

# Spotify's Love/Hate Relationship with DNS

Lynn Root | SRE | @roguelynn



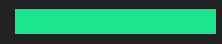
**\$ whoami**

# why we love DNS

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- It's boring
- Stable query language
- Free caching
- Service discovery

# agenda



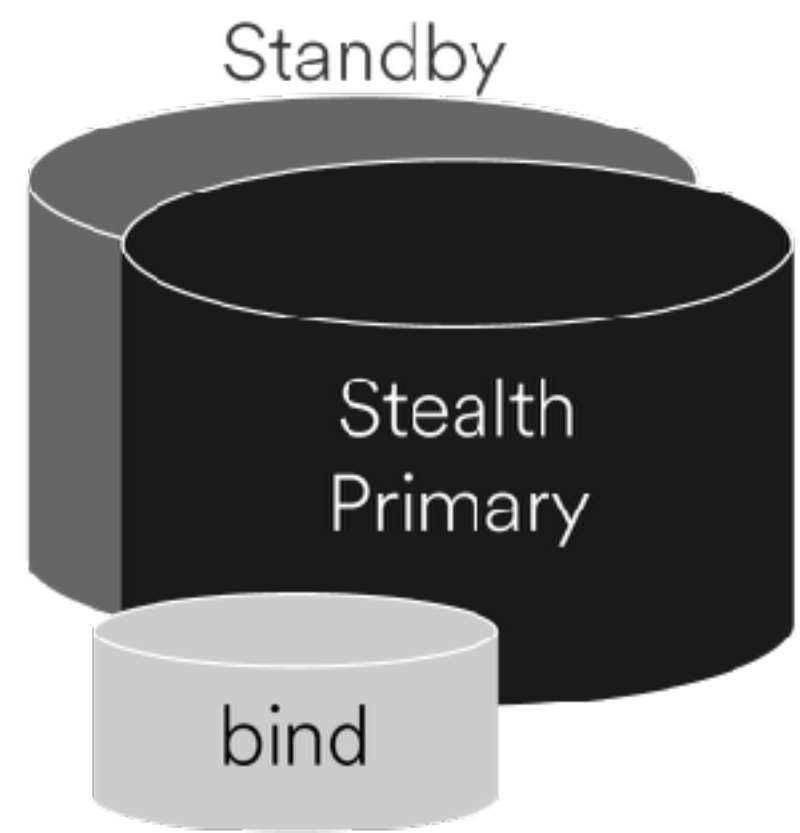
# agenda

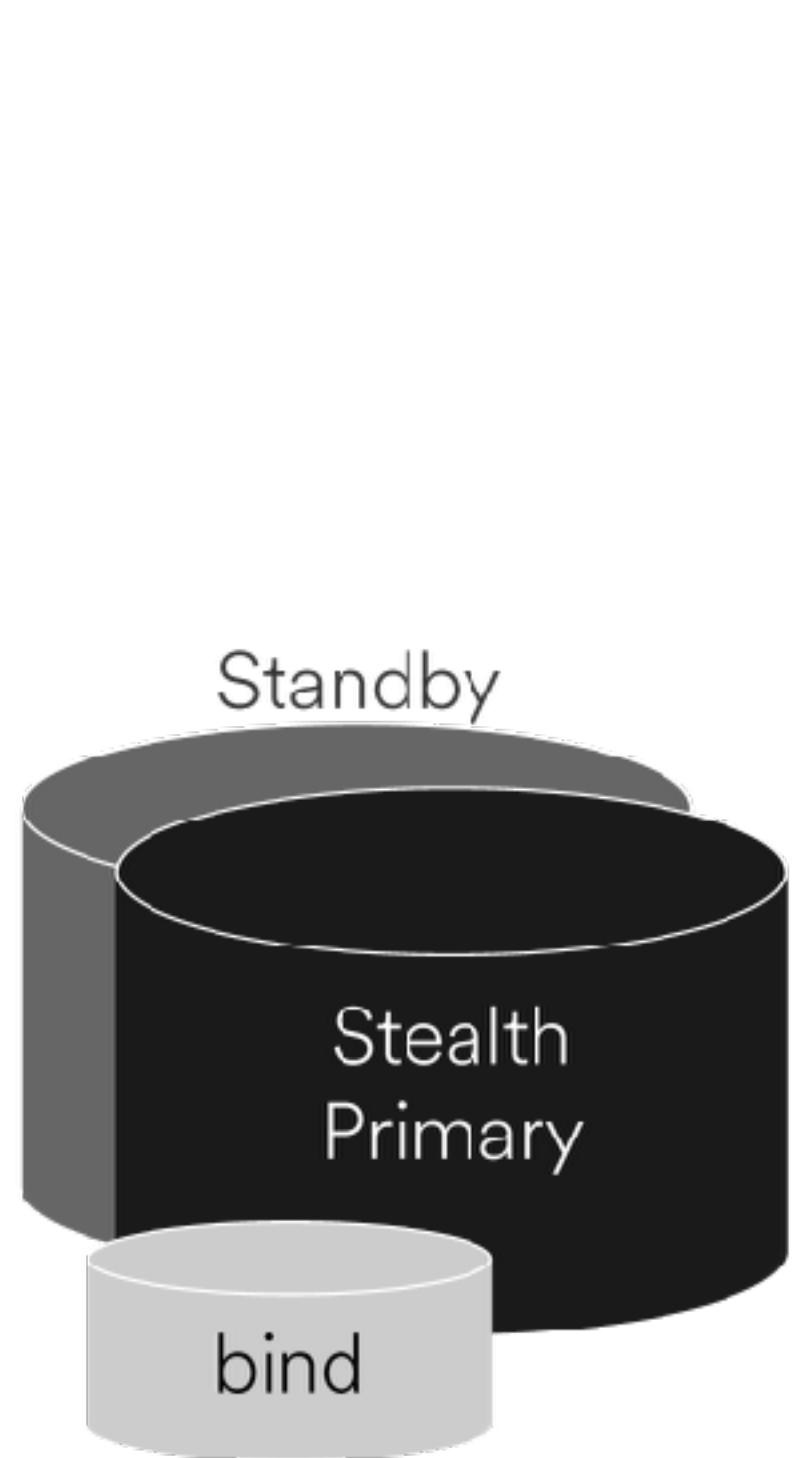
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- Our infrastructure
- Our DNS curiosities
- What we've learned
- Future of DNS @ Spotify

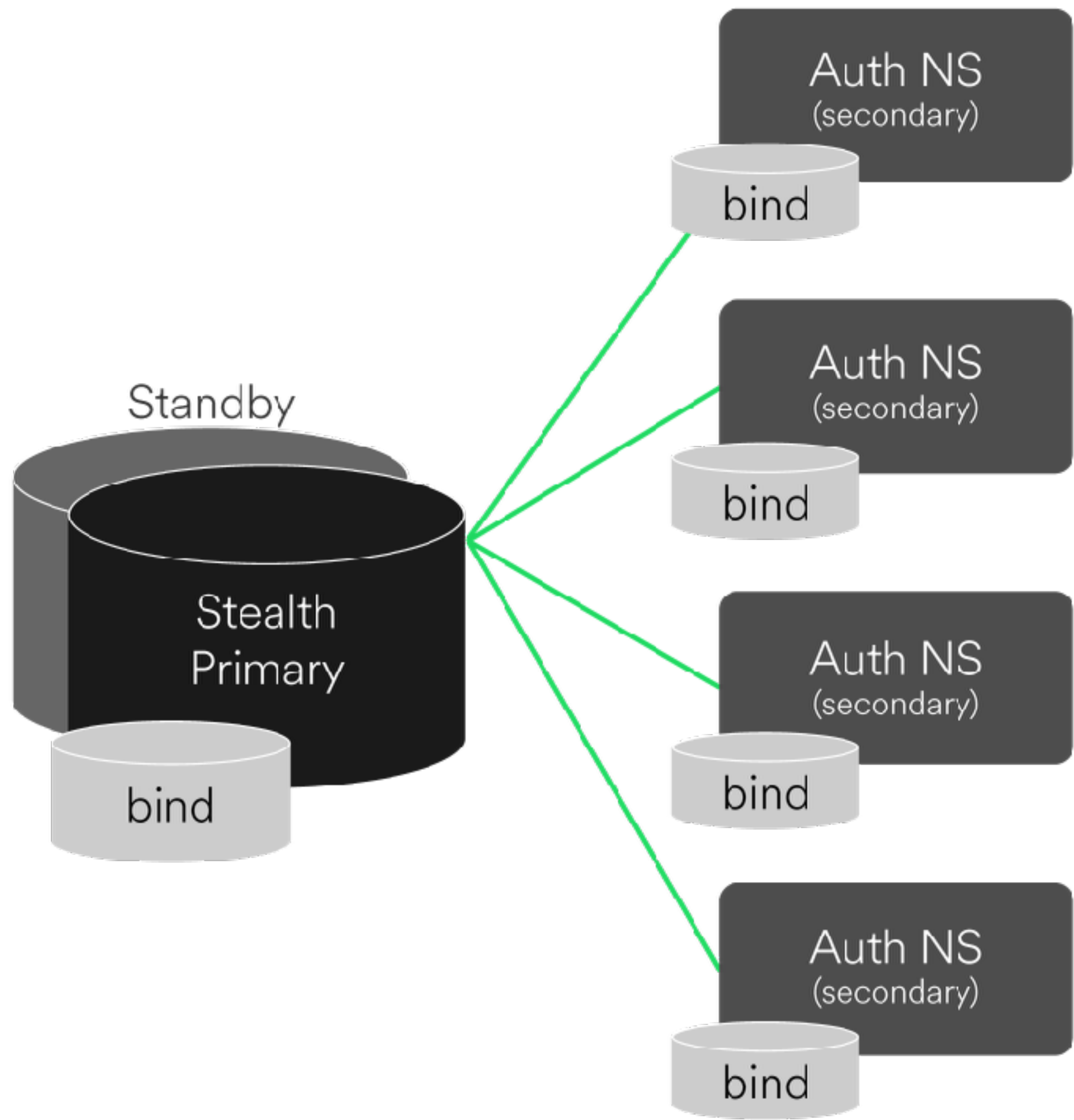
# Our Infrastructure

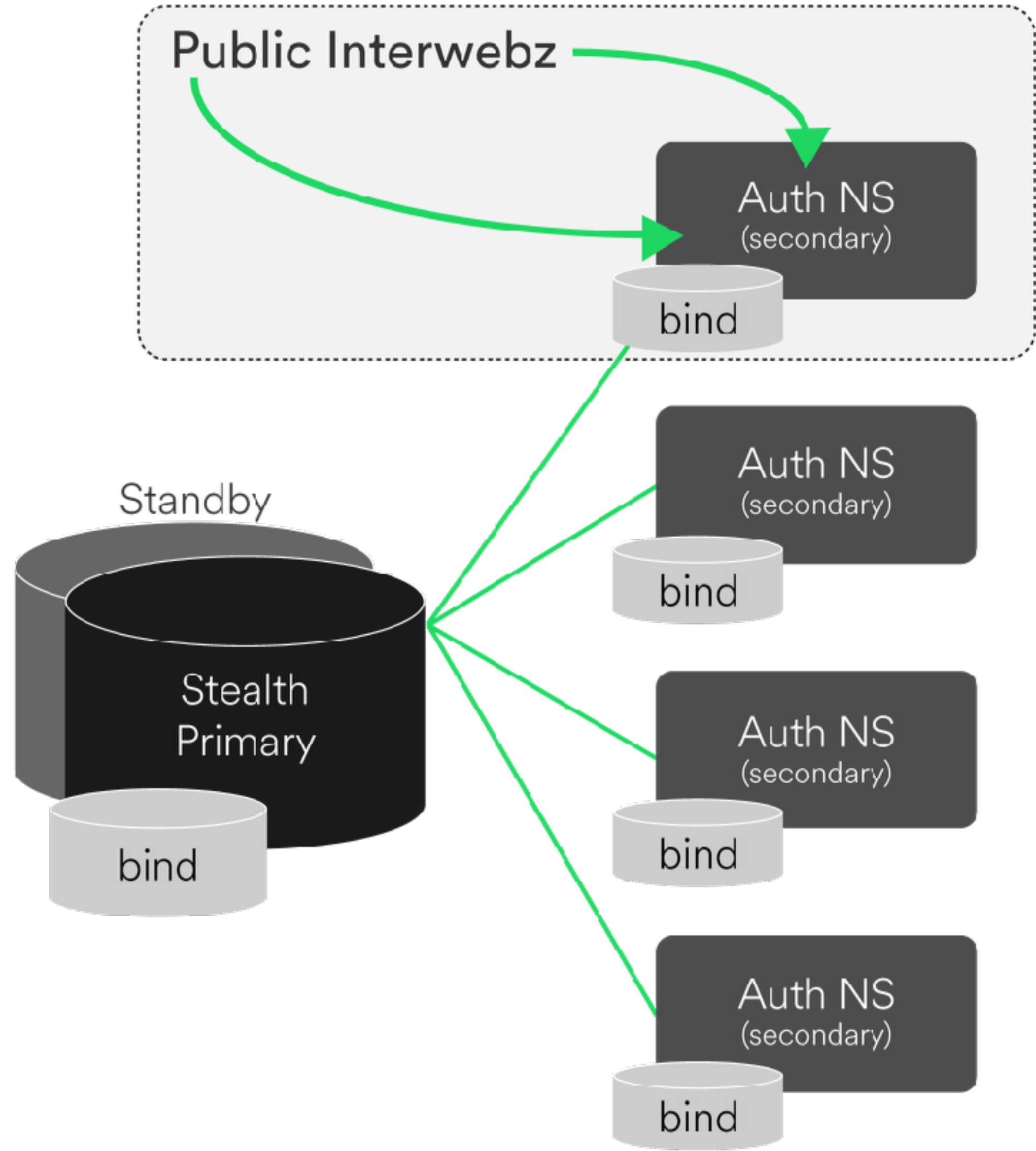


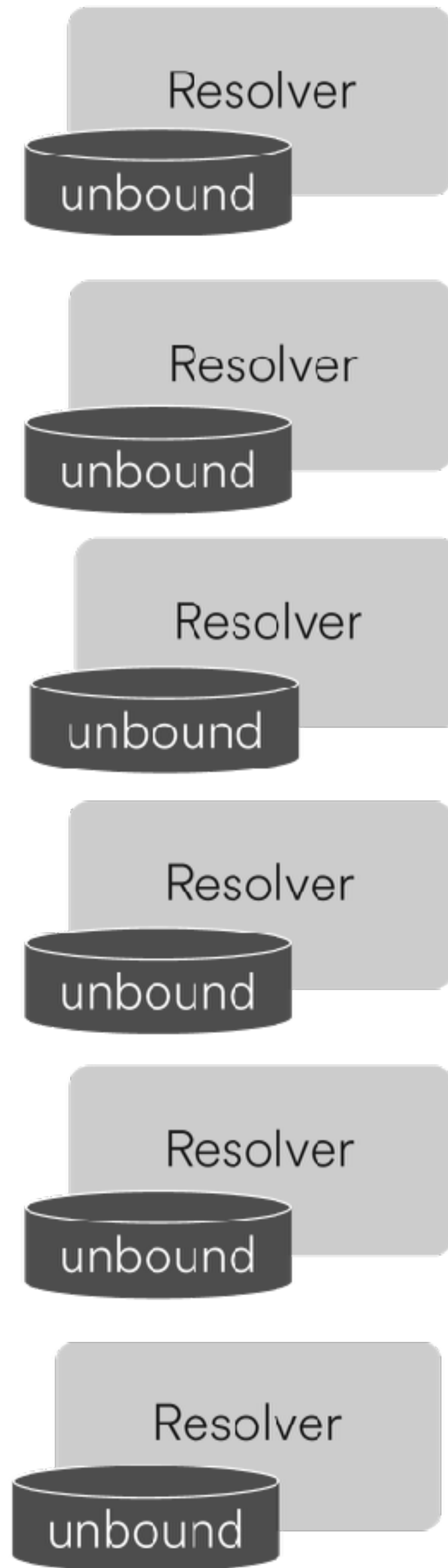
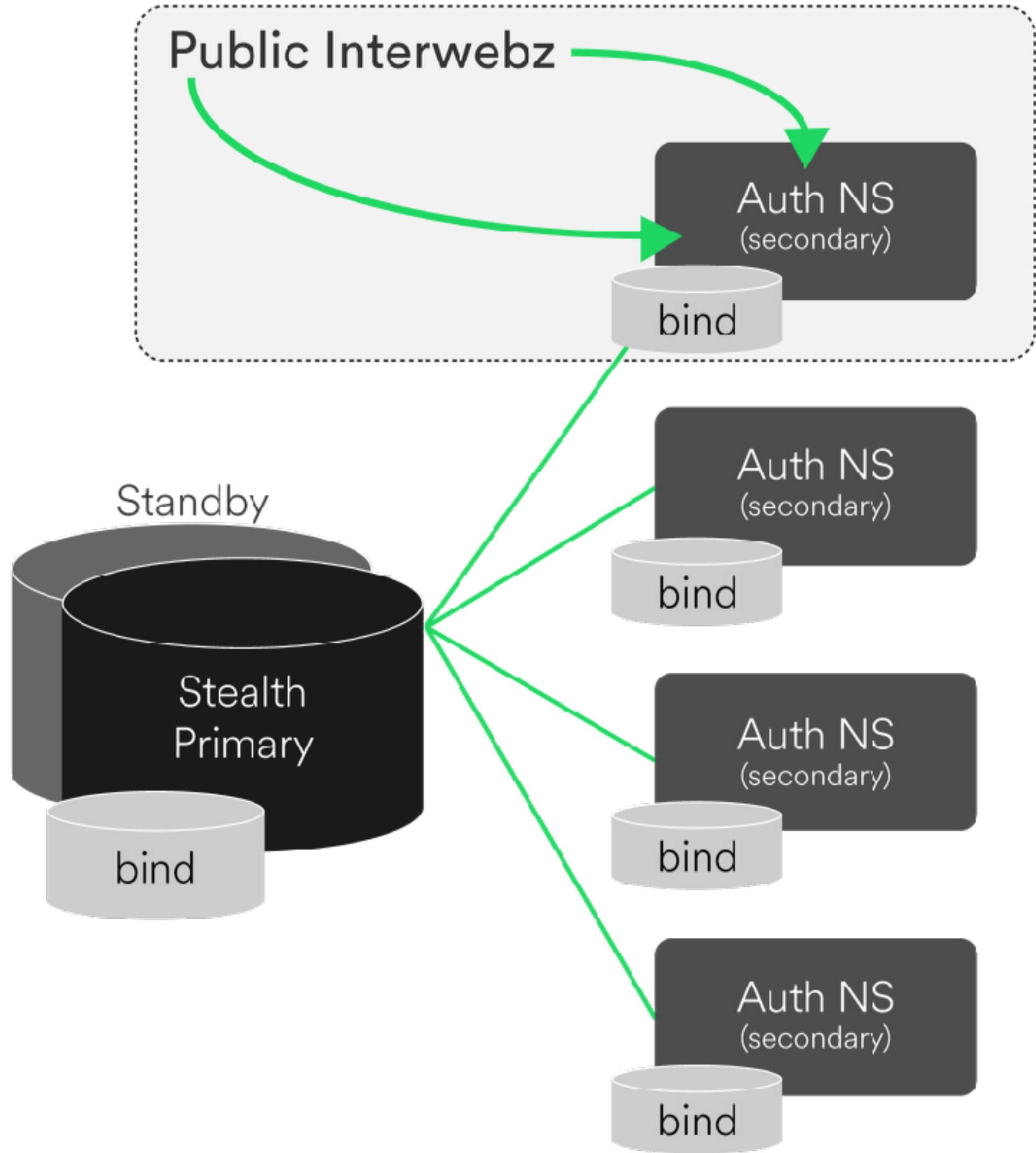


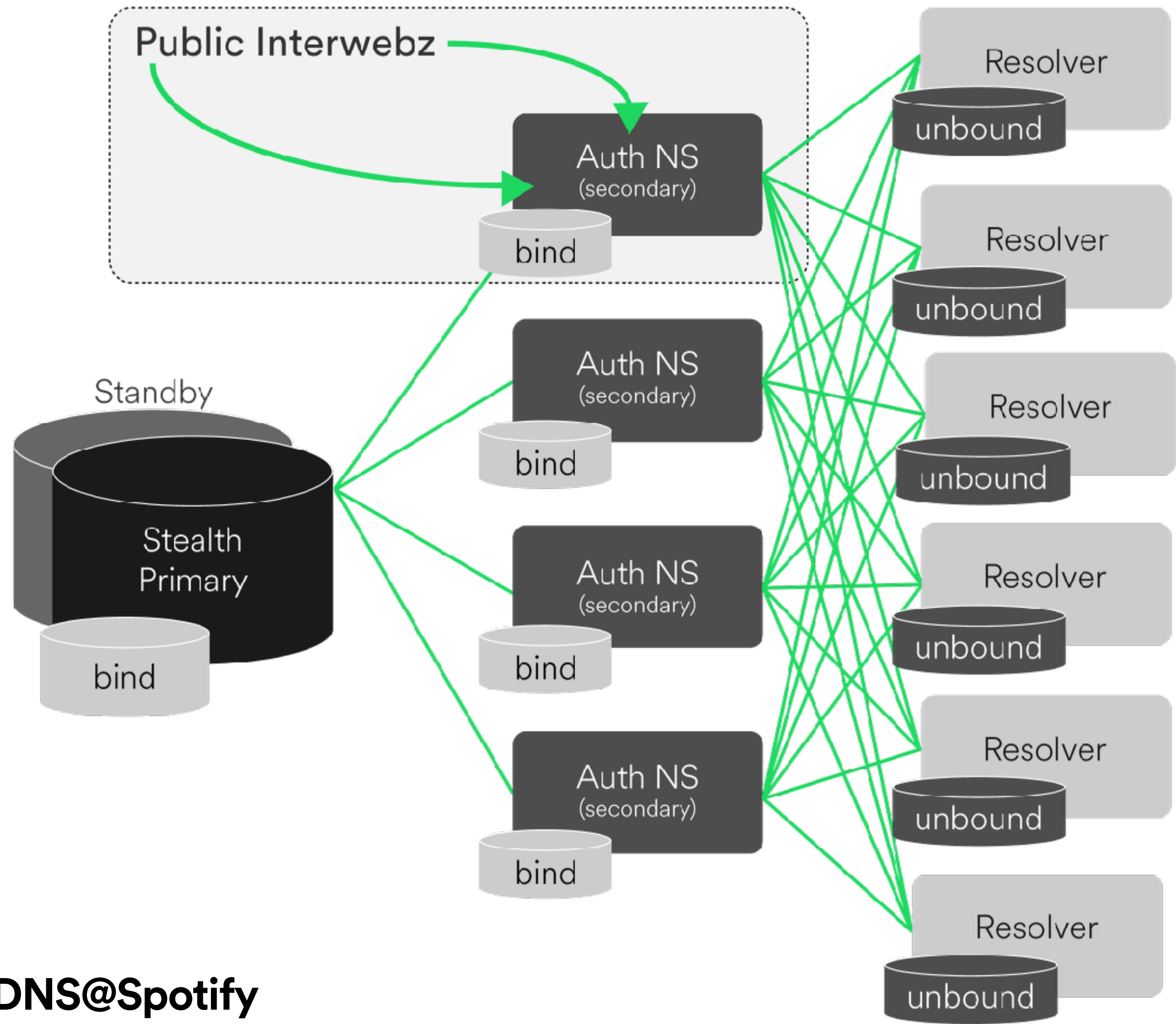






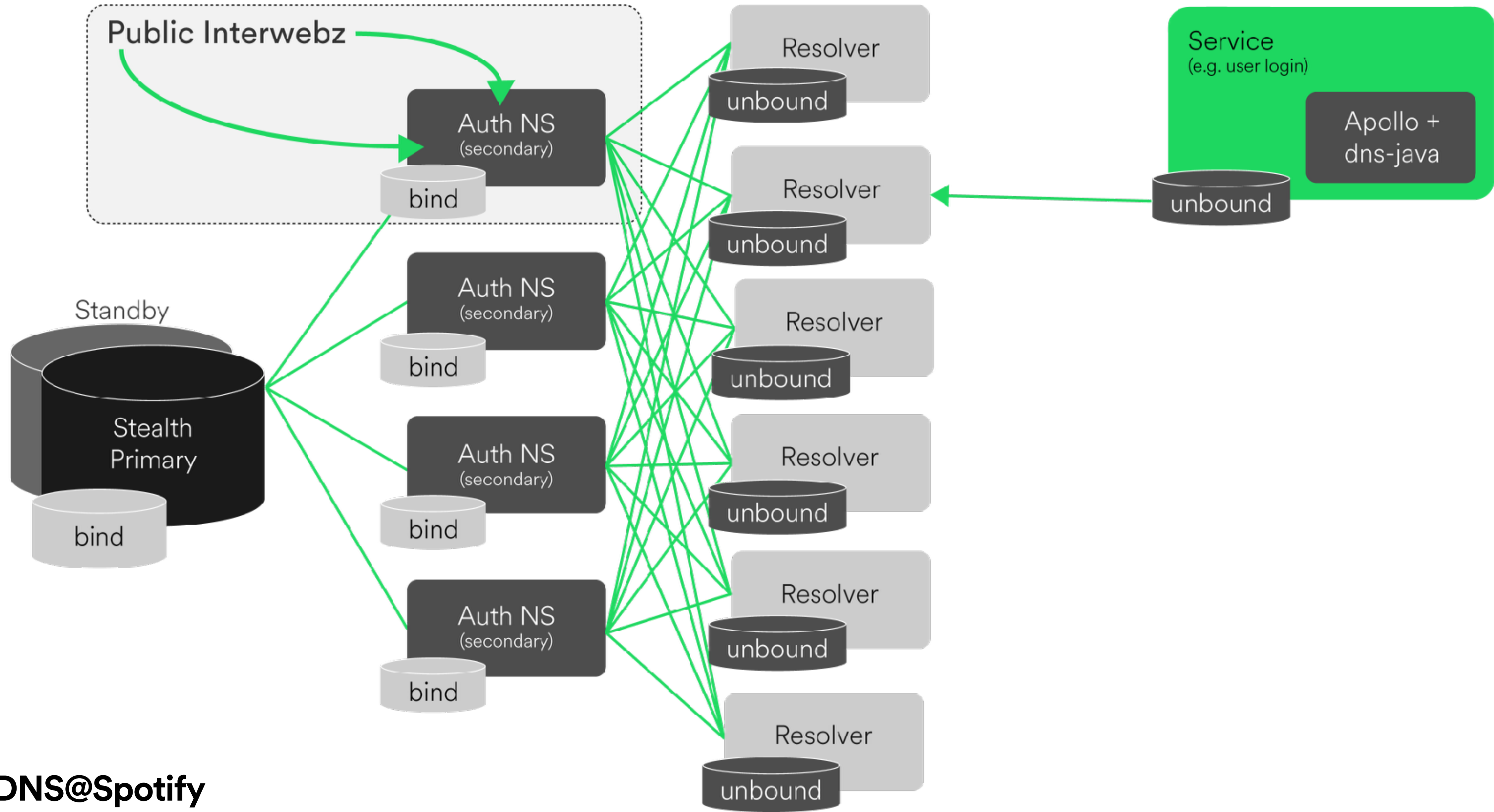






**DNS@Spotify**

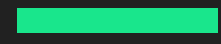




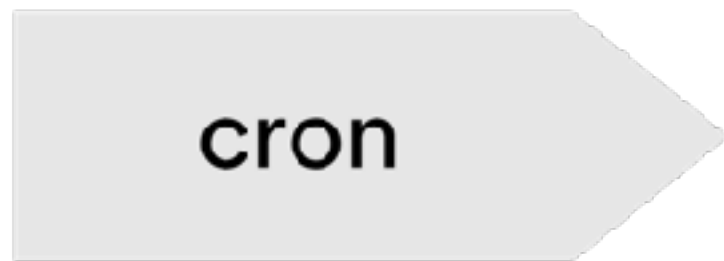
**DNS@Spotify**



# Record Generation & Deployment



***/msg #sre* DNS DEPLOY!**

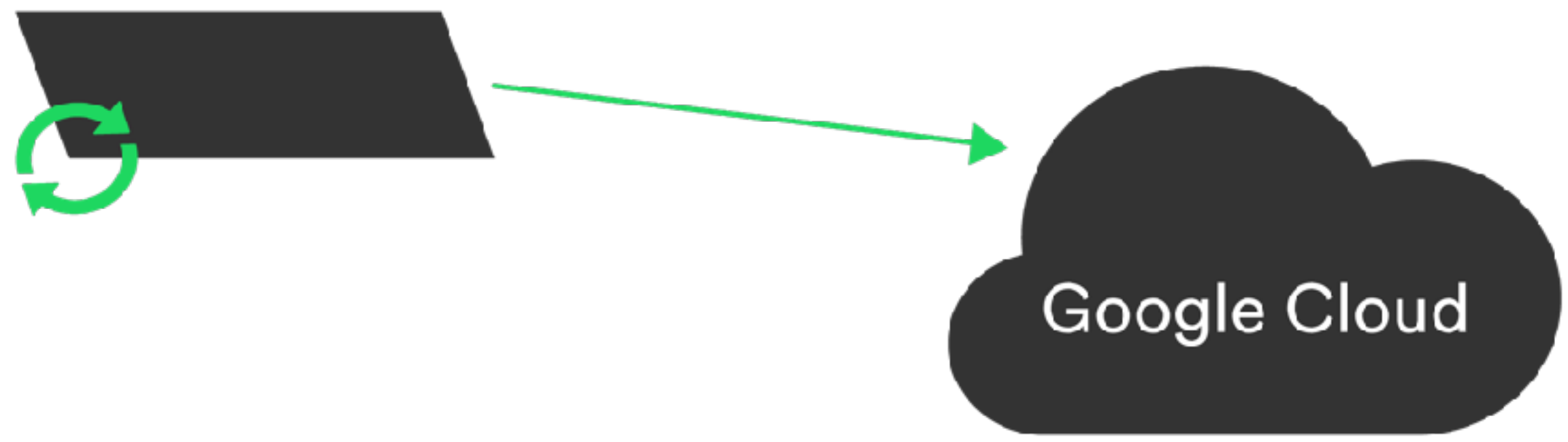
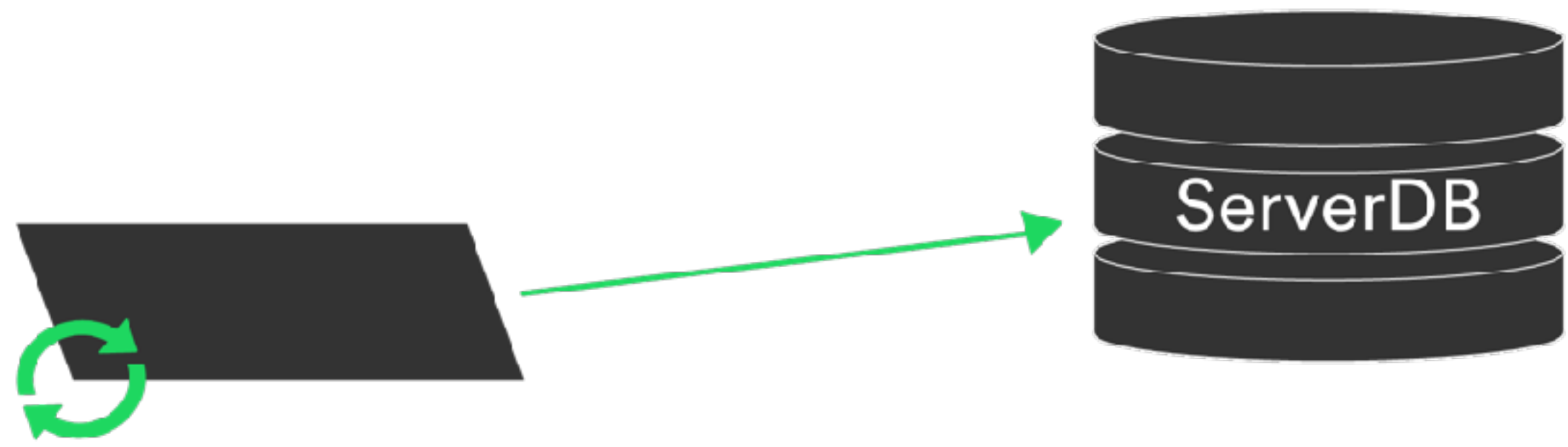


:00

**DNS@Spotify**



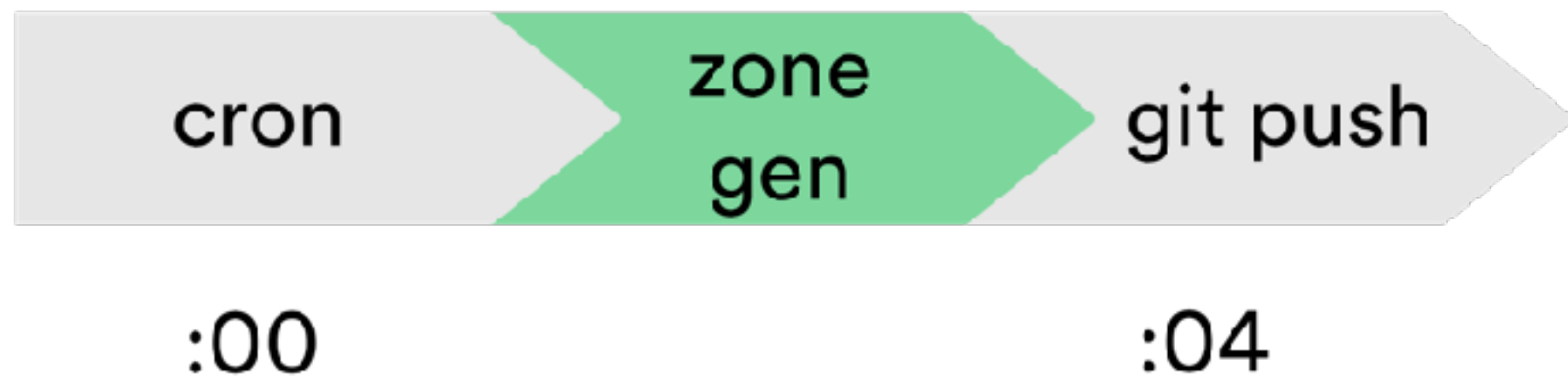
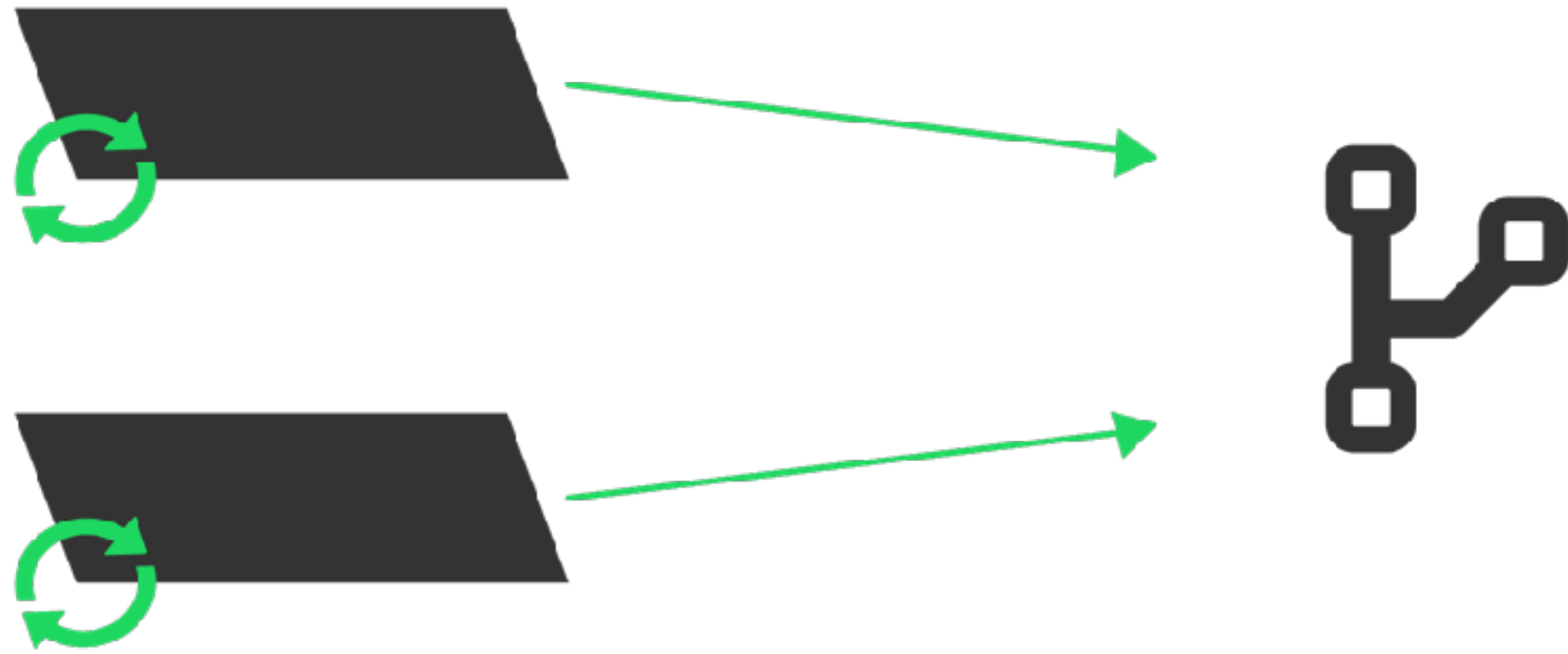




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**DNS@Spotify**







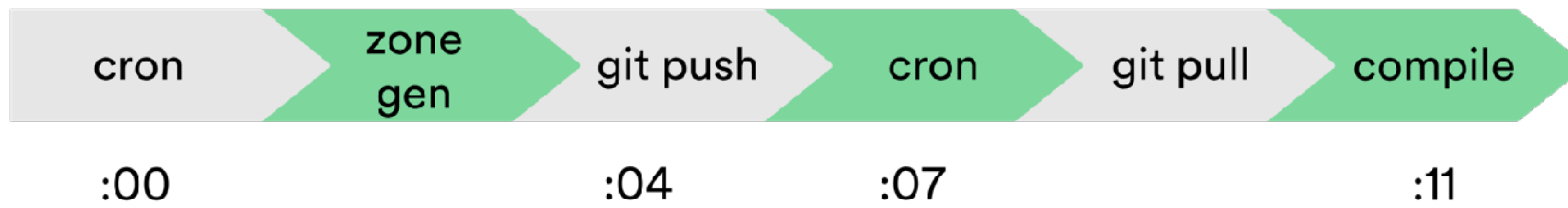
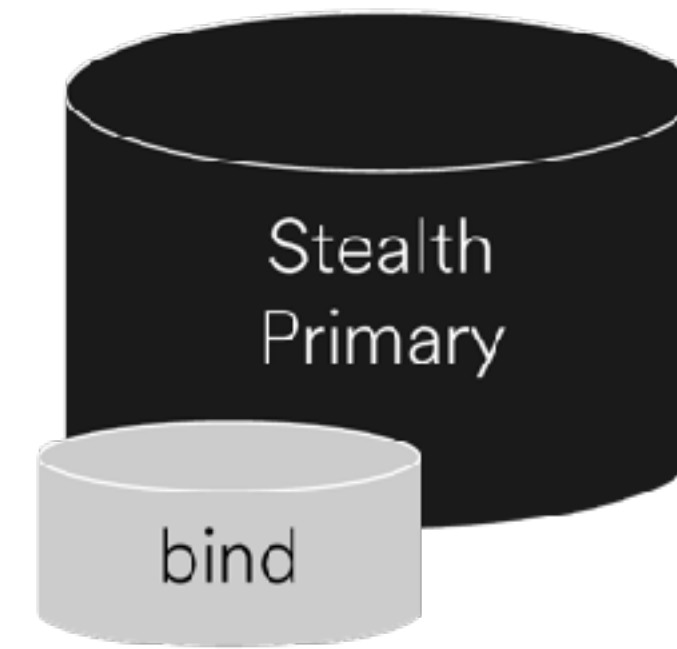
**DNS@Spotify**

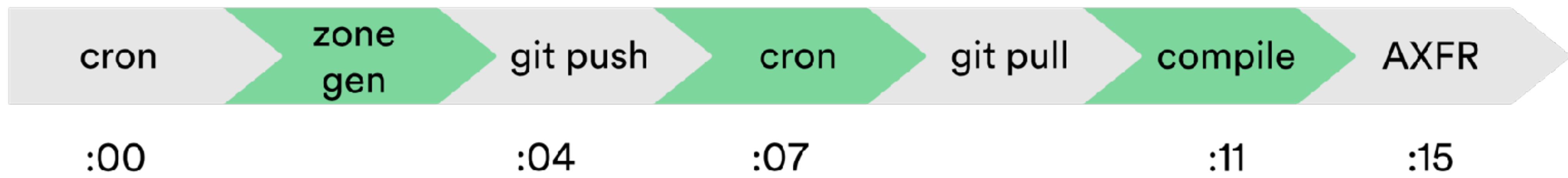
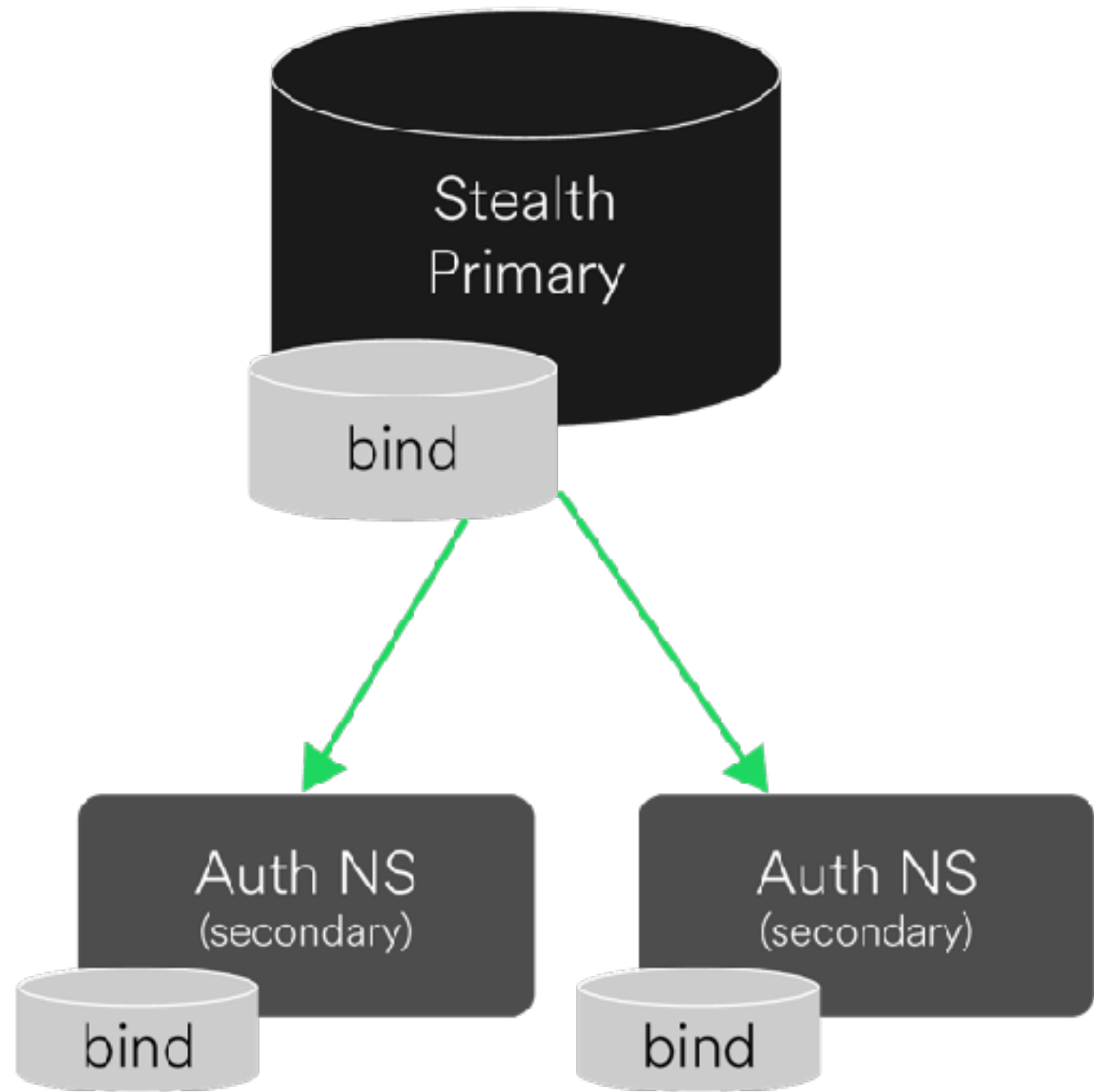




**DNS@Spotify**



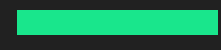


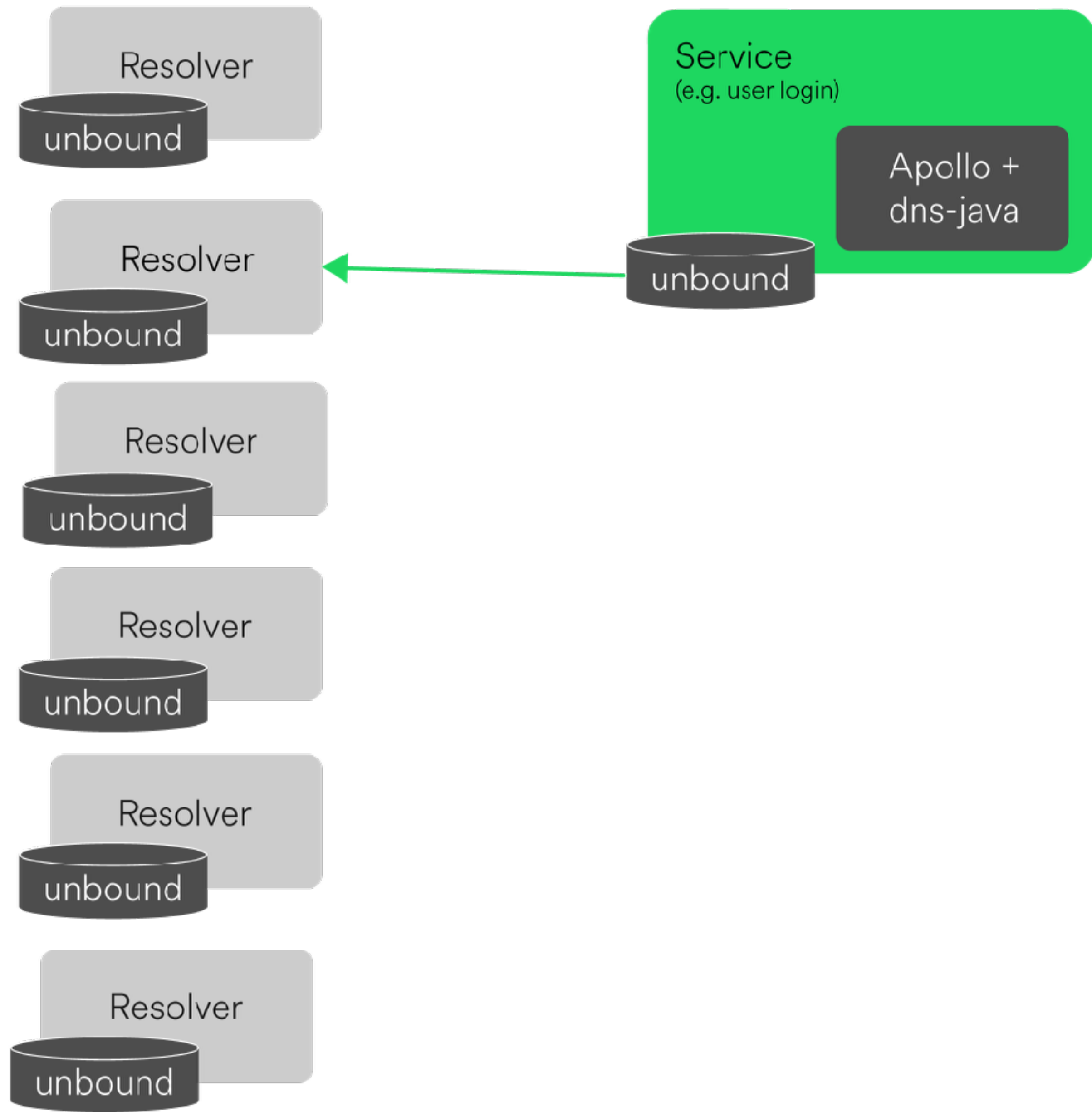


**DNS@Spotify**

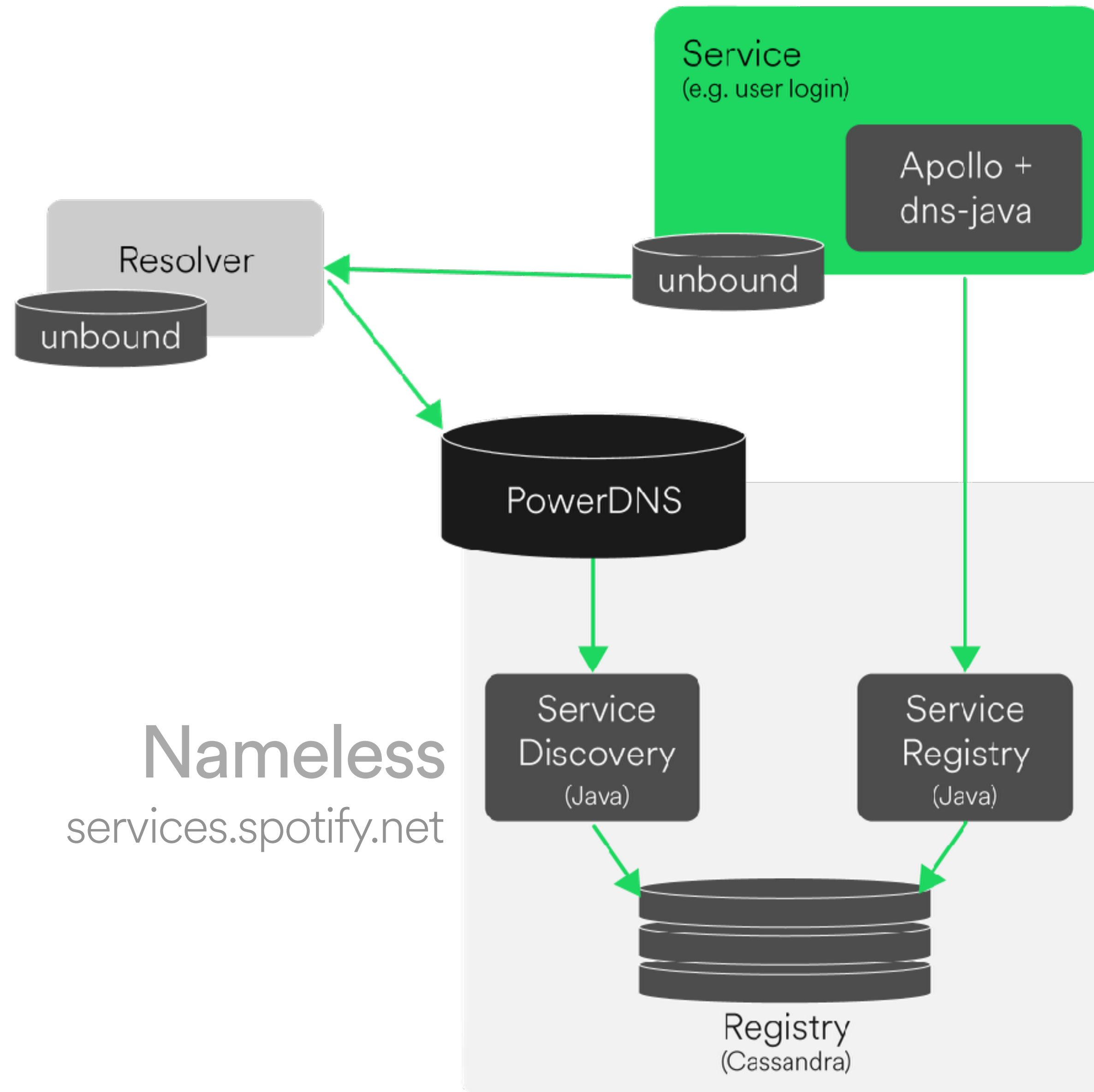


# Service Discovery

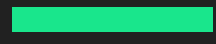


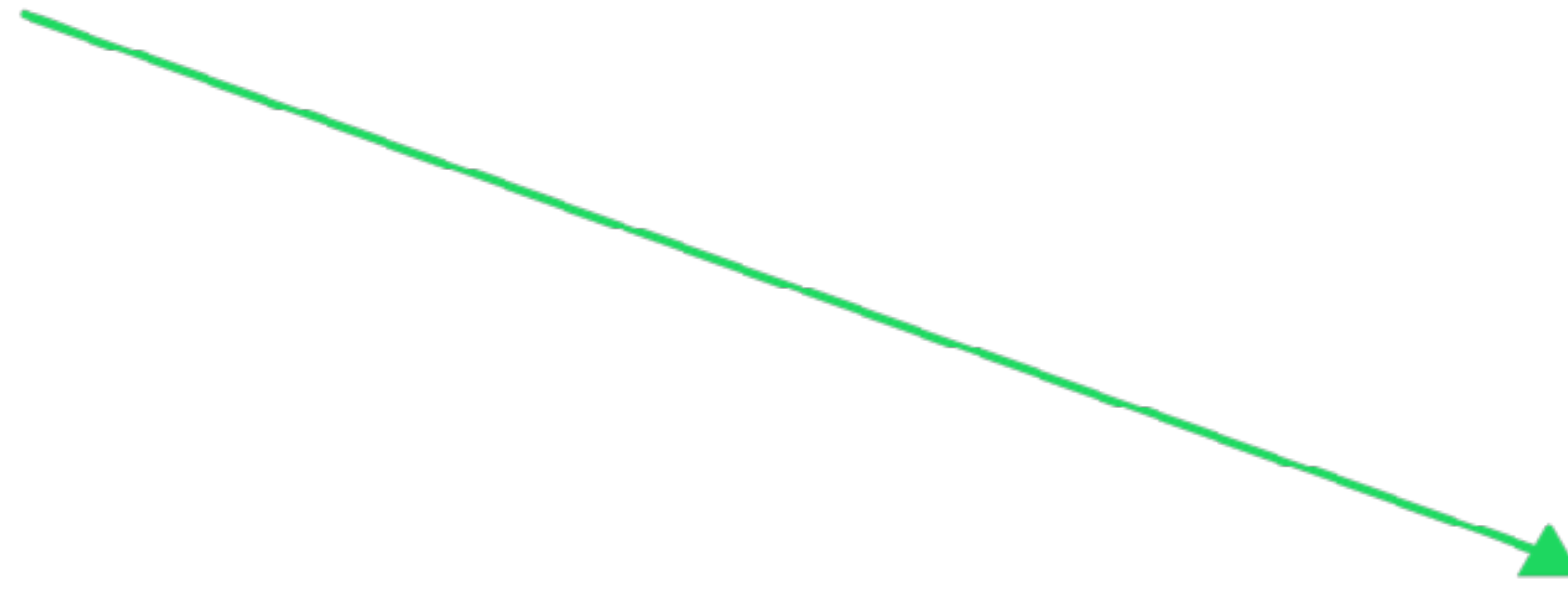
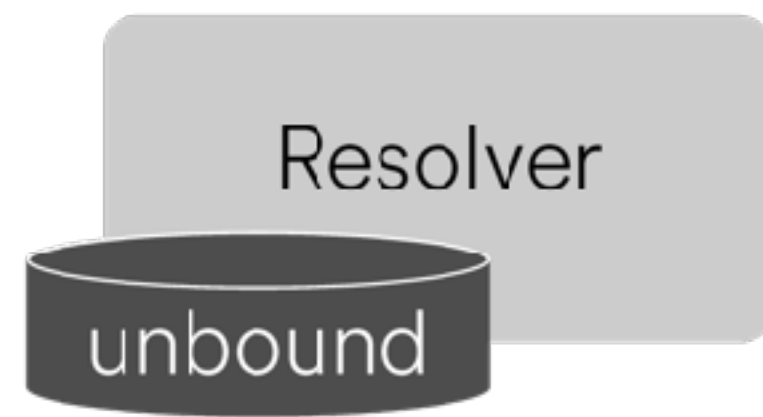






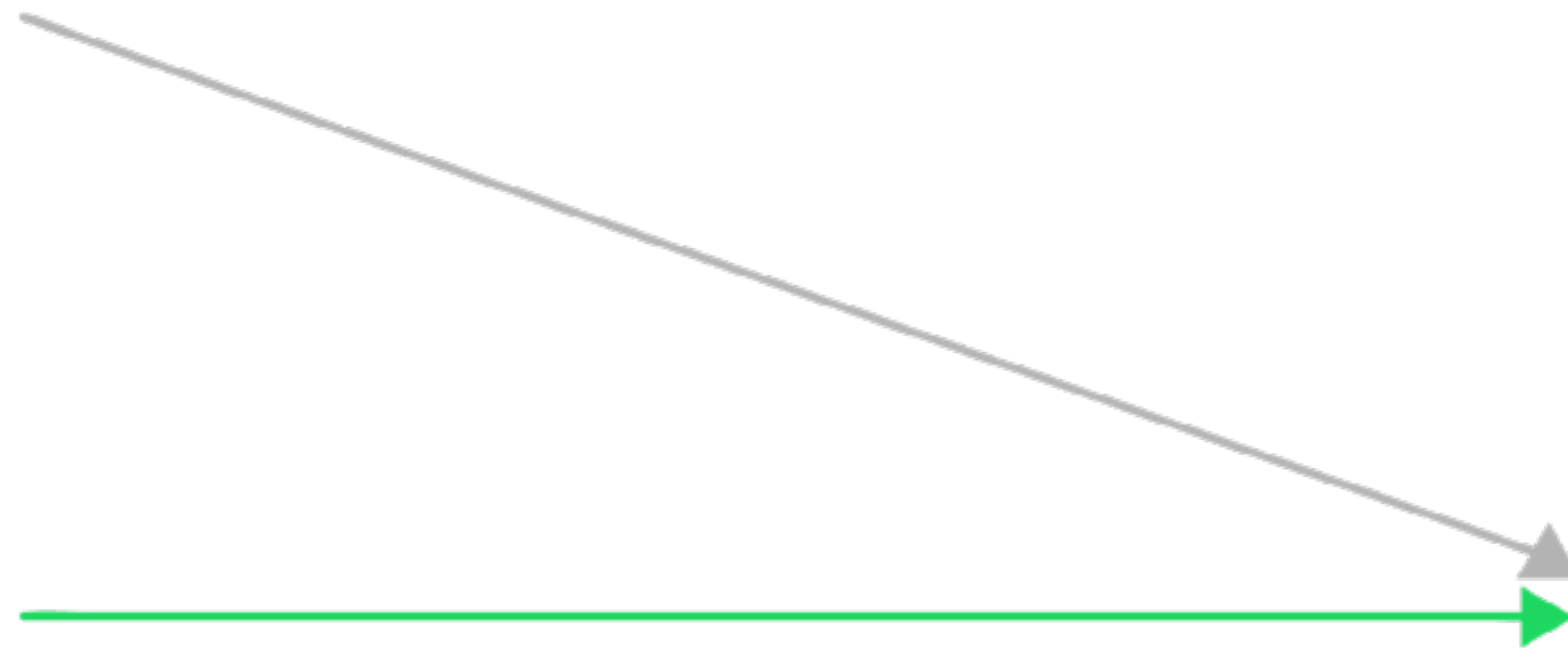
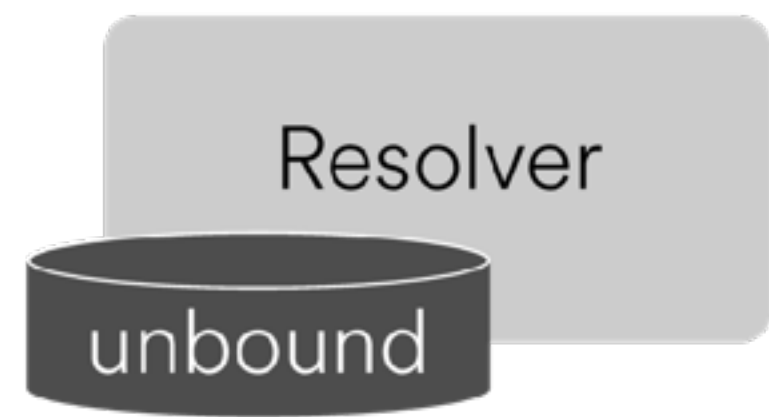
# Monitoring





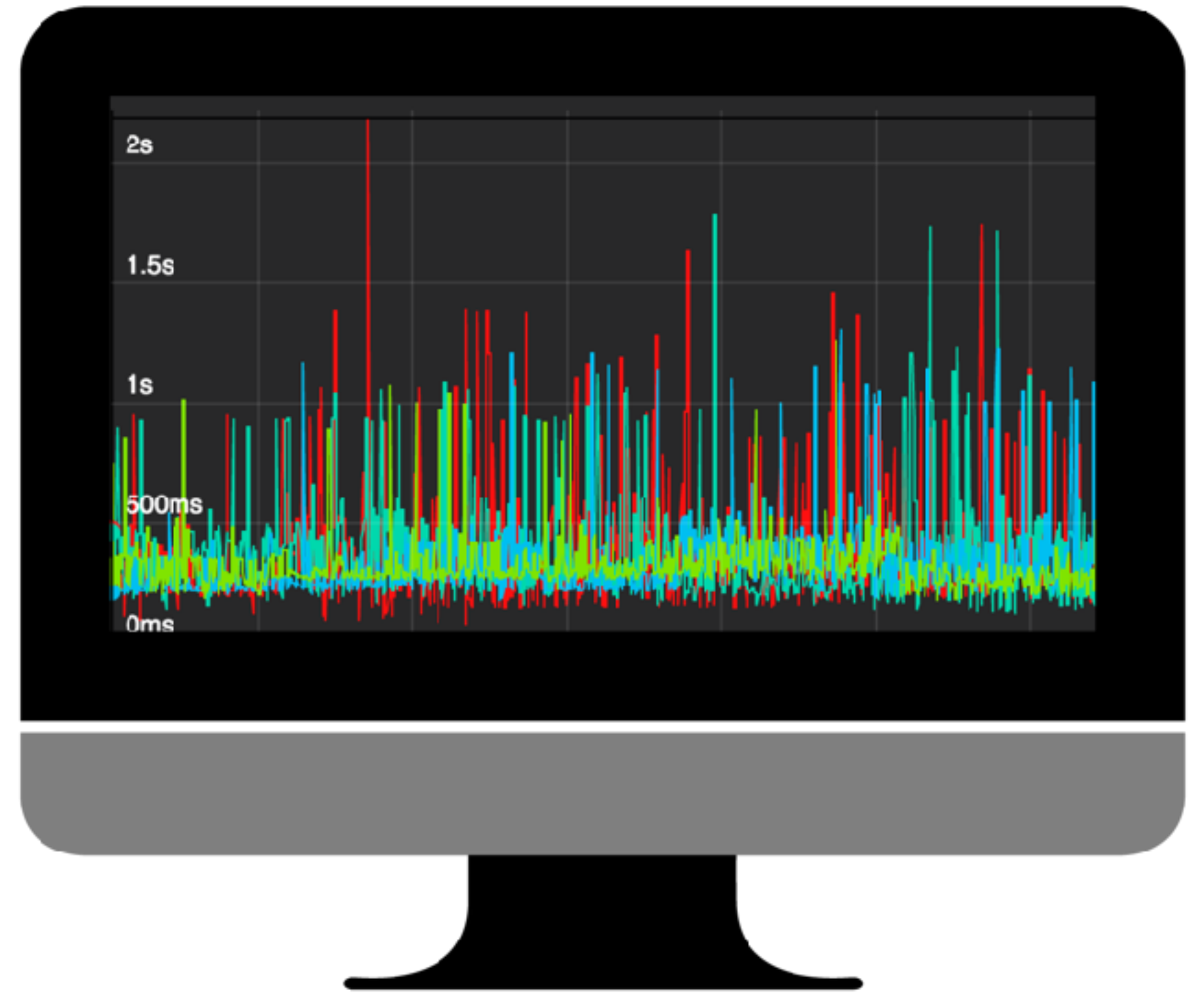
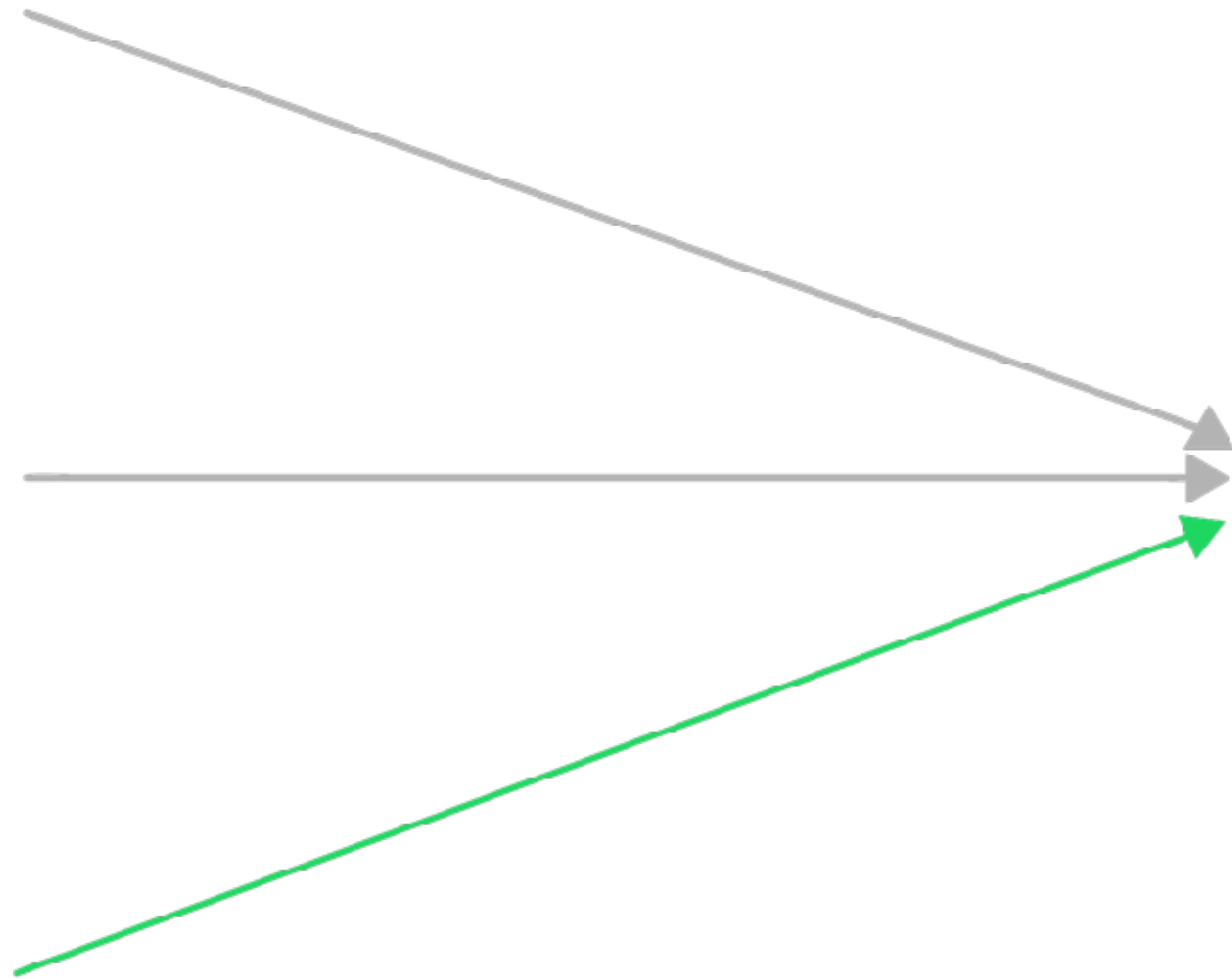
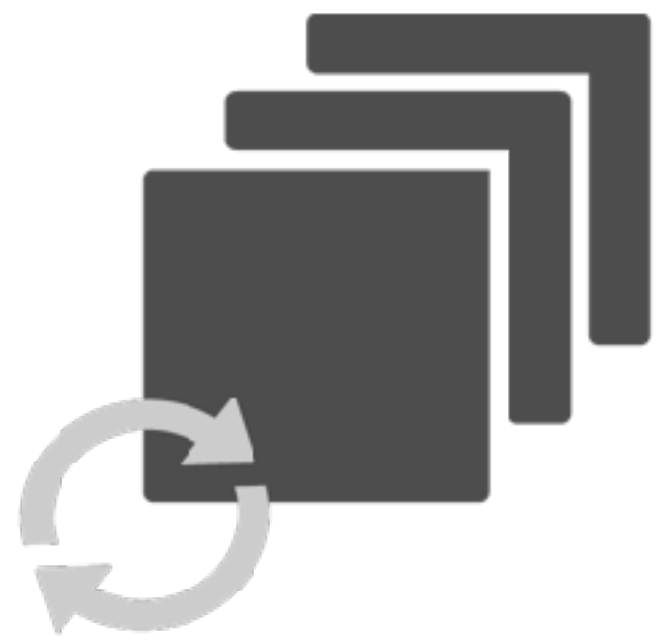
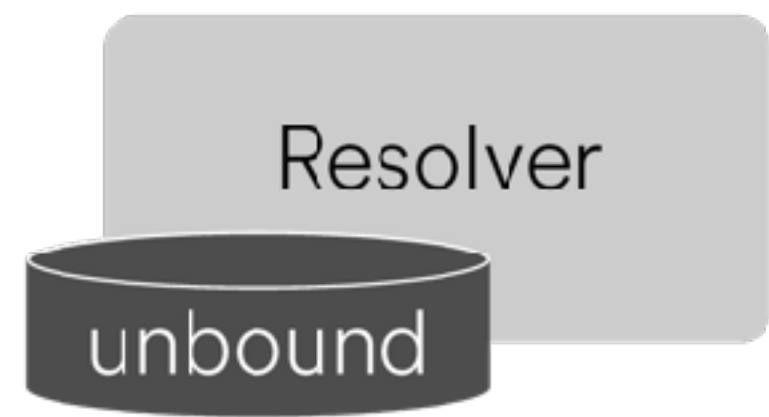
**DNS@Spotify**





**DNS@Spotify**

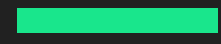




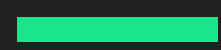
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# Global Server Load Balancing



# Responding to the DynDNS attack



# Response to DynDNS attack

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- Monitoring dashboards & VPN were inaccessible
- Internal SSO login inaccessible
- Pagerduty also affected



# Response to DynDNS attack

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- Couldn't easily access DNS data repo
- 3-year-old manual deployment documentation

# Response to DynDNS attack

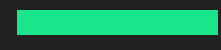
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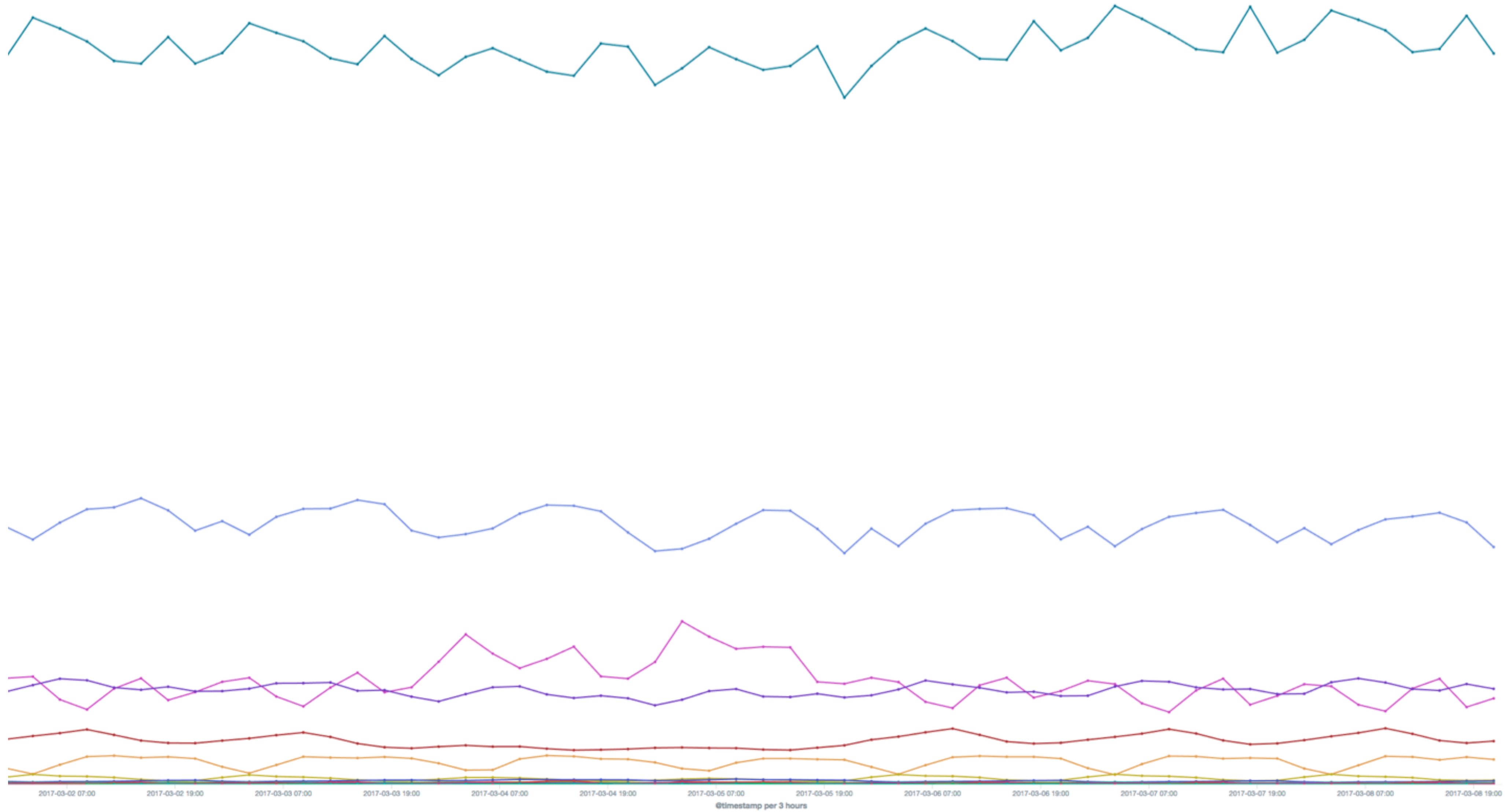
- Internal services ➡ removed GSLB mapping
- Spotify clients ➡ Route53
- Websites ➡ Route53

# Our DNS Curiosities

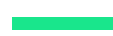


# Client Error Reporting

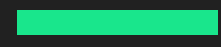




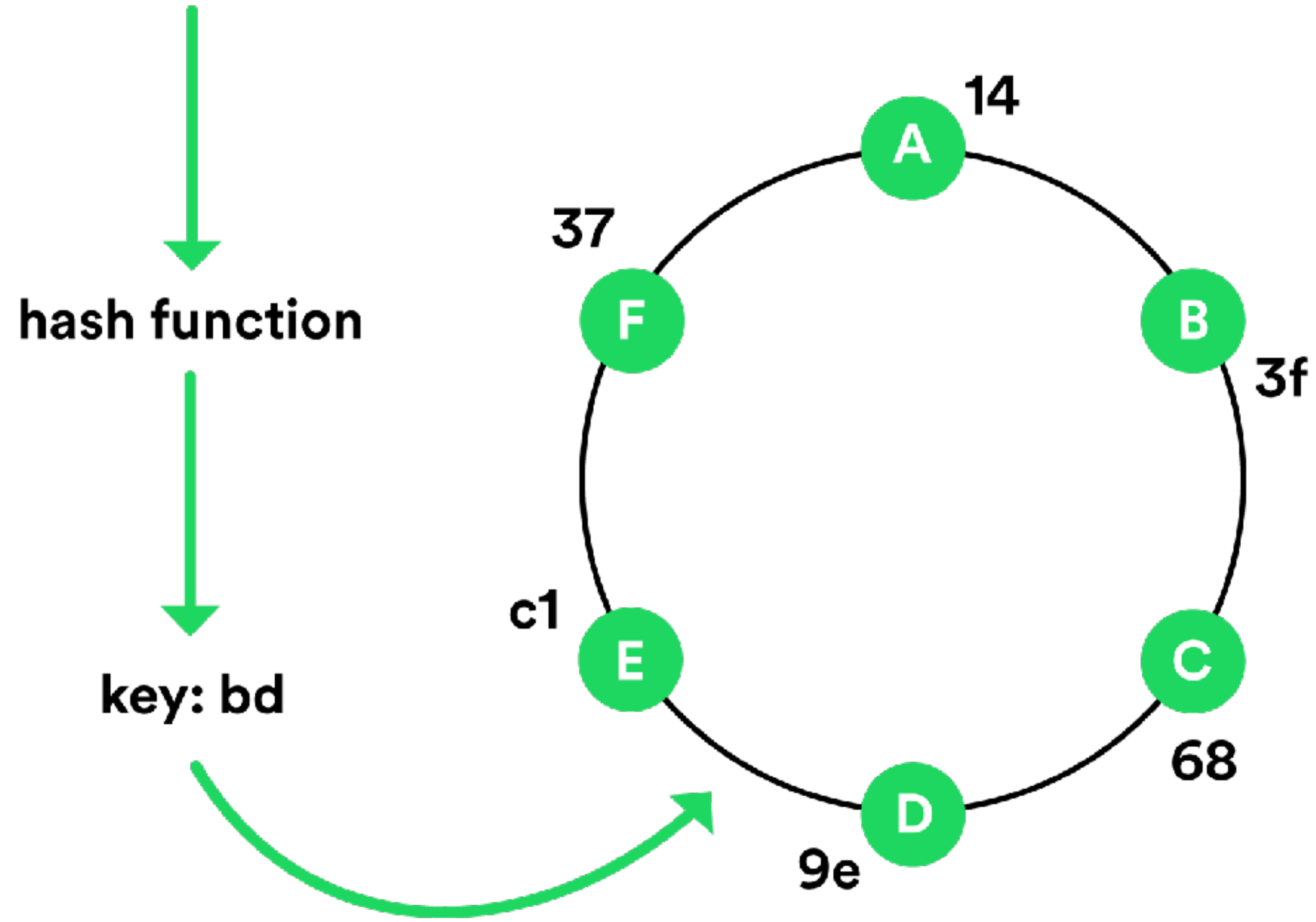
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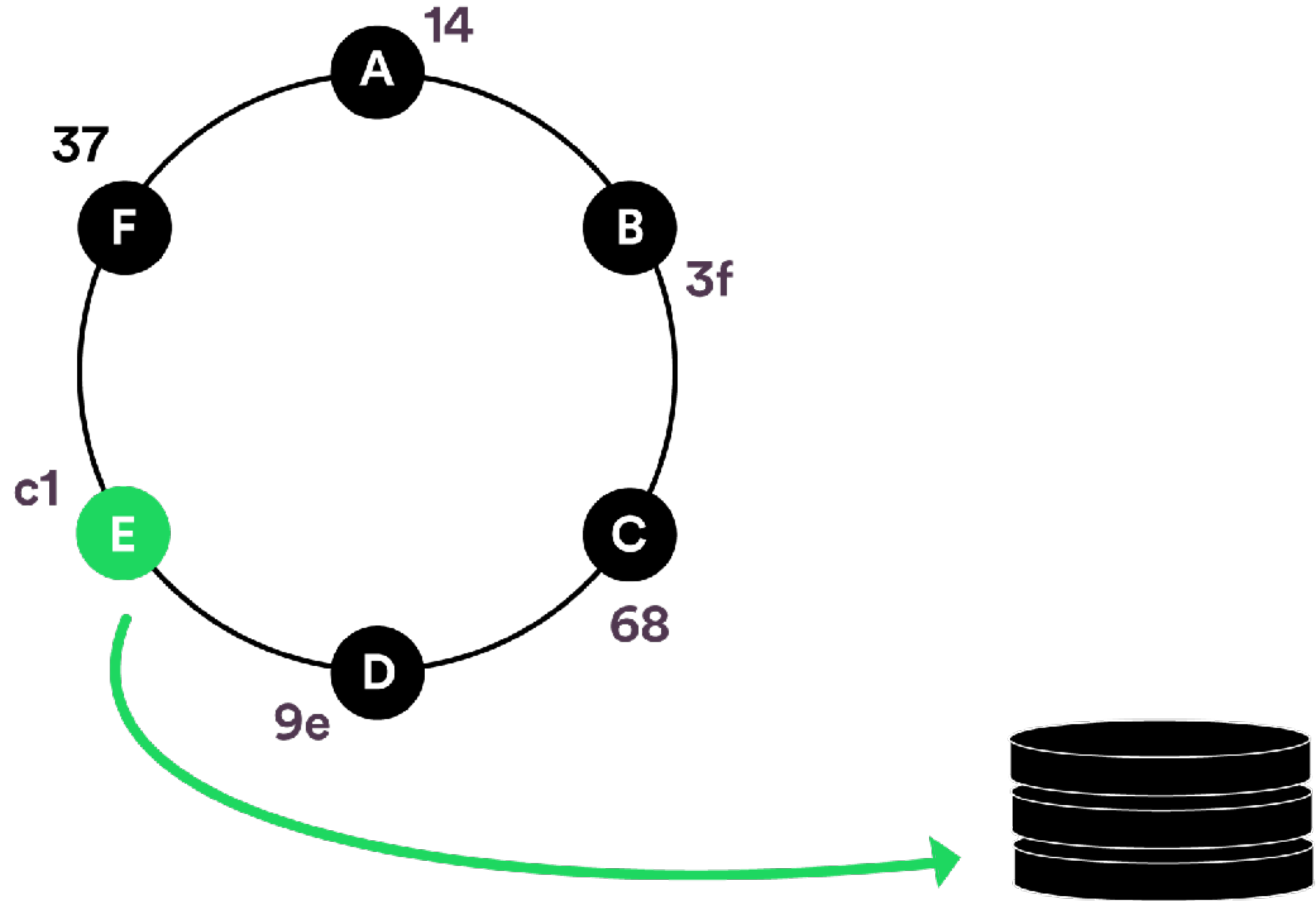


# DHT Ring



**Spotify Song ID**  
spotify:track:d34db33f





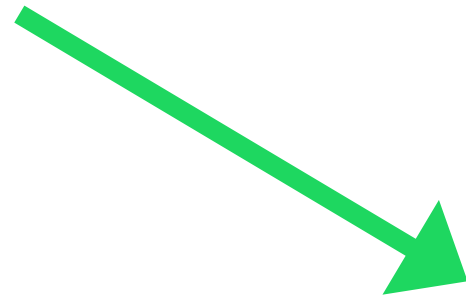
DNS@Spotify



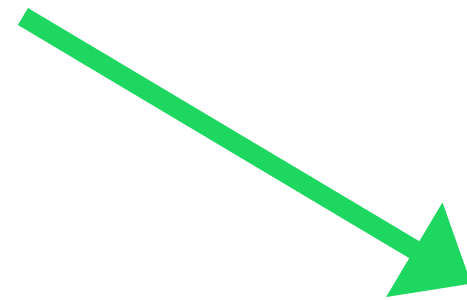
tracks.1234.lon6-storage-a5678.lon6.spotify.net



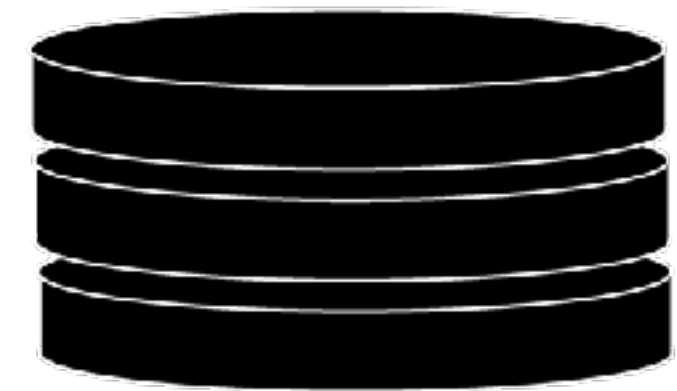
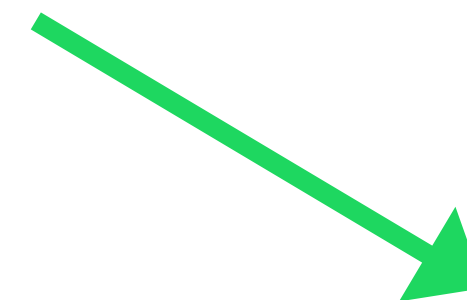
**Spotify Song ID**  
spotify:track:d34db33f



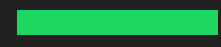
**tracks.1234.lon6-storage-a5678.lon6.spotify.net**



**lon6-storage-a5678.lon6.spotify.net:1234**



# Microservice lookups



```
$ dig +short dnsresolver.roles.lon6.spotify.net
```

```
10.1.2.3
```

```
10.4.5.6
```

```
10.7.8.9
```

```
$ dig +short dnsresolver.roles.lon6.spotify.net
```

```
10.1.2.3
```

```
10.4.5.6
```

```
10.7.8.9
```

```
$ dig +short -t PTR dnsresolver.roles.lon6.spotify.net
```

```
lon6-dnsresolver-a1337.lon6.spotify.net.
```

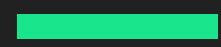
```
lon6-dnsresolver-a0325.lon6.spotify.net.
```

```
lon6-dnsresolver-a0828.lon6.spotify.net.
```

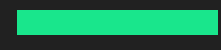
# What we've learned



# Differences in Linux distros



# Scaling is hard



# Dropped Responses





# Docker

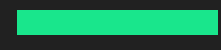


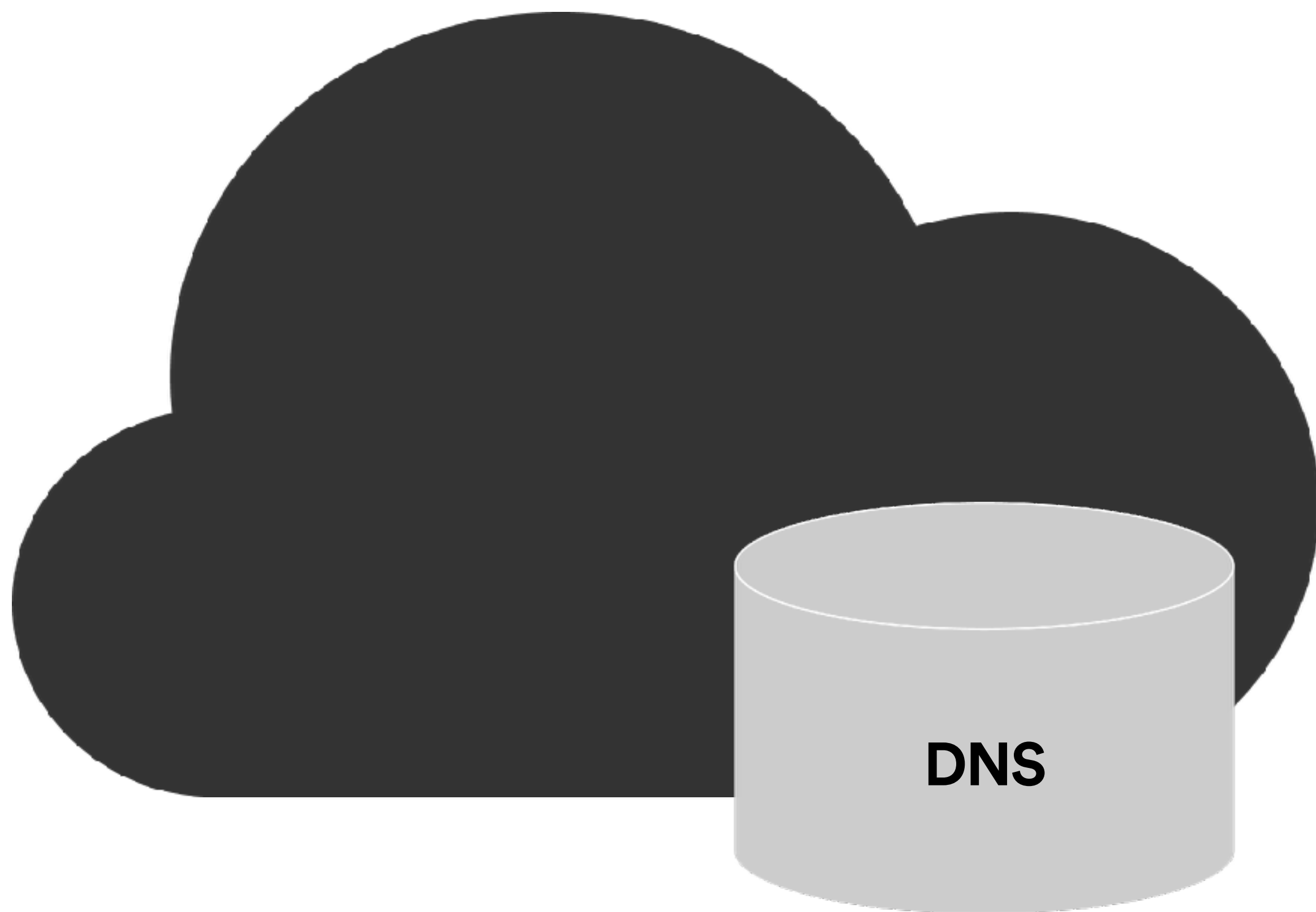
# The future of DNS @

# Spotify



# Ephemerality





**DNS@Spotify**



# recap

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- On-premise infrastructure
- Leveraging DNS beyond its intentions
- It's always DNS
- Handing off the responsibility

# thanks!

Lynn Root | SRE | @roguelynn

