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This Downstream Lab 1 infrastructure is mainly running on Arm architecture and some on x86 architecture, future plans to expand to RISC-V, MIPS, and more x86 architecture.

Cooperation mode

Organizational-level cooperation

1. About Open GCC

In April 2016, the Green Computing Consortium (referred to as "Open GCC") was established by a number of global leading manufacturers, universities and scientific research institutions. It aims to promote the construction of an open and innovative green computing industry ecology and accelerate the development of green computing architecture in key applications such as big data, enterprise level computing and cloud computing. The Green Computing Industry Consortium aggregate the advantageous resources of the global computing industry chain, promotes the interaction between industry and academia, complies with the information technology development trend of open source software and open hardware, and actively carrier out software and hardware development of plural computing architectures to provide end-users with more flexible, easier to use and manages green energy-saving enterprise-level products.

2. Explanation

Regarding the information we introduced in the PPT on October 21, 2021. for different application scenes such as big data, distributed storage, high-performance computing, and Web applications, plural computing architectures have their unique advantages. The Consortium will continue to expand green computing performance testing for more value scenes, provide important reference data for applications through platform and scheme evaluation, recommend users with more green computing products and solutions, and facilitate user selection and adaptation.

3. Website address:<http://www.opengcc.org>.

Cooperation

Open GCC is positioned to work in the area of electronic information technology, support the technical development of various open source software and open hardware, gather the advantageous resources of the global industrial chain, and promotes the development of the global computing industry.

1. The organization isa technical organization, focusing on open source software and hardware (Yes)
2. The organization participatesin adequate marketing and promotion, including online and social media. The organization isable to merge Akraino's web links, materials, and blueprint documents in a substantive, appropriate, and prominent way (yes)
3. The organization isassociated with academic institutions (Yes)
4. The organization hassponsoring companies (Yes)
5. The organization supports technology development, standard formulation and industrial promotion of pluralcomputing architecture, and promotes the capability of computing industry. (Yes)
6. The organization provideswork space and facilities, including WiFi or other Internet access that can conduct online video/audio collaboration. Server and other development hardware resources can be provide,too.(Yes)

Collaborative positioning

At present, the main body of the Akraino community is mainly in North America,and it is recommended that the Akraino community set up a collaboration laboratory in China. Open GCC, as a platform for China's computing industry, can be used as a carrier platform for the Akraino community in China. After the specific cooperation relationship is determined, a cooperation statement and plan will be issued to the outside world.

Business Implementation

Open GCC has offices in Beijing and Shenzhen, China.

1. Business scopeof Beijing Center: ConsortiumChina Business + Talent Training Center + Industrial Research Center. Relying on its strong strength in scientific research equipment and talent team, the Consortium has built an open laboratory (English: GCC Open Lab), which mainly conducts performance testing, security testing and test evaluation of typical server scenes. Office address: No. 65, Fuxing Road, Haidian District, Beijing.
2. Business scopeof Shenzhen Center: ConsortiumInternational Business+Testing and Certification Center+Exhibition Center. The Shenzhen Center is about 1000 square meters, including 200 square meters of exhibition area. Representative exhibition activities can be held for value members.

Based on the above,the on site exhibition hall is located in the Shenzhen Center, which will open the year-round display of the products and research results of important members and academic members. At present, the exhibition items are being settled in succession, and it is expected that they can be open to public in the second quarter of 2023. In order to better spread business information and the value of member units, the online exhibition hall is going to be set up by the Consortium will also be open to the public during this period,which will bring the visitor an all-round immersive experience. Office address: Floor 7, building 6 (B), Shenzhen-Hong Kong International Science Park,Shenzhen,China.

Others

The organization agrees to abide local lawsand the rules of the Linux Foundation, including open policies, supplier neutrality, and other rules listed on the Akraino regional community page.

Blueprint Landing Plans

Member company of Akraino China office will adopt and/or deploy these blueprints.

Integrated Edge Cloud (IEC) Blueprint Family

Architecture: x86, Arm

IEC Type 3: Android cloud native applications on Arm servers in edge for Integrated Edge Cloud (IEC) Blueprint Family

Architecture: Arm

Products implementing the blueprint:

Ampere Mt. Jade server

Nvidia GPU Tesla T4

Taishan 2280 server

AMD GPU WX 5100

Industrial Conference:

Workshop: Arm virtualized cloud gaming workshop

Time: March 27, 2021

Location: Shanghai, China

Attendees: Nvidia, Tencent, Baidu, Arm, Ampere, Phytium, et al

Topic: Cloud gaming solutions from different companies

Product: Nvidia vGaming, Arm server, Tencent XianYou, Baidu Red Finger, Ampere Altra, Phytium S2500

Goal: build up ecosystem connection, promote the collaboration

Exhibition:

Exhibitions of Cloud Mobile, Cloud Desktop, on Arm servers etc. in Apsara Conference, ODCC

Target Industries:

gaming, public cloud,

IEC Type 5: SmartNIC for Integrated Edge Cloud (IEC) Blueprint Family

Architecture: x86, Arm

[Leo Li jin peng](#)

Products implementing the blueprint:

Model: PCIe Backplane named X136 in X100 series by Socnoc.

Industrial Conference:

Workshop: DATA CONNECTING THE WORD, EDGE COMPUTING THE FUTURE

Time: TBD

Location: Hefei China,

Attendee: To be confirmed,

Topic: Demo show & New Product Announcement,

Product: 8 channels PCIe Backplane,

Goal: Edge computing group to shape a new rack & cloud service.

Exhibition:

To be confirmed

Target Industries:

Smart cities, AI Transportation, Energy manufacturing, Industries communication.

Poster:



The AI Edge Blueprint Family

Architecture: x86, Arm

The AI Edge: School/Education Video Security Monitoring

Architecture: x86, Arm

[Yu, Liya Wang Ye](#)

The AI Edge: Federated ML application at edge

Architecture: x86, Arm

[haihui wang](#)

Potential ideas implementing the blueprint:

- Federated ML Scheduling platform
- Factory warehouse manage middleware

Industrial Conference:

Exhibition:

Target Industries:

- Financial Criminal
- Diseases Diagnose

The AI Edge: Intelligent Vehicle-Infrastructure Cooperation System(I-VICS)

Architecture: x86, Arm

[Hao Zhongwang](#)

Products implementing the blueprint:

Yishi vBus vehicle middleware

TI

Industrial Conference:

Exhibition:

Target Industries:

AutoSAR (AUTomotive Open System ARchitecture)

Public Cloud Edge Interface (PCEI) Blueprint Family

Architecture: x86, Arm, MIPS, RISC-V

PCEI Documentation

[Oleg Berzin](#) [Gao Chen](#)

Products implementing the blueprint:

PCEI can be installed/enabled with Edge Multi-Cluster Orchestrator and accessible on common hardware and network environment.

PCEI enabler relieves users from troubles of API interoperability including API definition, API gateway functions (AAA, policy, security) and providing a secure, controllable, traceable, scalable and measurable way to access the APIs from diverse public edge cloud service providers. So far, PCEI has already finished these following onboarding and deployment of cloud native Public Cloud Edge (PCE) Apps: [Deploying Azure IoT Edge with PCEI](#) and [Deploying AWS GreenGrassCore with PCEI](#), and a 3rd-Party Edge (3PE) App: [ETSI MEC Location API App](#). We hope to collaborate with Teclos and hyperscalers in China to test the end-to-end operation of the Apps on their edge infrastructure: operator's edge infrastructure or public Clouds (Alibaba cloud or Tencent cloud).

Industrial Conference:

Exhibition:

Target Industries:

Edge computing; Public Cloud;

Federated Multi-Access Edge Cloud Platform

Architecture: x86, Arm

[Deepak Vij](#)

5G MEC System Blueprint Family

Architecture: x86, Arm

5G MEC/Slice System to Support Cloud Gaming, HD Video and Live Broadcasting Blueprint

Architecture: x86

[Zigeng Fu](#) [Feng Yang](#)

Enterprise Applications on Lightweight 5G Telco Edge

Architecture: x86, Arm

[khemendra kumar](#)

ELIOT: Edge Lightweight and IoT Blueprint Family

Architecture: x86, Arm

[khemendra kumar](#)

Network Cloud and TF Integration Project

Architecture: x86

[Sukhdev Kapur Jerry Tang](#)

Products implementing the blueprint:

vMX: Juniper virtualized MX router

BluVal

Architecture: x86, Arm

[Thor Chin](#)

The Blueprint Validation Framework offers a set of tools that can be used to test Akraino deployments on different layers (hardware, os, k8s, openstack, etc).

The framework provides tests at different layers of the stack, like hardware, operating system, cloud infrastructure, security, etc. Since the project is constantly evolving, the full list of available tests can be found in the [projects repo](#), where the tests are located under their respective layer. Each layer has its own container image built by the validation project. The full list of images provided can be found in the [project's DockerHub repo](#).

Bluval User Guide

[Thor Chin](#)

Security

Architecture: x86, Arm

[Randy Stricklin Daniil Egranov Wenhui Zhang](#)

If you are working on driver code, Vuls and Lynis are needed.

If you are developing container based application code, Vuls, Lynis and Kuber-Hunter are needed.

If you are developing VM based application code, Vuls (testing setup inside each VM) and Lynis (testing setup inside each VM) are needed.

Vuls scan usually takes around 10 to 20 mins.

Kuber-Hunter usually takes about 10 mins.

Lynis scan usually takes about 2 mins.

Steps To Implement Security Scan Requirements

Industry Promotion

White Paper

Exhibition

Shenzhen GCC laboratory, exhibition hall and office environment (over 1,000 m²) will be put into use at the end of November. The Akraino open source project can be deployed to the GCC laboratory and displayed in the exhibition hall.

Location: Shenzhen-Hong Kong International Technology Park
No. 3, Binlang Road, Futian District, Shenzhen City, Guangdong Province, China

Connectivity: 5G coverage is being developed by China Telecom, China Unicom, and China Mobile

Exhibition 1: [IEC Type 5: SmartNIC for Integrated Edge Cloud \(IEC\) Blueprint Family](#)

Exhibition 2: [The AI Edge: Intelligent Vehicle-Infrastructure Cooperation System\(I-VICS\)](#)

Exhibition 3: [Public Cloud Edge Interface \(PCEI\) Blueprint Family](#)

Exhibition 4: [Network Cloud and TF Integration Project](#)

Blog

Technical blogs can be published at Arm Software Developers WeChat Official Account, Aijishu Arm Software Developers column, Communication World, OpenGCC WeChat Official Account, etc.

Presentation at industry events

Presentation from Akraino China Office to industry events like OpenGCC Summit, Global Edge Computing Conference, ODCC etc.

Akraino to actively participate in the Open Green Computing Consortium ecosystem building activities, such as the Summit. We can sign up to participate, or can be the main participant in the main forum to make a speech or report. For example, we can participate in white papers, conference and other industrial voice, we have done Arm. Kirin special. We would love to have

Akraino participation and any suggestions.

Video

Some videos are available in LF Edge YouTube channel, can be republished to the following video website.

WeChat Video Channel

Bilibili up