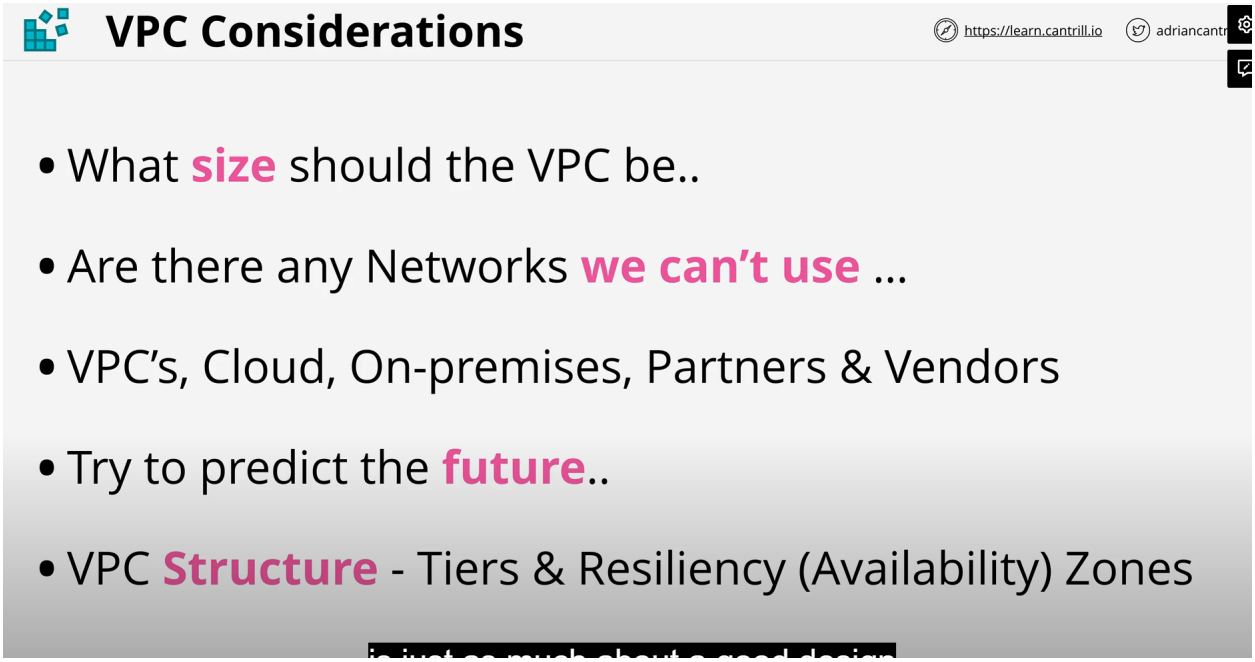
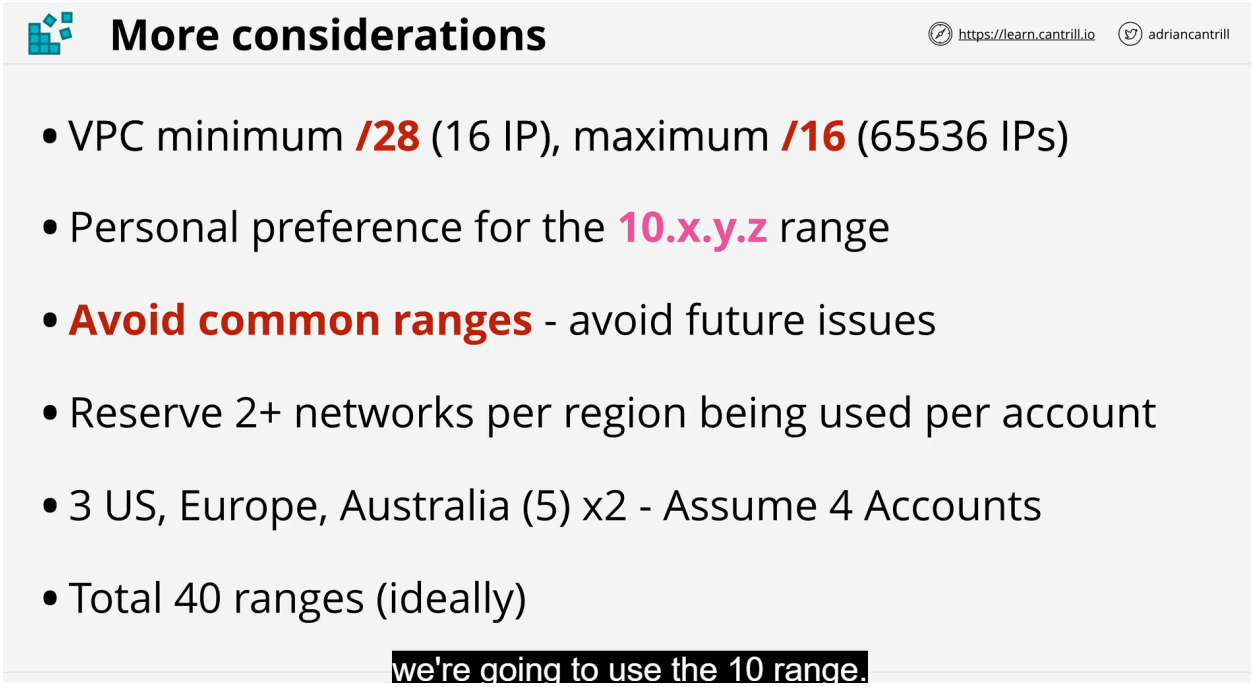
7. VPC

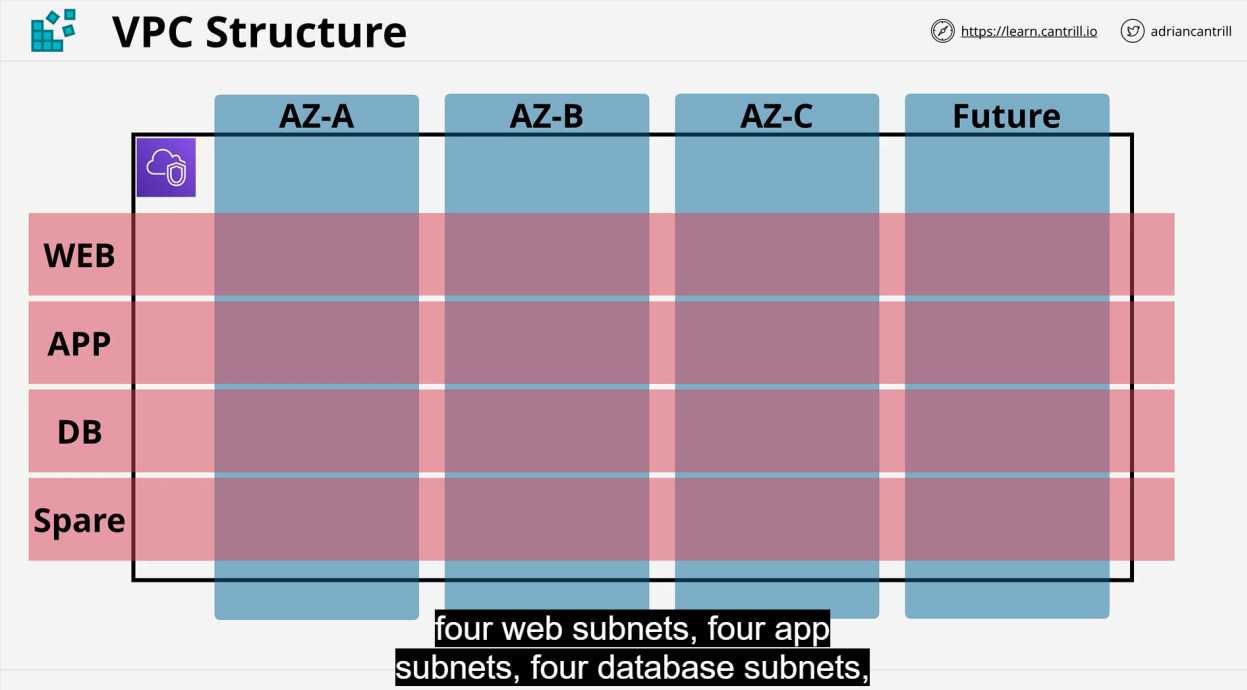
Created	@September 5, 2022 1:16 PM
Class	
Type	
Materials	
Reviewed	☐
Property	
Date	

VPC:





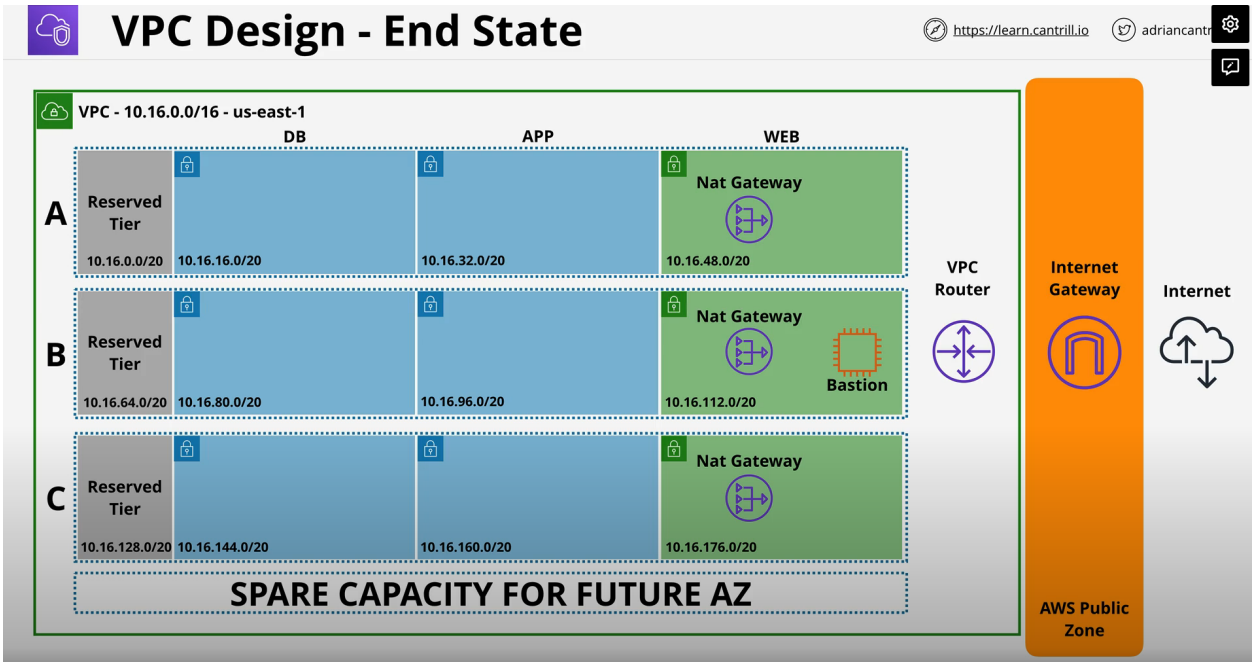
Best range is 10.16.0.0/16

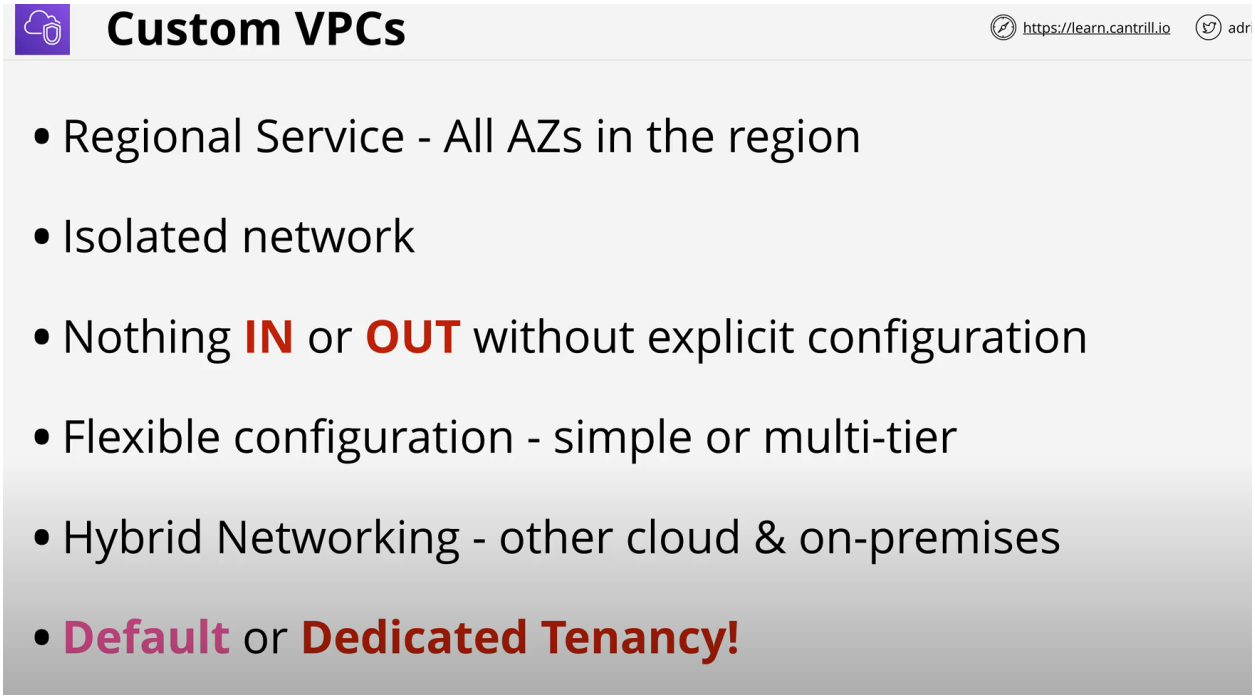


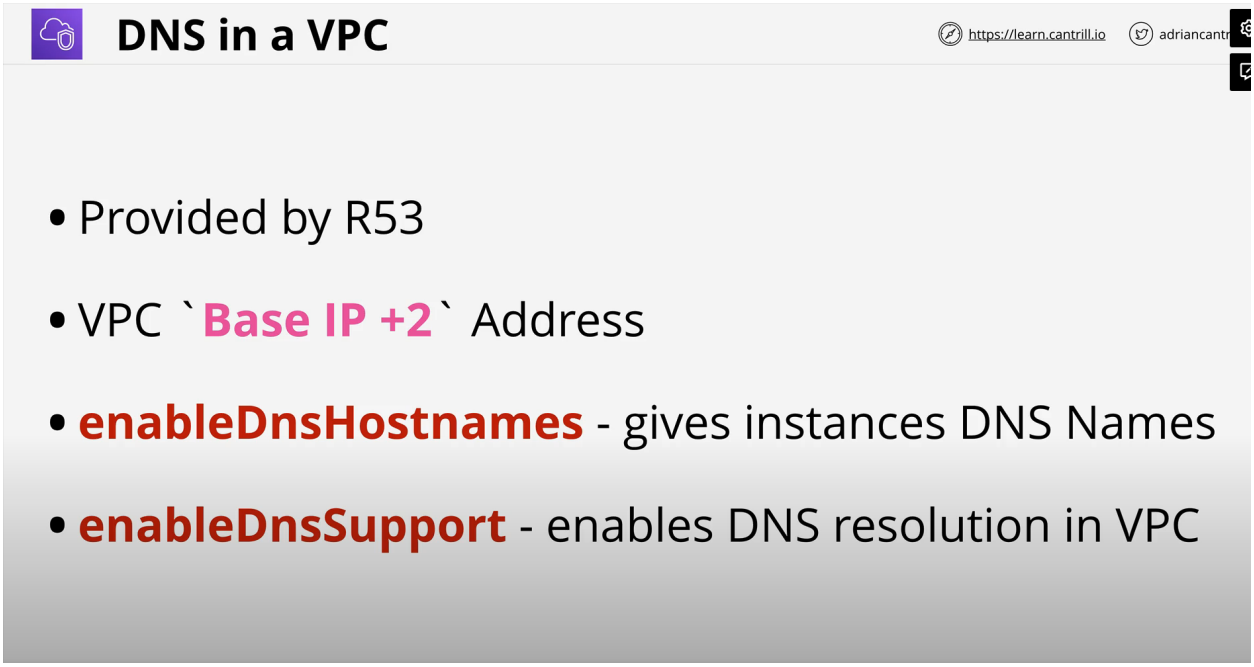
Consider every region has 3 AZ and one spare so take 4 ac and consider 4 aws accounts per az so

4x4=16 total subnets to consider per region

VPC setup:


VPC Design - End State
https://learn.cantrill.io
VPC - 10.16.0.0/16 - us-east-1
DB
APP
WEB
A
Reserved Tier
10.16.0.0/20
10.16.16.0/20
10.16.32.0/20
Nat Gateway
10.16.48.0/20
B
Reserved Tier
10.16.64.0/20
10.16.80.0/20
10.16.96.0/20
Nat Gateway
Bastion
10.16.112.0/20
C
Reserved Tier
10.16.128.0/20
10.16.144.0/20
10.16.160.0/20
Nat Gateway
10.16.176.0/20
SPARE CAPACITY FOR FUTURE AZ
VPC Router
Internet Gateway
Internet
AWS Public Zone


Custom VPCs
https://learn.cantrill.io
• Regional Service - All AZs in the region
• Isolated network
• Nothing IN or OUT without explicit configuration
• Flexible configuration - simple or multi-tier
• Hybrid Networking - other cloud & on-premises
• Default or Dedicated Tenancy!



DEMO for VPC:

One subnet cannot be used in other AZ

VPC Subnets

https://learn.cantrill.io adriancan

- **AZ Resilient**
- A subnetwork of a VPC - **within a particular AZ**
- 1 Subnet => 1 AZ, 1 AZ => 0+ Subnets
- IPv4 CIDR is a subset of the VPC CIDR
- Cannot overlap with other subnets
- Optional IPv6 CIDR (/64 subset of the /56 VPC - space for 256)
- Subnets can communicate with other subnets in the VPC

Subnet IP Addressing

https://learn.cantrill.io

- Reserved IP addresses (5 in total)
- 10.16.16.0/20 (10.16.16.0 => 10.16.31.255)
- **Network** Address (10.16.16.0)
- '**Network +1**' (10.16.16.1) - VPC Router
- '**Network +2**' (10.16.16.2) - Reserved (DNS*)
- '**Network +3**' (10.16.16.3) - Reserved Future Use
- **Broadcast** Address 10.16.31.255 (Last IP in subnet)