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## Running dnsmasq in Docker

Today we take a quick look at running dnsmasq as a docker container.

dnsmasq is a simple lightweight DNS (amongst other features) that can be used to easily set up various DNS records within your infrastructure. Our particular usecase is to set the TXT records Eureka requires for DNS based bootstrapping.

### Getting started

I've built and release an alpine based dnsmasq image which configures itself from a directory of `.conf` files. I chose this approach so that different services can include themselves in dnsmasq during provisioning.

You can see the Dockerfile here - <https://github.com/storytel/dnsmasq>

### Starting the container

```
docker run --name dnsmasq --cap-add=NET_ADMIN --net=host -v /etc/dnsmasq:/etc/dnsmasq storytel/dnsmasq
```

There are three options here to note :-

1. `--cap-add=NET_ADMIN` is required for dnsmasq to interact with the network stack
2. `--net=host` runs the container with the host network stack, so that port `53` on the host becomes the DNS and is accessible from the rest of the network.
3. `-v /etc/dnsmasq:/etc/dnsmasq` maps our folder of `.conf` files inside the container.

### Configuration

dnsmasq will read all the `.conf` files added to `/etc/dnsmasq` (a container restart is required to load changes). So we can add each service as it's own file, or put them all in one. Whichever suits your configuration needs.

```
# 0.base.conf
domain-needed
bogus-priv
no-hosts
keep-in-foreground
no-resolv
expand-hosts
server=8.8.8.8
server=8.8.4.4
```

```
# 1.eureka.conf
address=/001.eureka.storytel/10.10.10.21
address=/002.eureka.storytel/10.10.10.22
address=/003.eureka.storytel/10.10.10.23
txt-record=txt.global.eureka.storytel,sweden.eureka.storytel
txt-record=txt.sweden.eureka.storytel,10.10.10.21,10.10.10.22,10.10.10.23
```

```
# 2.etcd.conf
address=/001.etcd.storytel/10.10.10.21
address=/002.etcd.storytel/10.10.10.22
address=/003.etcd.storytel/10.10.10.23
```

## Access from another server

Once we have our container up and running we can then use the DNS from other servers on the network.

```
$ dig @10.10.10.1 TXT txt.global.eureka.storytel

; <<>> DiG 9.10.2-P4 <<>> @10.10.10.1 TXT txt.global.eureka.storytel
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 13897
;; flags: qr aa rd ra ad; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 4096
;; QUESTION SECTION:
;txt.global.eureka.storytel.      IN      TXT

;; ANSWER SECTION:
txt.global.eureka.storytel. 0      IN      TXT      "sweden.eureka.storytel"

;; Query time: 1 msec
```

```
;; SERVER: 10.10.10.1#53(10.10.10.1)
;; WHEN: Sat Sep 03 09:04:25 UTC 2016
;; MSG SIZE rcvd: 85
```