HashiCorp Vault Secrets management

Auth method userpass, token, oidc... → issues → **Token** carries policies → checked by → **Policy** path capabilities → allows → **Secrets engine** kv, transit, database...

CONCEPTS

The CLI is a thin wrapper over the HTTP API: everything lives at a path, and read/write/list/delete work on any of them.

The server starts sealed. Unseal it with enough key shares before any request works; dev mode skips this.

Dev mode is in-memory and insecure. Never use it for real secrets.

CONNECT

`export VAULT_ADDR=<url>`
Set the server address

`export VAULT_TOKEN=<token>`
Authenticate via environment

`vault status`
Show seal and HA state

`-format=json`
Machine-readable output (also yaml)

`-namespace=<ns>`
Run inside a namespace (Enterprise)

CONNECT (cont.)

`-ca-cert=<file>`
Trust a private CA

DEV SERVER

`vault server -dev`
Run in-memory, unsealed

`vault server -dev -dev-root-token-id=<id>`
Dev server with a known root token

`vault server -config=<file>`
Run with a config file

LOGIN AND TOKENS

`vault login`
Log in with a token (prompts)

`vault login -method=<type> <key>=<value>`
Log in with another auth method

`vault token lookup`
Show the current token

`vault token create -policy=<name>`
Create a token with a policy

LOGIN AND TOKENS (cont.)

`vault token create -ttl=<dur> -use-limit=<n>`
Short-lived, limited-use token

`vault token renew`
Extend the current token

`vault token revoke <token>`
Revoke a token and its children

KV SECRETS

`vault kv put -mount=secret <path> <key>=<value>`
Write a secret

`vault kv get -mount=secret <path>`
Read a secret

`vault kv get -mount=secret -field=<key> <path>`
Print one field only

`vault kv list -mount=secret`
List paths under a mount

`vault kv patch -mount=secret <path> <key>=<value>`
Change keys, keep the rest

KV SECRETS (cont.)

`vault kv put -mount=secret <path> <key>=-`
Read a value from stdin

`vault kv delete -mount=secret <path>`
Soft-delete the latest version

`vault kv metadata get -mount=secret <path>`
Show versions and settings

RAW API PATHS

`vault read <path>`
GET any path

`vault write <path> <key>=<value>`
POST/PUT data to a path

ENGINES AND AUTH METHODS

`vault secrets list`
Show enabled secrets engines

`vault secrets enable -path=<path> <type>`
Enable an engine

`vault auth list`
Show enabled auth methods

ENGINES AND AUTH METHODS (cont.)

`vault auth enable <type>`
Enable an auth method

POLICIES

`vault policy list`
List all policies

`vault policy read <name>`
Show a policy's rules

`vault policy write <name> <file>.hcl`
Upload a policy from a file

Read-only policy

```
path "secret/data/app/*" {
  capabilities = ["read", "list"]
}
```

KV v2 policies need /data/ (and /metadata/) in the path, even though -mount hides it in the CLI.

OPERATE AND SEAL

`vault operator init`
Initialize a new server

`vault operator unseal`
Enter one unseal key (prompts)