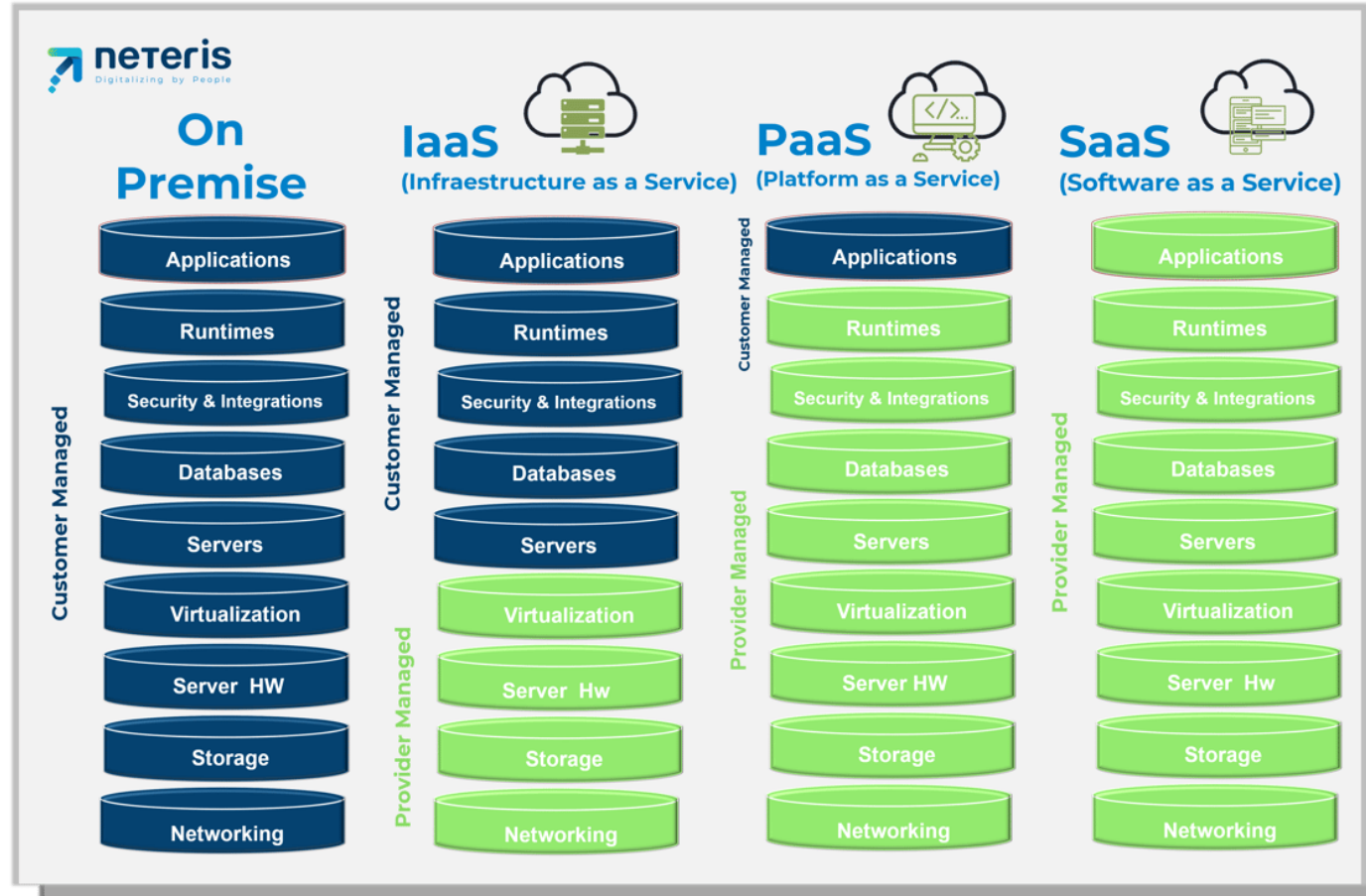# AZURE

KASIM BÖLÜCÜ

Azure Servisler

Hesaplama yapılması

- Lisanslar hibrit olarak seçildi fazladan lisans parası ödemiyoruz.

- Vmler son teknolojik olması açısından DsV5 olarak seçildi.

- DBler için SqlServer kurulumu eklendi fakat lisans hibrit olarak seçildiği için lisans parası eklenmedi.

- WebServer için Linux-CentOs işletim sistemi belirlendi çünkü sunucular için uygun bir işletim sistemi ayrıca DasV5 vm kullanıldı çünkü amd işlemciler sunucular için daha verimli çalışıyor. (Ve biraz farklılık olması adına)

- SFTP için A serisi vm seçilebilinirdi ama 1 yıl sonra kaldırılacağı için ve daha verimli olması açısından BsV2 yani B serisini uygun gördüm.

- Vmler için gerekli diskler tanımlandı ancak DB vmler için fazladan 1TB HDD disk eklenmesi gerekiyordu, bu diskleri Yönetilen Disk olarak tanımladım ve hesaplanabilmesi için ekledim.

- Dosya sunucusu yoğun depolama işleri için olan L serisi kullanılabilinirdi ama belirlenen özellikler için uygun vm yoktu.

- Backuplar haftada bir olacak şekilde 2 hafta ve 4 hafta süreyle saklanması için ayrı ayrı ayarlandı. Hepsinde yedekleme türü biraz daha güvenli ve uygun fiyatlı olması için ZRS olarak belirlendi. Yani aynı coğrafi bölge içinde farklı bir zone içinde yedekleme yapılacak. Daha güvenli olması için farklı region içinde yedekleme olan GRS kullanılabilinir.

- Sadece Vm ler için ön ödeme maliyeti hesaplandı. Aylık hesaplama dışında Yıllık ve 3 Yıllık hesaplama için Tasarruf planı veya Ayrılmış örnekler seçebilirdim, ben Ayrılmış örnekler seçerek devam ettim çünkü bütün gereksinimlerimiz önceden belirlenmiş olarak kabul ettim ve bu sayede (1 yıl için %41) (3 yıl için ise %62) indirim oranı ile hesaplama yapmış oldum. Eğer müşteri farklı bir senaryo düşünüyor ise bu konuda değişiklik yapılmalı net bir bilgi sağlanarak.

- DRC için ise 9 tane instance sayısı belirleyerek Azure Site Recovery ekledim. Çünkü 9 tane korunması gereken sanal makinaya sahibim.

Microsoft Azure Estimate

BitirmeProjesi

					AYLIK		1 Yıllık		3 Yıllık	
Service category	Service type	Custom name	Region	Description	Estimated monthly cost	Estimated upfront cost	Estimated monthly cost	Estimated upfront cost	Estimated monthly cost	Estimated upfront cost
Compute	Virtual Machines	ERP	West Europe	2 D4s v5 (4 vCPUs, 16 GB RAM) x 730 Hours (Pay as you go), Windows (AHB), OS Only; 1 managed disk – P30; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$484,48	$0,00	$148,68	$2.377,99	$148,68	$4.593,74
Compute	Virtual Machines	DB	West Europe	2 D4s v5 (4 vCPUs, 16 GB RAM) x 730 Hours (Pay as you go), Windows (AHB), SQL Enterprise (AHB); 2 managed disks – P30; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$633,16	$0,00	$297,36	$2.377,99	$297,36	$4.593,74
Compute	Virtual Machines	Web-Server	West Europe	1 D8as v5 (8 vCPUs, 32 GB RAM) x 730 Hours (Pay as you go), Linux, (Pay as you go); 1 managed disk – P30; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$452,36	$0,00	$148,68	$2.149,97	$148,68	$4.154,08
Compute	Virtual Machines	File-Server	West Europe	1 D4 v5 (4 vCPUs, 16 GB RAM) x 730 Hours (Pay as you go), Windows (AHB), OS Only; 3 managed disks – S30; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$290,78	$0,00	$122,88	$1.188,99	$122,88	$2.296,87
Compute	Virtual Machines	RDS-1	West Europe	1 D8s v5 (8 vCPUs, 32 GB RAM) x 730 Hours (Pay as you go), Windows (AHB), OS Only; 2 managed disks – P30; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$633,16	$0,00	$297,36	$2.377,03	$297,36	$4.594,01
Compute	Virtual Machines	RDS-2	West Europe	1 D8s v5 (8 vCPUs, 32 GB RAM) x 730 Hours (Pay as you go), Windows (AHB), OS Only; 2 managed disks – P30; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$633,16	$0,00	$297,36	$2.377,03	$297,36	$4.594,01
Compute	Virtual Machines	SFTP	West Europe	1 B2ls v2 (2 vCPUs, 4 GB RAM) x 730 Hours (Pay as you go), Windows (AHB), OS Only; 1 managed disk – S20; Inter Region transfer type, 5 GB outbound data transfer from West Europe to East Asia	$56,80	$0,00	$21,76	$248,00	$21,76	$479,08
Storage	Managed Disks	DB-1024GB-HDD	West Europe	Managed Disks, Standard HDD, S30 Disk Type 2 Disks, 100 Storage transactions; Pay as you go	$81,97	$0,00	$81,97	$0,00	$81,97	$0,00
Management and governance	Azure Backup	Backup-ERP	West Europe	Azure VMs, 2 Instance(s) x 1 TB, ZRS Redundancy, Moderate Average Daily Churn, 0 TB Average monthly snapshot usage data	$134,55	$0,00	$134,55	$0,00	$134,55	$0,00
Management and governance	Azure Backup	Backup-DB	West Europe	Azure VMs, 2 Instance(s) x 3 TB, ZRS Redundancy, Moderate Average Daily Churn, 0 TB Average monthly snapshot usage data	$394,61	$0,00	$394,61	$0,00	$394,61	$0,00
Management and governance	Azure Backup	Backup-WEB	West Europe	Azure VMs, 1 Instance(s) x 1 TB, ZRS Redundancy, Moderate Average Daily Churn, 0 TB Average monthly snapshot usage data	$72,43	$0,00	$72,43	$0,00	$72,43	$0,00
Management and governance	Azure Backup	Backup-FileServer	West Europe	Azure VMs, 1 Instance(s) x 3 TB, ZRS Redundancy, Moderate Average Daily Churn, 0 TB Average monthly snapshot usage data	$181,82	$0,00	$181,82	$0,00	$181,82	$0,00
Management and governance	Azure Backup	Backup-RDS-1	West Europe	Azure VMs, 1 Instance(s) x 2 TB, ZRS Redundancy, Moderate Average Daily Churn, 0 TB Average monthly snapshot usage data	$124,55	$0,00	$124,55	$0,00	$124,55	$0,00
Management and governance	Azure Backup	Backup-RDS-2	West Europe	Azure VMs, 1 Instance(s) x 2 TB, ZRS Redundancy, Moderate Average Daily Churn, 0 TB Average monthly snapshot usage data	$134,87	$0,00	$134,87	$0,00	$134,87	$0,00
Management and governance	Azure Backup	Backup-SFTP	West Europe	Azure VMs, 1 Instance(s) x 512 GB, ZRS Redundancy, Moderate Average Daily Churn, 0 GB Average monthly snapshot usage data	$41,22	$0,00	$41,22	$0,00	$41,22	$0,00
Management and governance	Azure Site Recovery		North Europe	0 Customer instances, 9 Azure instances	$225,00	$0,00	$225,00	$0,00	$225,00	$0,00
Support		Support			$0,00	$0,00	$0,00	$0,00	$0,00	$0,00
		Licensing Program		Microsoft Customer Agreement (MCA)						
		Billing Account								
		Billing Profile								
		Total			$4.574,91	$0,00	$2.725,09	$13.096,99	$2.725,09	$25.305,54

Resource Groups Oluşturma

Azure Portal

Home > Resource groups >

Create a resource group ...

Basics   Tags   Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. Learn more ⬈

Project details

Subscription * ⓘ   [Azure-sub-demo ⌄]

     Resource group * ⓘ   [rg-App-eu   ✓]

Resource details

Region * ⓘ   [(Europe) West Europe ⌄]

[Review + create]   [< Previous]   [Next : Tags >]

Home > Resource groups >

Create a resource group ...

✅ Validation passed.

Basics   Tags   **Review + create**

Basics

Subscription   Azure-sub-demo

Resource group   rg-App-eu

Region   West Europe

Tags

None

[Create]   [< Previous]   [Next >]   Download a template for automation

Azure Bash

az ad user list --output table

az group create --location westeurope --name rg-App-eu

az group create --location westeurope --name rg-DB-eu

az group create --location westeurope --name rg-FileServer-eu

az group create --location westeurope --name rg-RDS-eu

az group create --location westeurope --name rg-SFTP-eu

az group list --output table

```
kasim [ ~ ]$ az group list --output table
Name                               Location      Status
---------------------------------  ----------    ---------
rg-App-eu                          westeurope    Succeeded
cloud-shell-storage-westeurope     westeurope    Succeeded
rg-DB-eu                           westeurope    Succeeded
rg-FileServer-eu                   westeurope    Succeeded
rg-RDS-eu                          westeurope    Succeeded
rg-SFTP-eu                         westeurope    Succeeded
kasim [ ~ ]$ 
```

VM Oluşturma

Azure Portal

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ
`Azure-sub-demo`

Resource group * ⓘ
`(New) rg-DB-eu`
Create new

Instance details

Virtual machine name * ⓘ
`vm-DB-1` ✓

Region * ⓘ
`(Europe) West Europe`

Availability options ⓘ
`No infrastructure redundancy required`

Security type ⓘ
`Trusted launch virtual machines`
Configure security features

Image * ⓘ
`⊞ Windows Server 2022 Datacenter: Azure Edition - x64 Gen2 (free services el`
See all images | Configure VM generation

VM architecture ⓘ
○ Arm64
● x64
ⓘ Arm64 is not supported with the selected image.

Size * ⓘ
`Standard_D4s_v5 - 4 vcpus, 16 GiB memory ($302,22/month)`
See all sizes

Administrator account

Username * ⓘ
`azureuser` ✓

Password * ⓘ
`••••••••••••` ✓

Confirm password * ⓘ
`••••••••••••` ✓

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ⓘ
● None
○ Allow selected ports

Select inbound ports
`Select one or more ports`

ⓘ All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create   < Previous   Next : Disks >

Review + create   < Previous   Next : Disks >

Azure Portal

Select a VM size   ⋯   ✕

🔍 Search by VM size...	vCPUs : **All**	RAM (GiB) : **All**	Display cost : **Monthly**	⊹ Add filter

Showing 776 VM sizes. | Subscription: Azure-sub-demo | Region: West Europe | Current size: Standard_D4s_v5 | Image: Windows Server 2022 Datacenter: Azure Edition | Learn more about VM sizes ⬈

Group by series ⌄

VM Size ↑↓	Type ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data disks ↑↓	Max IOPS ↑↓	Temp storage (GiB) ↑↓	Premium disk ↑↓	Cost/month ↑↓
B2ms ↗	General purpose	2	8	4	1920	16	Supported	$75,92
DS2_v2 ↗	General purpose	2	7	8	6400	14	Supported	$194,18
B4ms ↗	General purpose	4	16	8	2880	32	Supported	$151,84
D4s_v3 ↗	General purpose	4	16	8	6400	32	Supported	$309,52
DS3_v2 ↗	General purpose	4	14	16	12800	28	Supported	$389,09
⌄ D-Series v5		The 5th generation D family sizes recommended for your general purpose needs						
D2ds_v5	General purpose	2	8	4	3750	75	Supported	$166,44
D2lds_v5	General purpose	2	4	4	3750	75	Supported	$148,19
D2ls_v5	General purpose	2	4	4	3750	0	Supported	$137,97
D2s_v5	General purpose	2	8	4	3750	0	Supported	$151,11
D4ds_v5	General purpose	4	16	8	6400	150	Supported	$332,88
D4lds_v5	General purpose	4	8	8	6400	150	Supported	$296,38
D4ls_v5	General purpose	4	8	8	6400	0	Supported	$275,94
D4s_v5	General purpose	4	16	8	6400	0	Supported	$302,22
> D-Series v4		The 4th generation D family sizes for your general purpose needs						
> B-Series v2		Ideal for workloads that do not need continuous full CPU performance						
> B-Series		Ideal for workloads that do not need continuous full CPU performance						

Azure Portal

Azure Portal

Select a disk size

Browse available disk sizes and their features.

Storage type ⓘ

Standard HDD (locally-redundant storage) ▼

Size	Performance tier	Provisioned IOPS	Provisioned throughput	Max Shares ⓘ
32 GiB	S4	500	60	-
64 GiB	S6	500	60	-
128 GiB	S10	500	60	-
256 GiB	S15	500	60	-
512 GiB	S20	500	60	2
1024 GiB	S30	500	60	5
2048 GiB	S40	500	60	5
4096 GiB	S50	500	60	5
8192 GiB	S60	1300	300	5
16384 GiB	S70	2000	500	5
32767 GiB	S80	2000	500	5

Custom disk size (GiB) * ⓘ

1024

🗑 ✏

OK

Home > Windows Server >

Create a virtual machine

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. Learn more ⧉

VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host ⓘ ☐

ℹ Encryption at host is not registered for the selected subscription. Learn more about enabling this feature ⧉

OS disk

OS disk type * ⓘ Premium SSD (locally-redundant storage) ▼

Delete with VM ⓘ ☑

Key management ⓘ Platform-managed key ▼

Enable Ultra Disk compatibility ⓘ ☐

Ultra disk is not supported with selected security type.

Data disks for vm-DB-1

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM ⓘ		
0	vm-DB-1_DataDisk_0	1024	Premium SSD LRS	Read-only ▼	☐	🗑	✏
1	vm-DB-1_DataDisk_1	1024	Standard HDD LRS	Read-only ▼	☐	🗑	✏

Create and attach a new disk   Attach an existing disk

Review + create   < Previous   Next : Networking >

Azure Bash

```
az vm create \
  --resource-group rg-App-eu \
  --name vm-ERP-1 \
  --image Win2019Datacenter \
  --public-ip-sku Standard \
  --admin-username azureuser \
  --admin-password 'Password1232' \
  --size Standard_D4s_v5 \
  --os-disk-size-gb 1024 \


az vm list --output table
```

```
kasim [ ~ ]$ az vm list --output table
Name          ResourceGroup        Location        Zones
--------      -----------------    ----------      -------

vm-ERP-1      RG-APP-EU            westeurope
kasim [ ~ ]$ 
```

VM Kurulumundan Sonra Disk Ekleme

Azure Portal

Azure Portal

Save ✕ Discard ⟳ Refresh | ⚙ Additional settings ⨁ Feedback ✐ Troubleshoot

OS disk

⇄ Swap OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption ⓘ	Host caching ⓘ
vm-DB-1_OsDisk_1_751765e3a7154728ba0f8d8239c963b8	Premium SSD LRS	1024	5000	200	SSE with PMK	Read/write ▾

Data disks

🔍 Filter by name

Showing 2 of 2 attached data disks

＋ Create and attach a new disk   ✇ Attach existing disks

LUN ⓘ	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption ⓘ	Host caching ⓘ	
0	Disk-HDD ✇	Standard HDD LRS	1024	500	60	SSE with PMK	None ▾	✇
1	Disk-SSD ✇	Premium SSD LRS	1024	5000	200	SSE with PMK	Read-only ▾	✇

Azure Bash

```
az vm create \
  --resource-group rg-DB-eu \
  --name vm-DB-1 \
  --image Win2019Datacenter \
  --public-ip-sku Standard \
  --admin-username azureuser \
  --admin-password 'Password1232' \
  --size Standard_D4s_v5 \
  --os-disk-size-gb 1024 \


# Diski oluşturun
az disk create \
  --resource-group rg-DB-eu \
  --name Disk-HDD \
  --size-gb 1024 \
  --sku Standard_LRS \
  --location westeurope
az vm stop --resource-group rg-DB-eu --name vm-DB-1
az vm disk attach --resource-group rg-DB-eu --vm-name vm-DB-1 --name Disk-HDD --size-gb 1024 --sku Standard_LRS
az vm start --resource-group rg-DB-eu --name vm-DB-1
```

```
kasim [ ~ ]$ az disk create \
    --resource-group  rg-DB-eu \
    --name Disk-HDD \
    --size-gb 1024 \
    --sku Standard_LRS \
    --location westeurope

# Sanal makineyi durdur
az vm stop --resource-group rg-DB-eu --name vm-DB-1

# Diski ekleyin
az vm disk attach --resource-group rg-DB-eu --vm-name vm-DB-1 --name Disk-HDD --sku Standard_LRS

# Sanal makineyi yeniden başlat
az vm start --resource-group rg-DB-eu --name vm-DB-1
```

Azure Backup Silinmesi

Azure Portal

Azure Backup Kurulumu

Azure Portal

Azure Portal

Azure Portal

Azure DRC Kurulumu

Azure Portal

Azure Portal

Azure Portal

Azure Portal

Resource groups 📌 ···   ✕
Default Directory (sumak1997hotmail.onmicrosoft.com)

+ Create   ⚙ Manage view ∨   ↻ Refresh   ⬇ Export to CSV   ⟨⟩ Open query | 🏷 Assign tags

| Filter for any field... | Subscription equals **all** | Location equals **all** ✕ | ▽ Add filter |

Showing 1 to 7 of 7 records.   No grouping ∨   ☰ List view ∨

☐	Name ↑↓	Subscription ↑↓	Location ↑↓	
☐	cloud-shell-storage-westeurope	Azure-sub-demo	West Europe	···
☐	NetworkWatcherRG	Azure-sub-demo	West Europe	···
☐	rg-App-eu	Azure-sub-demo	West Europe	···
☐	rg-FileServer-eu	Azure-sub-demo	West Europe	···
☐	rg-RDS-eu	Azure-sub-demo	West Europe	···
☐	rg-SFTP-eu	Azure-sub-demo	West Europe	···
☐	rg-SFTP-eu-asr	Azure-sub-demo	North Europe	···

Azure Sanal VM Kullanıcı Adı ve Şifre Değiştirme

Azure Portal

Azure RDS Kurulumu

Azure Portal

Azure Portal

Azure Backup Restore Testi

Azure Portal

- Yedekleme işlemlerinde geri yükleme testleri yapmak, verilerinizi kaybetmeniz durumunda onları kurtarmanızı sağlayacak önemli bir adımdır.

- Geri yükleme testleri, yedekleme işleminin başarılı olup olmadığını ve verilerinizi kurtarabileceğinizi doğrulamanıza yardımcı olur.

- Sol menüden "Recovery Services vaults" seçeneğini seçin.

- Kurtarma hizmeti kasasını seçin.

- "Backup items" sekmesine tıklayın.

- Yedeklenen öğeyi seçin.

- "Restore" düğmesine tıklayın.

- Geri yüklemek istediğiniz verileri seçin ve "OK" düğmesine tıklayın.

Azure Portal

Azure Portal

Azure Portal

Azure Portal

Azure Portal

- Böylece yedekleme işleminin başarılı olup olmadığını yada yedeklere dönmek istedeğimizde bir sorun olup olmayacağını test etmiş olduk.

Azure DRC Failover Testi

Azure Portal

Azure Portal

Azure Portal