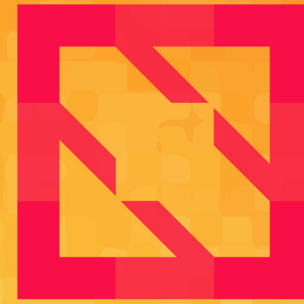




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What Makes a Good Multi-Tenant Kubernetes Solution?

Victor Varza <vvarza@adobe.com>



Why multi-tenancy?



A dark, atmospheric photograph of an astronaut in a white spacesuit standing on the moon's surface. The astronaut is positioned in the center-right of the frame, with their shadow cast long and dark on the lunar ground. The background is a vast, dark expanse of space with a bright, hazy celestial body (likely the Earth) visible in the upper left corner. The overall tone is somber and futuristic.

Project Ethos

a multi-tenant Kubernetes based platform
created by collaboration between the
infrastructure and product development
teams in Adobe

Ethos Kubernetes Friends

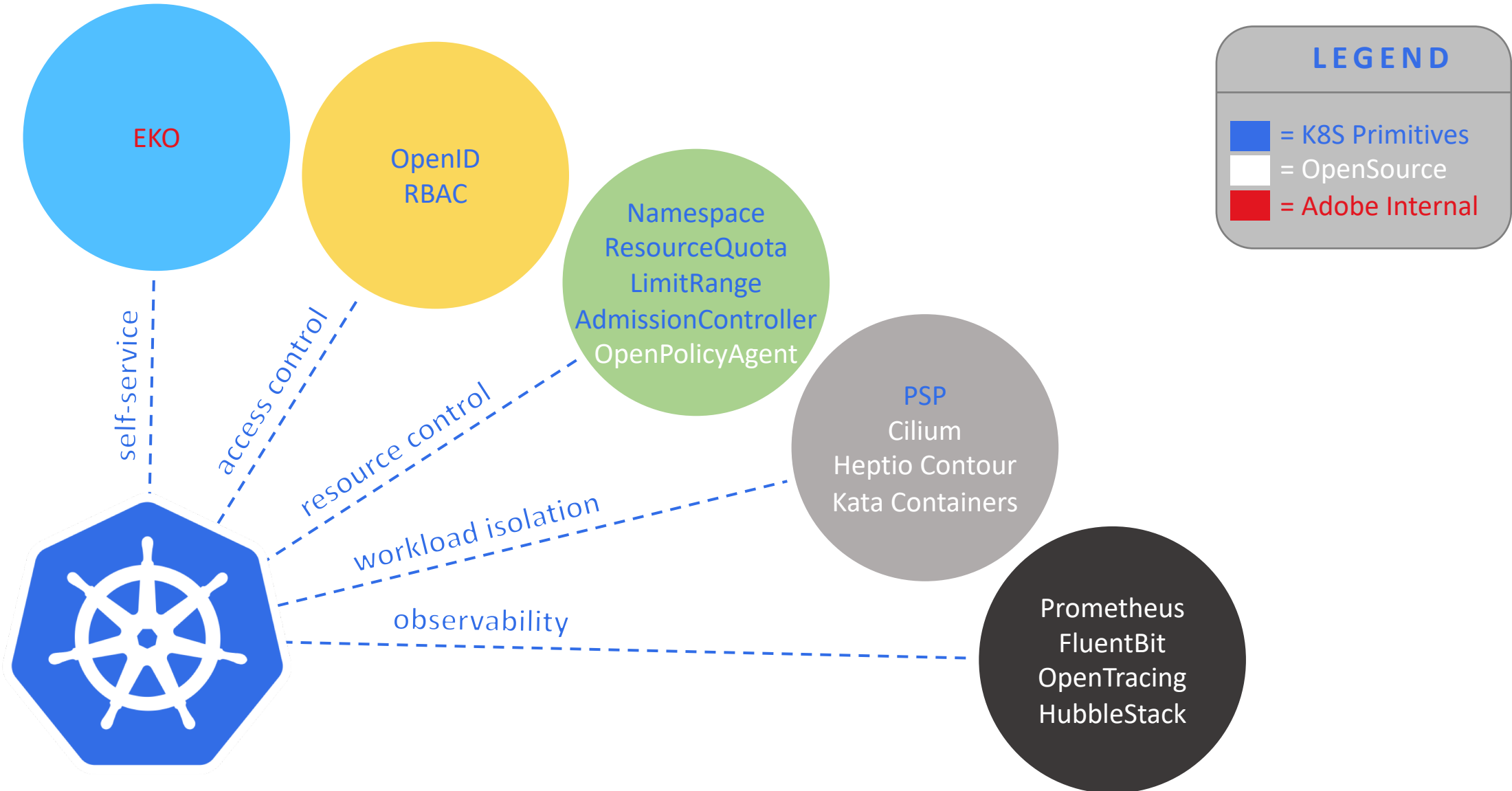


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Ethos Kubernetes Onboarder

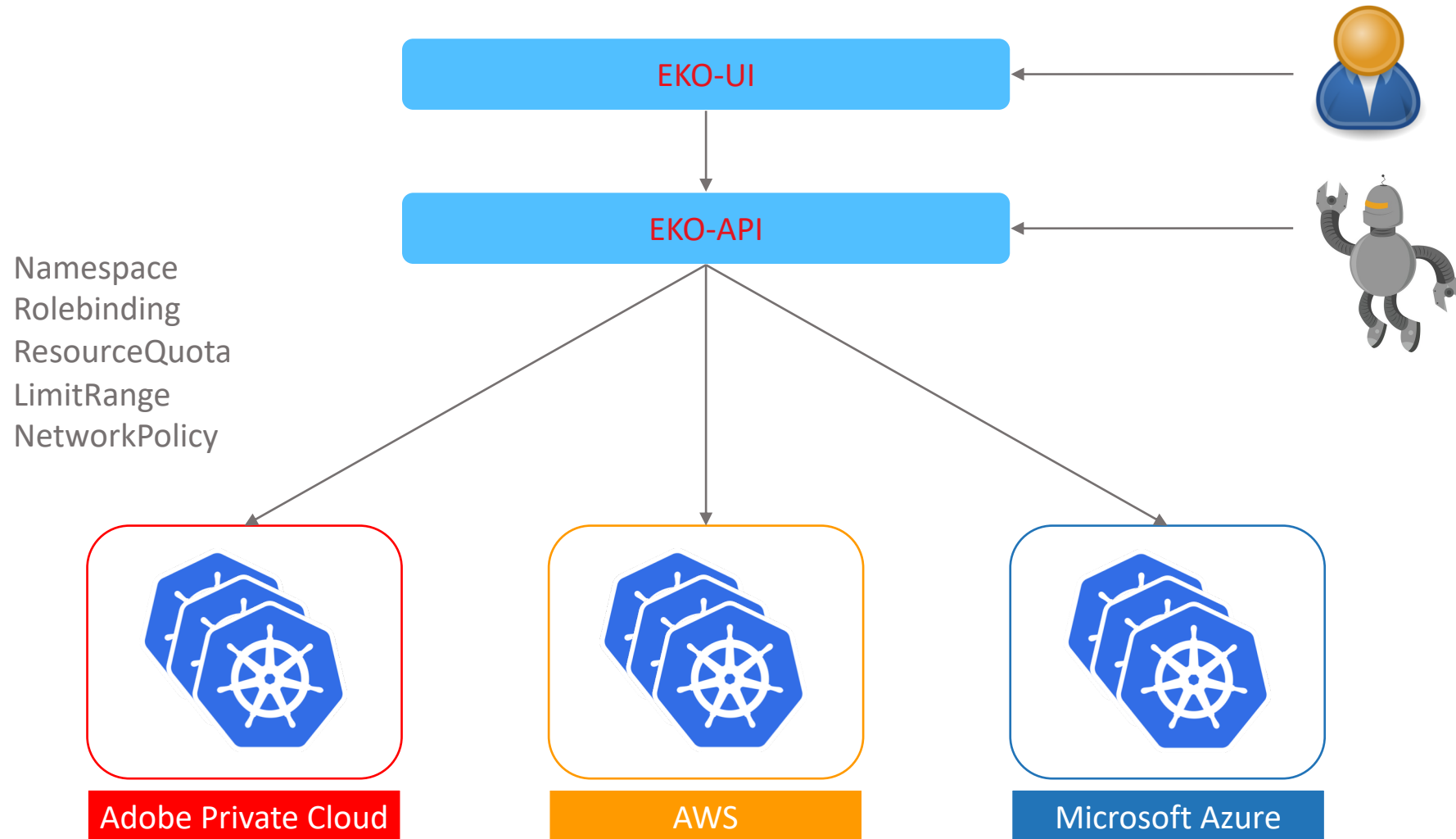


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Cilium



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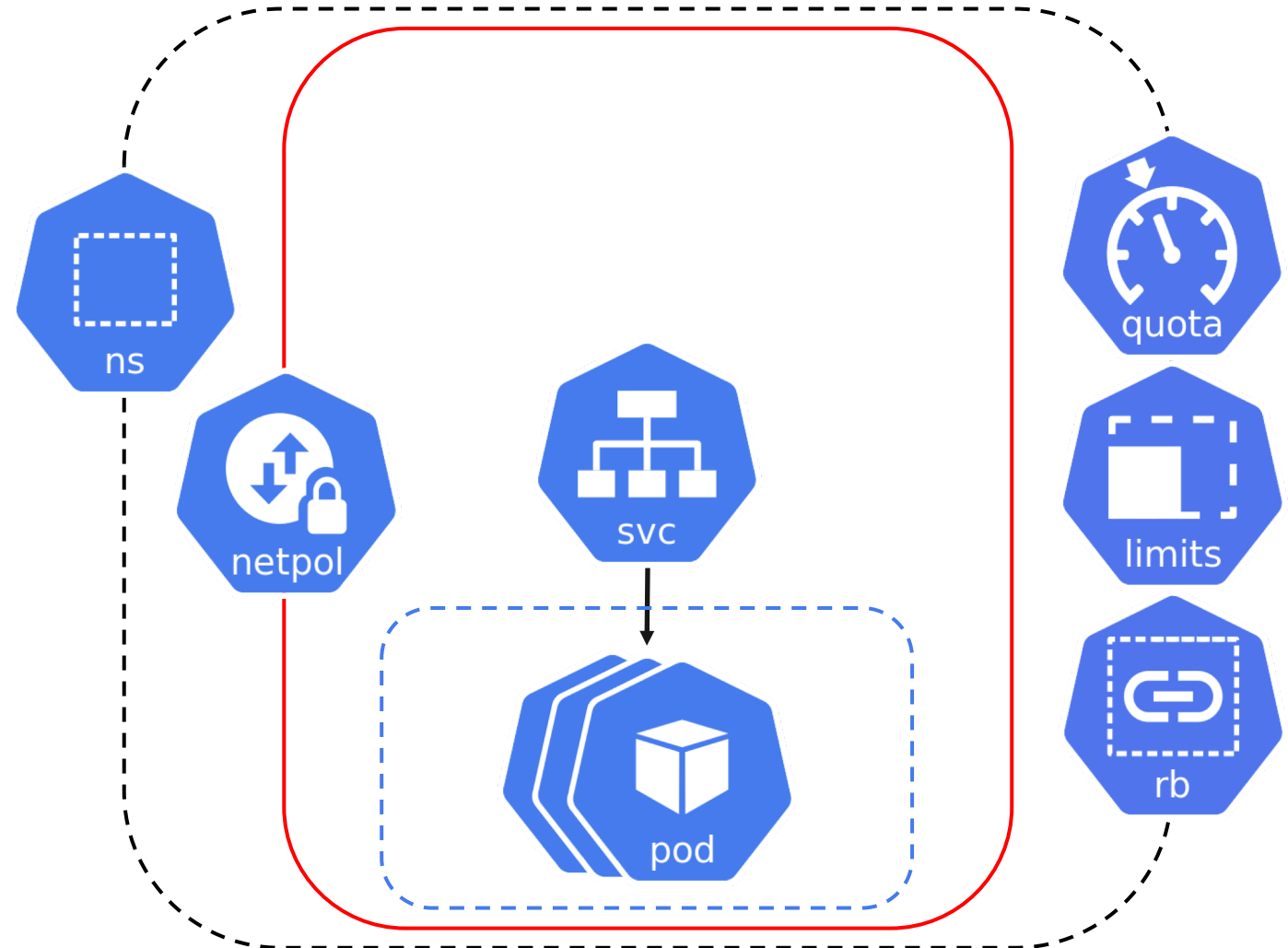
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eBPF

Designed for scale

Layer7 network policy

- CiliumNetworkPolicy CRD



Contour



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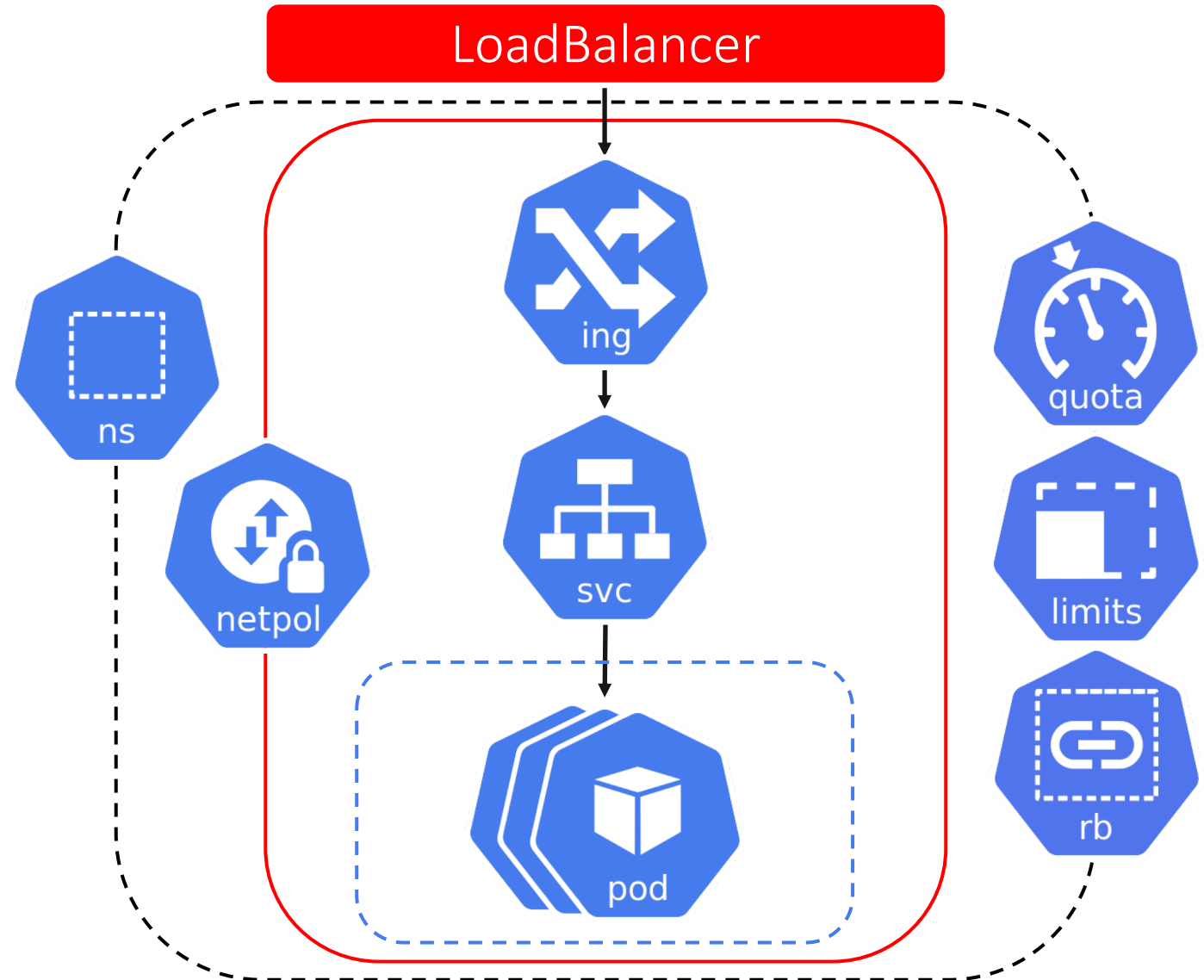
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Envoy under the hood

- Hot restart
- Observability
- Advanced load balancing

IngressRoute/HTTPProxy CRD



OpenPolicyAgent



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```
#-----  
# Deny create requests for ingressroutes with FQDNs matching  
# existing ingressroute FQDNs  
#-----  
deny[msg] {  
    isCreate  
    input.request.kind.kind = "IngressRoute"  
    ingressRoute := ingressroutes[namespace][name]  
    input.request.object.spec.virtualhost.fqdn == ingressRoute.spec.virtualhost.fqdn  
    msg = sprintf("spec.virtualhost.fqdn conflicts with existing IngressRoute FQDN", [])  
}
```

Kata Containers

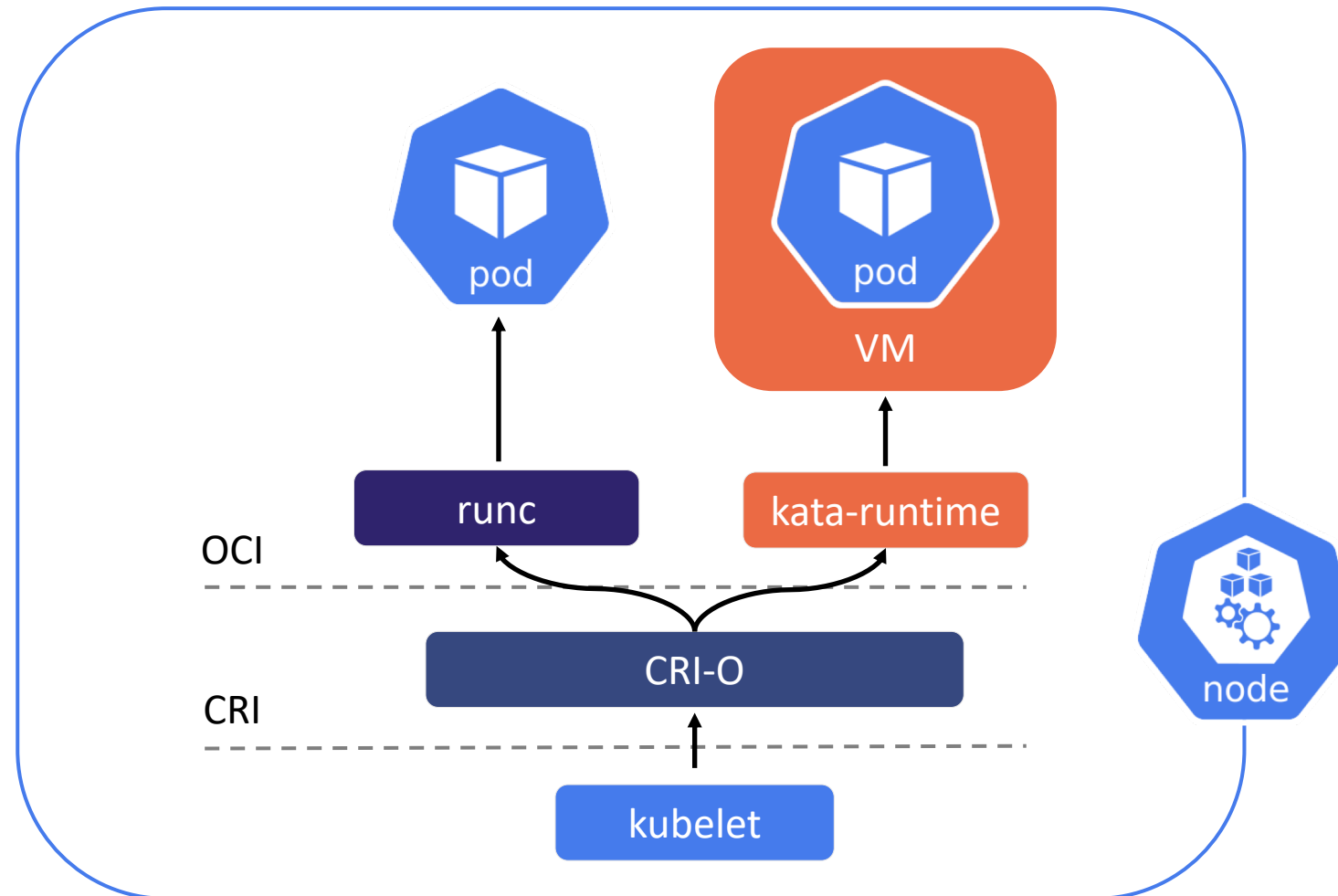


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Observability



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HubbleStack



Prometheus



cortex



fluentbit

Legend: ■ All metrics are meeting SLTs ■ Some metrics are outside SLTs ■ All metrics are outside SLTs

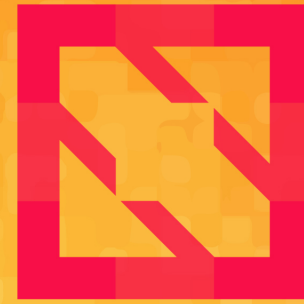
Refer the following [wiki](#) to learn more about different product capabilities.

e2e_capabilities_autoscale
e2e_capabilities_deployment
e2e_capabilities_egress
e2e_capabilities_ingress
e2e_capabilities_k8sapi
e2e_capabilities_runtime

Ps



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