Consul Service discovery and KV

Service your app → register → **Client agent** on each node → RPC → **Server agents** Raft quorum → query → **Catalog** DNS and HTTP

CONCEPTS

Every command talks to a local agent over HTTP (default 127.0.0.1:8500). Point it elsewhere with -http-addr or CONSUL_HTTP_ADDR, and authenticate with CONSUL_HTTP_TOKEN.

Run 3 or 5 servers so Raft keeps a quorum. Losing the majority stops writes; -dev mode is one in-memory server and never for production.

AGENT

consul agent -dev
Run a single in-memory dev server

consul agent -server -bootstrap-expect=*<n>* -data-dir=*<dir>*
Start a server in a new cluster

consul agent -data-dir=*<dir>* -retry-join=*<addr>*
Start a client that joins a server

consul agent -config-dir=*<dir>*
Load .json and .hcl config files

AGENT (cont.)

consul agent -node=*<name>* -datacenter=*<dc>*
Set node name and datacenter

consul agent -bind=*<ip>* -client=*<ip>*
Choose cluster and client addresses

consul agent -ui
Enable the web UI

consul validate *<file-or-dir>*
Check config before starting

CLUSTER

consul members
List members and their status

consul members -detailed
Include tags and versions

consul members -wan
Show the WAN pool (server members)

consul join *<addr>*
Join this agent to a cluster

consul leave
Leave gracefully and shut down

consul force-leave *<node>*
Mark a failed node as left

CLUSTER (cont.)

consul reload
Re-read config without a restart

consul monitor
Stream logs from the agent

consul monitor -log-level=debug
Raise the streamed log level

CATALOG AND SERVICES

consul catalog services
List services

consul catalog nodes
List nodes

consul catalog nodes -service=*<name>*
Nodes that provide a service

consul services register *<file>*
Register services from HCL or JSON

consul services register -name=*<name>* -port=*<port>*
Register one service from flags

consul services deregister -id=*<id>*
Remove a service instance

KEY-VALUE STORE

consul kv put *<key>* *<value>*
Set or update a key

consul kv get *<key>*
Read a key

consul kv get -recurse *<prefix>*/
Read all keys under a prefix

consul kv get -keys *<prefix>*/
List key names only

consul kv get -detailed *<key>*
Show index, flags and session

consul kv delete *<key>*
Delete a key

consul kv delete -recurse *<prefix>*/
Delete a whole subtree

consul kv export *<prefix>*/
Dump a subtree as JSON

consul kv import @*<file>*
Load a JSON export

SNAPSHOTS AND RAFT

consul snapshot save *<file>*
Save a point-in-time snapshot

SNAPSHOTS AND RAFT (cont.)

consul snapshot restore *<file>*
Restore a snapshot to the servers

consul operator raft list-peers
Show Raft servers and leader

ACL

consul acl bootstrap
Create the first management token

consul acl policy create -name *<name>* -rules @*<file>*
Create a policy from rules

consul acl token create -policy-name *<name>* -description *<text>*
Create a token for a policy

DNS

dig @127.0.0.1 -p 8600 *<name>*.service.consul
Resolve a service's addresses

dig @127.0.0.1 -p 8600 *<name>*.service.consul SRV
Get addresses and ports