

## Home LAB - Hacer un backup en Linux( Ubuntu 24.04.3 LTS) de las carpetas del sistema y almacenarlo en un blob storage de Microsoft Azure

Entorno y Software para el LAB:

- Suscripción gratuita de Azure
- VMware Workstation
- Azure CLI
- VM con SO Ubuntu

### Instalar las azure cli en el equipo Linux

Actualizamos los repositorios:

*sudo apt update*

```
wzambiano@LABMEMSRV01:~$ sudo apt update
[sudo] password for wzambiano:
Hit:1 http://ar.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://ar.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://ar.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1,217 kB]
Get:6 http://ar.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,498 kB]
Get:7 http://ar.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [288 kB]
Get:8 http://ar.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:9 http://ar.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.3 kB]
Get:10 http://ar.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:11 http://ar.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1,489 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [202 kB]
Get:13 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:14 http://ar.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [301 kB]
Get:15 http://ar.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [378 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [8,748 B]
Get:17 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1,978 kB]
Get:18 http://ar.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.2 kB]
Get:19 http://ar.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:20 http://ar.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7,156 B]
Get:21 http://ar.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:22 http://ar.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [11.0 kB]
Get:23 http://ar.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:24 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [450 kB]
Get:25 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [208 B]
Get:26 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [884 kB]
Get:27 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [196 kB]
Get:28 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.3 kB]
Get:29 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [18.1 kB]
Get:30 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Fetched 9,602 kB in 9s (1,067 kB/s)
```

Instalamos las Cli de Azure:

*sudo apt install -y azure-cli*

**Nota:** En caso de no encontrar el paquete de azure cli en los repositorios se debe agregar manualmente con el siguiente comando:

*sudo apt install -y ca-certificates curl apt-transport-https lsb-release gnupg*

**Agregamos el repositorio de Microsoft:**

Primero ejecutamos:

*curl -sL https://packages.microsoft.com/keys/microsoft.asc | sudo gpg --dearmor -o /etc/apt/trusted.gpg.d/microsoft.gpg*

Luego:

```
AZ_REPO=$(lsb_release -cs)
```

```
echo "deb [arch=amd64] https://packages.microsoft.com/repos/azure-cli/ $AZ_REPO main" | sudo  
tee /etc/apt/sources.list.d/azure-cli.list
```

Despues de agregar el paquete al repo, podemos instalar las cli:

```
sudo apt update
```

```
sudo apt install -y azure-cli
```

Validamos la versión instalada:

```
az versión
```

```
wzambrano@LABLMEMSRV01:~$ az version  
{  
  "azure-cli": "2.78.0",  
  "azure-cli-core": "2.78.0",  
  "azure-cli-telemetry": "1.1.0",  
  "extensions": {}  
}
```

## Conectarnos al tenant de azure

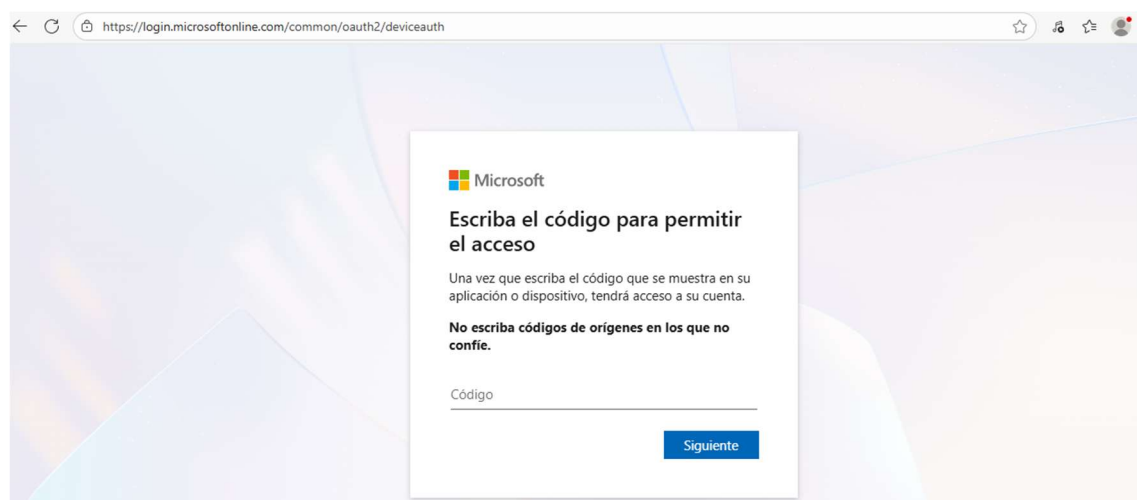
Ejecutamos el comando:

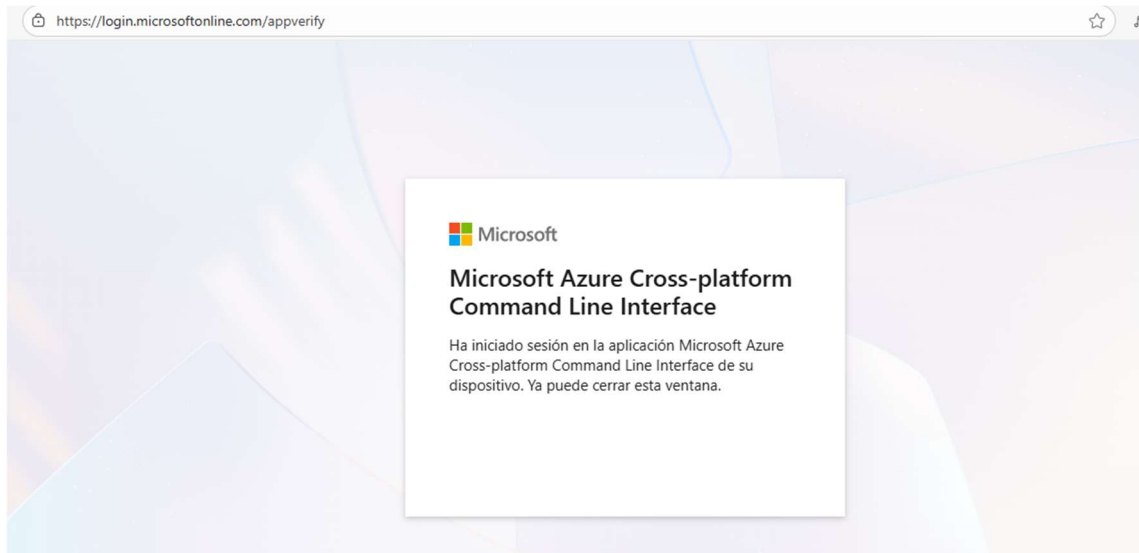
```
az login
```

Copiamos el código que nos arroja para conectarnos al tenant, en mi caso es EQB....

```
wzambrano@LABLMEMSRV01:~$ az login  
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code EQBA7KDW3 to authenticate.
```

Abrimos la url que nos proporciono cuando ejecutamos el comando az login y pegamos el código





Seleccionamos la suscripción con 1

```
wzambiano@LABMEMSRV01:~$ az login
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code FUUXPH3XM to authenticate.
Retrieving tenants and subscriptions for the selection...
[Tenant and subscription selection]
No  Subscription name  Subscription ID  Tenant
-----
[1] * Azure subscription 1  [REDACTED]  Directorio predeterminado
The default is marked with an *; the default tenant is 'Directorio predeterminado' and subscription is 'Azure subscription 1' ([REDACTED]).
Select a subscription and tenant (Type a number or Enter for no changes): |
```

```
wzambiano@LABMEMSRV01:~$ az login
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code [REDACTED] to authenticate.
Retrieving tenants and subscriptions for the selection...
[Tenant and subscription selection]
No  Subscription name  Subscription ID  Tenant
-----
[1] * Azure subscription 1  [REDACTED]  Directorio predeterminado
The default is marked with an *; the default tenant is 'Directorio predeterminado' and subscription is 'Azure subscription 1' ([REDACTED]).
Select a subscription and tenant (Type a number or Enter for no changes): 1
Tenant: Directorio predeterminado
Subscription: Azure subscription 1 ([REDACTED])

[Announcements]
With the new Azure CLI login experience, you can select the subscription you want to use more easily. Learn more about it and its configuration at https://go.microsoft.com/fwlink/?linkid=2271236
If you encounter any problem, please open an issue at https://aka.ms/azclibug

[Warning] The login output has been updated. Please be aware that it no longer displays the full list of available subscriptions by default.
wzambiano@LABMEMSRV01:~$
```

## Creación de recursos en azure:

Creamos el grupo de recursos:

Home > Create a resource > Marketplace > Resource group >

### 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](#)

Subscription \*

Resource group name \*

Region \*

Previous Next Review + create

Microsoft Azure Upgrade Search resources, services, and docs (G+/I) Copilot entrenamiento:Cloudhz... DIRECTORIO PREDETERMINADO

Home > RG01 Resource group Help me generate Terraform for this resource group configuration. +2

Search + Create Manage view Delete resource group Group by none

Overview

- Activity log
- Access control (IAM)
- Tags
- Resource visualizer
- Events
- Settings
  - Deployments
  - Security
  - Deployment stacks
  - Policies
  - Properties
  - Locks
- Cost Management
- Monitoring
- Automation
- Help

Essentials JSON View

Resources Recommendations

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

No resources match your filters

Try changing or clearing your filters.

+ Create Clear filters Learn more

Showing 1 - 0 of 0. Display count: auto Give feedback

Add or remove favorites by pressing Ctrl+L+Shift+F+F

### Notifications

More events in the activity log → Dismiss all

- Resource group created**  
Creating resource group 'RG01' in subscription 'Azure subscription 1' succeeded.  
[Go to resource group](#) [Pin to dashboard](#)  
a few seconds ago
- \$199.30 credit remaining**  
Subscription 'Azure subscription 1' has a remaining credit of \$199.30.  
Upgrade to a Pay-As-You-Go subscription.  
21 hours ago

## Crear la cuenta de almacenamiento:

Home > Storage center

### Storage center | Storage accounts (Blobs)

Directorio predeterminado (entrenamientoCloudwzoutlook.onmicrosoft.com)

Search

Summary Resources

+ Create Restore Manage view Refresh Export to CSV Open query Assign tags Delete

Filter for any field... Subscription equals all Resource group equals all Location equals all Add filter

Showing 0 to 0 of 0 records.

Name	Type	Kind	Resource group	Location	Subscription
------	------	------	----------------	----------	--------------

No storage accounts to display

Create a storage account to store up to 500TB of data in the cloud. Use a general-purpose storage account to store object data, use a NoSQL data store, define and use queues for message processing, and set up file shares in the cloud. Use the Blob storage account and the hot or cool access tiers to optimize your costs based on how frequently your object data is accessed.

+ Create storage account

Learn more

Add or remove favorites by pressing Ctrl+Shift+F

Give feedback

Seleccionamos el grupo de recursos creado anteriormente “RG01” le damos un nombre al storage account , seleccionamos la región donde se va a crear el storage account (misma que la del resource group). Seleccionamos LRS de redundancia para efectos de laboratorio

Home > Storage center | Storage accounts (Blobs) >

## Create a storage account

Project details

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription \* Azure subscription 1

Resource group \* RG01  
[Create new](#)

Instance details

Storage account name \* sawezd

Region \* (US) East US  
[Deploy to an Azure Extended Zone](#)

Preferred storage type Choose preferred storage type

**i** This helps us provide relevant guidance. It doesn't restrict your storage to this resource type. [Learn more](#)

Performance \* Standard: Recommended for most scenarios (general-purpose v2 account)  
Premium: Recommended for scenarios that require low latency.

Redundancy \* Locally-redundant storage (LRS)

Previous Next Review + create

## Pestaña advanced:

Home > Storage center | Storage accounts (Blobs) >

### Create a storage account

Basics **Advanced** Networking Data protection Encryption Tags Review + create

#### Security

Configure security settings that impact your storage account.

Require secure transfer for REST API operations ☒ **OBLIGAA USAR HTTPS PARA EL ACCESO**

Allow enabling anonymous access on individual containers ☐

Enable storage account key access ☒ **PERMITE EL ACCESO CON ACCESS KEYS Y SAS SI SE DESACTIVA SOLO SE PERMITIRA EL ACCESO CON ENTRA ID**

Default to Microsoft Entra authorization in the Azure portal ☐

Minimum TLS version

Permitted scope for copy operations (preview)

#### Hierarchical Namespace

Hierarchical namespace, complemented by Data Lake Storage Gen2 endpoint, enables file and directory semantics, accelerates big data analytics workloads, and enables access control lists (ACLs) [Learn more](#)

Enable hierarchical namespace ☐

#### Access protocols

Advanced Data Lake Storage Gen2 endpoint is enabled by default [Learn more](#)

Previous Next **Review + create**

[Give feedback](#)

## Pestaña Networking:

Se deja por defecto las opciones ofrecidas por azure

Home > Storage center | Storage accounts (Blobs) >

### Create a storage account

Basics Advanced **Networking** Data protection Encryption Tags Review + create

#### Public access

Access your resource from anywhere through a public network.

Note: Allowing access to your resource through a public network increases security risk. [Learn more](#)

Public network access \* ☒ **Enable**  
Allow inbound and outbound access with the option to restrict select inbound access using resource access configurations for this resource.

☐ **Disable**  
Restrict inbound access while allowing outbound access.

☐ **Secure by perimeter (Most restricted)**  
Restrict inbound and outbound access using a network security perimeter. Secure by perimeter offers the greatest level of inbound and outbound restriction to secure your resource.

Public network access scope \* ☒ **Enable from all networks**

☐ **Enable from selected virtual networks and IP addresses**

⚠ Enabling public network access will make this resource available publicly. Unless public access is required, consider using the most restricted access configurations.

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## Pestaña data Data Protection, (opciones de recuperación de los datos)

Para efectos del laboratorio configurar estas opciones como se muestra en la imagen

Home > Storage center | Storage accounts (Blobs) >

### Create a storage account

Basics Advanced Networking **Data protection** Encryption Tags Review + create

**Recovery**  
Protect your data from accidental or erroneous deletion or modification.

☐ Enable point-in-time restore for containers  
Use point-in-time restore to restore one or more containers to an earlier state. If point-in-time restore is enabled, then versioning, change feed, and blob soft delete must also be enabled. [Learn more](#)

☒ Enable soft delete for blobs  
Soft delete enables you to recover blobs that were previously marked for deletion, including blobs that were overwritten. [Learn more](#)  
Days to retain deleted blobs

☒ Enable soft delete for containers  
Soft delete enables you to recover containers that were previously marked for deletion. [Learn more](#)  
Enabling soft delete for frequently overwritten data may result in increased storage costs. [Learn more](#)  
Days to retain deleted containers

☒ Enable soft delete for file shares  
Soft delete enables you to recover file shares that were previously marked for deletion. [Learn more](#)  
Days to retain deleted file shares

Habilita la opcion de recuperacion granular

Habilita la opcion de recuperacion granular en blobs

Habilita la opcion de recuperacion granular en containers

Habilita la opcion de recuperacion en Azure Files


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Home > Storage center | Storage accounts (Blobs) >

### Create a storage account

Basics Advanced Networking Data protection **Encryption** Tags Review + create

Encryption type \* ☒ Microsoft-managed keys (MMK)  
☐ Customer-managed keys (CMK)

Enable support for customer-managed keys ☒ Blobs and files only  
☐ All service types (blobs, files, tables, and queues)  
 This option cannot be changed after this storage account is created.

Enable infrastructure encryption ☐

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Create a storage account ...

- Basics
- Advanced
- Networking
- Data protection
- Encryption
- Tags
- Review + create

Name	Value	Resource
<div></div>	:	<div>All resources selected</div>

Create a storage account ...

- Basics
- Advanced
- Networking
- Data protection
- Encryption
- Tags
- Review + create

[View automation template](#)

Basics

Subscription	Azure subscription 1
Resource group	RG01
Location	East US
Storage account name	sawezd
Preferred storage type	
Performance	Standard
Replication	Locally-redundant storage (LRS)

Advanced

Enable hierarchical namespace	Disabled
Enable SFTP	Disabled
Enable network file system v3	Disabled
Allow cross-tenant replication	Disabled
Access tier	Cool
Enable large file shares	Enabled

Security



Home > sawezd\_1760658133832 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Overview

Inputs

Outputs

Template

**Your deployment is complete**

Deployment name: sawezd\_1760658133832 Start time: 10/16/2025, 8:42:41 PM  
Subscription: Azure subscription 1 Correlation ID: 8119517b-a553-4694-a0a8-c068f96dd31e  
Resource group: RG01

Deployment details

Next steps

[Go to resource](#)

Give feedback

[Tell us about your experience with deployment](#)

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Add or remove favorites by pressing Ctrl+Shift+F

Creamos un container del tipo blob:

Home > sawezd

sawezd | Containers

Storage account

Search

+ Add container Upload Refresh Delete Change access level Restore containers Edit columns

Search containers by prefix

Only show active containers

Showing all 1 items

<input type="checkbox"/>	Name	Last modified	Anonymous access level	Lease state	
<input type="checkbox"/>	Slogs	10/16/2025, 8:43:11 PM	Private	Available	...

Containers

File shares

Queues

Tables

Security + networking

Data management

Settings

Monitoring

Monitoring (classic)

Add or remove favorites by pressing Ctrl+Shift+F

Home > **sawezd**

sawezd | Containers

Storage account

Search

Diagnose and solve problems

Access Control (IAM)

Data migration

Events

Storage browser

Storage Mover

Partner solutions

Resource visualizer

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**Containers**

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Monitoring

Monitoring (classic)

Add or remove favorites by pressing Ctrl+Shift+F

+ Add container

Upload

Refresh

Delete

Change access level

Restore containers

Search containers by prefix

Showing all 1 items

<input type="checkbox"/>	Name	Last modified
<input type="checkbox"/>	Slogs	10/16/2025, 8

New container

Name \*

backuplx

Anonymous access level

Private (no anonymous access)

The access level is set to private because anonymous access is disabled on this storage account.

Advanced

Encryption scope

Select from existing account scopes

☐ Use this encryption scope for all blobs in the container


☐ Enable version-level immutability support

In order to enable version-level immutability support, your storage account must have versioning turned on.

Create

Give feedback

Home > saweaz

 saweaz | Containers

Storage account

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Monitoring

Monitoring (classic)

✖

+

↺

↻

🗑️

🔒

↺



🔗

✎

Search containers by prefix

Only show active containers

Showing all 2 items

<input type="checkbox"/>	Name	Last modified	Anonymous access level	Lease state	
<input type="checkbox"/>	 <a href="#">\$logs</a>	10/16/2025, 8:43:11 PM	Private	Available	⋮
<input type="checkbox"/>	 <a href="#">backuplpx</a>	10/16/2025, 8:48:17 PM	Private	Available	⋮

## Configuración en el servidor Linux

Desde el servidor local obtenemos la cadena de conexión que usaremos para conectarnos al recurso de storage en Azure

Ejecutamos:

***az storage account show-connection-string --name "StorageAccountName" --resource-group "ResourceGroupName"***

```
wzabrano@LABMEMSRV01:~/backups$ az storage account show-connection-string --name sawezd --resource-group RG01
{
  "connectionString": "DefaultEndpointsProtocol=https;EndpointSuffix=core.windows.net;AccountName=sawezd;AccountKey=...;BlobEndpoint=https://sawezd.blob.core.windows.net;FileEndpoint=https://sawezd.file.core.windows.net;QueueEndpoint=https://sawezd.queue.core.windows.net;TableEndpoint=https://sawezd.table.core.windows.net/"
}
```

**\*Guardar el connection string que devuelve el comando en un archivo seguro dentro del servidor\***

Generamos un archivo nuevo para guardar esta cadena:

***sudo nano /root/.azure\_blob\_conn***

```
GNU nano 7.2 /root/.azure_blob_conn
DefaultEndpointsProtocol=https;EndpointSuffix=core.windows.net;AccountName=sawezd;AccountKey=...
```

otorgar los permisos al archivo:

***sudo chmod 600 /root/.azure\_blob\_conn***

Para hacer el backup automático en mi servidor Linux use un script bash, que respalda mi carpeta home y lo almacena en otro disco dentro del mismo servidor como destino

***#!/bin/bash***

***# Script para respaldar archivos***

***# Directorios a respaldar***

***SRC="/home/wzabrano"***

***DEST="/backups/\$(date +%F)"***

***mkdir -p "\$DEST"***

***# Crear backup comprimido***

***tar -czf "\$DEST/bkp\_\$(hostname)\_\$(date +%F).tar.gz" \$SRC***

Pueden descargar el script en acá :

***[ScriptsVarios/backup\\_sistema.sh at main · wezd1308/ScriptsVarios](#)***

Para subir los backups a azure programamos otro script y lo guardaremos en el directorio:

***/usr/local/bin***

El script lo pueden descargar del repo:

***[ScriptsVarios/backup\\_to\\_azure.sh at main · wezd1308/ScriptsVarios](#)***

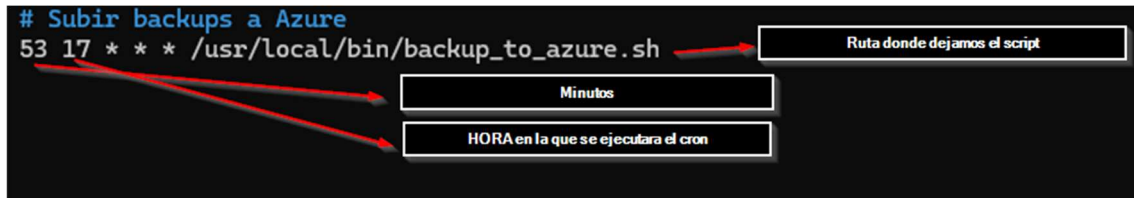
Otorgar permisos de ejecución al script:

```
sudo chmod +x /usr/local/bin/backup_to_azure.sh
```

Programar el script en un cron:

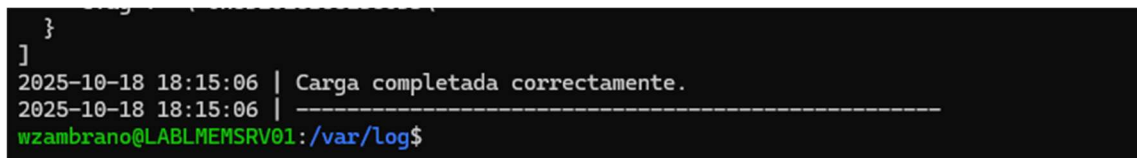
```
Sudo crontab -e
```

```
53 17 * * * /usr/local/bin/backup_to_azure.sh
```

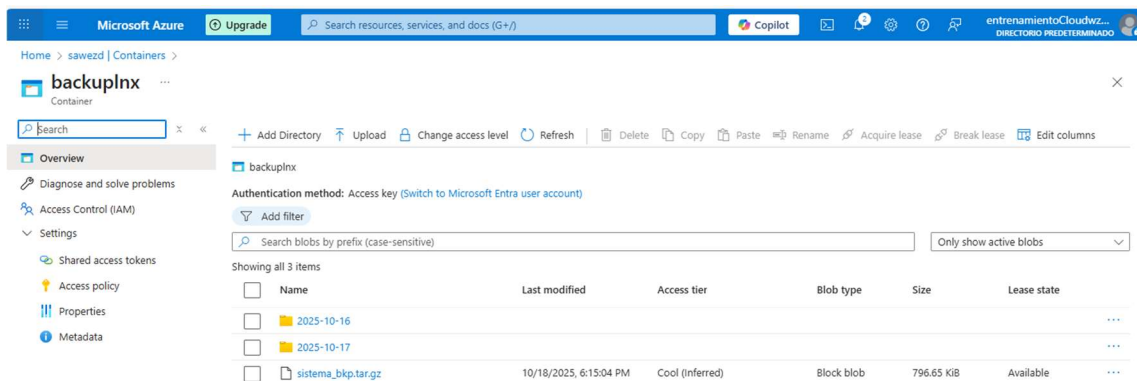


Esperamos que se ejecute el cron, validamos en el log `/var/log/azure_backup.log` que no haya errores

```
/var/log/azure_backup.log
```



Luego en portal de azure validamos que se hayan subido correctamente los backups



Con esto tendríamos nuestro backup automatizado y subido a azure programado mediante cron.

**\*Eliminar todos los recursos en azure para no generar costos no deseados en la suscripción\***

Para eliminar todos los recursos del grupo de recursos, usamos el comando:

```
az group delete --name RG01 --yes
```

