

Azure Databricks Integracion con ADLS Usar Active Directory – Utilizar Service Principal / Databricks Scoped Secret

Creando un Azure Service Principal

The screenshot shows the Azure portal interface. On the left is a navigation menu with various options. In the main area, there are sections for 'Azure services' and 'Recent resources'.

Azure services

- Create a resource
- Azure Active Directory
- All resources
- App Services
- Cost Management ...
- Subscriptions
- Monitor

Recent resources

Name	Type
formula1dl	Storage account
databricks-course-rg	Resource group
covidreportingsa	Storage account
covid-reporting-databricks-ws	Azure Databricks Service
databricks-course-ws	Azure Databricks Service
covid-reporting-adf	Data factory (V2)
dbstorager2n2mkt5svw34	Storage account
workers-vnet	Virtual network
ecdc	Storage account
covid-srv	SQL server
covid-db	SQL database
databricks-demo-rg	Resource group

Navigate

Microsoft Azure

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

Home >

Default Directory | Overview

Azure Active Directory

Switch tenant Delete tenant + Create a tenant What's new Preview features Got feedback?

- Overview
- Getting started
- Preview features
- Diagnose and solve problems

Manage

- Users
- Groups
- External Identities
- Roles and administrators
- Administrative units
- Enterprise applications
- Devices
- App registrations**
- Identity Governance
- Application proxy
- Licenses

Microsoft Azure

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

Home > Default Directory

Default Directory | App registrations

Azure Active Directory

+ New registration Endpoints Troubleshooting Download Preview features Got feedback?

Try out the new App registrations search preview! Click to enable the preview. →

Starting June 30th, 2020 we will no longer add any new features to Azure Active Directory Authentication Library (ADAL) and Azure AD Graph. [Learn more](#)

All applications **Owned applications** Deleted applications (Preview) Applications from personal account

Start typing a name or Application ID to filter these results

Display name

co	covid-reporting-app
----	---------------------

[Home](#) > [Default Directory](#) >

Register an application ...

* Name

The user-facing display name for this application (this can be changed later).

LE DAMOS UN NOMBRE

Supported account types

Who can use this application or access this API?

- ☒ Accounts in this organizational directory only (Default Directory only - Single tenant)
- ☐ Accounts in any organizational directory (Any Azure AD directory - Multitenant)
- ☐ Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)
- ☐ Personal Microsoft accounts only

[Help me choose...](#)

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.



Register an app you're working on here. Integrate gallery apps and other apps from outside your organization by adding from [Enterprise applications](#).

By proceeding, you agree to the [Microsoft Platform Policies](#)

Register

Microsoft Azure

Search resources, services, and docs (G+)

Home > Default Directory >

databricks-service-app

✎ ⋮

Search (Cmd+)

«

Delete Endpoints Preview features

Overview

Quickstart

Integration assistant

Manage

Branding

Authentication

Certificates & secrets

Token configuration

API permissions

Expose an API

App roles

Essentials

Display name : databricks-service-app

Application (client) ID : b9f0234a-70c9-44f6-a2a2-fff1d6939edc

Directory (tenant) ID : 65947afd-b0be-440f-b3d5-2ca66af0ef41

Object ID : adf28b97-79a0-4a80-a4f1-3373f39b9c5c

Welcome to the new and improved App registrations. Looking to learn how it's changed from App registrations (Legacy)? [Learn more](#)

Starting June 30th, 2020 we will no longer add any new features to Azure Active Directory Authentication Library (ADAL) and Azure AD will be upgraded to Microsoft Authentication Library (MSAL) and Microsoft Graph. [Learn more](#)

Get Started Documentation

COPIAR:

- Application (client) ID

- Directory (tenant) ID

Microsoft Azure

Search resources, services, and docs (G+)

Home > Default Directory > databricks-service-app

databricks-service-app | Certificates & secrets

✎ ⋮

Search (Cmd+)

«

Got feedback?

Overview

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Owners

Roles and administrators | Preview

Manifest

Support + Troubleshooting

Troubleshooting

New support request

Credentials enable confidential applications to identify themselves to the authentication service when receiving tokens at a web addressable location (using an HTTPS scheme). For a higher level of assurance, we recommend using a certificate (instead of a client secret) as a credential.

Certificates

Certificates can be used as secrets to prove the application's identity when requesting a token. Also can be referred to as public keys.

Upload certificate

Thumbprint	Start date	Expires	ID
No certificates have been added for this application.			

Client secrets

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

+ New client secret

Description	Expires	Value	ID
No client secrets have been created for this application.			

1

2

Microsoft Azure

Search resources, services, and docs (G+)

Home > Default Directory > databricks-service-app

databricks-service-app | Certificates & secrets

Search (Cmd+/) Got feedback?

Overview Quickstart Integration assistant

Manage

- Branding
- Authentication
- Certificates & secrets**
- Token configuration
- API permissions
- Expose an API
- App roles
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- Roles and administrators | Preview
- Manifest

Support + Troubleshooting

- Troubleshooting
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+ New client secret

Description	Expires	Value	ID
No client secrets have been created for this application.			

Add a client secret

LE DAMOS UN NOMBRE

Description databricks-access-secret

Expires Recommended: 6 months

Microsoft Azure

Search resources, services, and docs (G+)

Home > Default Directory > databricks-service-app

databricks-service-app | Certificates & secrets

Search (Cmd+/) Got feedback?

Overview Quickstart Integration assistant

Manage

- Branding
- Authentication
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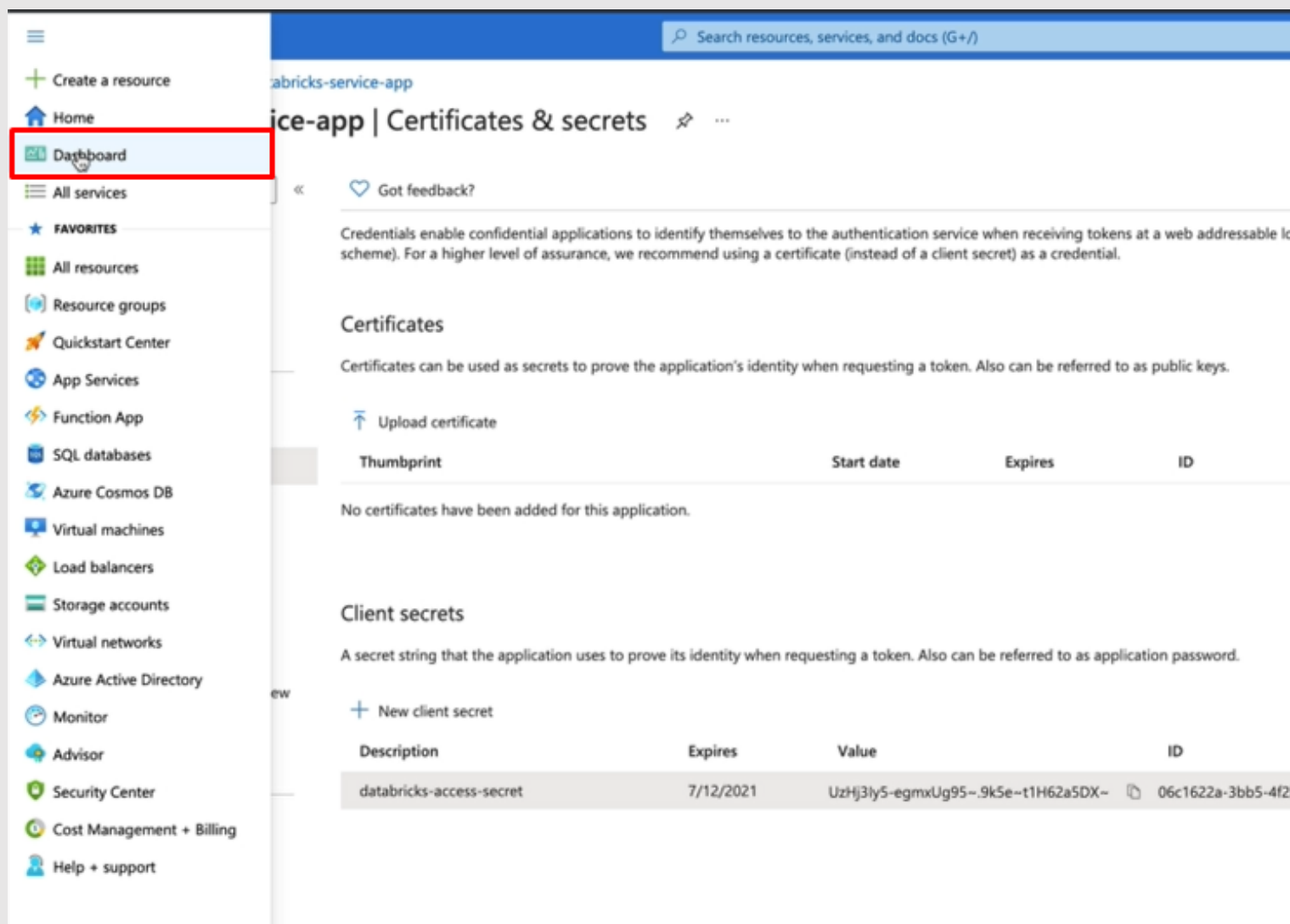
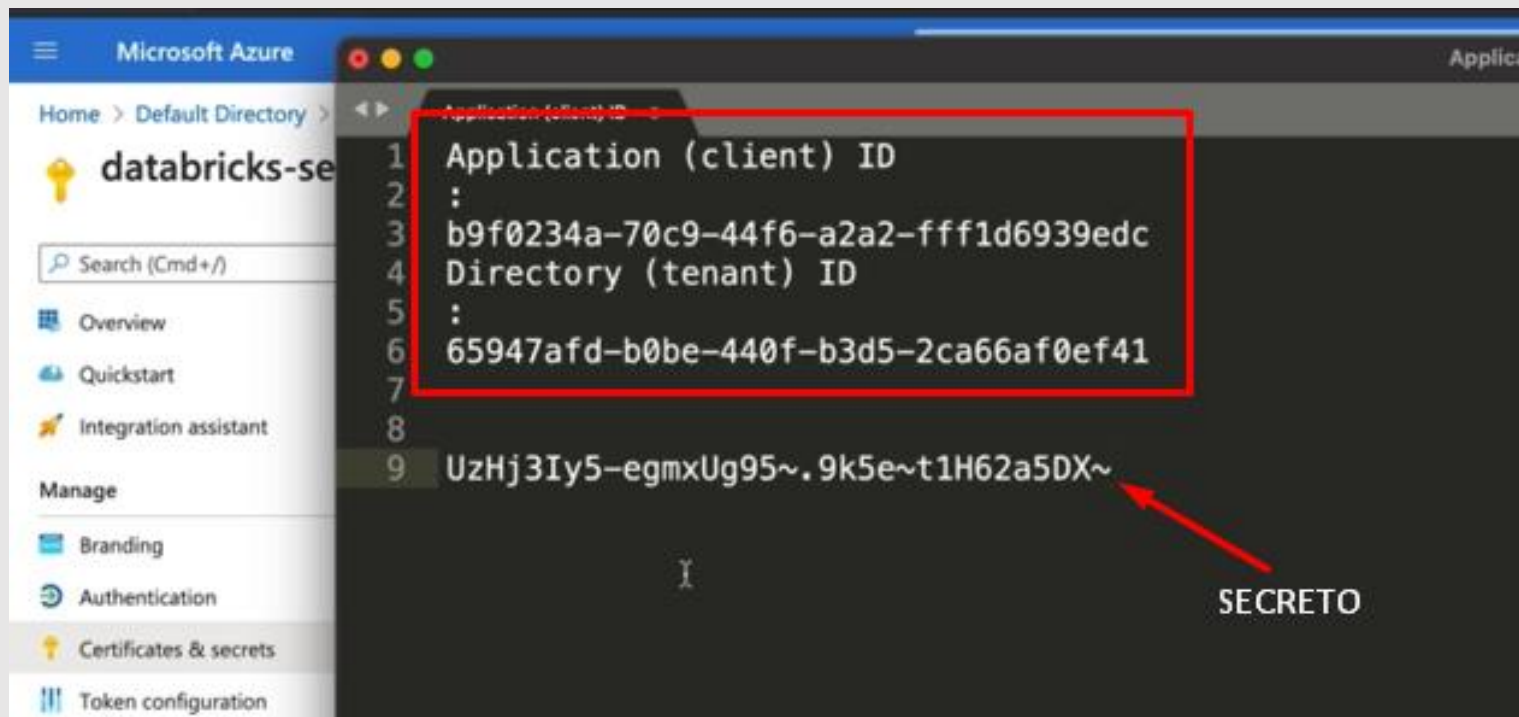
Client secrets

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

+ New client secret

Description	Expires	Value	ID
databricks-access-secret	7/12/2021	Uzhj3ly5-egmxUg95-.9k5e-t1h62a5DX-	06c1622a-3bb5-4f2b-ade6-19632a30bd8b

COPIAMOS EL SECRETO RECIÉN CREADO



Microsoft Azure

Search resources, services, and docs (G+)

Databricks Course Dashboard

Private dashboard

+ New dashboard ▾ Refresh Full screen Edit Share Download Clone Assign tags Delete Feedback

Auto refresh : Off

databricks-course-ws
Workspace

formula1dl
Storage account

Storage account: que corresponde a un ADLS

Microsoft Azure

Search resources, services, and docs (G+)

Dashboard > formula1dl

formula1dl | Access Control (IAM)

Storage account

Search (Cmd+/) << + Add Download role assignments Edit columns Refresh Remove Got feedback?

Overview
Activity log
Tags
Diagnose and solve problems
Access Control (IAM)
Data migration
Events
Storage Explorer (preview)
Settings
Access keys
Geo-replication
Costs

Add role assignment
Add co-administrator

My access
View my level of access to this resource.
[View my access](#)

Check access
Review the level of access a user, group, service principal, or managed identity has to this resource. [Learn more](#)

Find
User, group, or service principal
Search by name or email address

Grant access to this resource
Grant access to resources by assigning a role.
[Add role assignments](#) [Learn more](#)

View deny assignments
View the role assignments that have been denied access to specific actions at this scope.

Microsoft Azure

Dashboard > formula1dl

formula1dl | Access Control (IAM)

Storage account

Search (Cmd+/) Add Download role assignments Edit columns Refresh Remove Got feedback?

Check access Role assignments Roles Roles (Preview) Deny assignments Classic administrators

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Grant access to this resource
Grant access to resources by assigning a role.
[Add role assignments](#) [Learn more](#)

View access to this resource
View the role assignments that grant access to this and other resources.
[View](#) [Learn more](#)

View deny assignments
View the role assignments that have been denied access to specific actions at this scope.
[View](#) [Learn more](#)

Add role assignment

Role
Storage Blob Data Contributor

Assign access to
User, group, or service principal

Select
data

Databricks Resource Provider

databricks-service-app

Azure Service Principal que acabamos de crear

Selected members:
No members selected. Search for and add one or more members you want to assign to the role for this resource.
[Learn more about RBAC](#)

Microsoft Azure

Dashboard > formula1dl

formula1dl | Access Control (IAM)

Storage account

Search (Cmd+/) Add Download role assignments Edit columns Refresh Remove Got feedback?

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Role
Storage Blob Data Contributor

Assign access to
User, group, or service principal

Select
data

Databricks Resource Provider

databricks-service-app


Remove

Selected members:

[Save](#) [Discard](#)

Mounting Azure Data Lake Storage Gen2


Antes que todo, vamos a utilizar Azure Key Vault para almacenar el Client ID, Tenant ID y el Client Secret.

 Microsoft Azure

Search resources, services, and docs (G+/f)

Home > New > Key Vault >

Create key vault ...

 Validation passed

BasicsAccess policyNetworkingTagsReview + create

Review + create

Basics

Subscription	Pay-As-You-Go
Resource group	databricks-course-rg
Key vault name	formula1-key-vault
Region	UK South
Pricing tier	Standard
Soft-delete	Enabled
Purge protection during retention period	Disabled
Days to retain deleted vaults	90 days

Access policy

Azure Virtual Machines for deployment	Disabled
Azure Resource Manager for template deployment	Disabled
Azure Disk Encryption for volume encryption	Disabled
Permission model	Vault access policy
Access policies	1

Networking

Connectivity method	Public endpoint (all networks)
---------------------	--------------------------------

Create

< Previous

Next >

[Download a template for automation](#)

Así agregamos el servicio al dashboard

Microsoft Azure

Home > formula1-key-vault > formula1-key-vault

formula1-key-vault

Key vault

Search (Cmd+/)

Delete Move Refresh Open in mobile

Overview

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Certificates

Access policies

Networking

Security

Properties

Locks

Monitoring

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Alerts

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Diagnostic settings

Logs

Workbooks

Essentials

Resource group (change) : databricks-course-rg

Location : UK South

Subscription (change) : Pay-As-You-Go

Subscription ID : 34c7d7a-1340-43c5-81e4-57efa1d4b11a

Vault URI : https://formula1-key-vault.vault.azure.net/

SKU (Pricing tier) : Standard

Directory ID : 65947afd-b0be-440f-b3d5-2ca66af0ef41

Directory Name : Default Directory

Soft-delete : Enabled

Purge protection : Disabled

Tags (change) : Click here to add tags

Get started Monitoring Tools + SDKs Tutorials

Manage keys and secrets used by apps and services

Our recommendation is to use a vault per application per environment (Development, Pre-Production and Production). This helps you to not share secrets across environments and also reduces the threat in case of a breach.

Control access to key vault

Assign access policy and determine whether a given service principal, namely an application or user group, can perform different operations on key vault keys, secrets or certificates.

View access policies

Adding Access policy

How to authenticate to key vault

Enable logging and set up alerts

Enable logging to monitor how, when and by whom your key vaults are accessed. Monitor performance and configure alerts for key vault metrics e.g., service API latency, error code, throttling.

View diagnostic settings

How to enable Key Vault logging

How to configure monitoring and alerting

Turn on recovery options

For protection against accidental or malicious deletion, soft-delete is enabled. Turn on purge protection to guard against manual purging of deleted key vaults and items. Learn more

View properties

Key vault recovery options

Pin to dashboard

Existing Create new

Type

Private

Shared

Dashboard

Databricks Course Dashboard

Pin Cancel

So that's done.

Microsoft Azure

Home > formula1-key-vault > formula1-key-vault

formula1-key-vault | Secrets

Key vault

Search (Cmd+/)

+ Generate/Import Refresh Restore Backup Manage deleted secrets

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Events

Settings

Keys

Secrets

Certificates

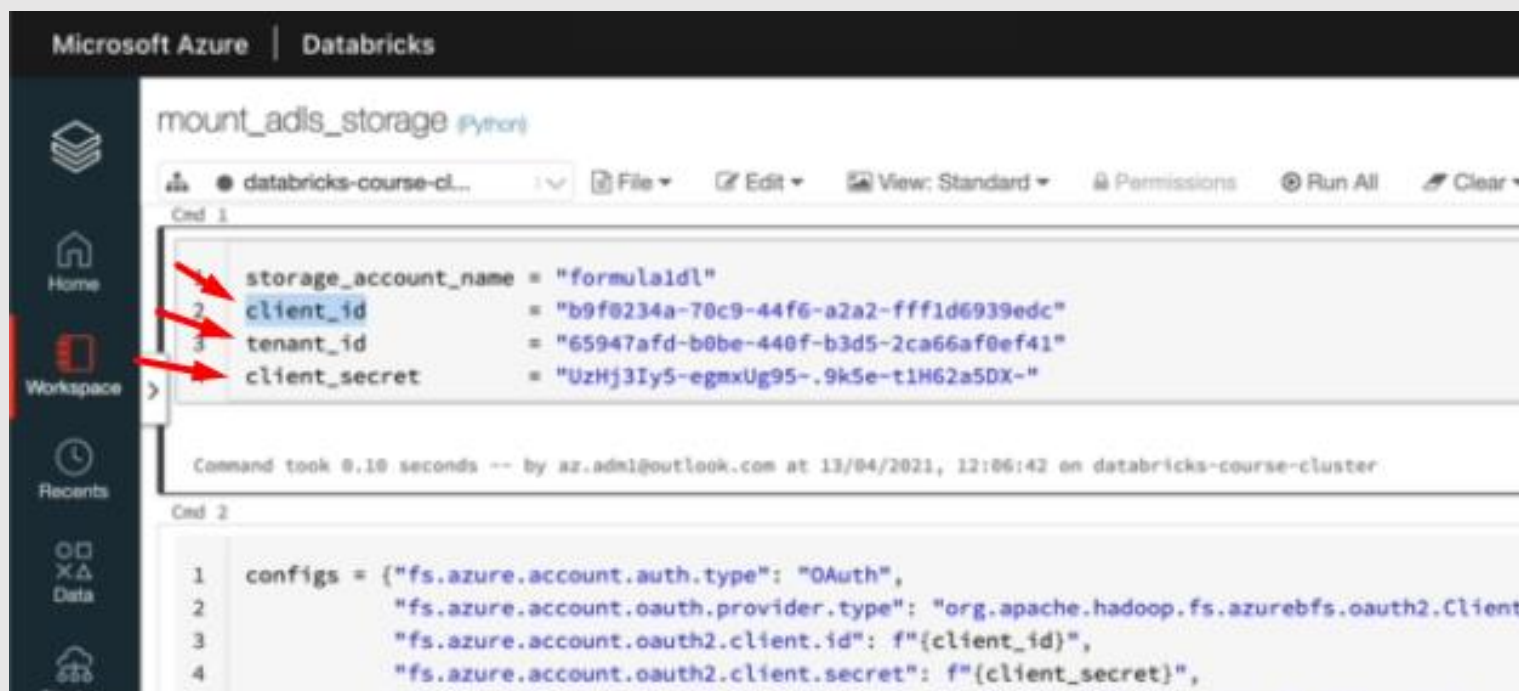
Access policies

Name

Type

There are no secrets available.

Tenemos que generar 3 secretos en Azure Key Vault



Microsoft Azure | Databricks

mount_adls_storage (Python)

databricks-course-cl...

File Edit View: Standard Permissions Run All Clear

Cmd 1

```
storage_account_name = "formula1d1"
client_id = "b9f0234a-70c9-44f6-a2a2-fff1d6939edc"
tenant_id = "65947afd-b0be-440f-b3d5-2ca66af0ef41"
client_secret = "UzHj3Iy5-egmxUg95-.9k5e-t1H62a5DX-"
```

Command took 0.10 seconds -- by az.adml@outlook.com at 13/04/2021, 12:06:42 on databricks-course-cluster

Cmd 2

```
1 configs = {"fs.azure.account.auth.type": "OAuth",
2           "fs.azure.account.oauth.provider.type": "org.apache.hadoop.fs.azurebfs.oauth2.Client
3           "fs.azure.account.oauth2.client.id": f"{client_id}",
4           "fs.azure.account.oauth2.client.secret": f"{client_secret}",
```

Microsoft Azure

Search resources, services, and docs (G+)

Home > formula1-key-vault > formula1-key-vault

formula1-key-vault | Secrets

Key vault

Search (Cmd+/)

Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Events
Settings
Keys
Secrets
Certificates

+ Generate/import Refresh Restore Backup Manage deleted secrets

The secret 'databricks-app-client-id' has been successfully created.

Name	Type	Status
databricks-app-client-id		✓ Enabled

Repetimos el paso tanto para TENANT ID y el Client Secret

Se creó el secreto de Client ID en Azure Key Vault

Se han creado los 3 secretos

Microsoft Azure

Search resources, services, and docs (G+)

Home > formula1-key-vault > formula1-key-vault

formula1-key-vault | Secrets

Key vault

Search (Cmd+/)

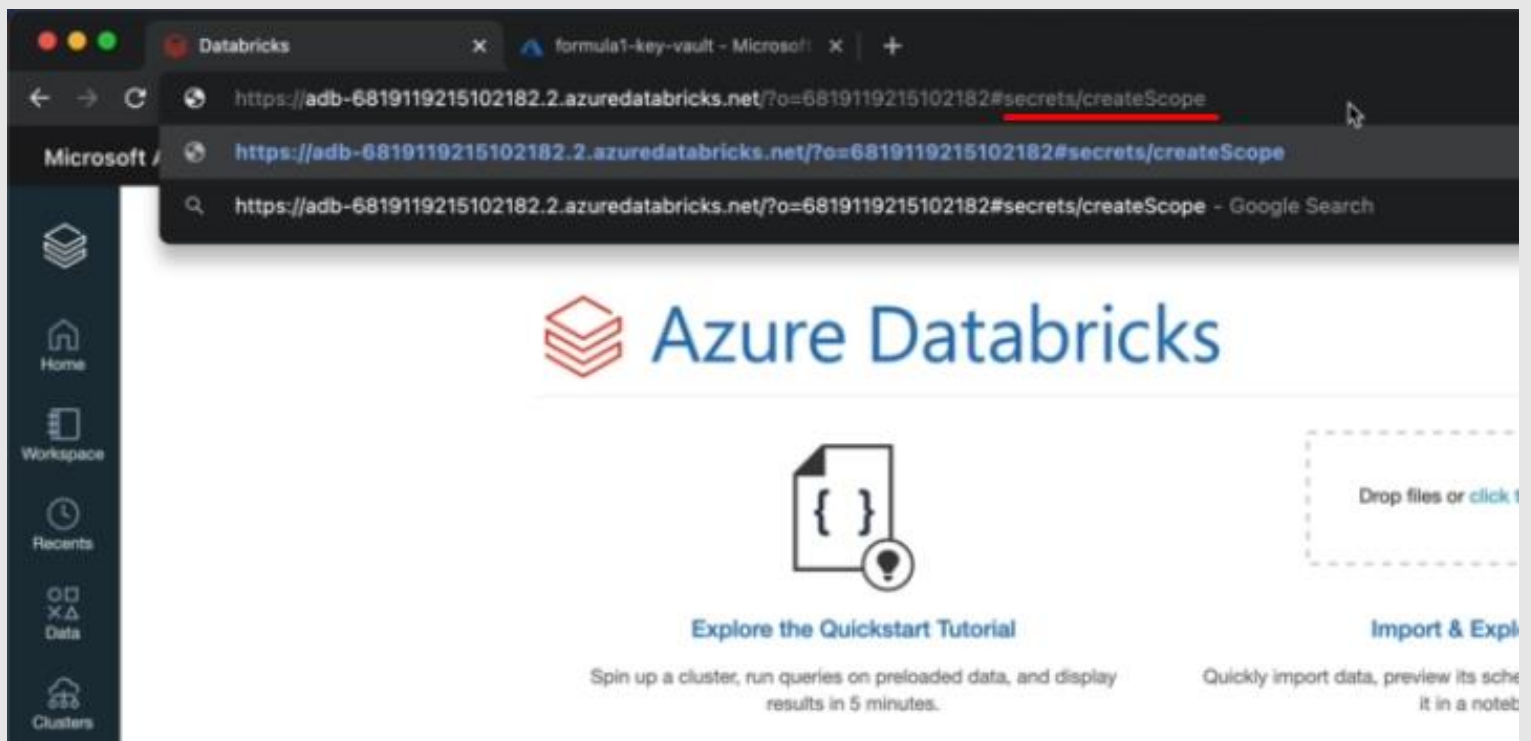
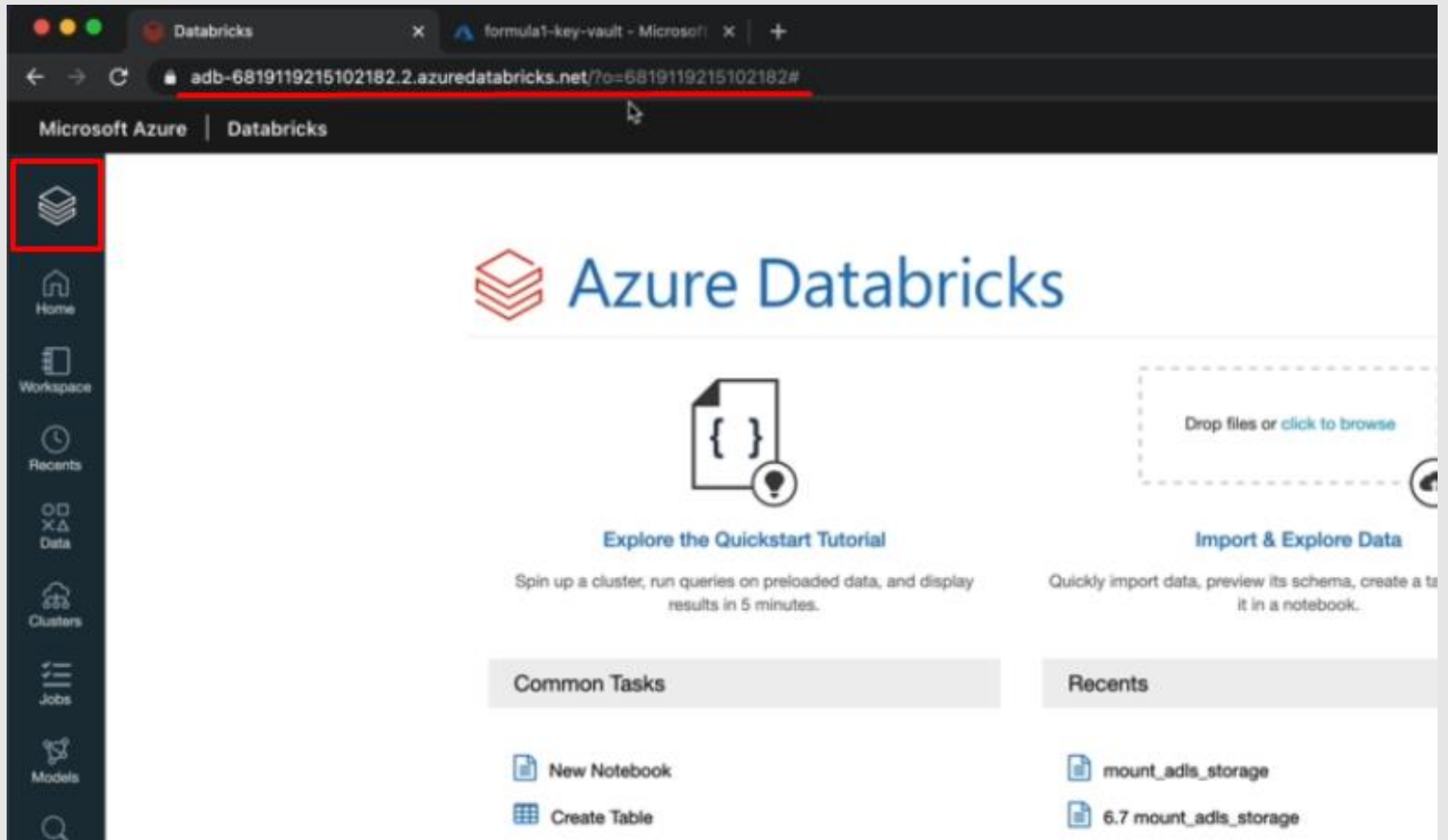
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Events
Settings
Keys
Secrets
Certificates
Access policies
Networking

+ Generate/import Refresh Restore Backup Manage deleted secrets

The secret 'databricks-app-client-secret' has been successfully created.

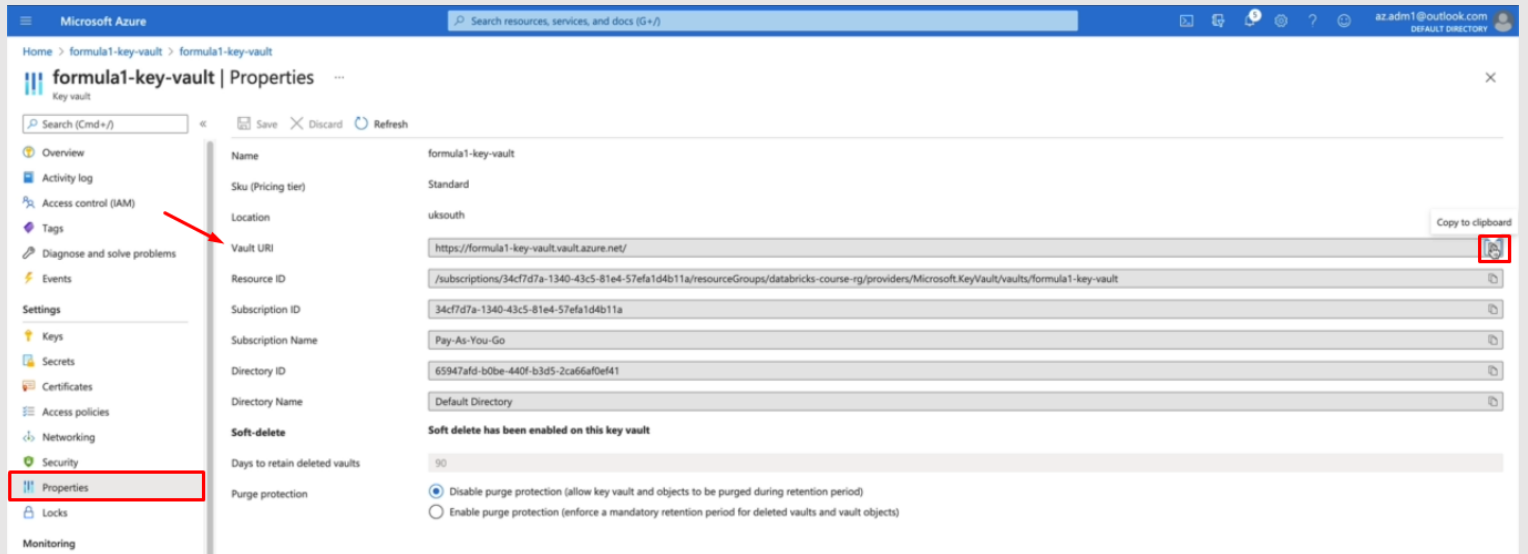
Name	Type	Status
databricks-app-client-secret		✓ Enabled
databricks-app-tenant-id		✓ Enabled
databricks-app-client-id		✓ Enabled

Luego, damos clic en el símbolo de databricks y en la ruta web en el navegador agregaremos **#secrets/createScope**. Vamos a utilizar **Databricks Scoped Secret**



Regresamos al Azure Key Vault

Vault URI



The screenshot shows the Azure portal interface for a key vault named 'formula1-key-vault'. The left sidebar contains navigation options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Events, Settings, Keys, Secrets, Certificates, Access policies, Networking, Security, Properties (highlighted with a red box), and Locks. The main content area displays the 'Properties' page for the key vault. The 'Vault URI' field is highlighted with a red box, and a 'Copy to clipboard' button is visible next to it. The 'Properties' tab in the left sidebar is also highlighted with a red box.

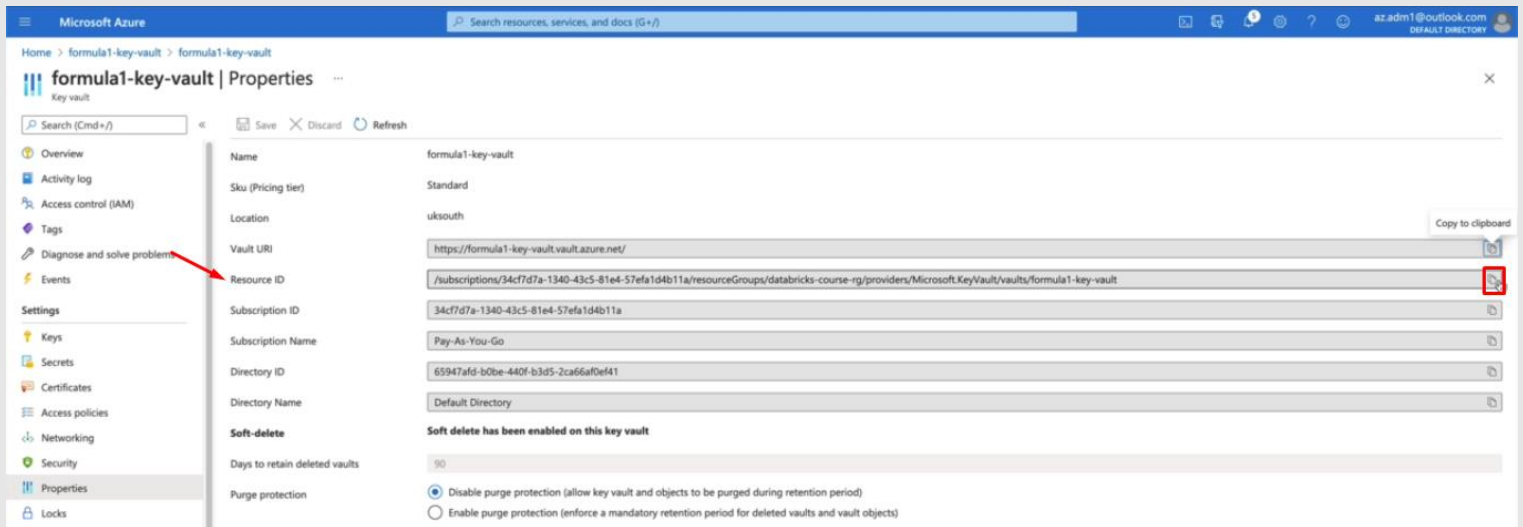
Property	Value
Name	formula1-key-vault
SKU (Pricing tier)	Standard
Location	uksouth
Vault URI	https://formula1-key-vault.vault.azure.net/
Resource ID	/subscriptions/34c7d7a-1340-43c5-81e4-57efa1d4b11a/resourceGroups/databricks-course-rg/providers/Microsoft.KeyVault/vaults/formula1-key-vault
Subscription ID	34c7d7a-1340-43c5-81e4-57efa1d4b11a
Subscription Name	Pay-As-You-Go
Directory ID	65947afd-b0be-440f-b3d5-2ca66af0ef41
Directory Name	Default Directory

Soft-delete
Soft delete has been enabled on this key vault

Days to retain deleted vaults: 90

Purge protection: ☒ Disable purge protection (allow key vault and objects to be purged during retention period) ☐ Enable purge protection (enforce a mandatory retention period for deleted vaults and vault objects)

Resource ID



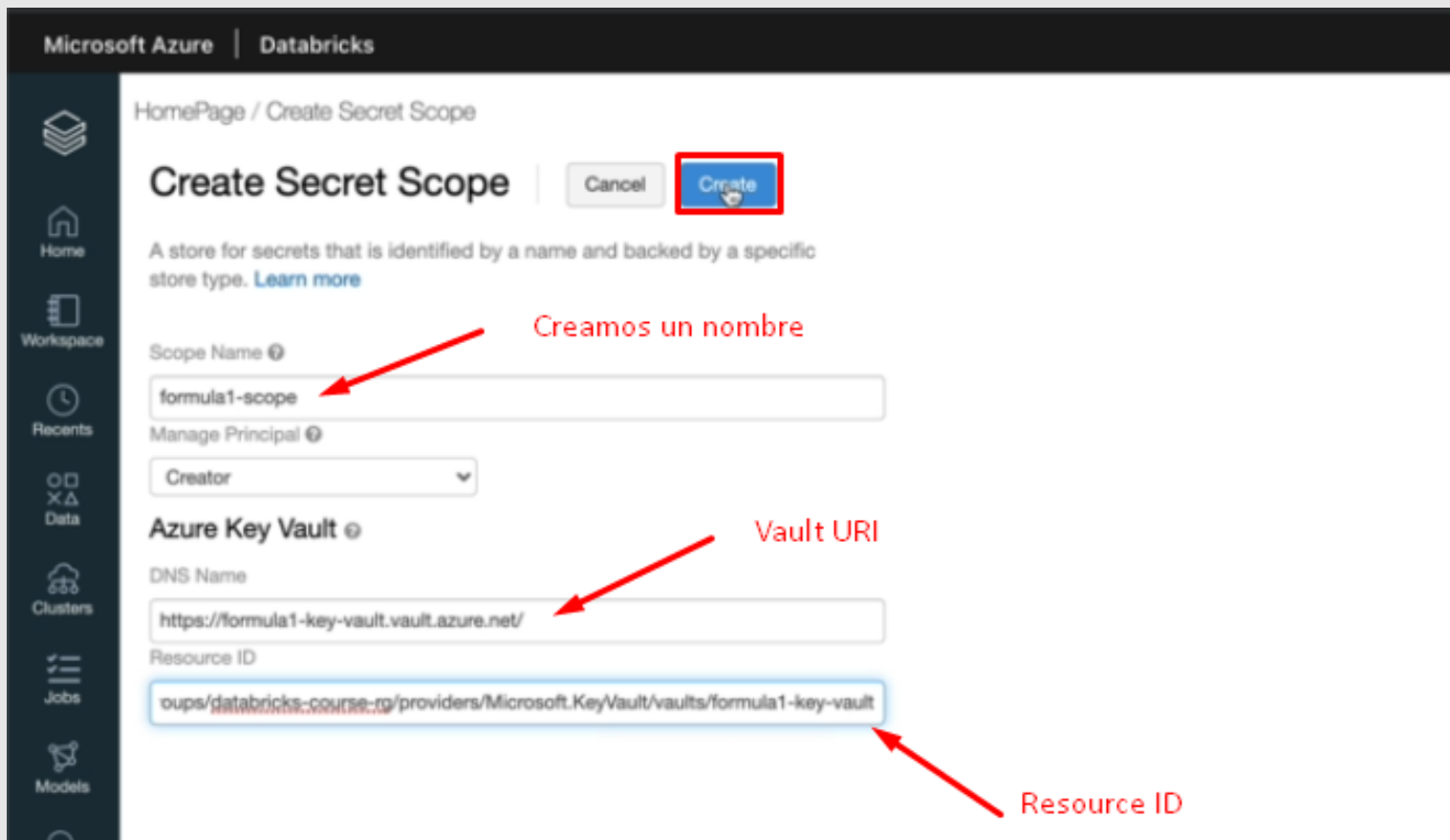
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Property	Value
Name	formula1-key-vault
SKU (Pricing tier)	Standard
Location	uksouth
Vault URI	https://formula1-key-vault.vault.azure.net/
Resource ID	/subscriptions/34c7d7a-1340-43c5-81e4-57efa1d4b11a/resourceGroups/databricks-course-rg/providers/Microsoft.KeyVault/vaults/formula1-key-vault
Subscription ID	34c7d7a-1340-43c5-81e4-57efa1d4b11a
Subscription Name	Pay-As-You-Go
Directory ID	65947afd-b0be-440f-b3d5-2ca66af0ef41
Directory Name	Default Directory

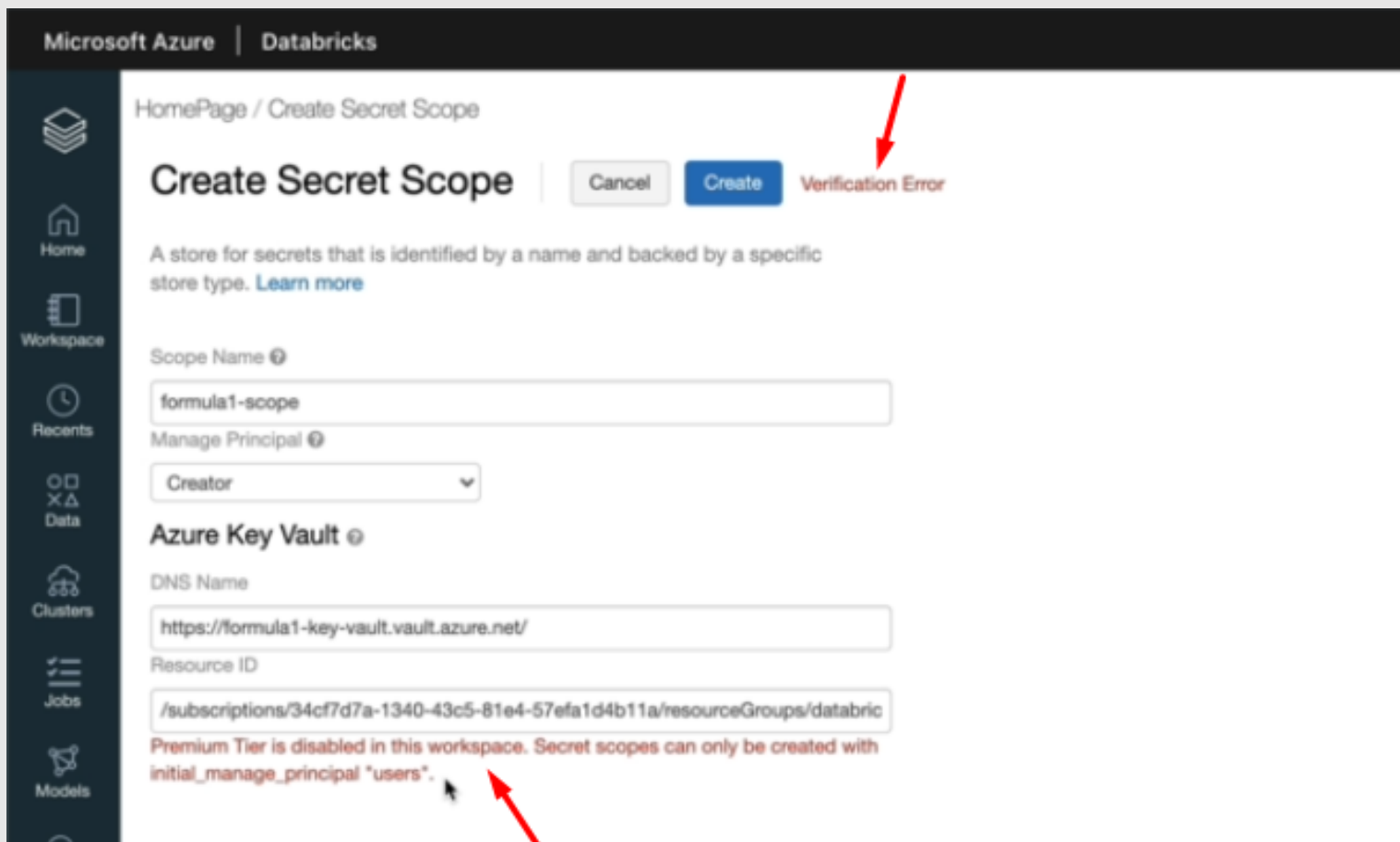
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Nos generará un error



Modificamos el “Manage Principal” a “All Users”

Microsoft Azure | Databricks

HomePage / Create Secret Scope

Create Secret Scope

[Cancel](#) [Verifying...](#)

A store for secrets that is identified by a name and backed by a specific store type. [Learn more](#)

Scope Name ⓘ

Manage Principal ⓘ

All Users

Azure Key Vault ⓘ

DNS Name

Resource ID

Microsoft Azure | Databricks

HomePage / Create Secret Scope

Create Secret Scope

[Cancel](#) [Create](#)

A store for secrets that is identified by a name and backed by a specific store type. [Learn more](#)

Scope Name ⓘ

Manage Principal ⓘ

All Users

Azure Key Vault ⓘ

DNS Name

Resource ID

The secret scope named formula1-scope has been added.

Manage secrets in this scope in Azure KeyVault with [manage principal = users](#)

OK

Cmd 1

```
1 storage_account_name = "formuladl"
2 client_id             = dbutils.secrets.get(scope="formulal-scope", key="databricks-app-client-id")
3 tenant_id             = dbutils.secrets.get(scope="formulal-scope", key="databricks-app-tenant-id")
4 client_secret         = dbutils.secrets.get(scope="formulal-scope", key="databricks-app-client-secret")
```

Cmd 2

```
1 configs = {"fs.azure.account.auth.type": "OAuth",
2           "fs.azure.account.oauth.provider.type": "org.apache.hadoop.fs.azurebfs.oauth2.ClientCredsTokenProvider",
3           "fs.azure.account.oauth2.client.id": f"{client_id}",
4           "fs.azure.account.oauth2.client.secret": f"{client_secret}",
5           "fs.azure.account.oauth2.client.endpoint": f"https://login.microsoftonline.com/{tenant_id}/oauth2/token"}
```

Cmd 3

```
1 def mount_adls(container_name):
2     dbutils.fs.mount(
3         source = f"abfss://{container_name}@{storage_account_name}.dfs.core.windows.net/",
4         mount_point = f"/mnt/{storage_account_name}/{container_name}",
5         extra_configs = configs)
```

Cmd 4

```
1 mount_adls("raw")
```

Cmd 5

```
1 mount_adls("processed")
```

Cmd 6

```
1 dbutils.fs.ls("/mnt/formuladl/raw")
```

Cmd 7

```
1 dbutils.fs.ls("/mnt/formuladl/processed")
```

Continuando con imágenes desde otro video, ahora debemos crear un secreto en Azure Key Vault con la clave que obtuvimos al crear nuestro Service Principal. En este ejemplo, no se utilizó **Databricks Scoped Secret**

Microsoft Azure portal interface showing the 'Create a secret' form for the 'akv-maheer' key vault. The form includes the following fields and options:

- Upload options: Manual
- Name: spSecret
- Value: [Redacted]
- Content type (optional): [Empty]
- Set activation date: [Unchecked]
- Set expiration date: [Unchecked]
- Enabled: Yes
- Tags: 0 tags

The 'Create' button is highlighted at the bottom left.

Microsoft Azure portal interface showing the 'akv-maheer | Secrets' page. The page displays a list of secrets and a navigation menu on the left.

Navigation Menu (Left):

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Events
- Settings
 - Keys
 - Secrets** (highlighted with a red box and a red arrow)
 - Certificates
 - Access policies

Secrets List:

Name	Type	Status	Expiration date
spSecret		✓ Enabled	
adlsmaheerAK		✓ Enabled	
secretKey		✓ Enabled	

A message at the top states: "The secret 'spSecret' has been successfully created."

Access ADLS Gen2 with Service Principle

```
service_credential = dbutils.secrets.get(scope="<scope>",key="<service-credential-key>")

spark.conf.set("fs.azure.account.auth.type.<storage-account>.dfs.core.windows.net", "OAuth")
spark.conf.set("fs.azure.account.oauth.provider.type.<storage-account>.dfs.core.windows.net",
"org.apache.hadoop.fs.azurebfs.oauth2.ClientCredsTokenProvider")
spark.conf.set("fs.azure.account.oauth2.client.id.<storage-account>.dfs.core.windows.net",
"<application-id>")
spark.conf.set("fs.azure.account.oauth2.client.secret.<storage-account>.dfs.core.windows.net",
service_credential)
spark.conf.set("fs.azure.account.oauth2.client.endpoint.<storage-account>.dfs.core.windows.net",
"https://login.microsoftonline.com/<directory-id>/oauth2/token")
```

Cuenta de almacenamiento: adlsmaheer

Application id: Corresponde el ID del Service Principal

Service credential: scope --> testScope <-- Nombre de nuestro Service Principal

key: spSecret <-- Nombre de nuestro secreto en Azure Key Vault

Directory id: Corresponde al Directorio (tenant) ID --> Abajo deje una imagen de donde se obtiene

The screenshot shows a Databricks notebook interface with the title 'maheernotebook2'. The notebook is running on a cluster named 'demoCluster'. The code in the notebook is as follows:

```
1 spark.conf.set("fs.azure.account.auth.type.adlsmaheer.dfs.core.windows.net", "OAuth")
2 spark.conf.set("fs.azure.account.oauth.provider.type.adlsmaheer.dfs.core.windows.net",
"org.apache.hadoop.fs.azurebfs.oauth2.ClientCredsTokenProvider")
3 spark.conf.set("fs.azure.account.oauth2.client.id.adlsmaheer.dfs.core.windows.net", "37913bfc-77f3-44e9-afb1-4a590de54114")
4 spark.conf.set("fs.azure.account.oauth2.client.secret.adlsmaheer.dfs.core.windows.net", dbutils.secrets.get(scope="testScope",key="spSecret"))
5 spark.conf.set("fs.azure.account.oauth2.client.endpoint.adlsmaheer.dfs.core.windows.net", "https://login.microsoftonline.com/bacbdce8-6b8b-4079-9840-a7d0889449f1/oauth2/token")
```

Below the code, a message indicates that the command took 3.46 seconds and was executed by 'maheer3222@gmail.com' at 7/17/2022, 6:22:17 PM on the 'demoCluster'.

The notebook interface also shows a sidebar with various icons and a top bar with the Microsoft Azure logo and the user's email address 'maheer3222@gmail.com'.

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

Home > Default Directory > **maheertestSP**

Overview

Quickstart

Integration assistant

Manage

- Branding & properties
- Authentication
- Certificates & secrets
- Token configuration
- API permissions
- Expose an API
- App roles

Essentials

Display name: [maheertestSP](#)

Application (client) ID: 37913bfc-77f3-44e9-afb3-4a590de54114

Object ID: 33d84519-6a6b-452b-89d8-bad1ae04db8b

Directory (tenant) ID: **bacbdce8-6b8b-4079-9840-a7d0889449f1**

Supported account types: [My organization only](#)

Client credentials: [0 certificate, 1 secret](#)

Redirect URIs: [Add a Redirect URI](#)

Application ID URI: [Add an Application ID URI](#)

Managed application in local directory: [maheertestSP](#)

Starting June 30th, 2020 we will no longer add any new features to Azure Active Directory Authentication Library

Microsoft Azure | Databricks

maheernotebook2 Python

demoCluster

```
1 df = spark.read.csv("abfs://samplecontainer@adlismaheer.dfs.core.windows.net/data/Employees.csv",header=True)
2 display(df)
```

(2) Spark Jobs

df: pyspark.sql.dataframe.DataFrame = [id: string, name: string ... 2 more fields]

Table Data Profile

	id	name	gender	salary
1	1	maheer	male	3000
2	2	pradeep	male	3000
3	3	kranthi	male	2500
4	4	annu	female	4000

Showing all 4 rows.

Command took 1.11 seconds -- by maheer3222@gmail.com at 7/17/2022, 6:25:30 PM on demoCluster