kubeseal Sealed Secrets CLI

Secret plain, local only → `kubeseal` → **SealedSecret** encrypted, in Git → `kubectl apply` → **Controller** holds private key → `decrypts` → **Secret** in the cluster

CONCEPTS

Only the controller's private key can decrypt a SealedSecret, so sealed files are safe to commit to Git.

The default strict scope binds name and namespace into the ciphertext: renaming or moving the file breaks decryption.

Sealing keys rotate (every 30 days by default) but old keys stay, so old sealed files keep working. Back up the keys.

SEAL

`kubeseal -f <secret> -w <sealed>`
Seal a Secret file

`kubeseal < <secret> > <sealed>`
Seal via stdin and stdout

`kubectl create secret generic <name> --dry-run=client --from-literal=<k>=<v> -o json | kubeseal > <sealed>`
Create and seal in one pipe

SEAL (cont.)

`kubeseal -o yaml < <secret>`
Output YAML instead of JSON

`kubeseal --namespace <ns> < <secret>`
Seal for a namespace

`kubectl apply -f <sealed>`
Deploy the SealedSecret

`kubectl get sealedsecret`
List SealedSecrets

`kubectl get secret <name>`
Check the controller made the Secret

CERTIFICATE

`kubeseal --fetch-cert > <pub.pem>`
Download the controller's public cert

`kubeseal --cert <pub.pem> < <secret>`
Seal offline with a saved cert

`kubeseal --cert <https-url> < <secret>`
Seal with a cert from a URL

`export SEALED_SECRETS_CERT=<pub.pem>`
Set the default cert

CONTROLLER

`kubeseal --controller-name <name>`
Name of the controller service

`kubeseal --controller-namespace <ns>`
Namespace of the controller

`kubeseal --version`
Show kubeseal version

SCOPES

`kubeseal --scope strict`
Bind name and namespace (default)

`kubeseal --scope namespace-wide`
Allow renaming inside the namespace

`kubeseal --scope cluster-wide`
Allow any name and namespace

Scope annotations

Annotation on the Secret	Effect
`sealedsecrets.bitnami.com/namespace-wide: "true"`	Namespace-wide scope
`sealedsecrets.bitnami.com/cluster-wide: "true"`	Cluster-wide scope, wins over the other

MAINTAIN

`kubeseal --validate < <sealed>`
Check the controller can decrypt it

`kubeseal --re-encrypt < <sealed> > <new>`
Re-encrypt with the newest key

`kubeseal --merge-into <sealed> < <secret>`
Add values to an existing SealedSecret

`kubeseal --recovery-unseal --recovery-private-key <k1>,<k2> < <sealed>`
Decrypt offline with backed-up keys

`kubectl get secret -n kube-system -l sealedsecrets.bitnami.com/sealed-secrets-key -o yaml > <main.key>`
Back up the sealing keys

`kubectl apply -f <main.key>`
Restore keys, then restart the controller pod

RAW MODE

`echo -n <value> | kubeseal --raw --name <n> --namespace <ns>`
Encrypt one value (strict)

SECRET ANNOTATIONS

Controller behaviour

Annotation (sealedsecrets.bitnami.com/)	Effect
`managed: "true"`	Take over an existing Secret
`patch: "true"`	Add keys, keep others (0.23+)
`skip-set-owner-references: "true"`	Secret outlives its SealedSecr

RECIPES

Seal a new secret

```
kubectl create secret
generic db --dry-run=client
\
  --from-
literal=password=<pw> -n app
-o json \
  | kubeseal > db-
sealed.json
kubectl apply -f db-
sealed.json
```

Seal in CI without cluster access

```
# once, with cluster access
kubeseal --fetch-cert >
pub.pem
# later, anywhere
kubeseal --cert pub.pem -f
secret.yaml -w sealed.yaml
```