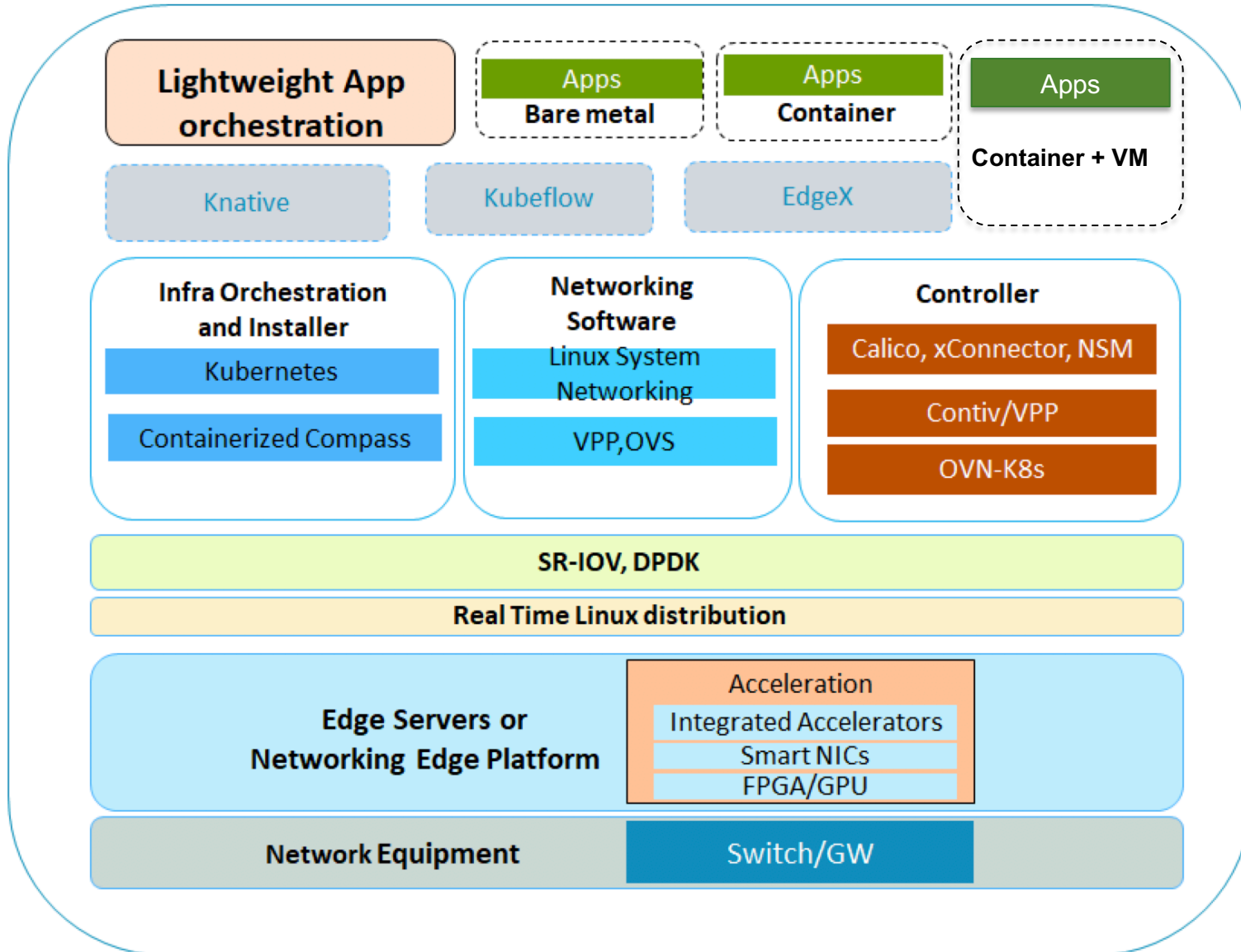


XConnect for Akraino

Blueprint Proposal: XConnect

Case Attributes	Description	Informational
Type	New Blueprint for edge cloud	
Blueprint Family - Proposed Name	IEC	
Use Case	Provide MEC platform for virtual network steering with prescribed QoS SLAs and Multi-tenancy isolation for v2x/AI/IOT on Mobile Edge	
Blueprint proposed Name	XConnect	
Initial POD Cost (capex)	Unicycle and Middle POD	
Scale & Type	From 7 to 200 servers x86/ARM server or deep edge class	
Applications	MEC/Enterprise/5G. For example, applications for autonomous cars.	
Power Restrictions	Less than 10Kw and Middle level capability	
Infrastructure orchestration	VMs and Containers together Docker 1.13.1 or above and K8s 1.14.2 or above- Container Orchestration OS - Ubuntu 18.x Cluster Platform – K8s on SDDC	
SDN controller	ProgRAN/network and SEBA with Xconnect	
Workload Type	Containers and VMs	
Additional Details	VerneMQ MQTT Gateway and/or Mosca MQTT Broker depending on community family Kafka message bus and Webhook/Nginx middleware Kubeless function management engine over Kubernetes Helm chart based Xconnect auto-installer, which is capable to work together with airship	To set up lab facilities or leverage current Arm lab

IEC Stack



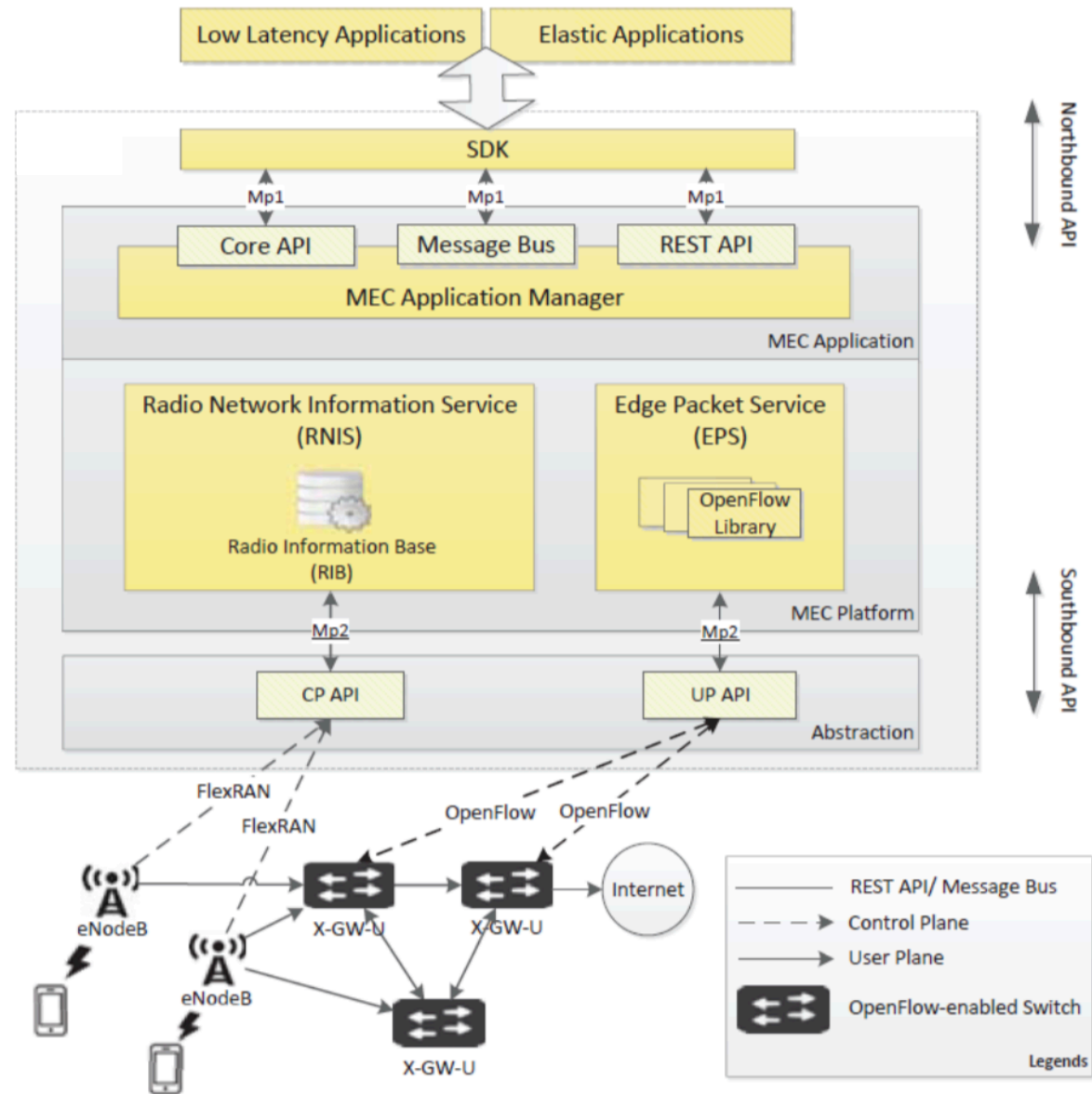
- Heterogeneous Architecture
 - VM, container, bare metal
 - Servers and customized Edge platforms
 - Virtualized NFs and Physical NFs
 - Accelerator interface
- Resource constraints
 - Kubernetes
 - SDN Controller for K8s
- HW Accelerations
 - Integrated accelerators
 - PCIe/CCIX attached accelerator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

MEC Platform

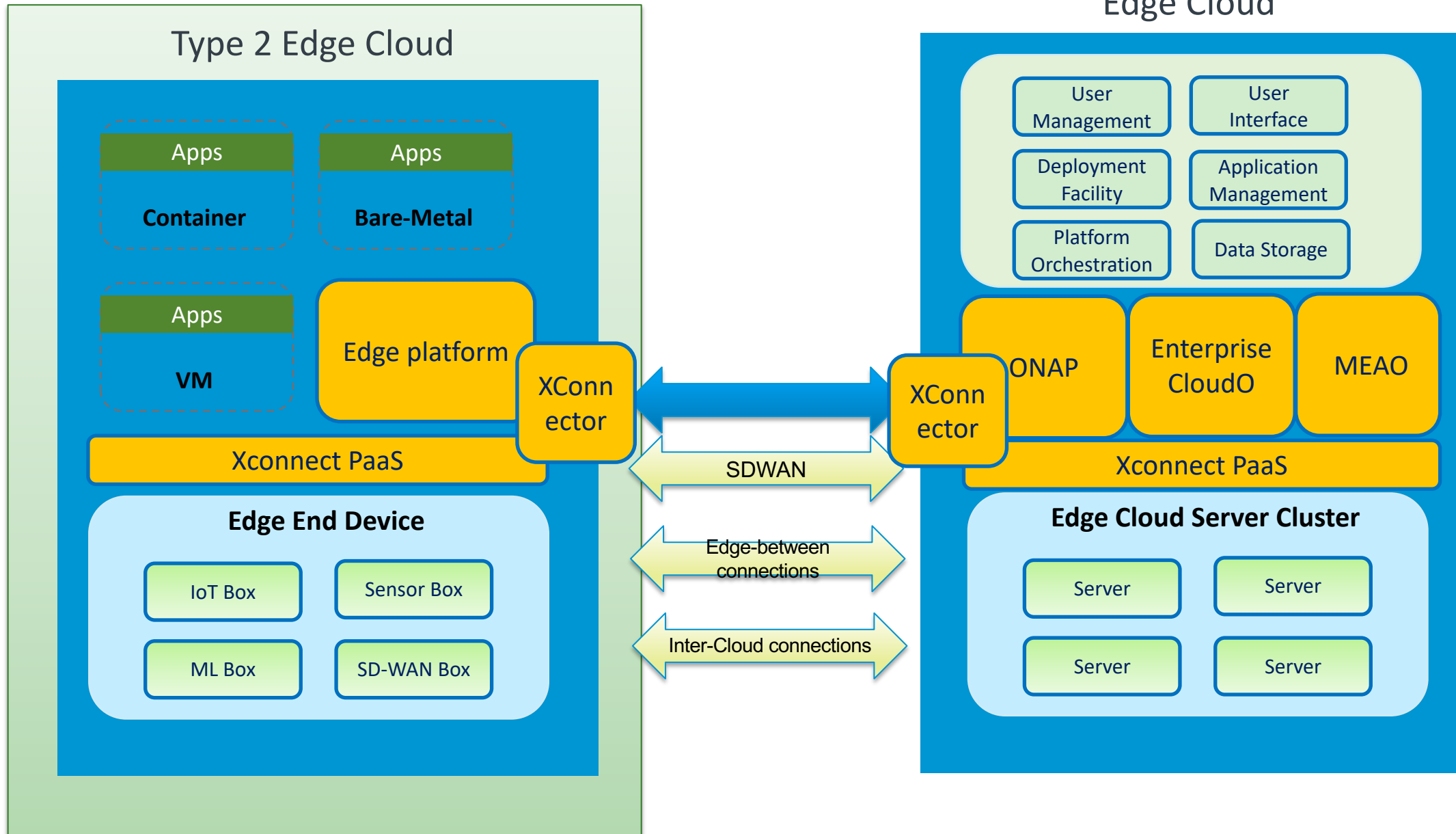
1. Enable Containerized Application deployment: Uniqueness of container need special support for the provisioning and operation. Alignment with standards and de-facto are indispensable. The differences at clustering provisioning and management cause fundamental change at support of micro-service orient workload. Xconnect targets to resolve this problem by cooperation of products and community.

2. Enable fine-granularity resource sharing and SLA controller mechanism in container scheduling framework. MEC propose challenges on the existing style of resource management on containers from perspectives of resource utilization, SLA enforcement and how to integrate with external network devices/controllers. Akraino and CNCF are targeted de-facto for alignment purpose.

3. Enable edge-adoptable placement functions in platform. MEC brings new challenges to traditional cloud placement problem from the perspective of elasticity, env-awareness, and accuracy. This item targets to provide optimal placement algorithm and module designed with flexibility to allow incorporating new metrics as they become known. This is a complicated NP-hard problem and edge-adoption is the key goal to achieve a feasible and unique delivery. Xconnect target to resolve this problem by cooperation of products and community.



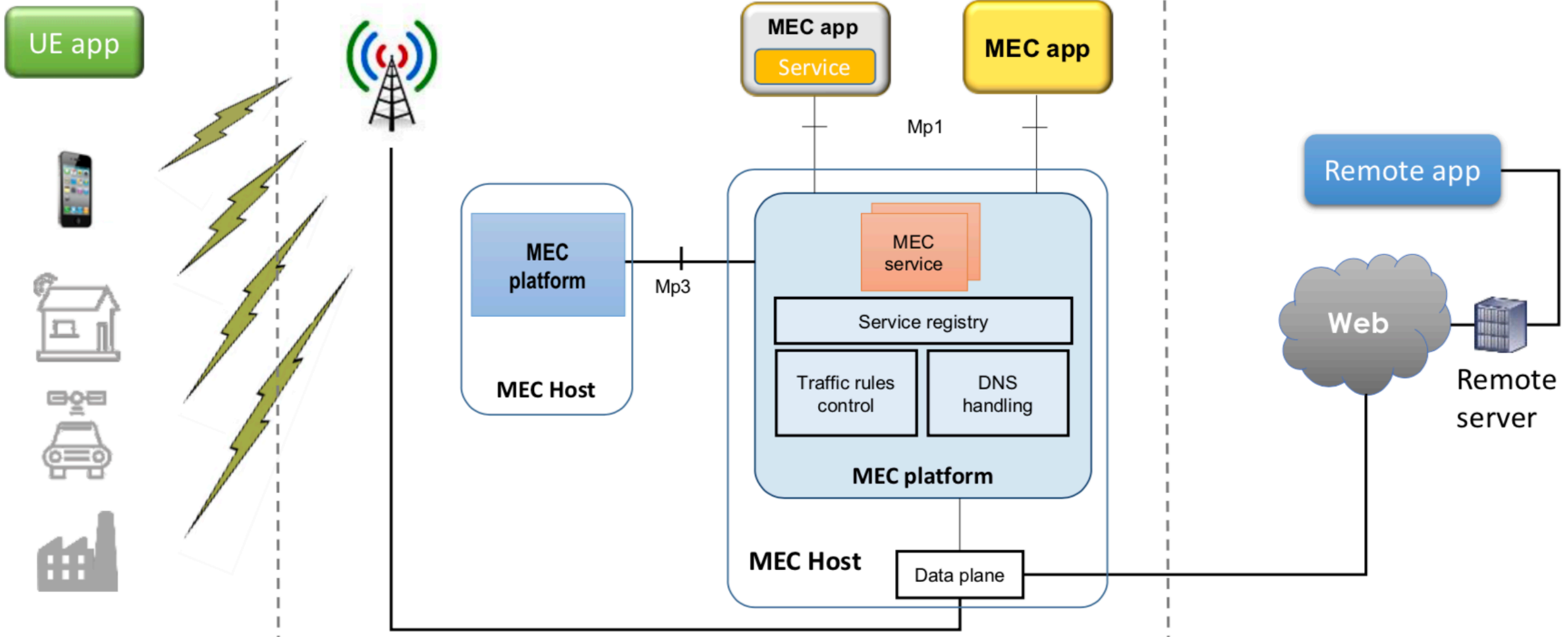
Akraino Release Targeted



UE level

Edge level

Remote level



UE app

MEC app
Service

MEC app

Remote app

MEC platform

MEC service

Service registry

Traffic rules control

DNS handling

MEC platform

MEC Host

Data plane

Web

Remote server

Mp3

Mp1

Enable VMware Stack for MEC

Not Secure | 192.168.129.143:30001/#/dashboard

Apps | Bookmarks | 从 Safari 中导入 | Workspace One | HelpNow | Source | SoYouJustGotAMac | Software Portal | VMware Sites | VMware Tools | RSA | Rancher | LeetCode 解题报... | Other Bookmarks

CORD v.6.1.0

Navigate routes (press 'f' to select)

Service Status

- Nodes
- Instances
- Att workflow driver
- Fabric crossconnect
- Fabric
- Kubernetes
- Volt
- Onos
- Rcord

```
graph TD; RCORD --- VOLT; VOLT --- ONOS; VOLT --- FABRIC_CROSSCONNECT; VOLT --- ATT_WORKFLOW_DRIVER; ONOS --- FABRIC; ONOS --- FABRIC_CROSSCONNECT; KUBERNETES --- ATT_WORKFLOW_DRIVER
```

Services | Service Instances | Instances | Networks

System summary:

0 Nodes	46 Slices	47 Instances
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CORD
Your VNF orchestrator

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