



CIP Technical Steering Committee Meeting

Date: 13th April 2021.

Roll Call

TSC members

- Attendees (Please change to *Italic*, if you attend this meeting) (Key shortcut: Ctrl+i)
 - *Sam Wilson (Codethink)*
 - *Masashi Kudo (Cybertrust) (Representative)*
 - *Hidehiro Kawai (Hitachi)*
 - Takuo Koguchi (Hitachi)
 - *Stéphane Desneux (IoT.bzh) (CTO) (Representative)*
 - Holger Dengler (Linutronix)
 - *SZ Lin (Moxa) (Representative)*
 - *Masato Minda (Plat'Home) (Representative)*
 - *Chris Paterson (Renesas)*
 - *Kento Yoshida (Renesas)*
 - Kazuhiro Fujita (Renesas)
 - *Takehisa Katayama (Renesas) (Representative) (Voting)*
 - *Jan Kiszka (Siemens) (Representative)*
 - *Wolfgang Mauerer (Siemens) (Representative)(Voting)*
 - Urs Gleim (Siemens)
 - *Dinesh Kumar (Toshiba)*
 - *Daniel Sangorrin (Toshiba)*
 - *Kazuhiro Hayashi (Toshiba)*
 - Venkata Pyla (Toshiba)
 - Nobuhiro Iwamatsu (Toshiba) (Kernel Maintainer)
 - Punit Agrawal (Toshiba)
 - *Yoshi Kobayashi (Toshiba) (Representative) (Voting) - Chair*
 - *Pavel Machek (Denx) (Kernel Maintainer)*
 - *Neal Caidin (Linux Foundation)*

Discussions

Security Working Group

Items need to be approved by TSC voting members

- None

Status updates

- Collaboration with other projects:
 - SWG members are interested in collaboration with both OI4A and IIC.
 - Discussions with each project will be held to clarify detailed information on what collaboration can be realized.
 - Reference: [CIP collaboration discussion](#)
 - OI4A: OI4A members will complete internal discussion and plan for further technical discussion with CIP members.
 - IIC: To be clarified the time schedule for creating a best practice with CIP OSBL, IIC requires 10+ years support for security packages and so on.
 - (Action)
 - Ask questions to both projects
- (No updates) The development process certification:
 - Defined detailed action items and assigned WG for each AI.
 - [CIP AI lists from IEC 62443-4-1 gap assessment](#)
 - Issues that need to be discussed are managed in [gitlab](#)
- (No updates) The security function requirements certification:
 - [Report for the CIP project of IEC 62443-4-1&4-2](#)
 - Items validated by the gap assessment:
 - Pre-selected packages are effective for each requirement.
 - Clearly distinguished the requirements between:
 - A - completely met by the package software and application can simply use it.
 - B - application/component may have to support some of the required functionality by software/hardware capability.
 - C- application/component may have to support all of the required functionality by software/hardware capability.
 - We will provide security guidelines that describe what must be done to meet each requirement for the application/component developers.
- Created documents:
 - Posted into [cip-documents](#)
 - security requirements
 - security code guidelines
 - thread modeling
 - [development process](#) (under internally working)

Backlog

- Updates on discussion with IIC and CIP members

- What would be the collaborative points with IIC e.g. areas of common interest for CIP and IIC?
 - IEC-62443-x alignment, of course
 - Apply IIC SMM to CIP work
- Roughly what kind of effort would be required if the collaboration happens and what would be the duration of effort?
 - White Paper ~6-12 months
 - Best Practice ~9-12 months
- **Next Step**
 - Discussion within CIP TSC members followed by discussion with IIC and CIP TSC members
- Updates on CIP & OI4.0A members
 - OI4.0A members have shown keen interest to use CIP(OSBL) for their members various use cases
 - The requirement is to use IEC 62443-4-x certified OSBL and use it as base layer for end products
 - **Next Step**
 - OI4.0A members will complete internal discussion and plan for further technical discussion with CIP members
 - Discussion within CIP TSC members for next step for the collaboration
 - Technical Queries from OI4.0A members
 - How does CIP enable the IEC-62443-4-2 security layer on tiny devices?
 - Is there any minimum hardware capabilities required to run CIP on any hardware?

Kernel Team Working Group

Items need to be approved by TSC voting members

- None

Status updates

- CIP IRC weekly meeting logs
 - [April 1st](#)
 - [April 8th](#)
- CIP kernel release
 - 4.19
 - [v4.19.186-cip47](#) on April 13 by Iwamatsu-san
 - 4.4
 - [v4.4.266-cip56](#) on April 13 by Iwamatsu-san
- Reference HW for **5.10** and **5.10-rt**
 - Reference HW Table was updated based on the decision at the last TSC.
 - [Table](#)

The current list of reference hardware for the CIP project is:

Platform	Architecture	Supported Kernels				To Be Supported	
		SLTS v4.4	SLTS v4.4-rt	SLTS v4.19	SLTS v4.19-rt	SLTS v5.10	SLTS v5.10-rt
AM335x Beaglebone Black	Armv7	Y	Y ¹	Y	Y ¹	Y	T
Cyclone V DE0-Nano-SoC Development Kit	Armv7	N	N	Y	Y ¹	Y	T
QEMU	x86_64	Y	Y ¹	Y	Y ¹	Y	T
	Armv7	N	N	N	N	Y	T
	Armv8	N	N	N	N	Y	T
RZ/G1M iWave Qseven Development Kit	Armv7	Y	Y ²	Y	Y ²	Y	Y
RZ/G2M HiHopeRun HiHope	Armv8	N	N	Y	Y ²	Y	Y
SIMATIC IPC227E	x86-64	N	N	Y	Y ¹	Y	Y
OpenBlocks IoT VX2	x86-64	N	N	Y	Y ¹	Y	T
Zynq UltraScale+ MPSoC ZCU102 Evaluation Kit	Armv8	N	N	T	T ¹	Y	Y

Notation: Y: Supported, N: Not Supported, T: Not Supported but Testing is done

¹ Tested with standard Kernel configuration (non-RT)

² Tested with Real-Time enabled Kernel configuration

- Pls note that the RZ/G1 and RZ/G2 were added to the 5.10-rt supported list based on Chris-san's request.

CIP Core Working Group

Items need to be approved by TSC voting members

- None

Status updates

- [past meetings](#)

Collaboration with Helmut Grohne

- We contacted Helmut on March 30 and gave him a list of resources to learn about CIP and CIP Core. He has replied today, after Easter holidays and we discussed some items by email
- Daniel asked Helmut if he is available on April 15th
 - it seems it works for him, although there is a small risk
 - https://doodle.com/poll/8839gghv5wu8a5za?utm_source=poll&utm_medium=link
- Main topic: a binary-based tiny profile (possibly using ISAR)
 - DPKG_CHROOT (no root, no qemu)
 - smaller essential packages (no perl, no bash, busybox-based)
 - mmdebstrap
 - A sub-essential rootfs that excludes apt/dpkg
- Other topics we talked about

- Deby, DEP5, SW updates
- Debian meta-builder
 - a tool that abstracts sbuild/pbuilder/... (package builders) into an API
 - he sent us an API sketch attached as a json schema file
 - this would need more clarification
- Cross-compile/multi-arch: it is mostly done
- Other possible proposals
 - read-only debian
 - <https://packages.ubuntu.com/xenial/all/overlayroot/filelist>
 - Choose one depending on the use case
 - Systemd has something similar called extents?
 - FYI: <https://wiki.debian.org/ReadonlyRoot>
 - Manual steps to setup read-only rootfs
 - fix packages that require being installed natively with the kernel running (eg kdump tools)
 - Help us making CIP core reproducible

Reproducible builds

Daniel got in contact with Chris Lamb (Thanks Neal!)

- We are still interested in reproducible builds
- We will work on making ISAR-CIP-CORE images reproducible
 - security benefits
 - software updates deltas minimization
 - both block-based and package-based updates
 - there was an experiment with RPM, that used deltas
- Collaboration possibilities
 - They will review our results
 - Write an article on their newsletter
 - Shared presentation in a conference about how reproducible images reduce the size of software updates deltas
 - Document on their site about “know-how” making a build tool reproducible
 - Chris can put us in contact with Roland Clobus
 - he was working on making the Debian Live images reproducible
 - <https://lists.reproducible-builds.org/pipermail/rb-general/2020-September/002044.html>
 - Chris mentioned that Tails also has final image reproducibility
 - <https://tails.boum.org/contribute/build/reproducible/>
 - Collaborate on the CI ([Holger](#) is the expert)
 - <https://reproducible-builds.org/citests/>
- We should use the appropriate channels for support
 - rb-general mailing-list
 - <https://reproducible-builds.org/contribute/>

Next action items:

- Confirm that ISAR-CIP-CORE images are not reproducible in the first place
- Try to figure out easy reasons and fix them
- For the complex ones, consider contacting with Roland or ask members to contribute

Updates to Isar-cip-core

- Dinesh: **issues with secure boot(I will move these points to gitlab for further discussion)**
- Iwamatsu: add qemu arm64 support for LAVA tests (accepted in [next](#))
 - [qemu-arm64.yml](#)
 - [qemu-arm64.conf](#)
 - jobs for [gitlab-ci.yml](#)
- Iwamatsu:
 - add support for IMAGE_TYPE=targz-img
 - produces a tar.gz file instead of a raw image (WIC)
 - rename targz to wic_targz to avoid confusion

Updates to Deby

- [Added Bro package to the security layer](#)
 - the security layer is complete now on Deby as well
 - Next: CI tests for Deby

CIP Core lifecycle

- Asking TSC approval: "CIP lifecycle definitions"
 - Requests:
 - Move [cip-lifecycle](#) from cip-playground to cip-project
 - Remove Debian 9 from maintenance targets of CIP Core
 - Add Debian 11 from maintenance targets of CIP Core
 - Result: Approved with the condition that the AI is completed
 - +1: Renesas, Siemens, Toshiba (Cybetrust, Hitachi, Moxa, Plat'home)

CIP Testing Working Group

Items need to be approved by TSC voting members

- None

Status updates

- LAVA master stopped processing jobs last weekend - again. Turns out one of the required ports (5500) was blocked so I've now unblocked it. The master is working okay now, but tbh I'm not sure if that's just coincidence or not.

Future plan and Roadmap

- Upgrade LAVA server & workers to the latest upstream versions [continuous]

- Improve test results front end
 - Setup and configure kernelci.cipplatform.org
 - Integrate CIP's GitLab based Kernel builds with KernelCI's backend
 - Automatic test regression detection
 - Automatic git bisecting
- Test case expansion
 - LTP for all reference boards
 - kSelftest
 - Others... (?)
- Speed up build times
 - Use ccache
- Speed up test times
 - Move s3 storage to EU
 - Integrate squid cache into cip-lava-docker
- Add monitoring for the various CI components (LAVA master, LAVA workers etc.)
- Add support for the next SLTS Kernels (if/when it comes)
- Add support for the next CIP Core versions (if/when they come)
- Sort out the mess of repositories/projects in <https://gitlab.com/cip-project/cip-testing>

Discussions

- None

Software Update Working Group

Items need to be approved by TSC voting members

- Item

Status updates

- <https://gitlab.com/cip-playground/swupdate-handler-roundrobin>
 - issue 1 closed and superseded by 9
 - <https://gitlab.com/cip-playground/swupdate-handler-roundrobin/-/issues/9>
 - Let's propose it as official and start the implementation on isar-cip-core
- Toshiba is working on getting the handler working
 - AI: peer-review on the Lua code and the usage (documentation bugs)

Future plan and Roadmap

- None

Discussions

- None