Master Thesis – System Upgrade Verifications

Background
Keeping all systems in a cloud environment up to date with latest security and bugfix patches is a very important part of Linux lifecycle management.

Patching a production environment can cause issues for installed applications with productivity loss for the users as a result. So all updates needs to be carefully tested before they are deployed to thousands of production servers.

Thesis Description
The following steps are envisioned as part of the thesis work:

- Look at the existing system software and analyze which components that are most likely to cause issues after an operating system/system software update.
- Look at existing user applications and analyze which are most important to verify after an operating system update and if an automatic verification of these is possible.
- Create an automated software testsuite for both system software and identified user applications that will detect any issues found after an upgrade.
- Implement the automated testsuite in our Ansible tool and verify the functionality on a set of testhosts consisting of all our 8 supported Linux releases.

The thesis will be concluded with a result presentation for the Ericsson Engineering Cloud team and the Linux UNIX Operations global service.

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering or similar.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2019

Keywords
Cloud, Linux Lifecycle Management, Automation, Mobile Telecommunication, Datacentre Infrastructure

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