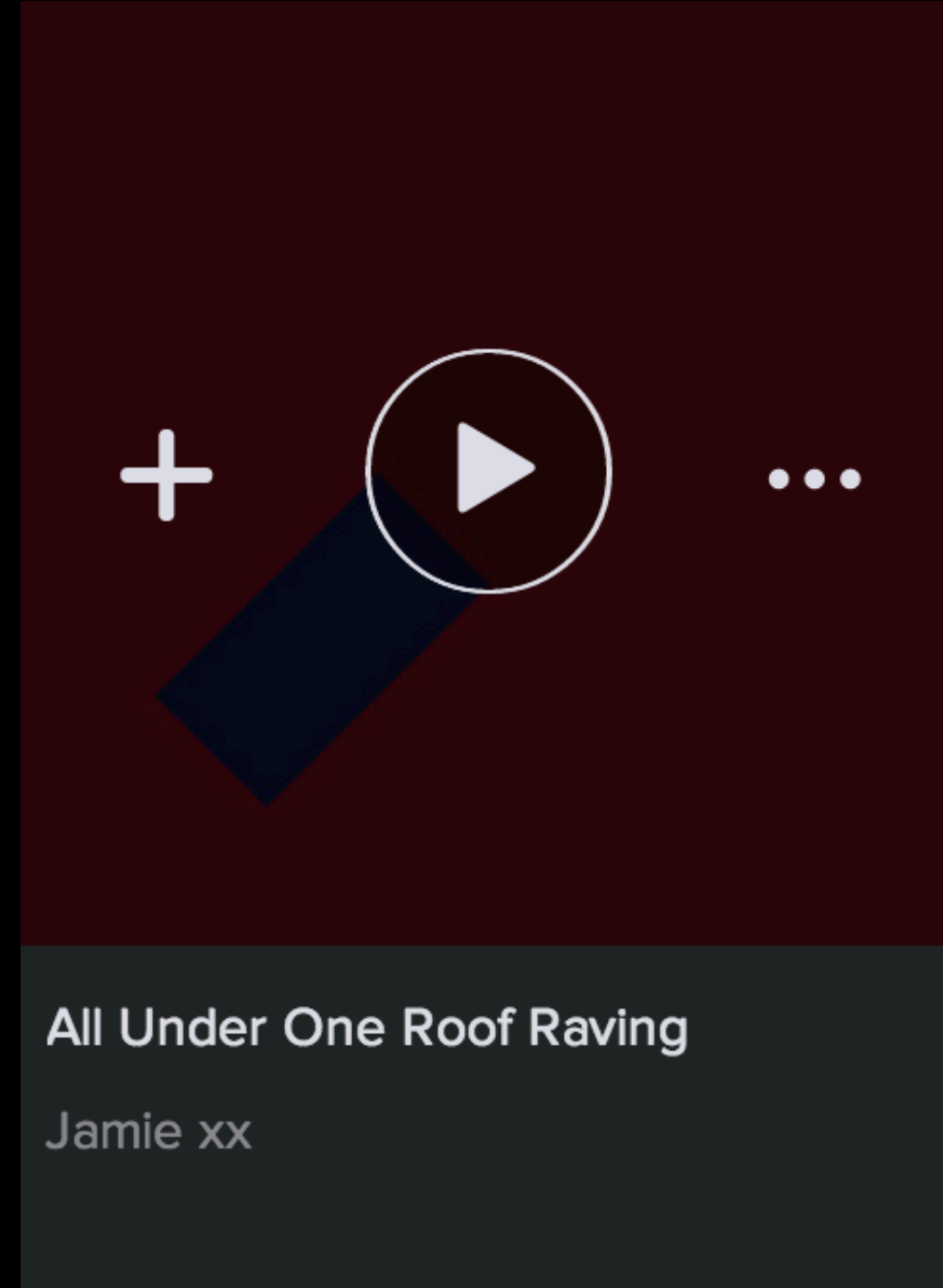




Audio delivery at scale

Niklas Gustavsson
ngn@spotify.com
@protocol7

Playing music



"Microservices"

Simplicity

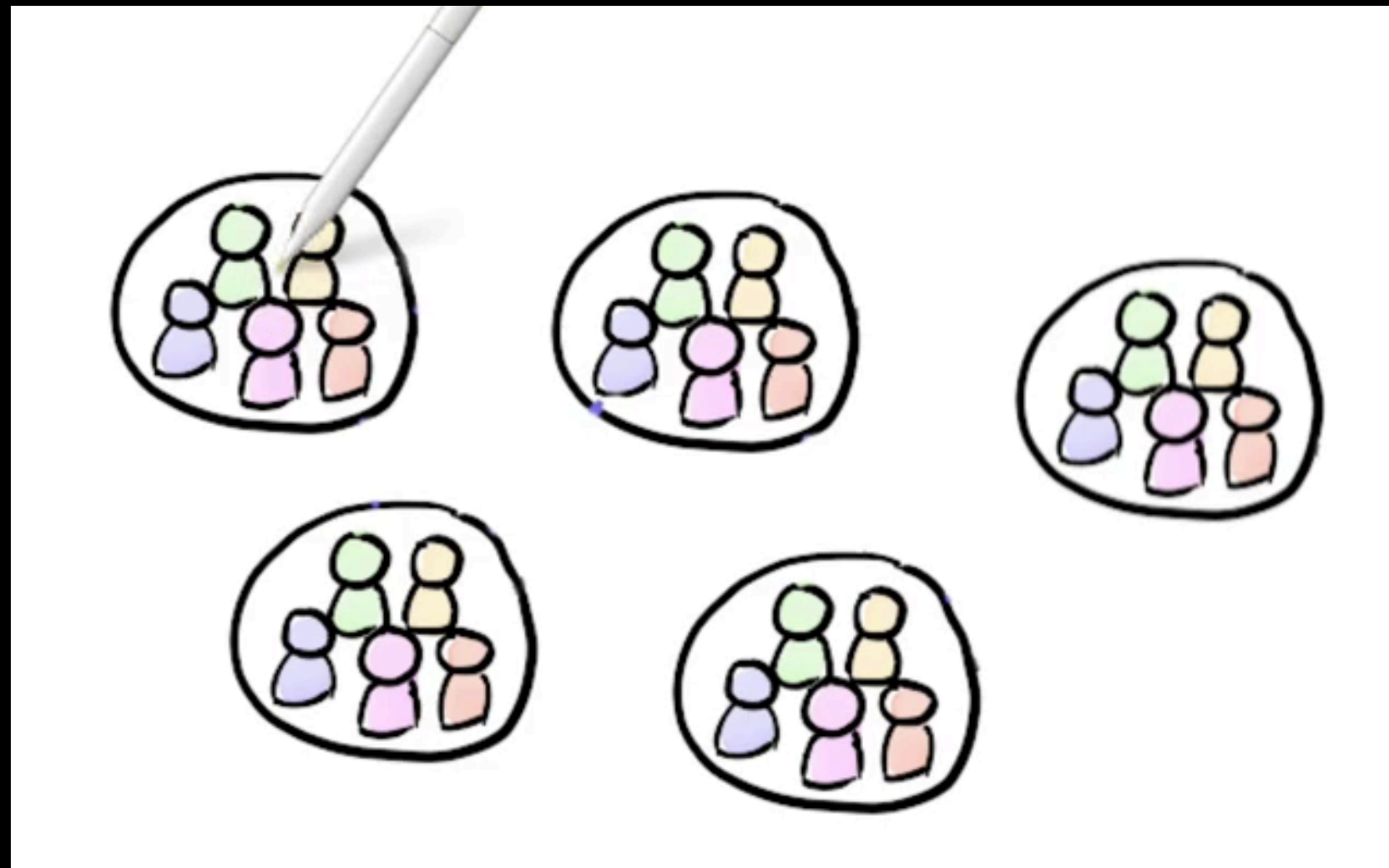
Robustness

Scalability

"Developers should build a program out of simple parts connected by well defined interfaces, so problems are local, and parts of the program can be replaced in future versions to support new features. This rule aims to save time on debugging complex code that is complex, long, and unreadable"

– *Eric S. Raymond, The Art of Unix Programming*

Embrace Conway's law²

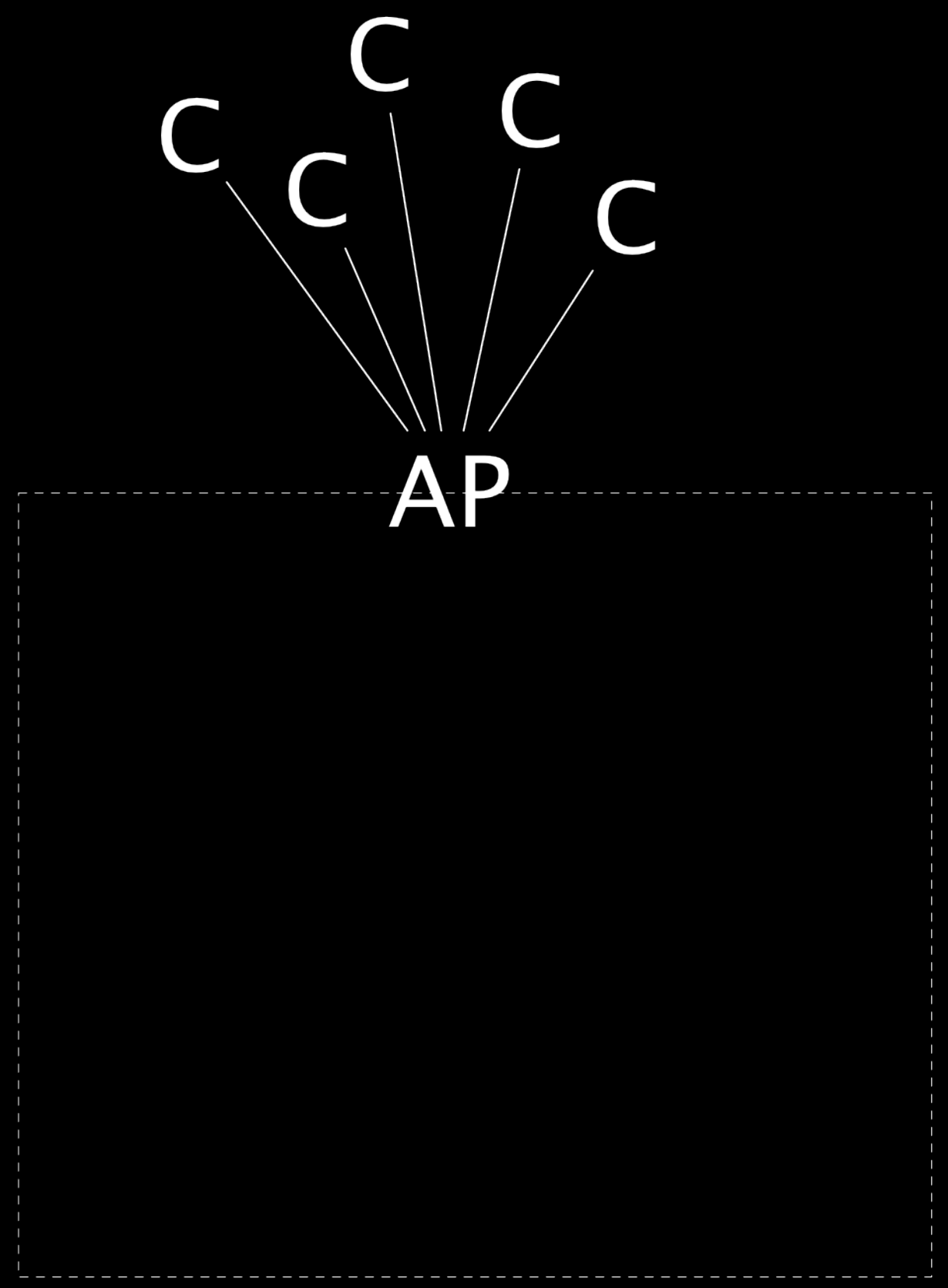


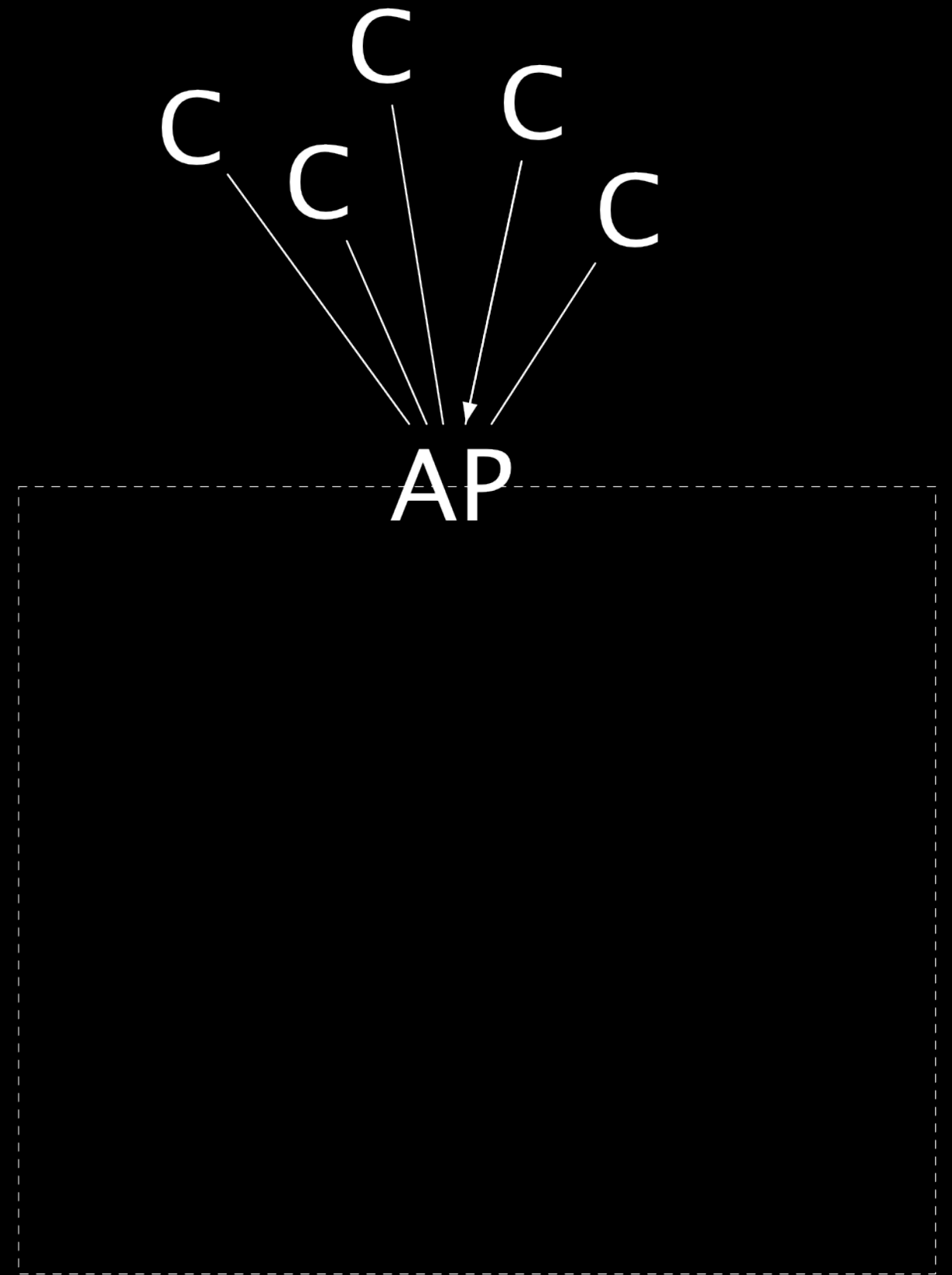
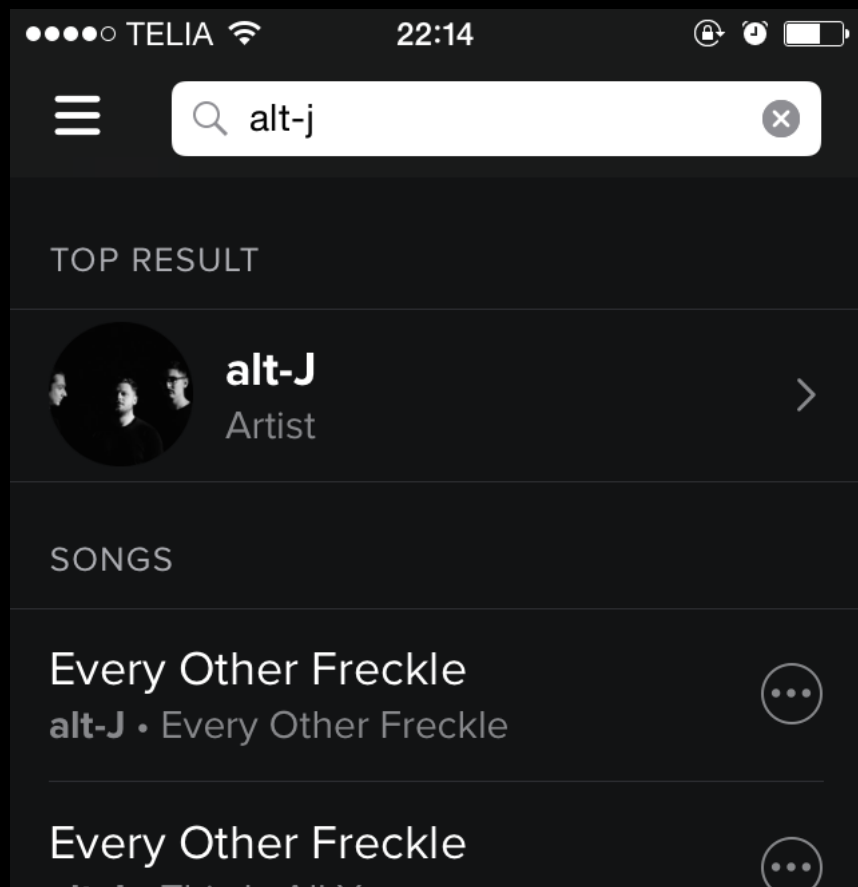
² <https://labs.spotify.com/2014/03/27/spotify-engineering-culture-part-1/>

What's a service?

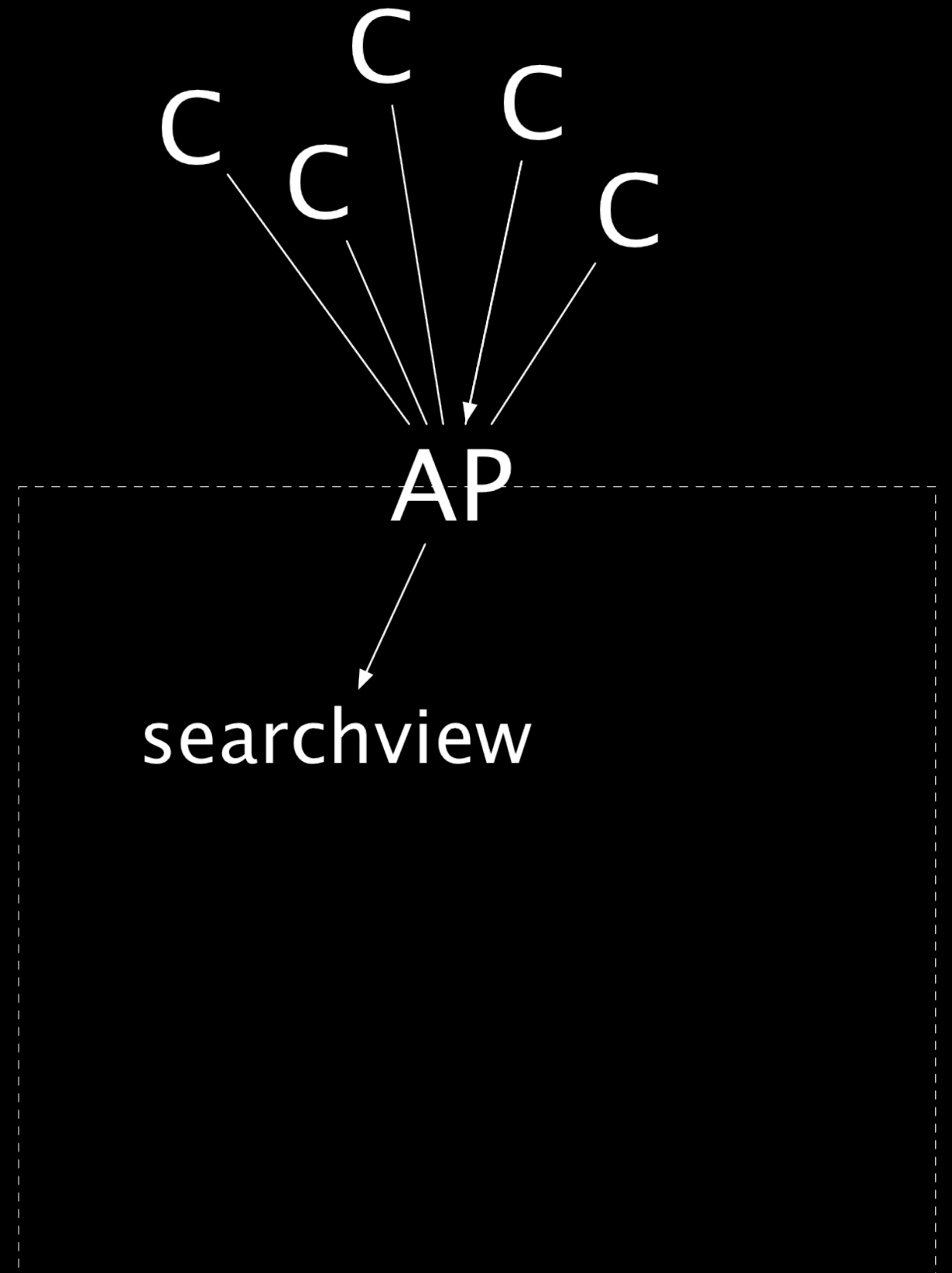
Let's walk a request

Perimeter services





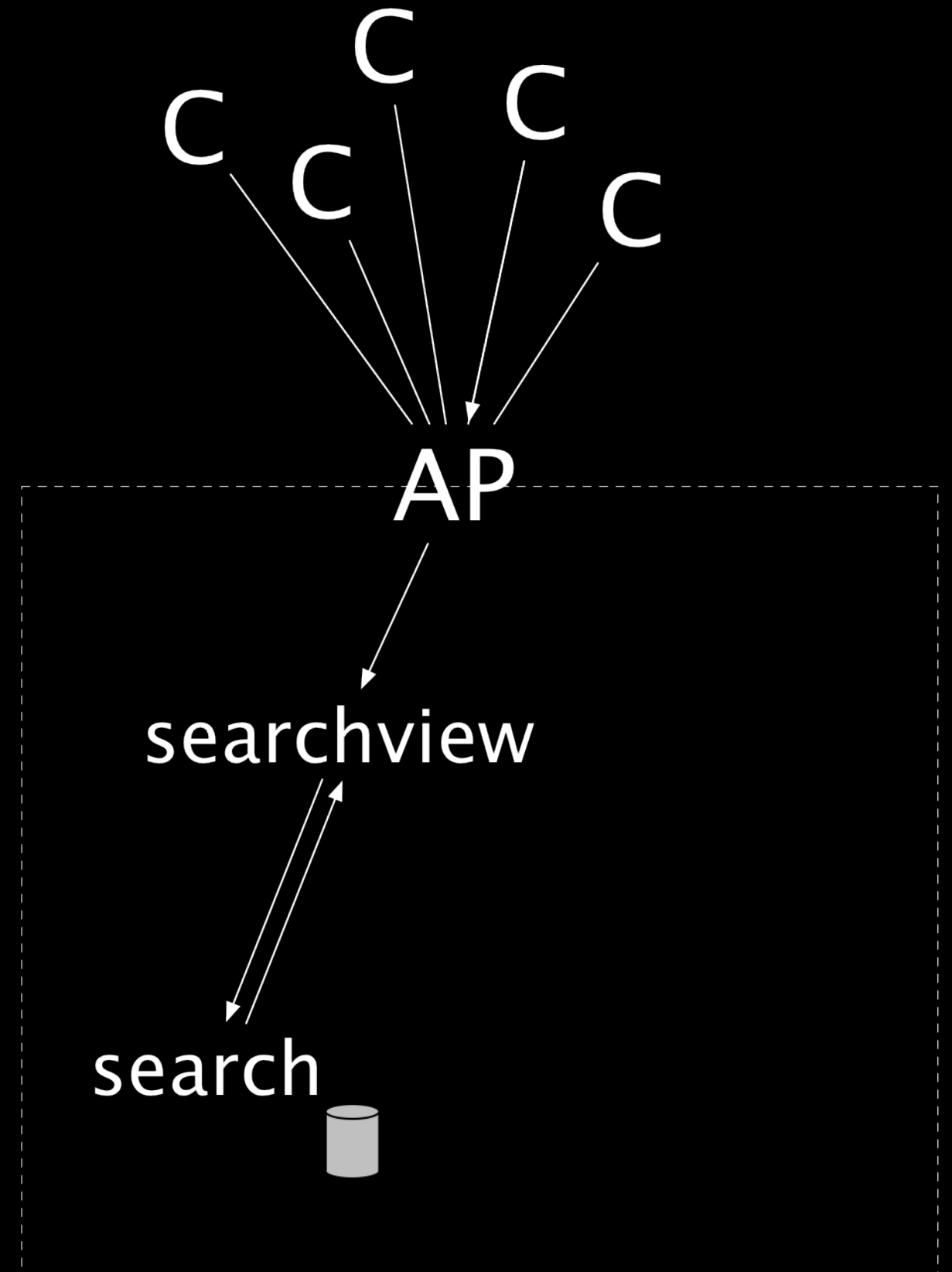
View services



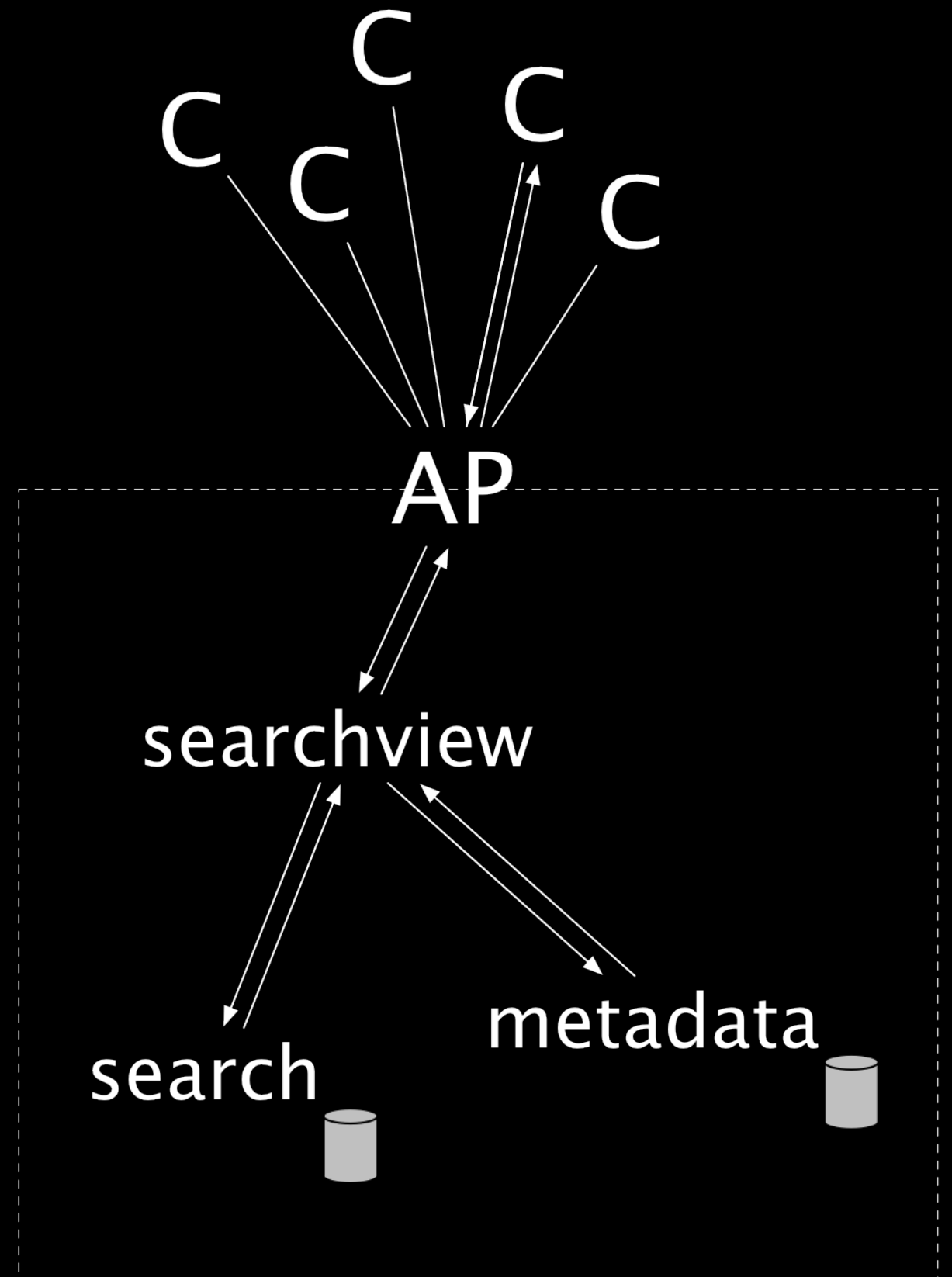
Service discovery

```
$ dig _spotify-search._hm.lon3.spotify.net SRV
...
5000 5000 8181 lon3-search-a1.lon3.spotify.net.
5000 5000 8181 lon3-search-a2.lon3.spotify.net.
...
```

Data services

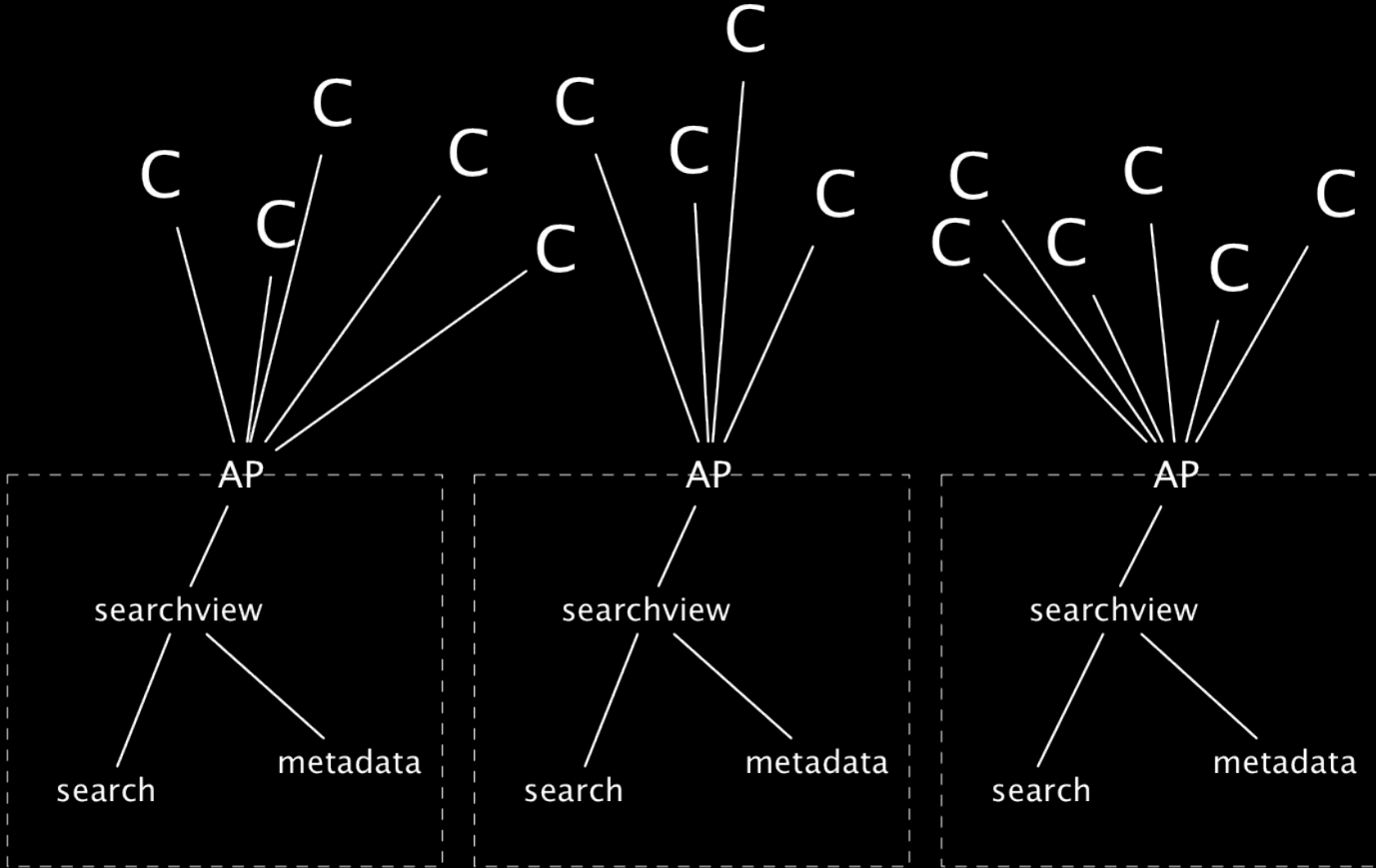


Aggregation



Scaling out

Multisite



$c/1.44$



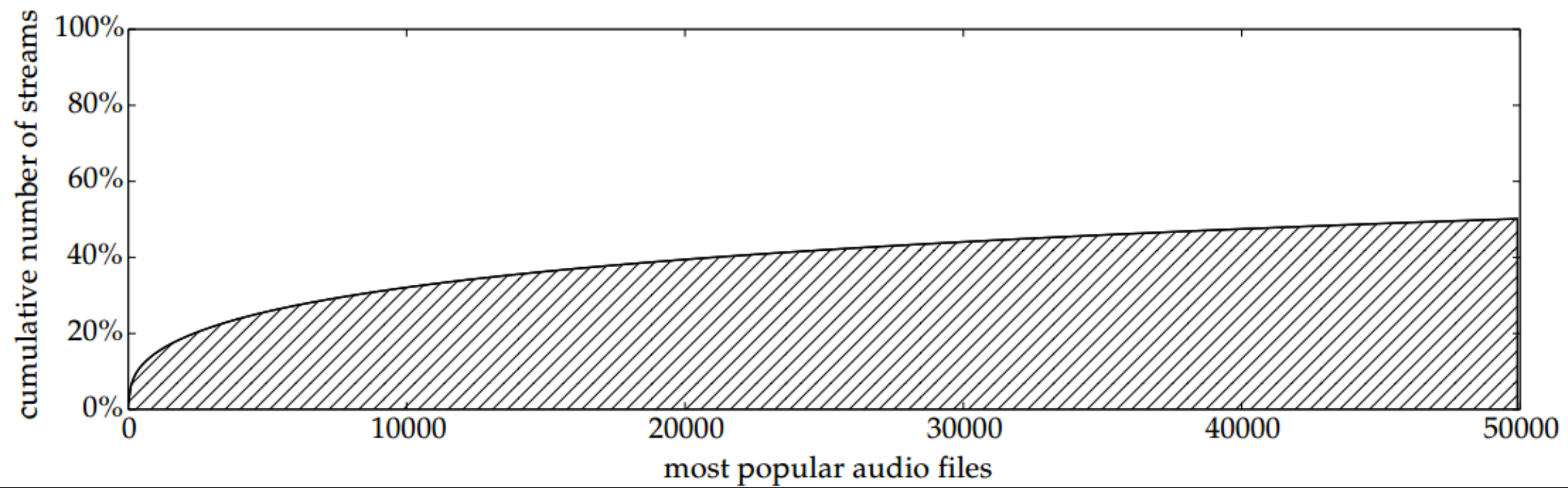
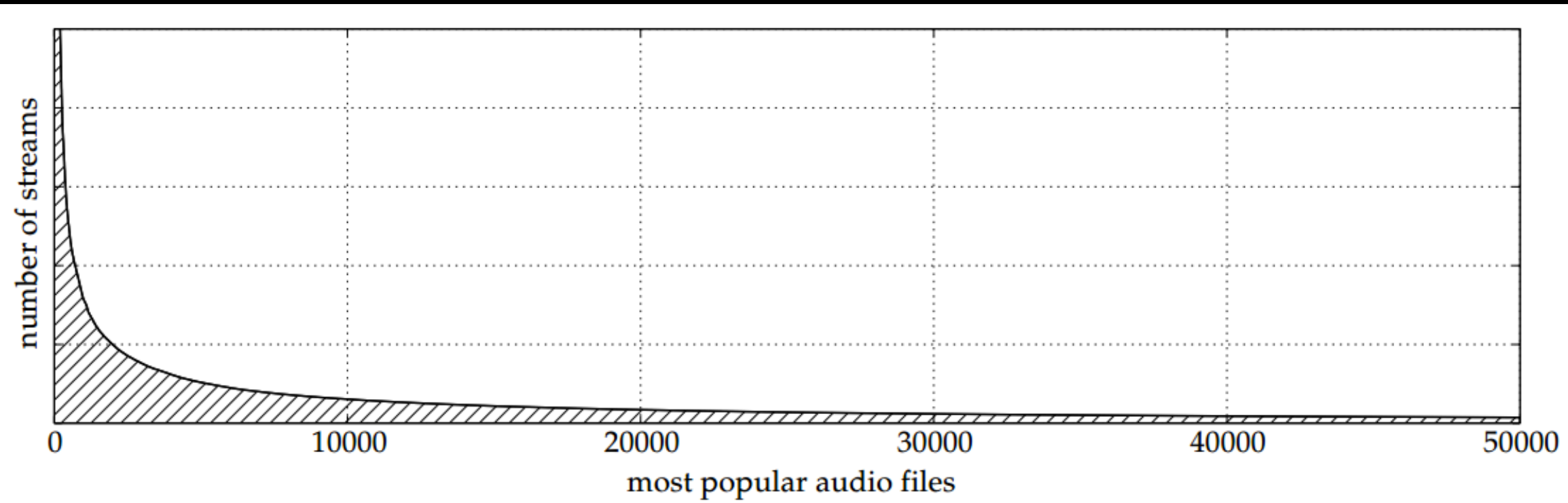
Content distribution

Audio data

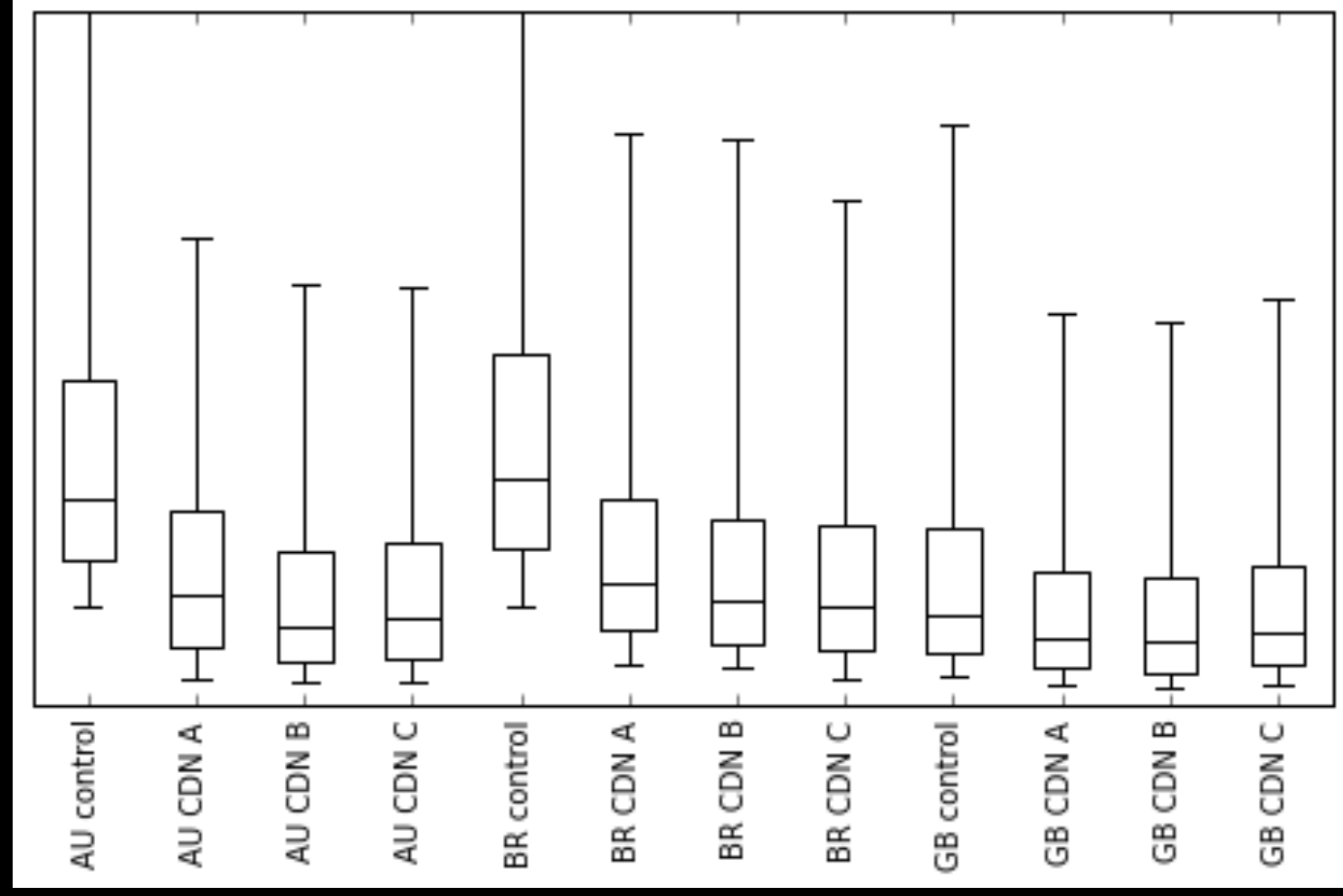
Production storage

CDNs

YOU



Head files



Prefetching



Spotify®

Questions?

ngn@spotify.com

[@protocol7](https://twitter.com/protocol7)