Bachelor's Thesis
JVM Deployer: Automated Service for Providing
State-of-the-Art Java Virtual Machines

Dipl.-Ing. Dr.
Markus Weninger, BSc
Institute for System Software

P +43-732-2468-4361
F +43-732-2468-4345
markus.weninger@jku.at

Student: Lukas Moritz
Advisor: Dipl.-Ing. Dr. Markus Weninger, BSc
   Dynatrace Supervisor: Dipl.-Ing. Philipp Lengauer, BSc
Start date: November 2022

Dynatrace uses a company-internal repository called Artifactory. One of the purposes of this repository is the storage of JVMs (mainly used for testing purposes) in an organized way, sorted by vendor, operating system, version et cetera. The deployment of these JVMs – looking for new JVMs, downloading them, renaming them & finally uploading them to the Artifactory – had to be done manually until in 2020 Dynatrace developed a company-internal tool called JVM-Deployer. This tool assists the developer with the deployment of JVMs by automating this process. It browses the repositories of various vendors for new JVMs, parses their metadata like version, operating system and bitness and finally uploads them to the Artifactory. Currently the JVM-Deployer is implemented as a local application with a graphical user interface. However, Dynatrace also uses another company-internal tool called Tech Currency Tracker (TCT), which scans for new releases of selected technologies – including JVMs – and can trigger actions in case of findings. The goal of this thesis is to combine the benefit of automatic release detection by TCT with the automated deployment of JVMs. The JVM-Deployer shall be upgraded from a local GUI-based application that has to be manually executed to an automated service that is triggered by TCT whenever a new JVM release was found. Since the human component will be removed from the application after this change, it must be made sure that the JVM-Deployer not only logs successfully deployed JVMs (which it already does), but also is prepared for possible errors, for example during metadata parsing. It has to handle these errors, preferable by creating a JIRA-Ticket for its specific issue.

Modalities:
The progress of the project should be discussed at least every two weeks with the Dynatrace supervisor and at least once per month with the advisor. A time schedule and a milestone plan must be set up within the first 3 weeks and discussed with the advisor and the supervisors. It should be continuously refined and monitored to make sure that the thesis will be completed in time. The final version of the thesis must be submitted not later than 15.05.2021.