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About Me

- Estu Fardani / tuanpembual
- openSUSE ID
- Cloud Engineer
- Deploy DevOps Culture and K8S

Agenda

- Why a hard way ? Challenge will face
- How to do?
- Design Production Grade
- Expand Design
- Install Stuff
- Testing
- Q&A

Why so hard ?

- Solved with Kubic, but ...
- Cloud provider with ISO upload is minority
- Or run openSUSE is limited (Leap 42.3, 15(?))
- Podman + Cri-O on Kubernetes Platform, where?

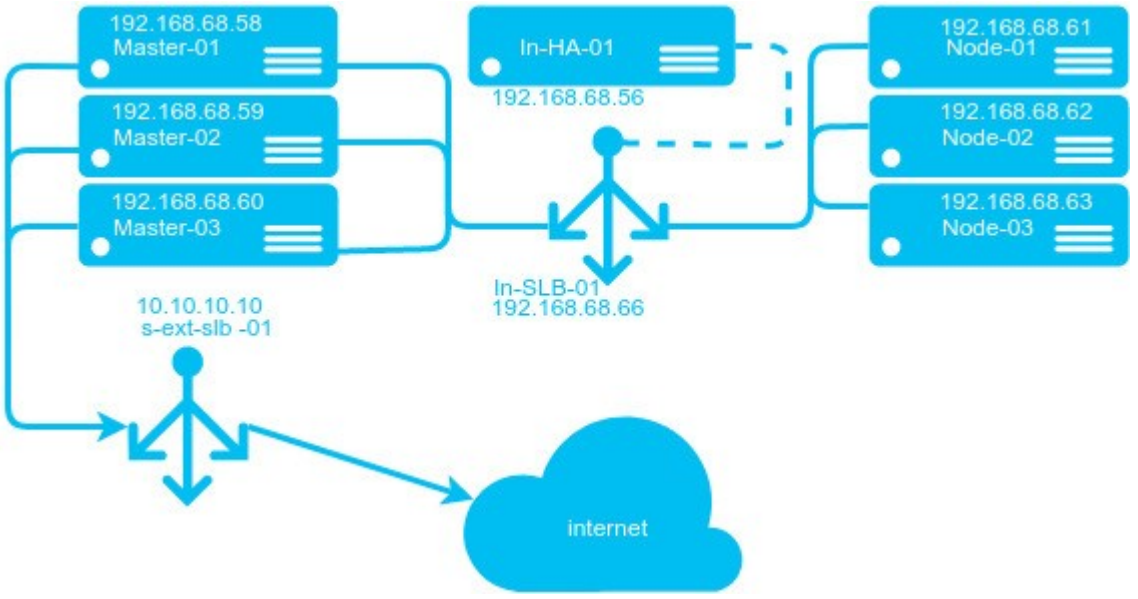
How to do?

- No openSUSE on AWS,GCP. But SLES available.
- Use Alibaba Cloud, with Leap 15.2
- Podman +Cri-O need kube 1.19, only on Tumbleweed
- Install Leap 15.2 and upgrade to Tumbleweed

Design Production Grade

- High Availability
- Self Healing
- Auto-scaling Support
- Isolation (DMZ)

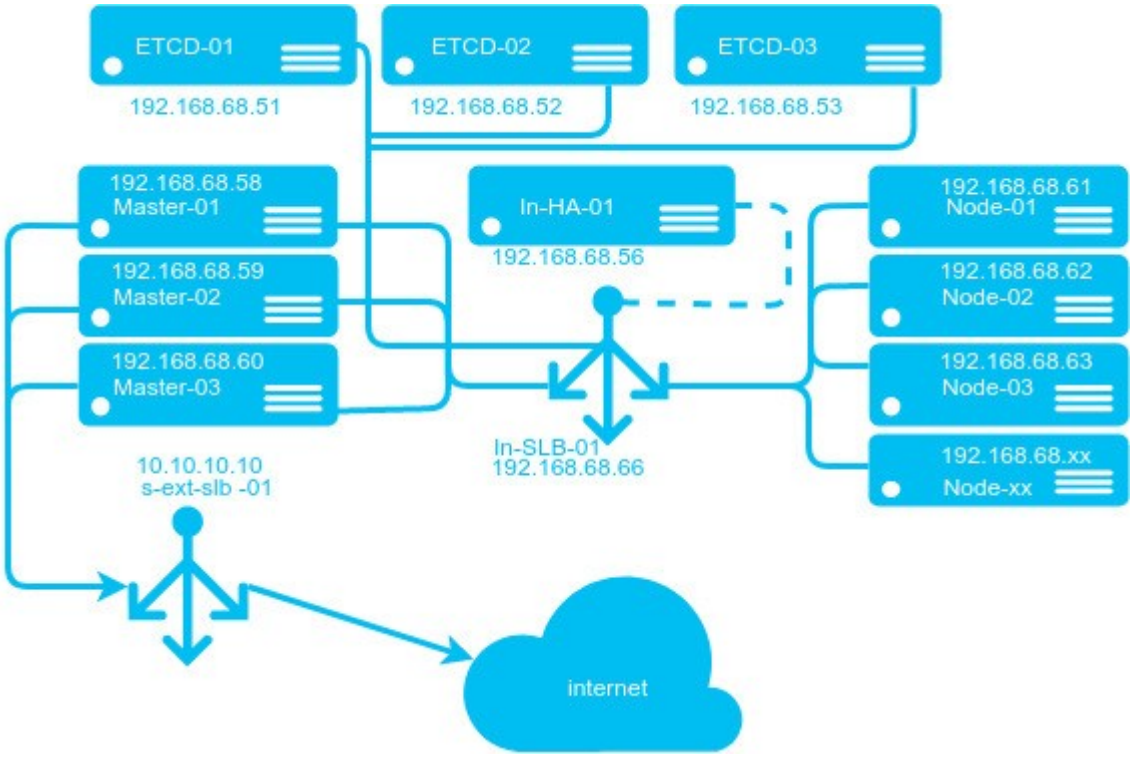
Design Production Grade



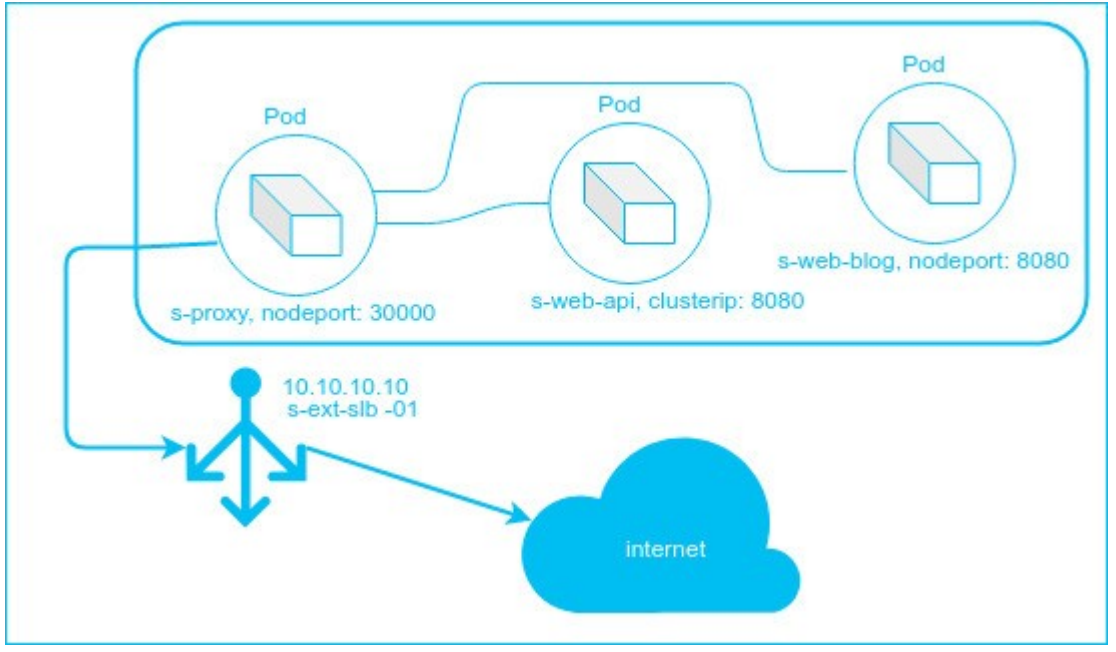
Expand Design

- Add more nodes
- Add more features
- Remove potential SPOF (single point of failure)

Expand Design



Load Balance and API Gateway



Install Stuff | Where is podman?

```
## Upgrade to Tumbleweed
$ zypper dup
$ modprobe overlay
$ modprobe br_netfilter
$ vim /etc/sysctl.conf
  net.ipv4.ip_forward = 1
  net.ipv4.conf.all.forwarding = 1
  net.bridge.bridge-nf-call-iptables = 1
$ sysctl -p
$ zypper in cri-o cri-tools kubernetes-kubeadm kubernetes-client podman
$ systemctl enable kubelet
$ systemctl start kubelet
$ kubeadm init #on master
$ kubectl apply -f calico.yml
$ kubeadm join #on node
```

Testing..

Create simple yaml for k8s as usual

- nginx testing
- service using nodeport

YAML

```
# deployment
spec:
    containers:
      - name: hello
        image: tuanpembual/hello
        imagePullPolicy: Always
        ports:
          - name: http
            containerPort: 80
            protocol: TCP
```

```
# service
spec:
  type: NodePort
  selector:
    app: hello
  ports:
    - name: http
      nodePort: 30000
      port: 80
      targetPort: 80
```

Open: http://147.139.169.40:30000/

References

- https://tuanpembual.wordpress.com/2019/12/23/high-availability-kubernetes-cluster-di-alibaba-cloud/
- https://tuanpembual.wordpress.com/2020/10/15/run-opensuse-kubic-like-k8s-podman-cri-o-on-alibaba-cloud/

Q & A

Thank You