

Research Project Proposal

Testing framework proposal for a Linux distribution

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The Yocto Project is an open-source collaboration project focused on embedded Linux developers. The Yocto Project is a collection of tools and metadata that allows a developer to build their own custom distribution of Linux for a specific embedded platform.

AGL (Automotive Grade Linux) is creating an automotive specific Linux distribution that unifies the software that has been written in a number of places already, such as GENIVI and Tizen IVI. In the latest period of time specifications and standardizations such as AGL and CGL (Carrier Grade Linux) are moving towards establishing a more user friendly approach. As a result a reference distribution is developed for both the specifications unfortunately an automated testing framework is missing to offer a full image and an easier method for the distribution vendors to verify their compatibility with the specification.

The Yocto Project is at the core of this work. It is the engine facilitating the configuration and development of the Linux distributions according to the CGL/AGL specifications. The proposed automated testing framework should meet the following objectives:

- Used the full power of the Yocto Project
- Permit extensibility and remote execution
- Encapsulate the available Linux testing suites
- Identify new testing formats suitable for specifications such as CGL or AGL
- Define a proof of concept for this new testing formats
- Evaluate the performance/cost/efficiency
- Provide further development input

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Technologies used: Linux, Yocto Project, Python

Prerequisites: Linux knowledge, C, Python, Yocto Project and Linux testing frameworks knowledge is appreciated but not mandatory

Notes: 1 student