

kubetest

Install

1. `git clone https://github.com/kubernetes/test-infra.git`
2. `cd test-infra && go install ./kubetest`
3. `cp $GOPATH/bin/kubetest /usr/bin/`

Testing against local clusters

No need to deploy local clusters

1. `cd $GOPATH/src/k8s.io/kubernetes`
2. `make WHAT=test/e2e/e2e.test GOGCFLAGS="-N -l" GOLDFLAGS=""`
3. `make ginkgo`
4. `export KUBECONFIG=/root/.kube/config`
5. `kubetest --test --test_args="--ginkgo.focus=PersistentVolumes" --provider=local`

```
kubetest --test --test_args="--ginkgo.focus=PersistentVolumes" --provider=local
2022/03/31 10:16:32 Warning: Couldn't find directory src/sigs.k8s.io/cloud-provider-azure under any of GOPATH /root/go, defaulting to /root/go/src/k8s.io/cloud-provider-azure
2022/03/31 10:16:32 main.go:284: Running kubetest version:
2022/03/31 10:16:32 process.go:153: Running: ./hack/e2e-internal/e2e-status.sh
Skeleton Provider: prepare-e2e not implemented
Client Version: version.Info{Major:"1", Minor:"22", GitVersion:"v1.22.7", GitCommit:"b56e432f2191419647a6a13b9f5867801850f969", GitTreeState:"clean", BuildDate:"2022-02-16T11:50:27Z", GoVersion:"go1.16.14", Compiler:"gc", Platform:"linux/amd64"}
Server Version: version.Info{Major:"1", Minor:"22", GitVersion:"v1.22.7", GitCommit:"b56e432f2191419647a6a13b9f5867801850f969", GitTreeState:"clean", BuildDate:"2022-02-16T11:43:55Z", GoVersion:"go1.16.14", Compiler:"gc", Platform:"linux/amd64"}
2022/03/31 10:16:32 process.go:155: Step './hack/e2e-internal/e2e-status.sh' finished in 113.303489ms
2022/03/31 10:16:32 process.go:153: Running: ./cluster/kubect1.sh --match-server-version=false version
2022/03/31 10:16:32 process.go:155: Step './cluster/kubect1.sh --match-server-version=false version' finished in 92.626573ms
2022/03/31 10:16:32 process.go:153: Running: ./hack/ginkgo-e2e.sh --ginkgo.focus=PersistentVolumes
which: no ginkgo in (/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/deeproute/.local/bin:/home/deeproute/bin:/root/bin:/usr/local/go/bin)
which: no e2e.test in (/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/deeproute/.local/bin:/home/deeproute/bin:/root/bin:/usr/local/go/bin)
Setting up for KUBERNETES_PROVIDER="local".
Skeleton Provider: prepare-e2e not implemented
KUBE_MASTER_IP:
KUBE_MASTER:
10331 10:16:32.728052 80689 e2e.go:1291 Starting e2e run "102f347f-6ce7-4058-901c-8dbf16c1d76" on Ginkgo node 1
^C2022/03/31 10:16:34 process.go:175: Killing ./hack/ginkgo-e2e.sh --ginkgo.focus=PersistentVolumes (-80615) after receiving signal
2022/03/31 10:16:34 process.go:155: Step './hack/ginkgo-e2e.sh --ginkgo.focus=PersistentVolumes' finished in 1.572287894s
2022/03/31 10:16:34 main.go:331: Something went wrong: encountered 1 errors: [error during ./hack/ginkgo-e2e.sh --ginkgo.focus=PersistentVolumes: signal: killed]
```

Bring up local clusters firstly

1. `cd $GOPATH/src/k8s.io/kubernetes`
2. `./hack/install-etcd.sh` (if already installed. To use: `export PATH="/root/go/src/k8s.io/kubernetes/third_party/etcd:${PATH}"`)
3. `sudo PATH=$PATH hack/local-up-cluster.sh`

```
logs:
/tmp/kube-apiserver.log
/tmp/kube-controller-manager.log

/tmp/kube-proxy.log
/tmp/kube-scheduler.log
/tmp/kubelet.log

To start using your cluster, you can open up another terminal/tab and run:

export KUBECONFIG=/var/run/kubernetes/admin.kubeconfig
cluster/kubect1.sh

Alternatively, you can write to the default kubeconfig:

export KUBERNETES_PROVIDER=local

cluster/kubect1.sh config set-cluster local --server=https://localhost:6443 --certificate-authority=/var/run/kubernetes/server-ca.crt
cluster/kubect1.sh config set-credentials myself --client-key=/var/run/kubernetes/client-admin.key --client-certificate=/var/run/kubernetes/client-admin.crt
cluster/kubect1.sh config set-context local --cluster=local --user=myself
cluster/kubect1.sh config use-context local
cluster/kubect1.sh
```

Open up another terminal/tab and run:

1. `export KUBECONFIG=/var/run/kubernetes/admin.kubeconfig`
2. `./cluster/kubect1.sh get nodes # To check the status of the node is running`

if the status of the node is not running, check the status of the coreDNS:

```
1. ./cluster/kubect1.sh get pods -n kube-system
```

if the status of the coreDNS is not running, describe the pod:

```
1. ./cluster/kubect1.sh describe pods coredns-8c79ffd8b-ngx8x -n kube-system
```

if the output like this:

```

Type      Reason              Age             From              Message
----      -
Warning   FailedScheduling    17m             default-scheduler no nodes available to schedule pods
Warning   FailedScheduling    17m             default-scheduler 0/1 nodes are available: 1 node(s) had taint {node.kubernetes.io/not-ready: }, that the pod didn't tolerate. preemption: 0/1 nodes are available: 1 Preemption is not helpful for scheduling.
Normal    Scheduled           17m             default-scheduler Successfully assigned kube-system/coredns-8c79ffd8b-ngx8x to 127.0.0.1
Warning   FailedCreatePodSandBox 17m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "37653b545d28b3d277a169c5ff52c13c718c518d85580bdc26c7f6a72a8b16": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 16m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "e6f9cb0eb532a1c4c5e45f30369d55578037517d221931061ce7168c6f34a": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 16m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "a3c6b55f7dc2bafa3f87c2846389d81aaefec120c11acd8cdfde7f9d119883d": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 16m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "3be58766875b3dd9a0bea8a212bdd337365febb17bf9d6bc2151261c3d3b1b1": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 16m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "83c3bc28f4839b32eb68a7127e29bda2148dc985b7fb76dd96d0e3d0c6ebb09b": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 16m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "92a0106f4f1da5f6ebdd69c7a09341072af5000bb914dad25b984351835fa7ed": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 15m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "0459c95a2f43bf58e49299fc2eafbbc205e103c2e5c5d920fb0fc8b6bd9ef130": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 15m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "2d06820d5e2628439bfcc1b91cc3a2bc6a8c71a89ff2d35a0a5067f393c04d": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 15m             kubelet           Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "9b68976951273e50d53b0d99a72be4228ff1719498dce04409305b949857f28e": failed to find plugin "loopback" in path [/opt/cni/bin]
Warning   FailedCreatePodSandBox 11m (x17 over 15m) kubelet           (combined from similar events): Failed to create pod sandbox: rpc error: code = Unknown desc = failed to setup network for sandbox "eb501aaff338f7151a8e1f6f5cd2406b79e84f96bcc172f72bcc4e3ff99ec45": failed to find plugin "loopback" in path [/opt/cni/bin]
```

we need to install cni:

```
1. mkdir $GOPATH/src/github.com/containernetworking
2. git clone https://github.com/containernetworking/plugins.git (change branch that we needed)
3. cd $GOPATH/src/github.com/containernetworking/plugins
4. ./build_linux.sh
5. cp bin/* /opt/cni/bin/
```

run e2e test:

```
1. make WHAT=test/e2e/e2e.test GOGCFLAGS="-N -l" GOLDFLAGS=""
2. make ginkgo
3. kubetest --test --test_args="--ginkgo.focus=PersistentVolumes" --provider=local
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