

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: [Kubect1 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
--kubecorecontext 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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