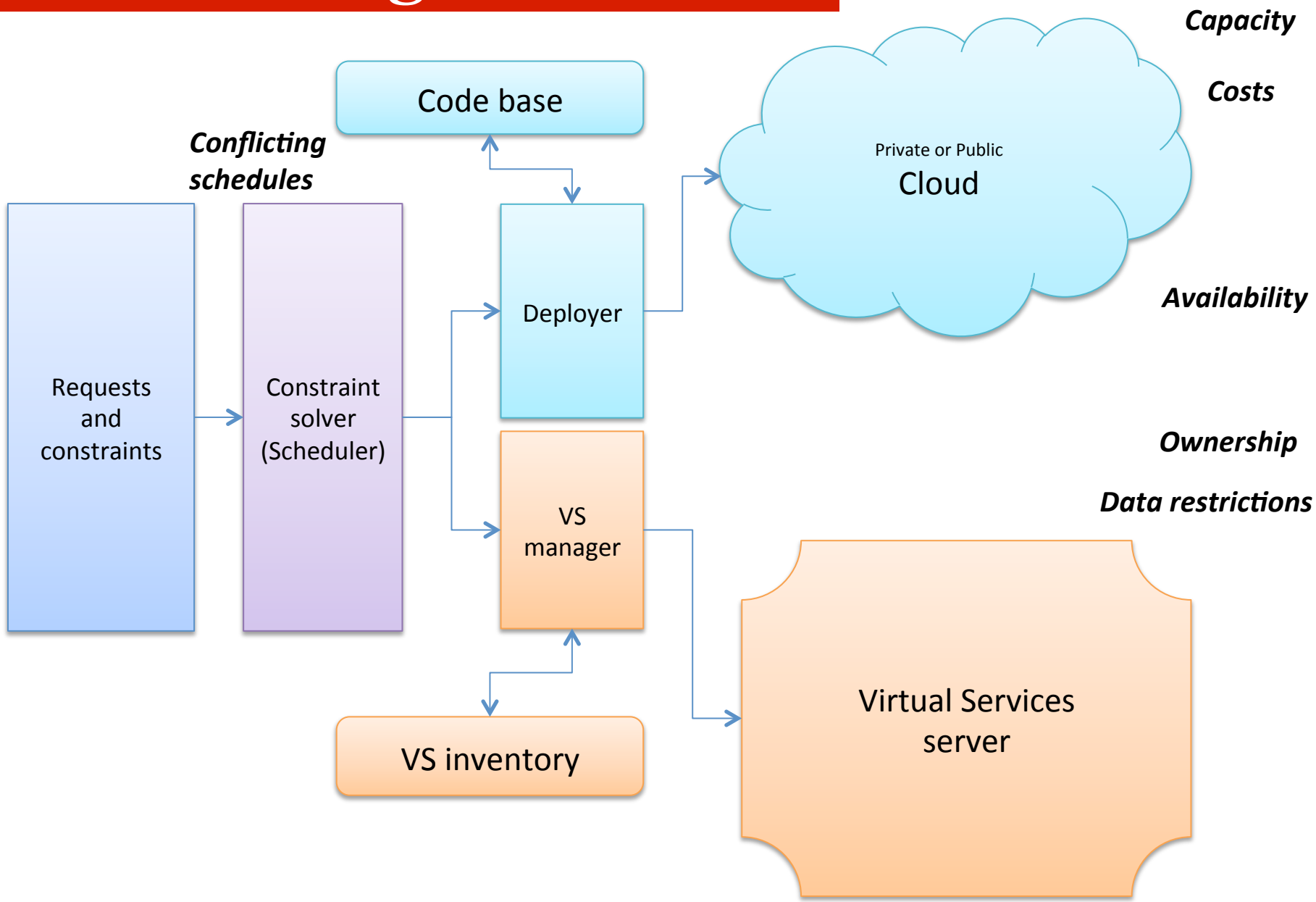
System type A: SOA



System type B: Chain

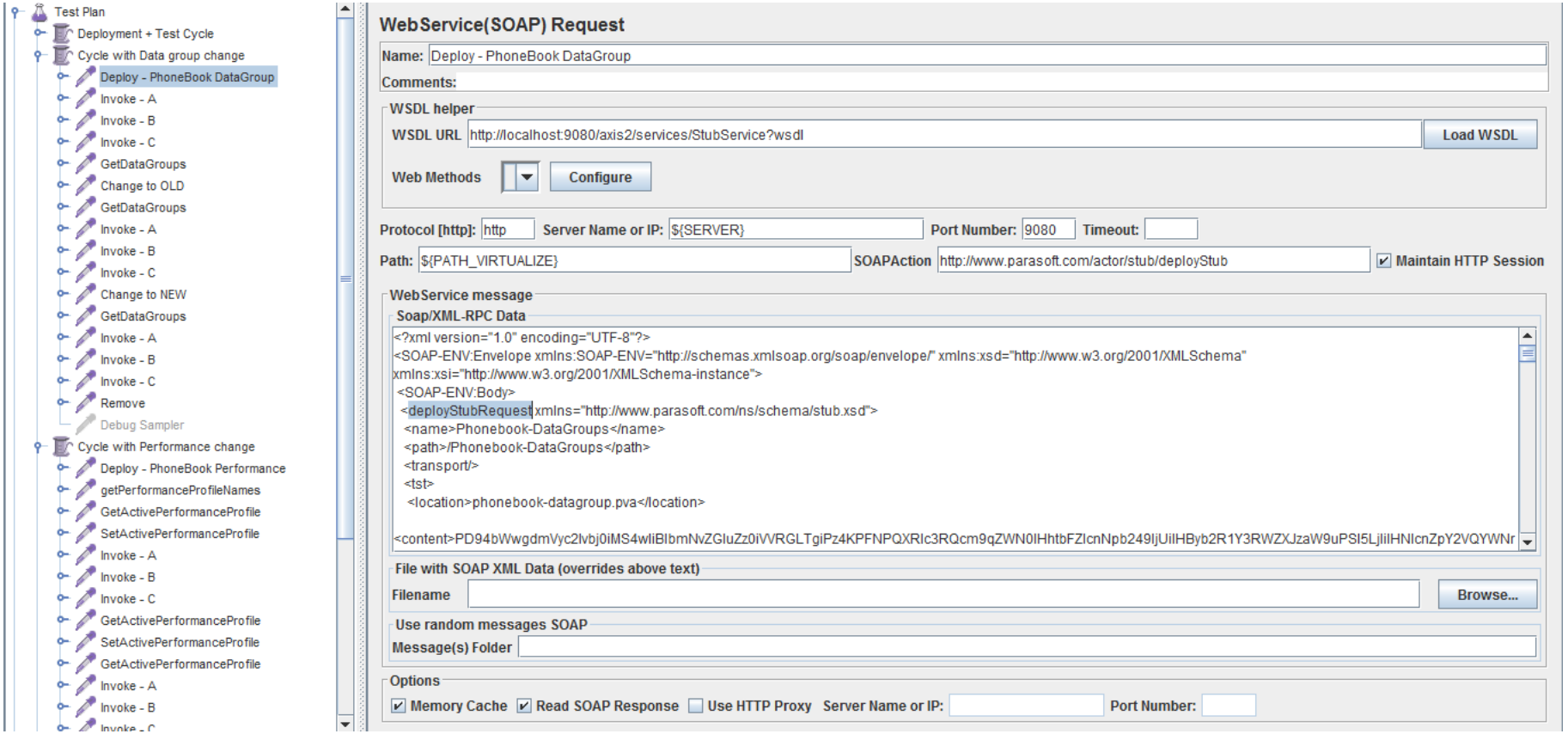


Removing constraints



Functionality, performance and data management

VS manipulation SOAP requests	Functionality
deployStub	Deploy virtual service
removeStub	Un-deploy virual service
getDataGroups	Get the list of all data groups
setActiveDataGroups	Set the active data group
getPerformanceProfileNames	Get the list of all performance profiles
setActivePerformanceProfile	Set the active performance profile
getActivePerformanceProfile	Get the active performance profile



Conclusion and future work

- Service Virtualization can remove availability, cost, and capacity constraints
- Using automated deployment of Virtual Services organization can achieve higher maturity level and that way achieve continuous delivery

- Conduct a survey regarding constraints, service virtualization and maturity levels of organizations
- Conduct an experiment as a part of a case study using real system in combination with virtual services (possibility for participation)

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Thank you for your attention!

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