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ZABBIX PREMIUM PARTNER

ZABBIX CERTIFIED TRAINER

Webinar

Kubernetes and docker monitoring with Zabbix

all your microphones are muted

ask your questions in Q&A, not in the Chat

use Chat for discussion, networking or applause

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Containers, Docker, Kubernetes, orchestration

- Docker was the pioneer in mass containerization
- It still can be found in production and run critical applications
- Then there was "orchestration clash" and ….

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Containers, Docker, Kubernetes, orchestration

- Kubernetes (K8s) is a standard for container orchestration
- There are other platforms based on K8s (Openshift, Tanzu)
- It can broke as everything else

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What Zabbix has to offer in this field ?

- Zabbix is already running
- Relevant in environments combining hardware, infrastructure, "legacy" stack and "new world"
- … it just might be enough and you can start in "no time"

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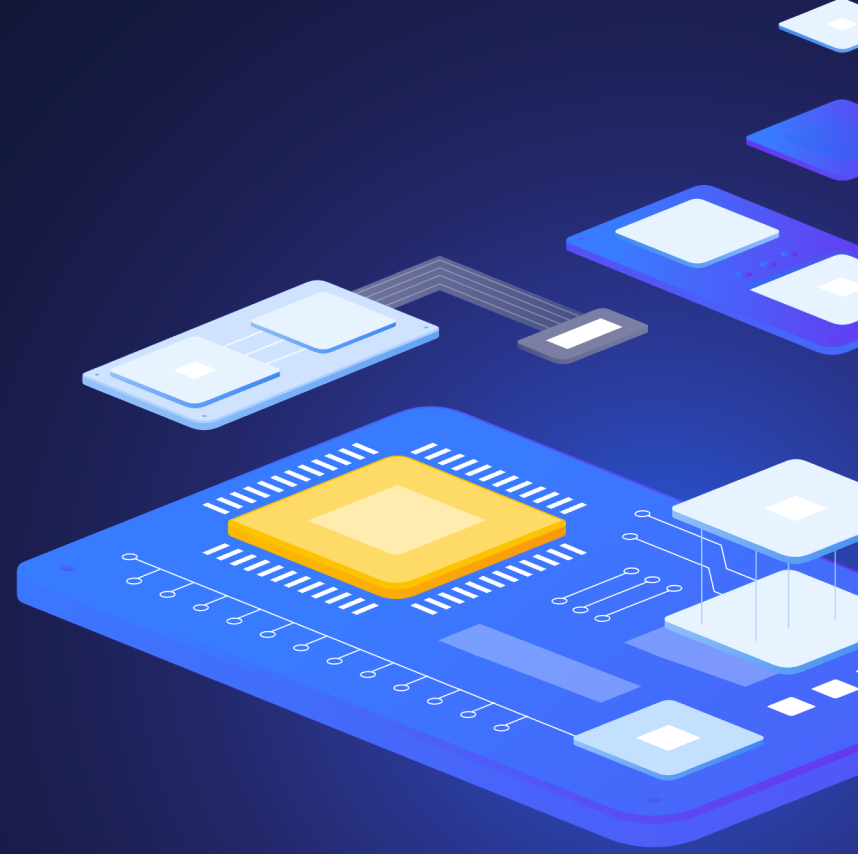
Docker



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Docker the daemon

- systemctl status docker
- unix:/var/run/docker.sock

```
$ curl --unix-socket /var/run/docker.sock http://localhost/images/json | jq
```

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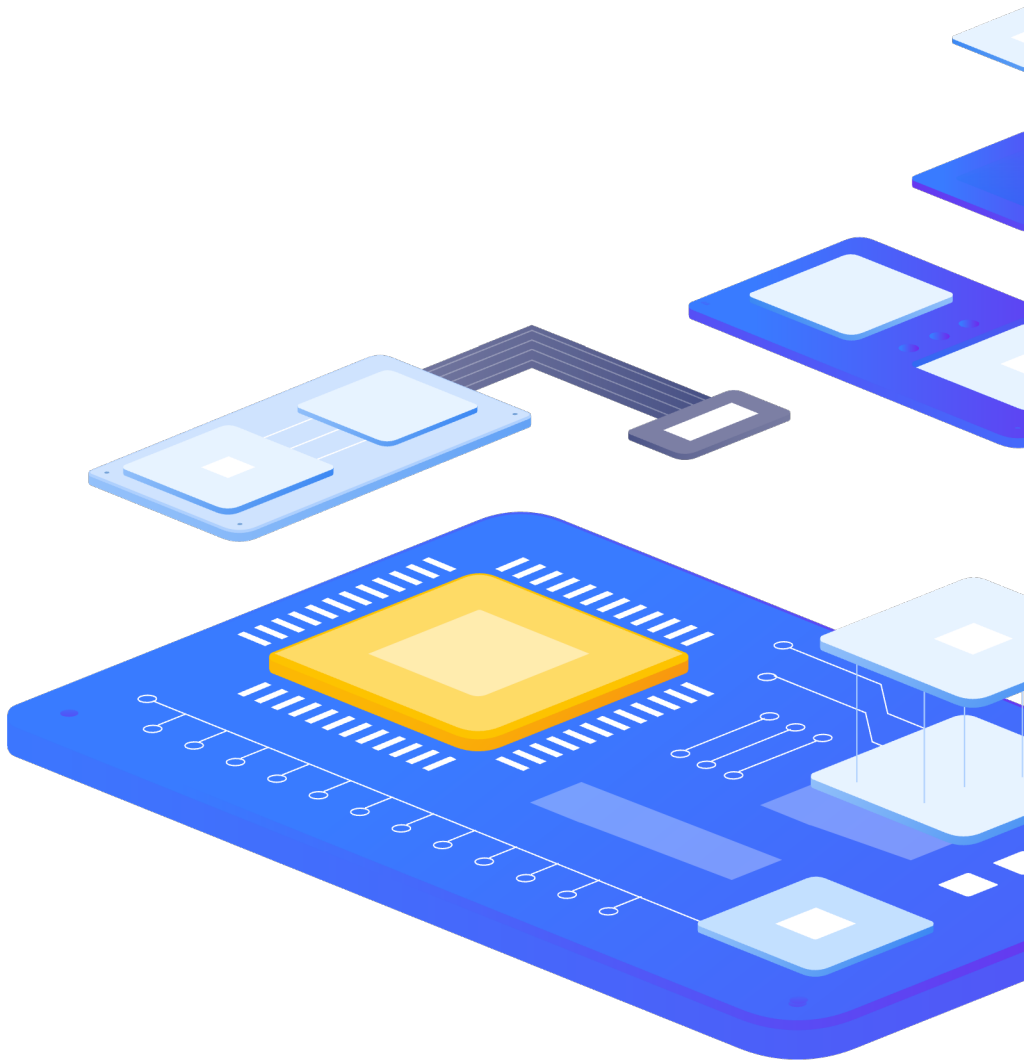
Zabbix docker monitoring

- **Docker by Zabbix agent 2 (template)**
- https://www.zabbix.com/integrations/docker

- **Notable Macros**
- {$DOCKER.LLD.FILTER.CONTAINER.MATCHES}
- {$DOCKER.LLD.FILTER.CONTAINER.NOT_MATCHES}
- {$DOCKER.LLD.FILTER.IMAGE.MATCHES}
- {$DOCKER.LLD.FILTER.IMAGE.MATCHES}

- **Deep dive**
- https://docs.docker.com/reference/api/engine/



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Zabbix docker monitoring

- **Built-in plugin**
- https://git.zabbix.com/projects/ZBX/repos/zabbix/browse/src/go/plugins/docker?at=refs%2Fheads%2Frelease%2F7.4

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Zabbix docker monitoring – do and don't

- **Do**

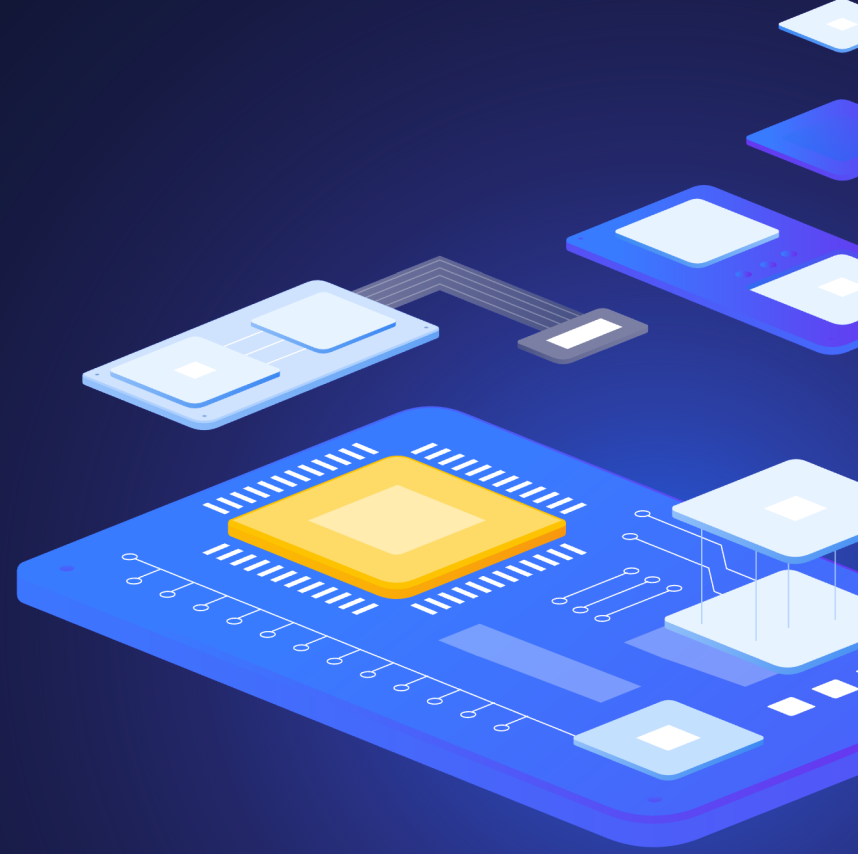
- Plugins.Docker.Endpoint unix:///var/run/docker.sock
- Plugins.Docker.Timeout global timeout
- usermod -aG docker zabbix

- **Don't**

- Run docker run without –name specified
- Your app becomes "bueish unicorn“
- Next time you‘ll run it will be “yellowish unicorn“
- Don't loose your Zabbix agent 2, it‘s doing the monitoring

2

Kubernetes (K8s)



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Kubernetes high level

- Container orchestration or "container OS"
- You tell it what to do not how to do, it‘s declarative
- Its complex, interconnected and mostly speaks API

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Kubernetes high level

- Control plane node(s) is the brain
- Worker node(s) is the muscle
- Everyting is a container ...except its not in K8s you say "Pod“

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Kubernetes high level - Pod

A Pod (as in a pod of whales or pea pod)

Group of one or more containers

With shared storage and network resources, and a specification for how to run the containers

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Kubernetes high level – Pod

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx
spec:
  containers:
  - name: nginx
    image: nginx:1.14.2
    ports:
    - containerPort: 80
```

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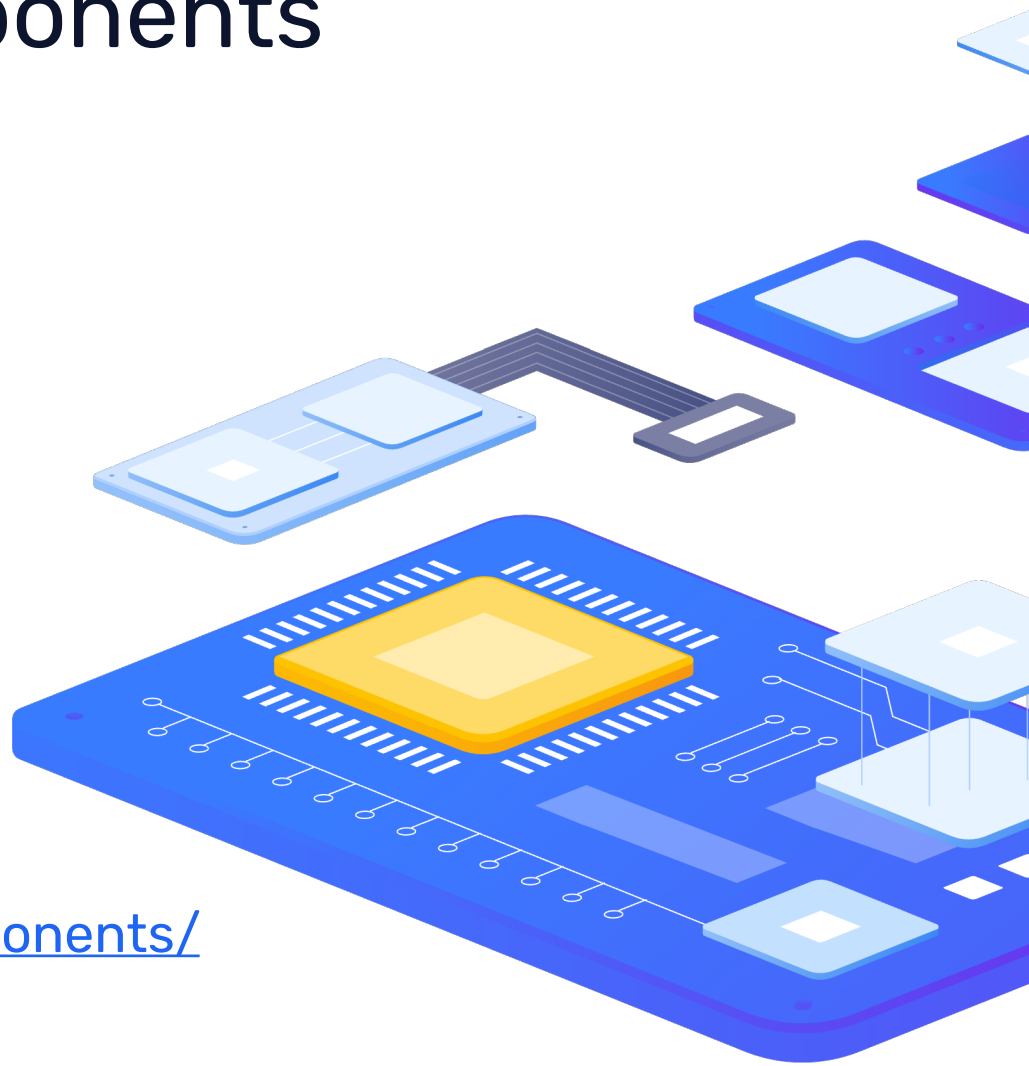
Kubernetes cluster / core components

- Node
- Kubelet
- API server
- Controller manager
- Scheduler
- Etcd
- Kube-proxy



- https://kubernetes.io/docs/concepts/overview/components/

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Monitoring key players

- kube-state-metrics
- https://github.com/kubernetes/kube-state-metrics

- K8s api server
- https://kubernetes.io/docs/concepts/overview/kubernetes-api/

- cAdvisor
- https://github.com/google/cadvisor

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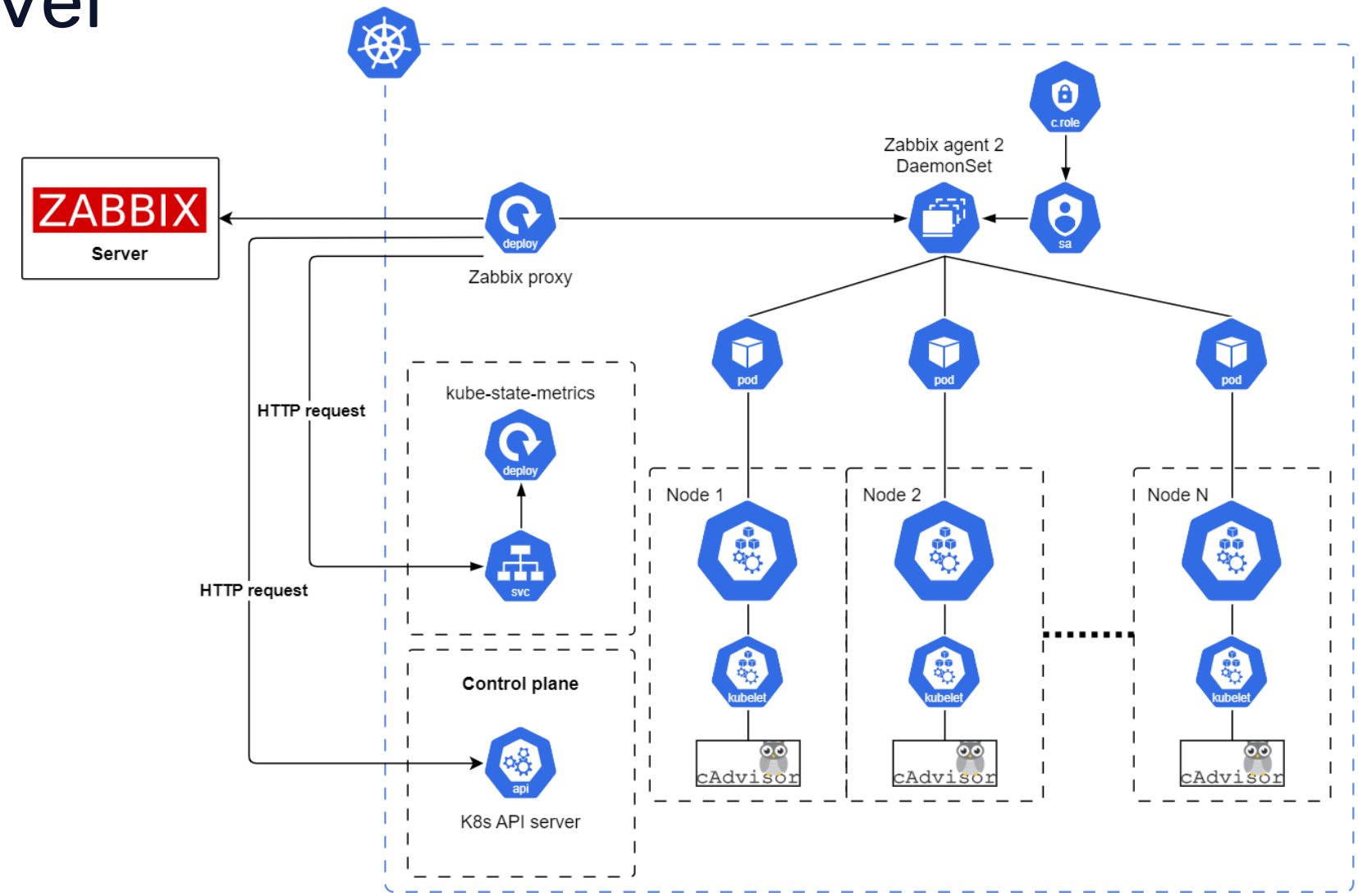
High level



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Zabbix Kubernetes monitoring

- How it works – templates
- https://www.zabbix.com/integrations/kubernetes

- Kubernetes nodes by HTTP
- Kubernetes cluster state by HTTP
- Kubernetes API server by HTTP
- Kubernetes Controller manager by HTTP
- Kubernetes Scheduler by HTTP
- Kubernetes kubelet by HTTP

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Zabbix Kubernetes monitoring

- Helm deployment
- https://git.zabbix.com/projects/ZT/repos/kubernetes-helm/browse?at=refs%2Fheads%2Frelease%2F7.4

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Zabbix Kubernetes monitoring

- K8s produces a lot of metrics

```
$ kubectl create deployment stress-test --image=registry.k8s.io/pause:3.9
$ kubectl scale deployment stress-test --replicas=2000
```

- PSK ?
- vote for https://support.zabbix.com/browse/ZBXNEXT-10482

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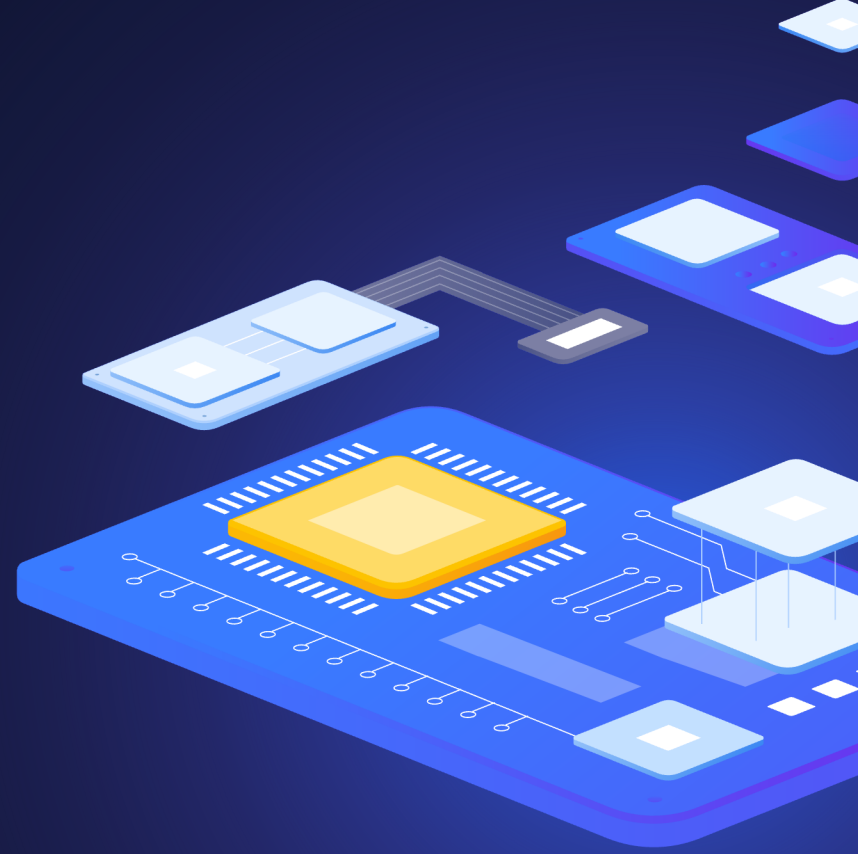
Demo



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Demo environment

- monitoring.lan
- docker.lan

- haproxy.lan
- control01.lan
- control02.lan
- control03.lan
- worker01.lan
- worker02.lan
- worker03.lan

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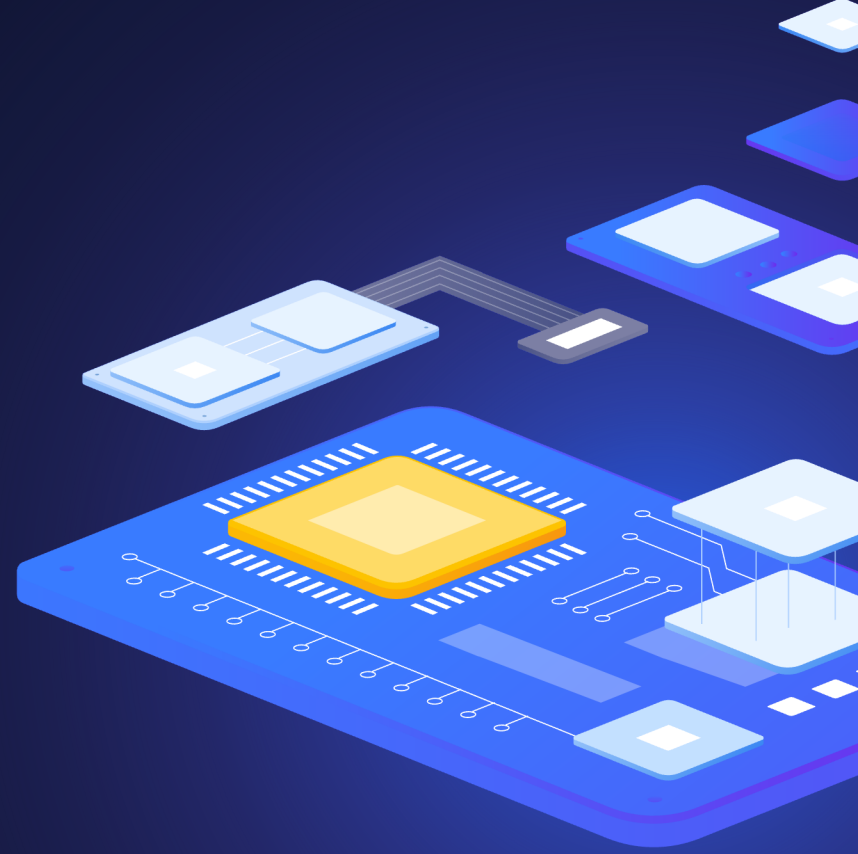
Questions?



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