

DAVE(WEI) CHEN

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🎓 EDUCATION

University of Science and Technology of China (USTC), Hefei, China 2007 – 2010

Master in Software Engineering, Computer Science Dept.

Anhui Polytechnic University, Anhui, China 2001 – 2005

B.S. in Information and Computing Science, Computer Science Dept.

👤 EXPERIENCE

PayPal Inc. 2024.11 – Present

Private Cloud Architect

Brief Introduction: Leads of IaaS team and the bridge between Infra IaaS and the private cloud team.

- IaaS resource on-boarding to private cloud automatically. The go-to person for the commercial storage / compute evaluation. AI software and LLM's integration with private cloud. Point of contact between IaaS and PaaS for the legacy storage data migration etc.

China Mobile Cloud 2024.5 – 2024.10

Cloud Senior System Architect

Brief Introduction: System design and architect review for IaaS product.

- System design and implementation, including container-based IaaS rolling upgrades, high availability assurance, and disaster recovery.

Arm Limited 2019.1 – 2024.3

Staff Engineer

Brief Introduction: Focus on the open-source projects for Arm Arch enabling and Arm IP features implementation in open-source projects.

- Contribute to open-source software related to cloud-native, including container-related software projects, such as Moby (Docker), Kubernetes, Kubeedge, CoCo (Confidential Container), Kubevirt etc.
- Performance evaluation in large-scale Kubernetes cluster on different architectures, high availability setup and configuration.
- Code review, new features development in Kubernetes community, CI/CD for Arm architectures.
- Arm IP-related feature enablement in the open-source community.
- **Notable Community Roles:**
 - The maintainer of Kubernetes (life-cycle management and scheduling), KubeEdge.
 - The collaborator of Moby buildKit.
 - Member of the CoCo (Confidential Container), Veraison project.

Dell EMC 2017.9 – 2019.1

Cloud Software Solution Architect

Brief Introduction: Hands-on and design of all those for internal cloud solutions.

- Architectural design for integrating Dell Rack Scale Design (RSD) solutions into cloud platforms, Mirantis OpenStack and Red hat OpenStack. Bare metal management with the software like MaaS, OpenStack Ironic and Juju for Dell's servers. The cloud software deployment based on Ansible, Puppet, Fuel etc. Benchmark the popular cloud solutions, such as K8S, Ceph, Redis, MongoDB against Dell hardware commodities. Maintain and develop POCs for external customers.

Intel APAC - OTC

2011.7 – 2017.09

Team leader and software developer

Brief Introduction: Enable Intel features and integrate the features with Cloud, e.g. OpenStack, oVirt, Ceph etc. Build public and private cloud and the leads of the project for remote attestation.

- Implementation of Intel architecture-related features in the open-source community, such as the trust computing based on Intel TXT (Trust Execution Technology) and power consumption management in cloud based on Intel Node Manager.
- Performance evaluation and tuning of Ceph and its integration with OpenStack.
- The metadata tagging feature in Cinder, bare metal trust in Ironi, the trusting computing pool in Nova, the remote attestation software stack, enterprise readiness features entablement(rolling upgrade).
- Build public cloud for China Unicom from scratch (auto deployment, IA feature integration, dashboard etc.)
- **Notable Community Roles:**
 - Core reviewer (maintainer) of the OpenStack keystone, and the contributor in Cinder, Glance, Nova etc.
 - The contributor in Ceph, oVirt, Open MANO

NOTABLE PROJECTS

Kubernetes

2019.01 – 2024

Kubernetes maintainer and reviewer

Brief introduction: Production-Grade Container Scheduling and Management

- New features implementation:
 - Prefer nominated node – the improvement of the logic of pod preemption in scheduling
 - Weighted balance allocation plugin for scoring extension point – the improvement of the scheduling of extended resource
 - Refactor default preemption for out-of-tree plugins – to better support out-of-tree plugins
 - Configurable weight on the CPU and memory – to better adapt with the use case in production environment
 - Migrate Ginkgo from v1 to v2 – due to the new features are only available in Ginkgo v2 and fix the tech-debt
 - Release V1 beta4 – leads the team for all those new features for V1 beta4
- Performance evaluation in large scale Kubernetes cluster deployment:
 - CNCF Webinar
- K8s CI/CD for Arm64
 - Arm CI coverage for Kubernetes

Confidential Computing

2022.12 – 2023.12

Software developer

Brief introduction: Confidential computing technology is based on hardware to provide a Trusted Execution Environment (TEE), achieving confidentiality, integrity, and security protection for "running" data. Hardware based implementation: memory encryption, memory isolation, CPU state protection, Attestation.

- Validate Arm CCA feature based on FVP (Fixed Virtual Platform).
- Work with Arm internal team to enhance the Varaison project to support CoCo
- Integrated the whole solution based on the Arm CCA into CoCo community

Open Attestation for Public Cloud

2012.04 – 2014.07

Team leader, PM, software developer

Brief introduction: The project is built on top of Intel TXT and Open Attestation Protocol, delivers an Attestation SDK to enable basic open-source SDK with Intel(R) TXT technology to remote attest and get node's trustworthiness.

- The couple of releases, such as OAT1.6, 1.7, 2.0 and 2.1 with Intel TXT built in for remote attestation
- Integrate Open Attestation with oVirt, OpenStack, Hadoop.
- Build the package of project for Fedora 19, OpenSUSE and ready for Red Hat summit on schedule.

Team leader, PM, software developer

Brief introduction: Full stack of private cloud solution based on OpenStack open-source project to help user enable and manage private cloud environment. OSPC enhanced OpenStack to develop a virtual/physical infrastructure management framework, enriched OpenStack APIs to support more meaningful IA manageability features, delivers a self-service portal to manage the holistic cloud environment and provides a simple deployment solution to large scale deployment.

- Coordinate with other colleagues to finish power management, policy and Intel TXT features in OSPC.
- Deliver full solution of OSPC deployment for China Unicom.
- Owner of the Node Manager which is independent module in OSPC.
- Participate in Beijing IDF 2012 as a worker, present OSPC in 2012 Shanghai SWPC.

⚙️ SKILLS

- Experienced Programming Languages: Java, C, Golang, Python, Rust etc.
- LLM setup, MCP development and maintenance
- Database: ASE, mysql, Oracle etc.
- Performance evaluation and tuning
 - LTTng tracing analysis for Ceph
 - Kubernetes scheduling system and overall performance evaluation in large-scale deployment
 - Performance evaluation of container runtimes (Containerd, Kata, CRI-O) with Kubernetes
- Public cloud services include AWS, Google Cloud Platform (GCP), and the OpenStack-based public cloud services
- Project management and hold PMP certification
- Experience in CI/CD enablement, e.g., Travis, Jenkins etc.
- Infra-as-Code: Leverage Ansible, Puppet, fuel etc. for the software deployment
- Cloud Computing
 - Experience in Kubernetes/Container/Ovirt/OpenStack/Hadoop projects
 - On-site comprehensive OpenStack training in Rackspace
 - Proficient in Docker, Kubernetes, OpenStack and the container runtime such as runc
 - Familiar with cloud-native projects, such as kubevirt, VPA, HPA etc.
 - Security: Arm CCA attestation and remote attestation protocol from TCG
 - Cryptography: Encryption and decryption, TPM, signature and integrity
 - Hands-on experience with LDAP, OAuth, and federated authentication
 - Knowledge/programming experience in popular cloud storage solutions, such as Ceph, OpenStack Cinder, Swift, and Glance
- MISC:
 - Experience in packaging and maintenance for various Distro (RHEL/FEDORA/UNBUNTU)
 - Comprehensive Hadoop training
 - Knowledge of NFV MANO (management and network orchestration of NFV)

📄 PAPER BOOK PATENT PRESENTATION

- OpenStack Design and implementation - book
- Policy Based Power Management in Cloud Environment with Intel Intelligent Power Node Manager - International Enterprise Computing Conference (EDOC) indexed by IEEE
- Application Aware Deduplication - patent was approved by filing (P118479)
- CoCo-as: First Confidential Computing Attestation Solution of CNCF - KubeCon presentation
- Kubernetes performance analysis - CNCF Webinar
- Intro: KubeEdge: Kubernetes Native Edge Computing Framework - KubeCon presentation
- Cloud Native Networking and Service Mesh with KubeEdge/Istio/Envoy/Cilium - presentation

- metadata tagging in cinder - OpenStack Summit Presentation
- BuildKit: A next generation image builder toolkit - Linaro presentation
- Research and Implementation of Heterogeneous Database Data Migration Testing Software - Journal of Anhui University of Engineering Science and Technology · December 1, 2010

♥ HONORS AND AWARDS

2022 Kubernetes contributor award winner	Sep. 2022
Arm - Quarterly Navigation Awards	Sep. 2023
Arm - Quarterly Navigation Awards	Sep. 2022
Arm - Quarterly Navigation Awards	Sep. 2020
Arm - Quarterly Navigation Awards	Sep. 2019
Intel - Department Recognize Awards	March 2014
Intel - Department Recognize Awards	Dec. 2013
Intel - Department Recognize Awards	May. 2012