

EE/CprE/SE 491 WEEKLY REPORT 5

Start Date – End Date: 02/27/2024 - 03/05/2024

Group number: 9

Project title: Multicore Operational Analysis Tooling

Client &/Advisor: Steve Vanderleest/Joe Zambreno

Team Members/Role: Alexander Bashara – Embedded Engineer, Joseph Dicklin – Hardware Design Engineer, Hankel Haldin – OS/Tooling Engineer, Anthony Manschula – Project Coordinator/Engineer

Weekly Summary: This week’s focus was on building an image of the Xen hypervisor. We were able to successfully build the Xen hypervisor, but the tool chain failed to build due to not having enough storage on the VM we were using for the build process. We also received the RockPro64 board from ETG, so we now have the necessary hardware platform for our project.

Past week accomplishments: We were able to build an image of the Xen image. We attempted to build the Xen tool chain as well, but ultimately ran out of space on the VM performing the build. We also received the RockPro64, so we now have our hardware platform. Once xen and its toolchain are built, this will allow us to bring up the Xen environment on the RockPro64 when we get all the necessary equipment and adapters.

Pending issues:

- Get Xen kernel built for ARM Architecture
- Determine the modes of interference that we want to test and assign priority
- Find Open-Source interference generators that we can use and reference
- Collect RockPro64 documentation so we can better understand the architecture

Individual contributions:

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Alexander Bashara	Booting Xen, Hardware Research	6	31
Joseph Dicklin	VM setup, hardware research	5	31
Hankel Haldin	Xen bring up, Hardware research	8	32
Anthony Manschula	VM setup, Xen compiling	5	37

Plans for the upcoming week:

- Flush out the cross-compiling setup so that we can develop in parallel
- Find open-source interference generators to test interference modes

- Build Xen for ARM kernel and boot it on the RockPro64
- Research interference for Cache, Main Memory, CPU Core and I/O

Summary of weekly advisor meeting: During this report period, we meet with Boeing to discuss our completed action items and our in-progress activities. We touched on completing the hardware selection activity; we acquired the RockPro64. As for in-progress activities, we talked on hardware research, cross-compiling progress, tool chain building and interference generator testing. We briefly touched on building an image for the RP64, but as it stands, this action item is still in development with not too much head way completed. Additionally, we touched on looking for backup boards to run alongside the RP64 in case of unforeseen complications, but as of now, no updates have been made.