Bachelor Thesis

2015-04-24

Design and Implementation of an Availabilty Measuring Tool for Cloud-based Virtual Machines

Context

Cloud computing has reached mainstream acceptance in the recent years and is currently being adopted by many companies including large enterprises as well as small and medium enterprises. Many cloud providers such as Amazon give guarantees on the availability of their virtual machines, but in practice their customers have barely any possibility to control whether these guarantees are fulfilled.

Scope of the Thesis

This thesis deals with the challenge of measuring the availability of Virtual Machines as provided by IaaS cloud providers such as Amazon. The outcome of the thesis shall be a light-weight tool that can be installed on a Virtual Machine and will perform steps in order to derive its own availability as well as the availability of its peer Virtual Machines, i.e. Virtual Machines belonging to the user.

Due to the fact that the availability is likely to be rather high (above 99%) the measurement has to be performed across many Virtual Machine over a long period of time. Hence, the tool shall be able to deal with the necessary number of Virtual Machines and further economise network usage. It shall be self-contained and easily deployable on any Virtual Machine.

Finally, it shall come with a graphical user interface (GUI) that lists the Virtual Machines currently known and their availability as well as the average availability measured over all Virtual Machines.

Requirements and Comments

If this thesis achieves good progress and outcome, its results are to be integrated in the PaaSage research project (http://paasage.eu) which is released under an OpenSource license. For that reason, we appreciate if you are ready to OpenSource your results.

If you are interested in this or similar theses, please contact Jörg Domaschka either by mail or in directly in his office.

mail: joerg.domaschka@uni-ulm.de
office: Uni West, 43.2.217

Faculty of Engineering and Computer Science

Institute of Information Resource Management