Technical Advisory Council (TAC) Meeting

November 14, 2024

CONFIDENTIAL COMPUTING CONSORTIUM

The Confidential Computing Consortium

A community focused on open source licensed projects securing DATA IN USE & accelerating the adoption of Confidential Computing through open collaboration

Every member is welcome; every project meeting our criteria is welcome.
We are a transparent, collaborative community.

We as members, contributors, and leaders pledge to make participation in our community a harassment-free experience for everyone.

Antitrust Policy Notice

- Linux Foundation meetings involve participation by industry competitors, and it is the intention of the Linux Foundation to conduct all of its activities in accordance with applicable antitrust and competition laws. It is therefore extremely important that attendees adhere to meeting agendas, and be aware of, and not participate in, any activities that are prohibited under applicable US state, federal or foreign antitrust and competition laws.
- Examples of types of actions that are prohibited at Linux Foundation meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at http://www.linuxfoundation.org/antitrust-policy. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrove of the firm of Gesmer Updegrove LLP, which provides legal counsel to the Linux Foundation.

Agenda

1. Welcome, roll call, introduce any first-time attendees
2. Old Business - Recap last meeting
3. Announcements
   a. TAC New Chair & Vice Chair
   b. Kubecon activities
   c. Project Mentorship Opportunities
4. New Business
   a. CC Summit Committee Rep needed
   b. 2025 Planning - Each TAC Member
   c. GRC SIG paper reviews - Mark Novak
   d. Tech Talk - Islet - Piotr / Bokdeuk
5. Future Business
   a. Next meeting agenda
      - 2025 Planning - Finalize
   b. Backlog

Roll Call

Quorum requires **5** or more voting reps:

* *TAC chair*

Member	**Representative / Alternate**	**Email**
AMD	Nathaniel McCallum / David Kaplan	Nathaniel.McCallum@amd.com
Arm	Paul Howard	Paul.Howard@arm.com
Google	Catherine Zhang	cxzhang@google.com
Huawei	Zhipeng (Howard) Huang	huangzhipeng@huawei.com
Intel	Dan Middleton * / Simon Johnson	dan.middleton@intel.com
Meta Platforms	Henry Wang / Kevin Hui	kevinhui@meta.com
Microsoft	Alec Fernandez	alfernandez@microsoft.com
Nvidia	Fritz Alder	falder@nvidia.com
Red Hat	Yash Mankad / Ram Pai	ymankad@redhat.com
TikTok	Mingshen Sun / Yao Zhang	mingshen.sun@tiktok.com

Welcome New Community Members

New to the community?

Haven’t introduced yourself at least twice?

Let us know

- your name, pronouns
- where you are joining from
- your main Confidential Computing interest

Old Business

Last meeting:

1. Announcements
   a. Kubecon activities
   b. TAC Chair Election
   c. Face to face at FOSDEM
2. Business
   a. CC Brand Repositioning WG Update
   b. Budget Update and 2025 Budget

Announcements

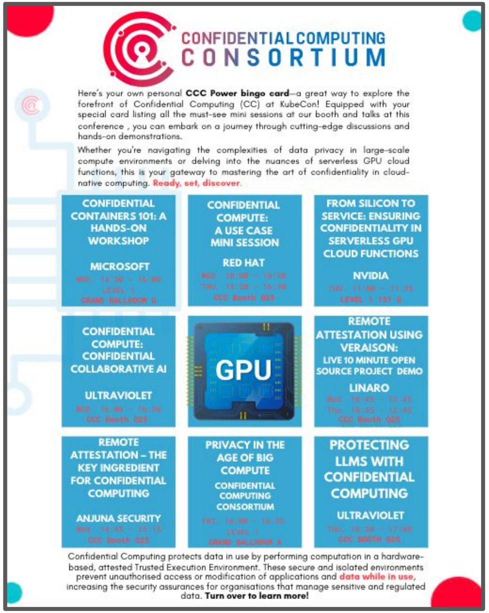
- TAC Committee 2025 Chair & Vice Chair
    - Congratulations, Dan & Yash !!! 🥳
- Kubecon activities
- Project mentorship Opportunities

Announcements

KubeCon Salt Lake City

CCC have a booth at Kubecon and a lot of incredible CC coverage this year. (tentative full schedule available here).

Booth Coverage is complete! Direct link to view and edit available here.



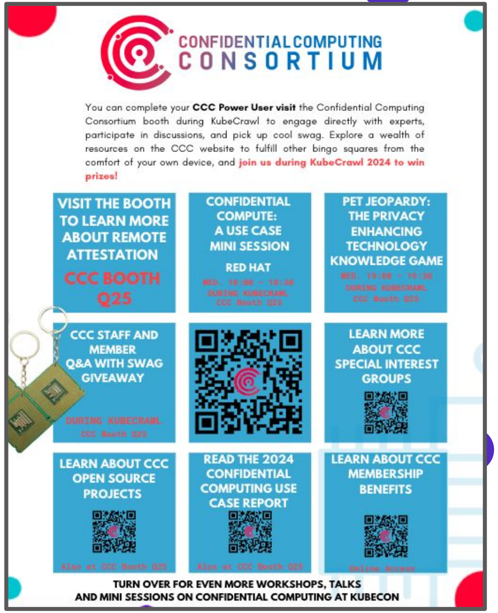
CONFIDENTIAL COMPUTING CONSORTIUM

Here's your own personal **CCC Power bingo card**—a great way to explore the forefront of Confidential Computing (CC) at KubeCon! Equipped with your special card listing all the must-see mini sessions at our booth and talks at this conference , you can embark on a journey through cutting-edge discussions and hands-on demonstrations.

Whether you're navigating the complexities of data privacy in large-scale compute environments or delving into the nuances of serverless GPU cloud functions, this is your gateway to mastering the art of confidentiality in cloud-native computing. **Ready, set, discover.**

CONFIDENTIAL CONTAINERS 101: A HANDS-ON WORKSHOP MICROSOFT WED. 14:30 - 16:00 LEVEL 1 GRAND BALLROOM G	CONFIDENTIAL COMPUTE: A USE CASE MINI SESSION RED HAT WED. 10:00 - 10:30 THU. 14:30 - 16:30 CCC Booth Q25	FROM SILICON TO SERVICE: ENSURING CONFIDENTIALITY IN SERVERLESS GPU CLOUD FUNCTIONS NVIDIA THU. 11:00 - 11:35 LEVEL 1 151 G
CONFIDENTIAL COMPUTE: CONFIDENTIAL COLLABORATIVE AI ULTRAVIOLET WED. 16:00 - 16:30 CCC Booth Q25	GPU	REMOTE ATTESTATION USING VERAISON: LIVE 10 MINUTE OPEN SOURCE PROJECT DEMO LINARO Wed. 10:45 - 12:45 Thu. 10:45 - 12:45 CCC Booth Q25
REMOTE ATTESTATION – THE KEY INGREDIENT FOR CONFIDENTIAL COMPUTING ANJUNA SECURITY Wed. 14:45 - 15:15 CCC Booth Q25	PRIVACY IN THE AGE OF BIG COMPUTE CONFIDENTIAL COMPUTING CONSORTIUM FRI. 16:00 - 16:35 LEVEL 1 GRAND BALLROOM A	PROTECTING LLMS WITH CONFIDENTIAL COMPUTING ULTRAVIOLET THU. 16:30 - 17:00 CCC BOOTH Q25

Confidential Computing protects data in use by performing computation in a hardware-based, attested Trusted Execution Environment. These secure and isolated environments prevent unauthorised access or modification of applications and **data while in use**, increasing the security assurances for organisations that manage sensitive and regulated data. **Turn over to learn more!**



CONFIDENTIAL COMPUTING CONSORTIUM

You can complete your **CCC Power User visit** the Confidential Computing Consortium booth during KubeCrawl to engage directly with experts, participate in discussions, and pick up cool swag. Explore a wealth of resources on the CCC website to fulfill other bingo squares from the comfort of your own device, and **join us during KubeCrawl 2024 to win prizes!**

VISIT THE BOOTH TO LEARN MORE ABOUT REMOTE ATTESTATION CCC BOOTH Q25	CONFIDENTIAL COMPUTE: A USE CASE MINI SESSION RED HAT WED. 18:00 - 18:30 DURING KUBECRAWL CCC Booth Q25	PET JEOPARDY: THE PRIVACY ENHANCING TECHNOLOGY KNOWLEDGE GAME WED. 19:00 - 19:30 DURING KUBECRAWL CCC Booth Q25
CCC STAFF AND MEMBER Q&A WITH SWAG GIVEAWAY DURING KUBECRAWL CCC Booth Q25		LEARN MORE ABOUT CCC SPECIAL INTEREST GROUPS
LEARN ABOUT CCC OPEN SOURCE PROJECTS Also at CCC Booth Q25	READ THE 2024 CONFIDENTIAL COMPUTING USE CASE REPORT Also at CCC Booth Q25	LEARN ABOUT CCC MEMBERSHIP BENEFITS Online Access

TURN OVER FOR EVEN MORE WORKSHOPS, TALKS AND MINI SESSIONS ON CONFIDENTIAL COMPUTING AT KUBECON

Announcements

KubeCon Asset Side 1: KubeCon Talks and Workshops on Confidential Computing

1. **From Silicon to Service: Ensuring Confidentiality in Serverless GPU Cloud Functions (NVIDIA)**
   - **Time:** Thu. 11:00 AM - 11:35 AM, **Location:** Salt Palace | Level 1 | 151 G
2. **Privacy in the Age of Big Compute (Confidential Computing Consortium)**
   - **Time:** Fri. 4:00 PM - 4:35 PM, **Location:** Salt Palace | Level 1 | Grand Ballroom A
3. **Confidential Containers 101: A Hands-on Workshop (Microsoft)**
   - **Time:** Wed. 2:30 PM - 4:00 PM, **Location:** Salt Palace | Level 1 | Grand Ballroom G
4. **Remote Attestation Using Veraison: Live 10 Minute Open Source Project Demo (Linaro)**
   - **Time:** Wed. 10:45 AM - 12:45 PM, Thu. 10:45 AM - 12:45 PM, **Location:** CCC Booth Q25
5. **Confidential Compute: A Use Case Mini Session (Red Hat)**
   - **Time:** Wed. 6:00 PM - 6:30 PM, Thu. 2:30 PM - 4:30 PM, **Location:** CCC Booth Q25
6. **Confidential Collaborative AI (Ultraviolet), Time:** Wed. 4:00 PM - 4:30 PM, **Location:** CCC Booth Q25
7. **Protecting LLMs with Confidential Computing (Ultraviolet)**
   - **Time:** Thu. 4:30 PM - 5:00 PM, **Location:** CCC Booth Q25
8. **Security Mini-Talk on Remote Attestation** (Anjuna)
   - **Time:** Wednesday, 2:45 PM – 3:15 PM, **Location:** CCC Booth Q25

Islet: LF Mentorship Opportunity!

Islet Mentorship: Strengthening Security through Fuzz Testing
Enhance **Islet's security** by identifying vulnerabilities early using **fuzz testing**. This project will integrate **Cargo Fuzz** tools with Islet's **CI pipeline**, focusing on testing **RMM interfaces** (RMI and RSI) based on ARM's RMM specification.

Scope of Work:

- **Phase I**: Develop 12 fuzz test harnesses using **Miri-based tests** (2 weeks), followed by a **1-week testing campaign**.
  - Miri Test Reference
- **Phase II**: Build advanced tests using **ACS-Test suite** (4 weeks), with 2 additional weeks for testing.

Outcome:
Deliver a set of **robust fuzz tests** integrated into Islet's CI, improving security and compliance with ARM standards.

Skills Needed: **Rust programming**, fuzz testing, and familiarity with **confidential computing, virtualization, and ARM architecture** is *extremely helpful* but not required.

Veraison: LF Mentorship Opportunities!

Veraison Mentorship #1: Enhancing CoRIM Support

This project will strengthen Veraison **CoRIM (Concise Reference Integrity Manifest) support** by integrating built-in object security and expanding signing capabilities. Participants will learn to generate and manage CoRIMs while building enhanced security into Veraison's services.

Scope of Work:

- **Familiarize** with the RATS architecture and CoRIM specifications.
- **Setup Veraison services**, deploy, and explore the REST API.
- Use the **cocli tool** to generate and manage CoRIMs.
- **Add signed CoRIM support** to Veraison services, enhancing security.

Stretch Goals: Enable **multi-signer support** for CoRIMs, Update the **CCA scheme** to incorporate multi-signatures.

Outcome: Deliver **robust CoRIM security features**, integrated into Veraison's services, improving integrity verification through enhanced signing and object security.

Skills Needed: Knowledge of **RATS architecture**, CoRIM, and API interaction, Experience with **Go** or relevant languages will be helpful.

Veraison: LF Mentorship Opportunities!

Veraison Mentorship #2: Harmonizing Open-Source Verifiers with RATS Standards

This mentorship focuses on **harmonizing Verifiers** with the RATS model, proposing standards for media types, evidence, and attestation results. Participants will align open-source Verifiers and propose ways to integrate **Keylime** for seamless interoperability.

Scope of Work:

- Define **media types for evidence** (e.g., TPM logs, incremental evidence).
- Standardize **attestation results** with EAT (Entity Attestation Token).
- Develop a **proposed adoption path** for integrating Keylime.

Stretch Goals: Create **CoRIM and policy formats** for runtime and UEFI boot attestation, Propose **policy primitives** for secure UEFI policies.

Outcome: Deliver **standardized evidence formats and adoption paths**, ensuring Verifiers across different open-source projects work seamlessly within the RATS model.

Skills Needed: Familiarity with **RATS architecture** and attestation workflows, Knowledge of **policy management** and TPM evidence formats.

CC Summit - Program Committee

- Fritz
- Yash
- Mingshen ← Winner

TAC 2025 Objectives

- Projects
  - All - Project Liaisons
  - Catherine
  - Henry / Kevin
- Ecosystem
  - Alec
  - Nathaniel
- Community
  - Yash
  - Fritz
  - Mingshen

TBD:

- Howard
- Henry / Kevin
- Paul

https://docs.google.com/document/d/1pa6XrOUhkIEFlP1MlLtn_84OjxV12L5hogch0shJkaA/edit?tab=t.0

GRC Paper Reviews

Which Papers?

- https://drive.google.com/drive/u/0/folders/1EaXIm1jK3af_oUG7ITLYL9QcS9BRO5gy

How would you like feedback?

- Normal: Doc comments (specifics) and mail list (general / directional)

Tech Talk

Islet

Piotr Sawicki

Projects

Project	Last Annual Review	Next Annual Review	Project Liason	Webinar	
Enarx	2024-04-04		Nick Vidal	Jan 2021	added to invite
OE SDK	2024-04-18		Alec Fernandez	Mar 2021	added to invite
Gramine	2023-02-09		Eric V	Feb 2022	
Keystone	2024-03-07		Lily Stuurman	Jun 2021	added to invite
ManaTEE	2024-07-25		Dayeol Lee		
Occlum	2024-03-21		Tate Tian	May 2021	requested
Veracruz	2023-01-12		Thomas Fossati	Apr 2021	
Veraison	2024-08-08		Howard Huang	Nov 2021	Invitation accepted
VirTEE	2024-01-17		Yash Mankad		
SPDM-RS	2024-01-17		Fritz Alder		
Certifier Framework	2024-01-17				
Islet	2024-03-01		Bokdeuk Jeong		

SIGs

SIG / WG	Last Annual Review	Next Annual Review	Liason	Webinar
CCC-Attestation SIG	2022-04-21		Dan	21 June 2022
GRC SIG	Quarterly 2023-10-08		Mark Novak	

Topic Schedule

2024-09-05		**Yash Mankad / Ram Pai (Mentorship)**	**Super Tech Talk - Andrey Pogoreltsev - CTO of Super Protocol**
2024-09-19	**Linux Plumbers conflicts?**	?	**- Collaborative and Private Data Processing with TEE-enforced Sticky Policy (Zhiqiang Lin)** **- Research topic: Formal programming techniques for secure data processing) by Patrick Eugster**
2024-10-03	**Rosh Hashanah conflicts?**	?	**- Chandra Nelogal: Extending Confidentiality to Data Storage** **- Caroline Perez-Vargas: Project presentation**
2024-10-17		~~David Kaplan (Plumbers recap)~~	
2024-10-31		OKR Updates - ALL TAC MEMBERS	2025 Planning
2024-11-14		**2025 Planning**	Islet Tech Talk - Bokdeuk Jeong
2024-11-28	**US Thanksgiving Conflicts**	**Cancel**	**Cancel**
2024-12-12		Finalize OKRs	Tech Talk: UCLA Trustworthy AI Lab: guangcheng@g.ucla.edu - Guang Cheng Tech Talk: Lisbon Account Protocol and challenges by James Bourque

Thank You

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