Etcd3节点故障恢复

K8s-master01虚拟化故障导致虚拟机不能启动，现在开一台新的虚拟机

K8s-master01 节点启动etcd发现以下故障

[root@k8s-master01 etcd]# /usr/local/bin/etcd --config-file=/etc/etcd/etcd.config.yml

[WARNING] Deprecated '--logger=capnslog' flag is set; use '--logger=zap' flag instead

2021-06-30 09:14:09.510234 I | etcdmain: Loading server configuration from "/etc/etcd/etcd.config.yml". Other configuration command line flags and environment variables will be ignored if provided.

2021-06-30 09:14:09.510295 I | etcdmain: etcd Version: 3.4.12

2021-06-30 09:14:09.510302 I | etcdmain: Git SHA: 17cef6e3e

2021-06-30 09:14:09.510310 I | etcdmain: Go Version: go1.12.17

2021-06-30 09:14:09.510317 I | etcdmain: Go OS/Arch: linux/amd64

2021-06-30 09:14:09.510324 I | etcdmain: setting maximum number of CPUs to 4, total number of available CPUs i s 4

2021-06-30 09:14:09.510386 N | etcdmain: the server is already initialized as member before, starting as etcd member...

[WARNING] Deprecated '--logger=capnslog' flag is set; use '--logger=zap' flag instead

2021-06-30 09:14:09.510415 W | embed: ignoring peer auto TLS since certs given

2021-06-30 09:14:09.510433 I | embed: peerTLS: cert = /etc/kubernetes/pki/etcd/etcd.pem, key = /etc/kubernetes /pki/etcd/etcd-key.pem, trusted-ca = /etc/kubernetes/pki/etcd/etcd-ca.pem, client-cert-auth = false, crl-file =

2021-06-30 09:14:09.511138 W | embed: ignoring client auto TLS since certs given

2021-06-30 09:14:09.511156 I | embed: pprof is enabled under /debug/pprof

2021-06-30 09:14:09.511166 W | embed: The scheme of client url http://127.0.0.1:2379 is HTTP while peer key/ce rt files are presented. Ignored key/cert files.

2021-06-30 09:14:09.511173 W | embed: The scheme of client url http://127.0.0.1:2379 is HTTP while client cert auth (--client-cert-auth) is enabled. Ignored client cert auth for this url.

2021-06-30 09:14:09.511275 I | embed: name = k8s-master01

2021-06-30 09:14:09.511286 I | embed: data dir = /var/lib/etcd

2021-06-30 09:14:09.511294 I | embed: member dir = /var/lib/etcd/member

2021-06-30 09:14:09.511302 I | embed: dedicated WAL dir = /var/lib/etcd/wal

2021-06-30 09:14:09.511309 I | embed: heartbeat = 100ms

2021-06-30 09:14:09.511315 I | embed: election = 1000ms

2021-06-30 09:14:09.511320 I | embed: snapshot count = 5000

2021-06-30 09:14:09.511330 I | embed: advertise client URLs = https://172.0.6.141:2379

2021-06-30 09:14:09.525019 C | etcdmain: member 70df3667574de84c has already been bootstrapped

1. 关闭keepalived和haproxy，让worker计算不能访问到kube-apiserver

Systemctl stop keeaplived;Systemctl start haproxy

1. 在可用的两台etcd节点中备份一份数据出来

[root@k8s-master02 etcd]# cat backup.sh

#!/bin/bash

#

BACKUP\_DIR=/opt/etcd\_backup/

find ${BACKUP\_DIR} -type f -mtime +30 | xargs rm -f

export ETCDCTL\_API=3

/usr/local/bin/etcdctl --cacert=/etc/etcd/ssl/etcd-ca.pem --cert=/etc/etcd/ssl/etcd.pem --key=/etc/etcd/ssl/etcd-key.pem --endpoints="https://172.0.6.142:2379" snapshot save /opt/etcd\_backup/$(date +%F-%H-%M).db

[root@k8s-master02 etcd]# bash backup.sh

{"level":"info","ts":1625017400.606784,"caller":"snapshot/v3\_snapshot.go:119","msg":"created temporary db file","path":"/opt/etcd\_backup/2021-06-30-09-43.db.part"}

{"level":"info","ts":"2021-06-30T09:43:20.616+0800","caller":"clientv3/maintenance.go:200","msg":"opened snapshot stream; downloading"}

{"level":"info","ts":1625017400.6165988,"caller":"snapshot/v3\_snapshot.go:127","msg":"fetching snapshot","endpoint":"https://172.0.6.142:2379"}

{"level":"info","ts":"2021-06-30T09:43:22.005+0800","caller":"clientv3/maintenance.go:208","msg":"completed snapshot read; closing"}

{"level":"info","ts":1625017402.6059985,"caller":"snapshot/v3\_snapshot.go:142","msg":"fetched snapshot","endpoint":"https://172.0.6.142:2379","size":"87 MB","took":1.999141722}

{"level":"info","ts":1625017402.606141,"caller":"snapshot/v3\_snapshot.go:152","msg":"saved","path":"/opt/etcd\_backup/2021-06-30-09-43.db"}

Snapshot saved at /opt/etcd\_backup/2021-06-30-09-43.db

1. 拷贝到etcd备份数据三个节点/root目录

scp /opt/etcd\_backup/2021-06-30-09-43.db [root@172.0.6.141:/root](mailto:root@172.0.6.141:/root)

scp /opt/etcd\_backup/2021-06-30-09-43.db [root@172.0.6.142:/root](mailto:root@172.0.6.141:/root)

scp /opt/etcd\_backup/2021-06-30-09-43.db [root@172.0.6.143:/root](mailto:root@172.0.6.141:/root)

1. 关闭两个可用etcd节点，同时将数据移走

systemctl stop etcd

mkdir /root/etcd\_bak

mv /var/lib/etcd/\* /root/etcd\_bak

1. 恢复数据到/var/lib/etcd/default

节点1

export ETCDCTL\_API=3

/usr/local/bin/etcdctl --cacert=/etc/kubernetes/pki/etcd/etcd-ca.pem --cert=/etc/kubernetes/pki/etcd/etcd.pem --key=/etc/kubernetes/pki/etcd-key.pem --endpoints="https://172.0.6.141:2379,https://172.0.6.142:2379,https://172.0.6.143:2379" snapshot restore /root/2021-06-30-09-26.db --data-dir=/var/lib/etcd/default --name k8s-master01 --initial-cluster "k8s-master01=https://172.0.6.141:2380,k8s-master02=https://172.0.6.142:2380,k8s-master03=https://172.0.6.143:2380" --initial-cluster-token etcd-k8s-cluster --initial-advertise-peer-urls "https://172.0.6.141:2380"

节点2

export ETCDCTL\_API=3

/usr/local/bin/etcdctl --cacert=/etc/kubernetes/pki/etcd/etcd-ca.pem --cert=/etc/kubernetes/pki/etcd/etcd.pem --key=/etc/kubernetes/pki/etcd-key.pem --endpoints="https://172.0.6.141:2379,https://172.0.6.142:2379,https://172.0.6.143:2379" snapshot restore /root/2021-06-30-09-26.db --data-dir=/var/lib/etcd/default --name k8s-master02 --initial-cluster "k8s-master01=https://172.0.6.141:2380,k8s-master02=https://172.0.6.142:2380,k8s-master03=https://172.0.6.143:2380" --initial-cluster-token etcd-k8s-cluster --initial-advertise-peer-urls "https://172.0.6.142:2380"

节点3

export ETCDCTL\_API=3

/usr/local/bin/etcdctl --cacert=/etc/kubernetes/pki/etcd/etcd-ca.pem --cert=/etc/kubernetes/pki/etcd/etcd.pem --key=/etc/kubernetes/pki/etcd-key.pem --endpoints="https://172.0.6.141:2379,https://172.0.6.142:2379,https://172.0.6.143:2379" snapshot restore /root/2021-06-30-09-26.db --data-dir=/var/lib/etcd/default --name k8s-master03 --initial-cluster "k8s-master01=https://172.0.6.141:2380,k8s-master02=https://172.0.6.142:2380,k8s-master03=https://172.0.6.143:2380" --initial-cluster-token etcd-k8s-cluster --initial-advertise-peer-urls "https://172.0.6.143:2380"

1. 修改配置文件数据到/var/lib/etcd/default

data-dir: /var/lib/etcd/default

wal-dir: /var/lib/etcd/default/wal

1. 启动三个节点的etcd

systemctl start etcd

(8)检查etcd节点的健康

export ETCDCTL\_API=3

etcdctl --endpoints="172.0.6.141:2379,172.0.6.142:2379,172.0.6.143:2379" --cacert=/etc/kubernetes/pki/etcd/etcd-ca.pem --cert=/etc/kubernetes/pki/etcd/etcd.pem --key=/etc/kubernetes/pki/etcd/etcd-key.pem endpoint status --write-out=table

1. 启动haproxy启动keepalived

systemctl start haproxy

systemctl start keepalived