Federated Multi-Access Edge Cloud Platform

This Akraino Blueprint, when completed, will implement the type II of Akraino PCEI Blueprint family that specifically focuses on a solution consisting of a mobile game deployed across multiple heterogenous edge nodes using network access technologies such as mobile and Wifi. This implementation demonstrates seamless roaming using KubeEdge technology-set. It essentially allows users to locally access multi-access edge computing (MEC)-enabled services while roaming.

We are targeting the initial implementation to be available by R5. We are planning to do incremental releases afterwards on a periodic basis.

Attributes	Description
Type	New
Industry Sector	Cloud, Enterprise, Telco
Business driver	Federated edge cloud imposes challenges in the edge service discovery and application migration in a device/edge/cloud setting. Goal is to address all these challenges by implementing a cloud gaming application in the federated edge cloud environment.
Business use cases	To implement the type II of Akraino PCEI Blueprint that specifically focuses on a solution consisting of a mobile game deployed across multiple heterogenous edge nodes using network access technologies such as mobile and Wifi. This implementation demonstrates seamless roaming using KubeEdge technology-set. It essentially allows users to locally access multi-access edge computing (MEC)-enabled services while roaming.
Business Cost - Initial Build Cost Target Objective	Cost of a proof of concept. Cost is only for the hardware. Federated KubeEdge is a software layer. Its managed applications can run on any Kubernetes environment. Validated edge stack including hardware choices should have manageable cost suitable for edge deployments.
Business Cost – Target Operational Objective	Federated KubeEdge edge service provides service portal for operational management. It supports zero touch deployment and monitoring capabilities.
Security need	KubeEdge supports application oriented security SPIFFE spec.
Regulations	N/A
Other restrictions	N/A
Additional details	N/A

BluePrint Details

Case Attributes	Description	Informational
Type	New	
Blueprint Family	PCEI	
Use Case	Cloud gaming in a federated edge cloud environment.	
Blueprint proposed Name	**Federated Multi-Access Edge Cloud Platform**	
Initial POD Cost (capex)	Less than USD100K	
Scale & Type of Server	From 1 server to a rack.	
Applications	Distributed mobile cloud gaming.	
Power Restrictions	NA	
Infrastructure orchestration	Docker/K8 - Container Orchestration OS - Linux	
SDN (Software Defined Networking)	None	
Workload Type	Containers	
Additional Details	N/A	

PCEI MEC TSC Proposal.pdf

Committer	Committer Company	Committer Contact Info	Committer Bio	Committer Picture	Self Nominate for PTL (Y/N)
Tina Tsou	Arm	tina.tsou@arm.com			N
Deepak Vij (Main Futurewei Contact Person)	Futurewei	dvij@futurewei.com	KubeEdge MEC-SIG member		Y
Peng Du	Futurewei	pdu@futurewei.com	KubeEdge MEC-SIG member		N
Hao Xu	Futurewei	hxu1@futurewei.com			N
Qi Fei	Huawei	qf.qifei@huawei.com	KubeEdge MEC-SIG member		N
Xue Bai	Huawei	xuebai@huawei.com	KubeEdge MEC-SIG member		N
Gao Chen (Main China Unicom Contact Person)	China Unicom Research Institute	cheng96@chinaunicom.cn	KubeEdge MEC-SIG member		N
Jiawei Zhang	Shanghai Jiao Tong University	jiaweizhang@sjtu.edu.cn	KubeEdge MEC-SIG member		N
Suhong Chen	Shanghai Jiao Tong University	sh-chen@sjtu.edu.cn	KubeEdge MEC-SIG member		N
1) Ruolin Xing 2) Shangguang Wang 3) Ao Zhou	State Key Laboratory of Network and Switching Technology, Beijing University of Posts and Telecommunications	1) xrl@bupt.edu.cn 2) sgwang@bupt.edu.cn 3) aozhou@bupt.edu.cn	KubeEdge MEC-SIG members		N
Jiahong Ning	Southeastern University	13768410701@163.com	KubeEdge MEC-SIG member		N