



VIRTUAL WORKSHOP

# Effectively run Windows Server on Amazon EC2 and AWS container platforms

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# Agenda

- Compute layer evolution
- Windows Server on Amazon EC2
- Demo: EC2 Fast Launch
- Windows container use cases on AWS
- Demo: Deploying Windows containers on AWS
- Choosing the right compute for your Windows workloads

# Migrate, Operate & Modernize

## Run Windows Workloads



Amazon EC2 Instances



Amazon Elastic Container Service (ECS)



Amazon Elastic Kubernetes Service (EKS)



AWS Fargate

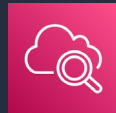
## Manage Windows Workloads



Amazon EC2 Image Builder



AWS Launch Wizard

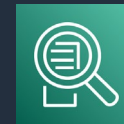


Amazon CloudWatch Application Insights



AWS Systems Manager Fleet Manager

## Migrate and Modernize Windows Workloads



AWS Application Migration Service



Porting Assistant for .NET



Microservice Extractor for .NET



App2Container

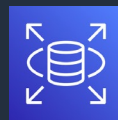
## Ecosystem Integration with other AWS Services



AWS Directory Service



Amazon FSx for Windows Server



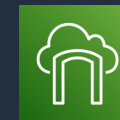
Amazon RDS for SQL Server



Amazon ECS



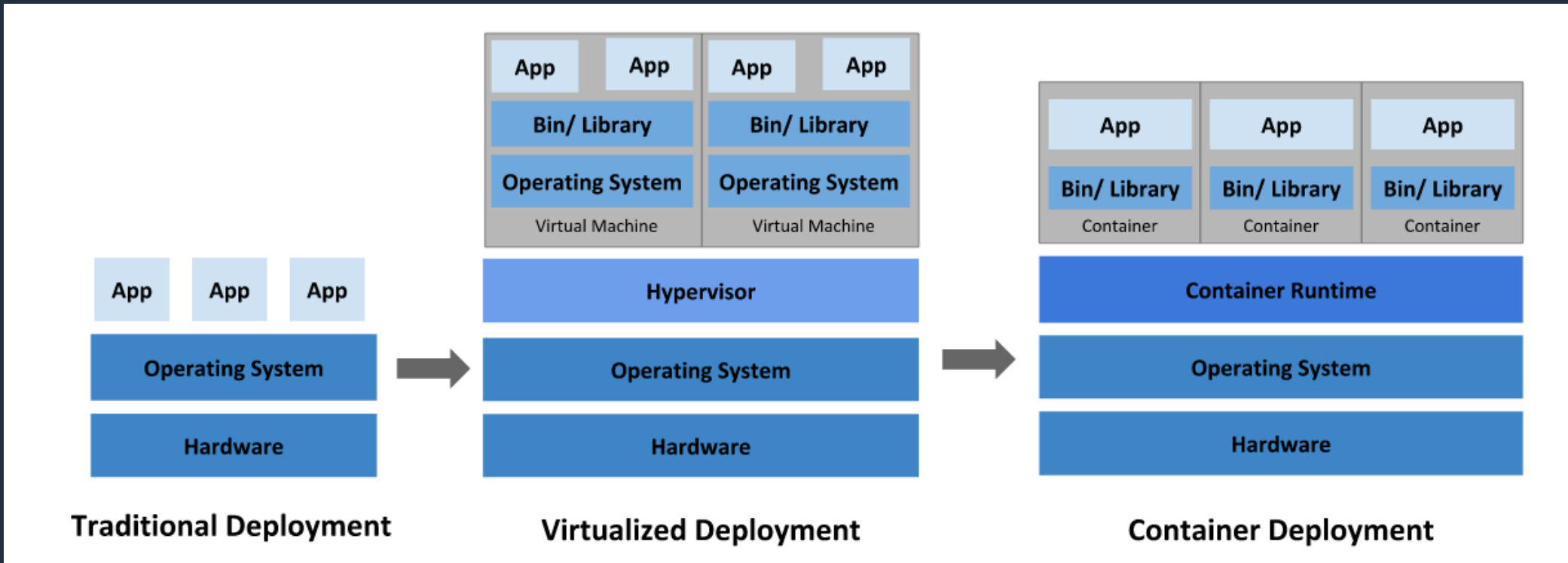
AWS Backup



AWS Storage Gateway

# Windows on AWS compute

# Compute layer evolution



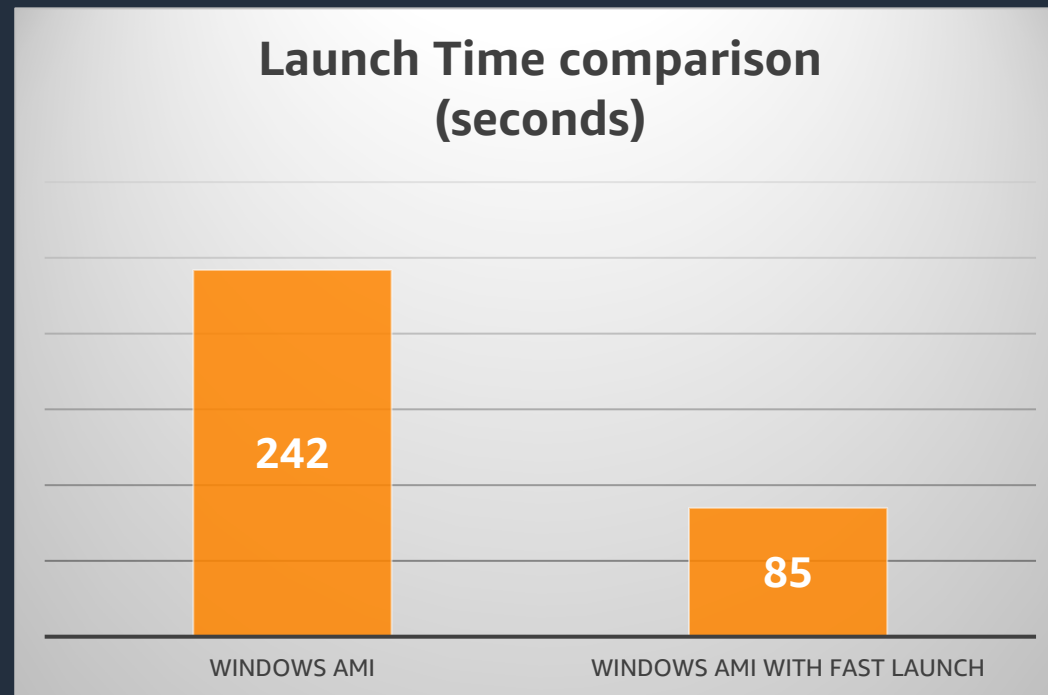
# Running Windows Server on Amazon EC2

- Amazon Machine Images (AMIs): AWS-provided vs Custom
- Latest versions of Windows drivers
- Cost optimization: Licensing options, Savings Plans
- Storage options: Instance Store, Amazon EBS, File Storage
- Performance: EC2 Windows Fast Launch

# Configuring Windows Server instances on Amazon EC2 for faster launches

# Windows Fast Launch

Reduces the launch time of Windows Server instances by up to 65% when launched from Amazon Machine Images (AMIs)





# Demo: EC2 Fast Launch

# Running Windows workloads on AWS container platforms

# Windows container use cases



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Build servers  
Windows Services



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APIs  
Web Applications



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COTS Applications



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Online game



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Cost optimization and  
management operation

# The broadest and most complete set to run Windows Containers

## AWS-managed orchestrators



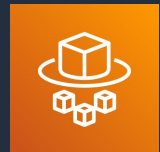
Amazon Elastic Container Service (ECS)



Amazon Elastic Container Service - Anywhere



Amazon Elastic Kubernetes Service (EKS)



AWS Fargate

## Self-managed orchestrators



OPENSIFT



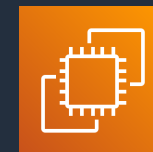
RANCHER



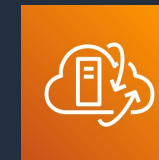
Nomad



kubernetes



Amazon Elastic Compute Cloud (EC2)

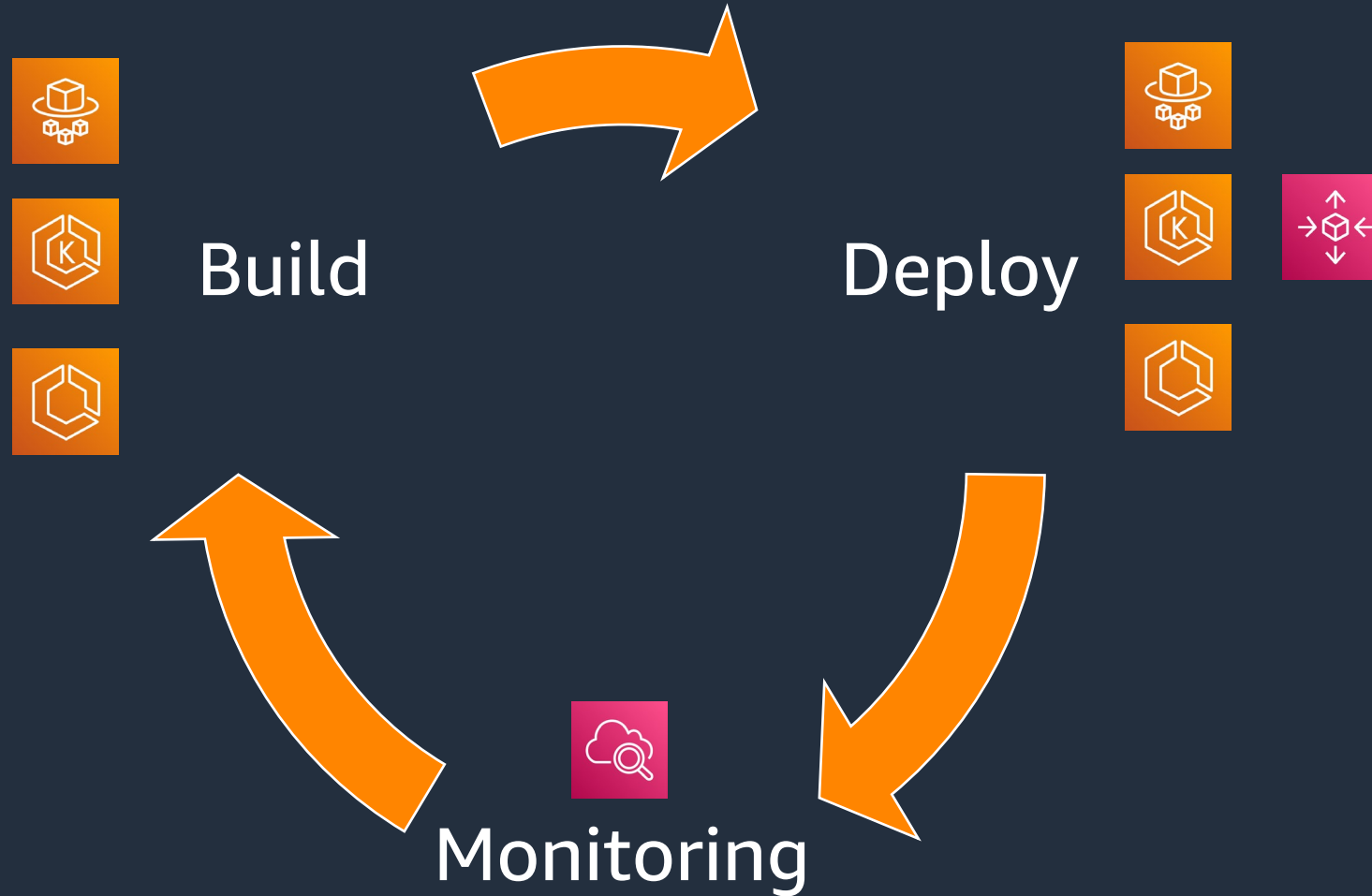


VMWare Cloud on AWS

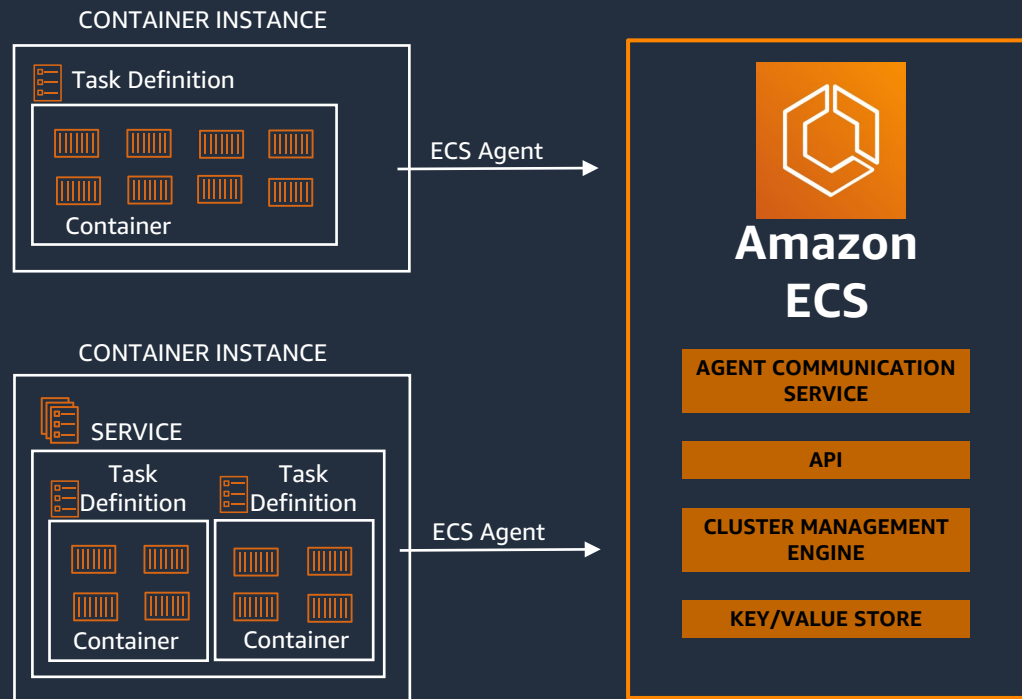


AWS Outposts

# Container management lifecycle



# Amazon ECS for Windows containers

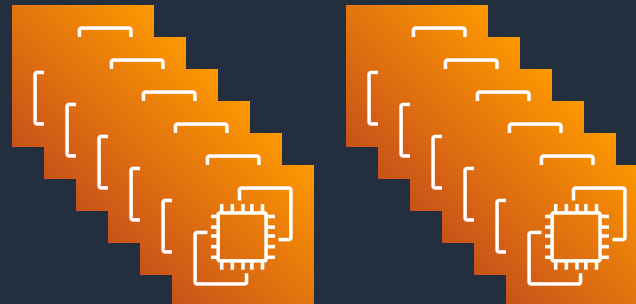


# Amazon EKS for Windows containers

Control Plane (Managed by AWS)



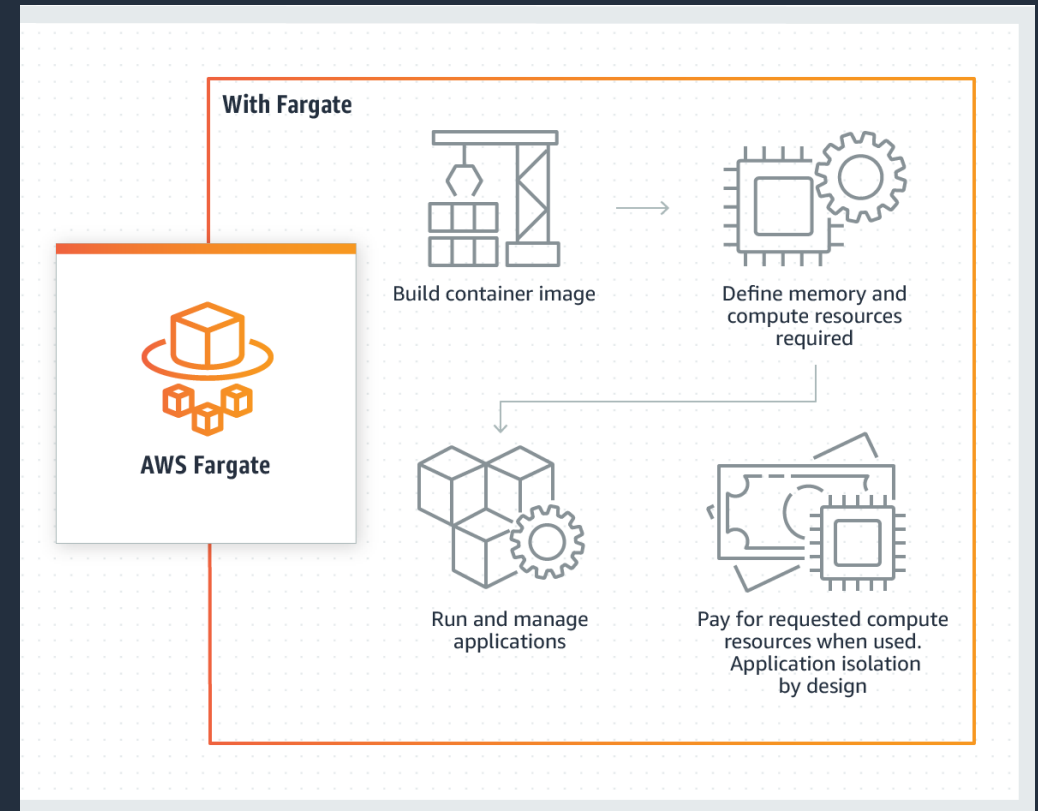
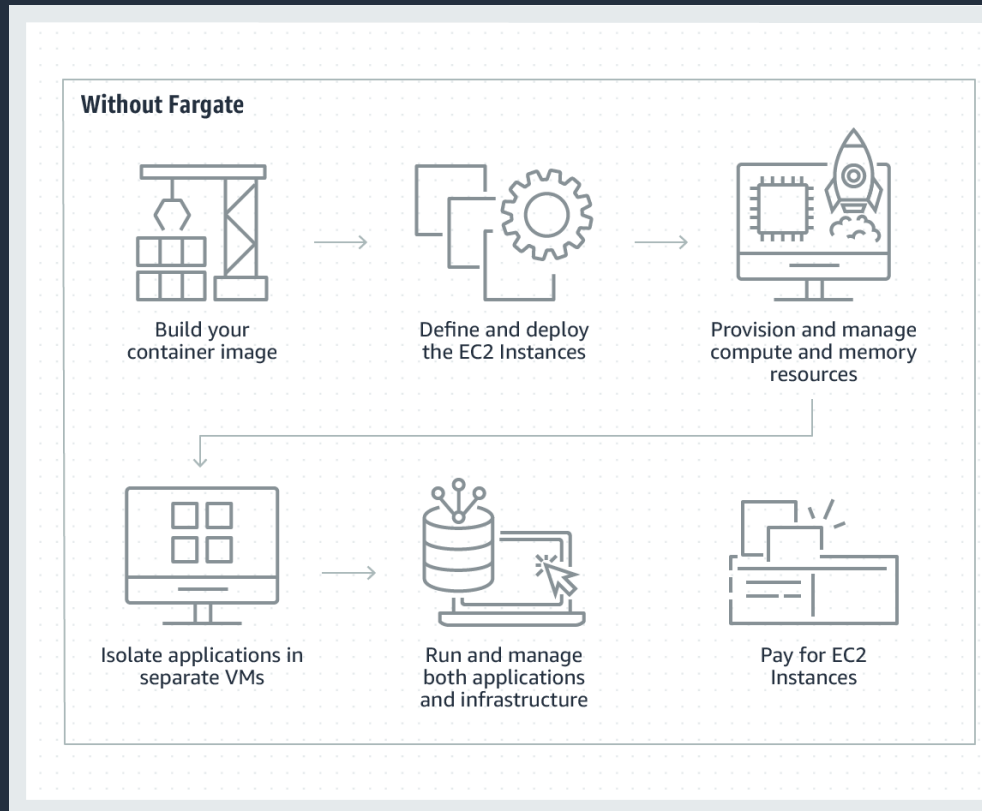
API Server  
ETCD  
VPC Controller



Node Group  
- Worker nodes

Data Plane (Customer managed)  
Amazon EC2 Windows

# AWS Fargate for Windows containers





# Steps to create container images

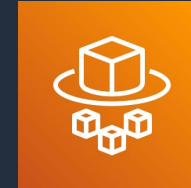
```
FROM  
mcr.microsoft.com/windows/servercore:ltsc2019  
  
SHELL ["powershell", "-  
NoLogo", "-Command",  
"$ErrorActionPreference =  
'Stop';  
$ProgressPreference =  
'SilentlyContinue';"]
```



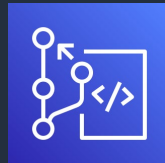
Amazon ECS



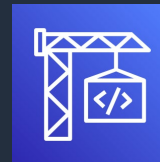
Amazon EKS



AWS Fargate



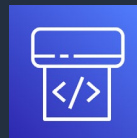
AWS CodeCommit



AWS Codebuild



Amazon ECR



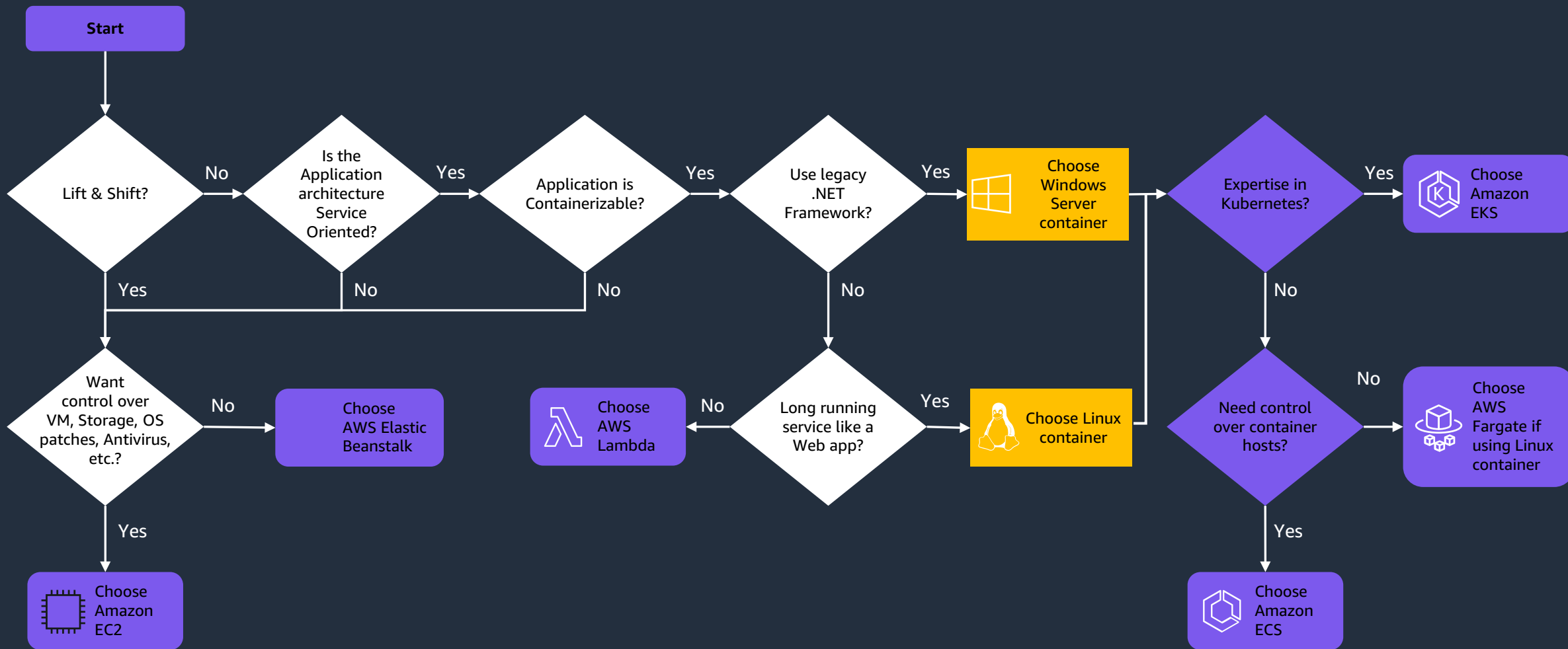
AWS CodePipeline

# Demo: Deploying Windows containers on AWS

# Our top tips for best practices

- 1 – Avoid image pulling during runtime, use pre-cached images directly in the AMI
- 2 – Treat container instances as ephemeral hosts
- 3 – Rebuild your Windows container image frequently
- 4 – Use instance store to reduce cost and improve performance

# Compute decision process



# Additional resources

Service overview: <https://aws.amazon.com/windows/>

<https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/concepts.html>

<https://aws.amazon.com/windows/platform-and-experience/>

Documentation: [https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/EC2\\_GetStarted.html](https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/EC2_GetStarted.html)

[https://docs.aws.amazon.com/AmazonECS/latest/developerguide/ECS\\_Windows.html](https://docs.aws.amazon.com/AmazonECS/latest/developerguide/ECS_Windows.html)

<https://docs.aws.amazon.com/eks/latest/userguide/windows-support.html>

Blogs: <https://aws.amazon.com/blogs/compute/category/aws-on-windows/>

<https://aws.amazon.com/blogs/containers/running-windows-workloads-on-a-private-eks-cluster/>

<https://aws.amazon.com/blogs/containers/running-windows-containers-with-amazon-ecs-on-aws-fargate/>

Additional: <https://aws.amazon.com/windows/faq/>





**Thank you!**