

arm

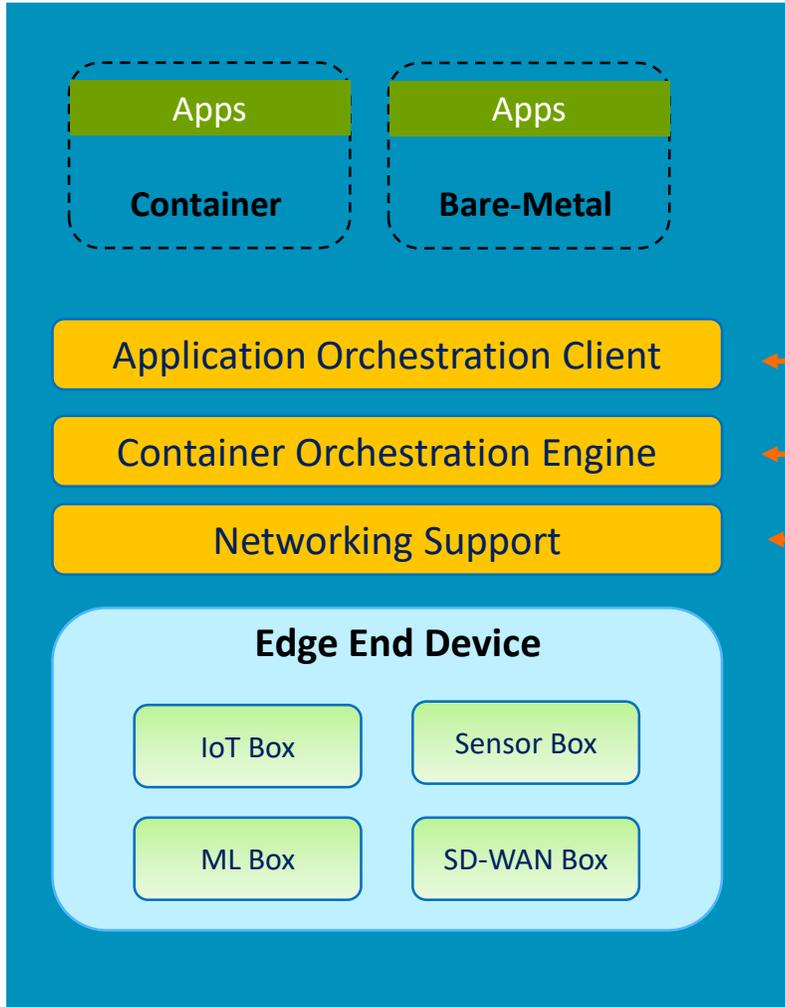
Akraino Blueprint Integrated Edge Cloud

Edge Use Cases to address

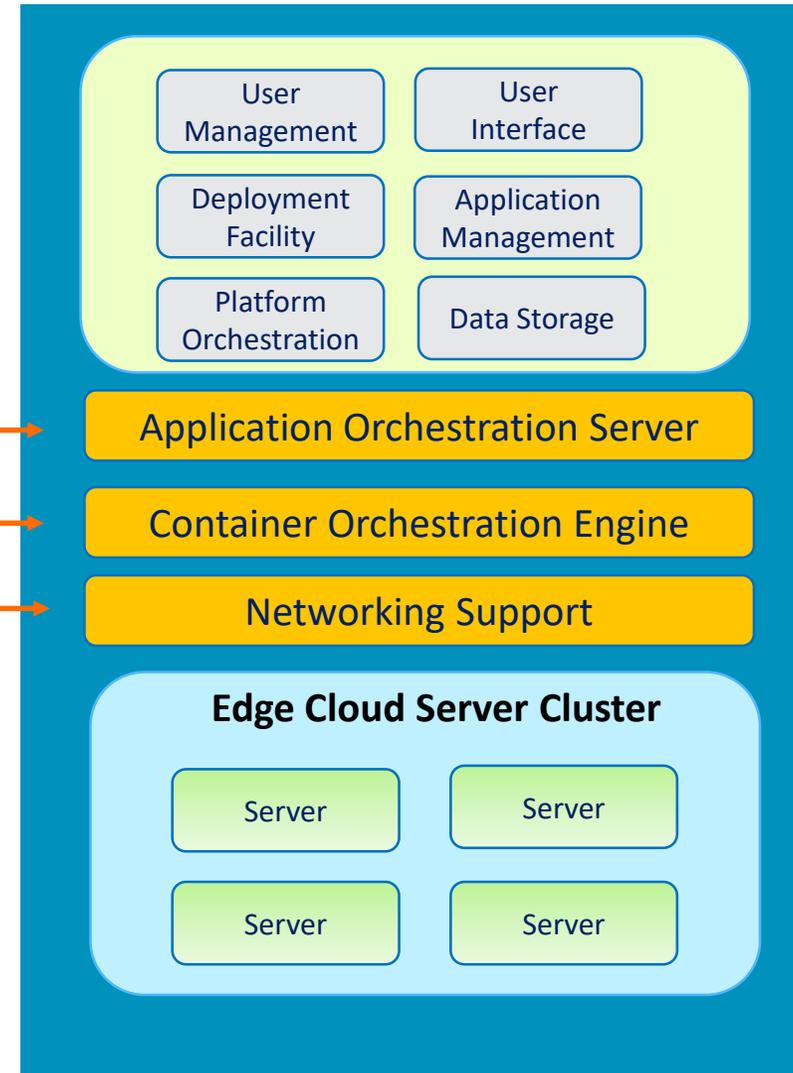
- Telco/enterprise Edge cloud – for example, MEC or branch office data center...
- Telco/enterprise remote edge locations – edge platform with limited resources, for example, SD-WAN, IoT gateway...

Integrated Edge Cloud Overview

Remote Edge End



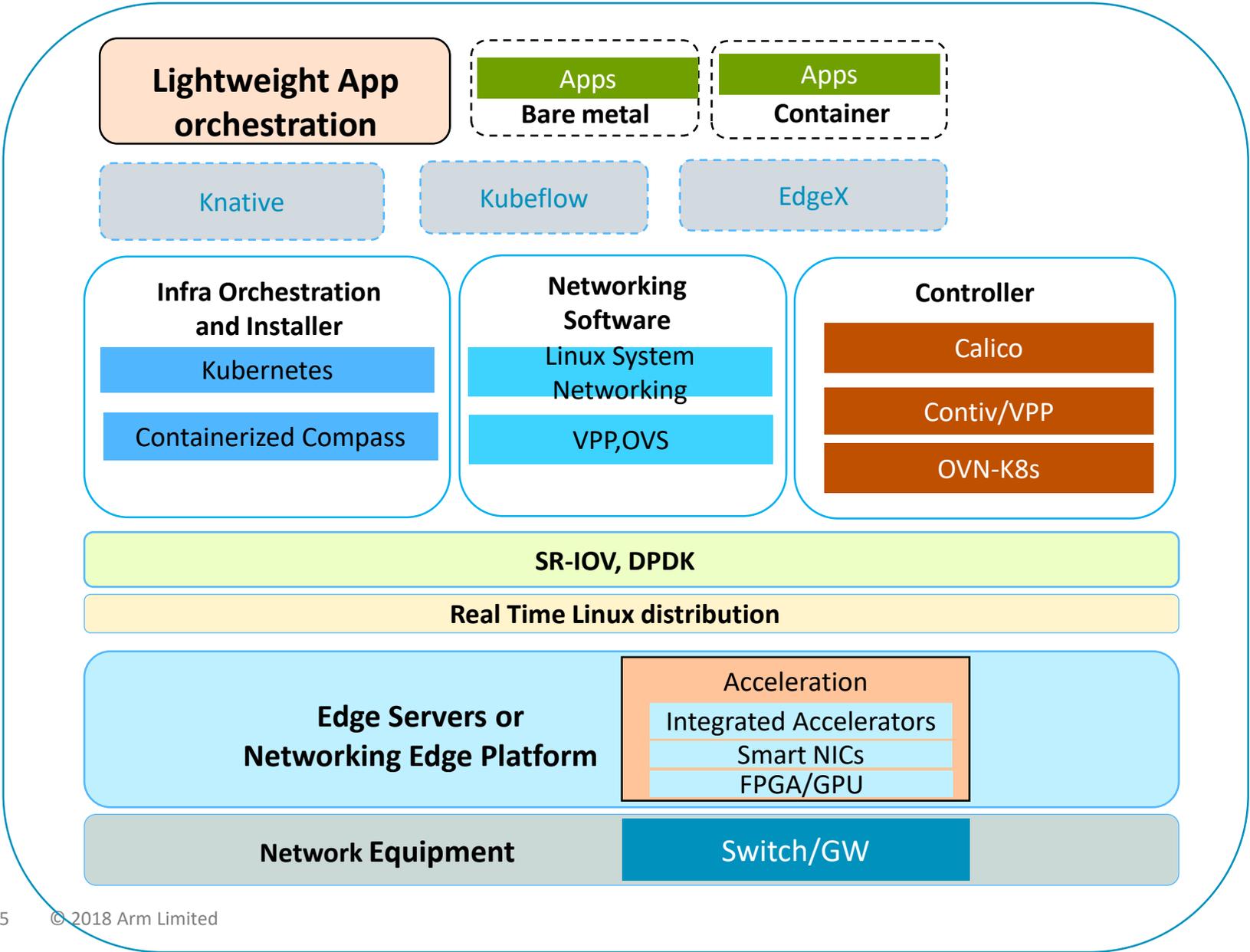
Edge Cloud



Containerized Integrated Edge Cloud Environment

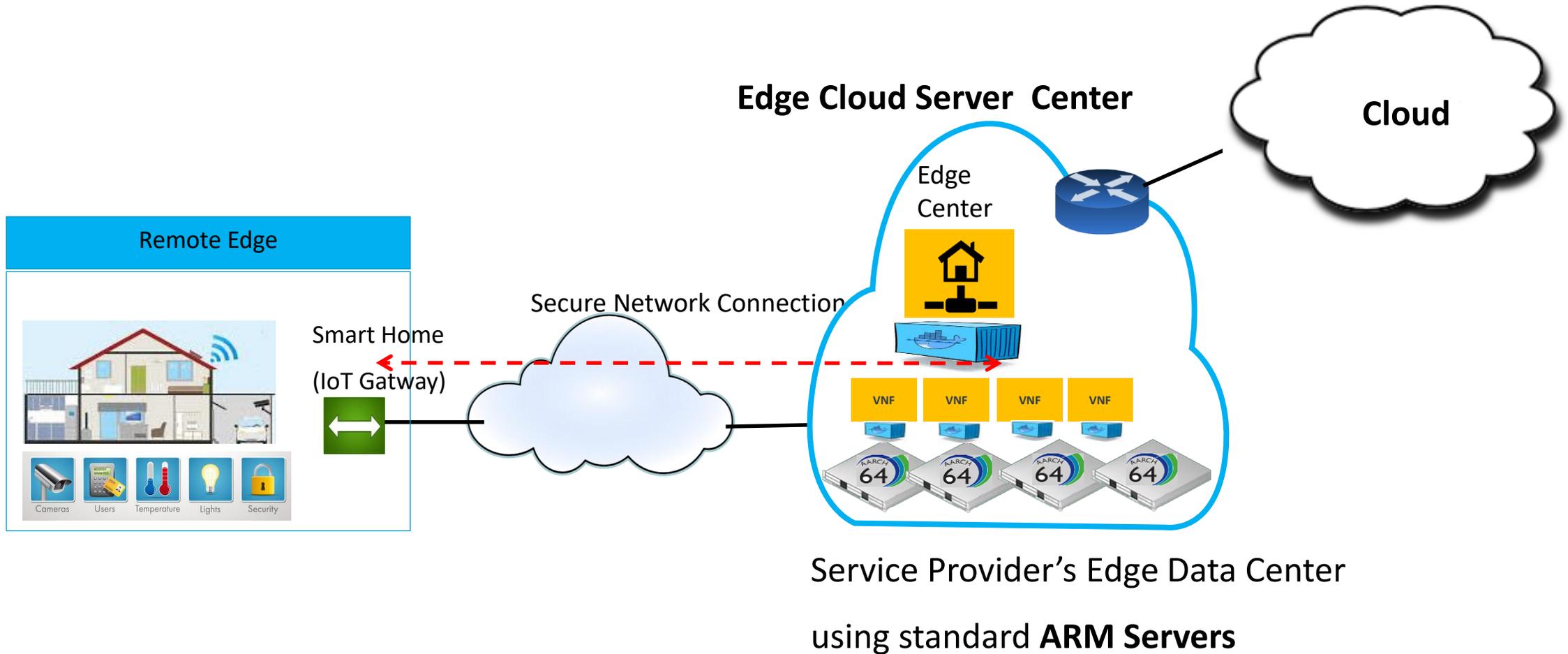
- The edge applications run as containers with container orchestration engine and high performance networking support;
- The integrated edge cloud platform provides management interface and programming interface to deploy/manage edge applications quickly and conveniently
- The platform supports the applications of IoT gateway, SD-WAN, edge AI and etc.

Arm Edge Cloud Reference Stack



- Heterogeneous Architecture
 - VM, container, bare metal
 - Servers and customized Edge platforms
 - Virtualized NFs and Physical NFs
 - Accelerator interface
- Resource constraints
 - Kubernetes
 - SDN Controller for K8s
- HW Accelerations
 - Integrated accelerators
 - PCIe/CCIX attached accelerator (Smart NICs...)

An Edge Use Case Scenario



Edge Reference Stack Components

Categories	Components	Descriptions
Edge HW platforms	Networking edge platforms	Arm Cortex 8.x-A cores Integrated HW accelerators Next gen Arm CPUs and custom CPUs
	Cloud edge servers	Arm cloud edge servers Accelerator expansion via CCIX/PCIe (Smart NICs) Next gen Arm CPUs and custom CPUs
Linux Distribution	Real time Linux distro Tiny Linux distro	Linux distribution with real-time open source kernel Tiny Linux distro in resource constraint edge environment
Data Plane Solutions	DPDK	A set of open source libraries to accelerate packet processing workloads running on Arm SoCs
	Open vSwitch	An open-source implementation of a virtual switch accelerated by HW offloading
	VPP	A high performance, open source virtual switching/routing solutions

Edge Reference Stack Components – Cont'd

Categories	Components	Descriptions
SDN controllers and CNI	CNIs and Container Networking Solutions	Calico, Contiv/VPP, OVN(OVS)-Kubernetes
Infrastructure Orchestration	Kubernetes	An open source container orchestration system with NFD
	Kubevirt/Virtlet	Deployment VMs on Kubernetes
Installer	Containerized Compass	Automatic deployment and management of Kubernetes
Apps Orchestration	Lightweight App orchestration	Orchestration and automation of physical and virtual network functions
Test framework & CI/CD	Edge application and reference stack test suites	Testing methodology, test suites and test cases to test and verify platform functionality