# Velero Kubernetes backup

## CONCEPTS

Velero stores backups as object-store tarballs; the CLI just creates Backup, Restore and Schedule objects the in-cluster server acts on.

**velero CLI** creates CRs
↓ Backup CR
**Velero server** deployment in velero ns
↓ upload
**Object store**
BackupStorageLocation
↓ snapshot
**Volumes** VolumeSnapshotLocation

Backups are namespaced to the velero namespace; use -n <ns> if you installed elsewhere.

A restore never overwrites existing objects by default; they are skipped with a warning.

## INSTALL

`velero install --provider <provider> --bucket <bucket> --secret-file <file> --plugins <image>`
Install server components

`velero install --no-secret`
Install using workload identity

`velero install --use-node-agent`
Enable file system backup

`velero install --default-volumes-to-fs-backup`
Use fs backup for all volumes

`velero install --dry-run -o yaml`
Render install manifests only

`velero uninstall`
Remove what install created

`velero version`
Show client and server version

## BACKUPS

`velero backup create <name>`
Back up all namespaces

## BACKUPS (cont.)

`velero backup create <name> --include-namespaces <ns>`
Back up chosen namespaces

`velero backup create <name> --exclude-namespaces <ns>`
Skip namespaces

`velero backup create <name> --selector <k>=<v>`
Back up by label

`velero backup create <name> --ttl <duration>`
Set retention (default 720h)

`velero backup create <name> --wait`
Block until finished

`velero backup create <name> --snapshot-volumes=false`
Skip volume snapshots

`velero backup create <name> --default-volumes-to-fs-backup`
Copy volume data with fs backup

`velero backup create --from-schedule <schedule>`
Run a schedule's backup now

`velero backup create <name> --storage-location <bsl>`
Pick a storage location

`velero backup get`
List backups and status

`velero backup describe <name> --details`
Show contents and volume results

`velero backup logs <name>`
Show backup log

`velero backup delete <name>`
Delete backup and its data

## RESTORES

`velero restore create --from-backup <name>`
Restore a backup

`velero restore create --from-schedule <schedule>`
Restore latest scheduled backup

`velero restore create <name> --from-backup <backup>`
Restore with a chosen name

## RESTORES (cont.)

`velero restore create --from-backup <name> --include-namespaces <ns>`
Restore only some namespaces

`velero restore create --from-backup <name> --include-resources <res>`
Restore only some kinds

`velero restore create --from-backup <name> --namespace-mappings <old>:<new>`
Restore into another namespace

`velero restore get`
List restores

`velero restore describe <name> --details`
Show warnings and errors

`velero restore logs <name>`
Show restore log

## SCHEDULES

`velero schedule create <name> --schedule="<cron>"`
Create a recurring backup

`velero schedule create <name> --schedule="@every 6h" --ttl <duration>`
Schedule with retention

`velero schedule get`
List schedules

## STORAGE LOCATIONS

`velero backup-location get`
List locations and phase

## HOOKS AND VOLUMES

`backup.velero.io/backup-volumes=<vol1>,<vol2>`
Opt a pod's volumes into fs backup

## TROUBLESHOOTING

`kubectl logs deployment/velero -n velero`
Read server logs