

**MASTER THESIS** Software Configuration Management in a DevOps context

**STUDENTS** Erik Hochbergs, Laroy Sjö Dahl

**SUPERVISORS** Lars Bendix (LTH) & Christian Pendleton (Praqma) & Albert Rigo (Praqma)

**EXAMINER** Ulf Asklund (LTH)

# Software Configuration Management in a DevOps context

---

POPULAR SCIENCE SUMMARY **Erik Hochbergs, Laroy Sjö Dahl**

---

Software Configuration Management is an essential part of software development for providing infrastructure to control changes of an emerging system. We show that SCM is needed in DevOps and provide guidelines for how SCM can be done within that context.

Software configuration management (SCM) is rarely explicitly discussed within the context of DevOps, and vice versa. Literature on DevOps often mentions parts of SCM as being important, but specifics on how it is done within DevOps is often left out, which creates a disconnect between SCM and DevOps regarding its usage in DevOps, and the benefits of it.

SCM is a valuable tool for providing an infrastructure where items and information can move around, structured and controlled. It also provides support for collaborative activities, and touches on practically all aspects of product development.

The lack of a common definition, or operational definition, of DevOps, in addition to sparse information regarding SCM in this context, and the role of DevOps in SCM, presents difficulties in understanding the role of SCM in DevOps, why SCM can be valuable, or why it might not be, and how to use it.

Because SCM is (or should be) method agnostic, it should be possible to combine these two methods, which partly sets the premise for this thesis.

By characterizing DevOps through what could be found in literature, and through a series of

interviews with companies who used DevOps, or wanted to move in that direction, we established a basis of common traits. These characteristics were analyzed in relation to each other, producing a graph of relationships between characteristics within DevOps. Applying the same methodology to SCM, and the activities in SCM, a second graph containing SCM activities were produced. These two graphs were then combined by identifying traits of DevOps characteristics in SCM activities, and vice versa.

By doing this, we could analyze to what extent SCM was already present in DevOps, and if something was missing. From this we could formulate interpretations of SCM activities within a more agile context, to better fit the fast pace of DevOps, while still maintaining the high value SCM brings.

These results can hopefully be used by both larger companies moving towards DevOps, who often already know SCM and wishes to adopt a more agile approach, as well as e.g. startups who wants to use SCM, or as motivation of why it is important.