Final thesis at Infor (Sweden) AB

Problem: Dynamically and safely compile and execute foreign code that can interact with selected parts of an existing system

Description
The Infor M3 Technology team in Linköping develops software that is essential for deploying, running and maintaining the M3 ERP product suite. Our codebase is written in Java.

We currently allow both internal (i.e. other Infor teams) and external (i.e. customers) to manipulate the logic and execution of programs within our ERP system. This manipulation is done through various methods including: modifying and/or extending existing classes, and by writing contained pieces of code which is safely compiled and executed during our normal runtime.

We are always interested in new ways to allow users to interact and potentially influence our system in sanctioned ways, and as such we are interested in more analysis in this area. Our safety requirements are very high since our ERP is available in CE (Cloud Edition), which means customers share certain resources.

This thesis work could, for example, include a proof-of-concept for how to safely compile and execute foreign code, an analysis of different solutions and their pros and cons, and/or analysis of best practices and potential pitfalls. Additionally, a proof-of-concept test suite (or guidelines for constructing one) designed to verify foreign code is handled safely could be made.

Scope
This thesis could be done alone or in a group and is available as 10-week or 20-week thesis depending on the applicant(s).

Knowledge requirements
We expect the student(s) to have good knowledge of object-oriented programming and to be interested in dynamic compilation and how to safely execute foreign code.

About Infor
Infor is an enterprise software provider and strategic technology partner for more than 90,000 organizations worldwide. We build complete industry suites in the cloud and deploy software that puts the user experience first, leverages data science, and integrates easily with existing systems of our customers.

In Sweden, Infor has offices in Linköping, Stockholm, Göteborg, and Malmö. The biggest office is situated in Mjärdevi, Linköping and houses approx. 200 employees. Most employees in Sweden (and Linköping) work with the M3 product suite, which is also one of the flagship ERP systems of Infor.

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