

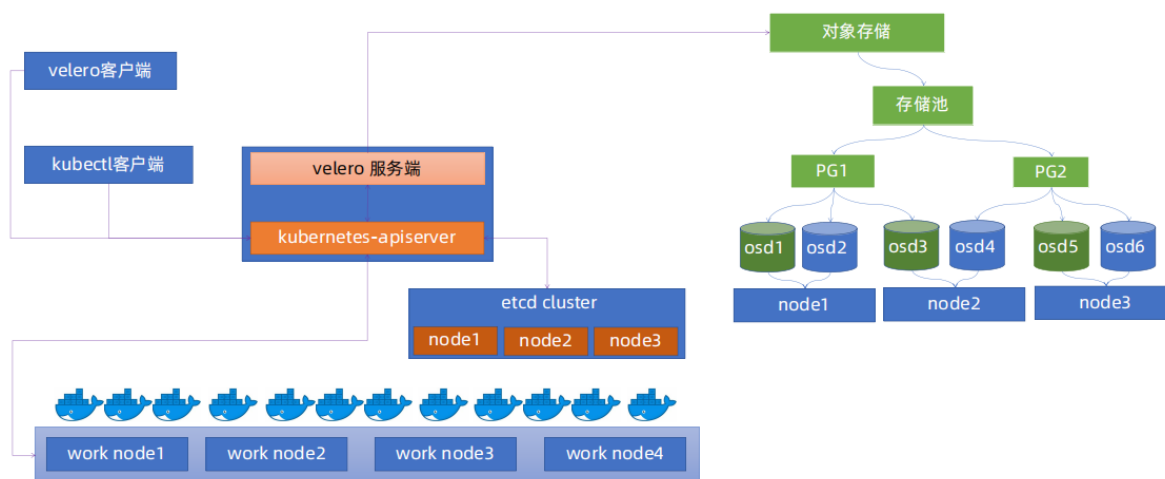
1、Velero简介

Velero 是vmware开源的一个云原生的灾难恢复和迁移工具，它本身也是开源的,采用Go语言编写，可以安全的备份、恢复和迁移Kubernetes集群资源数据；官网<https://velero.io/>。Velero 是西班牙语意思是帆船，非常符合Kubernetes社区的命名风格，Velero的开发公司Heptio，已被VMware收购。Velero 支持标准的K8S集群，既可以是私有云平台也可以是公有云，除了灾备之外它还能做资源移转，支持把容器应用从一个集群迁移到另一个集群。Velero 的工作方式就是把kubernetes中的数据备份到对象存储以实现高可用和持久化，默认的备份保存时间为720小时，并在需要的时候进行下载和恢复。

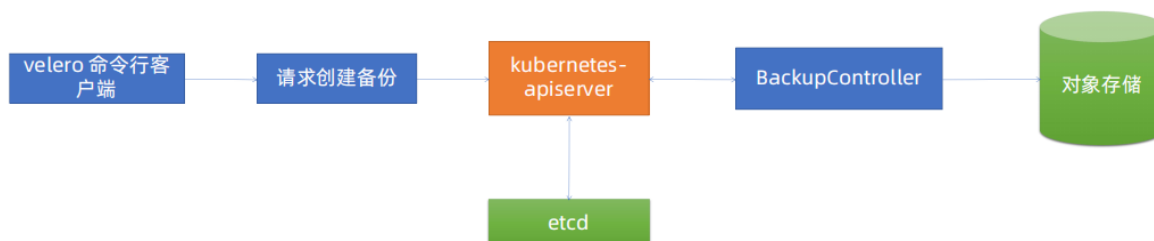
2、Velero与etcd快照备份的区别

- etcd 快照是全局完成备份(类似于MySQL全部备份),即使需要恢复一个资源对象(类似于只恢复MySQL的一个库),但是也需要做全局恢复到备份的状态(类似于MySQL的全库恢复),即会影响其它namespace中pod运行服务(类似于会影响MySQL其它数据库的数据)。
- Velero可以有针对性的备份,比如按照namespace单独备份、只备份单独的资源对象等,在恢复的时候可以根据备份只恢复单独的namespace或资源对象，而不影响其它namespace中pod运行服务。
- velero支持ceph、oss等对象存储，etcd 快照是一个为本地文件。
- velero支持任务计划实现周期备份，但etcd 快照也可以基于cronjob实现。
- velero支持对AWS EBS创建快照及还原<https://www.qcloudx.com/velero-for-kubernetes-backup-restore-stateful-workloads-with-aws-ebs-snapshots/>
<https://github.com/vmware-tanzu/velero-plugin-for-aws>

3、velero整体架构



4、velero备份流程



Velero 客户端调用Kubernetes API Server创建Backup任务。Backup 控制器基于watch 机制通过API Server获取到备份任务。Backup 控制器开始执行备份动作，其会通过请求API Server获取需要备份的数据。Backup 控制器将获取到的数据备份到指定的对象存储server端。

5、对象存储minio部署

5.1、创建数据目录

```
root@harbor:~# mkdir -p /data/minio
```

5.2、创建minio容器

下载镜像

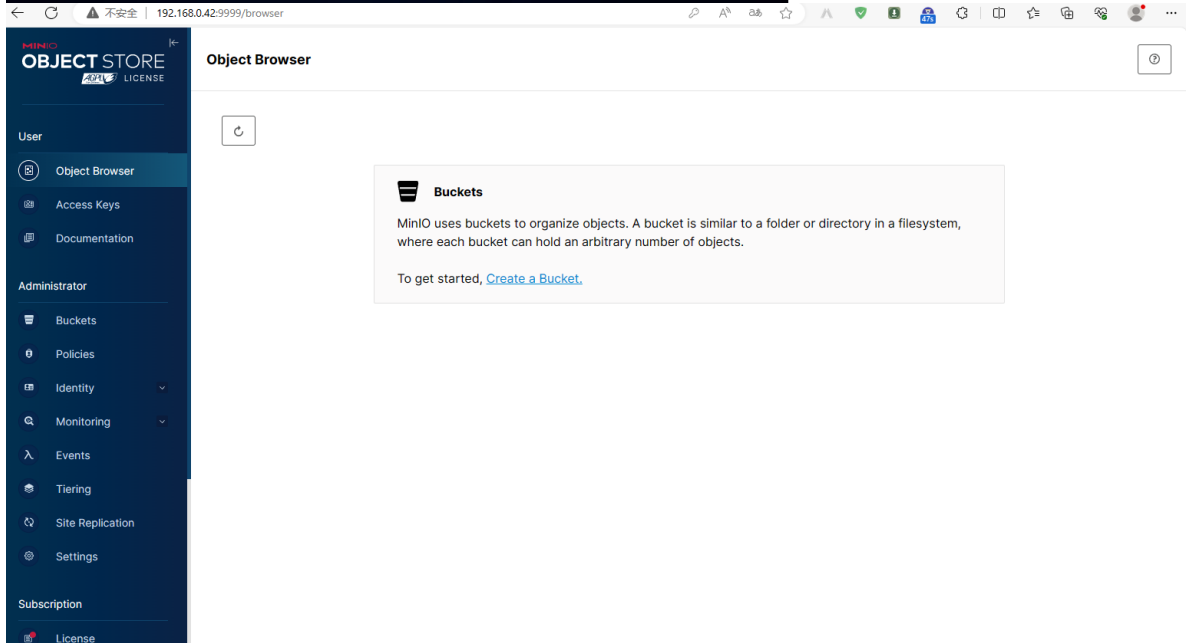
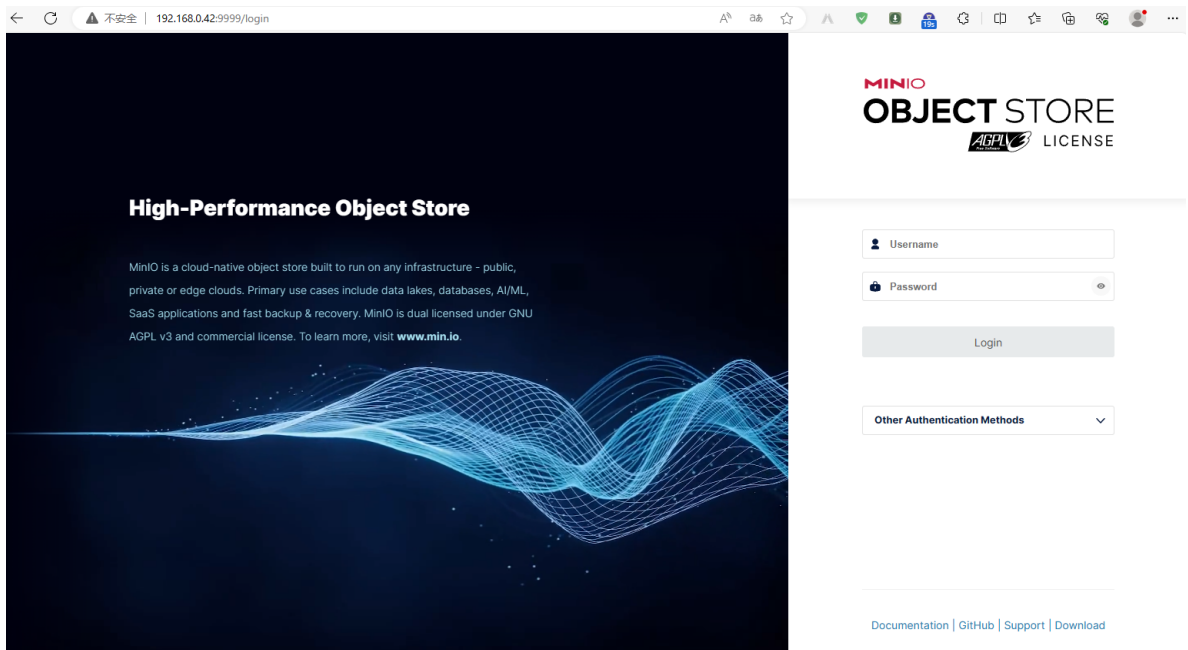
```
root@harbor:~# docker pull minio/minio:RELEASE.2023-08-31T15-31-16Z
RELEASE.2023-08-31T15-31-16Z: Pulling from minio/minio
0c10cd59e10e: Pull complete
b55c0ddd1333: Pull complete
4aade59ba7c6: Pull complete
7c45df1e40d6: Pull complete
adedf83b12e0: Pull complete
bc9f33183b0c: Pull complete
Digest: sha256:76868af456548aab229762d726271b0bf8604a500416b3e9bdc576940742cda
Status: Downloaded newer image for minio/minio:RELEASE.2023-08-31T15-31-16Z
docker.io/minio/minio:RELEASE.2023-08-31T15-31-16Z
root@harbor:~#
```

创建minio容器

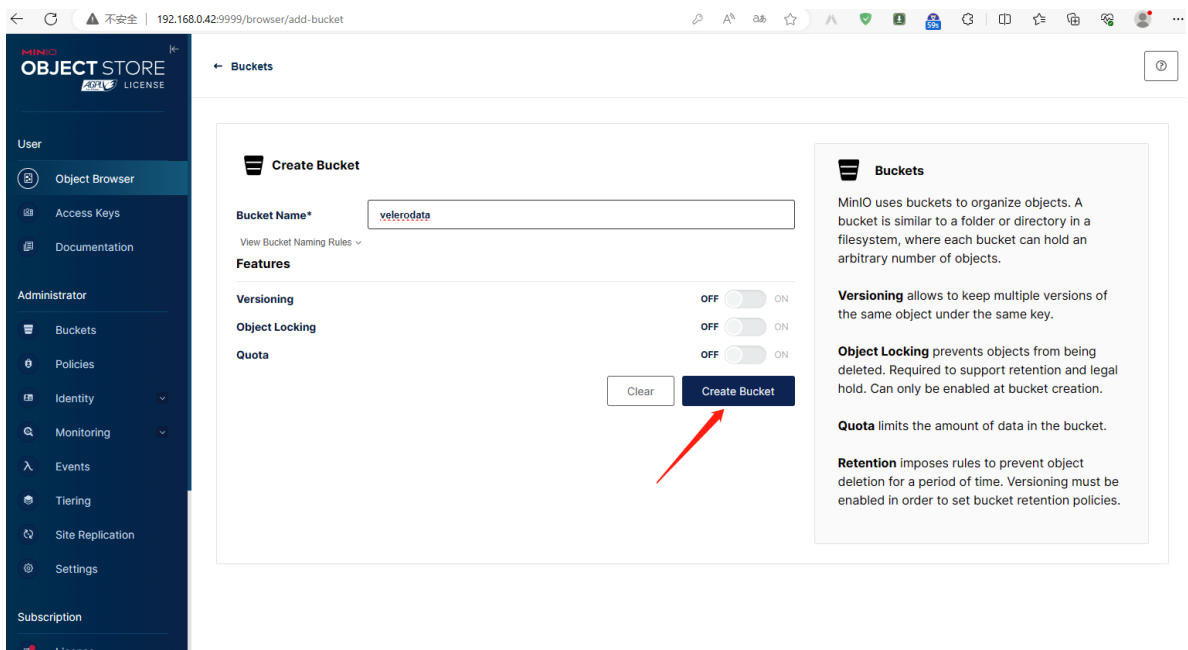
```
root@harbor:~# docker run --name minio \
> -p 9000:9000 \
> -p 9999:9999 \
> -d --restart=always \
> -e "MINIO_ROOT_USER=admin" \
> -e "MINIO_ROOT_PASSWORD=12345678" \
> -v /data/minio/data:/data \
> minio/minio:RELEASE.2023-08-31T15-31-16Z server /data \
> --console-address '0.0.0.0:9999'
ba5e511da5f30a17614d719979e28066788ca7520d87c67077a38389e70423f1
root@harbor:~#
```

如果不指定,则默认用户名与密码为 minioadmin/minioadmin,可以通过环境变量自定义 (MINIO_ROOT_USER来指定用户名, MINIO_ROOT_PASSWORD来指定用户名对应的密码);

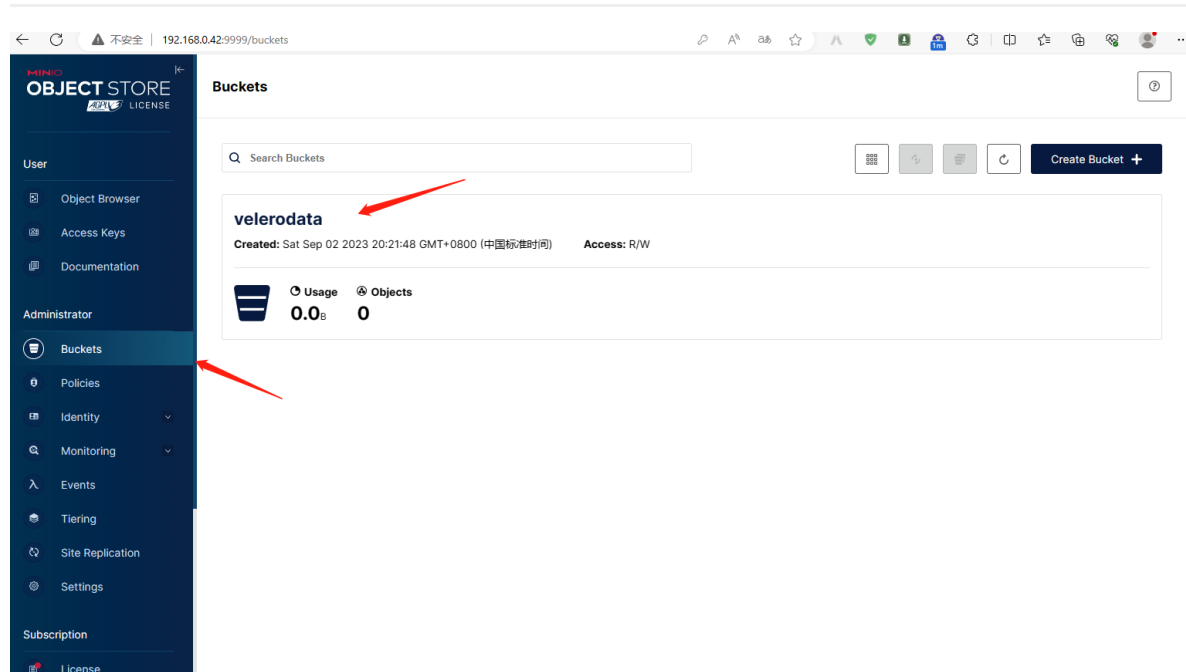
5.3、minio web界面登录



5.4、minio 创建bucket



5.5、minio 验证bucket



6、在master节点部署velero

6.1、下载velero客户端工具

下载velero客户端工具

```
root@k8s-master01:/usr/local/src# wget https://github.com/vmware-tanzu/velero/releases/download/v1.11.1/velero-v1.11.1-linux-amd64.tar.gz
```

解压压缩包

```
root@k8s-master01:/usr/local/src# ll
total 99344
drwxr-xr-x  3 root root    4096 Sep  2 12:38 ./
drwxr-xr-x 10 root root    4096 Feb 17  2023 ../
drwxr-xr-x  2 root root    4096 Oct 21  2015 bin/
-rw-r--r--  1 root root 64845365 May 31 13:21 buildkit-v0.11.6.linux-
amd64.tar.gz
-rw-r--r--  1 root root 36864459 Sep  2 12:31 velero-v1.11.1-linux-amd64.tar.gz
root@k8s-master01:/usr/local/src# tar xf velero-v1.11.1-linux-amd64.tar.gz
root@k8s-master01:/usr/local/src# ll
total 99348
drwxr-xr-x  4 root root    4096 Sep  2 12:39 ./
drwxr-xr-x 10 root root    4096 Feb 17  2023 ../
drwxr-xr-x  2 root root    4096 Oct 21  2015 bin/
-rw-r--r--  1 root root 64845365 May 31 13:21 buildkit-v0.11.6.linux-
amd64.tar.gz
drwxr-xr-x  3 root root    4096 Sep  2 12:39 velero-v1.11.1-linux-amd64/
-rw-r--r--  1 root root 36864459 Sep  2 12:31 velero-v1.11.1-linux-amd64.tar.gz
root@k8s-master01:/usr/local/src#
```

将velero二进制文件移动至/usr/local/bin

```

root@k8s-master01:/usr/local/src# ll velero-v1.11.1-linux-amd64
total 83780
drwxr-xr-x 3 root root    4096 Sep  2 12:39 ./
drwxr-xr-x 4 root root    4096 Sep  2 12:39 ../
-rw-r--r-- 1 root root 10255 Dec 13 2022 LICENSE
drwxr-xr-x 4 root root    4096 Sep  2 12:39 examples/
-rwxr-xr-x 1 root root 85765416 Jul 25 08:43 velero*
root@k8s-master01:/usr/local/src# cp velero-v1.11.1-linux-amd64/velero
/usr/local/bin/
root@k8s-master01:/usr/local/src#

```

验证velero命令是否可执行?

```

root@k8s-master01:/usr/local/src# velero --help
Velero is a tool for managing disaster recovery, specifically for Kubernetes
cluster resources. It provides a simple, configurable, and operationally robust
way to back up your application state and associated data.

```

If you're familiar with kubectl, Velero supports a similar model, allowing you to execute commands such as 'velero get backup' and 'velero create schedule'. The same operations can also be performed as 'velero backup get' and 'velero schedule create'.

Usage:
velero [command]

Available Commands:

backup	work with backups
backup-location	work with backup storage locations
bug	Report a velero bug
client	velero client related commands
completion	Generate completion script
create	Create velero resources
debug	Generate debug bundle
delete	Delete velero resources
describe	Describe velero resources
get	Get velero resources
help	Help about any command
install	Install velero
plugin	work with plugins
repo	work with repositories
restore	work with restores
schedule	work with schedules
snapshot-location	work with snapshot locations
uninstall	Uninstall velero
version	Print the velero version and associated image

Flags:

<code>--add_dir_header</code>	If <code>true</code> , adds the file directory to the header of the log messages
<code>--alsologtostderr</code>	log to standard error as well as files (no effect when <code>-logtostderr=true</code>)

```

--colorized optionalBool      Show colored output in TTY. Overrides
'colorized' value from $HOME/.config/velero/config.json if present. Enabled by
default
--features stringArray        Comma-separated list of features to
enable for this Velero process. Combines with values from
$HOME/.config/velero/config.json if present
-h, --help                    help for velero
--kubeconfig string           Path to the kubeconfig file to use to
talk to the Kubernetes apiserver. If unset, try the environment variable
KUBECONFIG, as well as in-cluster configuration
--kubecorecontext string       The context to use to talk to the
Kubernetes apiserver. If unset defaults to whatever your current-context is
(kubectl config current-context)
--log-backtrace-at traceLocation  when logging hits line file:N, emit a
stack trace (default :0)
--log-dir string              If non-empty, write log files in this
directory (no effect when -logtostderr=true)
--log-file string             If non-empty, use this log file (no
effect when -logtostderr=true)
--log-file-max-size uint       Defines the maximum size a log file can
grow to (no effect when -logtostderr=true). Unit is megabytes. If the value is
0, the maximum file size is unlimited. (default 1800)
--logtostderr                 log to standard error instead of files
(default true)
-n, --namespace string        The namespace in which velero should
operate (default "velero")
--one-output                  If true, only write logs to their
native severity level (vs also writing to each lower severity level; no effect
when -logtostderr=true)
--skip-headers                If true, avoid header prefixes in the
log messages
--skip-log-headers            If true, avoid headers when opening log
files (no effect when -logtostderr=true)
--stderrthreshold severity     logs at or above this threshold go to
stderr when writing to files and stderr (no effect when -logtostderr=true or -
alsologtostderr=false) (default 2)
-v, --v Level                 number for the log level verbosity
--vmodule moduleSpec          comma-separated list of pattern=N
settings for file-filtered logging

Use "velero [command] --help" for more information about a command.
root@k8s-master01:/usr/local/src#

```

能够正常执行velero命令说明velero客户端工具就准备就绪；

6.2、配置velero认证环境

6.2.1、创建velero工作目录

```

root@k8s-master01:/usr/local/src# mkdir /data/velero -p
root@k8s-master01:/usr/local/src# cd /data/velero/
root@k8s-master01:/data/velero# ll
total 8
drwxr-xr-x 2 root root 4096 Sep  2 12:42 ./
drwxr-xr-x 3 root root 4096 Sep  2 12:42 ../
root@k8s-master01:/data/velero#

```

6.2.2、创建访问minio的认证文件

```
root@k8s-master01:/data/velero# ll
total 12
drwxr-xr-x 2 root root 4096 Sep  2 12:43 ./
drwxr-xr-x 3 root root 4096 Sep  2 12:42 ../
-rw-r--r-- 1 root root   69 Sep  2 12:43 velero-auth.txt
root@k8s-master01:/data/velero# cat velero-auth.txt
[default]
aws_access_key_id = admin
aws_secret_access_key = 12345678
root@k8s-master01:/data/velero#
```

这个velero-auth.txt文件中记录了访问对象存储minio的用户名和密码；其中aws_access_key_id这个变量用来指定对象存储用户名aws_secret_access_key变量用来指定密码；这两个变量是固定的不能随意改动；

6.2.3、准备user-csr文件

```
root@k8s-master01:/data/velero# ll
total 16
drwxr-xr-x 2 root root 4096 Sep  2 12:48 ./
drwxr-xr-x 3 root root 4096 Sep  2 12:42 ../
-rw-r--r-- 1 root root  222 Sep  2 12:48 awsuser-csr.json
-rw-r--r-- 1 root root   69 Sep  2 12:43 velero-auth.txt
root@k8s-master01:/data/velero# cat awsuser-csr.json
{
  "CN": "awsuser",
  "hosts": [],
  "key": {
    "algo": "rsa",
    "size": 2048
  },
  "names": [
    {
      "C": "CN",
      "ST": "SiChuan",
      "L": "GuangYuan",
      "O": "k8s",
      "OU": "System"
    }
  ]
}
```

该文件用于制作证书所需信息；

6.2.4、准备证书签发环境

安装证书签发工具

```
root@k8s-master01:/data/velero# apt install golang-cfssl
```

下载cfssl

```
root@k8s-master01:/data/velero# wget
https://github.com/cloudflare/cfssl/releases/download/v1.6.1/cfssl_1.6.1_linux_a
md64
```

下载cfssljson

```
root@k8s-master01:/data/velero# wget
https://github.com/cloudflare/cfssl/releases/download/v1.6.1/cfssljson_1.6.1_lin
ux_amd64
```

cfssl-certinfo

```
root@k8s-master01:/data/velero# wget
https://github.com/cloudflare/cfssl/releases/download/v1.6.1/cfssl-
certinfo_1.6.1_linux_amd64
```

重命名

```
root@k8s-master01:/data/velero# ll
total 40248
drwxr-xr-x 2 root root    4096 Sep  2 12:57 ./
drwxr-xr-x 3 root root    4096 Sep  2 12:42 ../
-rw-r--r-- 1 root root     222 Sep  2 12:48 awsuser-csr.json
-rw-r--r-- 1 root root 13502544 Aug 31 03:00 cfssl-certinfo_1.6.1_linux_amd64
-rw-r--r-- 1 root root 16659824 Aug 31 03:00 cfssl_1.6.1_linux_amd64
-rw-r--r-- 1 root root 11029744 Aug 31 03:00 cfssljson_1.6.1_linux_amd64
-rw-r--r-- 1 root root      69 Sep  2 12:43 velero-auth.txt
root@k8s-master01:/data/velero# mv cfssl-certinfo_1.6.1_linux_amd64 cfssl-
certinfo
root@k8s-master01:/data/velero# mv cfssl_1.6.1_linux_amd64 cfssl
root@k8s-master01:/data/velero# mv cfssljson_1.6.1_linux_amd64 cfssljson
root@k8s-master01:/data/velero# ll
total 40248
drwxr-xr-x 2 root root    4096 Sep  2 12:58 ./
drwxr-xr-x 3 root root    4096 Sep  2 12:42 ../
-rw-r--r-- 1 root root     222 Sep  2 12:48 awsuser-csr.json
-rw-r--r-- 1 root root 16659824 Aug 31 03:00 cfssl
-rw-r--r-- 1 root root 13502544 Aug 31 03:00 cfssl-certinfo
-rw-r--r-- 1 root root 11029744 Aug 31 03:00 cfssljson
-rw-r--r-- 1 root root      69 Sep  2 12:43 velero-auth.txt
root@k8s-master01:/data/velero#
```

移动二进制文件至/usr/local/bin/

```
root@k8s-master01:/data/velero# cp cfssl-certinfo cfssl cfssljson
/usr/local/bin/
```

添加可执行权限


```

root@k8s-master01:/data/velero# chmod a+x /usr/local/bin/cfssl*
root@k8s-master01:/data/velero# ll /usr/local/bin/cfssl*
-rwxr-xr-x 1 root root 16659824 Sep  2 12:59 /usr/local/bin/cfssl*
-rwxr-xr-x 1 root root 13502544 Sep  2 12:59 /usr/local/bin/cfssl-certinfo*
-rwxr-xr-x 1 root root 11029744 Sep  2 12:59 /usr/local/bin/cfssljson*
root@k8s-master01:/data/velero#

```

6.2.5、执行证书签发

复制部署k8s集群的ca-config.json文件至/data/velero

```

root@k8s-deploy:~# scp /etc/kubernetes/clusters/k8s-cluster01/ssl/ca-config.json
192.168.0.31:/data/velero
ca-config.json
100% 459 203.8KB/s 00:00
root@k8s-deploy:~#

```

验证ca-config.json是否正常复制

```

root@k8s-master01:/data/velero# ll
total 40252
drwxr-xr-x 2 root root 4096 Sep  2 13:03 ./
drwxr-xr-x 3 root root 4096 Sep  2 12:42 ../
-rw-r--r-- 1 root root 222 Sep  2 12:48 awsuser-csr.json
-rw-r--r-- 1 root root 459 Sep  2 13:03 ca-config.json
-rw-r--r-- 1 root root 16659824 Aug 31 03:00 cfssl
-rw-r--r-- 1 root root 13502544 Aug 31 03:00 cfssl-certinfo
-rw-r--r-- 1 root root 11029744 Aug 31 03:00 cfssljson
-rw-r--r-- 1 root root 69 Sep  2 12:43 velero-auth.txt
root@k8s-master01:/data/velero#

```

签发证书

```

root@k8s-master01:/data/velero# cfssl gencert -ca=/etc/kubernetes/ssl/ca.pem -
ca-key=/etc/kubernetes/ssl/ca-key.pem -config=./ca-config.json -
profile=kubernetes ./awsuser-csr.json | cfssljson -bare awsuser
2023/09/02 13:05:37 [INFO] generate received request
2023/09/02 13:05:37 [INFO] received CSR
2023/09/02 13:05:37 [INFO] generating key: rsa-2048
2023/09/02 13:05:38 [INFO] encoded CSR
2023/09/02 13:05:38 [INFO] signed certificate with serial number
309924608852958492895277791638870960844710474947
2023/09/02 13:05:38 [WARNING] This certificate lacks a "hosts" field. This makes
it unsuitable for
websites. For more information see the Baseline Requirements for the Issuance
and Management
of Publicly-Trusted Certificates, v.1.1.6, from the CA/Browser Forum
(https://cabforum.org);
specifically, section 10.2.3 ("Information Requirements").

```

6.2.6、验证证书

```

root@k8s-master01:/data/velero# ll
total 40264

```

```

drwxr-xr-x 2 root root 4096 Sep 2 13:05 ./
drwxr-xr-x 3 root root 4096 Sep 2 12:42 ../
-rw-r--r-- 1 root root 222 Sep 2 12:48 awsuser-csr.json
-rw----- 1 root root 1679 Sep 2 13:05 awsuser-key.pem
-rw-r--r-- 1 root root 1001 Sep 2 13:05 awsuser.csr
-rw-r--r-- 1 root root 1391 Sep 2 13:05 awsuser.pem
-rw-r--r-- 1 root root 459 Sep 2 13:03 ca-config.json
-rw-r--r-- 1 root root 16659824 Aug 31 03:00 cfssl
-rw-r--r-- 1 root root 13502544 Aug 31 03:00 cfssl-certinfo
-rw-r--r-- 1 root root 11029744 Aug 31 03:00 cfssljson
-rw-r--r-- 1 root root 69 Sep 2 12:43 velero-auth.txt
root@k8s-master01:/data/velero#

```

6.2.7、分发证书到api-server证书路径

```

root@k8s-master01:/data/velero# cp awsuser-key.pem /etc/kubernetes/ssl/
root@k8s-master01:/data/velero# cp awsuser.pem /etc/kubernetes/ssl/
root@k8s-master01:/data/velero# ll /etc/kubernetes/ssl/
total 48
drwxr-xr-x 2 root root 4096 Sep 2 13:07 ./
drwxr-xr-x 3 root root 4096 Apr 22 14:56 ../
-rw-r--r-- 1 root root 1679 Apr 22 14:54 aggregator-proxy-key.pem
-rw-r--r-- 1 root root 1387 Apr 22 14:54 aggregator-proxy.pem
-rw----- 1 root root 1679 Sep 2 13:07 awsuser-key.pem
-rw-r--r-- 1 root root 1391 Sep 2 13:07 awsuser.pem
-rw-r--r-- 1 root root 1679 Apr 22 14:10 ca-key.pem
-rw-r--r-- 1 root root 1310 Apr 22 14:10 ca.pem
-rw-r--r-- 1 root root 1679 Apr 22 14:56 kubelet-key.pem
-rw-r--r-- 1 root root 1460 Apr 22 14:56 kubelet.pem
-rw-r--r-- 1 root root 1679 Apr 22 14:54 kubernetes-key.pem
-rw-r--r-- 1 root root 1655 Apr 22 14:54 kubernetes.pem
root@k8s-master01:/data/velero#

```

6.3、生成k8s集群认证config文件

```

root@k8s-master01:/data/velero# export
KUBE_APISERVER="https://192.168.0.111:6443"
root@k8s-master01:/data/velero# kubectl config
set-cluster kubernetes \
> --certificate-authority=/etc/kubernetes/ssl/ca.pem \
> --embed-certs=true \
> --server=${KUBE_APISERVER} \
> --kubeconfig=./awsuser.kubeconfig
cluster "kubernetes" set.
root@k8s-master01:/data/velero# ll
total 40268
drwxr-xr-x 2 root root 4096 Sep 2 13:12 ./
drwxr-xr-x 3 root root 4096 Sep 2 12:42 ../
-rw-r--r-- 1 root root 222 Sep 2 12:48 awsuser-csr.json
-rw----- 1 root root 1679 Sep 2 13:05 awsuser-key.pem
-rw-r--r-- 1 root root 1001 Sep 2 13:05 awsuser.csr
-rw----- 1 root root 1951 Sep 2 13:12 awsuser.kubeconfig
-rw-r--r-- 1 root root 1391 Sep 2 13:05 awsuser.pem
-rw-r--r-- 1 root root 459 Sep 2 13:03 ca-config.json
-rw-r--r-- 1 root root 16659824 Aug 31 03:00 cfssl

```

```

-rw-r--r-- 1 root root 13502544 Aug 31 03:00 cfssl-certinfo
-rw-r--r-- 1 root root 11029744 Aug 31 03:00 cfssljson
-rw-r--r-- 1 root root 69 Sep 2 12:43 velero-auth.txt
root@k8s-master01:/data/velero# cat awsuser.kubeconfig
apiVersion: v1
clusters:
- cluster:
    certificate-authority-data:
LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tck1JSURtakNDQW9LZ0F3SUJBZ0lVtW01b1NKSUtdGdGm
eXy3MVlZZy9lQ1BSt3Jzd0RRWUplb1pjaHZjTkFRRUwKQ1FBd1pERUxNQWthQTFRVUJ0tUNRMDR4RVRB
UEJnTlZCQWduQ0VoagJtZGFhRzkxTVFzd0NRWURWUVFIRXdkWQpvekVNTUFR0ExVUVDaE1EYXpoek1R
OHdEUUVlEVlFRTEV3WlRlWE4wWlweEZqQVVCZ05WQkFNVERxdDFZbVZ5cmJtVjBawE10WTJFd0lCY05N
ak13TKrJeU1UTXpNekF3V2hnUE1qRXlNekF6TWpreE16TXpNREJhTudreEN6QUoKQmdOVkJBWVRBa05P
TVJFd0R3WURWUVFJRkd0SVlXNW5XbWw2ZFRFTE1Ba0dBmVVFQnhNQ1dGTXhEREFLQmdOVgpCQW9UQTJz
NGN6RVBNQTBHQTFVRUN4TudVM2x6ZEdwdE1SWXdGQVlEVlFRREV3MXJkV0psY201bGRHVnpMV05oCk1J
SUJJakFOQmdrcmhraUc5dzBCQVFFRkFBT0NBUThtBUlJQkNns0NBuUVBCTRmdwtncjl2ditQWVvtQmZn
WjUKTVJlOTZRekErMVgVZG5hU1pZn1lPZjZMaEZ5ZWJxUTFlM3k2bmN3Tk90WUkyemJ3SVJkL0c3YTNS
TSt0Qk5StQpWdE5Db1lxa1F4WVY2Ykp0cGNIRFJldTY0Z1BYCHhHY1FNZGE2Q1VhVTRnENMZ0I2ZGx1
OE8rUTdaLldNewhTClZQMwp5dEpnK1I4UGZRUWVzdnlTanBzaUM4cmdUQjc2VWU0ZXJqaEFwb2JSbzRI
LzN2cGhVUXRLNTBQSVVWVnlkTnpuTVNONmdLMXRqSjZPSStlVke1dwdTTnFOc3FVSXFHwHmZXXSeFBh
NzVBbDhrbmRxc3cyTm5SSF0ZmpGUApZR3lNOFlnc1lUwm9sa2RGYk9wb2g0U3pncTFnc1c0dzBpMnpY
SVlJTzAzNTBEOdh4RFRGRtBka3FPSlrvb0JyCmtRSURBUUFcbzBjd1FEQU9CZ05WSFE4QkFmOEVCQU1D
QVFZd0R3WURWUjBUQVFIL0JBVXdBd0VCL3pBZEJnTlYKSFE0RUZnUVU5SjZoekJaOTNZMklac1ZYUUYw
Zkluz0crSlV3RFFZSkvtwklodmNOQVFFTEJRQRnR0VCQZLNwpjZ3l3Uni4awt4NmpWMUYwVUNJRGxE
N0FPQ3dTe1odiThd1Zyd2k4Mk5xL3hpL2RjaGU1TjhJUKFEUKRQTHJUC1RRS2M4M2FURXM1dnpkczd5
Nn16WHhEbUZocGxry3NoenvhQkdFSkhpbGpucSHJ0Z09tLlZQck5QK3hhWXdUNHYKZFNODEIrczgxNGh6
OWhasitMTHRmb1RBS2tMujVMRjkyQjF2c0JsvnlkaUhlSnF6MctORkdJMzdiY1pvc0cxdpwbpvPROHgy
WUFxWHE2VF1UqnoXLzR6UGlSM3FMQmxtRkNMZVJCa1Rjb2VhUkFfu2ZkeDRiVlhGeTlpQ1lnTHU4CjVr
cmQzMEdmZU5pRUpZVWJtZzNxcHNVSU1QTmUvUDdHNU0ras9GS1pDcFBOQ3Y4aS9MQ0Z2cvhPbThvYmYy
Ym8keDnsZwpwVlZ6eG9yNEtod3puZz0KLS0tLS1FTkQgQ0VSVElGSUNBVEUtLS0tLQo=
server: https://192.168.0.111:6443
name: kubernetes
contexts: null
current-context: ""
kind: Config
preferences: {}
users: null
root@k8s-master01:/data/velero#

```

6.3.1、设置客户端证书认证

```

root@k8s-master01:/data/velero# kubectl config set-credentials awsuser \
> --client-certificate=/etc/kubernetes/ssl/awsuser.pem \
> --client-key=/etc/kubernetes/ssl/awsuser-key.pem \
> --embed-certs=true \
> --kubeconfig=./awsuser.kubeconfig
User "awsuser" set.
root@k8s-master01:/data/velero# cat awsuser.kubeconfig
apiVersion: v1
clusters:
- cluster:

```

certificate-authority-data:

```
LS0tLS1CRudJTiBDRVJUSUZJQ0FURS0tLS0tck1JSURtakNDQW9LZ0F3SUJBZ0lVTW01b1NKSutCdGNm
exY3MVlZzy91Q1Bst3Jzd0RRWupLb1pJaHJzTkFRRUwKQ1FBd1pERUXNQWthQTFVRUJoTUNRMDR4RVRB
UEJnTlZCQWduQ0VoagJtZGFhRzkxTVFzd0NRWURWUVFIRXdKwQpVekVNTUfVR0EXvUUVDaE1EYXpoek1R
OHdEUUVlEVlFRTEV3WlRlWE4ww1cweEZqQVVCZ05WQkFNVERxdDFZbvZ5CmJtVjBawE10WTJFd0lCY05N
ak13TKrJeu1UTXpNekF3V2hnUE1qRXlNekF6TwpreE16TXpNREJhTudReEN6QUoKQmdOVkBjBWRBa05P
TVJFd0R3WURWUVFJRXd0SV1XNW5Xbwh2ZFRFTE1Ba0dBMMVFQnhNQ1dGTxhEREFLQmdOVgpCQW9UQTJz
NGN6RVBNQTBHQTFVRUN4TUDVM2x6ZEdwdE1SWXGdQVlEVlFRREV3MXJkV0psY201bGRHVnpMV05oCk1J
SUJJakFOQmdrcwhraUc5dzBCQVFFRkFBT0NBUTHBTU1JQkNns0NBuUVBcTRmdwtncj12ditQWVvtQmZn
wJUKTVJiOTZRekErMVgvZG5hU1pzN1lPZjZMaEZ5ZWJxUTFlM3k2bmN3Tk90WUkyemJ3SVJkL0c3YTns
Tst0Qk5sTQpwdE5Db1lxa1F4WVY2Ykp0cGNIRFJlY0Y0Z1BYCHhHY1FNZGE2Q1VhVtBrNENMZ0I2ZGx1
OE8rUTdaLldNewhTC1ZQMwp5dEpnK1I4UGZRUWVzdn1TanBzaUM4cmdUqjc2VWU0ZXJqaEFwb2JsbzRI
LzN2cGhVUXRLNTBQSVVvN1gKTnpuTVNONmdLMXRqSjZPSSt1Vke1dwdTTnFoc3FVSXFHwmhmZXZSeFBh
NzVBBDhRbmRxc3cyTm5WSFFOZmpGUApZR31NOFlnc1lUwm9sa2RGYk9wb2g0U3pncTFnc1c0dzBpMnpY
SV1JTzAZNTBE0dh4FRFRGTBka3FPS1RVb0JyCmTRSURBUUFcbzBjd1FEQU9CZ05WSFE4QkFmOEVCQU1D
QVFZd0R3WURWUjBUQVFIL0JBVXdBd0VCL3pBZEJnTlYKSFE0RUZnUVU5SjZoekJaOTNZMklac1ZYUYW
Zkluz0crS1V3RFFZSkvtwklodmNOQVFFTEJRQRnZ0VCQUZLNwpjZ313Uni4awt4NmpWMUYwVUNJRGxE
N0FPQ3dTElodiThd1Zyd2k4Mk5xL3hpL2RjaGU1TjhJUKFEUKRQTHJUC1RRS2M4M2FURXM1dnpKczd5
Nn16WHHEBUZocGxry3NoenvhQkdFSkhpbGpuSHJ0Z09tL1ZQck5QK3hhWXDUNHYKZFNodEirczgxNGh6
OWhasitmTHRmb1RBS2tMUjVMRjkyQjF2c0JsvnlkaUhlSnF6MctORkdjMzdiY1pvc0cxdwPwbVpROHgy
WUFxWHE2VF1UqnoXLzR6UG1SM3FMQmxtRkNMZVJCa1RJB2VhUkFfu2ZkeDRiVlHgeTlpq1lnTHU4CjVr
cmQzMEDmZU5pRUpZVWJtZzNxcHNVSU1QTmUvUDdHNU0raS9GS1pDcFBOQ3Y4as9MQ0Z2cVhPbThvYmdY
Ym8KeDnsZwpwV1Z6eG9yNEtOd3puZz0KLS0tLS1FTkQgQ0VSVE1GSUNBVEUtLS0tLQo=
```

server: https://192.168.0.111:6443

name: kubernetes

contexts: null

current-context: ""

kind: Config

preferences: {}

users:

- name: awsuser

user:

client-certificate-data:

```
LS0tLS1CRudJTiBDRVJUSUZJQ0FURS0tLS0tck1JSUQxekNDQXIrZ0F3SUJBZ0lVTmttQUJ6ZjVhdCto
ZC9vYmTONXBVV3JWOU1Nd0RRWupLb1pJaHJzTkFRRUwKQ1FBd1pERUXNQWthQTFVRUJoTUNRMDR4RVRB
UEJnTlZCQWduQ0VoagJtZGFhRzkxTVFzd0NRWURWUVFIRXdKwQpVekVNTUfVR0EXvUUVDaE1EYXpoek1R
OHdEUUVlEVlFRTEV3WlRlWE4ww1cweEZqQVVCZ05WQkFNVERxdDFZbvZ5CmJtVjBawE10WTJFd0lCY05N
ak13T1RBeU1UTXdNVEF3V2hnUE1qQTNNeKE0TwPBeE16QXhNREJhTudReEN6QUoKQmdOVkBjBWRBa05P
TVJBd0RnWURWUVFJRXdKVGFTm9kV0Z1TVJJd0VBWURWUVFIRXdsSGRXRnVaMwwxwVc0eApEREFLQmdo
VkJBb1RBMnM0Y3pFUE1BMEDBMVVFQ3hNR1UzbHpkR1Z0TVJBd0RnWURWUVFERXdkagQzTjFjmlZ5Ck1J
SUJJakFOQmdrcwhraUc5dzBCQVFFRkFBT0NBUTHBTU1JQkNns0NBuUVBeVU3ZwtvQ0ZFS0Jnd3Z1SU12
ekkkKSHNqRmFZNzNmTm5awVhqU01sVEJKeDNqY1dyVGh1eno5a013WktPRFNybmXwcTF0SnZ1dHRVNWpC
aHRie1JkOAOorVVFYtKfHTVYxOFhVaGdvSmJZaHRCWstpsGhjk1dBNTYwaEEybEJaaFU2RGZzZjNvam9R
bjNKdu02YUQ0eHBEcjNIZG1TUGJ0am0xrKvWaTfKvHPseVhDSwxrTkJFR3hLam5MSjZ5dC9YcnVuNW9w
djBudE9jQww0VWJSWHFGejMkaT1BS3ARouHENUV6be5QaVUwY1F1ZkxERGEXp3N1nyaDFpNG9rdnhv
Snhyd0FhcTdak1Q5b1VRwkV5a0RpNqpUG1NN1NucEh5aF1tnW5sd2FRduZvekY2bwt4UzFPYXJjMSti
ZGhYSHU1T3ViYwJKOXY0bva5TDhyRFY3TDd6CkxRSURBUUFcbzM4d2ZUQU9CZ05WSFE4QkFmOEVCQU1D
QmFBd0hrWURWUjBsQk1Zd0ZBwU1Ld1lCQ1FVSEF3RUckQ0NzR0FRVUZCd01DTUF3R0EXvVRFd0VCL3dR
Q01BQXdIUUVlEVlIwT0JCWUVGREtyYkphanpDTTNzZHUzBtUwplV01Hbm5XM01COEdBMVVKsXdrWU1C
YUFGUfN1b2N3V2ZkMk5pR2JGVjJoZEh6SjRcdmlstUEwR0NTcudTSWIZCkRRRUJdd1VBQTRJQkFRQXd4
b043eUNQZzFRQMjRcTnWT1JYUFVvcXRdVjhsUHFjd3V4bTJWZkVmdPMFZYanQKTHR5aE12RD1ubEsy
azNmTFpWTVc2MWFzbVhtwktUth3YkZtL1RieE83ZkdJSwdpsZJKOGpwwHYZRnhNeExZNQprvjcvd3Qx
UU1uwjJstjBSM0c3TGhkyjJ4UjFORmd1eWNXdwTV3JKSwtpcu1Ma01OLZdPSFhtSFZxazV1a1ZlCmNo
YmViDnJSSXRRNHBPYj1FZVgzTUXiZXBkrjJ4Tws5NmZrVXJGwmhKYWREvNB5NXEwbHfUvJkMvpIwk4x
SkMKWVBrZGRxdVQxbHNxawJzN3BwTHRXXm1nv0J1s2hkQ0Fvet1UZEZ1Wet1QUZvdVJKUuJWQus4dTFH
RU1aL2JEYgp2eXRxnN26ZndwOFNrevNpkzZhc1dZRVBXUX11UEVEWjBPU1oKLS0tLS1FTkQgQ0VSVE1G
SUNBVEUtLS0tLQo=
```

client-key-data:

```
LS0tLS1CRudJTiBSU0EgUUFJJVkfURSBRLVktLS0tLQpNSU1FcFFJQkFBS0NBuUVBeVU3ZWtvQ0ZFS0Jnd3Z1SU12ek1Ic2pGYVksM2Z0b1pZWGpTSWxUQkp4M2pjV1hUCmh1eno5a013WktPRFNybmxwcTF0SnZ1dHRVNWpCaHRie1JKOCTvUVhoQWFNVjE4WVVoZ29KY1l0dEJZK21IaGMKK1dBNTYwaEEYbEJaaFU2RGZzQjNVam9RbjNKdu02YUQ0eHBEM0hkbnQYnRqbTFGRVZpMWRue1J5WENJbGtOQgpFR3hLam5MSjZ5dC9YcnVuNW9wdjBudE9jQWw0VWJSWHFGejNpOUFLCc5SEQ1RXpsTlBpVTBjUWVmTEREYTBFCnp3N1NyaDFpNG9rdnhVSnhyd0FhcTdak1Q5b1VRwkv5a0RpnW5Ubu02U25wSHloww01bmX3YVF1Rm96RjZta3gKUzFPYXJJMStiZGhYSHU1T3ViYWJKOXy0bVA5TDhYRFY3TDd6TFFJREFRQUJBb0lCQVFDtWVnb2RSNndUchliKwp5WklJcXBkbnpBamVtWktnd0ZET2tRwnFTS1NSREZsY0Y0ZW RUEHE3WGJXV2RQZzRuREtXNHNqSnJGV1NzUW12CKnFwnV1NWxvUkt6QWRGV1kzeFdpQnhoMUJYek5jN3hkZFVqRUNOOUNEYUNios9nUWEzS2RiK2VVTE1yT3lZYVgKYW5xY2J3YXVBEFTT0tZmZxcjA2T2R2a1dwLzIxwnF2bnAvdmZrN3dIYzduUktLWmt1ZVg0bVExdFFqdVBoZQpDQXN5WwZOeWM0vjvyUDF1K3AZTGU4Ly9sTXZQZ0wydFBib3NaagYvM0dCUGpPZHFabVdnL0R5b1hzN21qcnhqCng2OHJOchIXu2ZhQUNOMjNqde9HbXcreXh4NjdENTNUSVJUaxZiY2Izd0FIMnNRdkvzbG9HN0lMU0d2THJ1S3IKS0c2RkQwb0JBb0dCQVBSWfDydwQa3B6bz15ZUJnd3hudm1yn2x2THZrvkv1Q3ZmRVg2MHViYm5HOVVsZm1BQgpEavdu0FcvUkVHVjE0cFBtcjQ2eE5QLzkrb1p3cDNrNUMzbFNocENVWEVxZjVHTzBUSXdsb1NVdndKcuo2UHc0cm4yb0xExbXNS3k5bkZECFFCQTFoYUZS QnZjZ3ZxOXdhc0NmK3Fyc3pTNHM2bHplQm1KVdZXYUDCQW9HQkFNNnYKSWJrSXJnVW54NlpuNngyRjVmSEQ0YVfydWRLbWFSnN3NzV4dFY0ZVlEdU1ZVVIrYwXwy21lVDZ4Y1Z3NUFvbQp6Q2o1VUNsejZjZ3pj c2MyTGMRM3J0eDVRcUFTmZA1K0UxavdEegh6UG44buHETKi2NGY5WTVYdjJ6bm9mawVsCmNKd2pBaE50 ZlR1ck45ODR5RXpQL0tHa1NsbGNxdHFsOVF6VVRkR3RBb0dCQU81c0RGty85NmRqbW4yY0VYw1okZ01T U212TDJDUFBkZVNwaVBDMW5qT29MwMI3VUFscTB4NTFVVVBhMTk3Sz1IYktGZEx2Q1VvYXp5bm9CZ080 TwptaDBodjVEQ2Zob1N1S1pxUW9QeFc2RGVYNUttYXNXN014eE1oRGs2cwUQ2dVSWRQeks0UVBYSwdn MmVpL3h4CjNNSHhyn29mbTQzL3Nacn1Hai9pZ0JDQkFvR0Fwb3BzRTE3NEJu1drUzIzkZUraUHXNE1Y OFpuUTBtY2Zzs2UKWDNLYkgzS1dscmg3emNNazR2c1dY205HcGhwVDBaQ1hNZHphWE5FRwoycmg2QW5l ZS8vbVixYThoenhQdGowQgorcm15VDJtSnhKri9nMUXad1JJEKRZZm1Ba1EvOW5mR1JBCEFoemFOOwxz RnhQaxduY0VfcGVYMW41ODJodUN3ClQ1UGxJKzBDZ1lFQTN1WmptcX1lU0ZsUGR0Q3NSN1ZDUwc4K0N6 L1hBTUNQZGt0Smf1bng5VwxTWVZXFQzM2okby9uVVRPVHY1TWZPTm9wejVYOXM4SCsyexFodwPna2NH ZmFTEHFTN1BkbWNhctJGMTYxTDdTR0JDb2w1MVQ5ZwpXQkRobn1qOFprSkQxd2pRnKNDWG4zNDZIMS9Y REZjbmhnc2c2UHRjTGh3RC8yS013eFVmdzFBPQotLS0tLUVORCBSU0EgUUFJJVkfURSBRLVktLS0tLQo= root@k8s-master01:/data/velero#
```

6.3.2、设置上下文参数

```
root@k8s-master01:/data/velero# kubectl config set-context kubernetes \
> --cluster=kubernetes \
> --user=awsuser \
> --namespace=velero-system \
> --kubeconfig=./awsuser.kubeconfig
Context "kubernetes" created.
root@k8s-master01:/data/velero# cat awsuser.kubeconfig
apiVersion: v1
clusters:
- cluster:
```

certificate-authority-data:

```
LS0tLS1CRudJTiBDRVJUSUZJQ0FURS0tLS0tck1JSURtakNDQW9LZ0F3SUJBZ0lVTW01b1NKSutCdGNm
eXY3MVlZZy91Q1BSt3Jzd0RRWUpLb1pJaHZjTkFRRUwKQ1FBd1pERUxNQWthQTFVRUJJoTUNRMDR4RVRB
UEJnTlZCQWduQ0VoaGJtZGFhRzkxTVFzd0NRWURWUVFIRXdKwQpvekVNTUFVR0ExVUVDaE1EYXpoek1R
OHdEUVlEVlFRTEV3WlRlWE4wwlcweEZqQVVCZ05WQkFNVERxdDFZbVZ5cmJtVjBawE10WTJFd0lCY05N
ak13TKRJeU1UTXpNekF3V2hnUE1qRXlNekF6TWpreE16TXpNREJhTudReEN6QUoKQmdOVkJBWVRBa05P
TVJFd0R3WURWUVFJRXd0SVlXNW5XbWVhZ2ZFRFTE1Ba0dBMVVVFQnhNQ1dGTXhEREFLQmdOVgpCQW9UQTJz
NGN6RVBNQTBHQTFVRUN4TudVM2x6ZEdwdE1SWXdGQVlEVlFRREV3MXJkV0psY201bGRHVnpMV05oCk1J
SUJJakFOQmdrcwhraUc5dzBCQVFFRkFBT0NBUTHBTU1JQkNnS0NBUEVBCtRmdwtncjl2ditQWVvtQmZn
WjUKTVJlOTZRekErMVgvZG5hU1pzN1lPZjZMaEZ5ZWJxUTFlM3k2bmN3Tk90WUkyemJ3SVJkL0c3YTns
TSt0Qk5sTQpwdE5Db1lxa1F4WVY2Ykp0cGNIRFJldTY0Z1BYCHhHY1FNZGE2Q1VhVtBrNENMZ0I2ZGx1
OE8rUTdaLldNewhTC1ZQMwp5dEpnK1I4UGZRUWVzdn1TanBzaUM4cmdUQjc2VWU0ZXJqaEFwb2J5SbzRI
LZn2CgHVUXRLNTBQSWVvN1gkTnpuTVNONmdLMXRqSjZPSSt1Vke1dwdTTnFoc3FVSXFHwmhmZXZSeFBh
NzVBbDhrcmRxc3cyTm5SFFOZmpGUApZR31NOFlnc1lUwm9sa2RGYk9wb2g0U3pncTFnc1c0dzBpMnpy
SV1JTzAZNTBEODh4RFRGRtBka3FPS1RVb0JyCmRSURBUUFcbzBjd1FEQU9CZ05WSFE4QkFmOEVCQU1D
QVFZd0R3WURWUjBUQVFIL0JBVXdBd0VCL3pBZEJnTlYKSFE0RUZnUVU5SjZoekJaOTNZMklac1ZYUUYw
Zk1uZ0crS1V3RFFZSkvtwklodmNOQVFFTEJRQURnZ0VCQUZLNwpjZ313UnI4awt4NmpwMUyWVUNJRGxE
N0FPQ3dtCElodi1hd1Zyd2k4Mk5xL3hpL2RjaGU1TjhJUKFEUKRQTHJUC1RRS2M4M2FURXM1dnpKczd5
Nn16WHHEbUZocGxry3NoenvhQkdFSkhpbGpuSHJ0Z09tL1ZQck5QK3hhWxdUNHYKZFNodEirczgxNGh6
OWhasitmTHRmb1RBS2tMujVMRjkyQjF2c0JsvnlkaUhlSnF6MctORkdJMzdiY1pvc0cxdwPwbVpROHgy
WUFxWHE2VF1UqnoXLzR6UG1SM3FMQmxtRkNMZVJCa1Rjb2VhUkFfu2ZkeDRiVlhfGeTlpq11nTHU4CjVr
cmQzMEDmZU5pRUpZVWJtZzZnXCHNVsu1QTmUvUDdHNU0raS9GS1pDcFBOQ3Y4aS9MQ0Z2cVhPbThvYmdy
Ym8KeDnsZwpwV1Z6eG9yNEtOd3puZz0KLS0tLS1FTkQgQ0VSVE1GSUNBVEUtLS0tLQo=
```

server: https://192.168.0.111:6443

name: kubernetes

contexts:

- context:

cluster: kubernetes

namespace: velero-system

user: awsuser

name: kubernetes

current-context: ""

kind: Config

preferences: {}

users:

- name: awsuser

user:

client-certificate-data:

```
LS0tLS1CRudJTiBDRVJUSUZJQ0FURS0tLS0tck1JSUQxekNDQXIrZ0F3SUJBZ0lVTmttQUJ6ZjVhdCto
ZC9vYmtONXBVV3JWOU1Nd0RRWUpLb1pJaHJzTkFRRUwKQlFBd1pERUxNQWthQTFRVUJJoTUNRMDR4RVRB
UEJnTlZCQWduQ0VoaGJtZGFhRzkxTVFzd0NRWURWUVFIRXdKwQpVekVNTUFRV0ExVUVDaE1EYXpoek1R
OHdEUUVlEVlFRTEV3WlRlWE4wWlCweEZqQVVCZ05WQkFNVERxdDFZbVZ5cmJtVjBawE10WTJFd0lCY05N
ak13T1RBeU1UTxdNVEF3V2hnUE1qQTNNekE0TwpBeE16QXhNREJhTudReEN6QUoKQmdOVKBWVRBA05P
TVJBd0RnWURWUVFJRkdKVGFTm9kV0Z1TVJjZ0VWURWUVFIRXdsSGRXRnVaMwwxWVc0eApEREFLQmdo
VkJBb1RBMmM0Y3pFUE1BMEdBMVVFQ3hNR1UzbHpkR1Z0TVJBd0RnWURWUVFERXdkagQZTjFjMlZ5Ck1J
SUJJakFOQmdrcwhraUc5dzBCQVFFRkFBT0NBUTHBTU1JQkNnS0NBUEVBeVU3ZWtvQ0ZFS0Jnd3Z1SU12
ekkkSHNqRmFZNzNmTm5awVhQU01sVEJKeDNqYldYVGH1eno5a013WktPRFNybmXWcTF0SnZ1dHRVNWpc
aHRie1JkOAOorVVFYTkFhTVYxOFhVaGdvSmJZaHRCWStpsGhJk1dBNTYwaEEybEJaaFU2RGZzZjNVam9R
bjNKdu02YUQ0eHBECjNIZG1TUGJ0am0xRkVwaTFkVHpsVevHDSwxrTkJFR3hLam5MSjZ5dC9YcnVuNW9w
djBudE9jQww0VWJSWHFGejMKA1BS3AROUhENUV6bE5QaVUwY1F1ZkxERGEXp3N1NyaDFpNG9rdnhv
Snhyd0FhcTdak1Q5b1VRWkv5a0RpnQpuVG1NN1NucEh5aF1tnW5sd2FRdUZveky2bwt4UzFPYXJjMSti
ZGhYSHU1T3ViYWJkOXY0bVA5TDhyRFY3TDd6CkxRSURBUUFCbzM4d2ZUQU9CZ05WSFE4QkFmOEVCQU1D
QmFBD0hRWURWUjBsQkZjZ0ZBwU1Ld1lCQlFVSEF3RUckQ0NzR0FRVUZCd01DTUF3R0ExVWRFd0VCL3dR
Q01BQXdIUUVlEVlIiwT0JCWUUVGREtyYkphandDTTnZM2ZHUZBtUwplLV01Hbm5XM01COEdBMVVKsXdrWU1C
YUFGUfN1b2N3V2ZkMk5pR2JGVjJoZeh6SjRCdm1sTUEwR0NTCudTSWIZCkRRRUJdd1VBQTRJQkFRQXd4
b043eUNQZzFRQMjRcTnWT1JYUfVvcXRdVjhSUHfjd3V4bTJWZkVmdPMFZYanQKTHR5aE12RD1ubEsy
azNmTFpWTVc2MWFzVbVhtWktUth3YkZtL1RieE83ZkdJSwdpsZJKOGpWHZYRnhNeExZNQprvjcvd3Qx
UU1uwjJStjBsm0c3TghkyjJ4UjFORMd1eWNXdwtWV3JKSwtpcu1Ma01OLZdPSFhtSFZxazV1a1Z1CmNo
YmVidnJSSXRRNHBPYj1FZVgzTUXiZXBkrJj4Tws5NmZrVXJGwmhKYWREvNB5NXEwbHfPUVJkMvpIwk4x
SkMKwVBrZGRxdVQxbHNxawJzN3BwTHRmX1nv0J1s2hKQ0Fvet1UZEZ1WEt1QUZvdVJKUJWQus4dTFH
RU1aL2JEYgp2eXRnN2N6ZndWOFNrevNpkzZhc1dZRVBXU11UEVEWjBPU1okLS0tLS1FTkQgQ0VSVE1G
SUNBVEUtLS0tLQo=
```

client-key-data:

```
LS0tLS1CRudJTiB0EgUfJjVkfURSBLRVktLS0tLQpNSU1FcFFJQkFBS0NBUEVBeVU3ZWtvQ0ZFS0Jn
d3Z1SU12ek1Ic2pGYVtk3M2Z0b1pZGpTSWxUqk4M2pjV1hucmh1eno5a013WktPRFNybmXWcTF0SnZ1
dHRVNWpcAHRie1JkOCTvUVhoQWFnVjE4WfVoZ29KY1lodeJZK21IaGMKK1dBNTYwaEEybEJaaFU2RGZz
ZjNVam9RbjNKdu02YUQ0eHBEM0hkbVNQYnRqBtFGRVZpMWRue1J5WENJbGtoQgpfR3hLam5MSjZ5dC9Y
cnVuNW9wdjBudE9jQww0VWJSWHFGejnpOUFLCcs5SEQ1RXpsT1BpVTBjUWVmTEREYTBFCnp3N1NyaDFp
NG9rdnhvSnhyd0FhcTdak1Q5b1VRWkv5a0RpnW5ubu02U25wSH1oww01bmX3YVF1Rm96RjZta3gkUZFP
YXJjMStiZGhYSHU1T3ViYWJkOXY0bVA5TDhyRFY3TDd6TFFJREFRQUJbB01CQVFDTWVnb2RSNndUCH1i
Kwp5wk1JcXBkbnpBamVtWktnd0ZET2tRwnFTS1NsREZsY0Y0ZWwRueHE3WGJXV2RQZzRUeRtXNHNqSnJG
V1NzUW12CkNFwnV1NwXvUkt6QWRGV1kzeFdpqnhOMUJYek5jn3hkZFVqRUNOOUNEYUNios9nUWEzs2Ri
K2VVTE1yT31ZYVgKYW5xY2J3YXVBEFTT0tZmYzcjA2T2R2a1dwLzIxwnF2bnAvdmZrN3dIYzduUktL
Wmt1ZVg0bVExdFFqdVBoZQpDQXN5WwZOewM0vjvyUDF1K3AZTGU4Ly9sTXZQZ0wydFBib3NaagYVM0dC
UGpPZHfabvdnLOR5b1hzn21qcnhqCng2OHJOChIXu2ZhQUNOMjNqde9HbXcreXh4NjdENTNUSVJUaxZI
Y2Izd0FIMnNRdkvzbG9HN01MU0d2THJ1S3IKS0c2RkQwb0JBb0dCQVBSwFdydwXa3B6bz15ZUJnd3hu
dm1yn2x2THZrvkv1Q3ZmRVg2MHviYm5HOVVsZm1BQgpeAvduoFcvUkVHVjE0CFBtcjQ2eE5QLZkrb1p3
CDNRNUMzbfNocENVWEVxZjVHTzBUSxdSb1NVdndKcUo2UHC0Cm4yb0xEbXBNS3k5bkZECFFCQTFoYUzS
QnZjd3ZxOXdhc0NmK3Fyc3pTNHM2bHp1Qm1KVDZXYUdCQW9HQkFNnNYKSWJrSXJnVw54N1puNngyRjVm
SEQ0YVfYdWRlbWFSncn3NzV4dFY0ZV1EdU1ZVVIrYwXwY211VDZ4Y1Z3NUFvbQp6Q2o1VUNsejZJZ3pJ
c2MyTGRMR3JoEDVrcUFTMZA1K0UxavDEegh6UG44bUeTKI2NGY5WTVYdjJ6bm9mawVsCmNKd2pBaE5O
Z1R1ck45ODR5RXpQL0tha1NsbGNxdHFSOVF6VVZrK3RBb0dCQU81c0RGty85NmRqbW4yY0VYw1okZ01T
U212TDJDUFBkZVNwaVBDMW5qt29MwmI3VUFscTB4NTFVVVBhMTk3Sz1IYktGZEX2Q1VvYXp5bm9CZ080
TwptaDBodjVEQ2Z0b1N1S1pxUW9QeFc2RGVYNUttYXNXN014e1oRGS2cwXUQ2dVSWRQeks0UVBYSwdn
MmVpL3h4CjNNSHhyn29mbTQzL3Nacn1Hai9pZ0JDQkFvR0Fwb3BzRTE3NEJu1drUzIzkZUraUhxNE1Y
OFpuUTBTy2Zzs2UKWDNLYkgzS1dscmg3emNNazR2c1dYZ05HcGhwVDBaQ1hNZHphWE5FRwoycmg2QW51
ZS8vbVixYThoenhQdGowQgorcm15VDJtShhKRi9nMUXad1JJeKRZZm1Ba1EvOW5mR1JBCEFoemFOOWxz
RnhQaxduY0VFcGVYMW41ODJodUN3C1Q1UGxJKZBDZ11FQTN1wmpTc11U0ZsUGR0Q3NsN1ZDUWc4K0N6
L1hBTUNQZGt0Smf1bng5VwxTWVZXVfQZM2okby9uVVRPVHY1TWZPTm9wejVY0XM4ScsyexFodwPna2NH
ZmFTEHFTN1BkbWNhctJGMTYxTddTR0JDb2w1MVQ5ZwpXQkRobn1qoFprSkQxd2prNKNDWG4ZNDZIMS9Y
REZjbmhnc2c2UHRjTGh3RC8yS013eFVmdzFBPQotLS0tLUVORCBSU0EgUfJjVkfURSBLRVktLS0tLQo=
root@k8s-master01:/data/velero#
```

6.3.3、设置默认上下文

```
root@k8s-master01:/data/velero# kubectl config use-context kubernetes --
kubeconfig=awsuser.kubeconfig
Switched to context "kubernetes".
root@k8s-master01:/data/velero# cat awsuser.kubeconfig
apiVersion: v1
clusters:
- cluster:
    certificate-authority-data:
LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSB0tLS0tCk1JSURtakNDQW9LZ0F3SUJBZ0lVTW01b1NKSutCdGnm
eXY3MVlZZy9lQ1BSt3JZd0RRWUplb1pjaHZjTkFRRUwKQ1FBd1pERUXNQWthQTFVRUJ0TUNRMDR4RVRB
UEJnTlZCQWduQ0VoagJtZGFhRzKxTVFzd0NRWURWUVFIRXdKwQpVekVNTUFR0ExVUVDaE1EYXpoek1R
OHdEUUVlEVlFRTEV3W1RlWE4wW1cweEZqQVVCZ05WQkFNVERxdDFzbVZ5cmJtVjBawE10WTJFd0lCY05N
ak13TKRJeU1UTXpNekF3V2hnUE1qRXlNekF6TWpreE16TXpNREJhTudReEN6QUoKQmdOVk1BWWVRBa05P
TVJFd0R3WURWUVFJRXd0SV1XNW5XbWw2ZFRFTE1Ba0dBMVVFQnhNQ1dGTXhEREFLQmdOVgpCQW9UQTJz
NGN6RVBNTBhQTFVRUN4TudVM2x6ZEdwde1SWXGdGVlEVlFRREV3MXJkV0psY201bGRHVnpMV05oCk1J
SUJJakFOQmdrcmhraUc5dzBCQVFRkFBT0NBUTHBtU1JQKnNs0NBuUVBCTRmdwtncj12ditQWVvtQmZn
WjUKTVJlOTZRekERMVgVZG5hU1pzN1lPZjZMaEZ5ZWJxUTF1M3k2bmN3Tk90WUkyemJ3SVJkL0c3YTNS
TSt0Qk5sTQpwdE5Db1lxa1F4WVY2YkpoCGNIRFJldTY0ZlBYCHhHY1FNZGE2Q1VhVTRnENMZ0I2ZGx1
OE8rUTdaLldNewhTC1ZQMwp5dEpnK1I4UGZRUWVzdnlTanBzaUM4cmdUQjc2VWU0ZXJqaEFwb2JSbzRI
LzN2cGhVUXRLNTBQSWVvVnlgKTnpuTVNONmdLMXRqSjZPSSt1Vke1dwdTTnFOc3FVSXFHwHmZXXSeFBh
NzVBbDhrcmRxc3cyTm5SWFFOZmpGUApZ31NOF1nc1lUwm9sa2RGYk9wb2g0U3pncTFnc1c0dzBpMnpY
SV1JTzAZNTBEODh4RFRGRTBka3FPS1RVb0JyCmRlSURBUUFCbzBJd1FEQU9CZ05WSFE4QkFmOEVCQU1D
QVFZd0R3WURWUjBUQVFIL0JBVXdBd0VCL3pBZEJnTlYKSFE0RUZnUVU5SjZoekJaOTNZMklac1ZYUUYw
Zkl1Z0crSlV3RFFZSk1vdk1lZ0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1Z0t1
N0FPQ3dTCe1odi1thd1Zyd2k4Mk5xL3hpL2RjaGU1TjhJUKFEUKRQTHJUC1RRS2M4M2FURXM1dnpKczd5
Nn16WHhEbUZocGxry3NoenvhQkdFSkhpbGpucSHJ0Z09tL1ZQck5QK3hhWXdUNHYKZFN0dEirczgxNGh6
OWhaSitmTHRmb1RBS2tMuJVMRjkyQjF2c0JsvnlkaUhlSnF6MctORkdJMzdiY1pvc0cxwPwVpROHgy
WUFxWHE2VF1UqnoXLZ6UG1SM3FMQmXtrKnmZVJCa1Rjb2VhukFfu2ZkeDriVlhGeTlpQ1lnTHU4CjVr
cmQzMEDmZU5pRupZVWJtZzNxcHNVSU1QTmUvUddHNU0ras9GS1pDcFBOQ3Y4aS9MQ0Z2cVhPbThvYmDY
Ym8keDnsZwpwV1Z6eg9yNEtOd3puZZ0KLS0tLS1FTkQgQ0VSVE1GSUNBVEUtLS0tLQo=
    server: https://192.168.0.111:6443
    name: kubernetes
contexts:
- context:
    cluster: kubernetes
    namespace: velero-system
    user: awsuser
    name: kubernetes
current-context: kubernetes
kind: Config
preferences: {}
users:
- name: awsuser
  user:
```


client-certificate-data:

```
LS0tLS1CRudJTiBDRVJUSUZJQ0FURS0tLS0tck1JSUQxekNDQXIrZ0F3SUJBZ0lVTmttQUJ6ZjVhdCto
ZC9vYmtonXBVV3JWOU1Nd0RRWUpLb1pJaHZjTkFRRUwKQlFBd1pERUxNQWthQTFRVUJJoTUNRMDR4RVRB
UEJnTlZCQWduQ0VoaGJtZGFhRzkxTVFzd0NRWURWUWFIRxdKwQpVekVNTUFRV0ExVUVDaE1EYXpoek1R
OHdEUVlEVlFRTEV3WlRlWE4wWlCweEZqQVVCZ05WQkFNVERxdDFZbVZ5cmJtVjBawE10WTJFd0lCY05N
ak13T1RBeU1UTxdNVEF3V2hnUE1qQTNNekE0TwpBeE16QXhNREJhTudReEN6QUoKQmdOVKBWVRBA05P
TVJBd0RnWURWUWFJRxdKvGFVTm9kV0Z1TVJjZ0VWURWUWFIRXdsSGRXRnVaMwwxWVc0eApEREFLQmdo
VkJBb1RBMmM0Y3pFUE1BMEDBMVVFQ3hNR1UzbHpkR1Z0TVJBd0RnWURWUWFERXdkagQZtJfJmJlZ5Ck1J
SUJJakFOQmdrcwhraUc5dzBCQVFFRkFBT0NBUTHBTU1JQkNnS0NBUEVBeVU3ZWtvQ0ZFS0Jnd3Z1SU12
ekkkSHNqRmFZNzNmTm5awVhQU01sVEJKeDNqYldYVGH1eno5a013wktPRFnybmxwCtF0SnZ1dHRVNWpc
aHRie1JkOAOorVVFYtKfHtVYxOFhVaGdvSmJZaHRCWStpsGhjK1dBNTYwaEEybEJaaFU2RGZzZjNVam9R
bjNKdu02YUQ0eHBECjNIZG1TUGJ0am0xRkVwaTFkVHpSeVhDSWxrTkJFR3hLam5MSjZ5dC9YcnVuNW9w
djBudE9jQww0VWJSWHFGejMKA1BS3AROUhENUV6bE5QaVUwY1F1ZkxERGEXp3N1NyaDFpNG9rdnhv
Snhyd0FhcTdak1Q5b1VRwkv5a0RpnQpuVG1NN1NucEh5aF1tnW5sd2FRdUZvekY2bwt4UzFPYXJjMSti
ZGhYSHU1T3ViYWJkOXY0bVA5TDhyRFY3TDd6CkxRSURBUUFcbzM4d2ZUQU9CZ05WSFE4QkFmOEVCQU1D
QmFBD0hRWURWUjBsQkZjZ0ZBwU1Ld1lCQlFVSEF3RUCkQ0NzR0FRVUZCd01DTUF3R0ExVWRFd0VCL3dR
Q01BQXdIUUVlEVlIwT0JCWUVGREtyYkphanpDTTNzM2ZHUZBtUwpLV01Hbm5XM01COEdBMVVKsXdrWU1C
YUFGUfN1b2N3V2ZkMk5pR2JGVjJoZeh6SjRCdm1stUEwR0NTcUdTSWIZCkRRRUJdd1VBQTRJQkFRQXd4
b043eUNQZzFRQMjRcTnWT1JYUfVvcXRdVjhSUHfjd3V4bTJWZkVmdPMFZYanQKTHR5aE12RD1ubEsy
azNmTFpWTVc2MWFzVbVhtwktUth3YkZtL1RieE83ZkdJSwdpsZJKOGpWHZYRnhNeExZNQprvjcvd3Qx
UU1uwjJStjBsm0c3TghkyjJ4UjFORMd1eWNXdwtWV3JKSwtpcU1Ma01OLZdPSFhtSFZxazV1a1Z1CmNo
YmVidnJSSXRRNHBPYj1FZVgzTUXiZXBkrJj4Tws5NmZrVXJGwmhKYWREvNB5NXEwbHfPuvJkMvpIwk4x
SkMKwVBrZGRxdVQxbHNxawJzn3BwTHRmX1nv0JlS2hKQ0Fvet1UZEZ1WEt1QUZvdVJKUJWQus4dTFH
RU1aL2JEYgp2eXRnN2N6ZndWOFNrevNpkzZhc1dZRVBXUx11UEVEWjBPU1oKLS0tLS1FTkQgQ0VSVE1G
SUNBVEUtLS0tLQo=
```

client-key-data:

```
LS0tLS1CRudJTiB0EgUfJjVkfURSBLRVktLS0tLQpNSU1FcFFJQkFBS0NBUEVBeVU3ZWtvQ0ZFS0Jn
d3Z1SU12ek1Ic2pGYVt3M2Z0b1pZGpTSWxUqk4M2pjV1hucmh1eno5a013wktPRFnybmxwCtF0SnZ1
dHRVNWpcAHRie1JkOCTvUVhoQWFnVjE4WfVoZ29KY1lodeJZK21IaGMKK1dBNTYwaEEybEJaaFU2RGZz
ZjNVam9RbjNKdu02YUQ0eHBEM0hkbVNQYnRqBtFGRVZpMWRue1J5WENJbGtOQgpFR3hLam5MSjZ5dC9Y
cnVuNW9wdjBudE9jQww0VWJSWHFGejnpOUFLCcs5SEQ1RXpsT1BpVTBjUWVmTEREYTBFCnp3N1NyaDFp
NG9rdnhvSnhyd0FhcTdak1Q5b1VRwkv5a0RpnW5ubu02U25wSH1oww01bmX3YVF1Rm96RjZta3gkUZFP
YXJjMStiZGhYSHU1T3ViYWJkOXY0bVA5TDhyRFY3TDd6TFFJREFRQUJbB01CQVFDTWVnb2RSNndUCH1i
Kwp5wk1JcXBkbnpBamVtWktnd0ZET2tRwnFTS1NsREZsY0Y0ZWwRueHE3WGJXV2RQZzRUeRtXNHNqSnJG
V1NzUW12CkNFwnV1NwXvUkt6QWRGV1kzeFdpqnhOMUJYek5jn3hkZFVqRUNOOUNEYUNios9nUWEzS2Ri
K2VVTE1yT31ZYVgKYW5xY2J3YXVBEFTT0tZmYzcXc2R2R2a1dwLzIxwnF2bnAvdmZrN3dIYzduUktL
Wmt1ZVg0bVExdFFqdVBoZQpDQXN5WwZOewM0vjvyUDF1K3AZTGU4Ly9sTXZQZ0wydFBib3NaagYVM0dC
UGpPZHfabvdnL0R5b1hzn21qcnhqCng2OHJOChIXu2ZhQUNOMjNqde9HbXcreXh4NjdENTNUSVJUaxZI
Y2Izd0FIMnNRdkvzbG9HN01MU0d2THJ1S3IKS0c2RkQwb0JBb0dCQVBSwFdydwXa3B6bz15ZUJnd3hu
dm1yn2x2THZrVkv1Q3ZmRVg2MHviYm5HOVVsZm1BQgpeAvduoFcvUkVHVjE0CFBtcjQ2eE5QLZkrb1p3
CDNRNUMzbfNocENVWEVxZjVHTzBUSxdSb1NVdndKcUo2UHC0Cm4yb0xEbXBNS3k5bkZECFFCQTfoYUZS
QnZjd3ZxOXdhc0NmK3Fyc3pTNHM2bHp1Qm1KVDZXYudCQW9HQkFNnNYKSWJrSXJnVw54N1puNngYrjVm
SEQ0YVfYdWRlbWFSnN3NzV4dFY0ZV1EdU1ZVVIrYwXwY211VDZ4Y1Z3NUFvbQp6Q2o1VUNsejZJZ3pJ
c2MyTGRMR3JoEDVrcUFTMZA1K0UxavDEegh6UG44bUeTKi2NGY5WTVYdjJ6bm9mawVscmNkd2pBaE5O
Z1R1ck45ODR5RXpQL0tha1NsbGNxdHFSOVF6VvZrK3RBb0dCQU81c0RGty85NmRqbW4yY0VYw1okZ01T
U212TDJDUFBkZVNwaVBDMW5qT29Mwmi3VUFscTB4NTFVVVBhMTk3Sz1IYktGZEX2Q1VvYXp5bm9CZ080
TwptaDBodjVEQ2Z0b1N1S1pxUW9QeFc2RGVYNUttYXNXN014e1oRGS2cwXUQ2dVSWRQeks0UVBYSwdn
MmVpL3h4CjNNSHhyn29mbTQzL3Nacn1Hai9pZ0JDQkFvR0Fwb3BzRTE3NEJu1drUzIzkZUraUhxNE1Y
OFpuUTBtY2ZzS2UKWDNLYkgzS1dscmg3emNNazR2c1dYZ05HcGhwVDBaQ1hNZHphWE5FRwoycmg2QW51
ZS8vbVixYThoenhQdGowQgorcm15VDJtShhKRi9nMUXad1JJeKRZZm1Ba1EvOW5mR1JBCEfoemFOOWxz
RnhQaxduY0VFcGVYMW41ODJodUN3C1Q1UGxJKzBDZ11FQTN1wmpTc11U0ZsUGR0Q3NsN1ZDUWc4K0N6
L1hBTUNQZGt0Smf1bng5VwxtWVZXVfQZm2okby9uVVRPVHY1TWZPTm9wejVY0XM4ScsyexFodwPna2NH
ZmFTEHFTN1BkbWnhctJGMTYxTDDTR0JDb2w1MVQ5ZwpXQkRobn1qoFprSkQxd2prNKNDWG4ZNDZIMS9Y
REZjbmhnc2c2UHRjTGh3RC8yS013eFVmdzFBPQotLS0tLUVORCBSU0EgUfJjVkfURSBLRVktLS0tLQo=
root@k8s-master01:/data/velero#
```

6.3.4、k8s集群中创建awsuser账户

```

root@k8s-master01:/data/velero# kubectl create clusterrolebinding awsuser --
clusterrole=cluster-admin --user=awsuser
clusterrolebinding.rbac.authorization.k8s.io/awsuser created
root@k8s-master01:/data/velero# kubectl get clusterrolebinding -A|grep awsuser
awsuser                                     ClusterRole/cluster-admin
47s
root@k8s-master01:/data/velero#

```

6.3.5、验证证书的可用性

```

root@k8s-master01:/data/velero# kubectl --kubeconfig ./awsuser.kubeconfig get
nodes

```

NAME	STATUS	ROLES	AGE	VERSION
192.168.0.31	Ready,SchedulingDisabled	master	132d	v1.26.4
192.168.0.32	Ready,SchedulingDisabled	master	132d	v1.26.4
192.168.0.33	Ready,SchedulingDisabled	master	132d	v1.26.4
192.168.0.34	Ready	node	132d	v1.26.4
192.168.0.35	Ready	node	132d	v1.26.4
192.168.0.36	Ready	node	132d	v1.26.4

```

root@k8s-master01:/data/velero# kubectl --kubeconfig ./awsuser.kubeconfig get
pods -n kube-system

```

NAME	READY	STATUS	RESTARTS	AGE
calico-kube-controllers-5456dd947c-pw12n	1/1	Running	31 (79m ago)	132d
calico-node-4zmb4	1/1	Running	26 (79m ago)	132d
calico-node-7lc66	1/1	Running	28 (79m ago)	132d
calico-node-bkhkd	1/1	Running	28 (13d ago)	132d
calico-node-mw49k	1/1	Running	28 (79m ago)	132d
calico-node-v726r	1/1	Running	26 (79m ago)	132d
calico-node-x9r7h	1/1	Running	28 (79m ago)	132d
coredns-77879dc67d-k9ztn	1/1	Running	4 (79m ago)	27d
coredns-77879dc67d-qwb48	1/1	Running	4 (79m ago)	27d
snapshot-controller-0	1/1	Running	28 (79m ago)	132d

```

root@k8s-master01:/data/velero#

```

使用--kubeconfig选项来指定认证文件，如果能够正常查看k8s集群，pod等信息，说明该认证文件没有问题；

6.3.6、k8s集群中创建namespace

```

root@k8s-master01:/data/velero# kubectl create ns velero-system
namespace/velero-system created
root@k8s-master01:/data/velero# kubectl get ns

```

NAME	STATUS	AGE
argocd	Active	129d
default	Active	132d
kube-node-lease	Active	132d
kube-public	Active	132d
kube-system	Active	132d
magedu	Active	90d
myserver	Active	98d
velero-system	Active	5s

```

root@k8s-master01:/data/velero#

```

6.4、执行安装velero服务端

```
root@k8s-master01:/data/velero# velero --kubeconfig ./awsuser.kubeconfig \
> install \
> --provider aws \
> --plugins velero/velero-plugin-for-aws:v1.5.5 \
> --bucket velerodata \
> --secret-file ./velero-auth.txt \
> --use-volume-snapshots=false \
> --namespace velero-system \
> --backup-location-config
region=minio,s3ForcePathStyle="true",s3Url=http://192.168.0.42:9000
CustomResourceDefinition/backuprepositores.velero.io: attempting to create
resource
CustomResourceDefinition/backuprepositores.velero.io: attempting to create
resource client
CustomResourceDefinition/backuprepositores.velero.io: created
CustomResourceDefinition/backups.velero.io: attempting to create resource
CustomResourceDefinition/backups.velero.io: attempting to create resource client
CustomResourceDefinition/backups.velero.io: created
CustomResourceDefinition/backupstoragelocations.velero.io: attempting to create
resource
CustomResourceDefinition/backupstoragelocations.velero.io: attempting to create
resource client
CustomResourceDefinition/backupstoragelocations.velero.io: created
CustomResourceDefinition/deletebackuprequests.velero.io: attempting to create
resource
CustomResourceDefinition/deletebackuprequests.velero.io: attempting to create
resource client
CustomResourceDefinition/deletebackuprequests.velero.io: created
CustomResourceDefinition/downloadrequests.velero.io: attempting to create
resource
CustomResourceDefinition/downloadrequests.velero.io: attempting to create
resource client
CustomResourceDefinition/downloadrequests.velero.io: created
CustomResourceDefinition/podvolumebackups.velero.io: attempting to create
resource
CustomResourceDefinition/podvolumebackups.velero.io: attempting to create
resource client
CustomResourceDefinition/podvolumebackups.velero.io: created
CustomResourceDefinition/podvolumerestores.velero.io: attempting to create
resource
CustomResourceDefinition/podvolumerestores.velero.io: attempting to create
resource client
CustomResourceDefinition/podvolumerestores.velero.io: created
CustomResourceDefinition/restores.velero.io: attempting to create resource
CustomResourceDefinition/restores.velero.io: attempting to create resource
client
CustomResourceDefinition/restores.velero.io: created
CustomResourceDefinition/schedules.velero.io: attempting to create resource
CustomResourceDefinition/schedules.velero.io: attempting to create resource
client
CustomResourceDefinition/schedules.velero.io: created
CustomResourceDefinition/serverstatusrequests.velero.io: attempting to create
resource
CustomResourceDefinition/serverstatusrequests.velero.io: attempting to create
resource client
CustomResourceDefinition/serverstatusrequests.velero.io: created
```

```
CustomResourceDefinition/volumesnapshotlocations.velero.io: attempting to create resource
CustomResourceDefinition/volumesnapshotlocations.velero.io: attempting to create resource client
CustomResourceDefinition/volumesnapshotlocations.velero.io: created
Waiting for resources to be ready in cluster...
Namespace/velero-system: attempting to create resource
Namespace/velero-system: attempting to create resource client
Namespace/velero-system: already exists, proceeding
Namespace/velero-system: created
ClusterRoleBinding/velero-velero-system: attempting to create resource
ClusterRoleBinding/velero-velero-system: attempting to create resource client
ClusterRoleBinding/velero-velero-system: created
ServiceAccount/velero: attempting to create resource
ServiceAccount/velero: attempting to create resource client
ServiceAccount/velero: created
Secret/cloud-credentials: attempting to create resource
Secret/cloud-credentials: attempting to create resource client
Secret/cloud-credentials: created
BackupStorageLocation/default: attempting to create resource
BackupStorageLocation/default: attempting to create resource client
BackupStorageLocation/default: created
Deployment/velero: attempting to create resource
Deployment/velero: attempting to create resource client
Deployment/velero: created
velero is installed! 🚢 Use 'kubectl logs deployment/velero -n velero-system' to view the status.
root@k8s-master01:/data/velero#
```

6.5、验证安装velero服务端

```
root@k8s-master01:/data/velero# kubectl get pod -n velero-system
NAME                                READY   STATUS    RESTARTS   AGE
velero-5d675548c4-2dx8d            1/1     Running   0           105s
root@k8s-master01:/data/velero#
```

能够在velero-system名称空间下看到velero pod 正常running，这意味着velero服务端已经部署好了；

7、velero备份数据

7.1、对default ns进行备份

```
root@k8s-master01:/data/velero# DATE=`date +%Y%m%d%H%M%S`
root@k8s-master01:/data/velero# velero backup create default-backup-${DATE} \
> --include-cluster-resources=true \
> --include-namespaces default \
> --kubeconfig=./awsuser.kubeconfig \
> --namespace velero-system
Backup request "default-backup-20230902133242" submitted successfully.
Run `velero backup describe default-backup-20230902133242` or `velero backup logs default-backup-20230902133242` for more details.
root@k8s-master01:/data/velero#
```

验证备份

```
root@k8s-master01:/data/velero# velero backup describe default-backup-20230902133242 --kubeconfig=./awsuser.kubeconfig --namespace velero-system
Name:          default-backup-20230902133242
Namespace:     velero-system
Labels:        velero.io/storage-location=default
Annotations:   velero.io/source-cluster-k8s-gitversion=v1.26.4
               velero.io/source-cluster-k8s-major-version=1
               velero.io/source-cluster-k8s-minor-version=26

Phase:  Completed

Namespaces:
  Included:  default
  Excluded:  <none>

Resources:
  Included:  *
  Excluded:  <none>
  Cluster-scoped:  included

Label selector:  <none>

Storage Location:  default

Velero-Native Snapshot PVs:  auto

TTL:  720h0m0s

CSISnapshotTimeout:  10m0s
ItemOperationTimeout:  1h0m0s

Hooks:  <none>

Backup Format Version:  1.1.0

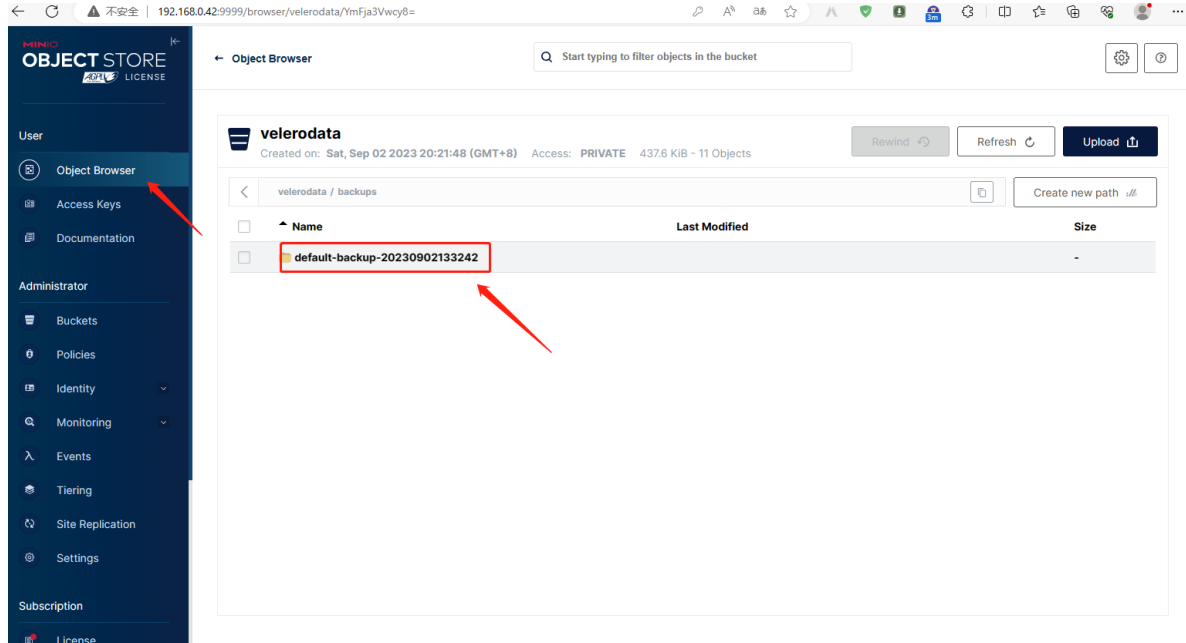
Started:    2023-09-02 13:33:01 +0000 UTC
Completed:  2023-09-02 13:33:09 +0000 UTC

Expiration: 2023-10-02 13:33:01 +0000 UTC

Total items to be backed up: 288
Items backed up:             288

Velero-Native Snapshots: <none included>
root@k8s-master01:/data/velero#
```

minio验证备份数据



删除pod并验证数据恢复

- 删除pod

```
root@k8s-master01:/data/velero# kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
bash     1/1     Running   5 (93m ago)  27d
root@k8s-master01:/data/velero# kubectl delete pod bash -n default
pod "bash" deleted
root@k8s-master01:/data/velero# kubectl get pods
No resources found in default namespace.
root@k8s-master01:/data/velero#
```

- 恢复pod

```
root@k8s-master01:/data/velero# velero restore create --from-backup default-backup-20230902133242 --wait --kubeconfig=./awsuser.kubeconfig --namespace velero-system
Restore request "default-backup-20230902133242-20230902134421" submitted successfully.
Waiting for restore to complete. You may safely press ctrl-c to stop waiting - your restore will continue in the background.
.....
Restore completed with status: Completed. You may check for more information using the commands `velero restore describe default-backup-20230902133242-20230902134421` and `velero restore logs default-backup-20230902133242-20230902134421`.
root@k8s-master01:/data/velero#
```

- 验证pod

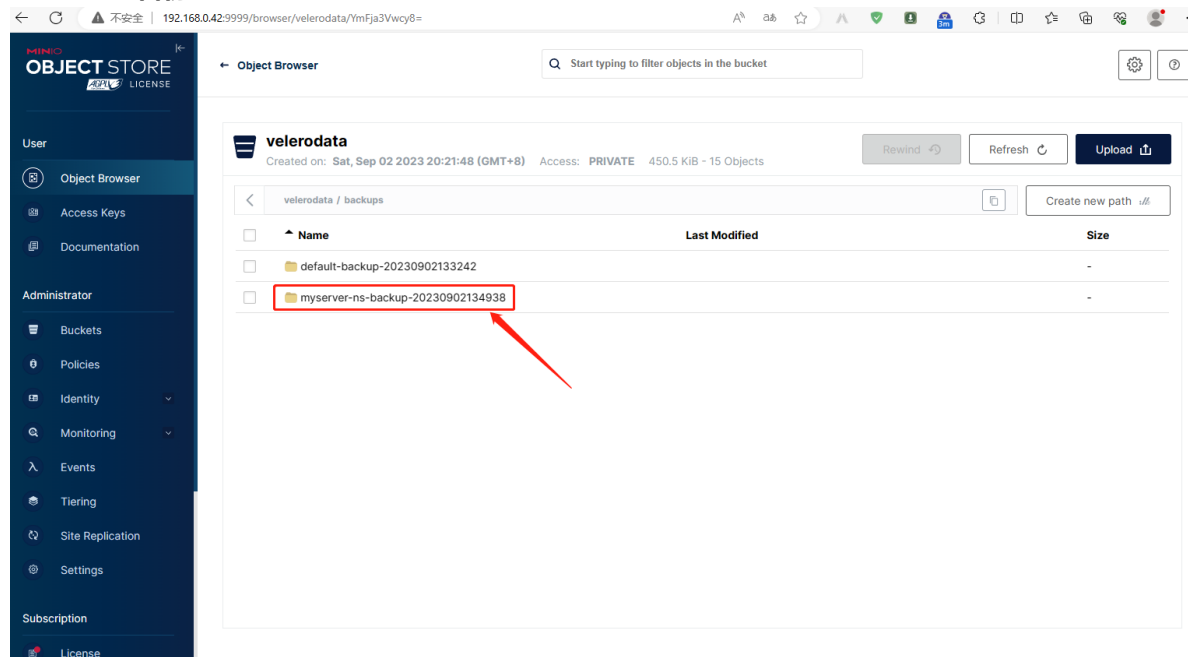
```
root@k8s-master01:/data/velero# kubectl get pods
NAME      READY   STATUS    RESTARTS   AGE
bash     1/1     Running   0           77s
root@k8s-master01:/data/velero# kubectl exec -it bash bash
kubectl exec [POD] [COMMAND] is DEPRECATED and will be removed in a future version. Use kubectl exec [POD] -- [COMMAND] instead.
```

```
[root@bash ~]# ping www.baidu.com
PING www.a.shifen.com (14.119.104.189) 56(84) bytes of data.
64 bytes from 14.119.104.189 (14.119.104.189): icmp_seq=1 ttl=53 time=42.5 ms
64 bytes from 14.119.104.189 (14.119.104.189): icmp_seq=2 ttl=53 time=42.2 ms
^C
--- www.a.shifen.com ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 42.234/42.400/42.567/0.264 ms
[root@bash ~]#
```

对myserver ns进行备份

```
root@k8s-master01:/data/velero# DATE=`date +%Y%m%d%H%M%S`
root@k8s-master01:/data/velero# velero backup create myserver-ns-backup-${DATE} \
> --include-cluster-resources=true \
> --include-namespaces myserver \
> --kubeconfig=/root/.kube/config \
> --namespace velero-system
Backup request "myserver-ns-backup-20230902134938" submitted successfully.
Run `velero backup describe myserver-ns-backup-20230902134938` or `velero backup
logs myserver-ns-backup-20230902134938` for more details.
root@k8s-master01:/data/velero#
```

minio验证备份



The screenshot shows the Minio Object Browser interface. On the left is a sidebar with navigation options like 'Object Browser', 'Access Keys', 'Documentation', 'Buckets', 'Policies', 'Identity', 'Monitoring', 'Events', 'Tiering', 'Site Replication', 'Settings', and 'Subscription'. The main area displays the 'velerodata' bucket, created on 'Sat, Sep 02 2023 20:21:48 (GMT+8)', with 'PRIVATE' access and '450.5 KiB - 15 Objects'. Below this, a table lists objects in the 'backups' folder:

Name	Last Modified	Size
default-backup-20230902133242		-
myserver-ns-backup-20230902134938		-

A red box highlights the 'myserver-ns-backup-20230902134938' entry, and a red arrow points to it.

删除pod并验证恢复

```
root@k8s-master01:/data/velero# DATE=`date +%Y%m%d%H%M%S`
root@k8s-master01:/data/velero# velero backup create myserver-ns-backup-${DATE} \
> --include-cluster-resources=true \
> --include-namespaces myserver \
> --kubeconfig=/root/.kube/config \
> --namespace velero-system
Backup request "myserver-ns-backup-20230902134938" submitted successfully.
Run `velero backup describe myserver-ns-backup-20230902134938` or `velero backup
logs myserver-ns-backup-20230902134938` for more details.
root@k8s-master01:/data/velero# kubectl get pods -n myserver
```



```

NAME                                     READY   STATUS    RESTARTS
    AGE
myserver-myapp-deployment-name-6965765b9c-h4kj6    1/1     Running    13 (104m
ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-8zw5s    1/1     Running    13 (104m
ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-j276c    1/1     Running    13 (104m
ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-p76bw    1/1     Running    13 (13d
ago)    98d
root@k8s-master01:/data/velero# kubectl get deployments.apps -n myserver
NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
myserver-myapp-deployment-name          1/1      1             1           98d
myserver-myapp-frontend-deployment      3/3      3             3           98d
root@k8s-master01:/data/velero# kubectl delete deployments.apps myserver-myapp-
deployment-name -n myserver
deployment.apps "myserver-myapp-deployment-name" deleted
root@k8s-master01:/data/velero# kubectl get pods -n myserver
NAME                                     READY   STATUS    RESTARTS
    AGE
myserver-myapp-frontend-deployment-6bd57599f4-8zw5s    1/1     Running    13 (106m
ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-j276c    1/1     Running    13 (106m
ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-p76bw    1/1     Running    13 (13d
ago)    98d
root@k8s-master01:/data/velero# velero restore create --from-backup myserver-ns-
backup-20230902134938 --wait \
> --kubeconfig=./awsuser.kubeconfig \
> --namespace velero-system
Restore request "myserver-ns-backup-20230902134938-20230902135401" submitted
successfully.
Waiting for restore to complete. You may safely press ctrl-c to stop waiting -
your restore will continue in the background.
.....
Restore completed with status: Completed. You may check for more information
using the commands `velero restore describe myserver-ns-backup-20230902134938-
20230902135401` and `velero restore logs myserver-ns-backup-20230902134938-
20230902135401`.
root@k8s-master01:/data/velero# kubectl get deployments.apps -n myserver
NAME                                     READY   UP-TO-DATE   AVAILABLE   AGE
myserver-myapp-deployment-name          0/1      1             0           37s
myserver-myapp-frontend-deployment      3/3      3             3           98d
root@k8s-master01:/data/velero# kubectl get pods -n myserver
NAME                                     READY   STATUS
RESTARTS    AGE
myserver-myapp-deployment-name-6965765b9c-h4kj6    0/1     PodInitializing
0           69s
myserver-myapp-frontend-deployment-6bd57599f4-8zw5s    1/1     Running
13 (108m ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-j276c    1/1     Running
13 (108m ago)    98d
myserver-myapp-frontend-deployment-6bd57599f4-p76bw    1/1     Running
13 (13d ago)    98d
root@k8s-master01:/data/velero#

```


7.2、备份指定资源对象

备份指定namespace中的pod或特定资源

```
root@k8s-master01:/data/velero# DATE=`date +%Y%m%d%H%M%S`
root@k8s-master01:/data/velero# velero backup create pod-backup-${DATE} --
include-cluster-resources=true \
> --ordered-resources 'pods=default/bash,magedu/ubuntu1804,magedu/mysql-
0;deployments.apps=myserver/myserver-myapp-frontend-deployment,magedu/wordpress-
app-deployment;services=myserver/myserver-myapp-service-
name,magedu/mysql,magedu/zookeeper' \
> --namespace velero-system --include-namespaces=myserver,magedu,default
Backup request "pod-backup-20230902141842" submitted successfully.
Run `velero backup describe pod-backup-20230902141842` or `velero backup logs
pod-backup-20230902141842` for more details.
root@k8s-master01:/data/velero#
```

删除pod并验证恢复

- 删除资源

```
root@k8s-master01:/data/velero# kubectl get deployments.apps -n magedu
NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
magedu-consumer-deployment         3/3      3              3            22d
magedu-dubboadmin-deployment        1/1      1              1            22d
magedu-provider-deployment          3/3      3              3            22d
wordpress-app-deployment            1/1      1              1            13d
zookeeper1                          1/1      1              1            90d
zookeeper2                          1/1      1              1            90d
zookeeper3                          1/1      1              1            90d
root@k8s-master01:/data/velero# kubectl delete deployments.apps wordpress-app-
deployment -n magedu
deployment.apps "wordpress-app-deployment" deleted
root@k8s-master01:/data/velero# kubectl get deployments.apps -n magedu
NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
magedu-consumer-deployment         3/3      3              3            22d
magedu-dubboadmin-deployment        1/1      1              1            22d
magedu-provider-deployment          3/3      3              3            22d
zookeeper1                          1/1      1              1            90d
zookeeper2                          1/1      1              1            90d
zookeeper3                          1/1      1              1            90d
root@k8s-master01:/data/velero# kubectl get svc -n magedu
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP    PORT(S)
AGE
magedu-consumer-server              NodePort            10.100.208.121  <none>         80:49630/TCP
22d
magedu-dubboadmin-service            NodePort            10.100.244.92   <none>         80:31080/TCP
22d
magedu-provider-spec                 NodePort            10.100.187.168  <none>         80:44873/TCP
22d
mysql                                ClusterIP            None             <none>         3306/TCP
79d
mysql-0                             ClusterIP            None             <none>         3306/TCP
13d
mysql-read                           ClusterIP            10.100.15.127   <none>         3306/TCP
79d
```

```

redis                                ClusterIP    None          <none>          6379/TCP
                                     88d
redis-access                         NodePort     10.100.117.185 <none>
6379:36379/TCP                       88d
wordpress-app-spec                  NodePort     10.100.189.214 <none>
80:30031/TCP,443:30033/TCP          13d
zookeeper                           ClusterIP    10.100.237.95  <none>          2181/TCP
                                     90d
zookeeper1                          NodePort     10.100.63.118  <none>
2181:32181/TCP,2888:30541/TCP,3888:31200/TCP 90d
zookeeper2                          NodePort     10.100.199.43  <none>
2181:32182/TCP,2888:32670/TCP,3888:32264/TCP 90d
zookeeper3                          NodePort     10.100.41.9    <none>
2181:32183/TCP,2888:31329/TCP,3888:32546/TCP 90d
root@k8s-master01:/data/velero# kubectl delete svc mysql -n magedu
service "mysql" deleted
root@k8s-master01:/data/velero# kubectl delete svc zookeeper -n magedu
service "zookeeper" deleted
root@k8s-master01:/data/velero# kubectl get svc -n magedu
NAME                                TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)
AGE
magedu-consumer-server             NodePort      10.100.208.121 <none>
80:49630/TCP                        22d
magedu-dubboadmin-service          NodePort      10.100.244.92  <none>
80:31080/TCP                        22d
magedu-provider-spec               NodePort      10.100.187.168 <none>
80:44873/TCP                        22d
mysql-0                             ClusterIP      None           <none>          3306/TCP
13d
mysql-read                         ClusterIP      10.100.15.127  <none>          3306/TCP
79d
redis                               ClusterIP      None           <none>          6379/TCP
88d
redis-access                       NodePort      10.100.117.185 <none>
6379:36379/TCP                       88d
wordpress-app-spec                 NodePort      10.100.189.214 <none>
80:30031/TCP,443:30033/TCP          13d
zookeeper1                         NodePort      10.100.63.118  <none>
2181:32181/TCP,2888:30541/TCP,3888:31200/TCP 90d
zookeeper2                         NodePort      10.100.199.43  <none>
2181:32182/TCP,2888:32670/TCP,3888:32264/TCP 90d
zookeeper3                         NodePort      10.100.41.9    <none>
2181:32183/TCP,2888:31329/TCP,3888:32546/TCP 90d
root@k8s-master01:/data/velero#

```

- 恢复资源

```

root@k8s-master01:/data/velero# velero restore create --from-backup pod-backup-
20230902141842 --wait \
> --kubeconfig=./awsuser.kubeconfig \
> --namespace velero-system
Restore request "pod-backup-20230902141842-20230902142341" submitted
successfully.
waiting for restore to complete. You may safely press ctrl-c to stop waiting -
your restore will continue in the background.
.....
Restore completed with status: Completed. You may check for more information
using the commands `velero restore describe pod-backup-20230902141842-
20230902142341` and `velero restore logs pod-backup-20230902141842-
20230902142341`.
root@k8s-master01:/data/velero#

```

- 验证对应资源是否恢复

```

root@k8s-master01:/data/velero# kubectl get kubectl get deployments.apps -n
magedu
error: the server doesn't have a resource type "kubectl"
root@k8s-master01:/data/velero# kubectl get deployments.apps -n magedu

```

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
magedu-consumer-deployment	3/3	3	3	22d
magedu-dubboadmin-deployment	1/1	1	1	22d
magedu-provider-deployment	3/3	3	3	22d
wordpress-app-deployment	1/1	1	1	2m57s
zookeeper1	1/1	1	1	90d
zookeeper2	1/1	1	1	90d
zookeeper3	1/1	1	1	90d

```

root@k8s-master01:/data/velero# kubectl get pods -n magedu

```

NAME	READY	STATUS	RESTARTS
AGE			
magedu-consumer-deployment-798c7d785b-fp4b9	1/1	Running	3 (140m ago)
22d			
magedu-consumer-deployment-798c7d785b-wmv9p	1/1	Running	3 (140m ago)
22d			
magedu-consumer-deployment-798c7d785b-zqm74	1/1	Running	3 (13d ago)
22d			
magedu-dubboadmin-deployment-798c4dfdd8-kvfvh	1/1	Running	3 (140m ago)
22d			
magedu-provider-deployment-6fccc6d9f5-k6z7m	1/1	Running	3 (140m ago)
22d			
magedu-provider-deployment-6fccc6d9f5-n14zd	1/1	Running	3 (140m ago)
22d			
magedu-provider-deployment-6fccc6d9f5-p94rb	1/1	Running	3 (140m ago)
22d			
mysql-0	2/2	Running	12 (140m ago)
79d			
mysql-1	2/2	Running	12 (140m ago)
79d			
mysql-2	2/2	Running	12 (140m ago)
79d			
redis-0	1/1	Running	8 (13d ago)
88d			
redis-1	1/1	Running	8 (140m ago)
88d			

```

redis-2      1/1    Running    8 (140m ago)
  88d
redis-3      1/1    Running    8 (13d ago)
  87d
redis-4      1/1    Running    8 (140m ago)
  88d
redis-5      1/1    Running    8 (140m ago)
  88d
ubuntu1804   0/1    Completed  0
  88d
wordpress-app-deployment-64c956bf9c-6qp8q  2/2    Running    0
  3m31s
zookeeper1-675c5477cb-vmwwq      1/1    Running    10 (13d ago)
  90d
zookeeper2-759fb6c6f-7jktr      1/1    Running    10 (140m
ago)  90d
zookeeper3-5c78bb5974-vxpbh      1/1    Running    10 (140m
ago)  90d
root@k8s-master01:/data/velero# kubectl svc -n magedu
error: unknown command "svc" for "kubectl"

```

Did you mean this?

`set`

```

root@k8s-master01:/data/velero# kubectl get svc -n magedu

```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)
magedu-consumer-server	NodePort	10.100.208.121	<none>	80:49630/TCP
				22d
magedu-dubboadmin-service	NodePort	10.100.244.92	<none>	80:31080/TCP
				22d
magedu-provider-spec	NodePort	10.100.187.168	<none>	80:44873/TCP
				22d
mysql	ClusterIP	None	<none>	3306/TCP
				4m6s
mysql-0	ClusterIP	None	<none>	3306/TCP
				13d
mysql-read	ClusterIP	10.100.15.127	<none>	3306/TCP
				79d
redis	ClusterIP	None	<none>	6379/TCP
				88d
redis-access	NodePort	10.100.117.185	<none>	6379:36379/TCP
				88d
wordpress-app-spec	NodePort	10.100.189.214	<none>	80:30031/TCP, 443:30033/TCP
				13d
zookeeper	ClusterIP	10.100.177.73	<none>	2181/TCP
				4m6s
zookeeper1	NodePort	10.100.63.118	<none>	2181:32181/TCP, 2888:30541/TCP, 3888:31200/TCP
				90d
zookeeper2	NodePort	10.100.199.43	<none>	2181:32182/TCP, 2888:32670/TCP, 3888:32264/TCP
				90d
zookeeper3	NodePort	10.100.41.9	<none>	2181:32183/TCP, 2888:31329/TCP, 3888:32546/TCP
				90d

```

root@k8s-master01:/data/velero#

```

7.3、批量备份所有namespace

```

root@k8s-master01:/data/velero# cat all-ns-backup.sh
#!/bin/bash
NS_NAME=`kubectl get ns | awk '{if (NR>2){print}}' | awk '{print $1}'`
DATE=`date +%Y%m%d%H%M%S`
cd /data/velero/
for i in $NS_NAME;do
velero backup create ${i}-ns-backup-${DATE} \
--include-cluster-resources=true \
--include-namespaces ${i} \
--kubeconfig=/root/.kube/config \
--namespace velero-system
done
root@k8s-master01:/data/velero#

```

执行脚本备份

```

root@k8s-master01:/data/velero# bash all-ns-backup.sh
Backup request "default-ns-backup-20230902143131" submitted successfully.
Run `velero backup describe default-ns-backup-20230902143131` or `velero backup
logs default-ns-backup-20230902143131` for more details.
Backup request "kube-node-lease-ns-backup-20230902143131" submitted
successfully.
Run `velero backup describe kube-node-lease-ns-backup-20230902143131` or `velero
backup logs kube-node-lease-ns-backup-20230902143131` for more details.
Backup request "kube-public-ns-backup-20230902143131" submitted successfully.
Run `velero backup describe kube-public-ns-backup-20230902143131` or `velero
backup logs kube-public-ns-backup-20230902143131` for more details.
Backup request "kube-system-ns-backup-20230902143131" submitted successfully.
Run `velero backup describe kube-system-ns-backup-20230902143131` or `velero
backup logs kube-system-ns-backup-20230902143131` for more details.
Backup request "magedu-ns-backup-20230902143131" submitted successfully.
Run `velero backup describe magedu-ns-backup-20230902143131` or `velero backup
logs magedu-ns-backup-20230902143131` for more details.
Backup request "myserver-ns-backup-20230902143131" submitted successfully.
Run `velero backup describe myserver-ns-backup-20230902143131` or `velero backup
logs myserver-ns-backup-20230902143131` for more details.
Backup request "velero-system-ns-backup-20230902143131" submitted successfully.
Run `velero backup describe velero-system-ns-backup-20230902143131` or `velero
backup logs velero-system-ns-backup-20230902143131` for more details.
root@k8s-master01:/data/velero#

```

在minio验证备份

192.168.0.42:9999/brower/velerodata/YmFja3Vwcy8=

MINIO
OBJECT STORE
LICENSE

User

Object Browser

Access Keys

Documentation

Administrator

Buckets

Policies

Identity

Monitoring

Events

Tiering

Site Replication

Settings

Subscription

License

Object Browser

Start typing to filter objects in the bucket

velerodata

Created on: Sat, Sep 02 2023 20:21:48 (GMT+8) Access: PRIVATE 1.4 MiB - 45 Objects

Rewind

Refresh

Upload

velerodata / backups

Create new path

	Name	Last Modified	Size
<input type="checkbox"/>	default-backup-20230902133242		-
<input type="checkbox"/>	default-ns-backup-20230902143131		-
<input type="checkbox"/>	kube-node-lease-ns-backup-20230902143131		-
<input type="checkbox"/>	kube-public-ns-backup-20230902143131		-
<input type="checkbox"/>	kube-system-ns-backup-20230902143131		-
<input type="checkbox"/>	magedu-ns-backup-20230902143131		-
<input type="checkbox"/>	myserver-ns-backup-20230902134938		-
<input type="checkbox"/>	myserver-ns-backup-20230902143131		-
<input type="checkbox"/>	pod-backup-20230902141842		-
<input type="checkbox"/>	velero-system-ns-backup-20230902143131		-