Rel1 Self Certification KNI PAE Blueprint

Akraino TSC call on 2019-05-28

AKRAINO EDGE STACK

The KNI-Edge Blueprint Family

Blueprints in the KNI for Edge family

- **implement the Kubernetes Machine APIs**

  ➜ declarative, provider-agnostic cluster deployment and operation

- **leverage the Operator Framework**

  ➜ automated and secure application deployment and operation

- **support VM workloads via KubeVirt**

 ➜ manage VMs like containers (e.g. common resource management)
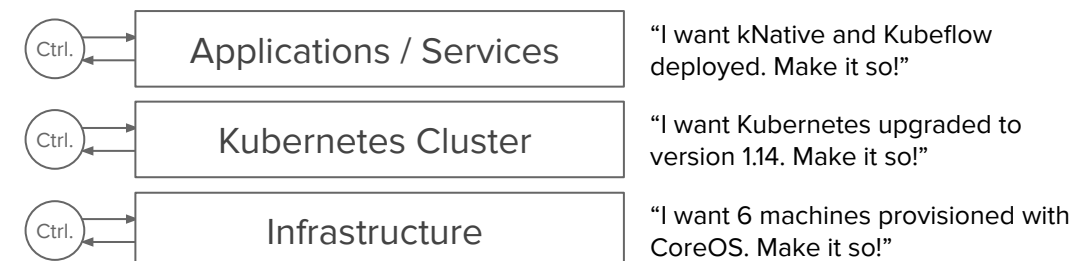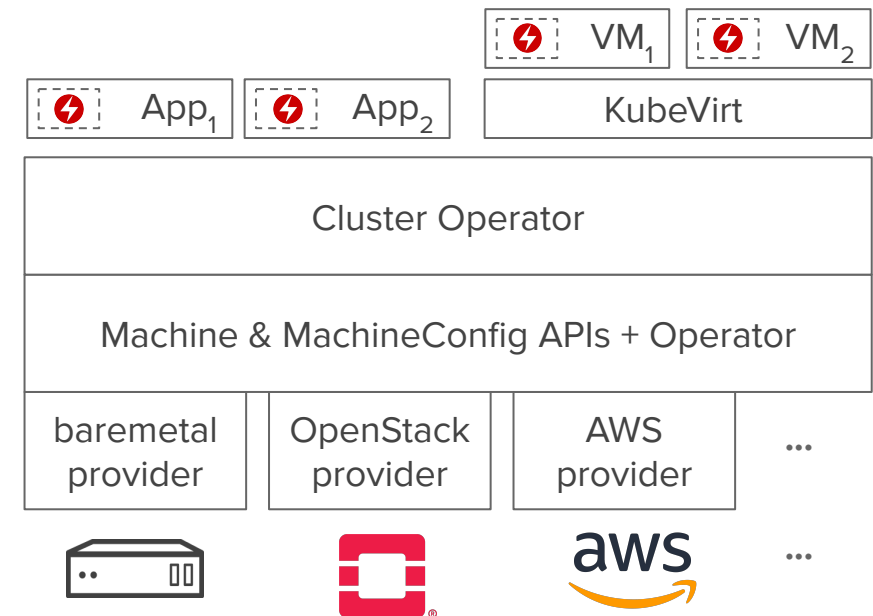
KNI for Provider Access Edge Blueprint

The family's Provider Access Edge blueprint targets

vRAN and MEC (e.g. AR/VR, machine learning, etc.)

use cases.

Key features:

- Lightweight, self-managing clusters based on

  CoreOS and Kubernetes (OKD distro).

- Support for VM (via KubeVirt) and container

  workloads with common resource scheduling.

- Application lifecycle management using the

  Operator Framework.

- Support for real-time workloads using CentOS-rt*.

Blueprint Datasheet available here: https://docs.google.com/document/d/1vKAMLpfEWxs78wGDhHjrv476fBCXItnoNwLV_vB9pPg/edit#
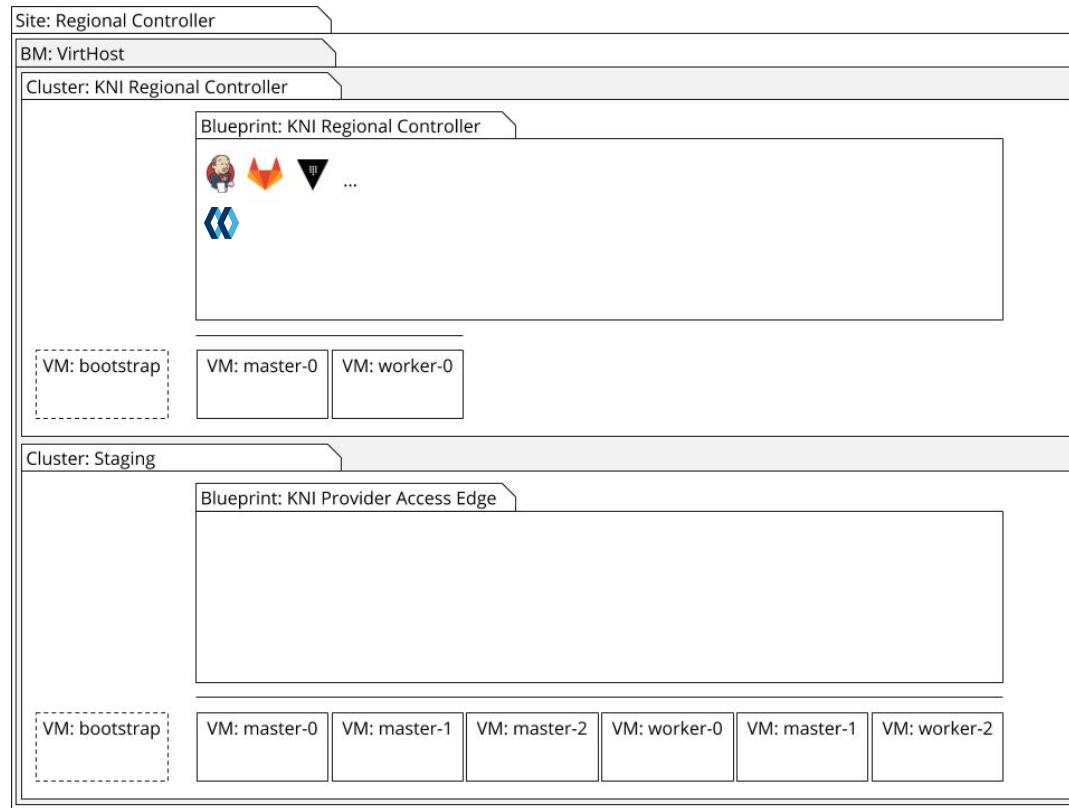
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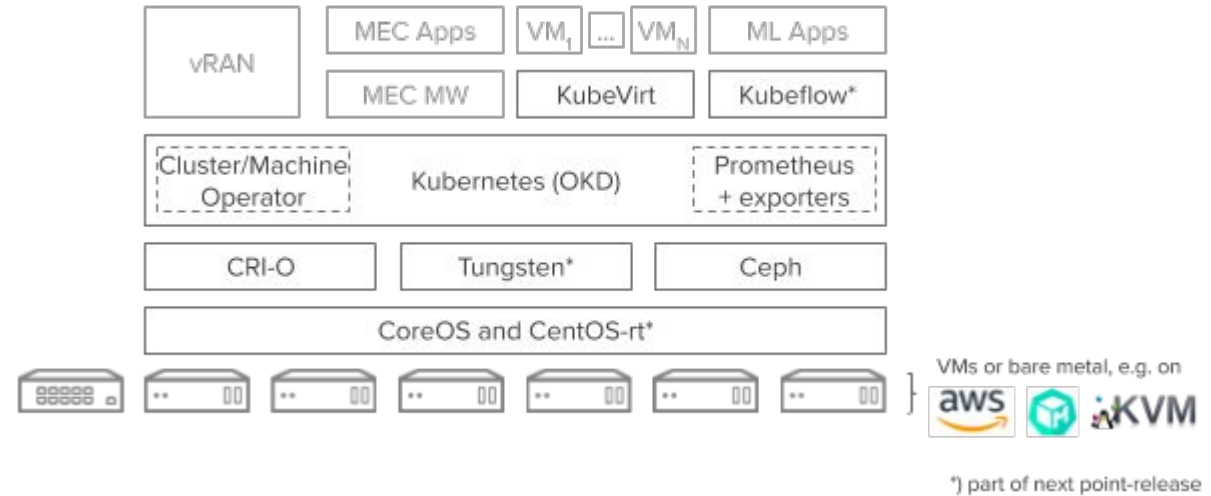
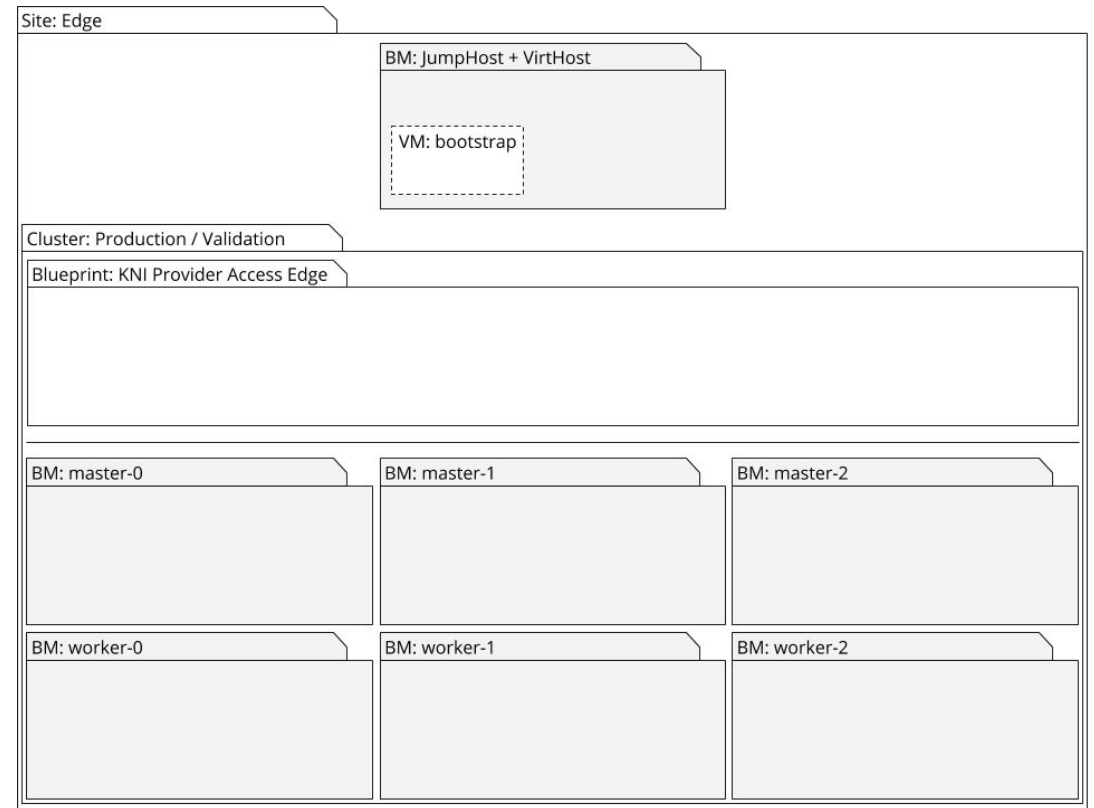# Demo of Declarative Infrastructure Management

Deployment View

KNI Regional Controller / Dev&Staging POD:

KNI Blueprint Validation POD (both PAE and IE BPs):

Site: Regional Controller
- BM: VirtHost
  - Cluster: KNI Regional Controller
    - Blueprint: KNI Regional Controller
  - VM: bootstrap | VM: master-0 | VM: worker-0
  - Cluster: Staging
    - Blueprint: KNI Provider Access Edge
  - VM: bootstrap | VM: master-0 | VM: master-1 | VM: master-2 | VM: worker-0 | VM: master-1 | VM: worker-2

Site: Edge
- BM: JumpHost + VirtHost
  - VM: bootstrap
- Cluster: Production / Validation
  - Blueprint: KNI Provider Access Edge
- BM: master-0 | BM: master-1 | BM: master-2
- BM: worker-0 | BM: worker-1 | BM: worker-2

Physical and Logical Connectivity View
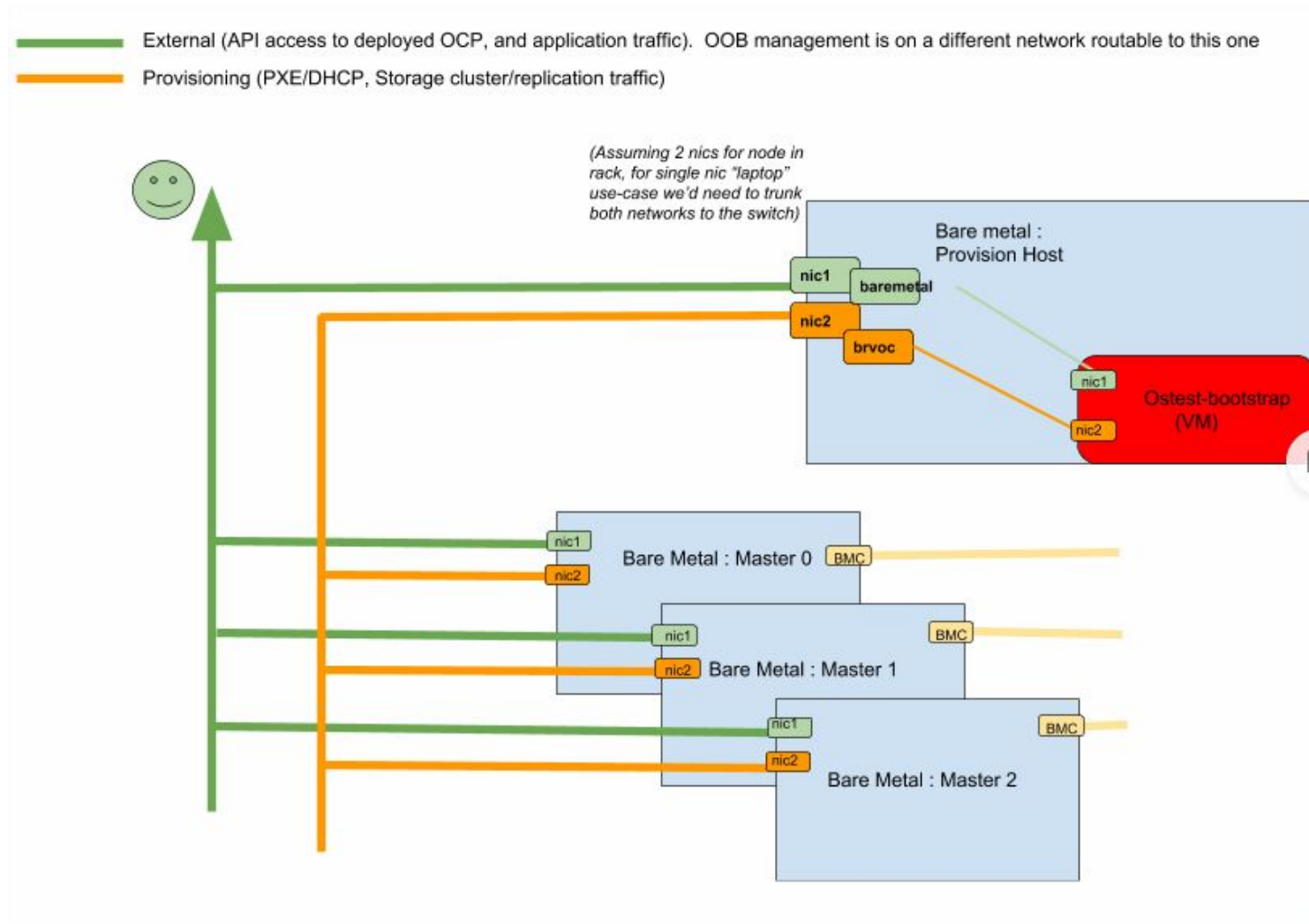
Self Certification Checklist

MBI	Name	Description/Checklist
MBI0	Project Induction	Blue Print is voted by TSC as an Akraino Blueprint. The project is defined and approved by TSC vote to enter incubation stage ([Incubation Review](#))
MBI1	Kick Off	First regular community call held, Recurring meeting should have been setup and details appear in the BP community meeting calendar: https://lists.akraino.org/g/blueprints/calendar. The first meeting date would be the timestamp for the 'Achieved date'.
MBI2	Planning Process Defined	- MBI2 is dependent on MBI1 - Identify integration/developers team & testing team - Identify whether LF CD or external validation lab is to be used for first validation. - hardware set up definition frozen and clearly and fully published to the community such that any community member can replicate - Identify team working on features & testing
MBI3	Additional Test scripts development CD lab is setup	- All additional test cases beyond those defined as mandatory for each layer being deployed by the BP are automated if possible and made available in bluep repos. - If LF lab is used for CD - The set up is complete and is accessible - Instructions to access the setup including the method to reserve/un-reserve hardware are available. - If member validation lab is being used for CD - All HW required to deploy the BP has been installed and is ready to start CD of actual BP - Peer Jenkins Set up in case of external validation lab ([CI, Blueprint Validation Lab sub-committee](#) - Security: <TBF>
MBI4	First Full CD deployment	- All requirements up till MBI4 should be complete at this stage - First full CD deployment either in the Member CD lab or the LF lab 1st run of test cases and rest results logs automatically posted to LF CI servers - All test cases have been executed (In case of CI / CD this waterfall approach is optional) - Failures and other issues have been documented

Self Certification Infos

MB0: Project passed Incubation Review during TSC f2f in December.

MB1: Project had kick-off call on 11 Feb; weekly team call scheduled every Thu @ noon EST

MB2: Team consists of

Yolanda Robla (PTL, Red Hat), Frank Zdarsky (Red Hat), Ricardo Noriega (Red Hat), Sukhdev Kapur (Juniper), Justin Scott (Intel), Craig Sterrett (Intel), Ned Smith (Intel), David Lyle (Intel), Manjari Asawa (Wipro)

MB3: member validation labs set up; community CI lab is w.i.p. (see deck from review meeting w/setup instructions)

MB4: User Documentation and Nexus logs available

- CI/CD from jenkins.arkaino.org into AWS:
  https://nexus.akraino.org/service/local/repositories/logs/content/production/vex-yul-akraino-jenkins-prod-1/kni-installer-merge-deploy-aws/8/aws_deploy.log.gz
- CI/CD from Red Hat validation lab into baremetal:
  https://logs.akraino.org/redhat-kni/kni-edge-installer-baremetal/12/
- CI/CD from Red Hat validation lab into libvirt:
  https://logs.akraino.org/redhat-kni/kni-edge-installer-libvirt/39/deploy.log.gz

See also YouTube video of how to deploy a simple BP: https://www.youtube.com/watch?v=3mDb1cba8uU

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