CZECH TECHNICAL UNIVERSITY IN PRAGUE

FACULTY OF INFORMATION TECHNOLOGY

ASSIGNMENT OF MASTER'S THESIS

Title: Suitability analysis of Kubernetes for Seznam.cz
Student: Bc. Ond ej Šejvl
Supervisor: Ing. Jan Baier
Study Programme: Informatics
Study Branch: Web and Software Engineering
Department: Department of Software Engineering
Validity: Until the end of summer semester 2016/17

Instructions

Make yourself familiar with the Kubernetes system. Compare Kubernetes in different environments (filesystem, network management, …) and create a set of recommendations for Seznam.cz corporate machines. Design and implement a set of applications to simulate real traffic. Describe how Kubernetes can help developers to deploy a software in production environment.

The applications should fulfill the following requirements:
• Load configuration files, SSL certificates and static resources.
• Use persistent storage.
• Raise controlled faults, deadlocks, segmentation faults.
• Simulate heavy CPU and RAM load.
• Log their own activity and reliably transfer the logs to the central log storage.

Implement application servers ready for Kubernetes in Python and Go and run a set of benchmarks on them.

References

Will be provided by the supervisor.

L.S.

Ing. Michal Valenta, Ph.D.   prof. Ing. Pavel Tvrdík, CSc.
Head of Department   Dean

Prague January 23, 2016