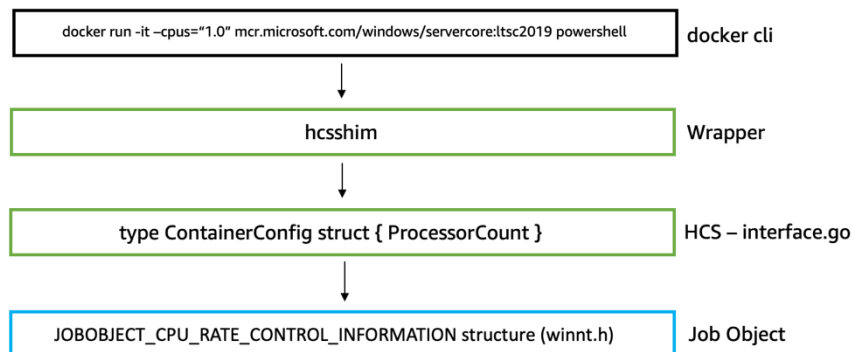
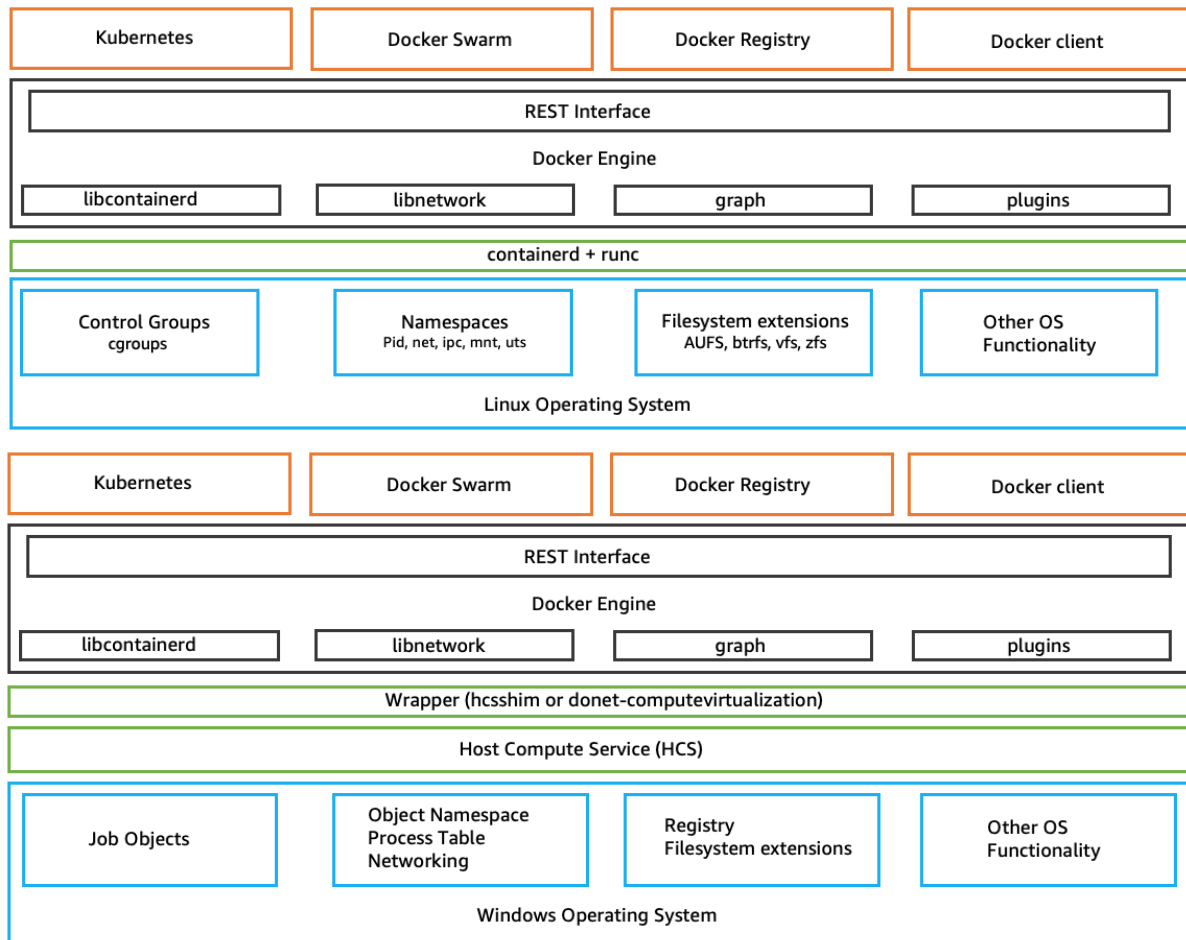


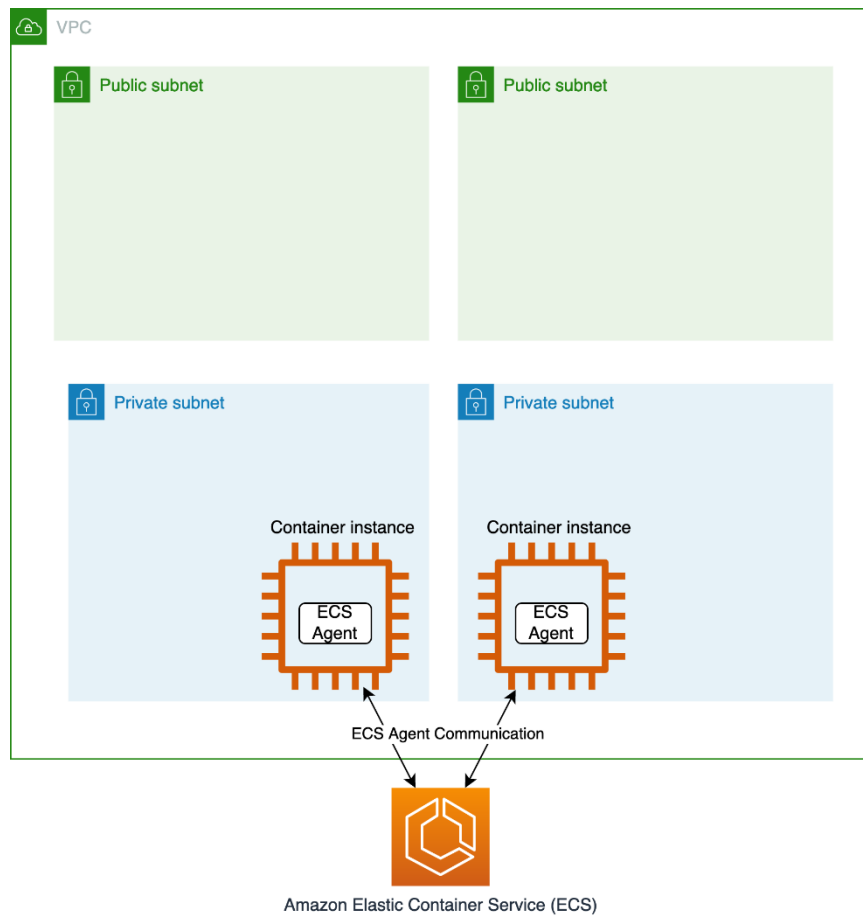
Chapter 1: No Manuscript Windows Container 101

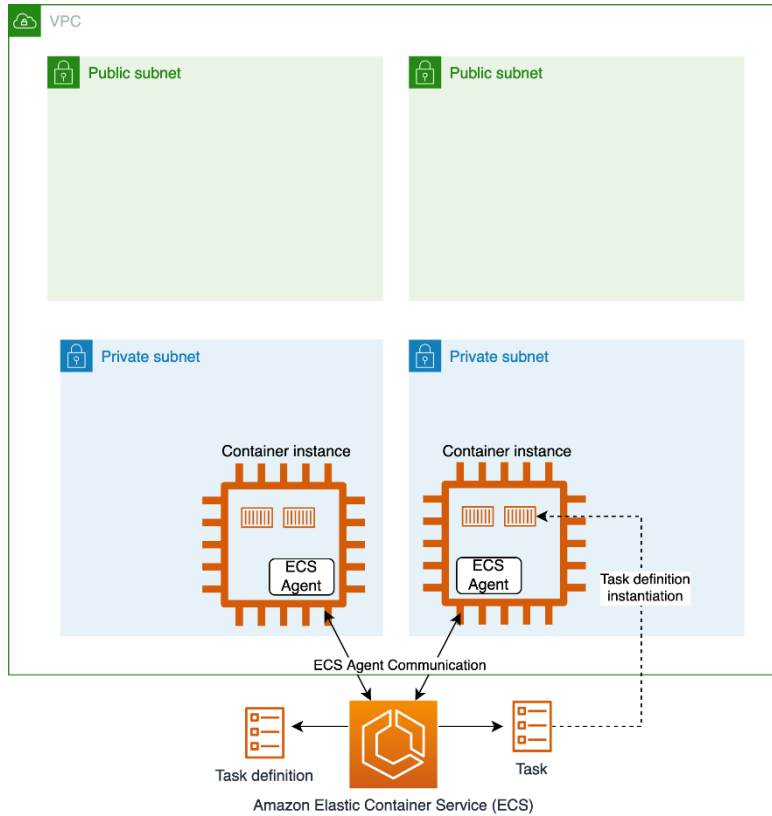
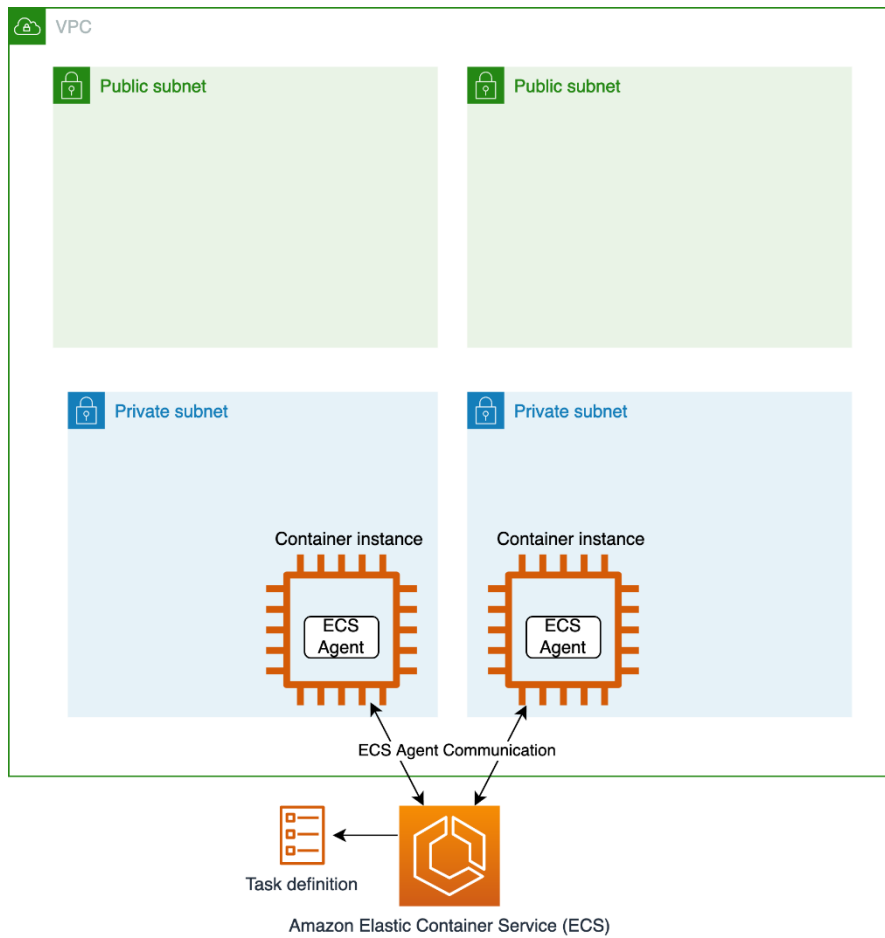


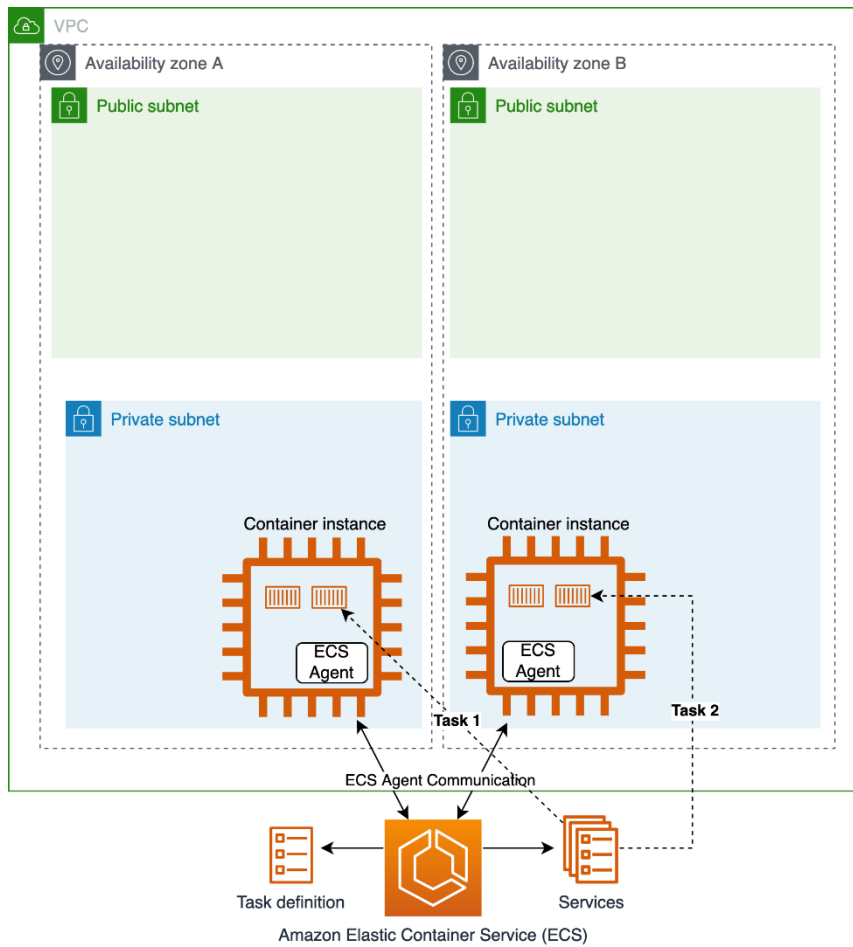
Chapter 2: Amazon Web Services – Breadth and Depth

No images...

Chapter 3: Amazon ECS – Overview

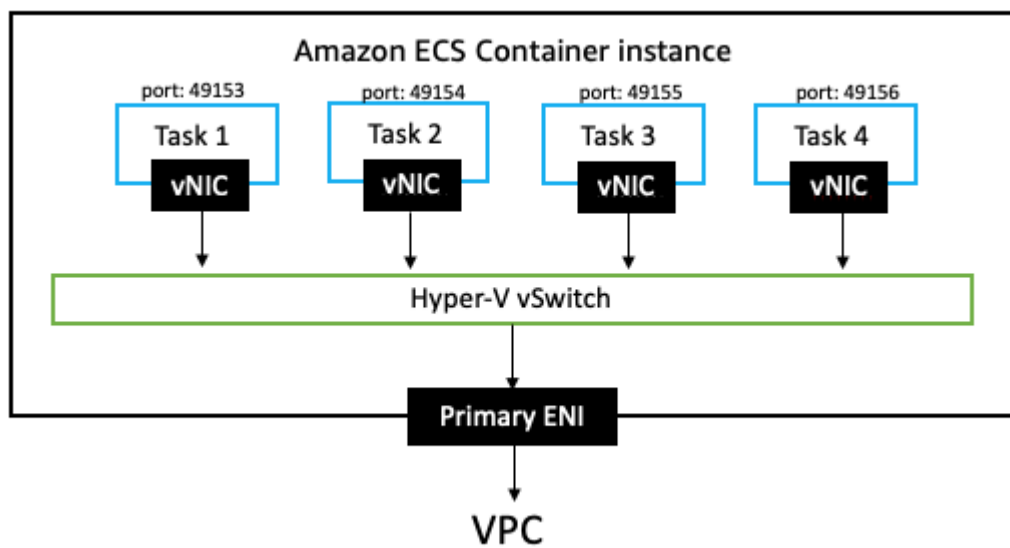






```
PS C:\> docker network ls
NETWORK ID      NAME      DRIVER      SCOPE
44c8de36da41    nat      nat         local
1d838dd9e015    none     null        local
PS C:\> Get-NetAdapter
```

Name	InterfaceDescription	ifIndex	Status	MacAddress	LinkSpeed
Ethernet 2	Amazon Elastic Network Adapter	9	Up	0A-05-1A-A9-E7-59	25 Gbps
vEthernet (nat)	Hyper-V Virtual Ethernet Adapter	10	Up	00-15-5D-69-BB-42	10 Gbps

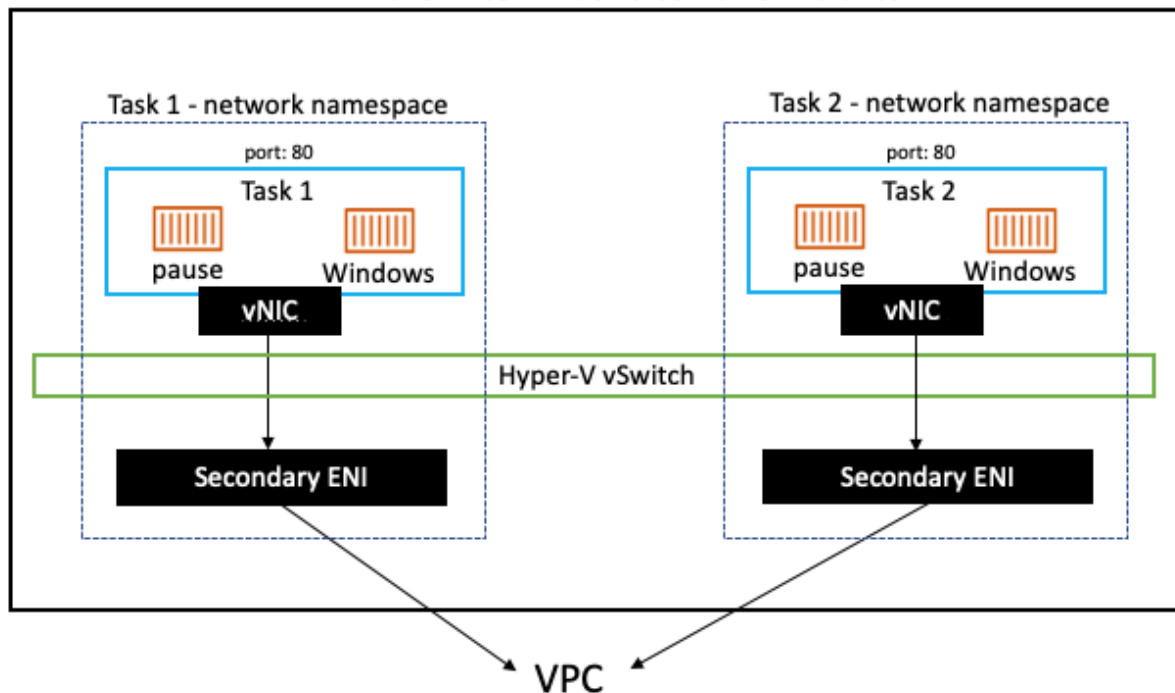


Administrator: Windows PowerShell

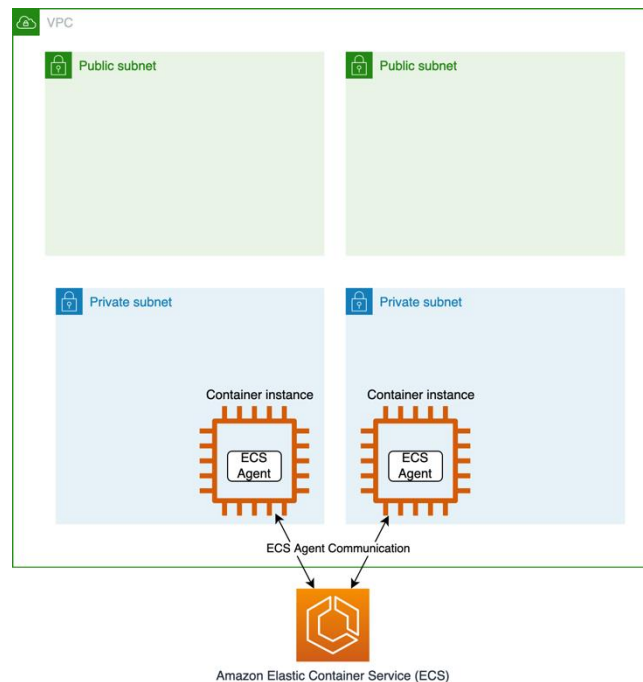
PS C:\Users\Administrator> Get-NetAdapter

Name	InterfaceDescription	ifIndex	Status	MacAddress	LinkSpeed
vEthernet (nat-ep-353a...		35	Up	00-15-5D-D2-73-09	10 Gbps
vEthernet (nat)	Hyper-V Virtual Ethernet Adapter	13	Up	00-15-5D-D2-7D-98	10 Gbps
Ethernet 4	Amazon Elastic Network Adapter #3	12	Up	16-73-6D-A2-73-45	25 Gbps
vEthernet (taskbr16736...		19	Up	16-73-6D-A2-73-45	25 Gbps
Ethernet 3	Amazon Elastic Network Adapter #2	8	Up	16-D8-61-3C-EB-65	25 Gbps
vEthernet (Ethernet 5)	Hyper-V Virtual Ethernet Adapter #3	24	Disabled	16-E7-23-B4-1E-23	25 Gbps
vEthernet (nat-ep-bfd6...		42	Up	00-15-5D-D2-74-B2	10 Gbps
vEthernet (taskbr16e72...		25	Up	16-E7-23-B4-1E-23	25 Gbps
vEthernet (Ethernet 4)	Hyper-V Virtual Ethernet Adapter #2	18	Disabled	16-73-6D-A2-73-45	25 Gbps
Ethernet 5	Amazon Elastic Network Adapter #4	4	Up	16-E7-23-B4-1E-23	25 Gbps

Amazon ECS Windows Container instance

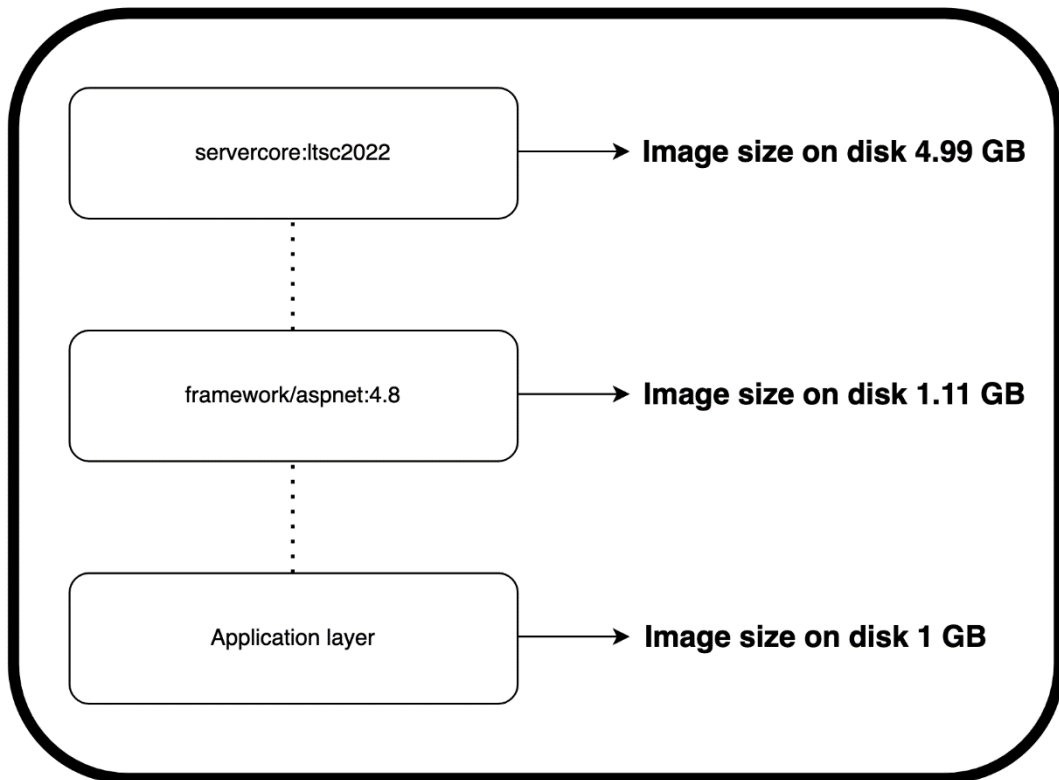


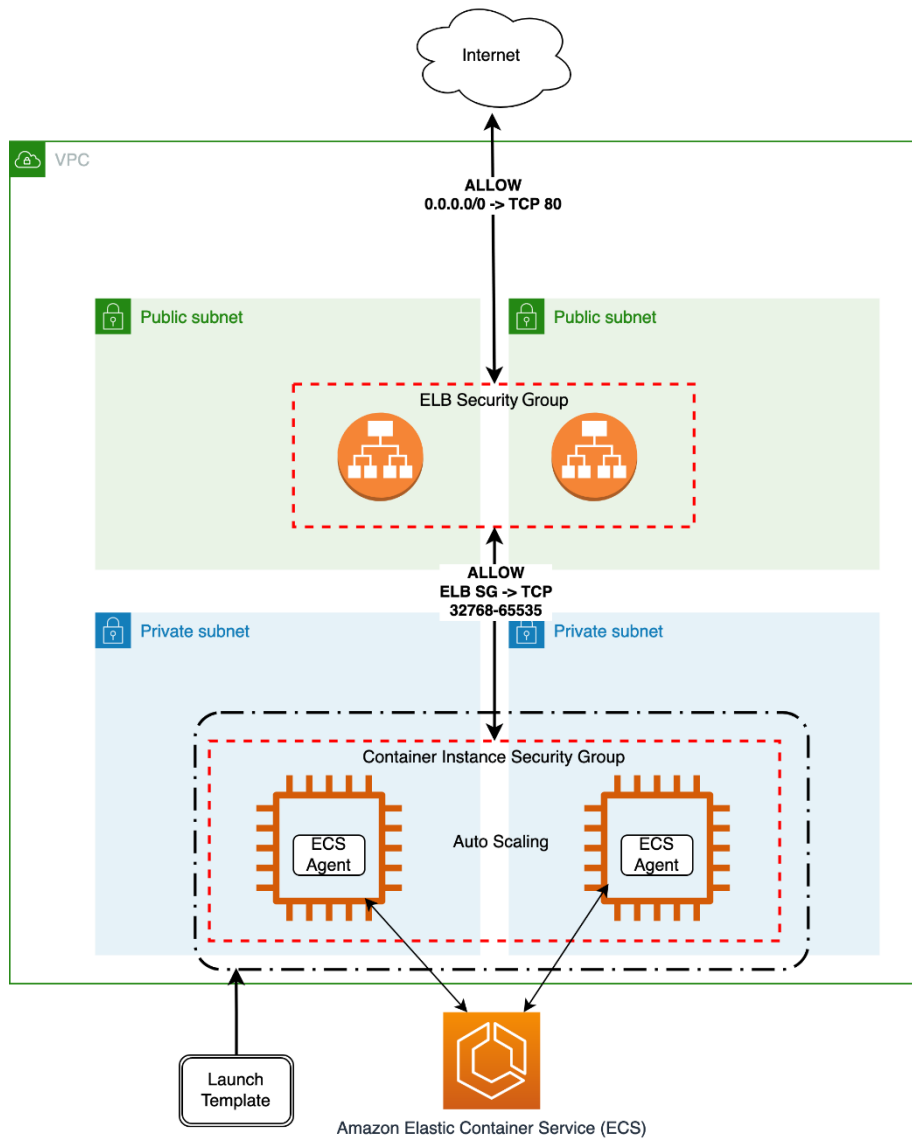
Chapter 4: Deploying a Windows Container Instance



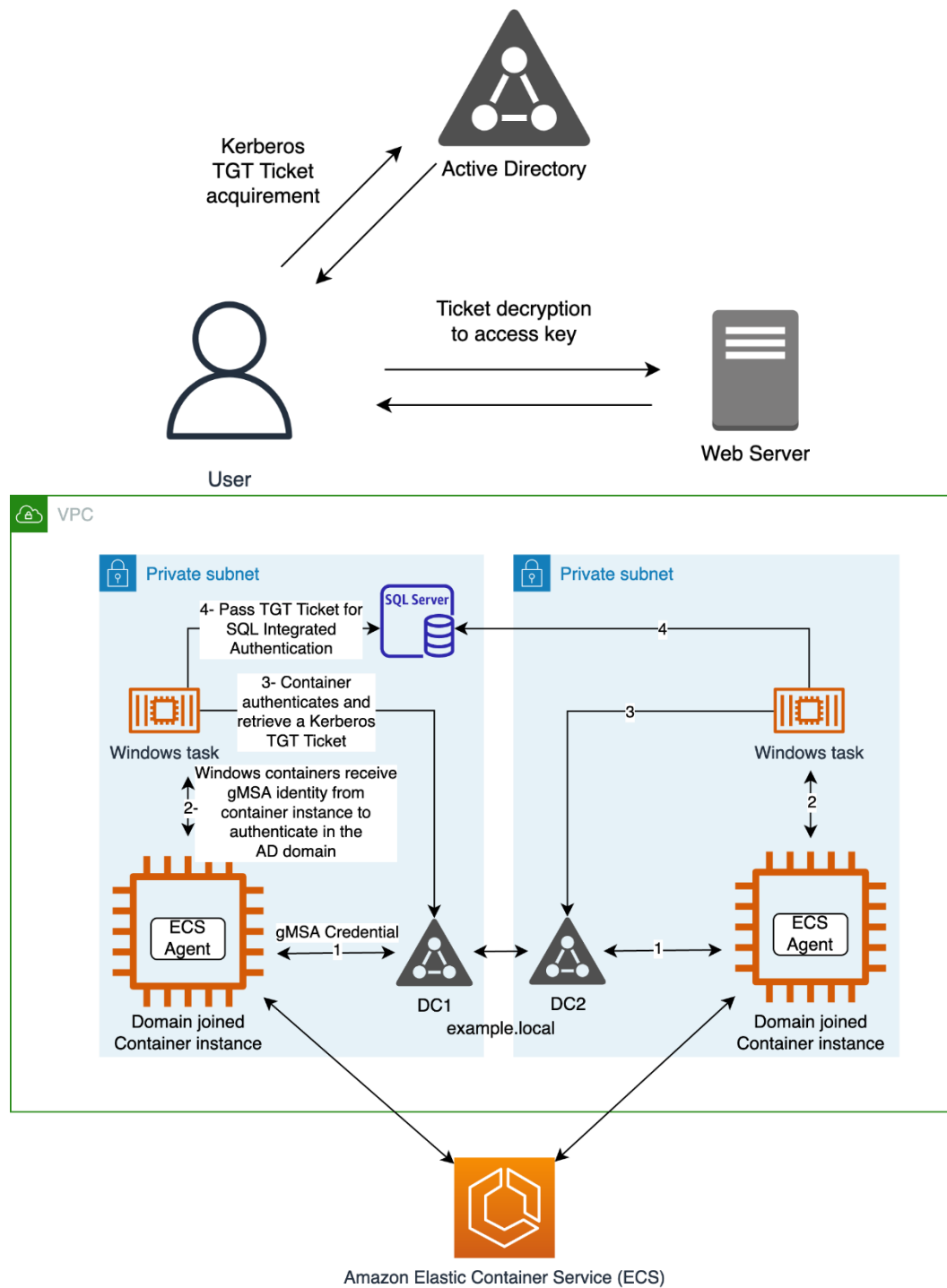
Pipe Name	Instances	Max Instances
-----	-----	-----
InitShutdown	3	-1
lsass	4	-1
ntsvcs	3	-1
scerpc	3	-1
winsock2\CatalogChangeListener-360-0	1	1
epmapper	3	-1
winsock2\CatalogChangeListener-1d0-0	1	1
LSM_API_service	3	-1
eventlog	3	-1
winsock2\CatalogChangeListener-53c-0	1	1
TermSrv_API_service	3	-1
Ctx_WinStation_API_service	3	-1
atsvc	3	-1
wkssvc	4	-1
winsock2\CatalogChangeListener-734-0	1	1
winsock2\CatalogChangeListener-264-0	1	1
SessEnvPublicRpc	3	-1
winsock2\CatalogChangeListener-930-0	1	1
spoolss	3	-1
winsock2\CatalogChangeListener-988-0	1	1
trkwks	3	-1
srvsvc	5	-1
ROUTER	3	-1
docker_engine	2	-1

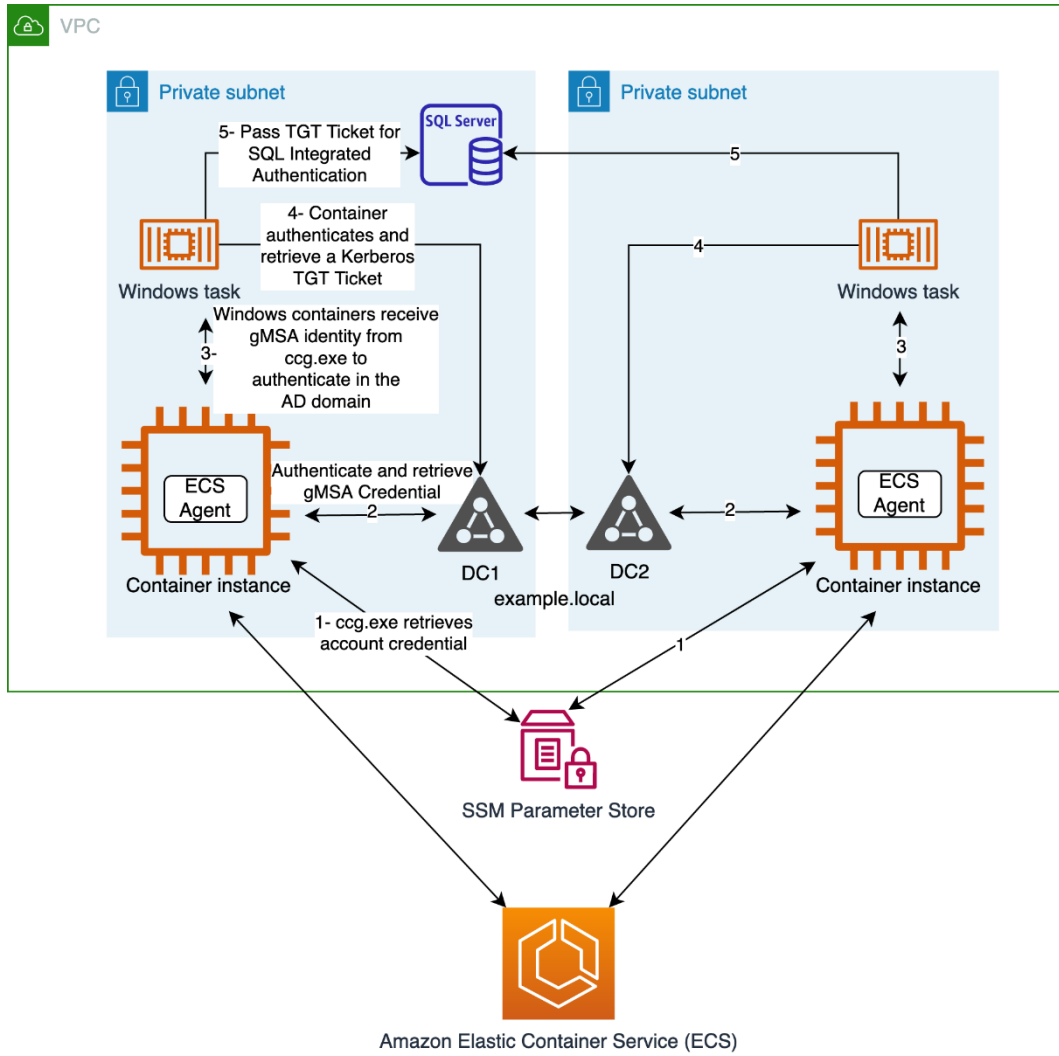
Total ASP.NET Application container image size = 7.1

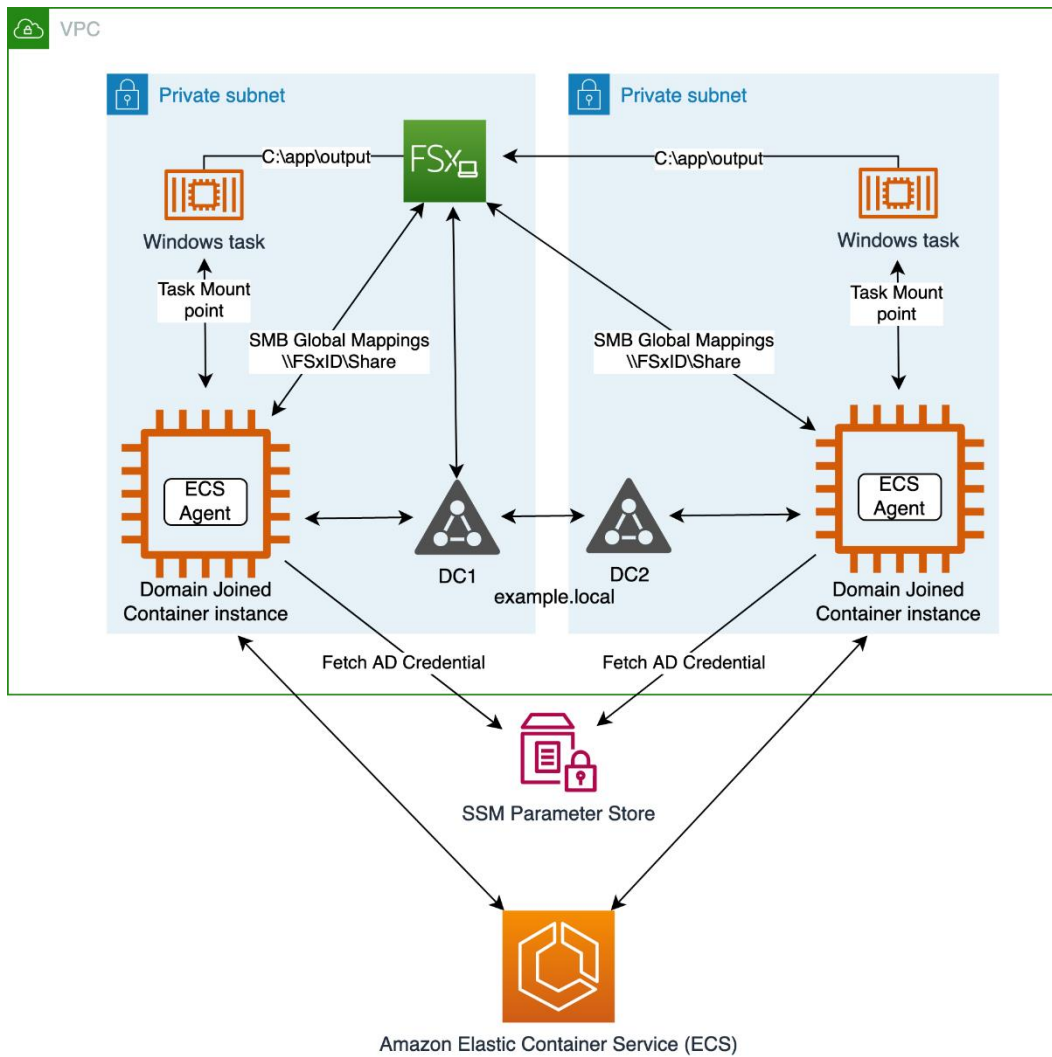


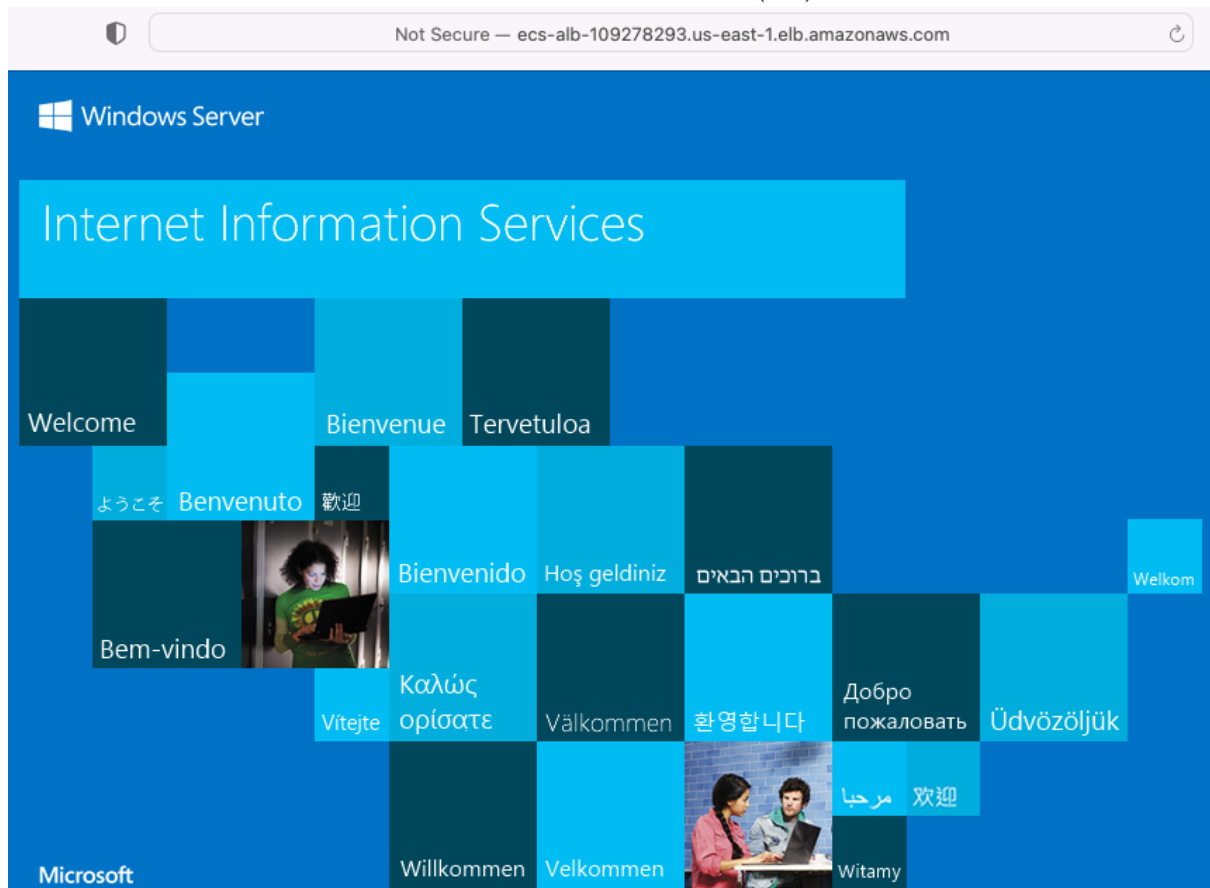
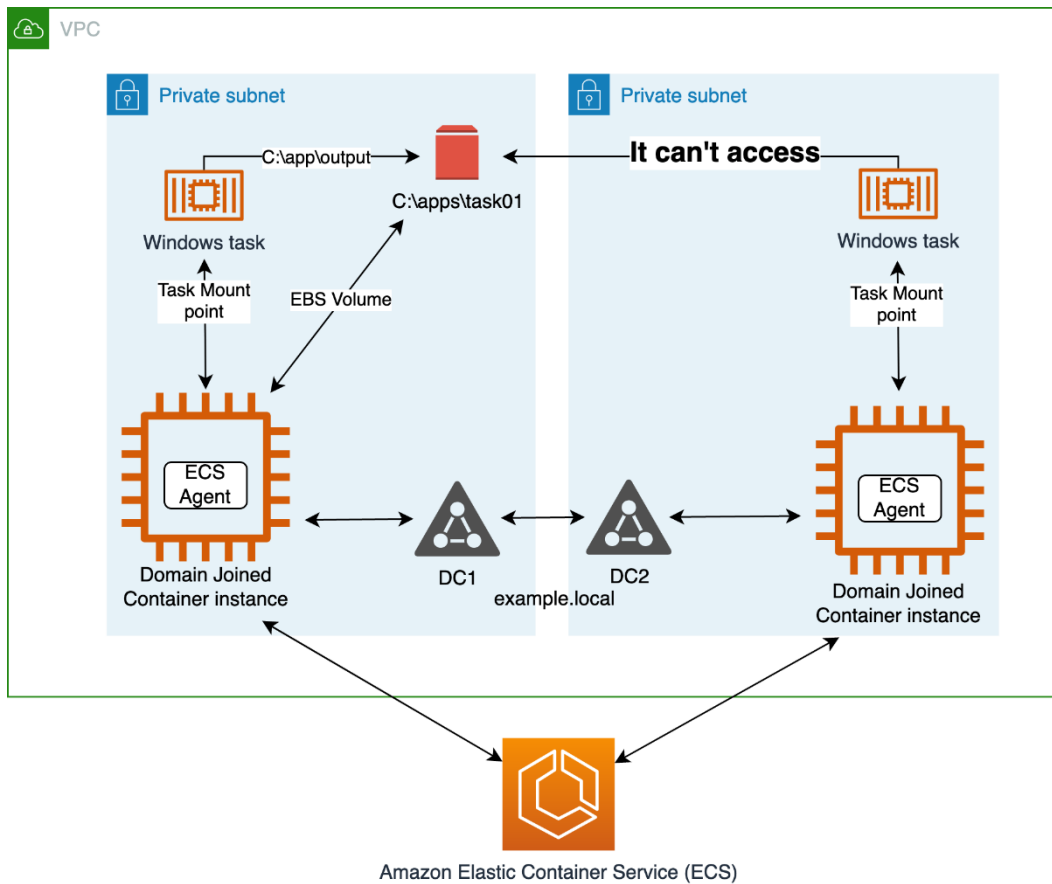


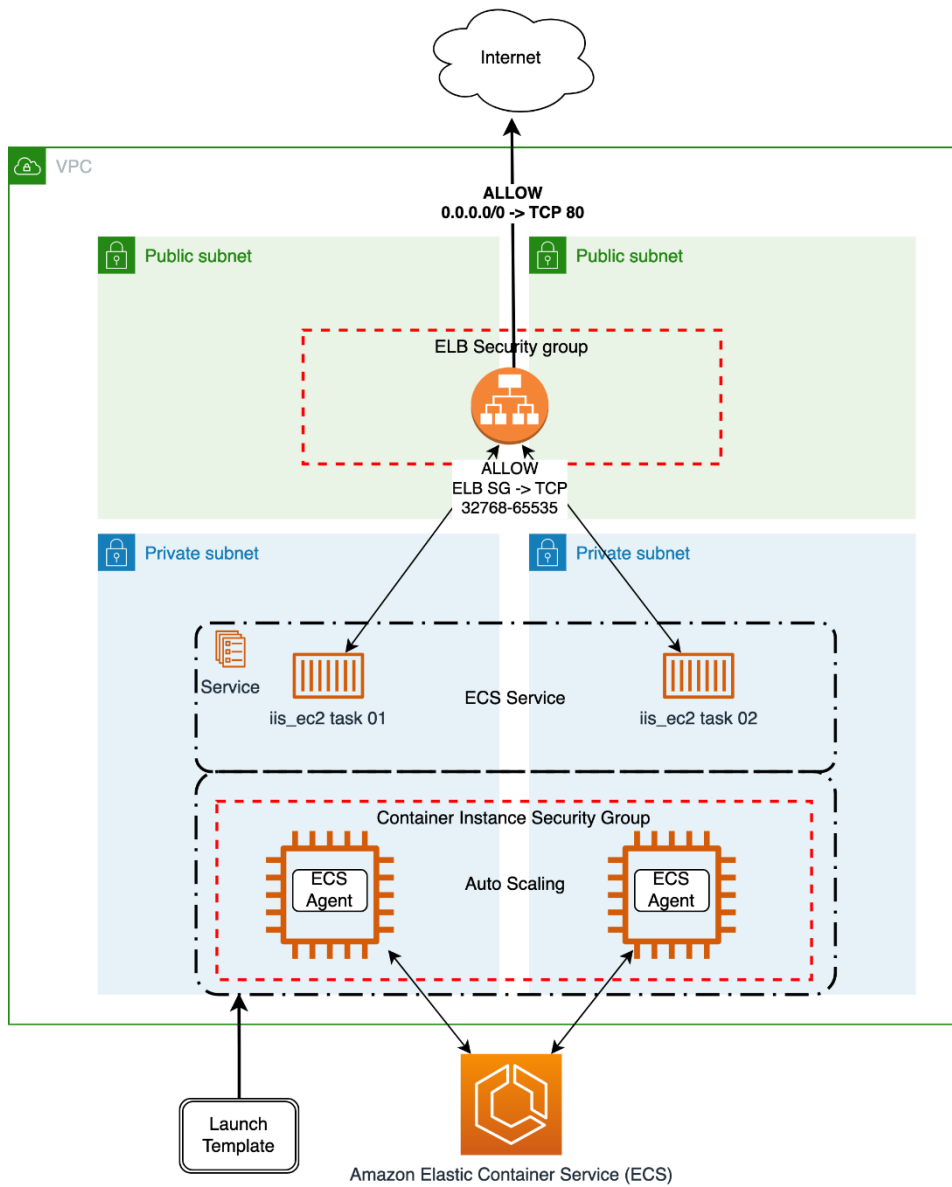
Chapter 5: Deploying an EC2 Windows-Based Task



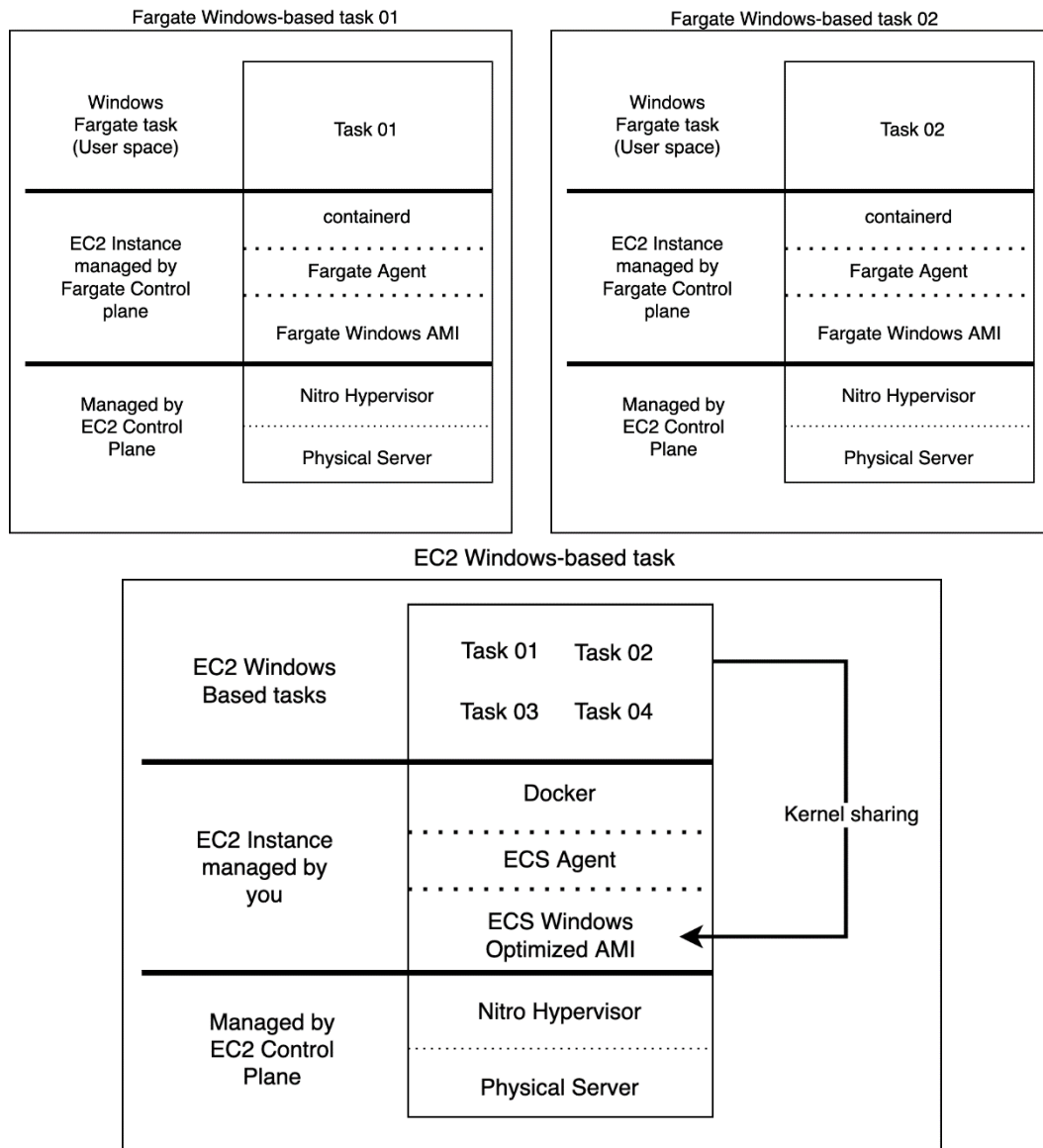


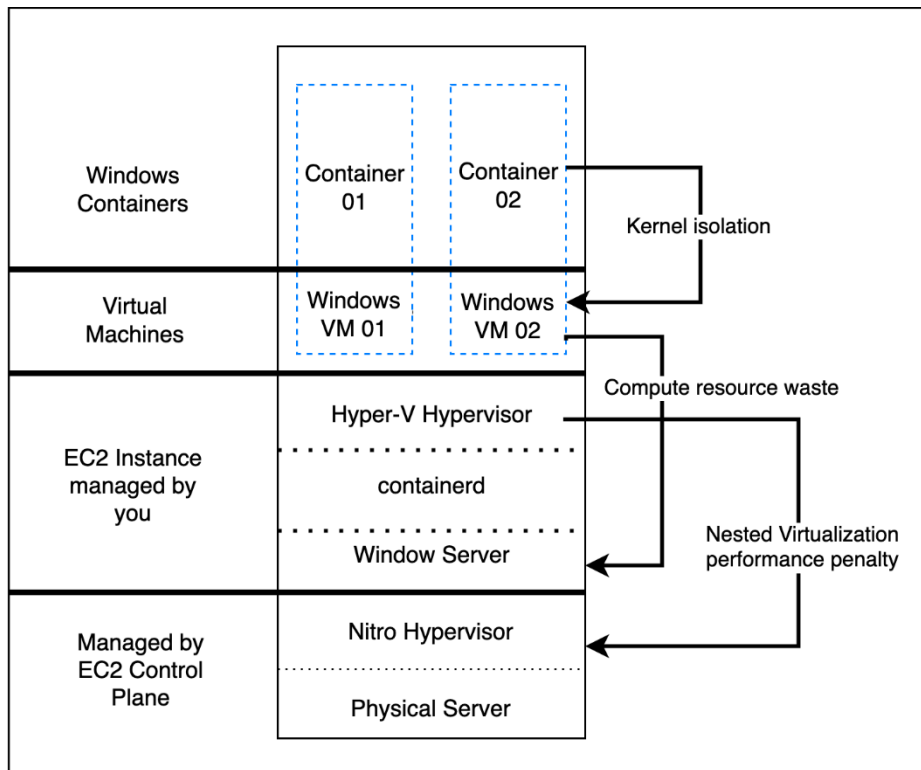




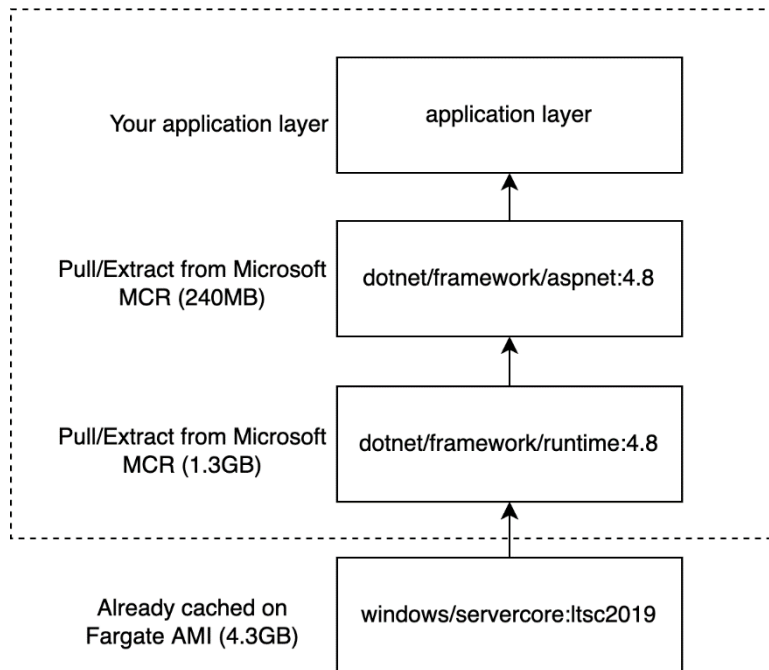


Chapter 6: Deploying a Fargate Windows-Based Task





Intermediate layers take an average of 4+ minutes to be fully pulled and extracted





Windows Server

Internet Information Services

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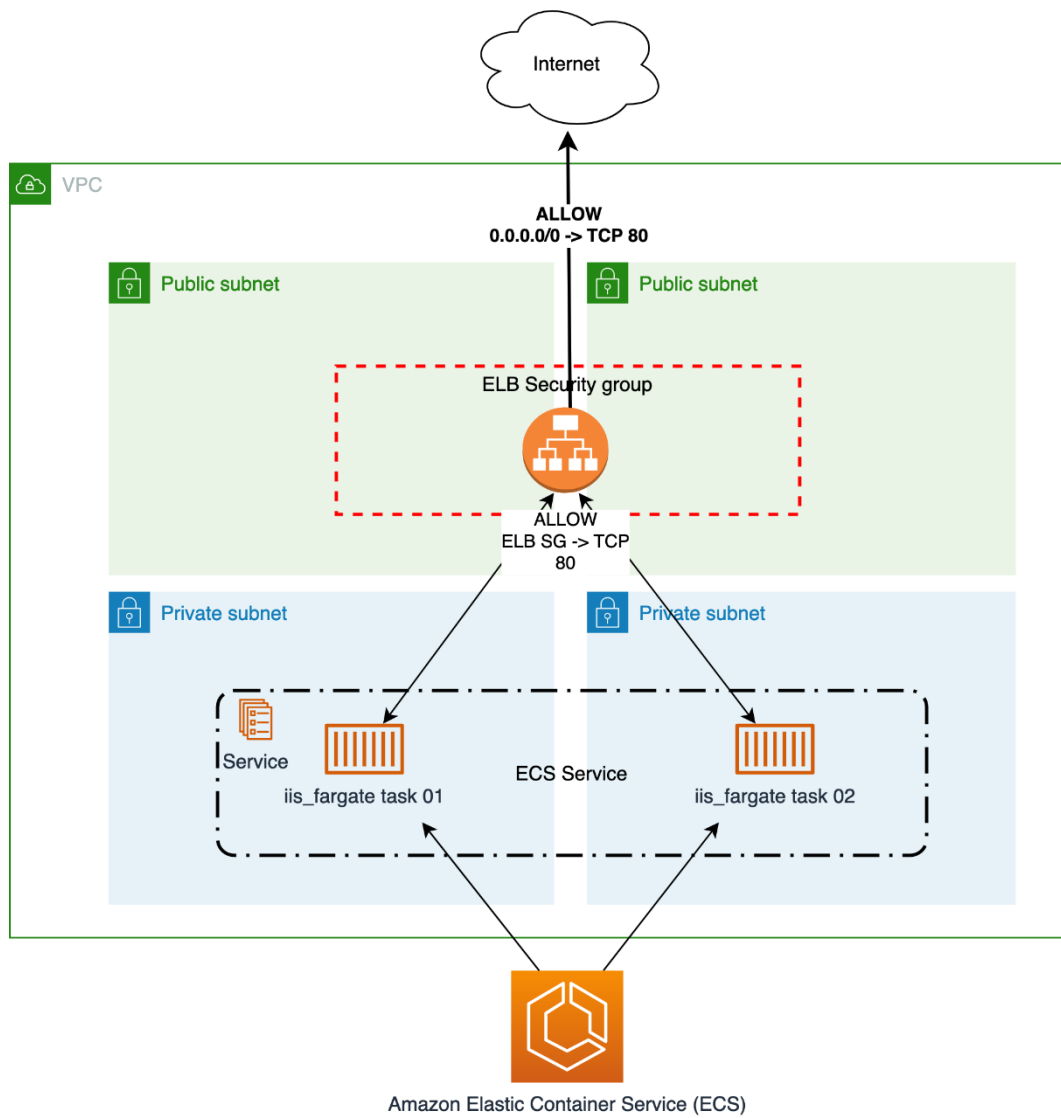
Velkommen



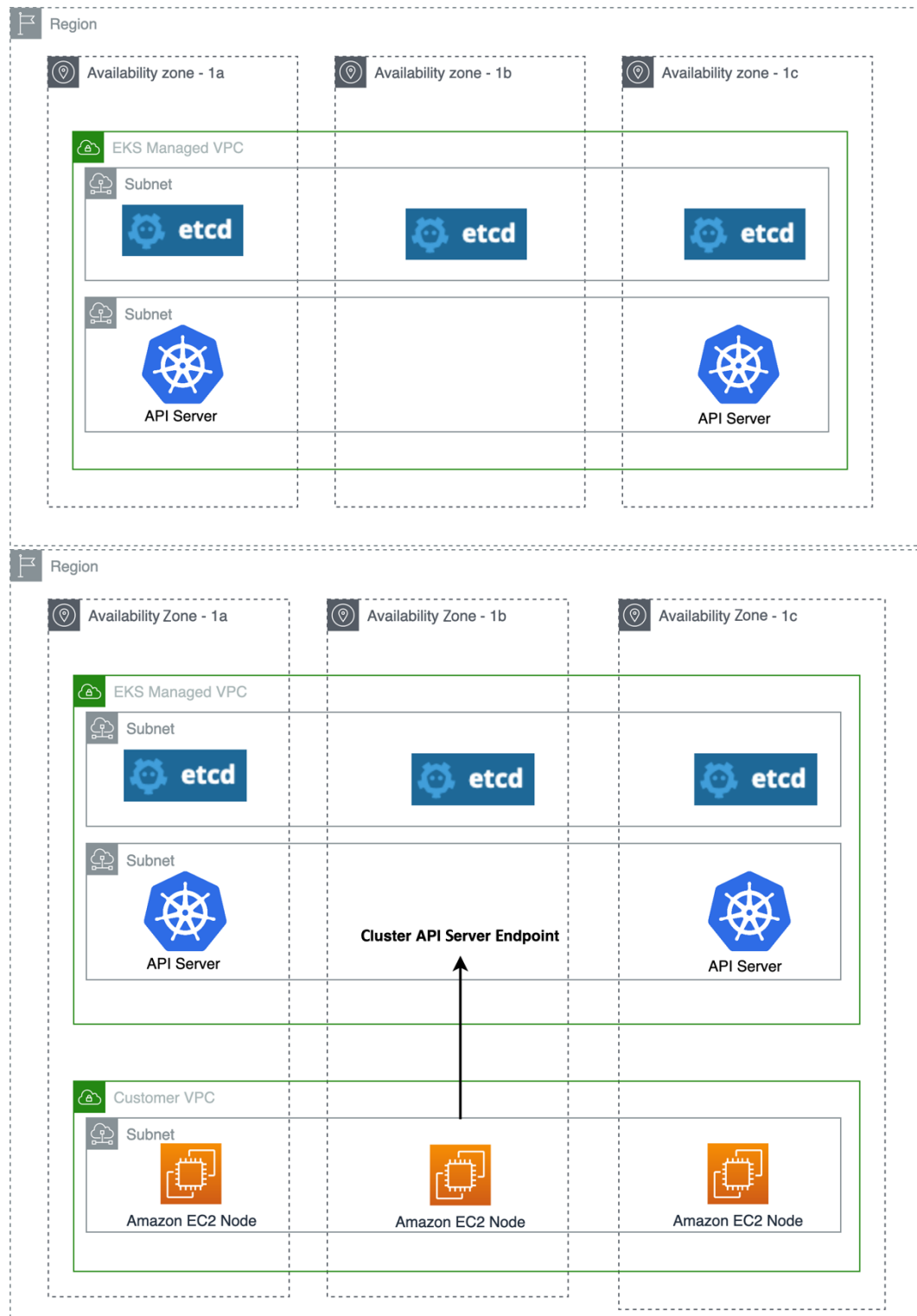
مرحبا

歡迎

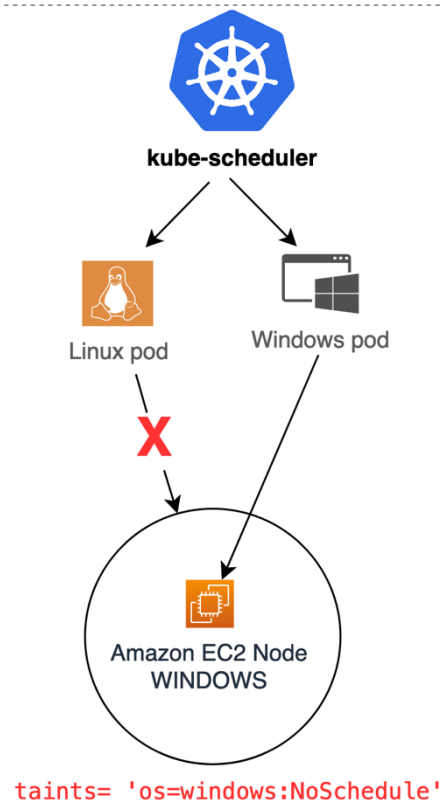
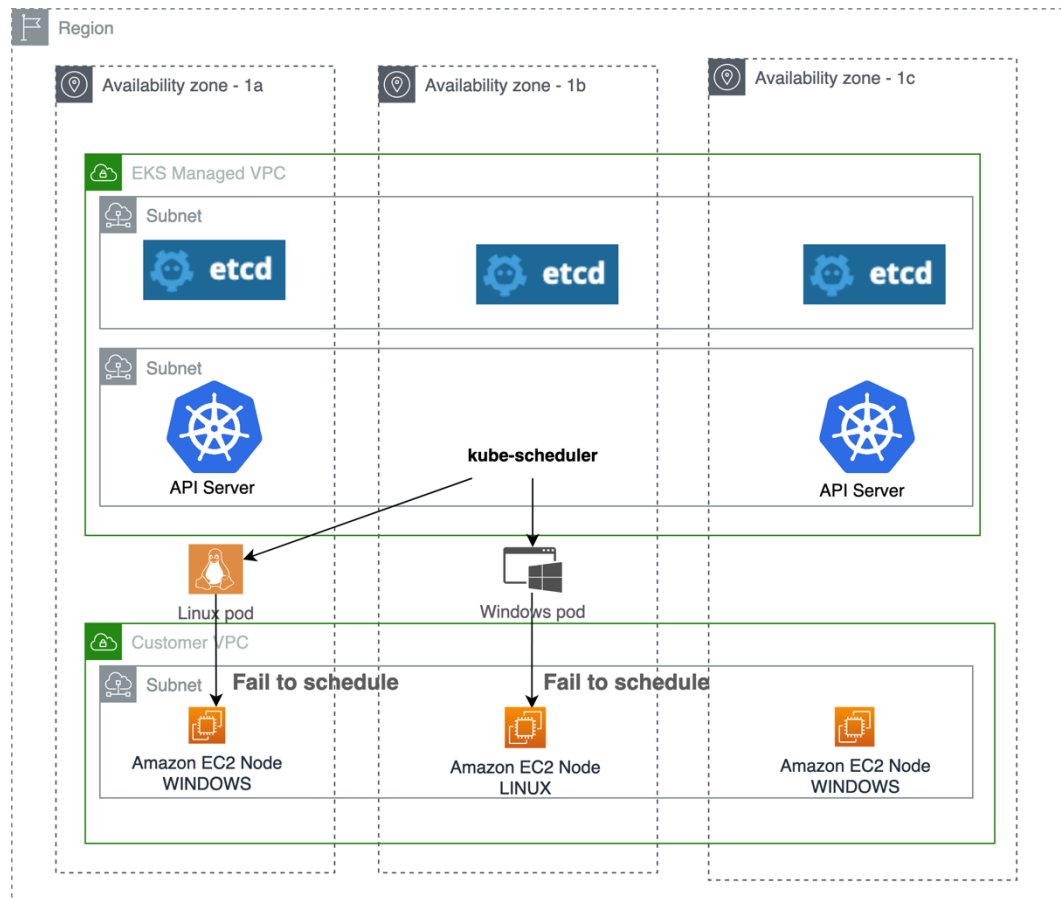
Witamy



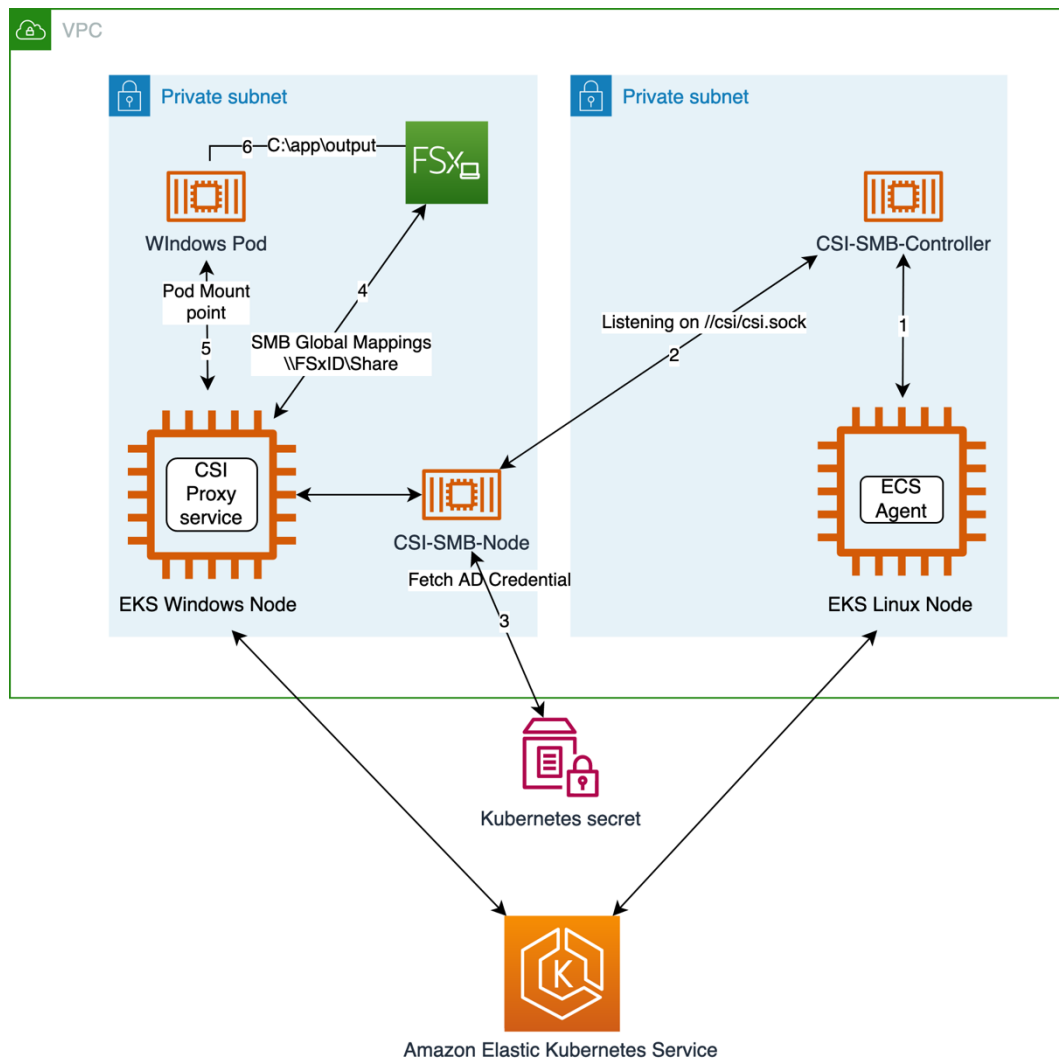
Chapter 7: Amazon EKS – Overview

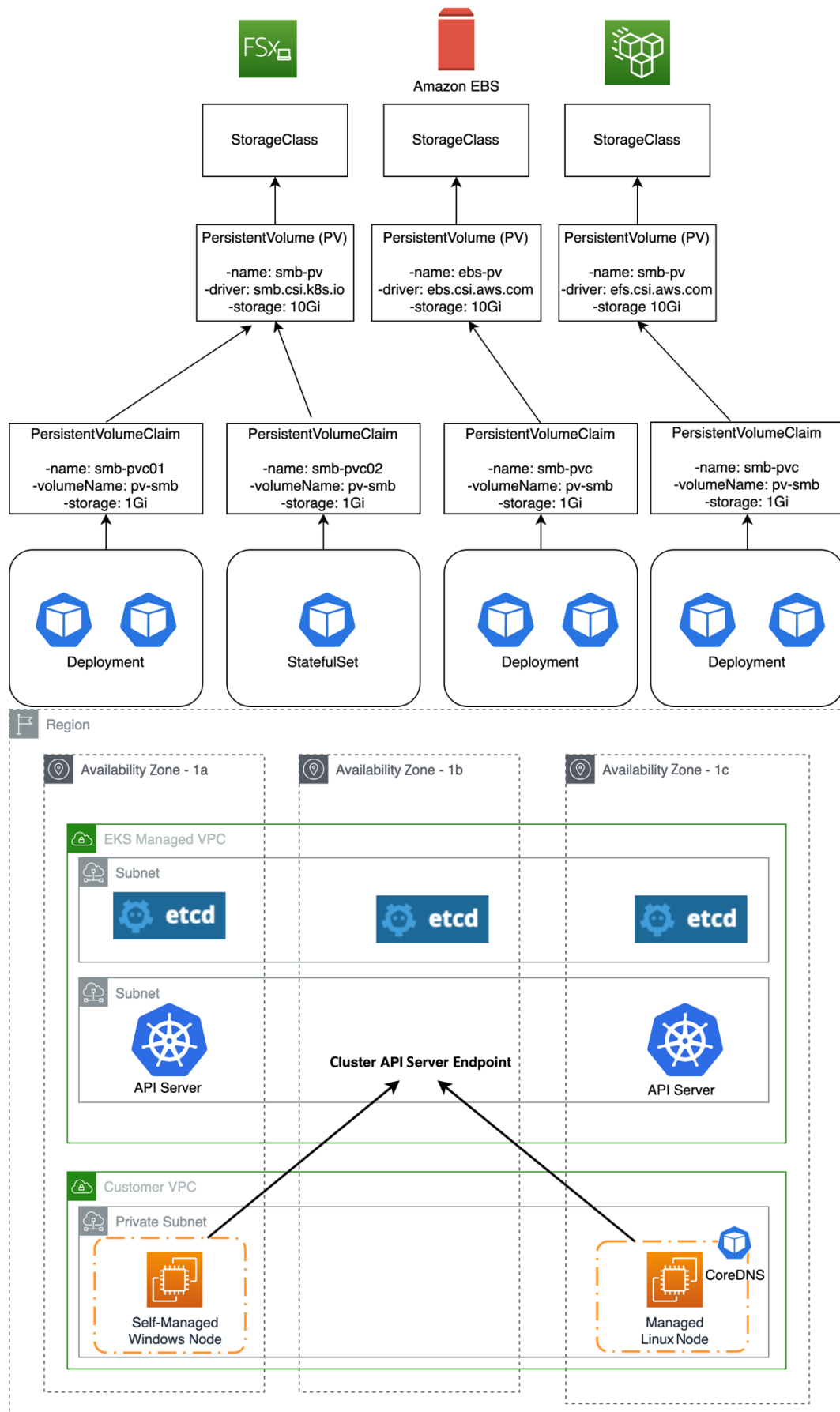


Chapter 8: Preparing the Cluster for OS Interoperability



Chapter 9: Deploying a Windows Node Group





Chapter 10: Managing a Windows Pod

Deployment 1

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: front-end
  namespace: windows
spec:
  selector:
    matchLabels:
      app: front-end
      track: stable
  replicas: 1
  template:
    metadata:
      labels:
        app: front-end
        track: stable
    spec:
      containers:
        - name: front-end
          image: mcr.microsoft.co...
          ports:
            - name: http
              containerPort: 80
          imagePullPolicy: IfNotPresent
      nodeSelector:
        kubernetes.io/os: windows
      tolerations:
        - key: "os"
          operator: "Equal"
          value: "windows"
          effect: "NoSchedule"
```

Deployment 2

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: backend
  namespace: windows
spec:
  selector:
    matchLabels:
      app: backend
      track: stable
  replicas: 1
  template:
    metadata:
      labels:
        app: backend
        track: stable
    spec:
      containers:
        - name: windows-server-iis-ltsc2019
          image: mcr.microsoft.co...
          ports:
            - name: http
              containerPort: 80
          imagePullPolicy: IfNotPresent
      nodeSelector:
        kubernetes.io/os: windows
      tolerations:
        - key: "os"
          operator: "Equal"
          value: "windows"
          effect: "NoSchedule"
```

Deployment 1

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: front-end
  namespace: windows
spec:
  selector:
    matchLabels:
      app: front-end
      track: stable
  replicas: 1
  template:
    metadata:
      labels:
        app: front-end
        track: stable
    spec:
      runtimeClassName: windows-2019
      containers:
        - name: front-end
          image: mcr.microsoft.co...
          ports:
            - name: http
              containerPort: 80
          imagePullPolicy: IfNotPresent
```

Deployment 2

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: backend
  namespace: windows
spec:
  selector:
    matchLabels:
      app: backend
      track: stable
  replicas: 1
  template:
    metadata:
      labels:
        app: backend
        track: stable
    spec:
      runtimeClassName: windows-2019
      containers:
        - name: windows-server-iis-ltsc2019
          image: mcr.microsoft.co...
          ports:
            - name: http
              containerPort: 80
          imagePullPolicy: IfNotPresent
```

```
apiVersion: node.k8s.io/v1
kind: RuntimeClass
metadata:
  name: windows-2019
  handler: 'docker'
spec:
  scheduling:
    nodeSelector:
      kubernetes.io/os: 'windows'
      node.kubernetes.io/windows-build: '10.0.17764'
  tolerations:
    - effect: NoSchedule
      key: os
      operator: Equal
      value: "windows"
```

RuntimeClass



Not Secure — aaaca8af0868949fe88fe17917ef8c47-14341788.us-east-1.elb.amazonaws.com



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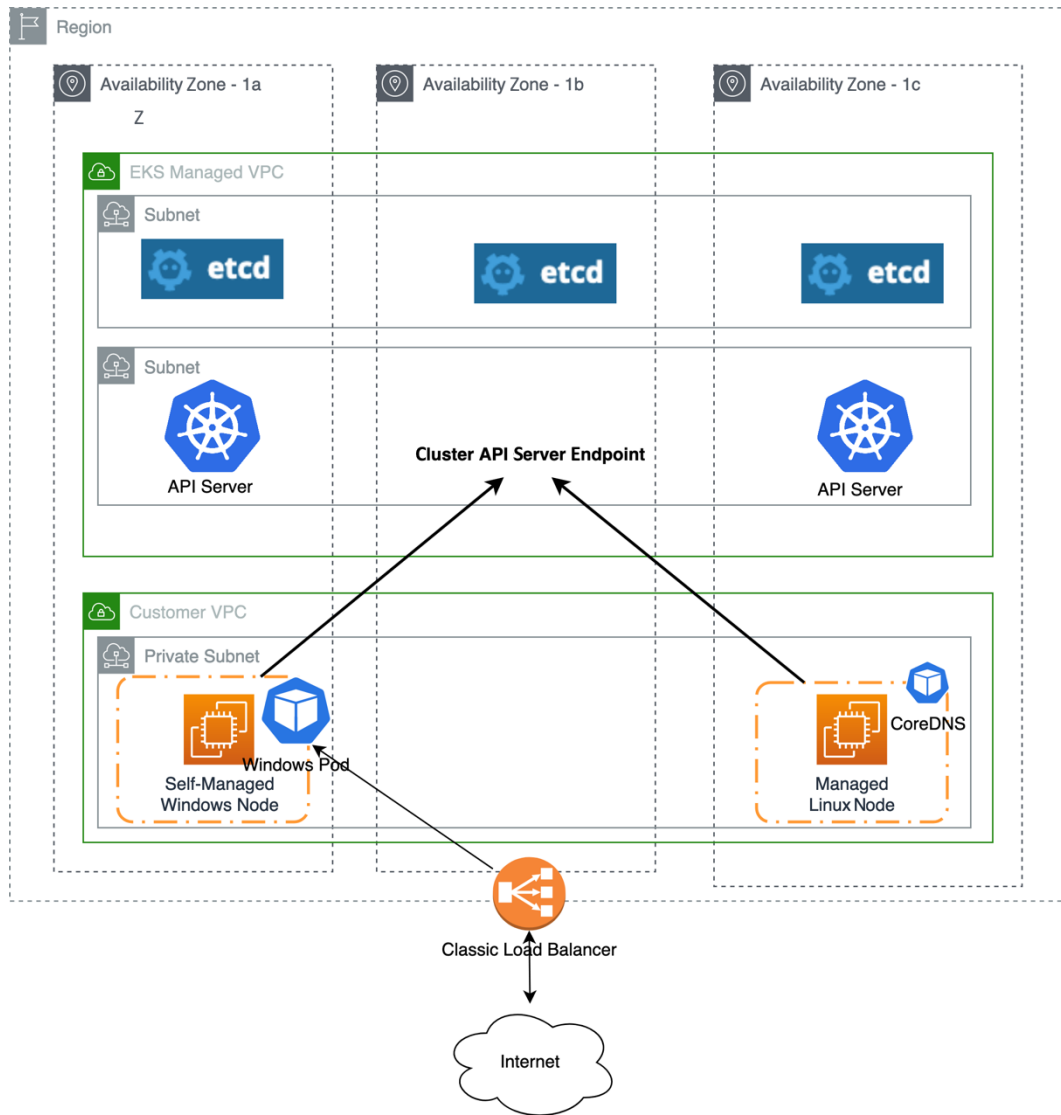
Willkommen

Velkommen

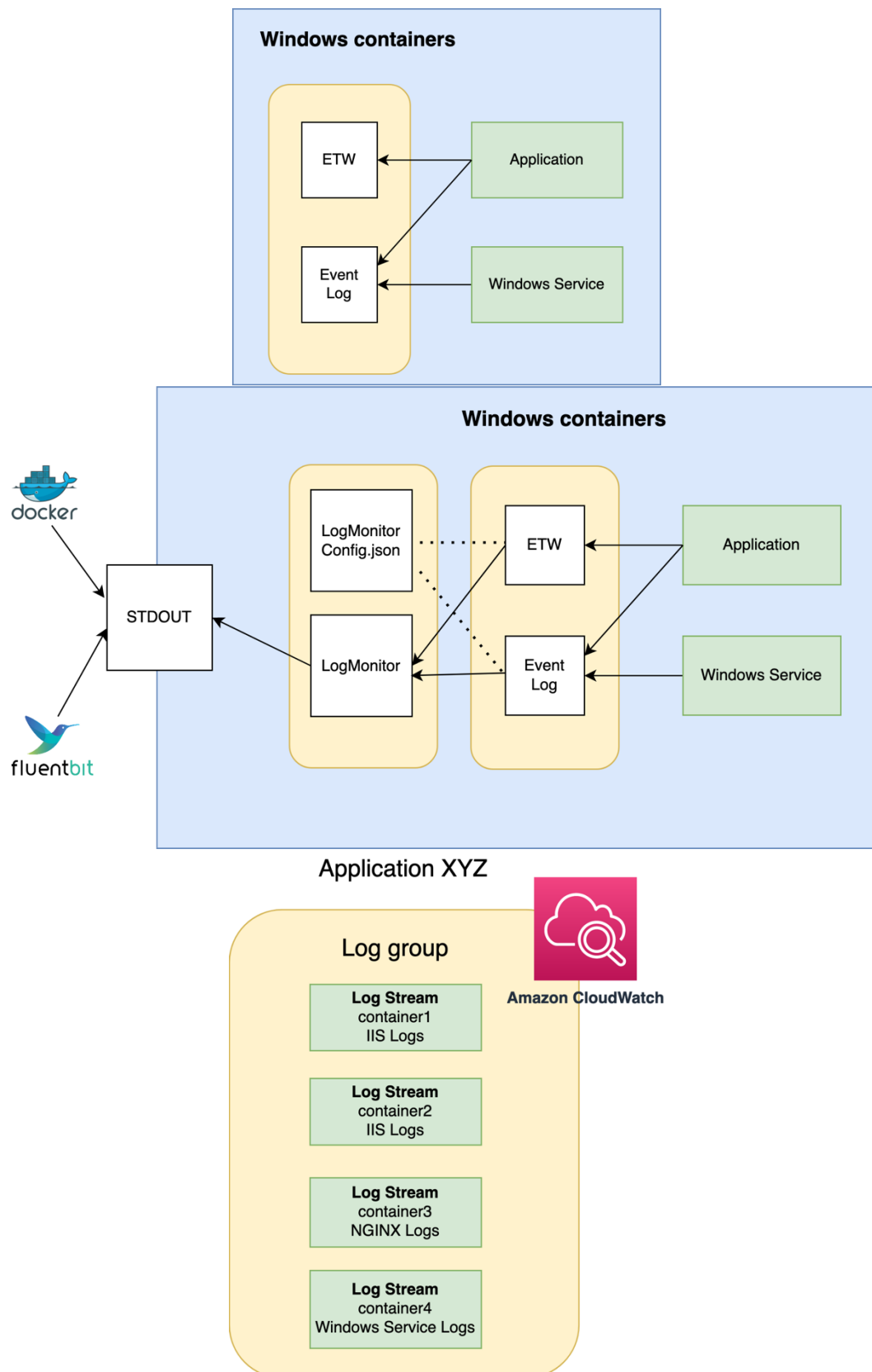


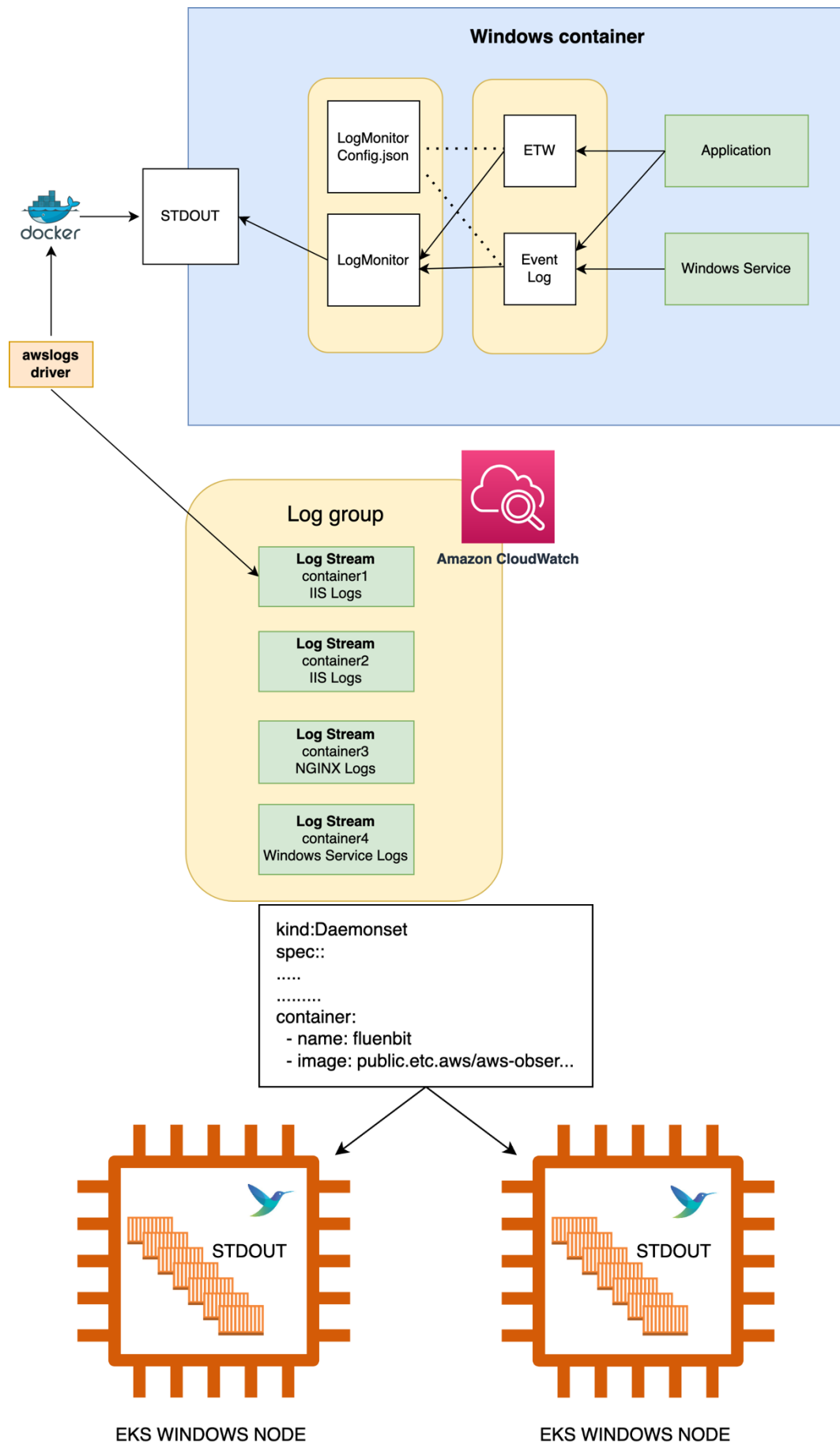
مرحبا 歡迎

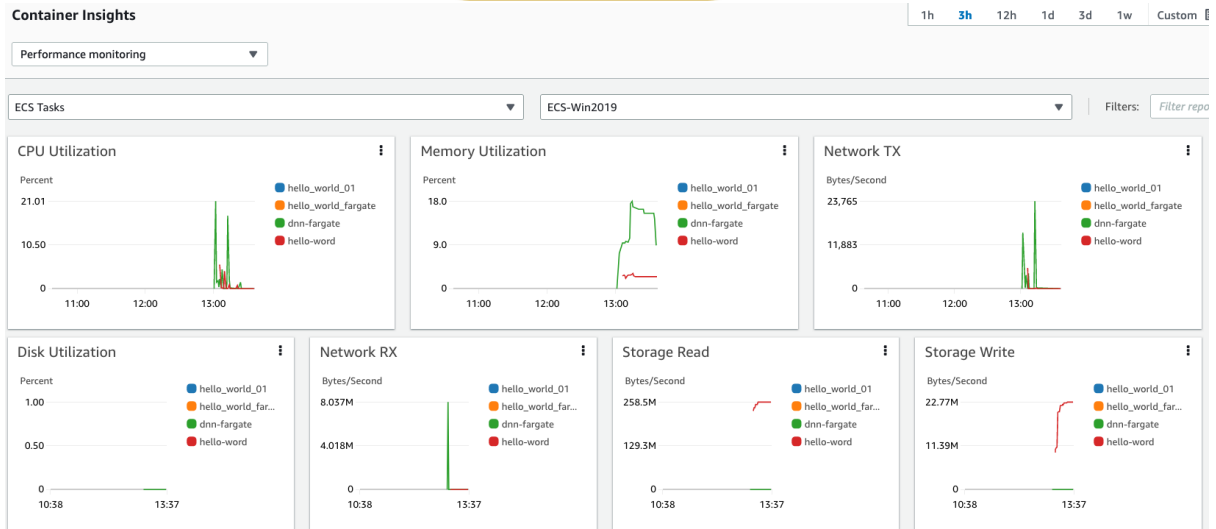
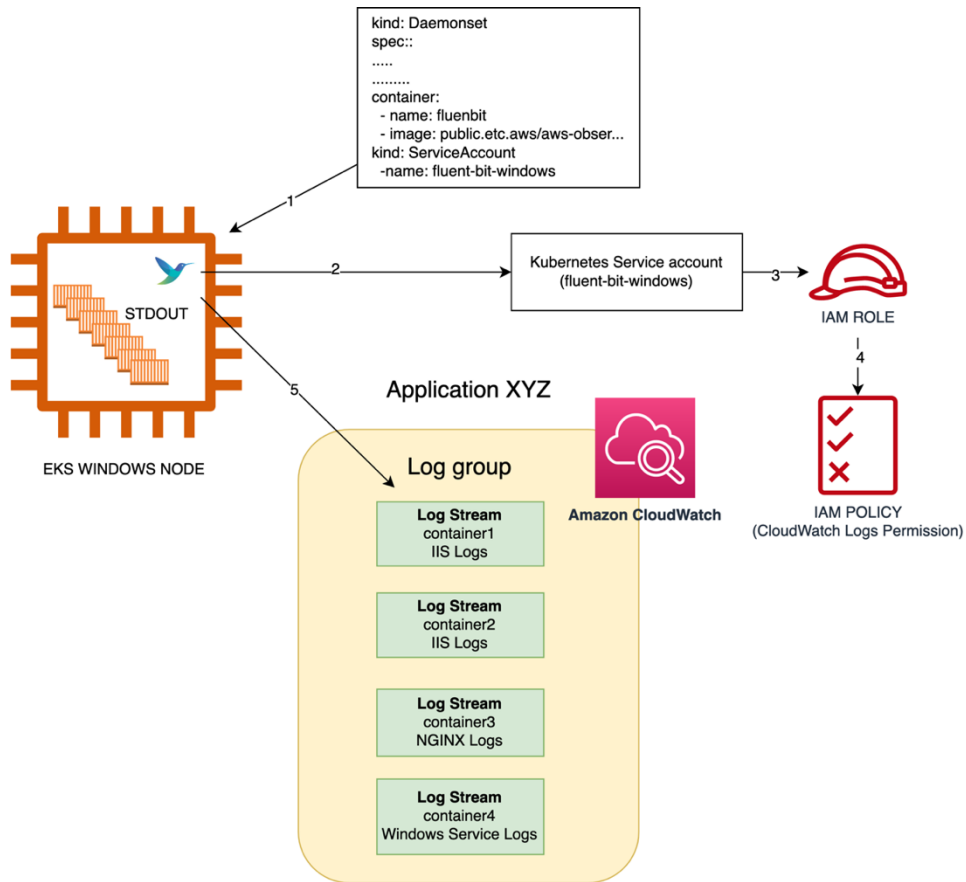
Witamy



Chapter 11: Monitoring and Logging







Chapter 12: Managing a Windows Container's Image Life Cycle

Security Update Guide

The Microsoft Security Response Center (MSRC) investigates all reports of security vulnerabilities affecting Microsoft products and services, and provides the information you need to manage security risks and help keep your systems protected.

All Deployments **Vulnerabilities**

Oct 12, 2022 - Dec 12, 2022

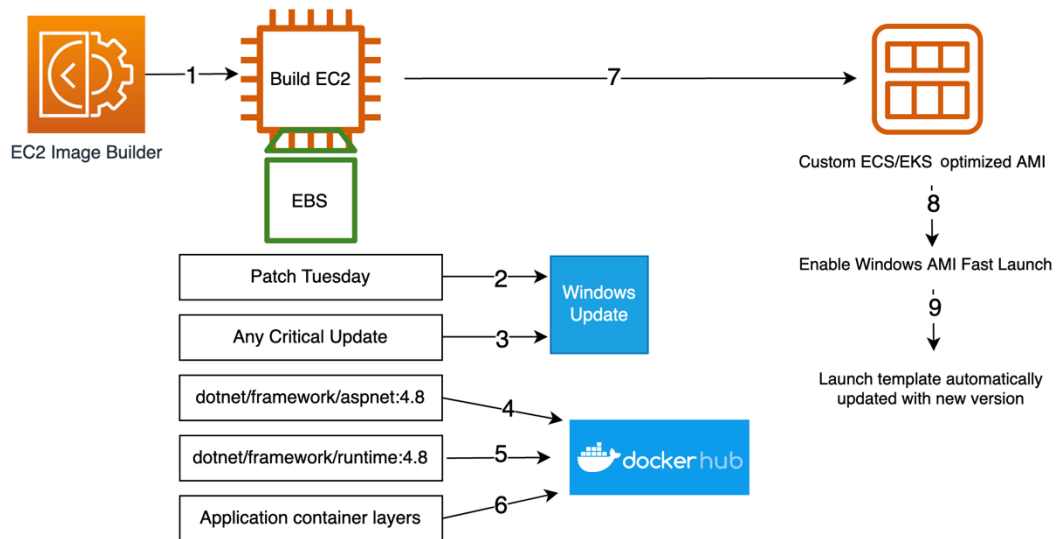
Windows Server No grouping

Release Date	Last Updated	CVE Number ↑	CVE Title	Tag
Nov 8, 2022	-	CVE-2022-41118	Windows Scripting Languages Remote Code Execution Vulnerability	Windows Scripting
Nov 8, 2022	Nov 15, 2022	CVE-2022-41064	.NET Framework Information Disclosure Vulnerability	.NET Framework
Oct 11, 2022	Nov 18, 2022	CVE-2022-38045	Windows Server Service Elevation of Privilege Vulnerability	Windows Server Service
Nov 8, 2022	-	CVE-2022-38023	Netlogon RPC Elevation of Privilege Vulnerability	Windows Netlogon

```
},
"RootFS": {
  "Type": "layers",
  "Layers": [
    "sha256:d6fdd6832d95a5f537e0e7d87f2613ea9741ad9c20438b9d5a2697a883c4cd96",
    "sha256:5e610cf6f2545f0e6ff64a4e2dee049427c80892d8b3d5ac0440664f0624b5ed"
  ]
},
"RootFS": {
  "Type": "layers",
  "Layers": [
    "sha256:d6fdd6832d95a5f537e0e7d87f2613ea9741ad9c20438b9d5a2697a883c4cd96",
    "sha256:2f7d24ac68514c762d490bb4ce7ea9f9e323f8e8b2f890ed90eea76f34a3ede9"
  ]
}
```

```
PS C:\> docker pull mcr.microsoft.com/windows/servercore:ltsc2019
ltsc2019: Pulling from windows/servercore
b111c3320c94: Already exists
98ecc5bab1a6: Downloading [=====>] 580.1MB/841.1MB
```

Chapter 13: Working with Ephemeral Hosts



```
"AmiLaunchIndex": 0,  
"ImageId": "ami-07b5c6410423030d7",  
"InstanceId": "i-06f9d6a7520ac3e64",  
"InstanceType": "c5.xlarge",  
"KeyName": "instancekeypair",  
"LaunchTime": "2022-09-27T02:30:42+00:00",  
"Monitoring": {  
  "State": "disabled"
```

System log

Review system log for instance i-06f9d6a7520ac3e64 as of Thu Oct 13 2022 09:41:17 GMT-0500 (Central Daylight Time)


```
2022/09/27 02:36:22Z: Windows sysprep configuration complete.  
2022/09/27 02:36:27Z: Message: Waiting for meta-data accessibility...  
2022/09/27 02:36:27Z: Message: Meta-data is now available.  
2022/09/27 02:36:32Z: AMI Origin Version: 2022.07.13
```

```
"AmiLaunchIndex": 0,  
"ImageId": "ami-0c37ae8befcac4239",  
"InstanceId": "i-08494058be0eb5ff5",  
"InstanceType": "c5.xlarge",  
"LaunchTime": "2022-09-29T16:35:59+00:00",  
"Monitoring": {  
  "State": "disabled"
```



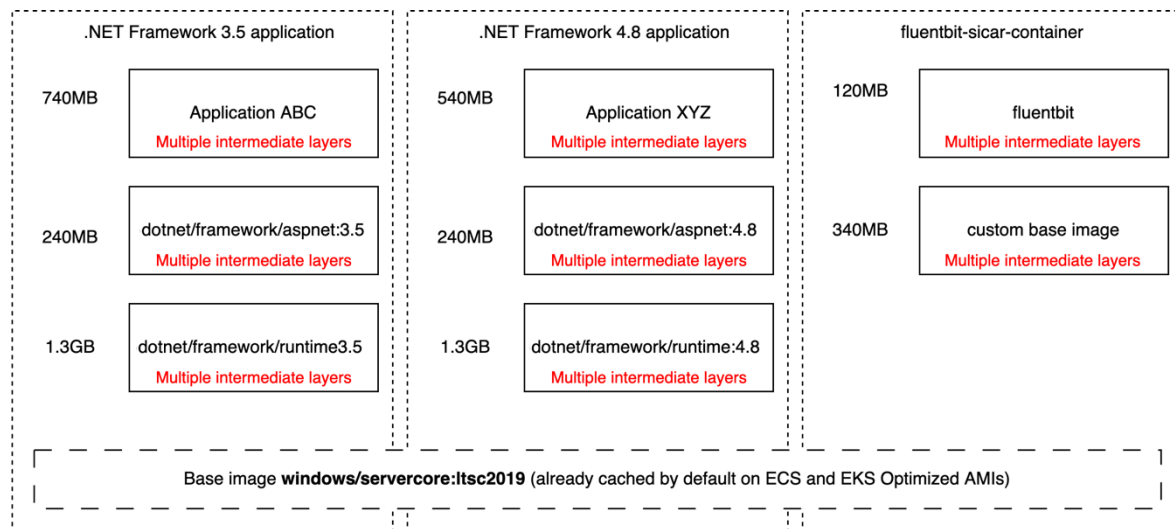
System log

Review system log for instance i-08494058be0eb5ff5 as of Thu Oct 13 2022 09:44:37 GMT-0500 (Central Daylight Time)



```
2022/09/29 16:37:54Z: Windows sysprep configuration complete.  
2022/09/29 16:37:58Z: Message: Waiting for meta-data accessibility...  
2022/09/29 16:37:58Z: Message: Meta-data is now available.  
2022/09/29 16:38:03Z: AMI Origin Version: 2022.09.14
```


Chapter 14: Implementing a Container Image Cache Strategy



By default, the Docker daemon and containerd pull **three layers** of an image simultaneously.

Concurrent I/O with OS initialization
Read I/O metadata
Write I/O pulling and extracting layer

Amazon EBS (Storage)

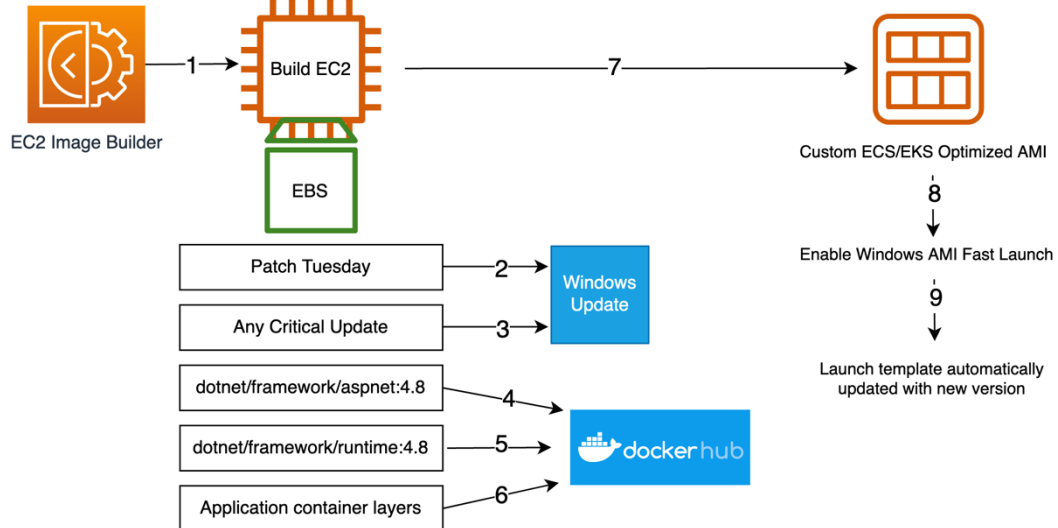
```
PS C:\> docker pull mcr.microsoft.com/dotnet/framework/aspnet:4.8
4.8: Pulling from dotnet/framework/aspnet
8185ee4ed646: Downloading [=====>] 926.7MB/1.66GB
bf56ff1ef993: Download complete
09f8fa5d46ee: Downloading [=====>] 547.1MB/928.6MB
830a738d8883: Download complete
06f5409051e0: Download complete
cf04e1604d25: Download complete
3261c9024fb5: Download complete
73b6efbc686e: Download complete
8bd0f7eee9c0: Download complete
6f03fdb3a94e: Download complete

PS C:\> docker pull mcr.microsoft.com/dotnet/framework/aspnet:4.8
4.8: Pulling from dotnet/framework/aspnet
8185ee4ed646: Extracting [=====>] 1.56GB/1.66GB
bf56ff1ef993: Download complete
09f8fa5d46ee: Download complete
830a738d8883: Download complete
06f5409051e0: Download complete
cf04e1604d25: Download complete
3261c9024fb5: Download complete
73b6efbc686e: Download complete
8bd0f7eee9c0: Download complete
6f03fdb3a94e: Download complete
```

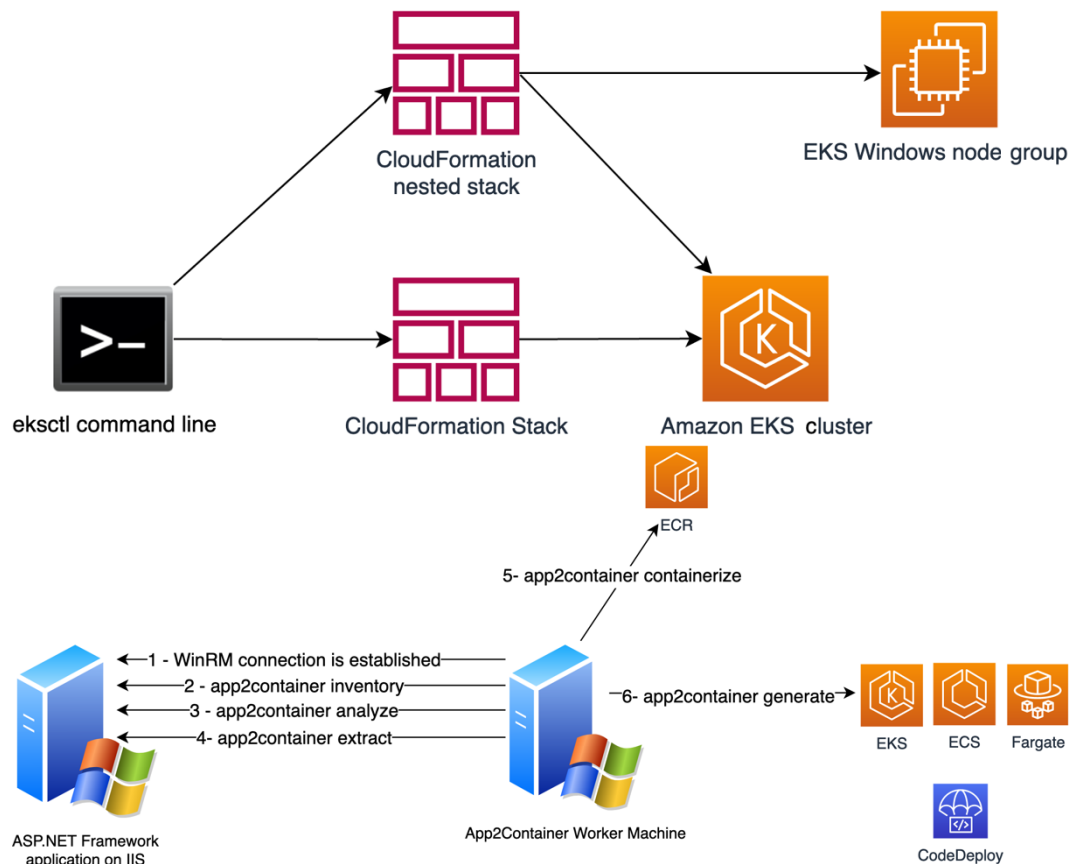
Administrator: Windows PowerShell

```
PS C:\> docker pull mcr.microsoft.com/dotnet/framework/aspnet:4.8
4.8: Pulling from dotnet/framework/aspnet
8185ee4ed646: Extracting [=====>] 1.525GB/1.66GB
bf56ff1ef993: Download complete
09f8fa5d46ee: Download complete
830a738d8883: Download
06f5409051e0: Downlo
cf04e1604d25: Downlo
3261c9024fb5: Downlo
73b6efbc686e: Downlo
8bd0f7eee9c0: Downlo
6f03fdb3a94e: Downlo
```

Task Manager			
File Options View			
Processes Performance Users Details Services			
Name	Status	CPU	Memory
Antimalware Service Executable		27.2%	135.5 MB
dockerd		23.4%	23.0 MB



Chapter 15: AWS Windows Containers Deployment Tools



```
[example] copilot init main ★
Note: It's best to run this command in the root of your Git repository.
Welcome to the Copilot CLI! We're going to walk you through some questions
to help you get set up with an application on ECS. An application is a collection of
containerized services that operate together.

What would you like to name your application? [?] for help] █

Deploy: Yes

: Creating the infrastructure for the test environment.
- Virtual private cloud on 2 availability zones to hold your services [In Progress]
- Internet gateway to connect the network to the internet [In Progress]
- Public subnets for internet facing services [In Progress]
- Private subnets for services that can't be reached from the internet [In Progress]
- Routing tables for services to talk with each other [In Progress]
- ECS Cluster to hold your services [Complete]
- Application load balancer to distribute traffic [In Progress]
```