Small, Modular, Agile, Secure: Pick 4

Many components makes light work

Andrew Sullivan at ICANN 55

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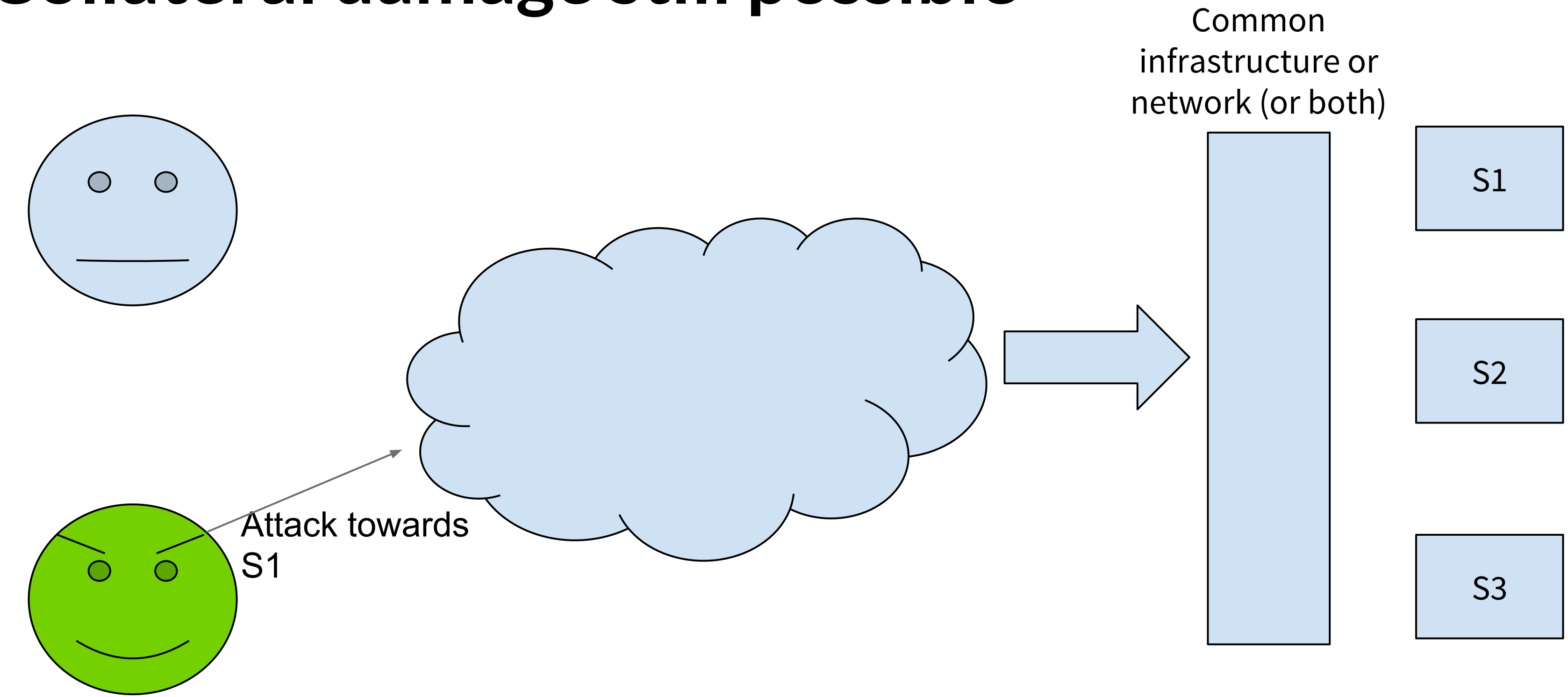
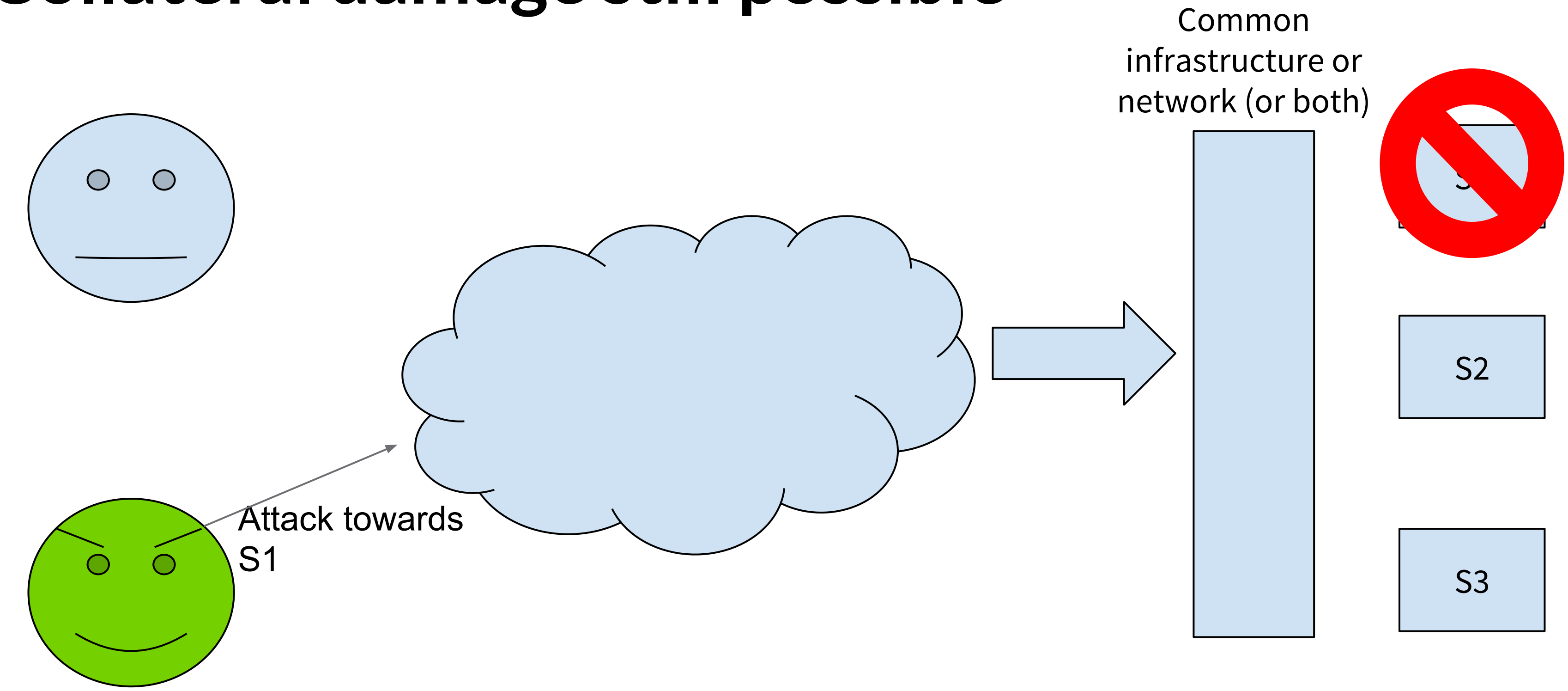
Anycast is just good

- Good to sink traffic topologically close to source
- Lower latency for everyone without relying on round-trip time differences among nameservers in the NS RRset
- More resilient to attacks than traditional “unicast” operation
  - Gets more resilient the more BCP38 is deployed
- Maintenance of a nameserver does not mean an outage of a named nameserver

Collateral damage still possible



Collateral damage still possible



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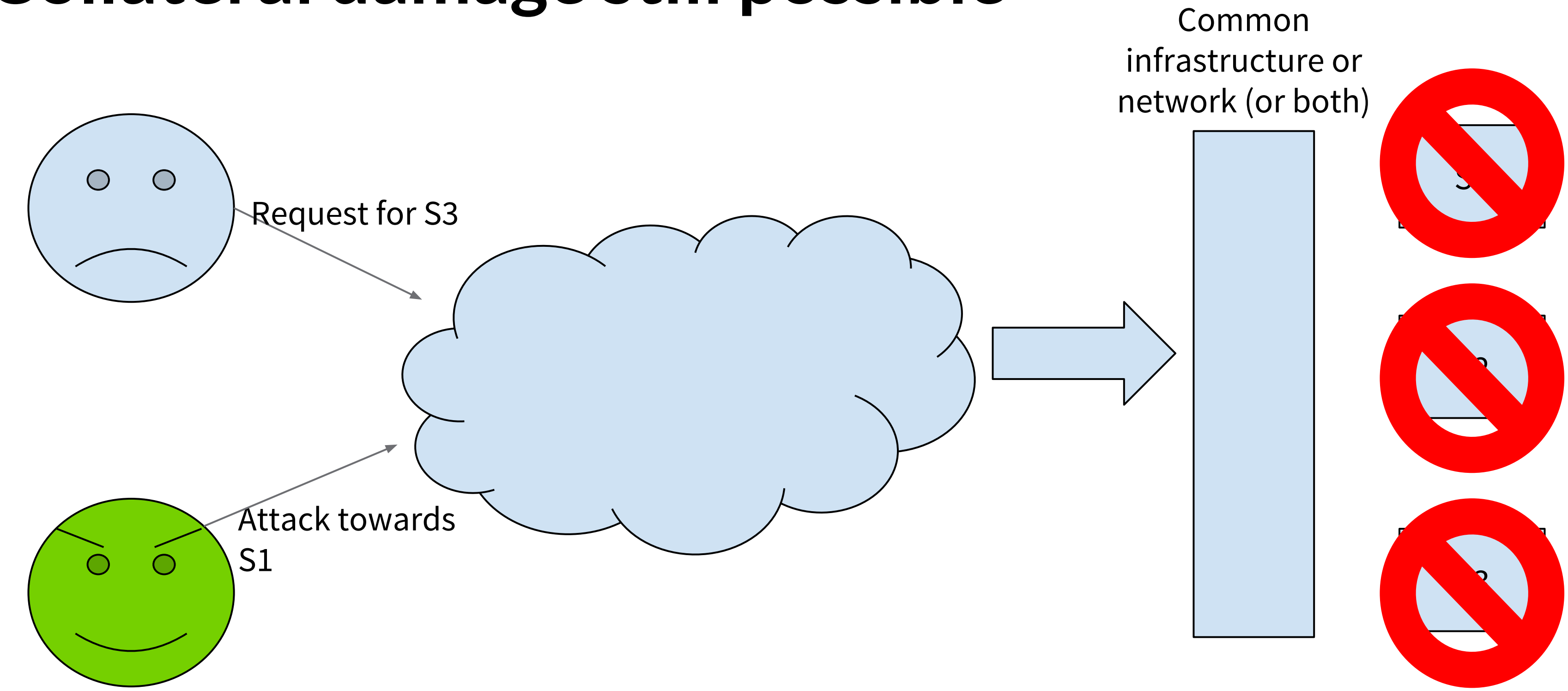
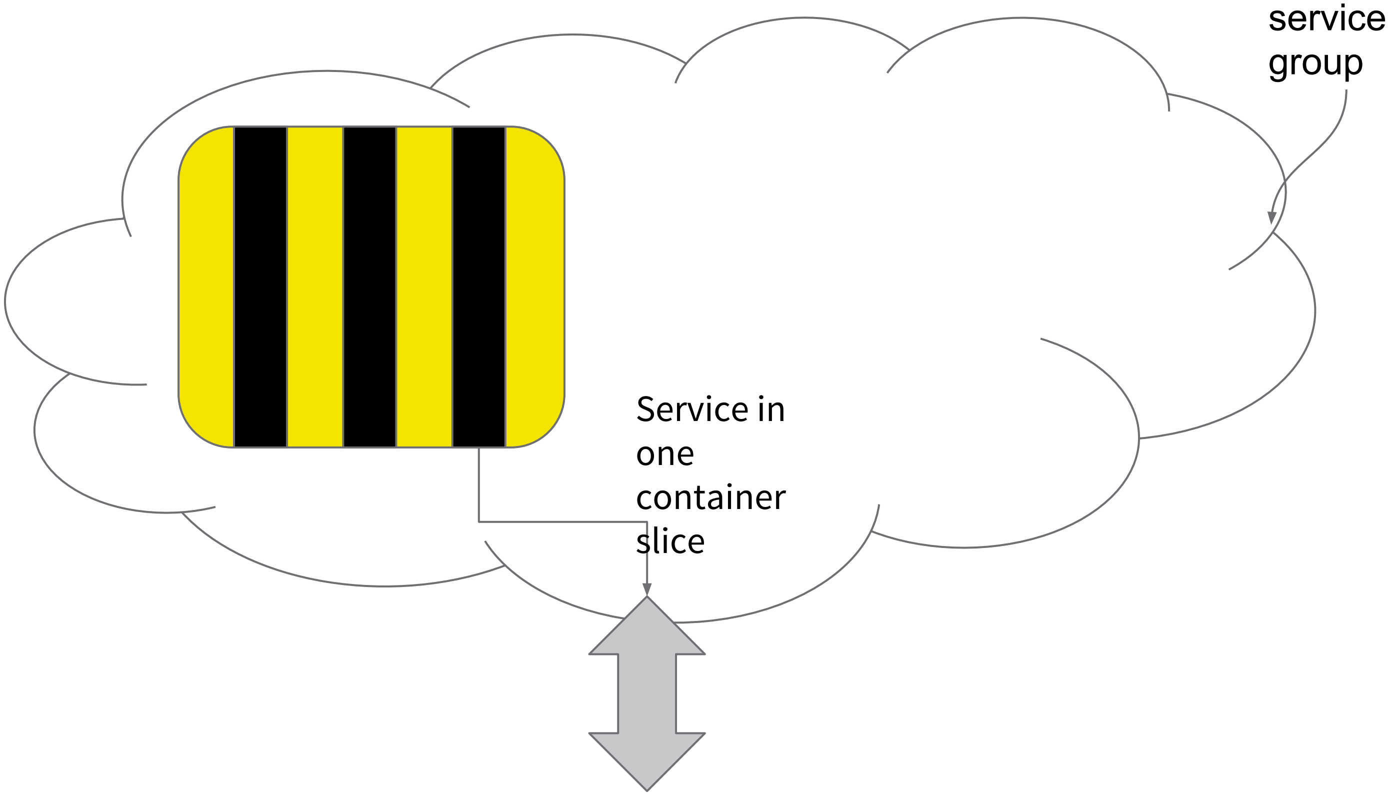


Service isolation helps

Make a larger service out of small, readily-deployable components

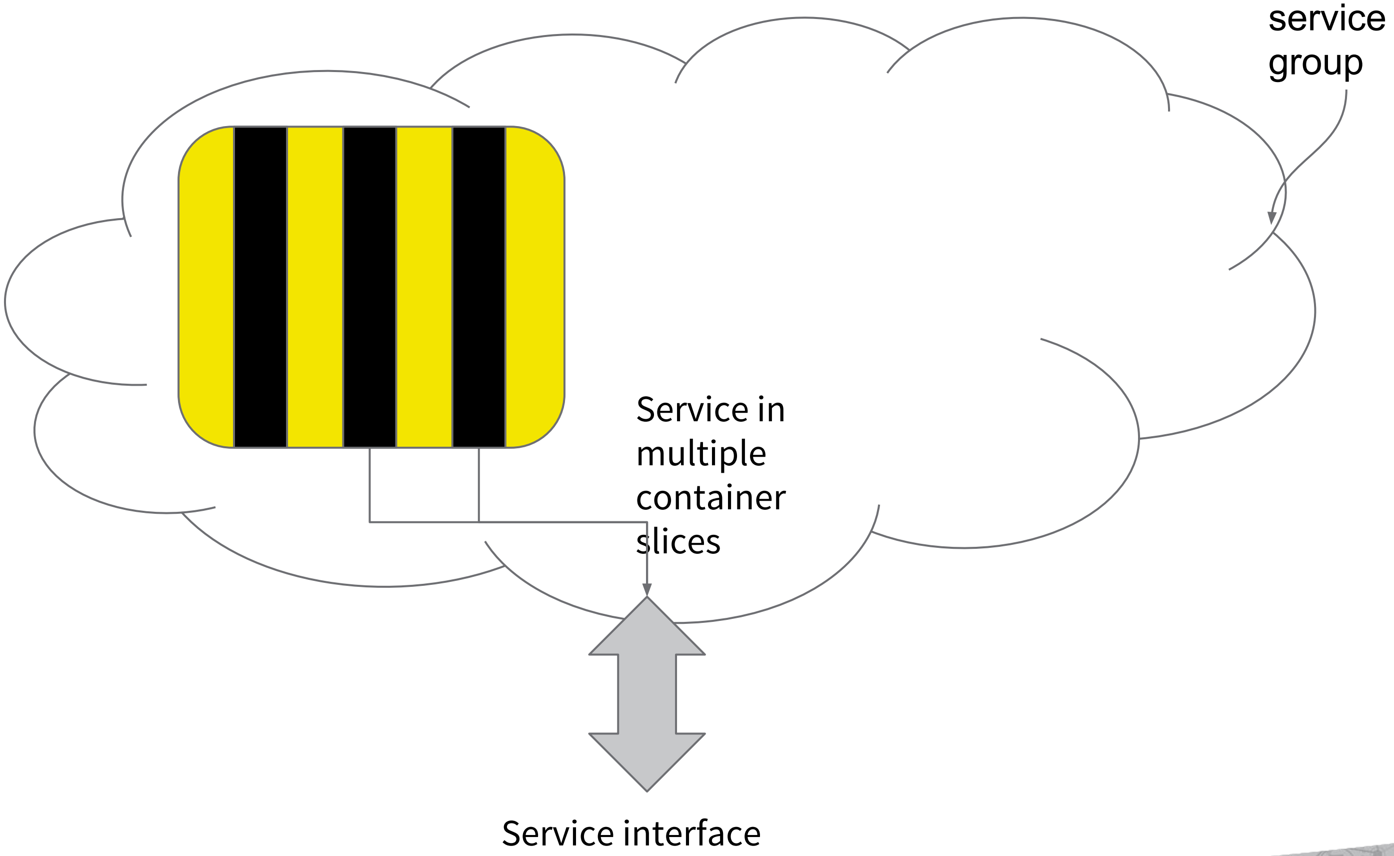
- Small components are cheap and easy to replace
- Modular parts mean mix-and-match works
  - Unanticipated service needs easily supplied
- Easy modularity means change is fast
- Security profile of each component can be understood
  - Security problems can be contained or removed

Snap-together service starts easy

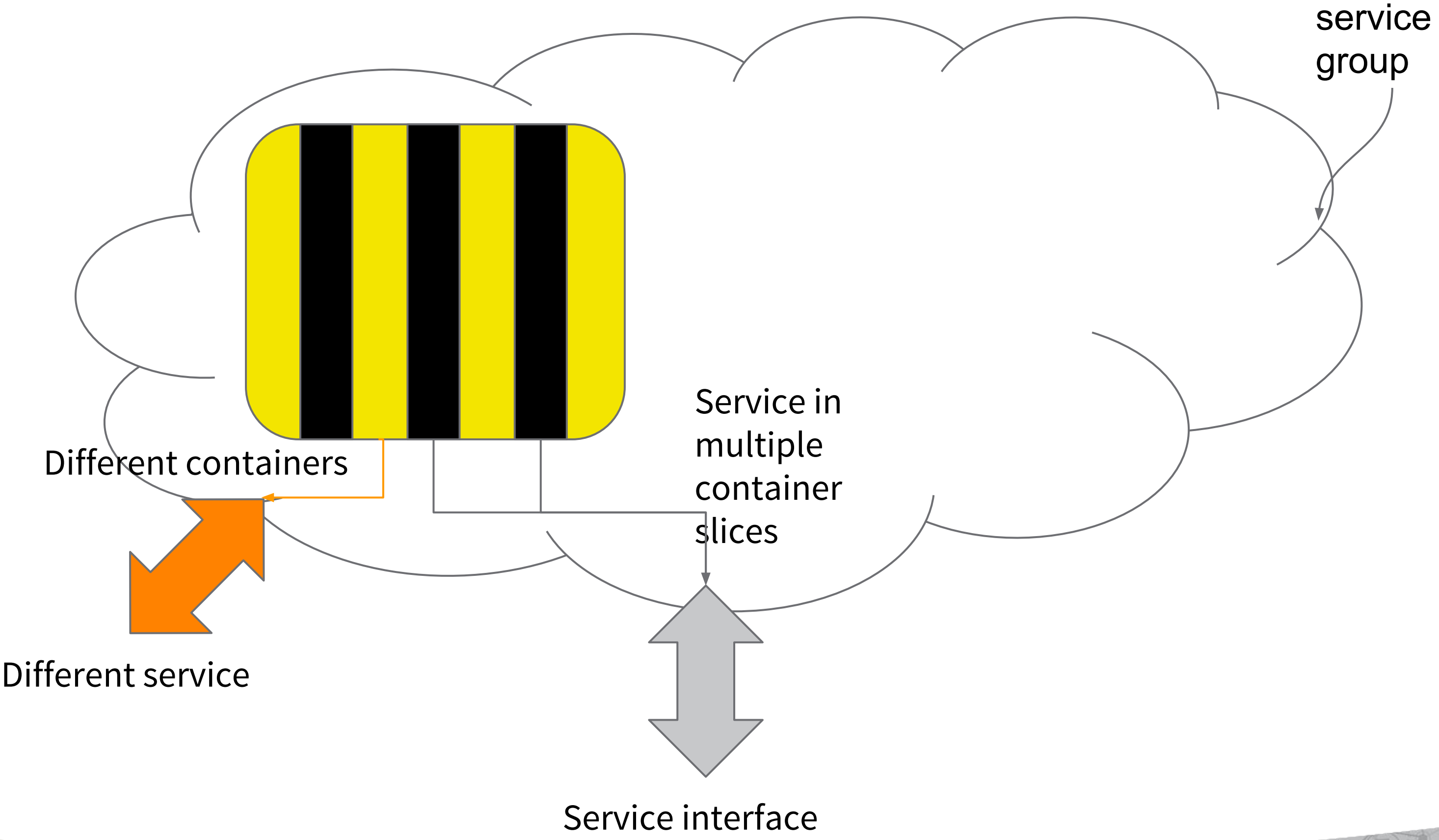


Service interface

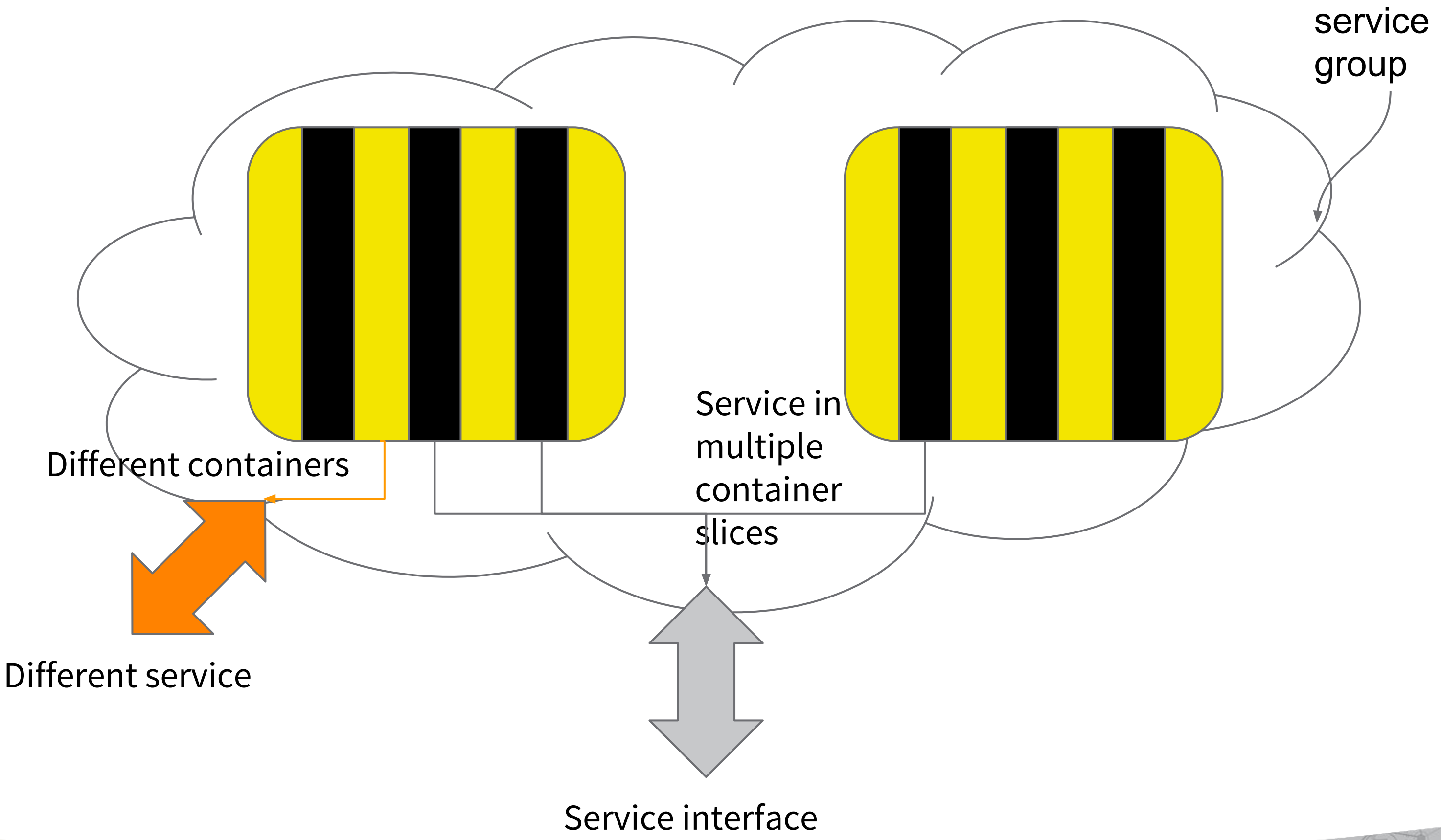
Snap-together service grows



Snap-together service is flexible



Snap-together service grows easily



service group

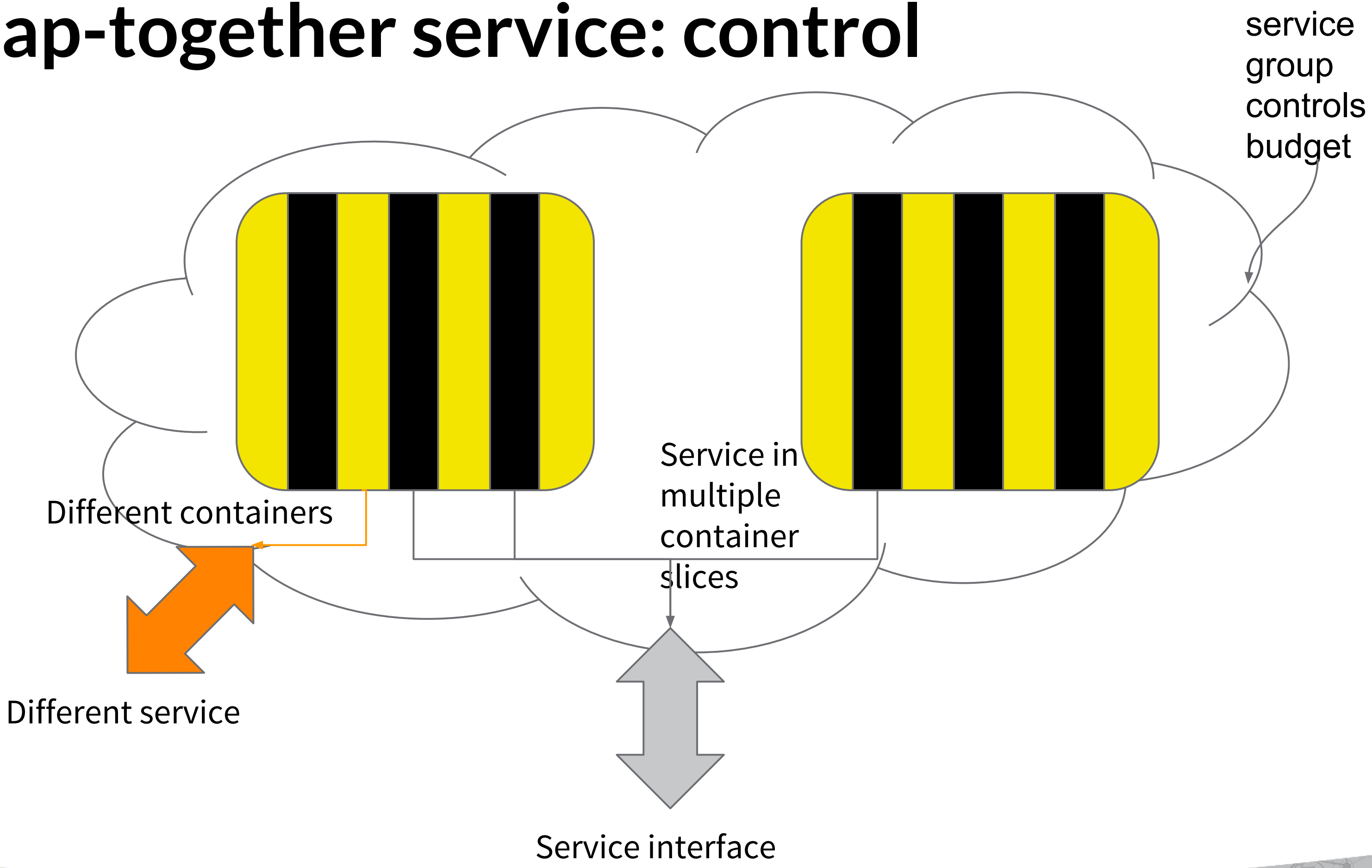
Different containers

Service in multiple container slices

Different service

Service interface

Snap-together service: control



service group controls budget

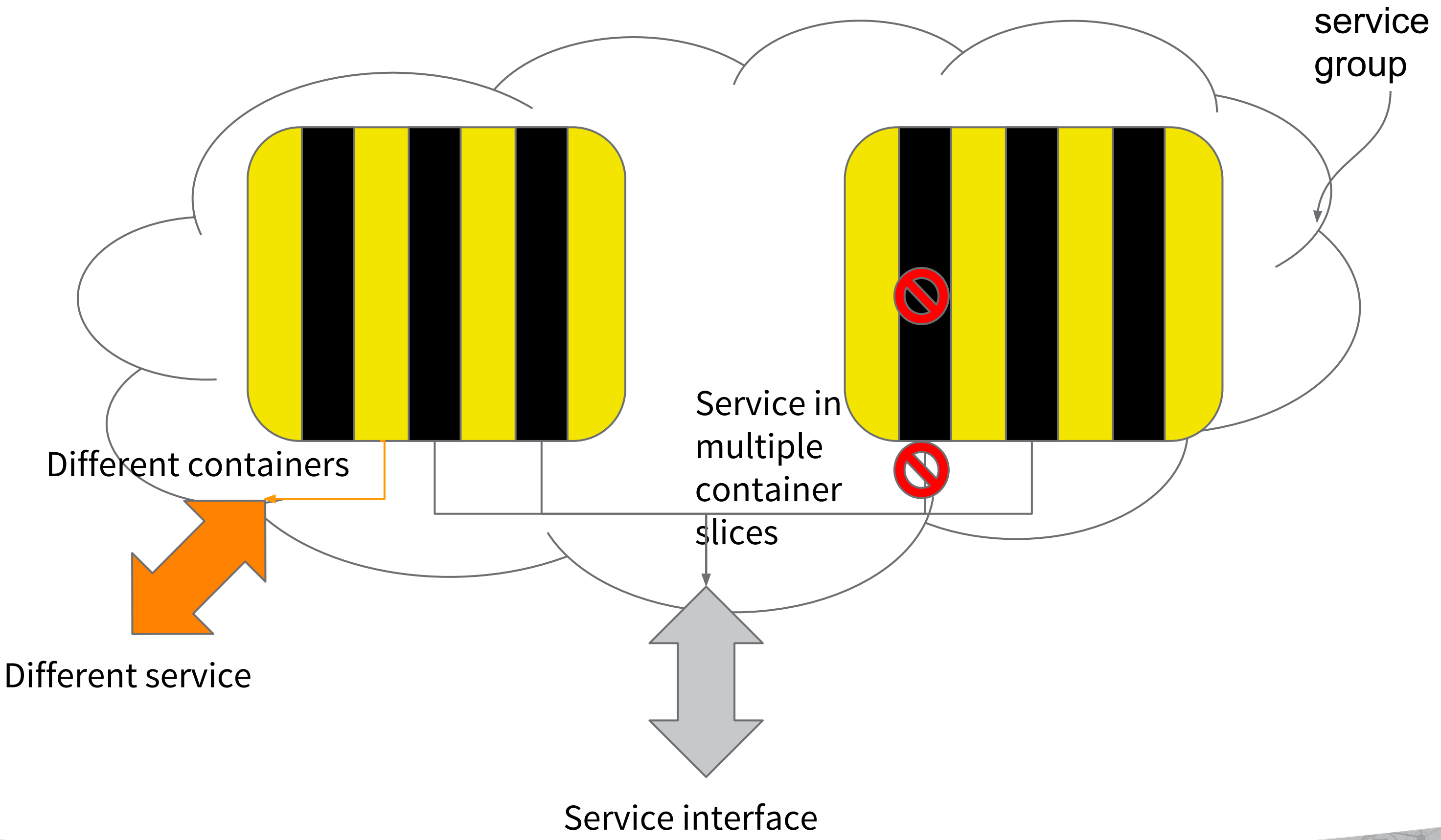
Different containers

Service in multiple container slices

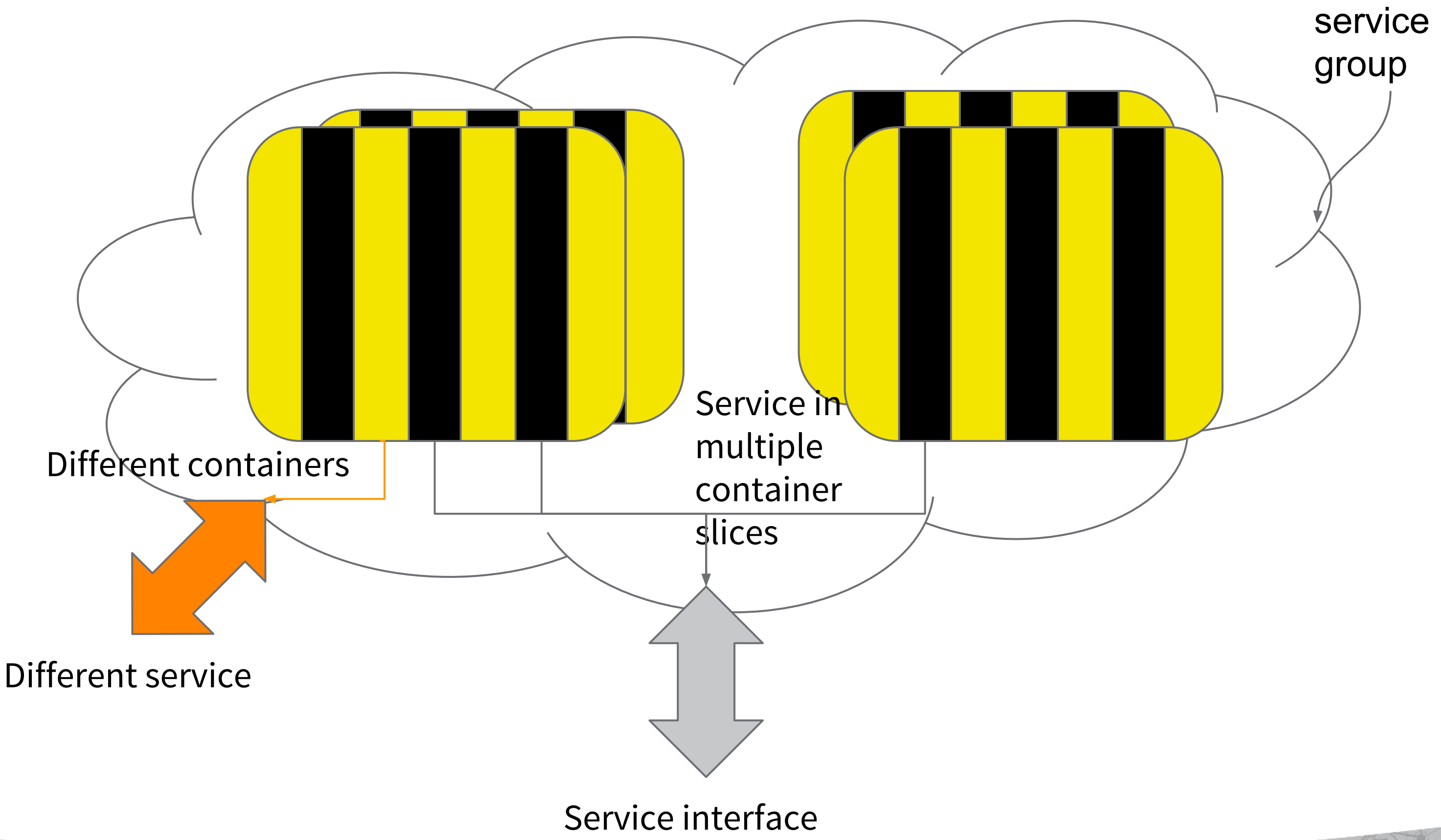
Different service

Service interface

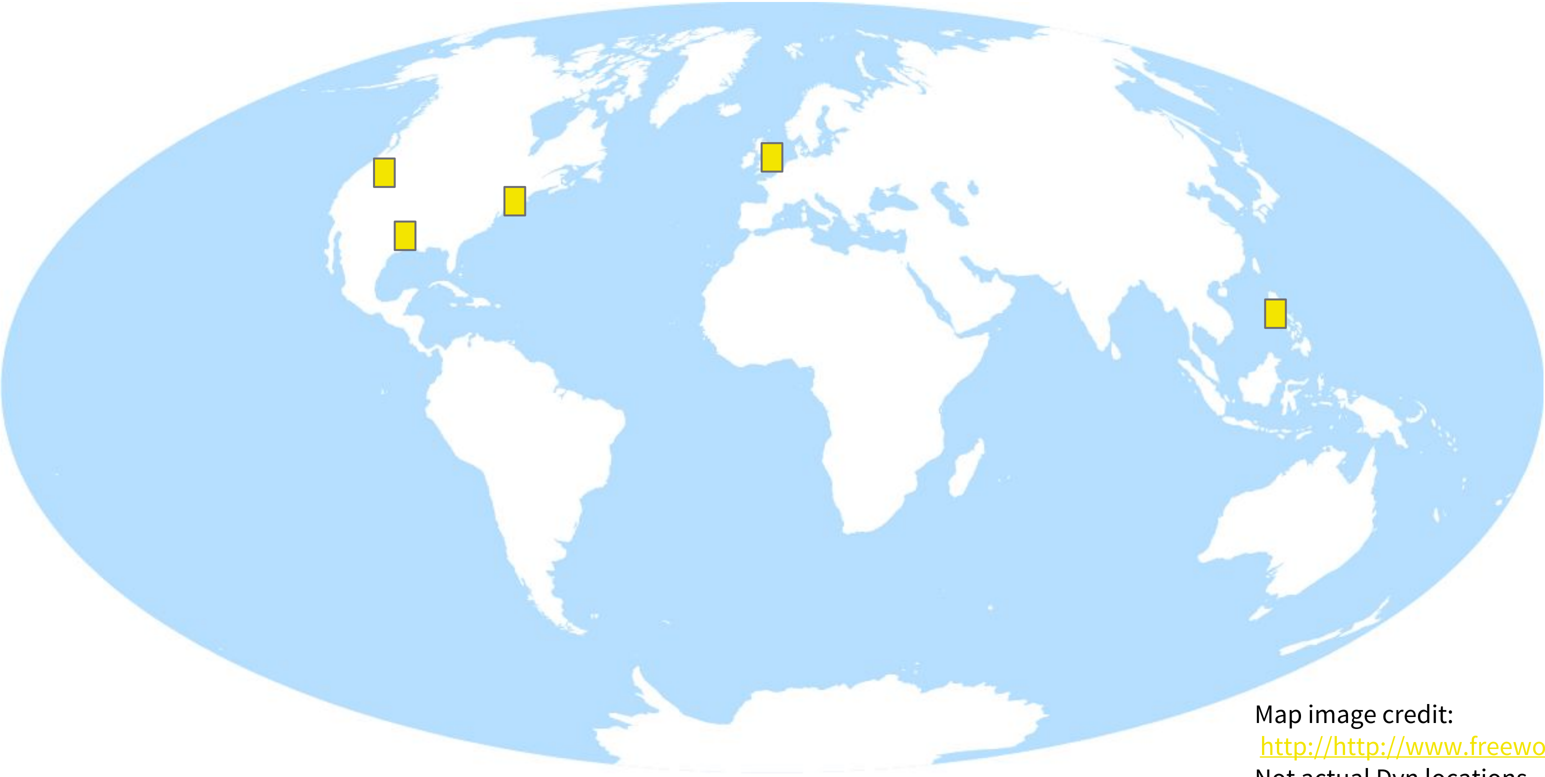
Security by resilience



Need more? Add them!

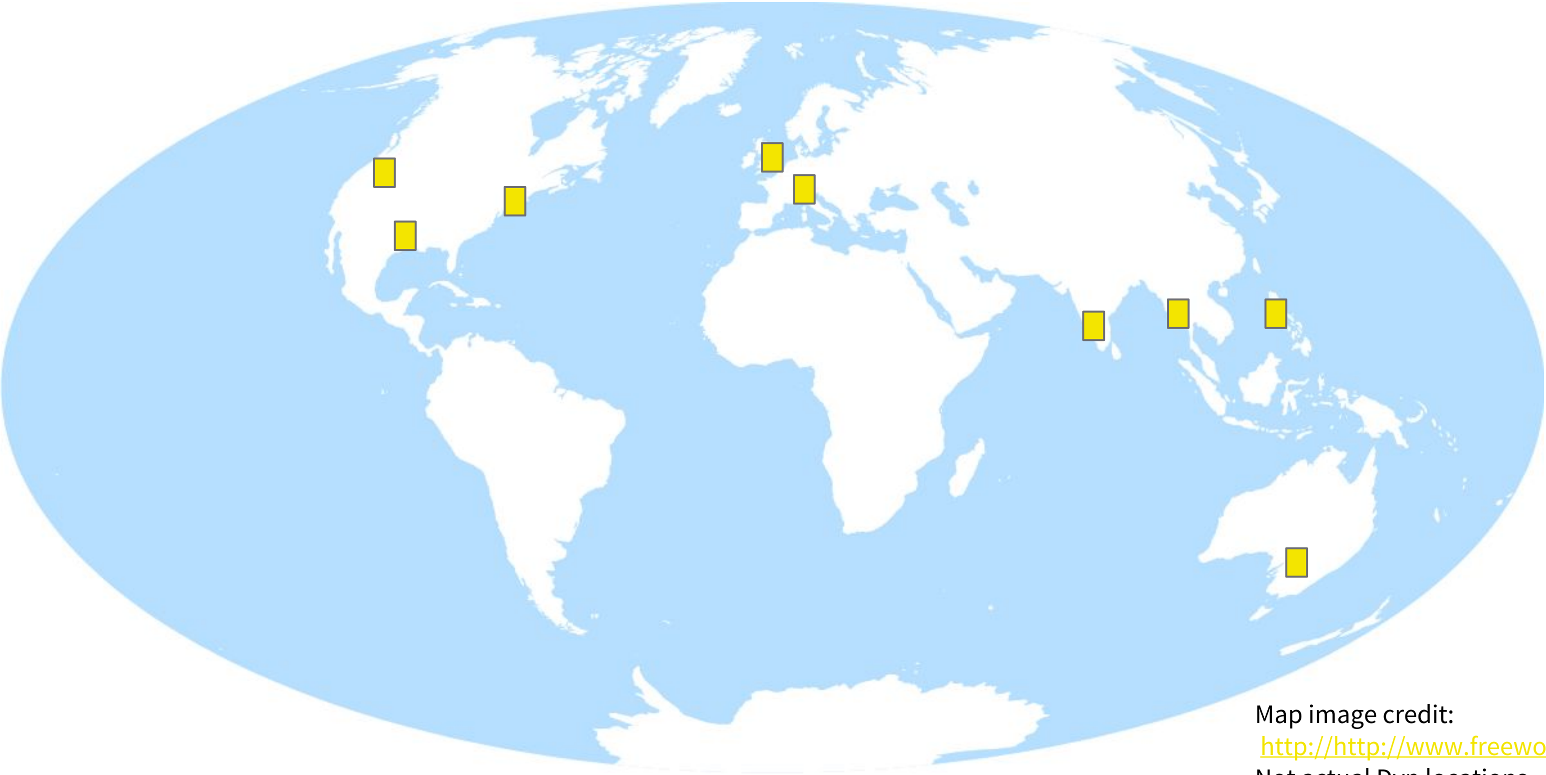


Start small



Map image credit:
http://http://www.freeworldmaps.net
Not actual Dyn locations

Expand for demand



Map image credit:
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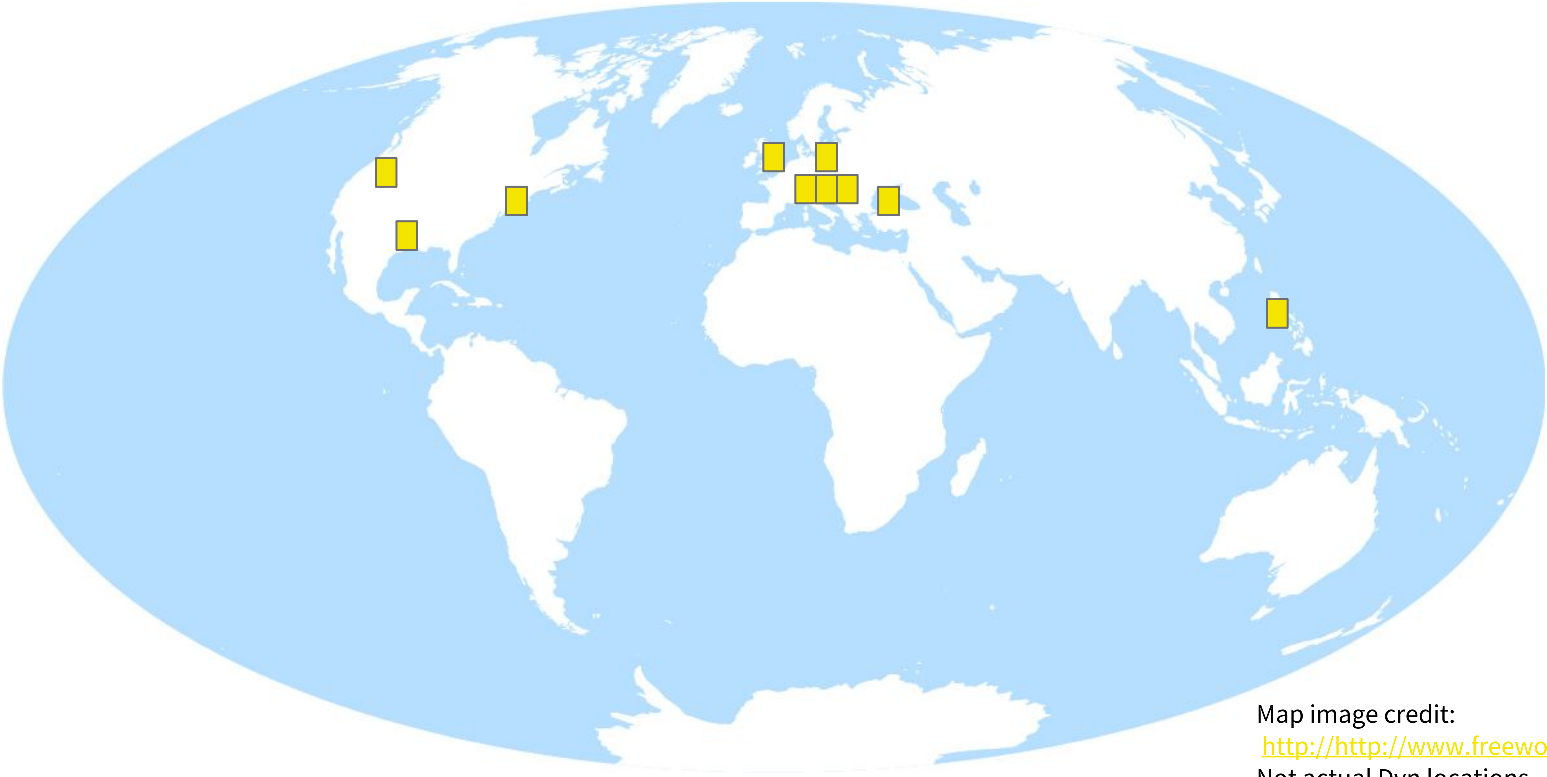
Or turn up to meet flash crowds



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Strategy not for everyone

You need an infrastructure approach to start with

- If you’re used to hand-building things, you have to completely change your operations
- If you have a couple of servers, then this won’t work
  - Consider a hybrid approach
- If you only have a single service, makes no sense to build for many

THANK YOU!

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