AWS re:Invent

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CON303-R2

Amazon EKS Anywhere: Manage your Kubernetes clusters on premises

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Deploy Kubernetes in any environment



Amazon **EKS** in AWS

A fully managed Kubernetes control plane that integrates with AWS services, including support for AWS Local Zones and Outposts



Amazon **EKS Anywhere**

Tools to help deploy, upgrade, and operate Kubernetes clusters on any infrastructure



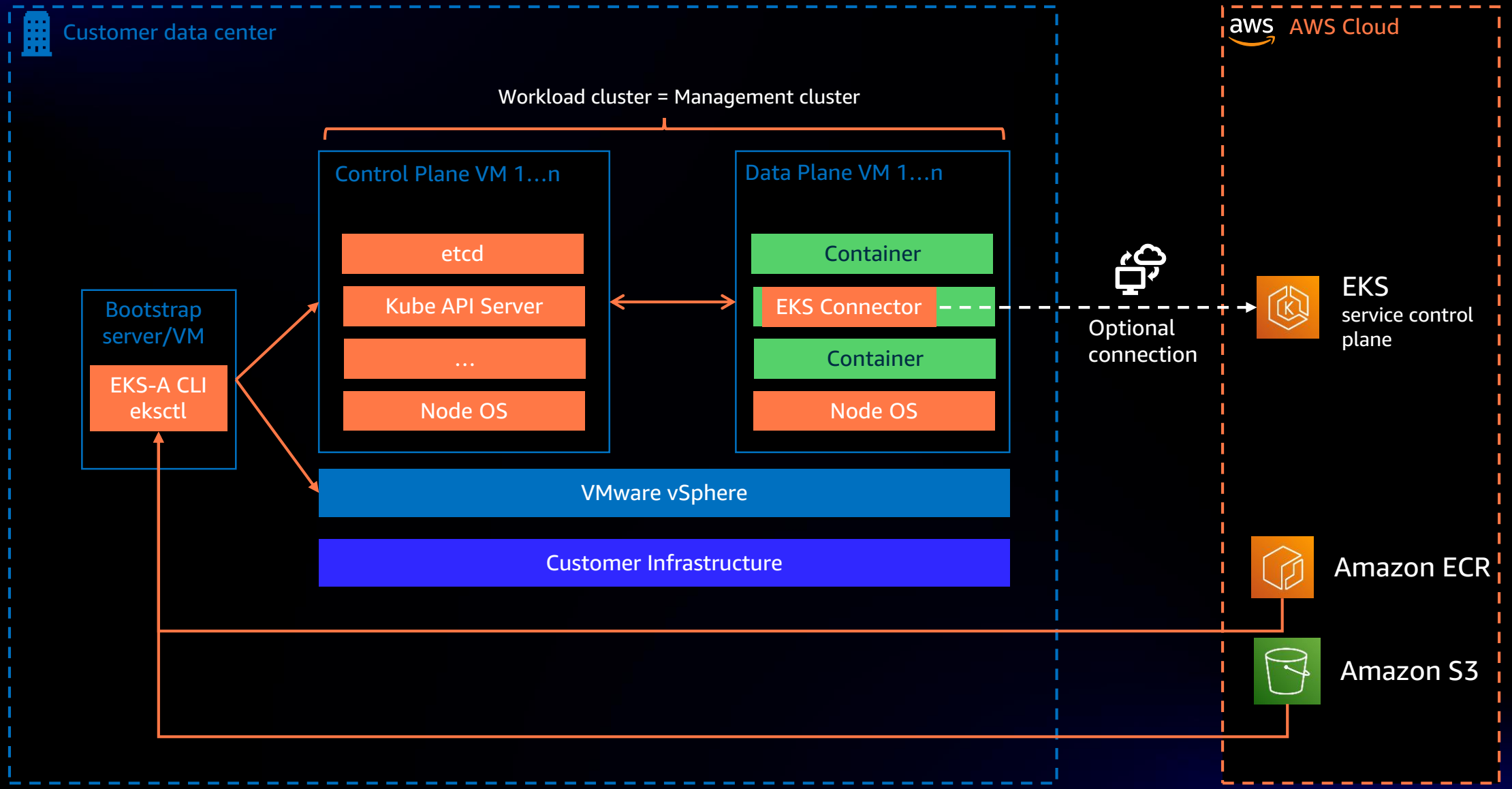
Amazon **EKS Distro (EKS-D)**

Amazon EKS-D is a Kubernetes distribution used by Amazon EKS to create reliable and secure clusters

Amazon EKS helps you deploy, operate, and secure Kubernetes environments no matter where they are deployed

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Architecture



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Amazon EKS portfolio

	EKS Distro	**EKS** Anywhere	**EKS** on AWS Outposts	**EKS**
				
Hardware	Customer	Customer	aws	aws
Location	On prem	On prem	On prem	aws
Control plane location	On prem	On prem	aws	aws
Data plane location	On prem	On prem	On prem	aws
Support	Community	aws	aws	aws



Customer managed

AWS managed

aws

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AWS EKS Anywhere partners

Security + networking

- aqua
- f5
- HashiCorp
- ISOVALENT
- RADCOM

Security + networking

- SentinelOne
- solo.io
- tetrate
- vmware

DevOps

- armory
- harness
- Kong
- RAFAY
- REPLICATED
- weaveworks

Monitoring + logging

- Cribl
- DATADOG
- dynatrace
- epsagon
- splunk>

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AWS EKS Anywhere partners

Consulting services

accenture

Atos

ECCOiii 华讯网络

HCL

Consulting services

LG CNS

TERASKY

网宿科技

Platform

DELL Technologies

EQUINIX

Lenovo

Cost Management

kubecost

Storage

kasten by Veeam

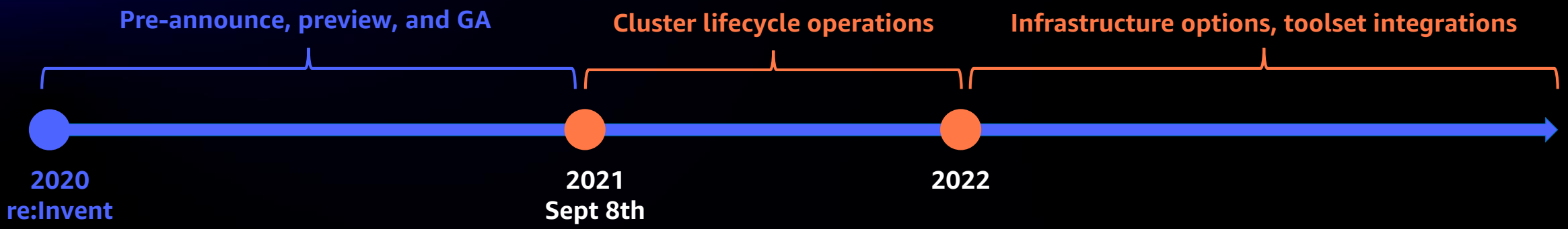
NetApp

PURE STORAGE

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What is the EKS Anywhere roadmap?



Cluster lifecycle operations

Security and reliability: Security compliance (e.g., CIS), IAM auth support, cluster upgrade improvements

Multi-cluster: Management cluster, GitOps for control plane, infrastructure-as-code

Diagnostics: Pre-flight checks, diagnostic tools

Toolset integrations

Networking: Ingress, load balancer

Observability: Monitoring, logging, service mesh

Manageability: Local container registry, policy management, cost management, storage

Infrastructure options

Deployment targets: Bare metal, Apache CloudStack, more vSphere versions

OS: More OS options

Availability

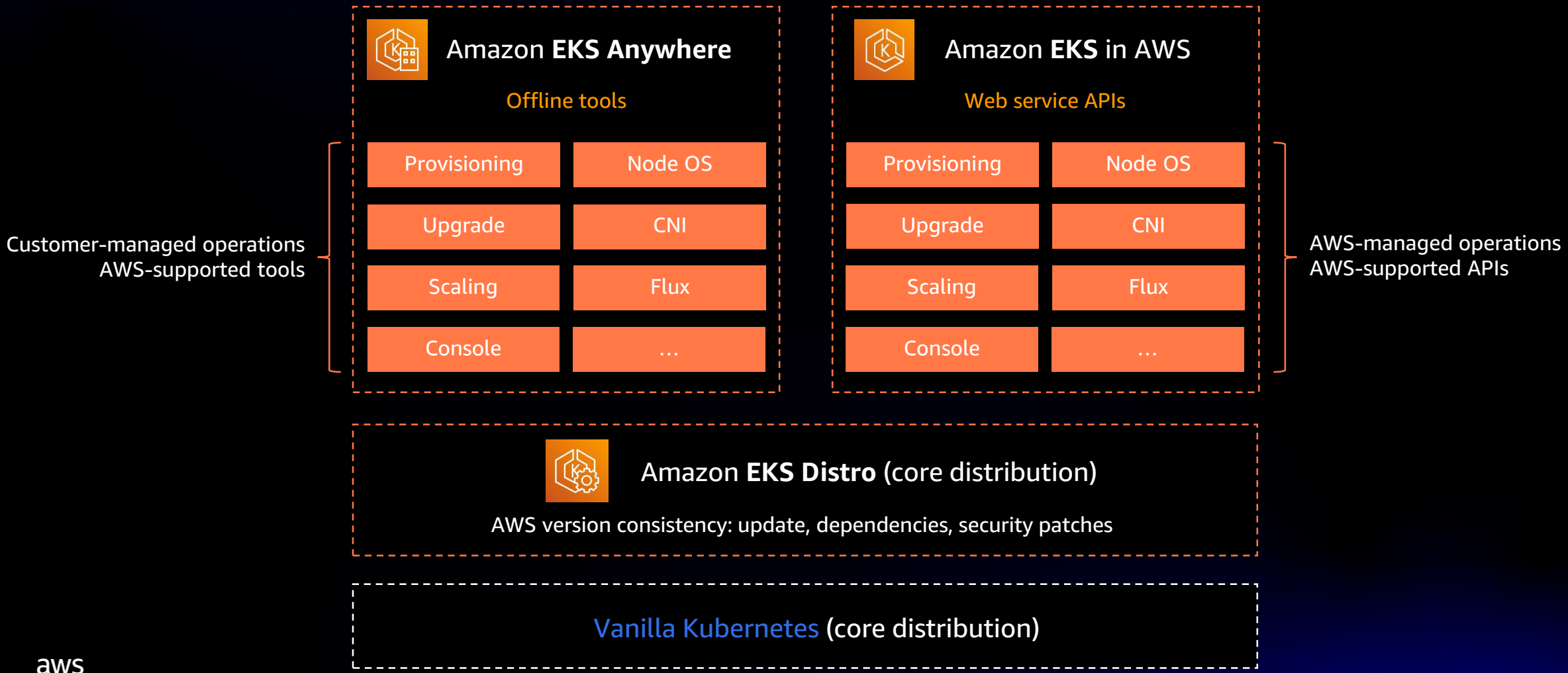
China Region

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What's the difference between EKS-D and EKS Anywhere?

Q: Why should I care for EKS-D when I can use any Vanilla Kubernetes?
Q: What is the point of paying for EKS Anywhere when I can use EKS-D (or a Vanilla Kubernetes) for free?



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What are the EKS Anywhere components?

Current prerequisite: VMware – vSphere 7.0

Components	Technology	Bundled
Operating System	Ubuntu: 20.04/BottleRocket	Yes
CNI	Cilium	Yes
GitOps	Flux v2	Yes
Storage	CSI drivers (NAS + local storage)	No
Cluster lifecycle management	CLI/Flux	Yes
Scaling and data plane updates	CLI/Flux	Yes
Console	Amazon EKS Connector (optional)	Yes

Amazon EKS Anywhere offers AWS support for all the above third-party vendor components as part of an optional AWS support purchase. It also provides flexibility for you to integrate with your choice of tools in other areas, but these tools will not be included in the support plan

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How do I configure access control on EKS Anywhere?

- AWS IAM
  - aws-iam-authenticator
- OIDC (including AAD and AD FS)
  - Built in
- LDAP
  - Not bundled
  - Dex LDAP connector

Links
aws-iam-authenticator: https://github.com/kubernetes-sigs/aws-iam-authenticator
Dex LDAP Connector: https://dexidp.io/docs/connectors/ldap/

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How does EKS Anywhere authenticate with AWS?

- Example: An app on EKS Anywhere on premises pushing data to Amazon S3
- IAM Role for Service Account (IRSA), special instructions for DIY Kubernetes
    - Key pair, customer self-hosts public key
    - Create IAM role for target service and bind role with Kubernetes service account
    - Pod assumes said service account
- Future
    - IAM credentials injected to cluster
    - No need to host public key

Links
IRSA: https://aws.amazon.com/blogs/opensource/introducing-fine-grained-iam-roles-service-accounts/
IRSA for DIY K8s: https://github.com/aws/amazon-eks-pod-identity-webhook/blob/master/SELF_HOSTED_SETUP.md

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What's the pricing for Amazon EKS Anywhere?

- Amazon EKS Anywhere is open source. Customers can download and use it for free
- Customers can optionally pay for SLA-backed support from AWS
    - AWS Enterprise Support is a prerequisite
    - Pricing is for the additional EKS Anywhere Support Subscription
    - Flat fee per cluster, two purchase options
        - Annual subscription per cluster for **1 year at $24,000**, or
        - Annual subscription per cluster for **3 years at $18,000 per year**

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Thank you!

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