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aws Community Day

MIDWEST | COLUMBUS, OH

Cruising through *Network Complexity*

while migrating apps
to AWS at Warp Speed

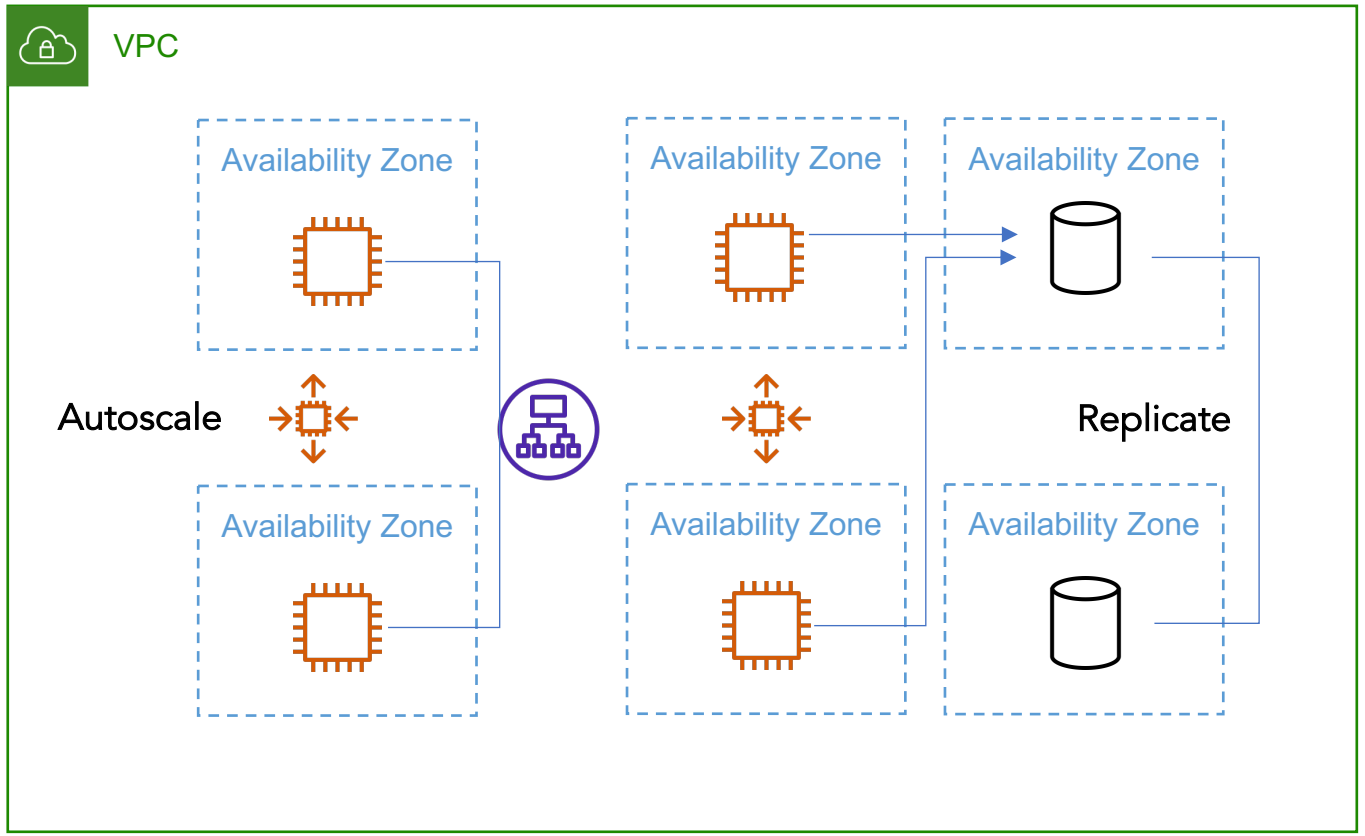
Agenda

1. The Plot
2. Sprint, Walk, Crawl
3. Network Complexity
4. Cruise Control

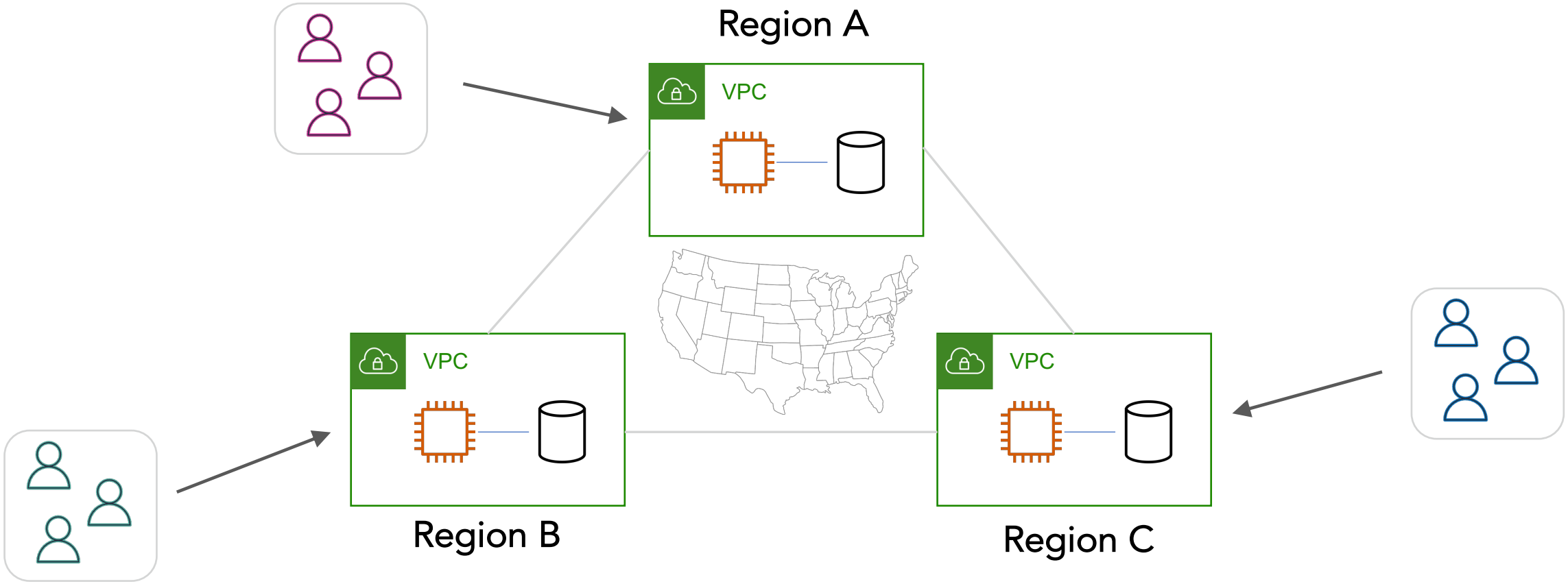
github.com/wcollins/cruising-through-network-complexity

The Plot

Developer Experience



The Plot



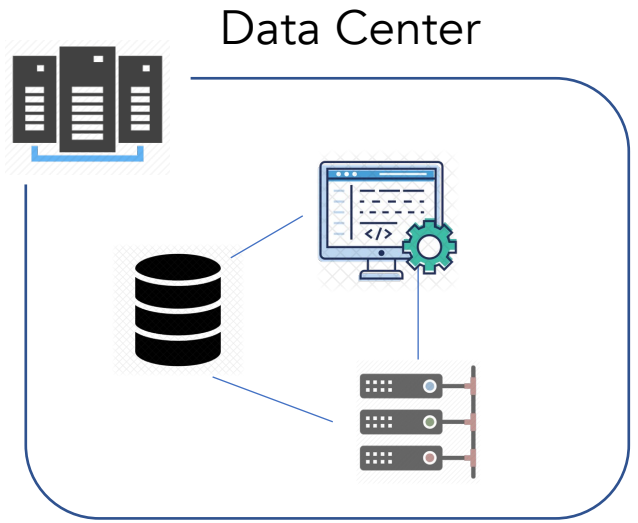
Customer Experience

The Plot

Enterprise

*(**15K** or more employees)*

100 – 2,000 Applications



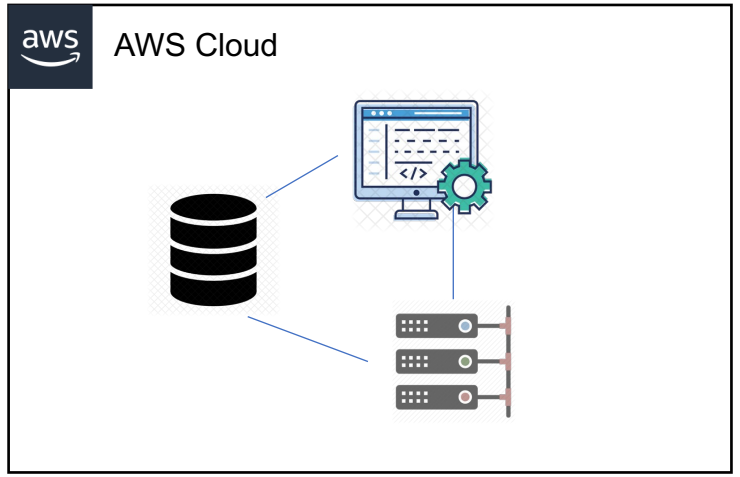
The Plot

Data Center

Modernize

Digital

Transformation



Sprint, Walk, Crawl

Learning to play music

- Sprint — Let's learn Beethoven in our first week!
- Walk — I don't have the skills yet
- Crawl — I need to learn to read music

Perspective

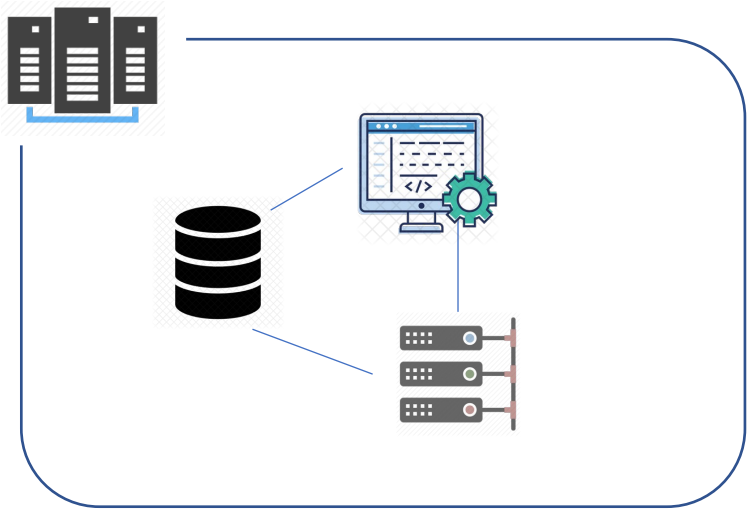
Digital Transformation

- Sprint — Let's migrate all our applications this year!
- Walk — There is a lot we didn't fully understand
- Crawl — Let's get the basics down

Sprint, Walk, Crawl

What does the network need to support?

1.) Brownfield *(Migrations)*



Fast + Reliable Connection

2.) Greenfield *(Cloud Native)*

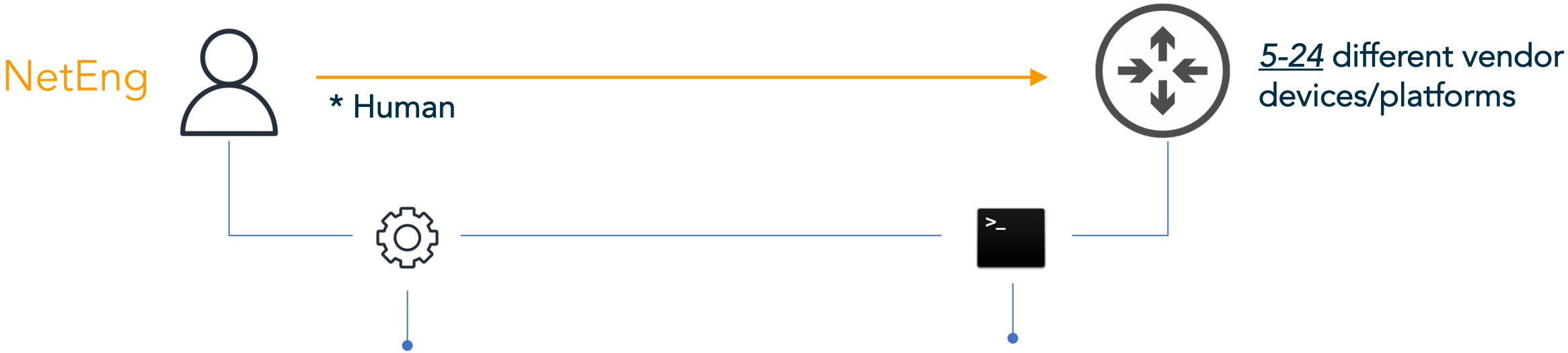
Network Complexity

Complex

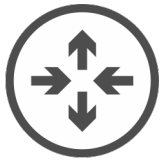
"characterized by a very complicated or involved arrangement of parts, units, etc"

dictionary.com

NetDevOps - Survey



Network Complexity



Underlay

Internet

MPLS

P2P

Physical network gear and
reliable optical infrastructure

Network Complexity

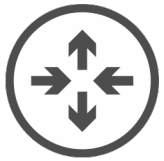
Virtual networking built on top of underlying network infrastructure

Overlay

Internet

MPLS

P2P



Underlay

Cruise Control

Investment = Reliability and Performance

https://datacenterfrontier.com › aws-has-spent-35-billio...

AWS Has Spent $35 Billion on its Northern Virginia Data ...

Oct 4, 2021 — Amazon's $35 billion **investment** supports the **AWS** US-East Northern **Virginia** cloud region, which includes more than 50 data centers. It's the ...

https://www.theregister.com › aws_oregon_datacenter

Amazon to spend $12b on five more datacenters in Oregon

May 6, 2022 — Amazon **plans** to build **five** more **datacenters** in rural Oregon at estimated cost of $11.8 **billion**, according to documents filed in Morrow ...

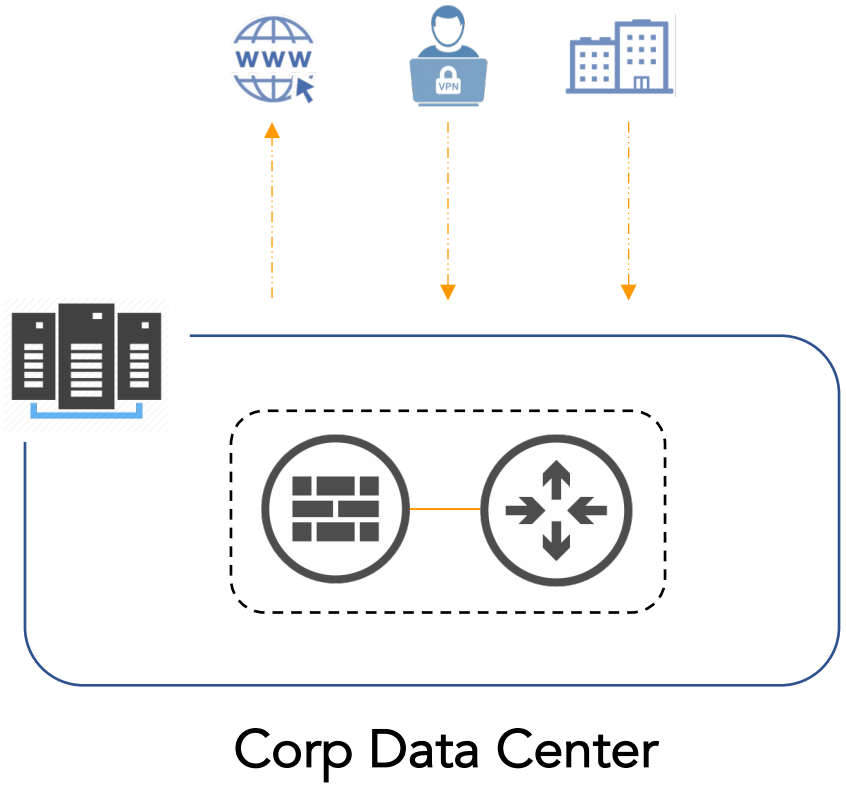
https://siliconangle.com › 2022/03/17 › aws-invest-2-3...

AWS to invest $2.3B+ in UK data centers over the next two years

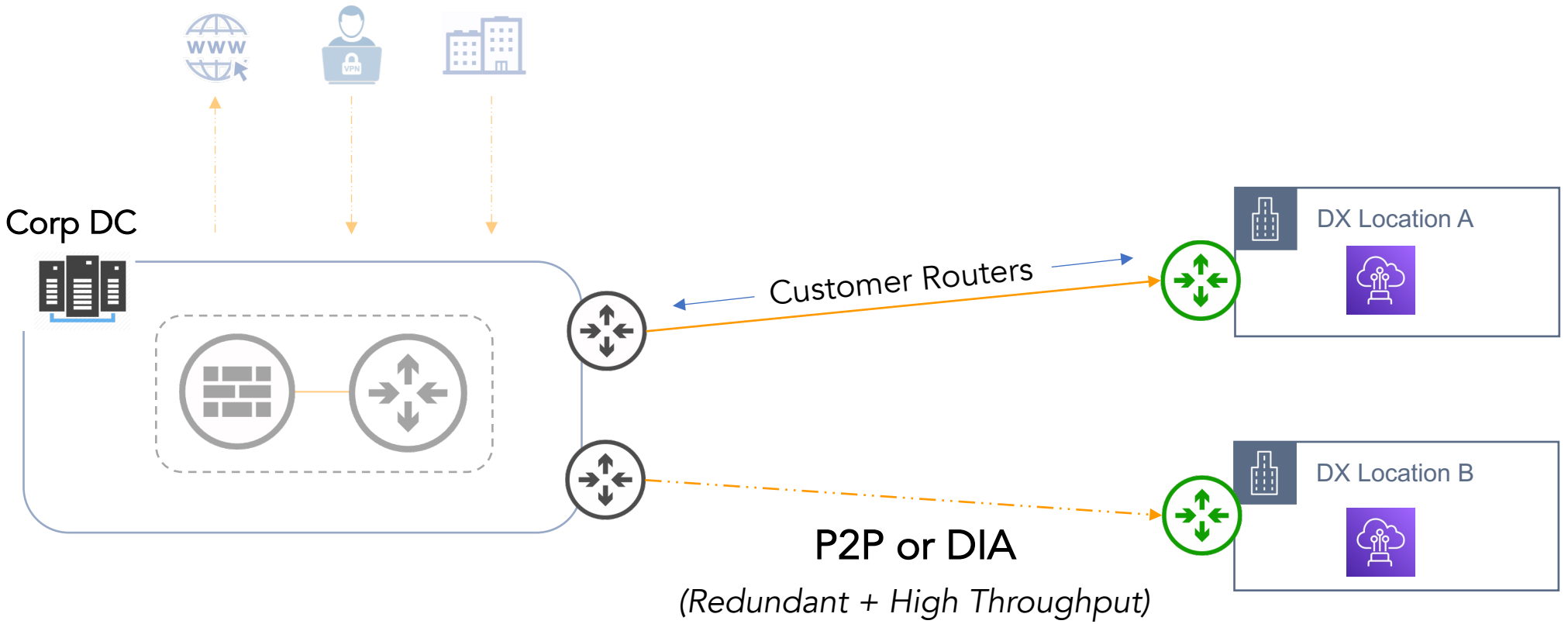
Mar 17, 2022 — **AWS** to **invest** $2.3B+ in UK **data centers** over the next two years ... Amazon Web Services Inc. on Wednesday announced that it will spend more than £ ...

Cruise Control

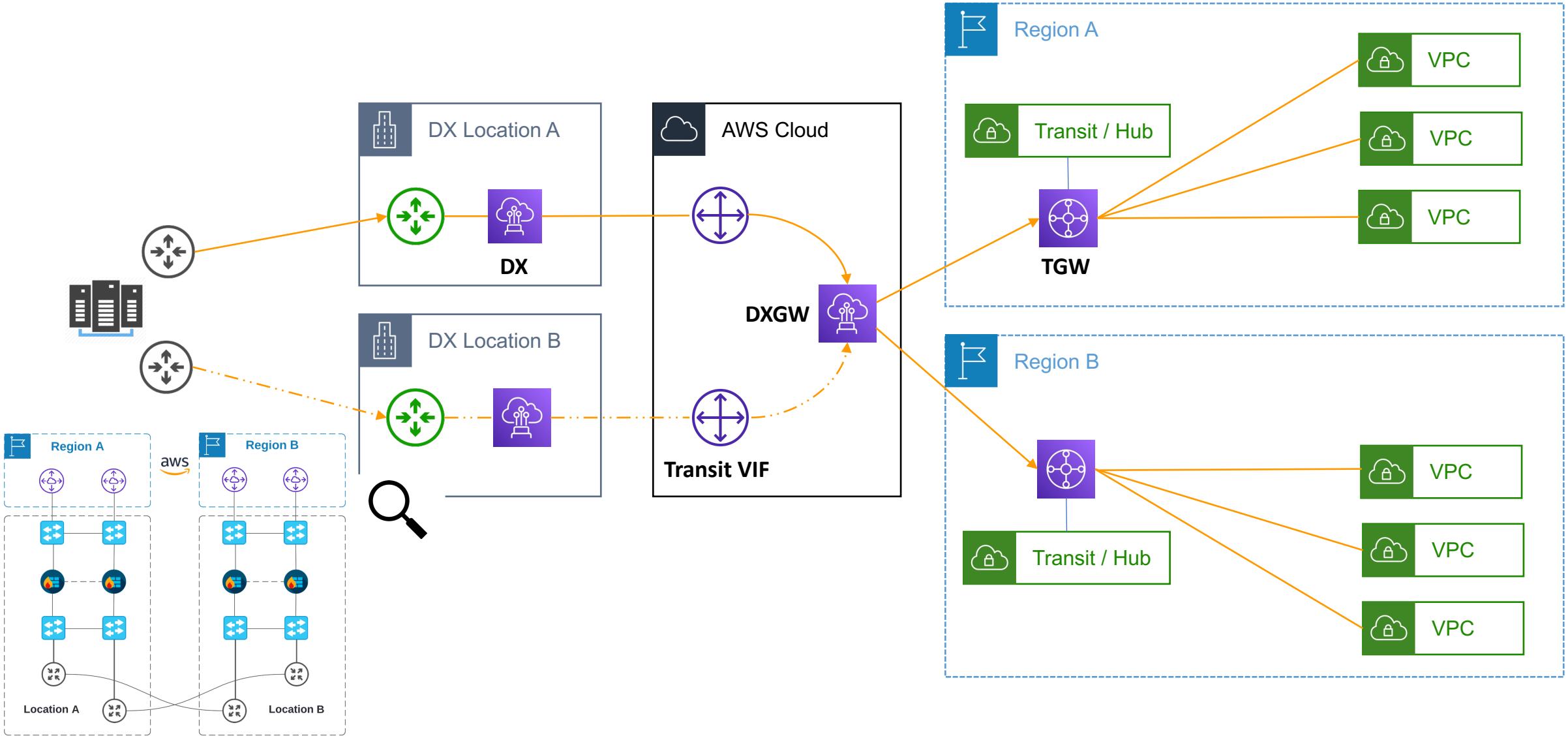
Let’s not disrupt existing infrastructure



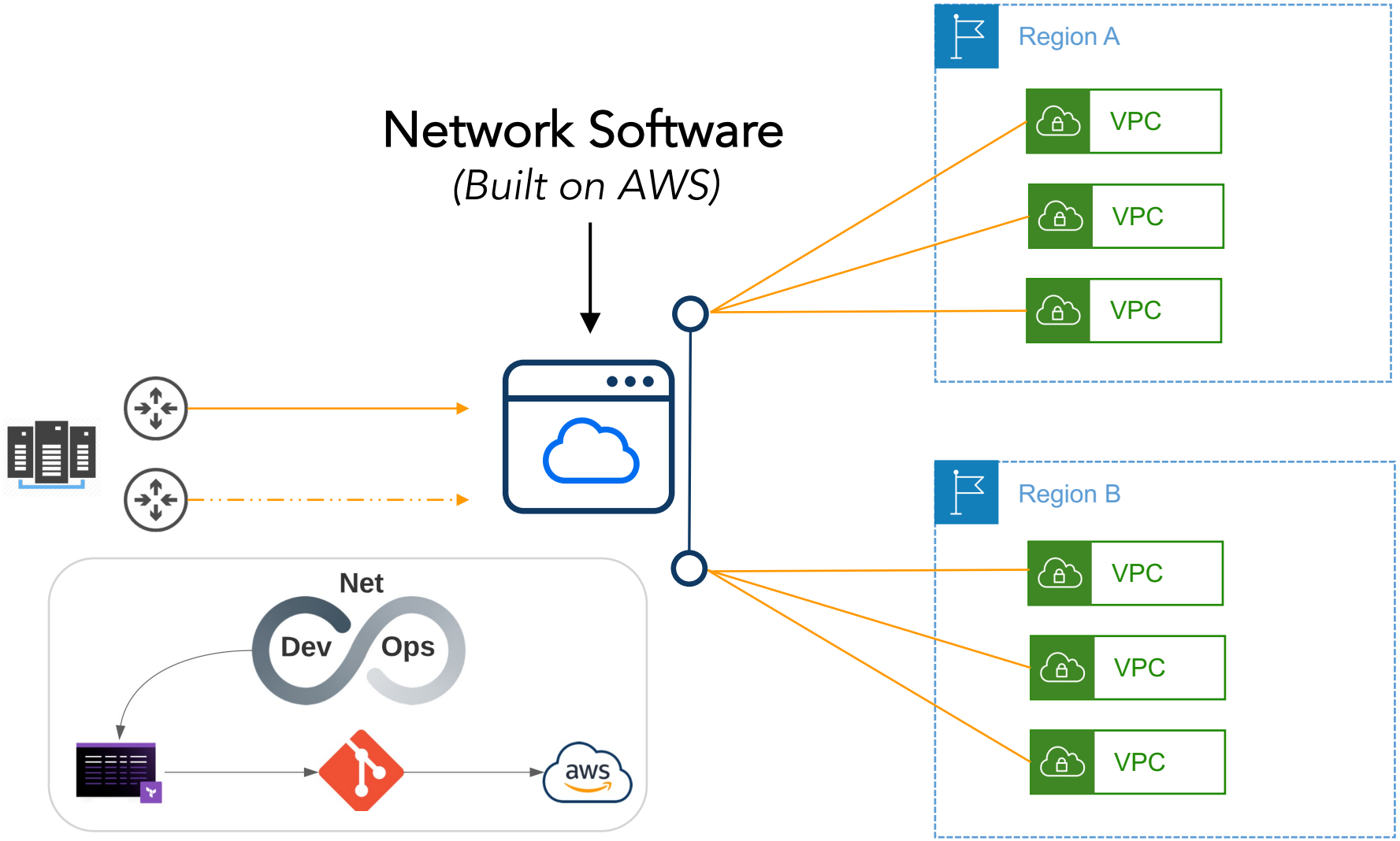
Cruise Control



Cruise Control

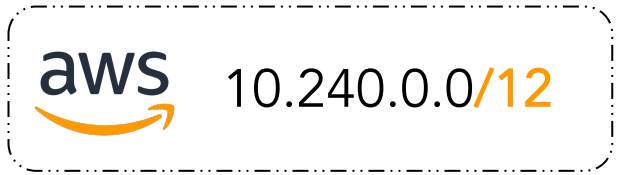


Cruise Control



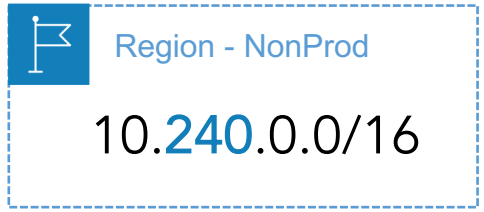
Cruise Control

IP addressing still matters!

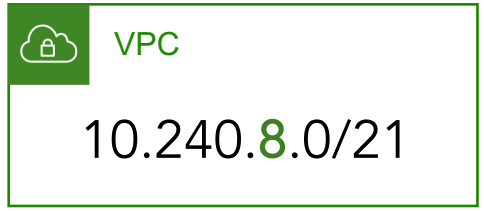


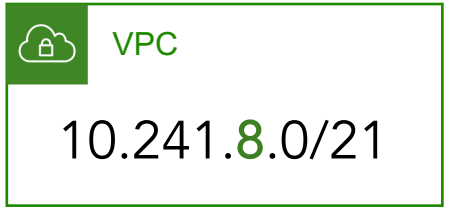

```
❯ ipcalc 10.240.0.0/12
Address:   10.240.0.0           00001010.1111 0000.00000000.00000000
Netmask:   255.240.0.0 = 12     11111111.1111 0000.00000000.00000000
Wildcard:  0.15.255.255         00000000.0000 1111.11111111.11111111
=>
Network:   10.240.0.0/12        00001010.1111 0000.00000000.00000000
HostMin:   10.240.0.1           00001010.1111 0000.00000000.00000001
HostMax:   10.255.255.254       00001010.1111 1111.11111111.11111110
Broadcast: 10.255.255.255       00001010.1111 1111.11111111.11111111
Hosts/Net: 1048574               Class A, Private Internet
```

Even numbered /16 allocated to all non-production



Odd numbered /16 allocated to all production





3rd octet matches between NonProd and Prod VPCs.

Thank You!