How do I use the Consul Agent CLI to create new KV entries but only if they don't already exist?

1

I have a toy Consul in a docker-compose.yml file. It gets populated with another service that runs and exits.

```yaml
version: '3.4'
services:
  consul:
    image: consul
  consul-seed:
    build:
      context: consul/seed
    environment:
      HELLO: WORLD
```

The `consul/seed` contains a Dockerfile that runs a Python script.

```dockerfile
FROM python:3-latest
RUN python3 -m pip install python-consul # Actually, this is via a
requirements.txt. But for simplicity, this works too.
COPY seed.py ./
CMD python3 seed.py
```

The python script just reads some environment variables and populates Consul's KV with them.

```python
#!/usr/bin/env python3

import os
import consul

seed_keys=["HELLO"]
consul = consul.Consul()
for key in seed_keys:
  value = os.environ.get(key, "")
  if consul.kv.put(key=key, value=value, cas=0):
    print("{}={}".format(key, value))
  else:
    print("! {}={}".format(key, value))
```

That works! When I do: `consul kv get HELLO`, the contents are `WORLD`. Importantly, the seed script doesn't overwrite any value which already has a key (demonstrating that the `cas` option is respected and the seed script should be safe to run with a "real" Consul instance instead of the toy one).

```
$ docker exec -ti consul /bin/sh
/ # consul kv get HELLO
WORLD
/ # consul kv put HELLO wOrLd
Success! Data written to: HELLO
/ # consul kv get HELLO
wOrLd
```

However if I try to use the Consul CLI to seed a value, it complains about the CAS options.

```
$ docker exec -ti consul /bin/sh
/ # consul kv get HELLO
wOrLd
/ # consul kv delete HELLO
Success! Deleted key: HELLO
/ # consul kv put -cas HELLO world
Must specify -modify-index with -cas!
/ # consul kv put -cas 0 HELLO world
Error! Too many arguments (expected 1 or 2, got 3)
/ # consul kv put -cas -modify-index 0 HELLO world
Must specify -modify-index with -cas!
/ # consul kv put -cas -modify-index 1 HELLO world
Error! Did not write to HELLO: CAS failed
/ # consul kv get HELLO
Error! No key exists at: HELLO
```

How do I use the agent CLI to create new KV entries but only if they don't already exist?

I am using:

```
$ docker pull consul
Using default tag: latest
latest: Pulling from library/consul
Digest: sha256:0e660ca8ae28d864e3eaaed0e273b2f8cd348af207e2b715237e869d7a8b5dcc
Status: Image is up to date for consul:latest
docker.io/library/consul:latest
$ docker image ls consul
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
consul              latest              941109e2896d        4 weeks ago
122MB
$ docker run --rm -ti consul consul --version
Consul v1.8.0
Protocol 2 spoken by default, understands 2 to 3 (agent will automatically use
protocol >2 when speaking to compatible agents)
```

python **docker** **shell** **consul**

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1 Answer

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I'm a product manager for Consul. This is a bug in our CLI. We filed https://github.com/hashicorp/consul/issues/8330 to track fixing this issue.

2

In the mean time you can use the HTTP API directly, or via a SDK, to conditionally set keys if they don't exist.

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answered Jul 17, 2020 at 21:38

Blake Covarrubias
2,303 ● 2 ● 9 ● 16

Oh nice! It didn't occur to me that there was a bug. I thought I was misinterpreting the documentation. Thank you for the quick fix! – inetknght Jul 20, 2020 at 13:06

You're welcome! Pull request hashicorp/consul#8331 was just merged to resolve this issue. The fix will be available in the next version of Consul. – Blake Covarrubias Jul 20, 2020 at 17:30

@BlakeC do you think you can help me with my question here. Trying to design a system using consul that can manage configurations dynamically so needed some help with the design. – dragons Jul 22, 2020 at 2:36

What would you like to know? If it's related to a different discussion, might be better to start a new post or ask on HashiCorp's forums where you're likely to get some more responses. Discuss.hashicorp.com. – Blake Covarrubias Jul 22, 2020 at 2:43

Basically wanted to know how can I use consul kv store to manage configurations in a dynamic way as mentioned in the question. Do you think its a good idea to post it in `Discuss.hashicorp.com` forums? – dragons Jul 22, 2020 at 3:30