Secure and Agile Connected Things

D 2.2 and 2.3 - IoT platform Public

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Abstract

Development and operation of secure, large-scale IoT systems is hard. While there exist Software Development Environments (SDE), platforms aimed at providing the necessary building blocks to control software development, testing and integration, they do not solve the major concerns of today's software-intensive systems: security, agility and a need for fast deployment of IoT system updates. Tooling is just one element of a SDE evenly important are the processes that control the workflow of all developer involved. Processes that include the necessary security steps. in this paper the reference to relevant tools to support the SecDevOps process are listed and can be used by small SMe's getting them closer to a SecDevOps Cycle without the overhead that larger companies have to control their development. In SCRATCh the SecDevOps cycle is simplified into the 3C method as described in D2.1 for convenience there is a complete mapping of the 3C method and SecDevOps on GitHub.

1. Introduction

Mainstream DevOps is supported by a multitude of commercial and a few Open-source tools. According the developed SCRATCh 3C methodology Development is covered in the Phase Constrain, and Deployment is covered in the Phase Comply. Specific tools developed within the project are published on GitHub, an overview per Phase can be found on https://github.com/SCRATCh-ITEA3/SCRATCh-Tools-Repo. For practical reasons task 2.2 and 2.3 are combined in this document.

The tasks will take its input from task 2.1

The tasks will also be conducted in close collaboration with tasks 2.4 in order to ensure the best possible deployment processes when systems are put into operation based on the tools developed.

2. Approach

Within SCRATCh the project team is taking the perspective of an SME trying to develop a security relevant IoT solution. Going through the process following the blueprint and using common available tools and tools developed within the project. the result of this labour will be an open-source demonstrator.

   While gathering information about the state of the art (available on the SCRATCh homepage), it becomes quite quickly clear for each part of the DevOps Cycle there is a commercial package available satisfying the needs of larger enterprises.

   Software developed for the deployment phase is submitted to the GitHub repository to be used by other partners in the project.

Task2.2 and Deliverable 2.2 covers the Constrain Phase (plan-code-build) and are listed in https://github.com/SCRATCh-ITEA3/SCRATCh-Tools-Repo/tree/master/C1_Constrain . Tools developed in Scratch are separately listed above a limited list of publicly available tools.

Task2.2 and Deliverable 2.3 covers the Comply Phase (test-release-deploy) and are listed in https://github.com/SCRATCh-ITEA3/SCRATCh-Tools-Repo/tree/master/C2_Comply . Tools developed in Scratch are separately listed above a limited list of publicly available tools