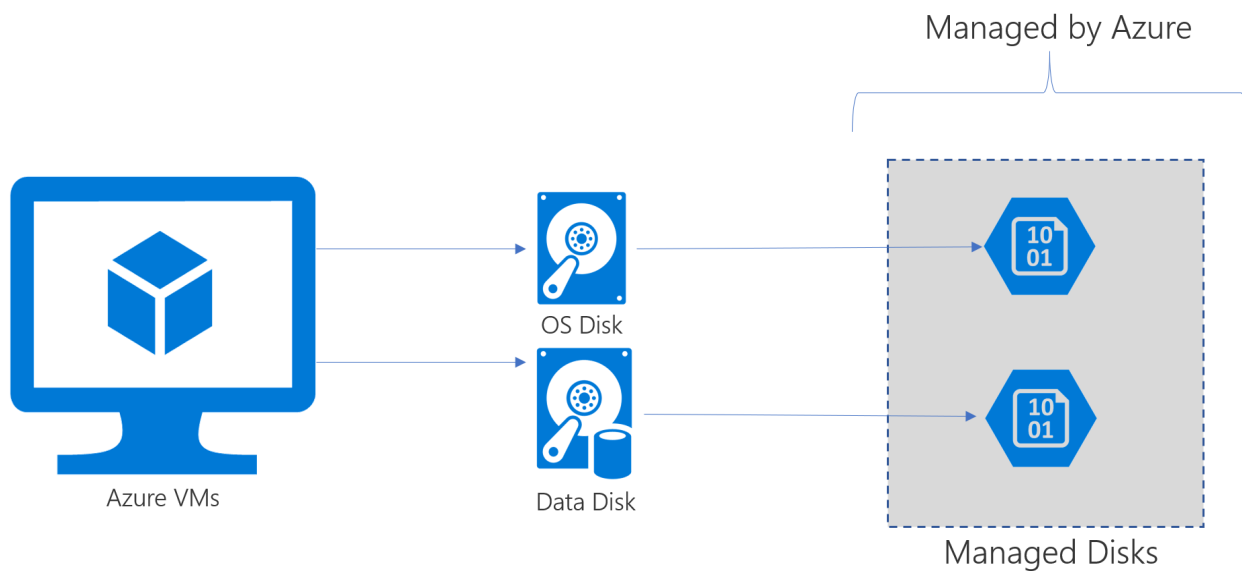
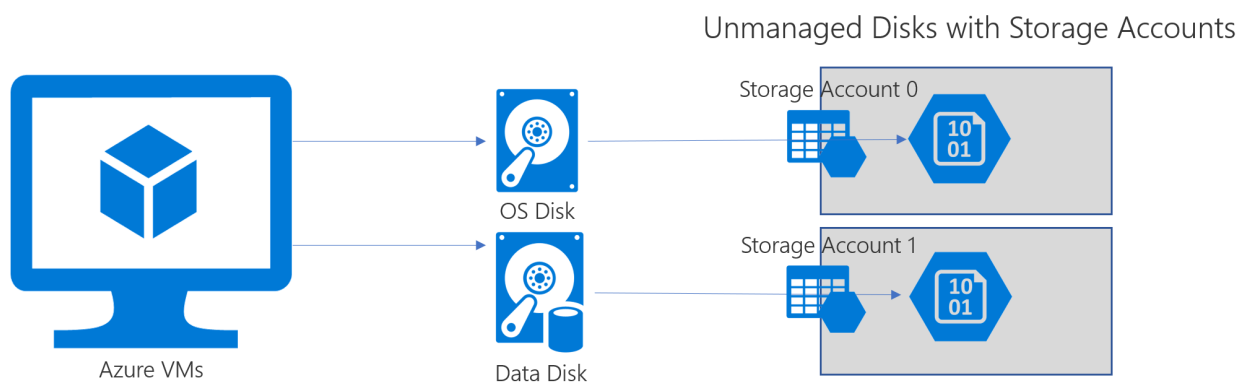


# 托管磁盘概念



# 托管磁盘优势

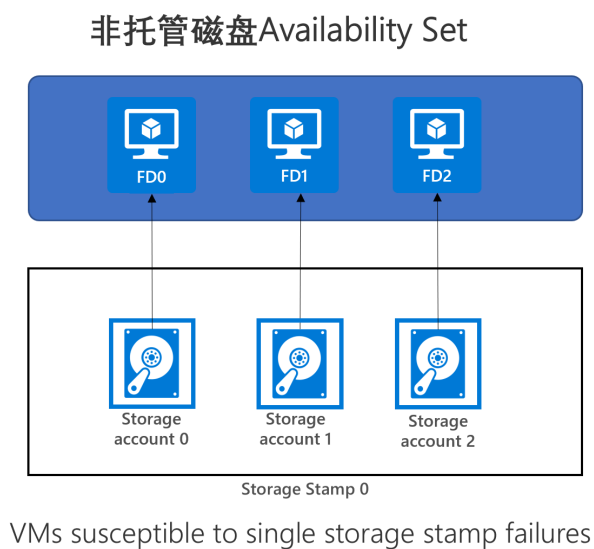
# 托管磁盘: 增强的扩展性

✓ 无需考虑存储账户限制

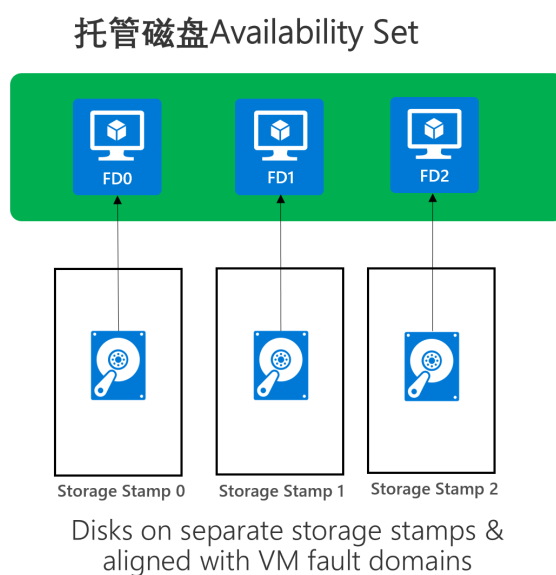


✓ 10,000 Managed Disks/Subscription/Region

## 托管磁盘: 提高安全性



vs



## 托管磁盘弱势

- 没有url, 无法像非托管磁盘一样进行copy等操作
- 只有LRS的复制, 无法通过Azure进行存储级跨Region容灾

## 托管磁盘操作

### 列出所有磁盘

```
az disk list -o table
```

```
hanyuan@Aubrey-Go: $ az disk list -o table
```

Name	ResourceGroup	Location	Zones	Skus	OsType	SizeGb	ProvisioningState
SS01_OsDisk_1_00dc84f3679e47e39524085e5f0c5da5	SS	southeastasia		Premium_LRS	Linux	31	Succeeded
linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47	STODEMORG	westus2		Premium_LRS	Linux	30	Succeeded

## 创建磁盘

### 创建一个空白磁盘

```
az disk create -g ResourceGroup -n DiskName --sku sku --size-gb size
```

```
hanyuan@Aubrey-Go: $ az disk create -g StoDemoRG -n diskdemo01 --sku Premium_LRS --size-gb 30
```

```
{
  "creationData": {
    "createOption": "Empty",
    "imageReference": null,
    "sourceResourceId": null,
    "sourceUri": null,
    "storageAccountId": null
  },
  "diskIopsReadWrite": 120,
  "diskMbpsReadWrite": 25,
  "diskSizeGb": 30,
  "encryptionSettings": null,
  "id": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/disks/diskdemo01",
  "location": "westus2",
  "managedBy": null,
  "name": "diskdemo01",
  "osType": null,
  "provisioningState": "Succeeded",
  "resourceGroup": "StoDemoRG",
  "sku": {
    "name": "Premium_LRS",
    "tier": "Premium"
  },
  "tags": {},
  "timeCreated": "2019-03-03T13:42:44.571830+00:00",
  "type": "Microsoft.Compute/disks",
  "zones": null
}
```

```
hanyuan@Aubrey-Go: $ az disk list -o table
```

Name	ResourceGroup	Location	Zones	Skus	OsType	SizeGb	ProvisioningState
SS01_OsDisk_1_00dc84f3679e47e39524085e5f0c5da5	SS	southeastasia		Premium_LRS	Linux	31	Succeeded
diskdemo01	STODEMORG	westus2		Premium_LRS		30	Succeeded
linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47	STODEMORG	westus2		Premium_LRS	Linux	30	Succeeded

### 从现有磁盘或快照复制出一块新磁盘

```
az disk create -g ResourceGroup -n DiskName --sku sku --source Source{Disk|SnapShot}`
```

```
hanyuan@Aubrey-Go: $ az disk create -g StoDemoRG -n diskdemo02 --sku StandardSSD_LRS --source linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47
```

```
{
  "creationData": {
    "createOption": "Copy",
    "imageReference": null,
    "sourceResourceId": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/disks/linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47",
    "sourceUri": null,
    "storageAccountId": null
  },
  "diskIopsReadWrite": 500,
  "diskMbpsReadWrite": 60,
  "diskSizeGb": 30,
  "encryptionSettings": null,
  "id": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/disks/diskdemo02",
  "location": "westus2",
  "managedBy": null,
  "name": "diskdemo02",
  "osType": "Linux",
  "provisioningState": "Succeeded",
  "resourceGroup": "StoDemoRG",
  "sku": {
    "name": "StandardSSD_LRS",
    "tier": "Standard"
  },
  "tags": {},
  "timeCreated": "2019-03-03T13:46:13.743562+00:00",
  "type": "Microsoft.Compute/disks",
  "zones": null
}
```

```
hanyuan@Aubrey-Go: $ az disk list -o table
```

Name	ResourceGroup	Location	Zones	Skus	OsType	SizeGb	ProvisioningState
SS01_OsDisk_1_00dc84f3679e47e39524085e5f0c5da5	SS	southeastasia		Premium_LRS	Linux	31	Succeeded
diskdemo01	STODEMORG	westus2		Premium_LRS		30	Succeeded
diskdemo02	STODEMORG	westus2		StandardSSD_LRS	Linux	30	Succeeded
linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47	STODEMORG	westus2		Premium_LRS	Linux	30	Succeeded

#### Tips

- 新磁盘和原盘必须要在同一个Region及资源组
- 如果新磁盘名字与现有磁盘相同，会直接覆盖

## 删除磁盘

```
az disk delete -g ResourceGroup -n DiskName
```

```
hanyuan@Aubrey-Go: $ az disk delete -g StoDemoRG -n diskdemo01
Are you sure you want to perform this operation? (y/n): y
hanyuan@Aubrey-Go: $ az disk list -o table
```

Name	ResourceGroup	Location	Zones	SKU	OsType	SizeGb	ProvisioningState
SS01_OsDisk_1_00dc84f3679e47e39524085e5f0c5da5	SS	southeastasia		Premium_LRS	Linux	31	Succeeded
diskdemo02	STODEMORG	westus2		StandardSSD_LRS	Linux	30	Succeeded
linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47	STODEMORG	westus2		Premium_LRS	Linux	30	Succeeded

## 从新建磁盘创建vm（新建磁盘必须系统磁盘）

```
az vm create -g ResourceGroup -n VMName --attach-os-disk DiskName --os-type {windows|linux}
```

```
hanyuan@Aubrey-Go: $ az vm create -g StoDemoRG -n linuxvm02 --attach-os-disk diskdemo02 --os-type linux
{
  "fqdns": "",
  "id": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/virtualMachines/linuxvm02",
  "location": "westus2",
  "macAddress": "00-0D-3A-F7-3D-01",
  "powerState": "VM running",
  "privateIpAddress": "10.0.1.5",
  "publicIpAddress": "13.66.221.247",
  "resourceGroup": "StoDemoRG",
  "zones": ""
}
```

## 托管磁盘快照

### 创建托管磁盘快照

```
az snapshot create -g ResourceGroup -n SnapshotName --source DiskName
```

```
hanyuan@Aubrey-Go: $ az snapshot create -g StoDemoRG -n ssdemo01 --source diskdemo02
{
  "creationData": {
    "createOption": "Copy",
    "imageReference": null,
    "sourceResourceId": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/disks/diskdemo02",
    "sourceUri": null,
    "storageAccountId": null
  },
  "diskSizeGb": 30,
  "encryptionSettings": null,
  "id": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/snapshots/ssdemo01",
  "location": "westus2",
  "managedBy": null,
  "name": "ssdemo01",
  "osType": "Linux",
  "provisioningState": "Succeeded",
  "resourceGroup": "StoDemoRG",
  "sku": {
    "name": "Standard_LRS",
    "tier": "Standard"
  },
  "tags": {},
  "timeCreated": "2019-03-03T14:20:23.865644+00:00",
  "type": "Microsoft.Compute/snapshots"
}
```

## 通过快照创建磁盘

```
hanyuan@Aubrey-Go:~$ az disk create -g StoDemoRG -n diskdemo03 --source ssdemo01
{
  "creationData": {
    "createOption": "Copy",
    "imageReference": null,
    "sourceResourceId": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/snapshots/ssdemo01",
    "sourceUri": null,
    "storageAccountId": null
  },
  "diskIopsReadWrite": 120,
  "diskMbpsReadWrite": 25,
  "diskSizeGb": 30,
  "encryptionSettings": null,
  "id": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRG/providers/Microsoft.Compute/disks/diskdemo03",
  "location": "westus2",
  "managedBy": null,
  "name": "diskdemo03",
  "osType": "Linux",
  "provisioningState": "Succeeded",
  "resourceGroup": "StoDemoRG",
  "sku": {
    "name": "Premium_LRS",
    "tier": "Premium"
  },
  "tags": {},
  "timeCreated": "2019-03-03T14:29:24.128448+00:00",
  "type": "Microsoft.Compute/disks",
  "zones": null
}
hanyuan@Aubrey-Go:~$ az disk list -o table
Name                               ResourceGroup Location      Zones      Sku           OsType      SizeGb      ProvisioningState
-----
SS01_0sDisk_1_00dc84f3679e47e39524085e5f0c5da5 SS          southeastasia Premium_LRS   Linux        31          Succeeded
diskdemo02                               STODEMORG   westus2      StandardSSD_LRS Linux        30          Succeeded
diskdemo03                               STODEMORG   westus2      Premium_LRS   Linux        30          Succeeded
linuxvm01_disk1_8f7ff9d80d25406d972c216a42b2bd47 STODEMORG   westus2      Premium_LRS   Linux        30          Succeeded
```

## 托管磁盘的导出

### 直接托管磁盘导出

```
az disk grant-access --duration-in-seconds time -g ResourceGroup -n DiskName
```

```
hanyuan@Aubrey-Go:~$ az disk grant-access --duration-in-seconds 6000 -g StoDemoRG -n diskdemo03
{
  "accessSas": "https://md-n52m3bhkrsfb.blob.core.windows.net/bc45glcprxd/abcd?sv=2017-04-17&sr=b&si=c7887657-3f51-4111-9668-28c306fd46dc&sig=I%2BInTMTf9eqBrt8PKoQJAGp5K7A3XWtrBsZEGN5alhc%3D"
}
hanyuan@Aubrey-Go:~$
```

#### Tips

- ‘--duration-in-seconds’表示链接的有效时间，单位为秒，注意根据带宽等实际情况设置，避免磁盘复制时过期
- 中国区目前不支持开机状态下导出，需要先关机并释放资源才能导出

### 快照导出

```
az snapshot grant-access --duration-in-seconds time -g ResourceGroup -n SnapshotName
```

## 跨Region复制托管磁盘

### 下载后上传

### 直接复制

#### 在目标Region创建存储账户

- Region: EastUS
- ResourceGroup: StoDemoRGEast
- StorageAccount: saeastdemo
- Container: vhds

### 复制托管磁盘

## 将链接复制为目标区域的非托管磁盘

```
az storage blob copy start --destination-blob BlobName --destination-container ContainerName --account-name AccountName --account-key AccountKey --source-uri uri
```

```
anyuan@Aubrey-Ge:~$ az storage blob copy start --destination-blob demoblob.vhd --destination-container vhd --account-name saeastdemo --account-key lHtP8dZuafZlUcPvldpFieJsgJmE1ShEzn6t0~C6F8e0b0t000k/vHqHJ3mIq/Kx0t1hmNVA== --source-uri https://ml-b2blobazstb.blob.core.windows.net/b-c6gicgrpu/socd-2017-04-17mar+4a1~C7837657~3451-4111-9668~2830f6d0d0a1e~K3b16b7TF9w8fXpK6JAG9E7ASV0w0b2Z96~1b~k3D
{"completionTime": null,
 "id": "40f4e07f-b65a-4061-938f-21a6a38062f",
 "progress": null,
 "source": null,
 "status": "pending",
 "statusDescription": null}
```

## 检查复制任务状态

```
az storage blob show --name BlobName --container-name ContainerName --account-name AccountName --account-key AccountKey --query '{status:properties.copy.status}'
```

```
anyuan@Aubrey-Ge:~$ az storage blob show --name demoblob.vhd --container-name vhd --account-name saeastdemo --account-key lHtP8dZuafZlUcPvldpFieJsgJmE1ShEzn6t0~C6F8e0b0t000k/vHqHJ3mIq/Kx0t1hmNVA== --query '{status:properties.copy.status}'
{"status": "success"}
```

## Tips

- 通过检查目标Blob的拷贝状态来确认是否已完成，如果显示为“success”说明已完成，可以进行下一步

## 将非托管磁盘转化为托管磁盘

```
az disk create -n DiskName -g ResoureGroup --source Bloburi
```

```
anyuan@Aubrey-Ge:~$ az disk create -n diskdemo01 -g StoDemoRGEast --source https://saeastdemo.blob.core.windows.net/vhds/demoblob.vhd
{"creationData": {
  "createOption": "Import",
  "imageReference": null,
  "sourceResourceId": null,
  "sourceUri": "https://saeastdemo.blob.core.windows.net/vhds/demoblob.vhd",
  "storageAccountId": null
},
 "diskIopsReadWrite": 120,
 "diskMbpsReadWrite": 25,
 "diskSizeGb": 30,
 "encryptionSettings": null,
 "id": "/subscriptions/99098b63-e41a-45b7-8a99-c5baf41b3b86/resourceGroups/StoDemoRGEast/providers/Microsoft.Compute/disks/diskdemo01",
 "location": "eastus",
 "managedBy": null,
 "name": "diskdemo01",
 "osType": null,
 "provisioningState": "Succeeded",
 "resourceGroup": "StoDemoRGEast",
 "sku": {
  "name": "Premium_LRS",
  "tier": "Premium"
},
 "tags": {},
 "timeCreated": "2019-03-03T15:46:19.023993+00:00",
 "type": "Microsoft.Compute/disks",
 "zones": null}
```