

CheatSheet: Kubernetes Backup

CLOUD

- PDF Link: [cheatsheet-k8s-backup-A4.pdf](#), Category: Cloud
- Blog URL: <https://cheatsheet.dennyzhang.com/cheatsheet-k8s-backup-A4>
- Related posts: [Kubectl CheatSheet](#), [Kubernetes Yaml Templates](#), [#denny-cheatsheets](#)

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1.1 Backup Scenarios

| Name | Summary |
|------------------------------------|---|
| Backup and restore at infra level | Data and configuration of SDN, SDS and virtualization |
| Backup and restore at db level | Full etcd backup and restore |
| Backup and restore per label | k8s resource matching label will be copied, including PV and PVC. |
| Backup and restore namespace level | k8s resource for a given namespace. Not including global resource |

1.2 heptio ark

| Name | Summary |
|----------------------|--|
| ark | Kubernetes backup and recovery. Initiated by heptio |
| heptio backup volume | Backup is done at PV layer(e.g, snapshot EBS block), instead of PVC(Posix filesystem). |
| Reference | YouTube: 15 minutes with Heptio Ark, Link: How Ark Works |
| Reference | Link: ark supported storage providers |

<https://raw.githubusercontent.com/dennyzhang/cheatsheet.dennyzhang.com/master/cheatsheet-k8s-backup-A4/ark-backup.png>

1.3 heptio ark cli

| Name | Command |
|-------------------------|---|
| Create backup by labels | <code>ark backup create \$BACKUP_NAME --selector app=nginx</code> |
| Check backupset info | <code>ark backup describe \$BACKUP_NAME</code> |
| Restore from backupset | <code>ark restore create --from-backup \$BACKUP_NAME</code> |
| Check restore status | <code>ark restore get</code> |
| Delete backupset | <code>ark backup delete \$BACKUP_NAME</code> |

1.4 heptio ark CRD

| Name | Summary |
|---|---------|
| <code>backups.ark.heptio.com</code> | |
| <code>backupstoragelocations.ark.heptio.com</code> | |
| <code>deletebackuprequests.ark.heptio.com</code> | |
| <code>downloadrequests.ark.heptio.com</code> | |
| <code>podvolumebackups.ark.heptio.com</code> | |
| <code>podvolumerestores.ark.heptio.com</code> | |
| <code>resticrepositories.ark.heptio.com</code> | |
| <code>restores.ark.heptio.com</code> | |
| <code>schedules.ark.heptio.com</code> | |
| <code>volumesnapshotlocations.ark.heptio.com</code> | |

1.5 Sample output of ark backup

```
> ark backup describe nginx-backup
Name:      nginx-backup
Namespace: heptio-ark
Labels:    <none>
Annotations: <none>
```

Phase: New

Namespaces:

Included: *
Excluded: <none>

Resources:

Included: *
Excluded: <none>
Cluster-scoped: auto

Label selector: app=nginx

Storage Location:

Snapshot PVs: auto

TTL: 720h0m0s

Hooks: <none>

Backup Format Version: 0

Started: <n/a>

Completed: <n/a>

Expiration: 0001-01-01 00:00:00 +0000 UTC

Validation errors: <none>

Persistent Volumes: <none included>

1.6 ark CLI Online Help

```
> ./ark --help
```

Heptio Ark 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, Ark supports a similar model, allowing you to execute commands such as 'ark get backup' and 'ark create schedule'. The same operations can also be performed as 'ark backup get' and 'ark schedule create'.

Usage:

```
ark [command]
```

Available Commands:

| | |
|-----------------|--|
| backup | Work with backups |
| backup-location | Work with backup storage locations |
| bug | Report an Ark bug |
| client | Ark client related commands |
| completion | Output shell completion code for the specified shell (bash or zsh) |
| create | Create ark resources |
| delete | Delete ark resources |
| describe | Describe ark resources |
| get | Get ark resources |
| help | Help about any command |
| plugin | Work with plugins |
| restic | Work with restic |
| restore | Work with restores |
| schedule | Work with schedules |

```

server          Run the ark server
snapshot-location Work with snapshot locations
version         Print the ark version and associated image

```

Flags:

```

--alsologtostderr    log to standard error as well as files
-h, --help          help for ark
--kubeconfig string  Path to the kubeconfig file to use to talk to the Kubernetes apiserv
--kubecontext string The context to use to talk to the Kubernetes apiserver. If unset def
--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
--logtostderr        log to standard error instead of files
-n, --namespace string The namespace in which Ark should operate (default "heptio-ark")
--stderrthreshold severity logs at or above this threshold go to stderr (default 2)
-v, --v Level        log level for V logs
--vmodule moduleSpec comma-separated list of pattern=N settings for file-filtered logging

```

Use "ark [command] --help" for more information about a command.

1.7 More Resources

<https://kubedex.com/resource/ark/>

<https://blog.heptio.com/announcing-ark-v0-10-with-greater-support-for-hybrid-and-multi-cloud-deployments->

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