

# Akraino KNI Blueprint family Release 4 Planning

September, 2020



# Kubernetes Native Infrastructure Blueprint family

Kubernetes-  
managed infrastructure

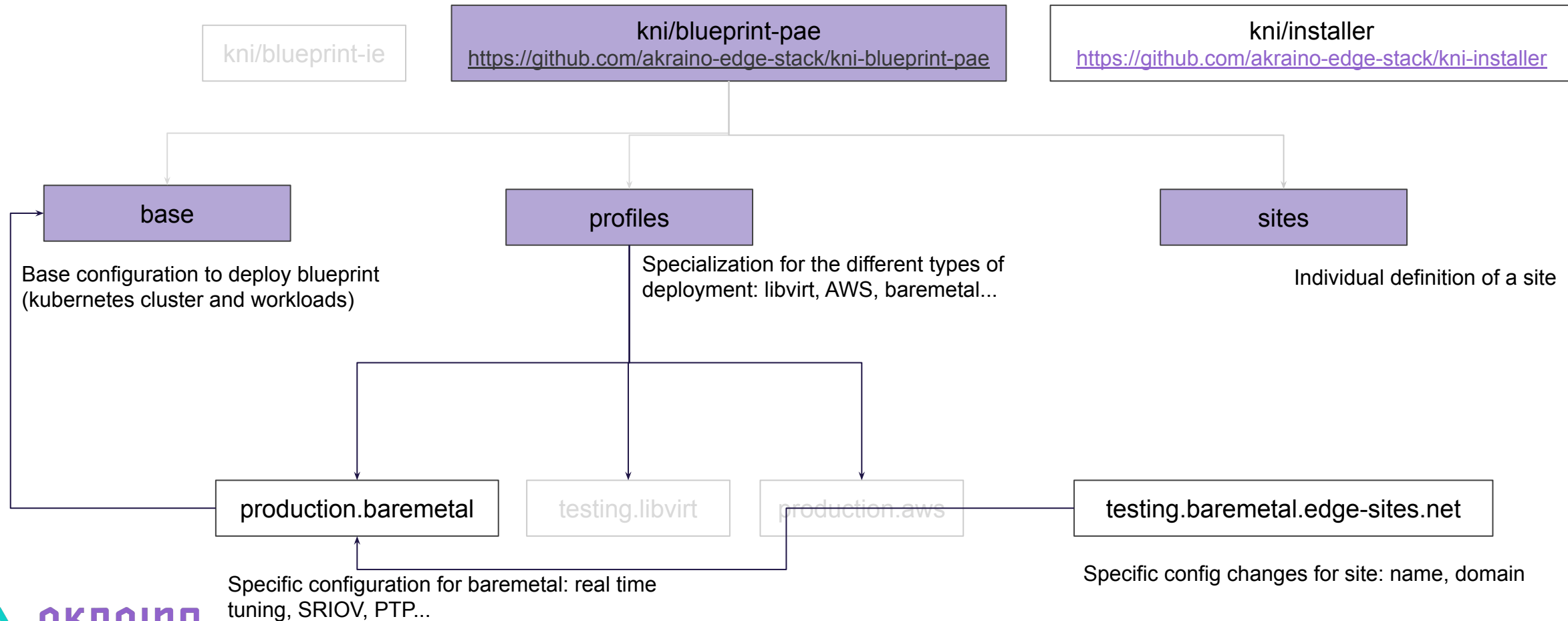
built on the rich  
tooling & best-practices  
of Kubernetes  
community & ecosystem

rich orchestration and lifecycle  
management

optimized for  
Kubernetes-native workloads,  
allows hybrid deploys with  
Kubevirt



# Kubernetes Native Infrastructure Blueprint structure



# Provider Access Edge blueprint

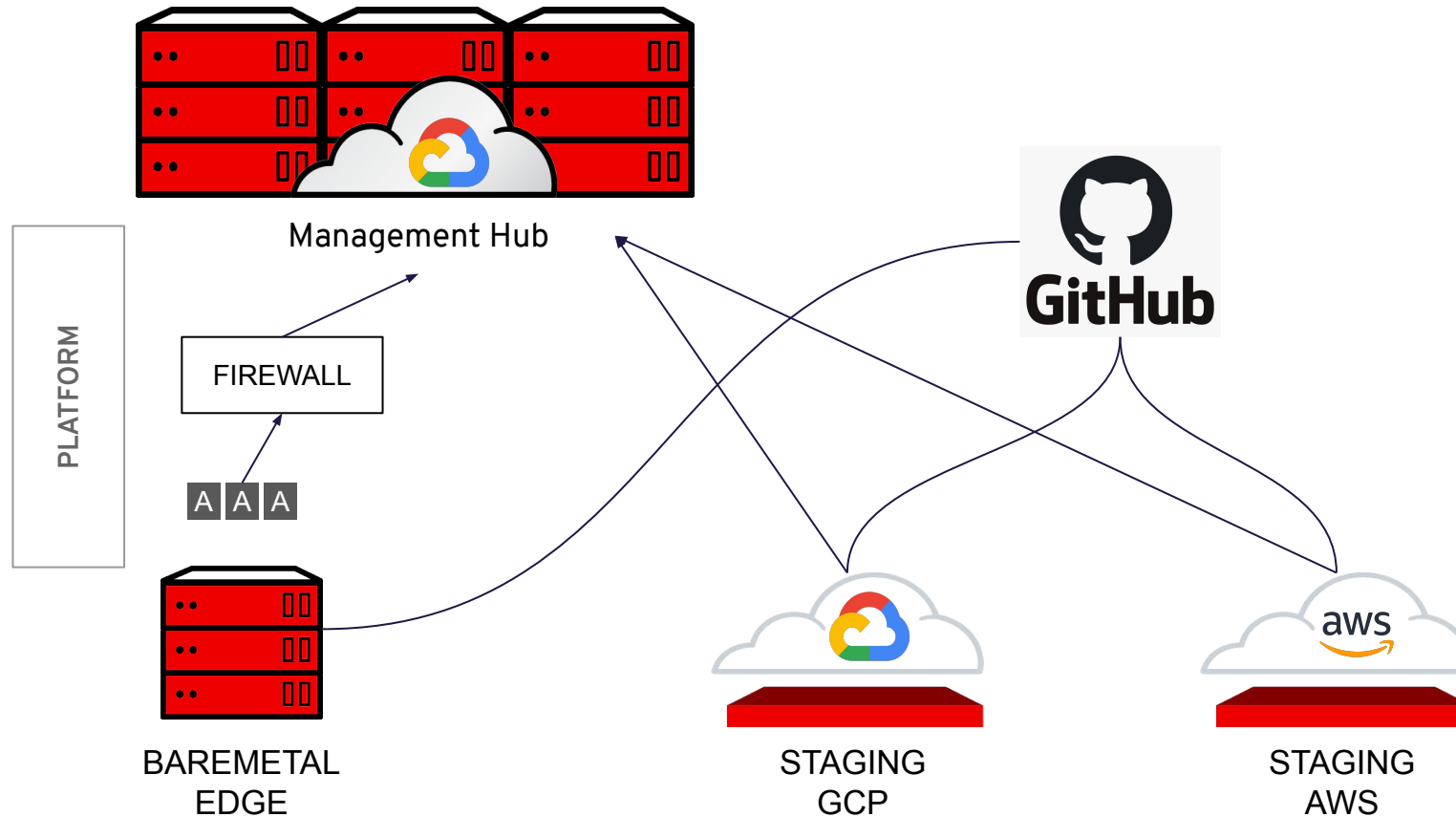
- Small footprint deployments able to host NFV (vRAN) and MEC
- Requirements: Lightweight, self-managing clusters - Support for VNF (via KubeVirt) and CNF common infrastructure - Support for multiple networks, SR-IOV, PTP - Support for real-time workloads using RHCOS-RT
- New features for this cycle:
  - Refresh component dependencies
  - Add a sample RAN workload (ORAN, OAI) to demonstrate the blueprint
  - Improve integration of Remote Worker Nodes



# Industrial Edge blueprint rationale

- Boosting manufacturing efficiency and product quality with AI/ML, edge computing and K8s.
- Requirements: real-time processing data, failure prediction, security, etc.
- Two different blueprints:
  - Management Hub (big centralized cluster)
  - Edge Computing remote sites (3 nodes clusters)
- Pushing AI/ML to the edge via gitops and blueprints.
- Validation via CI/CD on central clusters

# Industrial Edge testbed



## Management Hub Components:

- Red Hat Advance Cluster Manager
- Tekton, Kafka, OpenDataHub, etc...

## Edge Managed Cluster Components:

- Self-registration objects to ACM
- GitOps subscriptions
- Possibly: GPU operator, RT, etc.

# Industrial Edge backlog

- Create basic blueprint structure for:
  - blueprint-management-hub (3 masters/ 3 workers cluster running on AWS/GCP)
  - blueprint-industrial-edge (3 schedulable masters cluster running on AWS/GCP for staging, baremetal for production)
- Cluster addons and services:
  - blueprint-management-hub: ACM, Tekton, ArgoCD, Image registry
  - blueprint-industrial-edge: Registration process, line server, data lake infrastructure.
- Full Akraino CI jobs to validate blueprints separately
- Information for user adoption (documentation, wiki, videos, demos, etc.)
- OpenHorizon ? Solution CI Integration Testing?



Thank you!

