

Integrated Cloud Native NFV/App stack family (Short term: ICN)

- [Blueprint: Multi-Server Integrated Cloud native NFV/App stack \(Short term: MICN\)](#)
 - [Project Technical Lead: Kuralamdhan Ramakrishnan, Elected 6/24/2019](#)
 - [Attributes info](#)
 - [System level architect/lead: Srinivasa Addepalli](#)
 - [Contributors:](#)
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Blueprint: Multi-Server Integrated Cloud native NFV/App stack (Short term: MICN)

Project Technical Lead: Kuralamdhan Ramakrishnan, Elected 6/24/2019

[Link to process-SC review record](#) [Graduation reviews](#)


Attributes info

Case Attributes	Description	Informational
Type	Blueprint	
Blueprint Family - Proposed Name	Integrated Cloud Native NFV stack	
Use Case	SDWAN, Customer Edge, Edge Clouds – deploy VNFs/CNFs and applications as micro-services	
Blueprint proposed Name	Multi-server Cloud Native stack	
Initial POD Cost (capex)	50K minimum	
Scale & Type	Minimum of 4 Xeon Servers + 1 Xeon server as genesis	
Applications	SDWAN, ML/DL Analytics, EdgeXFoundry and 360 degree Video streaming	
Power Restrictions		
Orchestration	<p>Infrastructure Orchestration</p> <p>Bare Metal Provisioning : ironic with Metal3 controlled by Cluster API</p> <p>Kubernetes provisioning : KuD.</p> <p>Centralized controller: With Cluster-API</p> <p>Docker for containers and Virtlet for VMs</p> <p>Service Orchestration : ONAP (Only the components that require VNF/CNF workload deployments via K8S)</p> <p>MEC framework: OpenNESS</p> <p>Site orchestrator : Kubernetes upstream</p> <p>Traffic Orchestration within a cluster: ISTIO</p> <p>Traffic orchestration with external entities : ISTIO-ingress and ISTIO-egress with MCDeployment</p> <p>Knative for function orchestration</p>	<p>Expose HW accelerators</p> <p>Storage Orchestration: Ceph with Rook</p> <p>Futue: AF-XDP for packet processing based containers, OpenShift for site orchestrator, Kubevirt for VMs.</p>
SDN	OVN, SRIOV, Flannel	

Workload Type	Containers, VMs and functions	
Additional Details	Future: eBPF based CNI (such as PolyCube)	


System level architect/lead: [Srinivasa Addepalli](#)

Contributors:

Committer	Committer Company	Committer Contact Info	Committer Bio	Committer Picture	Self Nominate for PTL (Y/N)
Kuralamadhan Ramakrishnan	Intel	kuralamadhan.ramakrishnan@intel.com	<ul style="list-style-type: none"> • Kuralamadhan Ramakrishnan is working as a Senior Software Engineer in Intel, Oregon has specialized in the field of Networking, storage and data management and worked in Telco industries. • He created various open source projects such as Multi Network plugin in CNI called "Multus" CNI to support Multi-Homed pod in Kubernetes and "SRIOV-DPDK CNI" and "Userspace CNI" working in Kubernetes Networking in Intel, worked on Kubernetes compute on power management and worked in Kubernetes network SIG for Network Plumbing Working Group to advocate for Telco, comms use case in K8s and formation of Multi-network de-facto standard spec in K8s. • Kural's LinkedIn - link 		Yes
Ochulor, Enyinna	Intel	enyinna.ochulor@intel.com	Enyinna Ochulor is a Cloud Software Engineer at Intel. Since joining Intel, Enyinna has contributed to the OpenStack Neutron (DVR), and ONAP vCPE projects. LinkedIn		
Ukponmwan, Itohan	Intel	itohan.ukponmwan@intel.com	Itohan Ukponmwan is a Cloud Software Engineer at Intel. She has contributed to various projects in ONAP. She worked on the vCPE project in ONAP amsterdam release and contributed to making it possible to Deploy Intel's FlexRAN VNF with ONAP. She has also done a lot of work in enabling HPA features in ONAP for which Intel is a major contributor. Itohan has also contributed and worked on fixing bugs in the Opendaylight controller project. LinkedIn		
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Files

File	Modified 
Microsoft Powerpoint Presentation Akraino-Cloud-Native-Edge-Stack-external-v2.pptx	Jul 25, 2019 by Srinivasa Addepalli
Microsoft Powerpoint Presentation Akraino-Cloud-Native-Edge-Stack-external-v3.pptx	Aug 19, 2019 by Srinivasa Addepalli
Microsoft Powerpoint Presentation Akraino-Intergrated-Cloud-Native-meetup-external-v4.pptx	Dec 03, 2019 by Kuralamudhan Ramakrishnan
Microsoft Powerpoint Presentation Akraino-Edge-Service-matching.pptx	Apr 21, 2020 by Srinivasa Addepalli

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