



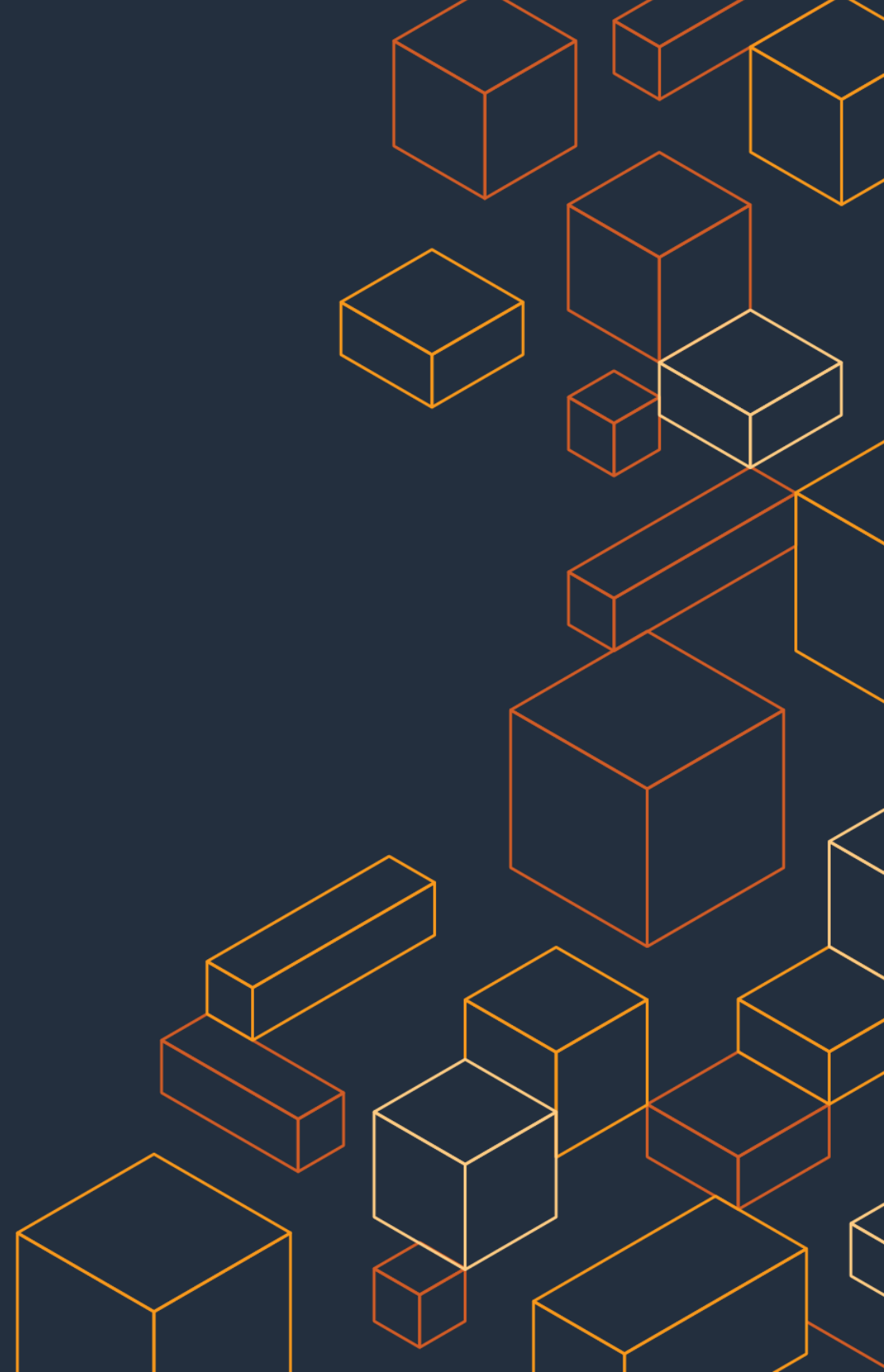
AWS Outposts

Networking Foundations

Matt Lehweess, [@mlehwess](#)

Principal Developer Advocate, AWS

March 2020



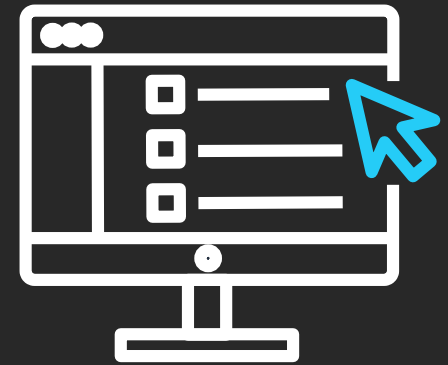
AWS Outposts: Bringing AWS on-premises



Same AWS-designed infrastructure as AWS data centers



Fully managed, monitored, and operated by AWS as if in AWS Regions

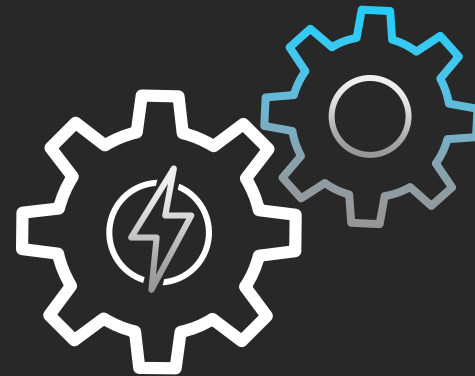


Single pane of management in the cloud, the same APIs and tools as AWS Regions

AWS Outposts: Three main network components



Amazon VPC
networking



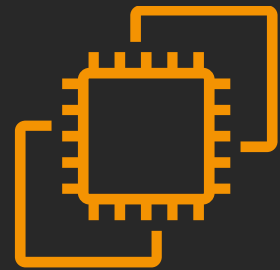
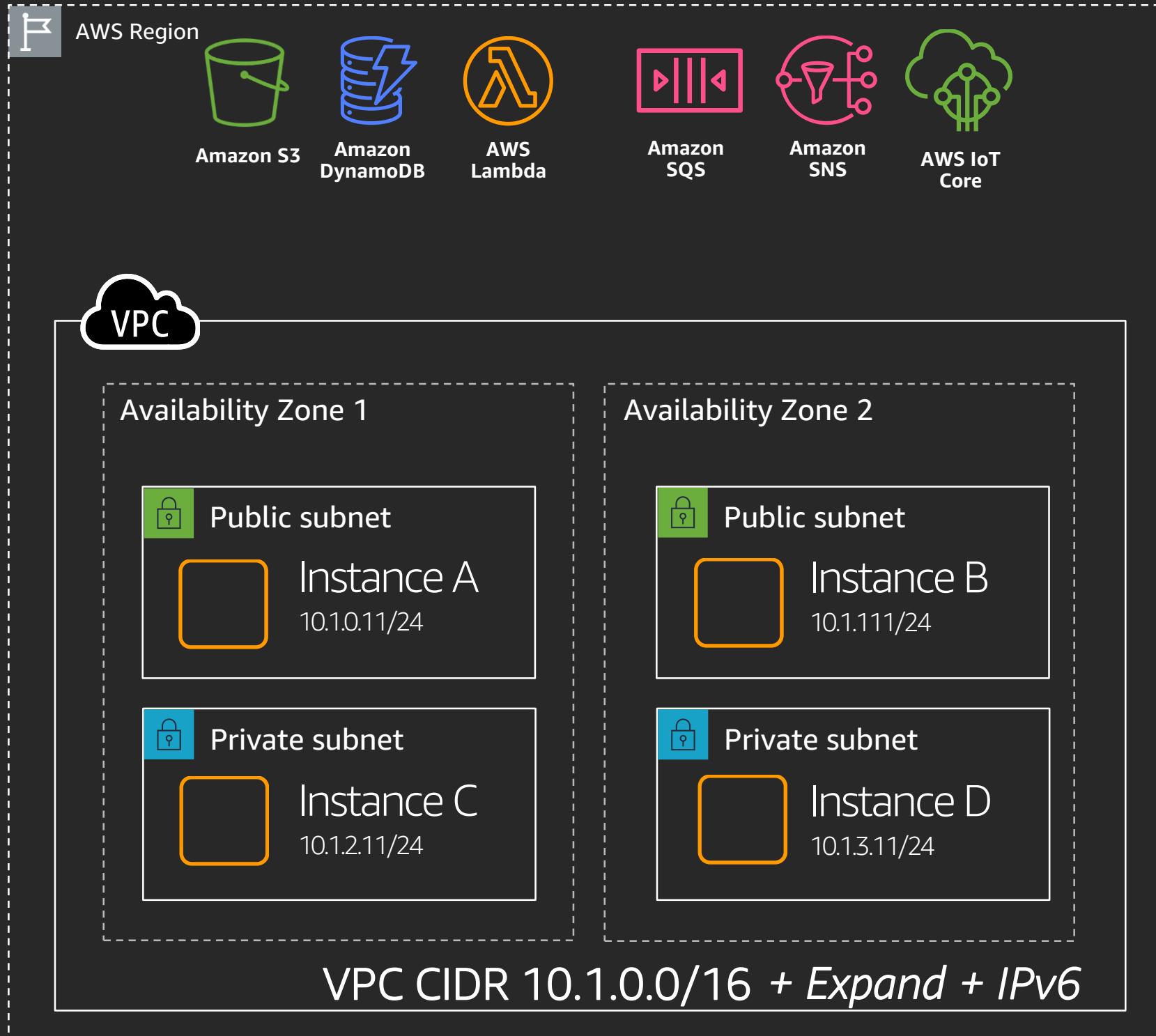
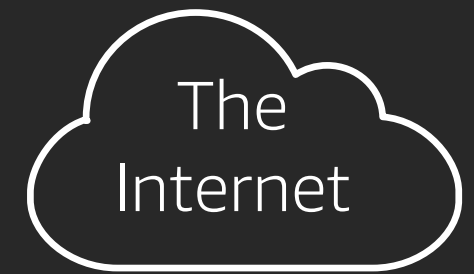
Local Area Network
(LAN) connectivity



Wide Area Network
(WAN) connectivity

Amazon VPC networking

Amazon VPC networking



Amazon EC2



Amazon VPC


Amazon VPC networking for AWS Outposts



AWS Region




Availability zone 1

 Public subnet

Instance
A


10.10.11/24

 Private subnet

Instance
C


10.12.11/24

Availability zone 2

 Public subnet

Instance
B

10.1.11/24

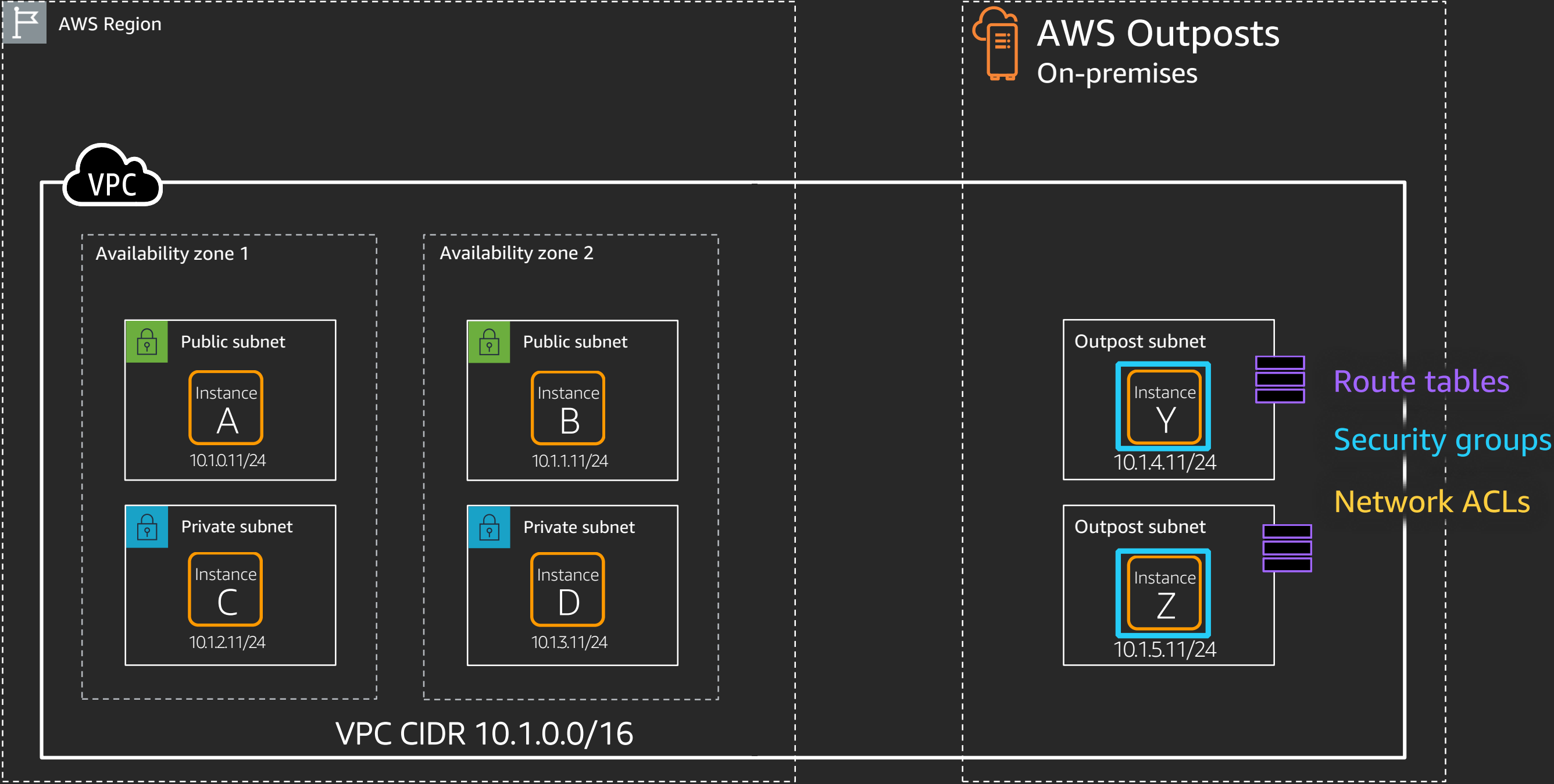
 Private subnet

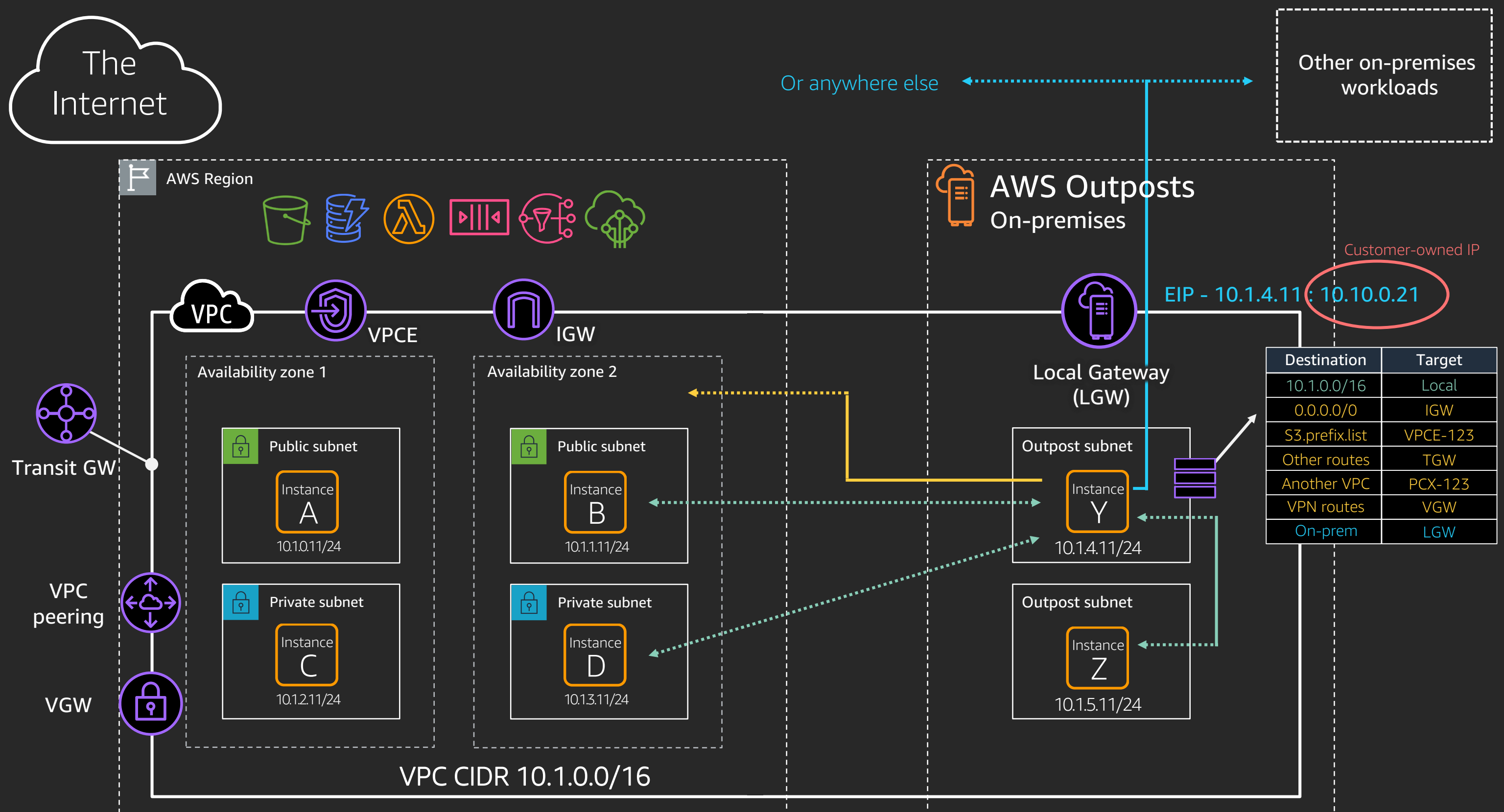
Instance
D

10.13.11/24

VPC CIDR 10.1.0.0/16

Access to the same networking constructs as the AWS Region





The Internet

Other on-premises workloads

AWS Region

AWS Outposts
On-premises

Customer-owned IP

VPC

VPCE

IGW

EIP - 10.1.4.11 : 10.10.0.21

Transit GW

Local Gateway (LGW)

Availability zone 1

Availability zone 2

VPC peering

Outpost subnet

VGW

Public subnet

Public subnet

Private subnet

Private subnet

Instance A
10.10.11/24

Instance B
10.1.11/24

Instance C
10.12.11/24

Instance D
10.13.11/24

Instance Y
10.1.4.11/24

Outpost subnet

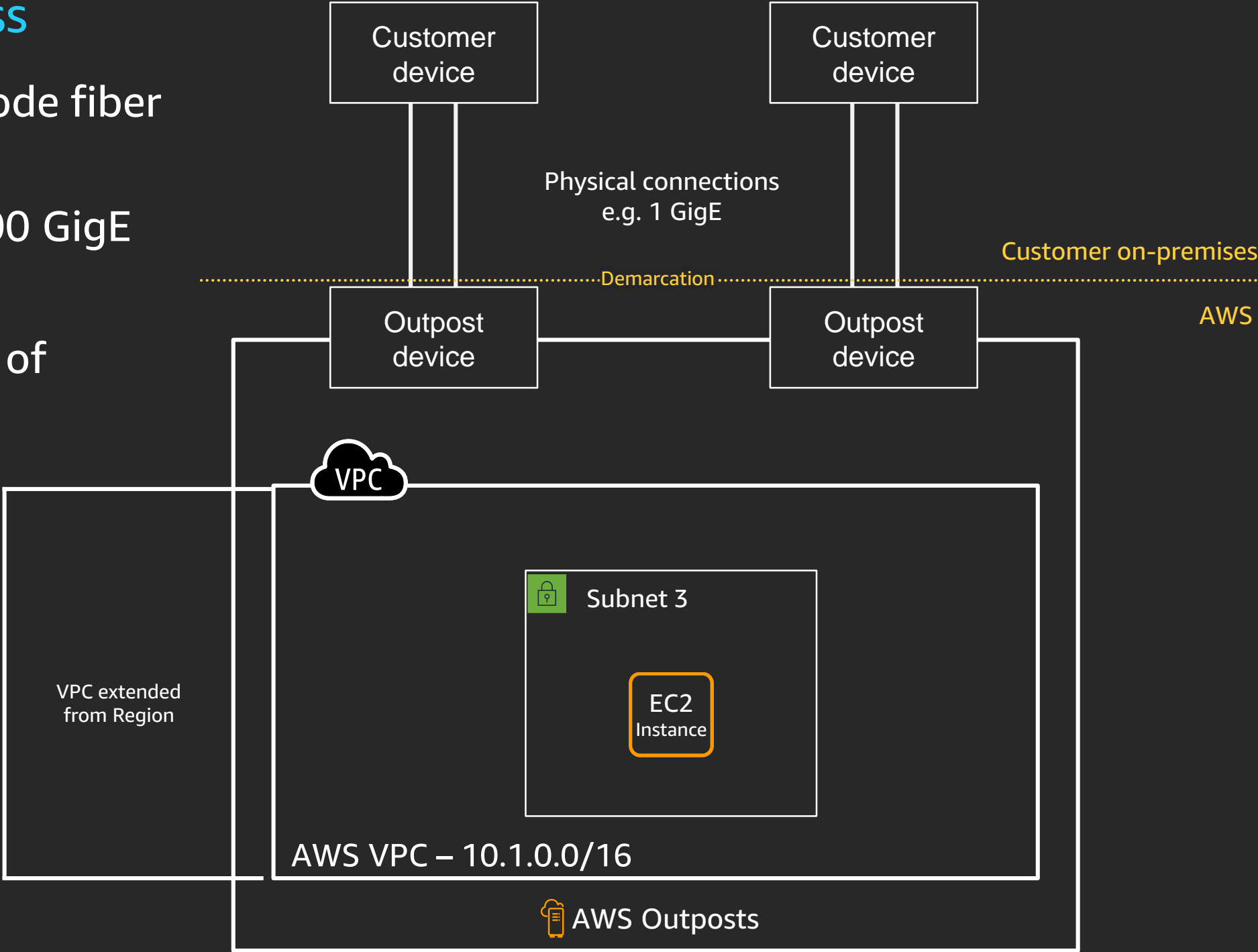
Instance Z
10.1.5.11/24

VPC CIDR 10.1.0.0/16

Local Area Network (LAN) connectivity

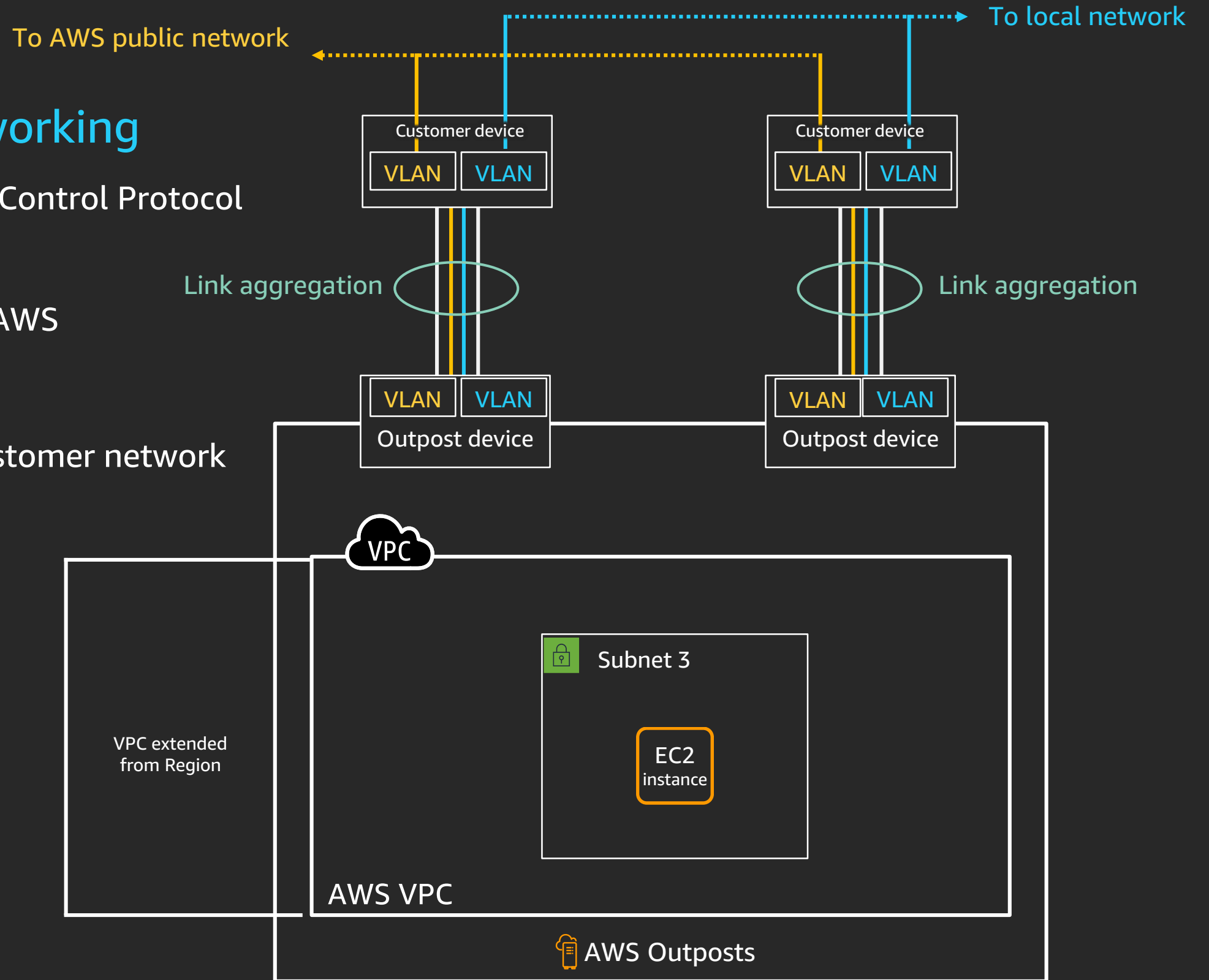
AWS Outposts – LAN access

- Fiber: Single mode or multi-mode fiber with LC connectors
- Connection types: 1, 10, 40, 100 GigE
- Connection number: Minimum of two (1x per outpost device)



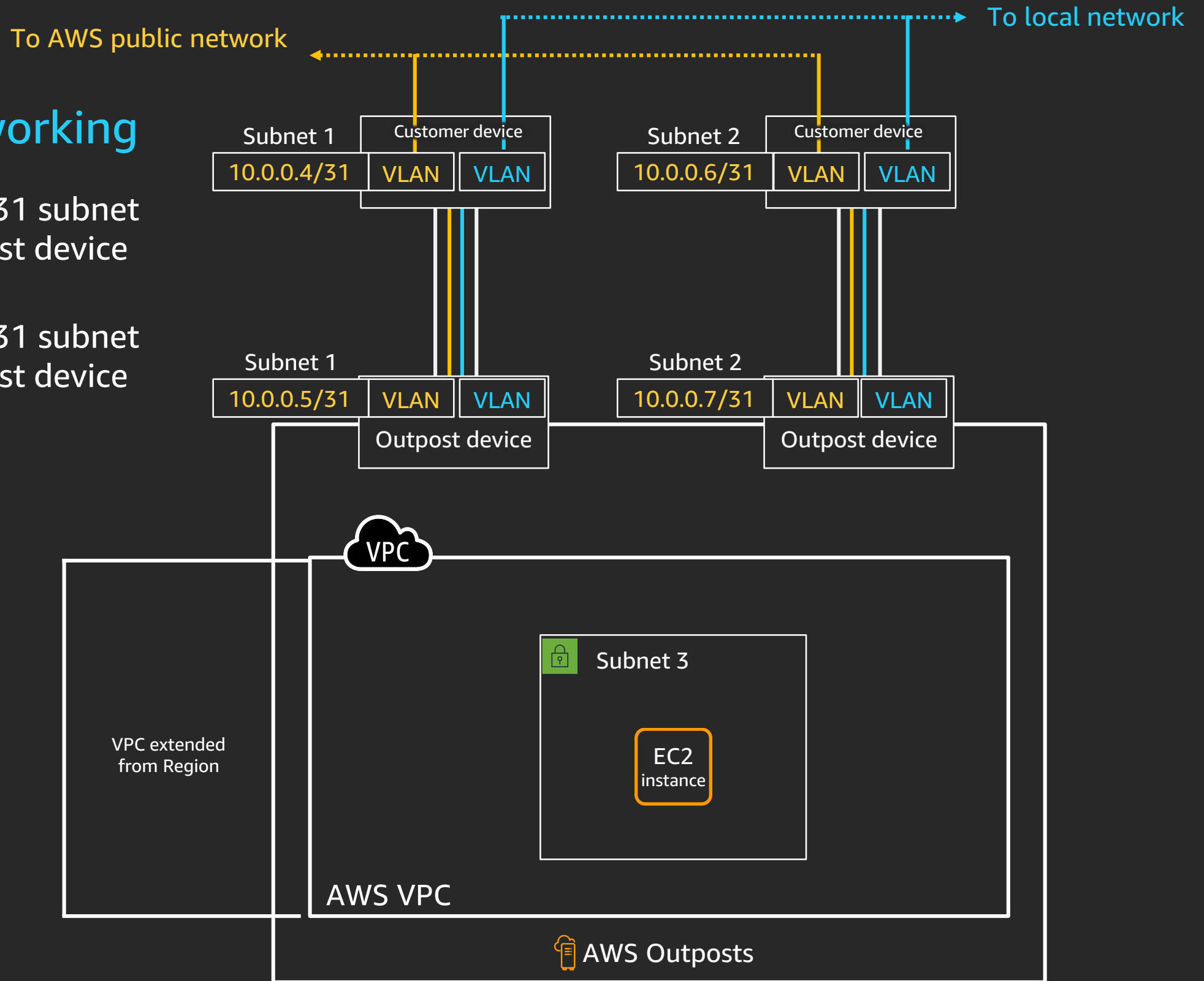
AWS Outposts – LAN networking

- **Link aggregation:** Link Aggregation Control Protocol (LACP)
- **Service link VLAN:** Connectivity for AWS Outposts back to AWS Region
- **LGW VLAN:** Connectivity to local customer network



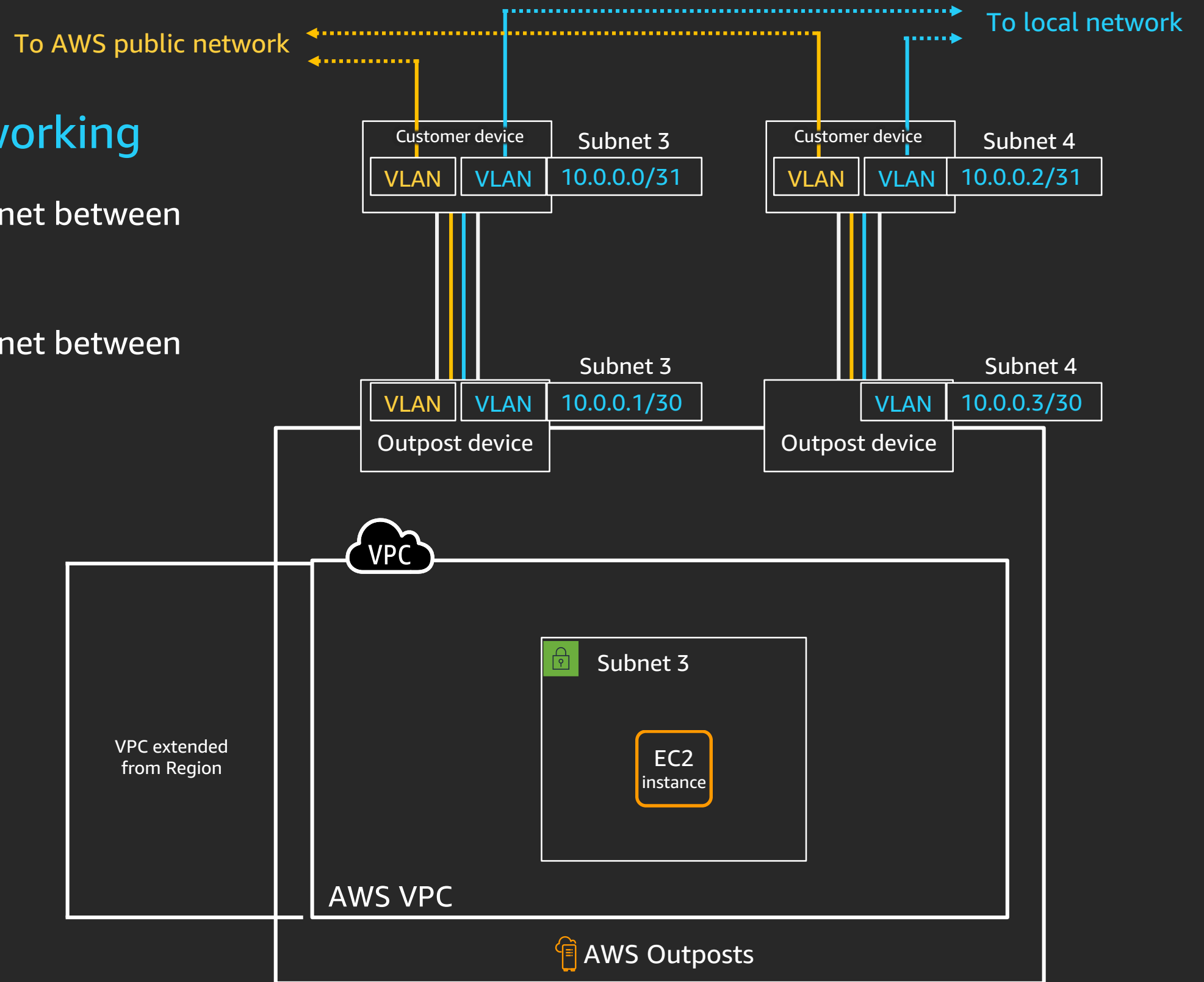
AWS Outposts – LAN networking

- Service link VLAN subnet 1: /30 or /31 subnet between customer device and outpost device
- Service link VLAN subnet 2: /30 or /31 subnet between customer device and outpost device



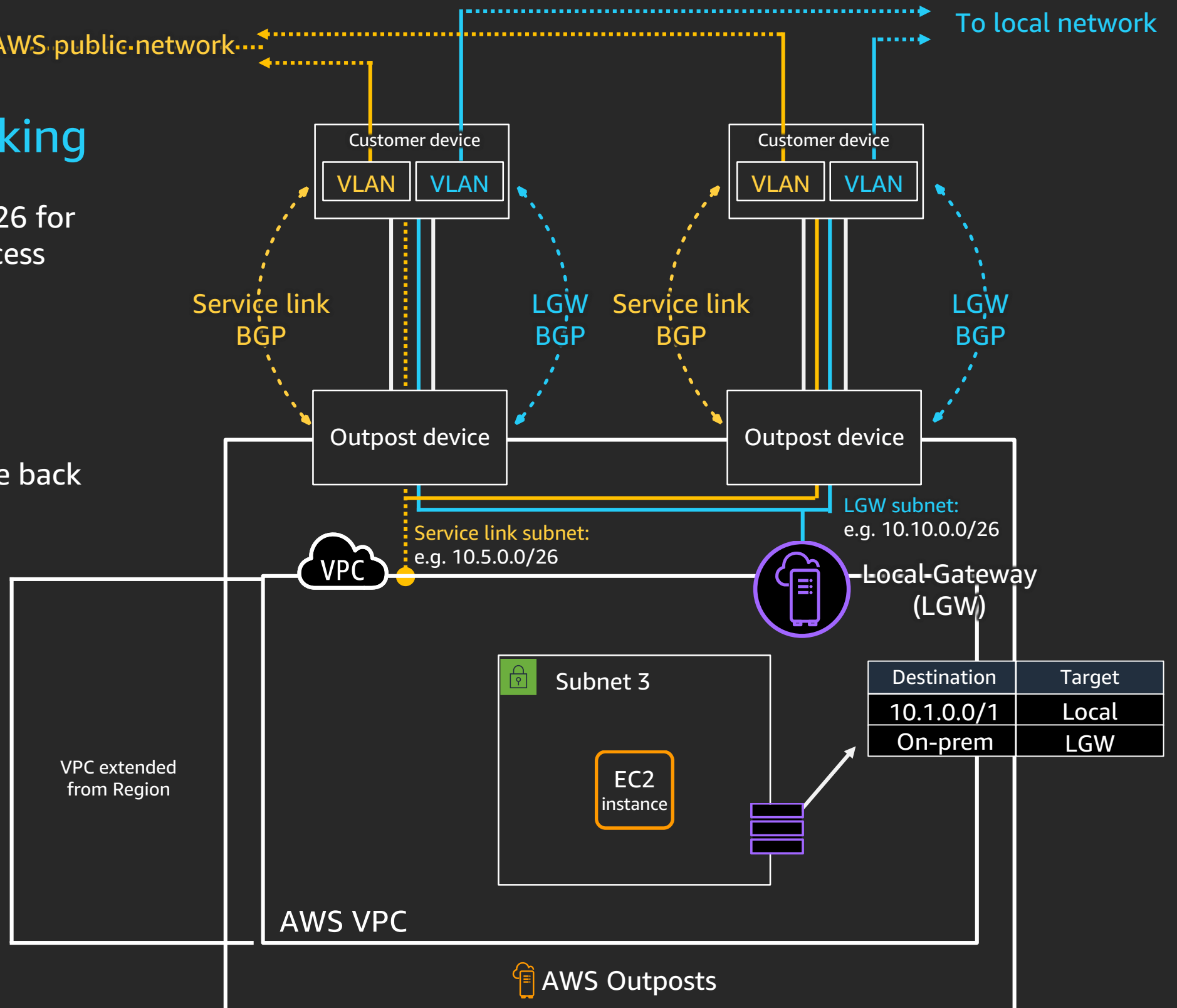
AWS Outposts – LAN networking

- LGW VLAN subnet 3: /30 or /31 subnet between customer device and outpost device
- LGW VLAN subnet 4: /30 or /31 subnet between customer device and outpost device



AWS Outposts – LAN networking

- **Service link subnet:** Customer assigned /26 for the service link network, needs public access
- **Service link BGP:** Advertises a /26 customer assigned IP range for the service link
- **Service link:** Control plane and data plane back to the AWS Region
- **LGW Subnet:** Customer assigned /26 (minimum) for the LGW network
- **LGW BGP:** Advertises a customer-owned /X IP range
- **Local Gateway (LGW):** Connects to the LGW VLAN and local customer network
- Appropriate routing within the VPC



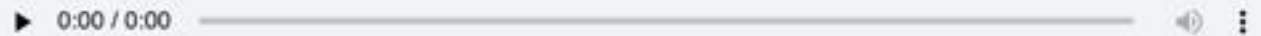
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AWS News Blog

AWS Outposts Now Available – Order Yours Today!

by Jeff Barr | on 03 DEC 2019 | in [AWS Outposts](#), [AWS Re:Invent](#), [Launch](#), [News](#) | [Permalink](#) | [Comments](#) | [Share](#)



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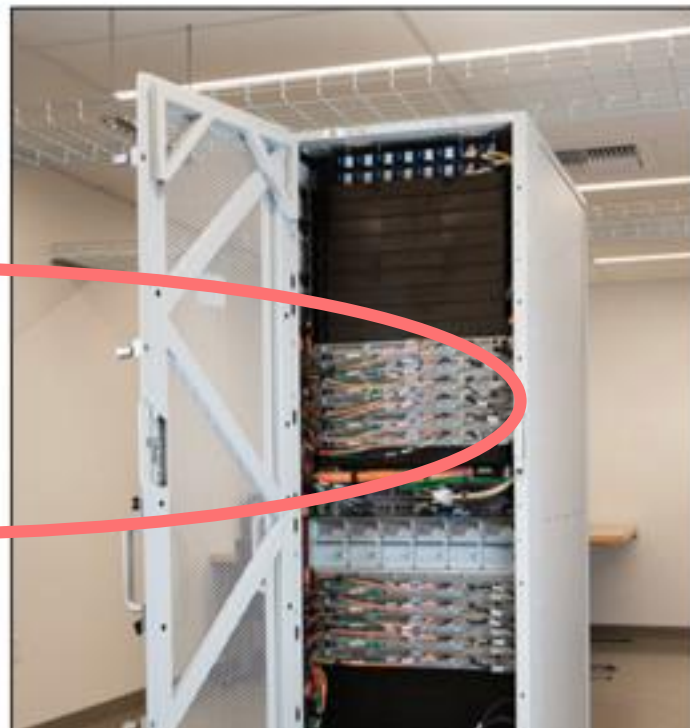
We first discussed [AWS Outposts](#) at re:Invent 2018. Today, I am happy to announce that we are ready to take orders and install Outposts racks in your data center or colo facility.

Why Outposts?

This new and unique AWS offering is a comprehensive, single-vendor compute & storage solution that is designed to meet the needs of customers who need local processing and very low latency. You no longer need to spend time creating detailed hardware specifications, soliciting & managing bids from multiple disparate vendors, or racking & stacking individual servers. Instead, you place your order online, take delivery, and relax while trained AWS technicians install, connect, set up, and verify your Outposts.

Once installed, we take care of monitoring, maintaining, and upgrading your Outposts. All of the hardware is modular and can be replaced in the field without downtime. When you need more processing or storage or want to upgrade to newer generations of [EC2](#) instances, you can initiate the request with a couple of clicks and we will take care of the rest.

Everything that you and your team already know about AWS still applies. You use the same APIs, tools, and



Resources

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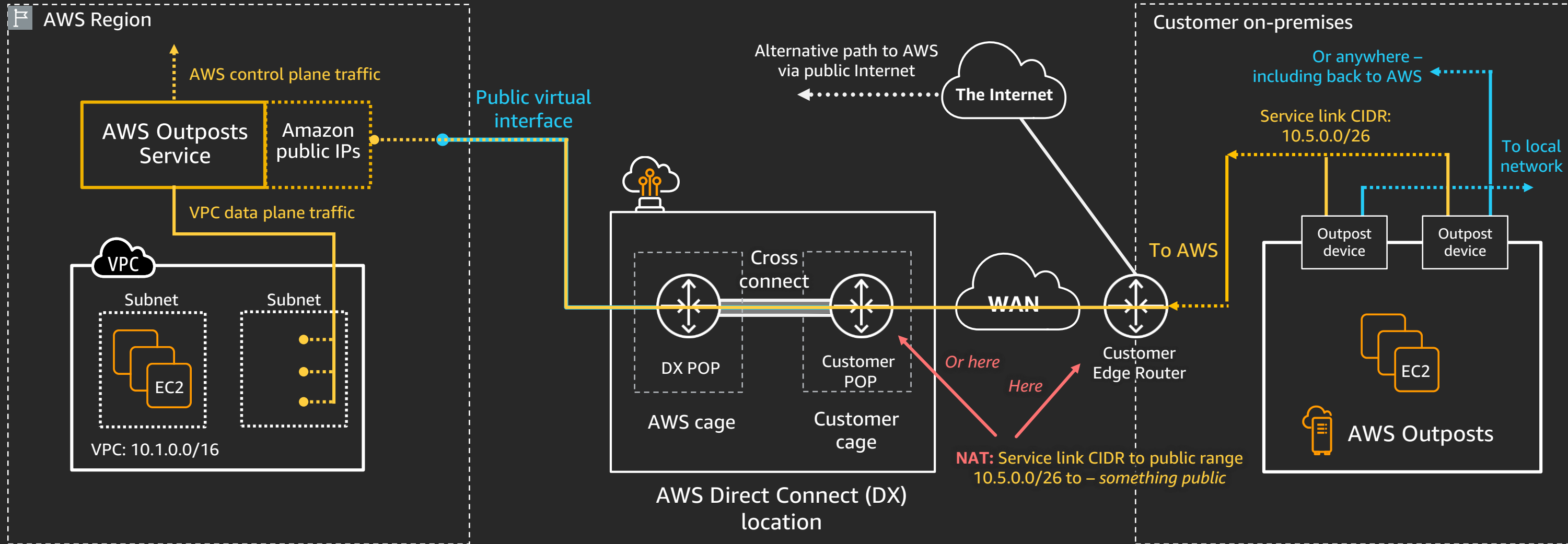
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AWS Events

Wide Area Network (WAN) connectivity

AWS Outposts – WAN access



To find out more

AWS Outposts Overview

<https://aws.amazon.com/outposts/>

How AWS Outposts Works

<https://amzn.to/2U4TJ9E>

Jeff Barr Blog – AWS Outposts Now Available!

<https://go.aws/2wgA1ic>



Thank you!

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