

AZ 104 ASSIGNMENT 6 LAB07 MANAGE AZURE STORAGE

Task 1: Provision the lab environment

```
PS /home/selma> $rgName = 'az104-07-rg0'
PS /home/selma> New-AzResourceGroup -Name $rgName -Location $location

ResourceGroupName : az104-07-rg0
Location         : eastus
ProvisioningState : Succeeded
Tags              :
ResourceId       : /subscriptions/82058535-5cb0-4107-841d-19e3434893a1/resourceGroups/az104-07-rg0

PS /home/selma> 
```

The screenshot shows the Microsoft Azure portal's Resource groups page. At the top, there's a search bar and a user profile. Below the header, the page title is 'Resource groups'. A table lists one resource group:

Name	Subscription	Location	... more
az104-07-rg0	Azure subscription 1	East US	...

```
PS /home/selma> code .
PS /home/selma> New-AzResourceGroupDeployment ` 
>>   -ResourceGroupName $rgName ` 
>>   -TemplateFile $HOME/az104-07-vm-template.json ` 
>>   -TemplateParameterFile $HOME/az104-07-vm-parameters.json ` 
>>   -AsJob

Id      Name          PSJobTypeName    State        HasMoreData      Location
--      --          -----          -----        -----          -----
2      Long Running  AzureLongRunni...  Running      True           localhost

PS /home/selma> 
```

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Home > Resource groups > az104-07-rg0

az104-07-rg0 Resource group

Search Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags

Subscription (move) Azure subscription 1 Deployments 1 Succeeded

Subscription ID 82058535-5cb0-4107-841d-19e3434893a1 Location East US

Tags (edit) Click here to add tags

Resources Recommendations

Filter for any field... Type equals all Location equals all Add filter

Showing 1 to 6 of 6 records. Show hidden types No grouping List view

Name	Type	Location
az104-07-nic0	Network Interface	East US
az104-07-nsg0	Network security group	East US
az104-07-pip0	Public IP address	East US
az104-07-vm0	Virtual machine	East US
az104-07-vm0_disk1_84ed31a288fe45f0a966516e5ec9ab29	Disk	East US

< Previous Page 1 of 1 Next >

Give feedback

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Home > Resource groups > az104-07-rg0

az104-07-rg0 | Resource visualizer Resource group

Search Choose resources Reset diagram Zoom to fit Refresh Export PNG Feedback

Virtual machine

az104-07-vm0 Disk Network interface

az104-07-vnet0 Public IP address Network security group

Events Settings

Deployments Security Policies Properties Locks

Cost Management

Cost analysis Cost alerts (preview) Budgets Advisor recommendations

Task 2: Create and configure Azure Storage accounts

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Home > selmasmlg1014_1668168334758 | Overview > selmasmlg1014

selmasmlg1014 | Redundancy

Storage account

Search Save Discard Prepare for failover Refresh

Azure Storage replication copies your data so that it is protected from transient hardware failures, network or power outages, and natural disasters. If an outage renders the primary endpoint unavailable, then you can initiate a failover to the secondary endpoint to rapidly restore write access to your data. [Learn more about storage account failover](#)

Redundancy (i) Read-access geo-redundant storage (RA-GRS)

Last failover time -

Storage endpoints View all

Location	Data center type	Status	Failover
East US	Primary	Available	-
West US	Secondary	Available	-



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Home > selmasmlg1014_1668168334758 | Overview > selmasmlg1014

selmasmlg1014 | Redundancy

Storage account

Search Save Discard Prepare for failover Refresh

Azure Storage replication copies your data so that it is protected from transient hardware failures, network or power outages, and natural disasters. If an outage renders the primary endpoint unavailable, then you can initiate a failover to the secondary endpoint to rapidly restore write access to your data. [Learn more about storage account failover](#)

Redundancy (i) Locally-redundant storage (LRS)

Last failover time -

Storage endpoints View all

Location	Data center type	Status
East US	Primary	Available



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Storage account settings

- Static website
- Lifecycle management
- Azure search
- Settings**
- Configuration
- Data Lake Gen2 upgrade

Version 1.2

Permitted scope for copy operations (preview)

Blob access tier (default) Hot Cool

Changing the access tier may result in additional charges. [Learn more about changing access tier](#)

Large file shares

selmasmlg1014 | Configuration

Storage account

Search Save Discard Refresh

Secure transfer required Enabled

Allow Blob public access Enabled

Allow storage account key access Enabled

Allow recommended upper limit for shared access signature (SAS) expiry interval Disabled

Default to Azure Active Directory authorization in the Azure portal Disabled

Minimum TLS version Version 1.2

Permitted scope for copy operations (preview)

Blob access tier (default) Cool Hot

Large file shares Disabled

selmasmlg1014 | Containers

Storage account

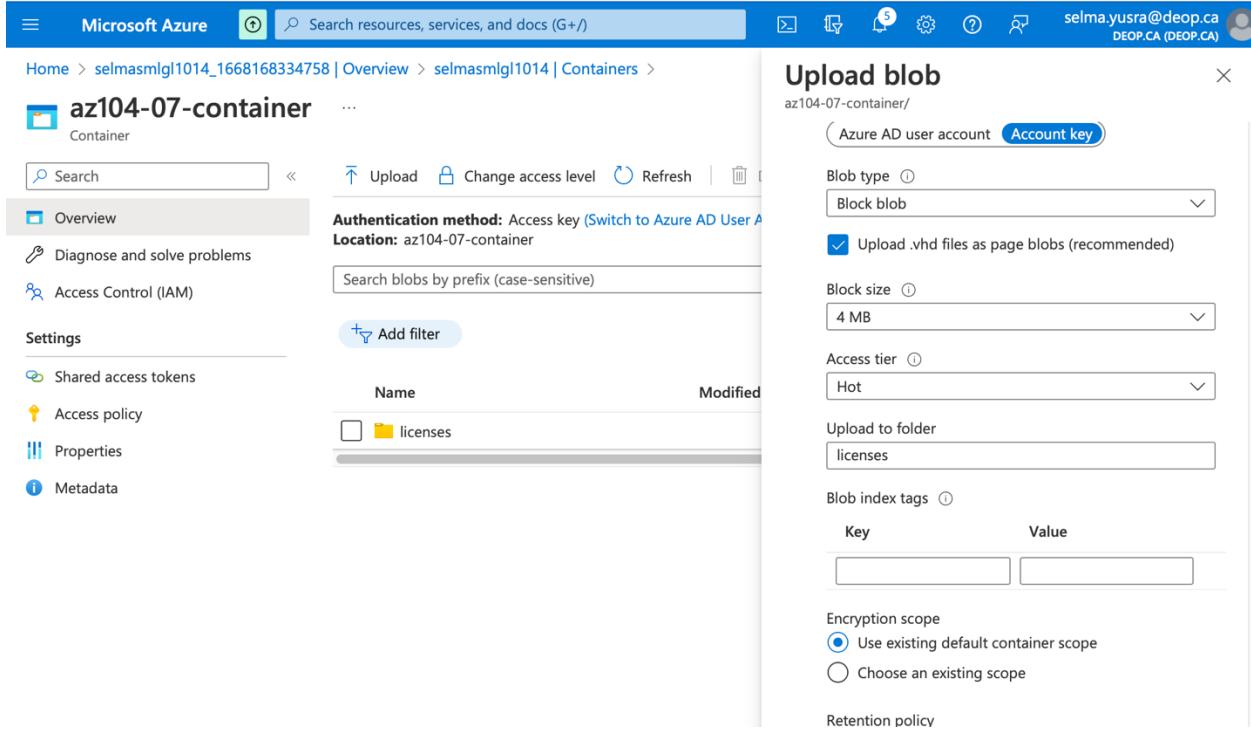
Search + Container Change access level Restore containers Refresh Delete

Search containers by prefix Show deleted containers

Name	Last modified	Public access level	Lease state
\$logs	11/11/2022, 3:06:05 P...	Private	Available
az104-07-container	11/11/2022, 3:33:38 P...	Private	Available

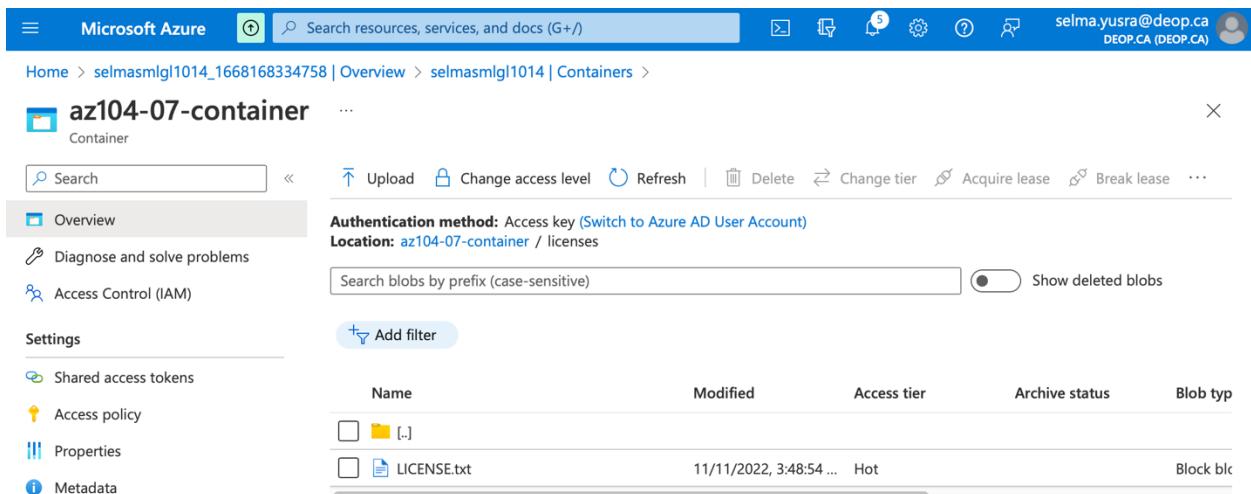
Overview Activity log Tags Diagnose and solve problems Access Control (IAM) Data migration

Task 3: Manage blob storage



The screenshot shows the Microsoft Azure Storage Blob upload dialog. The left pane displays the 'az104-07-container' overview, showing a single blob named 'licenses'. The right pane is titled 'Upload blob' and contains the following fields:

- Authentication method:** Access key (Switch to Azure AD User Account)
- Location:** az104-07-container
- Search blobs by prefix (case-sensitive):** licenses
- Add filter:** +
- Blob type:** Block blob
- Upload .vhf files as page blobs (recommended):** checked
- Block size:** 4 MB
- Access tier:** Hot
- Upload to folder:** licenses
- Blob index tags:** Key Value
- Encryption scope:** Use existing default container scope (radio button selected)
- Retention policy:** (disabled)



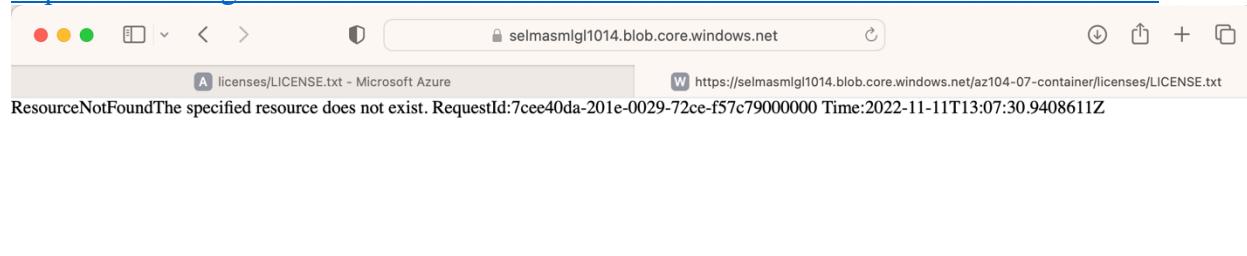
The screenshot shows the Microsoft Azure Storage blob list for the 'az104-07-container'. The left pane displays the container overview. The right pane lists the blobs:

Name	Modified	Access tier	Archive status	Blob type
[..]	11/11/2022, 3:48:54 ...	Hot		Block blob
LICENSE.txt	11/11/2022, 3:48:54 ...	Hot		Block blob

Additional controls include 'Upload', 'Change access level', 'Refresh', 'Delete', 'Change tier', 'Acquire lease', 'Break lease', and a 'Show deleted blobs' toggle switch.

Task 4: Manage authentication and authorization for Azure Storage

<https://selmasmlgl1014.blob.core.windows.net/az104-07-container/licenses/LICENSE.txt>



Blob SAS token

sp=r&st=2022-11-10T13:06:13Z&se=2022-11-11T21:06:13Z&spr=https&sv=2021-06-08&sr=b&sig=Pt2ZMd7mOkND67JCgISoI6tBCKXYGC5CZ46vHat7Dkk%3D

Blob SAS URL

<https://selmasmlgl1014.blob.core.windows.net/az104-07-container/licenses/LICENSE.txt?sp=r&st=2022-11-10T13:06:13Z&se=2022-11-11T21:06:13Z&spr=https&sv=2021-06-08&sr=b&sig=Pt2ZMd7mOkND67JCgISoI6tBCKXYGC5CZ46vHat7Dkk%3D>

Generate SAS token and URL

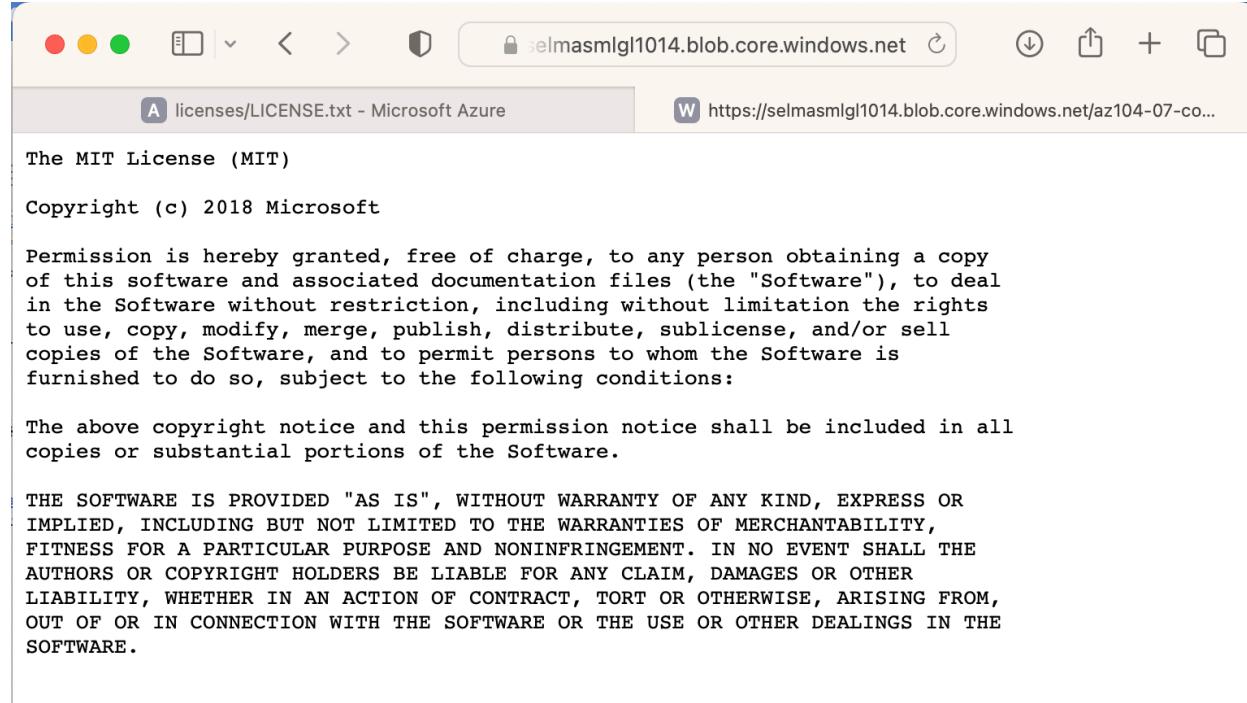
Blob SAS token (i)

sp=r&st=2022-11-10T13:06:13Z&se=2022-11-11T21:06:13Z&spr=https&sv=2021-06-08&sr=b&sig=Pt2ZMd7mO...

Copy Copied

Blob SAS URL

<https://selmasmlgl1014.blob.core.windows.net/az104-07-container/licenses/LICENSE.txt?sp=r&st=2022-11-10T13:06:13Z&se=2022-11-11T21:06:13Z&spr=https&sv=2021-06-08&sr=b&sig=Pt2ZMd7mO...>



Microsoft Azure Search resources, services, and docs (G+/)

Home > selmasmlgl1014_1668168334758 | Overview > selmasmlgl1014 | Containers >

az104-07-container

Container

Search Overview Diagnose and solve problems Access Control (IAM)

Upload Change access level Refresh Delete Change tier ...

You do not have permissions to list the data using your user account with Azure AD. Click to learn more about authenticating with Azure AD.
This request is not authorized to perform this operation using this permission.
RequestId:54e6512c-e01e-0036-2ee6-f5cf7d000000
Time:2022-11-11T15:58:46.8702924Z

Authentication method: Azure AD User Account (Switch to Access key)
Location: az104-07-container / licenses

Search blobs by prefix (case-sensitive) Show deleted blobs

Add filter

Name	Modified	Access tier	Archive status
[...]			

Microsoft Azure Search resources, services, and docs (G+/)

... > selmasmlgl1014 | Containers > az104-07-container | Access Control (IAM) >

Add role assignment

Got feedback?

Role Members * Conditions (optional) Review + assign

Selected role: Storage Blob Data Owner

Assign access to:

User, group, or service principal
 Managed identity

Members: + Select members

Name	Object ID	Type
No members selected		

Description: Optional

Select members

Select ⓘ

Search by name or email address

- abdulkirim.senoglu (Guest) abdulkirim.senoglu@thea...
- AdminAgents
- Ahmet Berkay Unal ahmet.unal@deop.ca
- Ahmet Aslan ahmet@deop.ca
- Akin Kuya akin.kuya@deop.ca

Selected members:

- Selma Yusra selma.yusra@... Remove

Microsoft Azure | Search resources, services, and docs (G+)

Home > selmasmlgl1014_1668168334758 | Overview > selmasmlgl1014 | Containers >

az104-07-container

Container

Search | Upload | Change access level | Refresh | Delete | Change tier | Acquire lease | Break lease | View snapshots | ...

Overview | Diagnose and solve problems | Access Control (IAM) | Settings | Shared access tokens | Access policy | Properties | Metadata

Authentication method: Azure AD User Account (Switch to Access key)
Location: az104-07-container

Search blobs by prefix (case-sensitive) | Show deleted blobs

Add filter

Name	Modified	Access tier	Archive status	Blob type
licenses				

Microsoft Azure | Search resources, services, and docs (G+)

Home > selmasmlgl1014_1668168334758 | Overview > Selma Yusra assignments - az104-07-container

az104-07-container | Access Control

Container

Search | Add | Check access | My access | View my level | Check access | Grant access | Grant access

Overview | Diagnose and solve problems | Access Control (IAM) | Settings | Shared access tokens | Access policy | Properties | Metadata

Current role assignments | Eligible assignments

Assignments for the selected user, group, service principal, or managed identity at this scope or inherited to this scope.

Search by assignment name or description

Role assignments (2) | Deny assignments (0) | Classic administrators (0)

Role	Description	Scope	Group assignment	Condition
Owner	Grants full access to manage all r...	Subscription (Inherited)	--	None
Storage Blob Data Owner	Allows for full access to Azure St...	This resource	--	Add

Task 5: Create and configure an Azure Files shares

Microsoft Azure | Search resources, services, and docs (G+)

Home > Storage accounts > selmasmlgl1014

selmasmlgl1014 | File shares

Storage account

Search | + File share | Refresh

File share settings

Active Directory: Not configured | Default share-level permissions: Disabled | Soft delete: 7 days | Maximum capacity: 5 TiB

Security: Maximum compatibility

Search file shares by prefix (case-sensitive) | Show deleted shares

Name	Modified	Tier	Quota	...
az104-07-share	11/11/2022, 7:44:20 PM	Transaction optimized	5 TiB	...

The screenshot shows the Azure Storage account interface. On the left, the 'az104-07-share' file share is selected. On the right, the 'Connect' section is open, providing instructions and PowerShell scripts for connecting from Windows.

Connect

az104-07-share

Windows

To connect to this Azure file share from Windows, choose from the following authentication methods and run the PowerShell commands from a normal (not elevated) PowerShell terminal:

Drive letter: Z

Authentication method: Storage account key

Hide Script

```
$connectTestResult = Test-NetConnection -ComputerName selmasmlgl1014.file.core.windows.net -Port 445
if ($connectTestResult.TcpTestSucceeded) {
    # Save the password so the drive will persist on reboot
    cmd.exe /C "cmdkey /add:'selmasmlgl1014.file.core.windows.net'""
    /user:'localhost\selmasmlgl1014'
    /pass:'CEoo2zZUzbSDsdOpYBjl+SV13YiboKwReM5msA/PFoXN9Dwqbplc8J20jHRxveh1IxZQhwX
    dNrLO+AST7/d9Pg=='"
    # Mount the drive
    New-PSDrive -Name Z -PSProvider FileSystem -Root "\\selmasmlgl1014.file.core.windows.net\az104-07-share" -Persist
} else {
    Write-Error -Message "Unable to reach the Azure storage account via port 445. Check to
make sure your organization or ISP is not blocking port 445, or use Azure P2S VPN, Azure S2S
VPN, or Express Route to tunnel SMB traffic over a different port."
}
```

```
$connectTestResult = Test-NetConnection -ComputerName
selmasmlgl1014.file.core.windows.net -Port 445
if ($connectTestResult.TcpTestSucceeded) {
    # Save the password so the drive will persist on reboot
    cmd.exe /C "cmdkey /add:'selmasmlgl1014.file.core.windows.net'""
    /user:'localhost\selmasmlgl1014'
    /pass:'CEoo2zZUzbSDsdOpYBjl+SV13YiboKwReM5msA/PFoXN9Dwqbplc8J20jHRxveh1IxZQhwX
    dNrLO+AST7/d9Pg=='"
    # Mount the drive
    New-PSDrive -Name Z -PSProvider FileSystem -Root
"\\selmasmlgl1014.file.core.windows.net\az104-07-share" -Persist
} else {
    Write-Error -Message "Unable to reach the Azure storage account via port 445. Check to
make sure your organization or ISP is not blocking port 445, or use Azure P2S VPN, Azure S2S
VPN, or Express Route to tunnel SMB traffic over a different port."
}
```

Microsoft Azure  Search resources, services, and docs (G+)

Home > Virtual machines > az104-07-vm0

az104-07-vm0 | Run command Virtual machine

Operations

Run command

Name

RunPowerShell

DisableNLA

DisableWindowsUpdate

EnableAdminA

EnableEMS

Run Command Script

RunPowerShellScript

PowerShell Script

```
1 $connectTestResult = Test-NetConnection -ComputerName selmasmlgl1014.file.core.windows.net -Port 445
2 if ($connectTestResult.TcpTestSucceeded) {
3     # Save the password so the drive will persist on reboot
4     cmd.exe /C "cmdkey /add:'selmasmlgl1014.file.core.windows.net' /user:'localhost\selmasmlgl1014'
5     # Mount the drive
6     New-PSDrive -Name Z -PSProvider FileSystem -Root "\\\selmasmlgl1014.file.core.windows.net\az104-07-
7 } else {
8     Write-Error -Message "Unable to reach the Azure storage account via port 445. Check to make sure y
9 }
```

Run

Microsoft Azure  Search resources, services, and docs (G+)

Home > Virtual machines > az104-07-vm0

az104-07-vm0 | Run command Virtual machine

Operations

Run command

Name

RunPowerShell

DisableNLA

DisableWindowsUpdate

EnableAdminA

EnableEMS

EnableRemote

EnableWindowsUpdate

IPConfig

RDPSettings

ResetRDPCert

SetRDPPort

Run Command Script

RunPowerShellScript

Script execution complete

PowerShell Script

```
1 $connectTestResult = Test-NetConnection -ComputerName selmasmlgl1014.file.core.windows.net -Port 445
2 if ($connectTestResult.TcpTestSucceeded) {
3     # Save the password so the drive will persist on reboot
4     cmd.exe /C "cmdkey /add:'selmasmlgl1014.file.core.windows.net' /user:'localhost\selmasmlgl1014'
5     # Mount the drive
6     New-PSDrive -Name Z -PSProvider FileSystem -Root "\\\selmasmlgl1014.file.core.windows.net\az104-07-
7 } else {
8     Write-Error -Message "Unable to reach the Azure storage account via port 445. Check to make sure y
9 }
```

Run

Output

```
CMDKEY: Credential added successfully.

Name      Used (GB)    Free (GB) Provider      Root
CurrentLocation
-----
Z          0.00        5120.00 FileSystem   \\selmasmlgl1014.file.core.windo...
```

New-Item -Type Directory -Path 'Z:\az104-07-folder'

New-Item -Type File -Path 'Z:\az104-07-folder\az-104-07-file.txt'

The screenshot shows two separate Azure portal windows.

Top Window: Run Command Script

- Left Sidebar:** Home > Virtual machines > az104-07-vm0
- Run Command Script Dialog:**
 - Title:** Run Command Script
 - Description:** RunPowerShellScript
 - Status:** Script execution in progress...
 - PowerShell Script:**

```
1 New-Item -Type Directory -Path 'Z:\az104-07-folder'
2
3 New-Item -Type File -Path 'Z:\az104-07-folder\az-104-07-file.txt'
```
 - Run Button:** A greyed-out button.
- Bottom Status Bar:** Microsoft Azure, Search resources, services, and docs (G+), selma.yusra@deop.ca DEOP.CA (DEOP.CA)

Bottom Window: Storage account file share

- Left Sidebar:** Home > Storage accounts > selmasmgl1014 | File shares > az104-07-share
- File Share Overview:**
 - Name:** az104-07-share
 - Type:** File share
- Toolbar:** Search, Upload, Add directory, Refresh, Delete directory, Properties
- Search Bar:** Search files by prefix
- Table:** Displays file contents.

Name	Type	Size
[..]	Directory	...
az-104-07-file.txt	File	0 B
- Bottom Status Bar:** Microsoft Azure, Search resources, services, and docs (G+), selma.yusra@deop.ca DEOP.CA (DEOP.CA)

Task 6: Manage network access for Azure Storage

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Home > Storage accounts > selmasmlgl1014

selmasmlgl1014 | Networking

Storage account

Search  Save  Discard  Refresh

Public network access

Enabled from all networks

Enabled from selected virtual networks and IP addresses

Disabled

 Configure network security for your storage accounts. [Learn more](#)

Virtual networks

 Add existing virtual network  Add new virtual network

Virtual Network	Subnet	Address range	Endpoint Status	Resource Group	Subscription
No network selected.					

Firewall

Add IP ranges to allow access from the internet or your on-premises networks. [Learn more](#).

Address range

46.2.50.43 

IP address or CIDR

Resource instances

Specify resource instances that will have access to your storage account based on their system-assigned managed identity.

Resource type	Instance name

```
Invoke-WebRequest -URI '[blob SAS URL]'
```

```
https://selmasmlgl1014.blob.core.windows.net/az104-07-
container/licenses/LICENSE.txt?sp=r&st=2022-11-10T13:06:13Z&se=2022-11-
11T21:06:13Z&spr=https&sv=2021-06-
08&s r=b&sig=Pt2ZMd7m0kND67JCgISoI6tBCKXYGC5CZ46vHat7Dkk%3D
```

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Home > Storage accounts > selmasmlgl1014

selmasmlgl1014 | Networking

Storage account

Search Save Discard Refresh

Firewalls and virtual networks Private endpoint connections Custom domain

Public network access

- Enabled from all networks
- Enabled from selected virtual networks and IP addresses
- Disabled

Configure network security for your storage accounts. [Learn more](#)

Virtual networks

Add existing virtual network Add new virtual network

Virtual Network	Subnet	Address range	Endpoint Status	Resource Group	Subscription

PowerShell ? Copy Open in browser Open in new tab Close

```
PS /home/selma> Invoke-WebRequest -URI 'https://selmasmlgl1014.blob.core.windows.net/az104-07-container/licenses/LICENSE.txt?sp=r&t=2022-11-10T13:06:13Z&se=2022-11-11T21:06:13Z&spr=https&sv=2021-06-'  
Invoke-WebRequest: AuthorizationFailureThis request is not authorized to perform this operation.  
RequestId:efd535ff-e01e-0009-47f3-f507de000000  
Time:2022-11-11T17:32:08.8091940Z  
PS /home/selma> ls  
az104-07-vm-parameters.json az104-07-vm-template.json az104-07-vmtemplate.json clouddrive  
PS /home/selma> code az104-07-vm-parameters.json  
PS /home/selma> Invoke-WebRequest -URI 'https://selmasmlgl1014.blob.core.windows.net/az104-07-container/licenses/LICENSE.txt?sp=r&t=2022-11-10T13:06:13Z&se=2022-11-11T21:06:13Z&spr=https&sv=2021-06-08&sr=b&sig=Pt2ZMd7mOkND67JCgISoI6tBCKXYGC5CZ46vHat7Dk%3D'  
Invoke-WebRequest: AuthorizationFailureThis request is not authorized to perform this operation.  
RequestId:e47369e5-001e-0001-5ef4-f51dd1000000  
Time:2022-11-11T17:42:15.1197358Z  
PS /home/selma>
```

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Home > az104-07-rg0

az104-07-rg0 | Resource visualizer

Resource group

Search Choose resources Reset diagram Zoom to fit Refresh Export PNG Feedback

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer Events

Settings

Deployments

Security

Policies

Properties

Locks

Cost Management

Cost analysis

Cost alerts (preview)

Budgets

Advisor recommendations

Monitoring

Clean up resources

```
Get-AzResourceGroup -Name 'az104-07*' | Remove-AzResourceGroup -Force -AsJob
```

```
RequestId:667369e5-001e-0001-0ef4-f51dd1000000
Time:2022-11-11T17:42:15.1197358Z
PS /home/selma> Get-AzResourceGroup -Name 'az104-07*' | Remove-AzResourceGroup -Force -AsJob
```

```
ResourceGroupName : az104-07-rg0
Location        : eastus
ProvisioningState: Succeeded
Tags            :
ResourceId      : /subscriptions/82058535-5cb0-4107-841d-19e3434893a1/resourceGroups/az104-07-rg0
```

```
PS /home/selma> Get-AzResourceGroup -Name 'az104-07*' | Remove-AzResourceGroup -Force -AsJob
```

Id	Name	PSJobTypeName	State	HasMoreData	Location	Command
--	--	-----	-----	-----	-----	-----
2	Long Running Job	AzureLongRunni...	Running	True	localhost	Remove-AzResourceGroup

```
PS /home/selma> [ ]
```