



VIRTUAL
CABLE

VDI with UDS Enterprise 4.0 and Microsoft Azure



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Introduction

Azure is a proprietary platform from Microsoft that offers cloud services. Among some of its advanced features, there is the ability to run virtual machines, virtual applications, databases, backups, and many other tasks. It integrates a myriad of cloud services that are needed to develop, test, deploy, and manage virtual machines (VMs).

This **VDI Guide with UDS Enterprise & Microsoft Azure** will help you learn the procedure to deploy and configure UDS Enterprise components on the platform. This document shows, through real examples, how to create resource groups, storage accounts, containers and any resource necessary for UDS Enterprise to deploy virtual desktops on this platform.

In addition, it details one of the procedures for creating virtual machines (which will be used as a base machine or template), the steps to migrate machines from an existing environment (VMware, Hyper-V, etc...) to Microsoft Azure and the easiest way to convert an MV disk to .vhd format (disk format recognized in Azure).

UDS Enterprise en Microsoft Azure

Before carrying out the integration, it is advisable to invest time in knowing the different configurable parts of UDS Enterprise (for more information visit our [website](#). In the [Documentation section](#) you will find the UDS Enterprise Installation, Administration and User Manual. Two of them are Service **Providers** and **Authenticators**, elements of utmost importance for the configuration of Azure in UDS Enterprise.

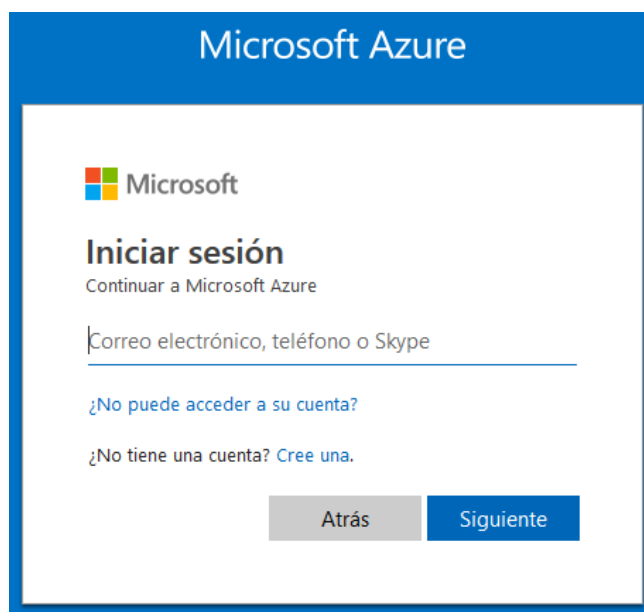
UDS Enterprise will allow the deployment of auto-generated virtual desktops and virtual application sessions on the Microsoft Azure platform.

To install and configure UDS Enterprise you must request its components (UDS-Server, UDS-Tunnel and MySQL Database -the latter optional-) and a serial number (Evaluation/ Enterprise) from Virtual Cable.

You must have a valid subscription in Microsoft Azure on which to deploy UDS Enterprise components, virtual desktops or Windows/Linux application servers.

Where do I start?

First, you must have an account with administrator privileges on the Azure platform. If you already have it, log in to the [portal](#).



The screenshot shows the Microsoft Azure login interface. At the top, there is a blue header with the text "Microsoft Azure". Below this, the Microsoft logo is displayed. The main heading is "Iniciar sesión" (Sign in), followed by the subtitle "Continuar a Microsoft Azure". There is a text input field labeled "Correo electrónico, teléfono o Skype". Below the input field, there are two links: "¿No puede acceder a su cuenta?" and "¿No tiene una cuenta? Cree una.". At the bottom, there are two buttons: "Atrás" (Back) and "Siguiente" (Next).

Once you have logged in and before uploading the UDS Enterprise components, you will need a series of elements available on the Azure platform ("**Resource Groups**", "**Storage Accounts**", "**Container**", "**Network Security Groups**").

Below are examples of how you should create and configure these elements for the correct operation of UDS Enterprise on an Azure platform.

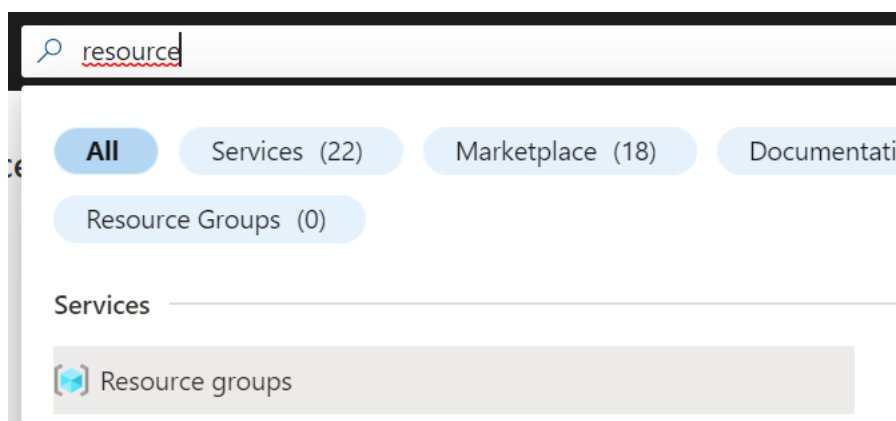
1. Required Items

▪ Resource Groups

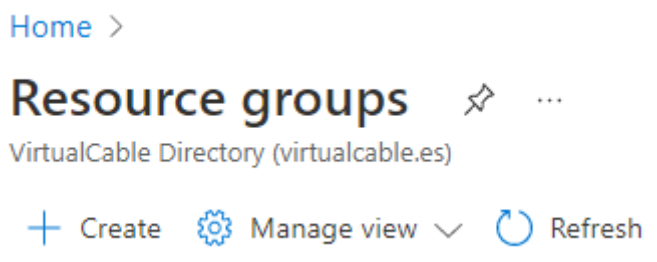
A resource **group** in Azure groups a collection of assets into logical groups for easy or even automatic provisioning, monitoring, and access control, for more effective management.

We will need to have at least one "**Resource Group**" on which to deploy and configure all the requirements and components of UDS Enterprise. If you don't have one, you can create one by following these steps:

1. In the "**Services**" list, we look for "**Resources groups**" and click on it:



2. Once inside, click on "**Create**" to create a new one.



3. In the "**Basics**" section, select the subscription on which it will be registered, indicate a descriptive name for the item, and choose a "**Resource group location**". Click on "**Review + Create**".

[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](#)

Subscription * ⓘ	VirtualCable Pago por Uso
Resource group name * ⓘ	UDS_Enterprise_4
Region * ⓘ	(Europe) France Central

[Previous](#)

[Next](#)

[Review + create](#)

4. We review all the data and if they are correct click on "**Create**":

Create a resource group ...

Basics Tags **Review + create**

[Automation Link](#)

Basics

Subscription	VirtualCable Pago por Uso
Resource group name	UDS_Enterprise_4
Region	France Central

Tags

None

[Previous](#)

[Next](#)

[Create](#)

5. We confirm that the "**Resource Group**" has been created correctly.

Home >

Resource groups

VirtualCable Directory (virtualcable.es)

+ Create ⚙️ Manage view ▾ ↻ Refresh ⬇️ Export to CSV 🔗 Open query | 🔗 Assign tags

You are viewing a new version of Browse experience. Some features may be missing. [Click here to access the old experience.](#)

4 × Subscription equals all Location equals all × + Add filter

<input type="checkbox"/>	Name ↑	Subscription	Location
<input type="checkbox"/>	UDS_Enterprise_4	VirtualCable Pago por Uso	France Central

Storage Accounts

The next item we will need will be a "**Storage account**". This element will allow us to import the UDS components and generate the virtual disks to later deploy the UDS virtual servers.

If you don't have one, you can create one by following these steps:

1. In the "**Services**" list, we look for "**Storage accounts**" and click on it:

storage

Services

Storage accounts

2. Once inside, click on "**Create**" to create a new one.

Home >

Storage accounts

VirtualCable Directory (virtualcable.es)

+ Create ↶ Restore ⚙️ Manage view ▾ ↻ Refresh

Subscription equals all

3. In the "**Basics**" section, select the subscription for which it will be registered, choose the "**Resource group**" created earlier and enter a descriptive name.

The choice of the rest of the available options ("**Performance**", "**Region**", "**Redundancy**") does not affect the operation/deployment of UDS, but they can affect the final cost.

[Home](#) > [Storage accounts](#) >

Create a storage account ...

Basics

Advanced

Networking

Data protection

Encryption

Tags

Review + create

Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#)

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 *

VirtualCable Pago por Uso

└─

Resource group *

UDS_Enterprise_4

[Create new](#)

Instance details

Storage account name * ⓘ

storageuds

Region * ⓘ

(Europe) France Central

[Deploy to an Azure Extended Zone](#)

Primary service ⓘ

Select a primary service

Performance * ⓘ



Standard: Recommended for most scenarios (general-purpose v2 account)



Premium: Recommended for scenarios that require low latency.

Redundancy * ⓘ

Locally-redundant storage (LRS)

4. In the "**Advanced**" *section*, we will mark the options that interest us

Create a storage account ...

Basics Advanced Networking Data protection Encryption Tags Review

ⓘ Certain options have been disabled by default due to the combination of storage account performance, redundancy, and region.

Security

Configure security settings that impact your storage account.

Require secure transfer for REST API operations ⓘ ☒

Enable blob public access ⓘ ☒

Enable storage account key access ⓘ ☒

Default to Azure Active Directory authorization in the Azure portal ⓘ ☐

Minimum TLS version ⓘ

Permitted scope for copy operations (preview) ⓘ

NOTE: It is important to enable "Storage account key access" to be able to access and manage our storage.

5. In the "**Networking**" *section*, we will mark the options that interest us.

Create a storage account ...

Basics Advanced Networking Data protection Encryption Tags Review

Network connectivity

You can connect to your storage account either publicly, via public IP addresses or service endpoints, or privately, using a private endpoint.

Network access * ☒ Enable public access from all networks
☐ Enable public access from selected virtual networks and IP addresses
☐ Disable public access and use private access
 ⓘ Enabling public access from all networks might make this resource available publicly. Unless public access is required, we recommend using a more restricted access type. [Learn more](#)

Network routing

Determine how to route your traffic as it travels from the source to its Azure endpoint. Microsoft network routing is recommended for most customers.

Routing preference ⓘ * ☒ Microsoft network routing
☐ Internet routing

6. In the "**Data protection**" section, we will check the options that interest us.

[Home](#) >

Create a storage account ...

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

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](#)
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 ⓘ

7. In the "**Encryption**" section , we will mark the options that interest us

Create a storage account ...

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

- 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 ⓘ ☐

In the "**Review**" section we will confirm that all the data is correct and click on "**create**":

Create a storage account ...

Basics Advanced Networking Data protection Encryption Tags Review

Default routing tier	Microsoft network routing
Endpoint type	Standard

Data protection

Point-in-time restore	Disabled
Blob soft delete	Enabled
Blob retainment period in days	7
Container soft delete	Enabled
Container retainment period in days	7
File share soft delete	Enabled
File share retainment period in days	7
Versioning	Disabled
Blob change feed	Disabled
Version-level immutability support	Disabled

Encryption

Encryption type	Microsoft-managed keys (MMK)
Enable support for customer-managed keys	Blobs and files only
Enable infrastructure encryption	Disabled

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

8. We confirm that the "**Storage account**" has been created correctly.

Home >


Storage accounts

VirtualCable Directory (virtualcable.es)

+ Create ↶ Restore ⚙️ Manage view ▾ ↻ Refresh ⬇️ Export to CSV 🔗 Open query | 🏷️ Assign tags 🗑️ Delete

uds Subscription equals all Resource group equals all Location equals all Add filter

Showing 1 to 2 of 2 records. No grouping ▾

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/>	 storageuds	Storage account	StorageV2	UDS_Enterprise_4	France Central	VirtualCable Pago por Uso

▪ Container

Once we have a valid "**Storage account**", we will need to have a "**Container**" to upload the disk images of the UDS servers.

If you don't have one, you can create one by following these steps:

1. Access the "**Storage account**" on which we will upload the UDS images. Within the "**Data Storage**" menu, select "**Containers**" and click on "**Container**" to create a new one:


Home > Storage accounts > storageuds


storageuds | Containers

Storage account

Search 🔍 << + Container

▼ Data storage

 Containers

 File shares

Search contain

Name

- We provide a descriptive name for the new "**Container**" and select the appropriate "**Public access level**" for our needs. Click on "**Create**" to finish its creation.

New container

Name *

uds4

Anonymous access level ⓘ

Private (no anonymous access)

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

Advanced

Create

Give feedback

- We confirm that the "Container" has been created correctly:

storageuds | Containers

Storage account

Search

Storage browser

Storage Mover

Partner solutions

Resource visualizer

Data storage

Containers

File shares

+ Container

Change access

Search containers by prefix

Name

☐ \$logs
☐ uds4

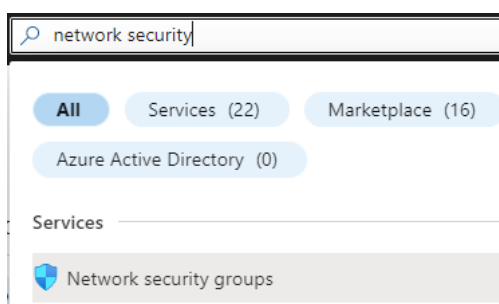
Page 13 of 87

■ Network security groups

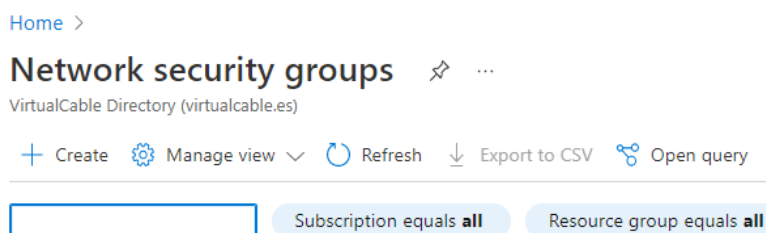
Another element necessary for the deployment of UDS will be the "**Network security groups**", which will perform the firewall function.

For the different UDS elements, specific ports will be required. Below are the ports that need to be configured for the proper functioning of UDS:

1. In the list of "**Services**", we look for "**Network security groups**" and click on it:



Once inside, click on "**Create**" to create a new one.



2. In the "**Basics**" section, select the subscription and the "**Resource group**" on which it will be registered, indicate a descriptive name for the item, and choose a "**Region**". Click on "**Review + Create**".

Create network security group ...

Basics

Tags

Review + create

Project details

Subscription *

VirtualCable Pago por Uso

Resource group *

UDS_Enterprise_4

Create new

Instance details

Name *

UDS-Server

Region *

France Central

3. We review all the data and if they are correct we click on "**Create**"

Create network security group ...

✓ Validation passed

Basics Tags Review + create

Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_4
Region	France Central
name	UDS-Server

Tags

None

Create

< Previous

Next >

Dc

4. We confirm that the "**Network security group**" has been created correctly. **It will be necessary to create two, one for the UDS server and one for the UDS Tunnel server:**

Network security groups ☆ ...

VirtualCable Directory (virtualcable.es)

+ Create ⚙️ Manage view ∨ ↻ Refresh ↓ Export to CSV 🔗 Open query | 🏷️ Assign tags

uds



Subscription equals all

Resource group equals all ✕

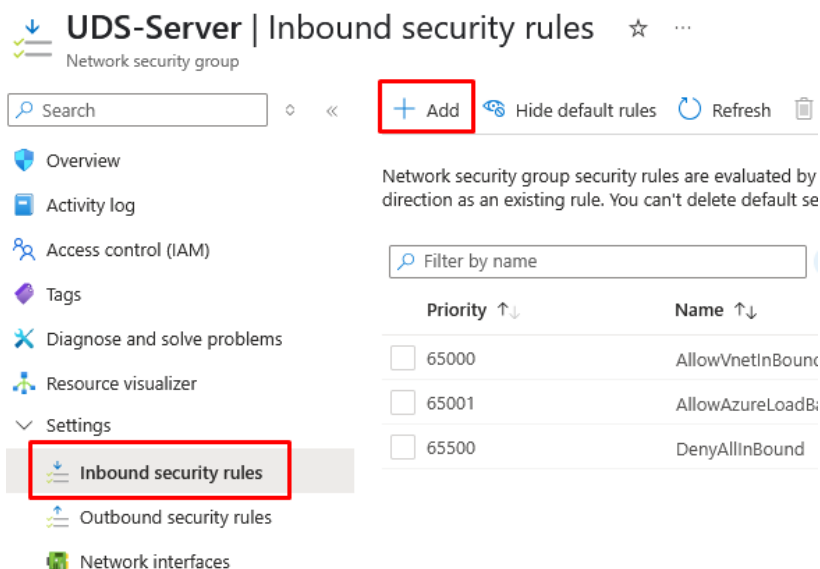
Location equal

Showing 1 to 2 of 2 records.

No grouping

<input type="checkbox"/> Name ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/>  UDS-Server	UDS_Enterprise_4	France Central	VirtualCable Pago por .
<input type="checkbox"/>  UDS-Tunnel	UDS_Enterprise_4	France Central	VirtualCable Pago por .


5. We access the newly created "**Network security group**". In the "**Settings**" menu, select "**Inbound security rules**" and click on "add" to create the necessary access rules:



6. We will need to set up two "**Network security groups**"; one for the UDS server and one for the UDS Tunnel server, each with its corresponding rule in "**Inbound security rules**". In the following table you can check the ports required for access to UDS components and the service they will offer:

Component	Port	Function
UDS Server	443	Access to the login panel
UDS Tunnel	443, 10443	Tunneled Access and HTML5

- a) **UDS-Server:** We must create an access rule to the UDS server where we allow traffic through TCP port 443:


Add inbound security rule
×

UDS-Server

Source ⓘ

Any

Source port ranges * ⓘ

*

Destination ⓘ

Any

Service ⓘ

Custom

Destination port ranges * ⓘ

443 ✓

Protocol

☐ Any
☒ TCP
☐ UDP
☐ ICMPv4
☐ ICMPv6

Action

☒ Allow
☐ Deny

Priority * ⓘ

100

Name *

UDS-Server ✓

Description

Access UDS portal


Once we have indicated the data as shown in the screenshot, we will click on "**add**" to create the rule and confirm its correct creation:

[+ Add](#)
[🔍 Hide default rules](#)
[🔄 Refresh](#)
[🗑 Delete](#)
[🗣 Give feedback](#)

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol to allow or deny the traffic. A security rule can't have the same priority and direction as an existing rule. You can't delete default security rules, but you can override them with rules that have a higher priority. [Learn more](#)

<input type="text" value="Filter by name"/>		Port == all	Protocol == all	Source == all	Destination == all	Action == all
Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 100	UDS-Server	443	TCP	Any	Any	✔ Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✔ Allow
<input type="checkbox"/> 65001	AllowAzureLoadBalan...	Any	Any	AzureLoadBalancer	Any	✔ Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	✖ Deny

- b) **UDS Tunnel:** We must create an access rule to the UDS Tunnel server where we allow traffic through TCP port 443 and TCP 10443:


Add inbound security rule
×

UDS-Tunnel

Source ⓘ

Any

Source port ranges * ⓘ

*

Destination ⓘ

Any

Service ⓘ

Custom

Destination port ranges * ⓘ

443,10443

Protocol
☐ Any
☒ TCP
☐ UDP
☐ ICMPv4
☐ ICMPv6

Action
☒ Allow
☐ Deny

Priority * ⓘ

100


Name *

UDS-Tunnel

Description

Access Tunneled and HTML5

Once we indicate the data as shown in the screenshot, we will click on "**add**" to create the rule and confirm its correct creation:


UDS-Tunnel | Inbound security rules
☆
...

Network security group

Search

◊

◀

+ Add

🔒 Hide default rules

🔄 Refresh

🗑 Delete

🗨 Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

Settings

Inbound security rules

Outbound security rules

Filter by name

Port == all

Protocol == all

Source == all

Destination == all

Action == all

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 100	UDS-Tunnel	443,10443	TCP	Any	Any	✔ Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✔ Allow
<input type="checkbox"/> 65001	AllowAzureLoadBalan...	Any	Any	AzureLoadBalancer	Any	✔ Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	✖ Deny

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol to allow or deny the traffic. A security rule can't have the same priority and direction as an existing rule. You can't delete default security rules, but you can override them with rules that have a higher priority. [Learn more](#)

Deploy UDS servers

Below is an example of how to deploy the servers that make up the UDS Enterprise environment on an Azure platform. This guide details the steps to upload and create the UDS Server component. **The same tasks must be performed for the UDS Tunnel server and the MySQL database.**

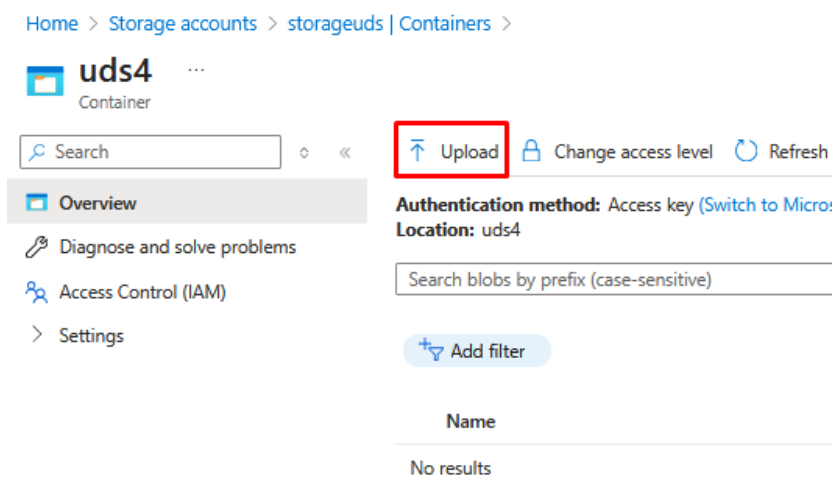
If the UDS version to be installed is Enterprise, you should also upload the MySQL database server to the platform (if you use the UDS Enterprise Evaluation Edition version you may not deploy a database server and activate a local one included in the UDS server).

UDS servers will be provided by the VirtualCable team in disk image format (.vhd)

■ Upload disc images


The first task we will perform will be to import the UDS Server disk image. To do this, we must have a "**Container**" and the UDS Server disk image in .vhd format

1. Access the "**Container**" ("**Storage accounts**", in the "**Data Storage**" section, click on the existing "**Container**") and click on "**Upload**":



2. We indicate the disc image in the "**Files**" section. In "**Blob type**" select "**Page blob**" and click on "**Upload**"

Upload blob
×



1 file(s) selected: UDS-Server-azure00e6.4.0.0.vhd
Drag and drop files here or [Browse for files](#)

☒ Overwrite if files already exist

^ Advanced

Blob type ⓘ
Page blob


☒ Upload .vhd files as page blobs (recommended)

Block size ⓘ
4 MiB

Access tier ⓘ

- The image will start importing and we will have to wait until the upload process is finished. Once finished, we will proceed to the following task, which will consist of generating a disk from the image:

Name

☐  UDS-Server-azure00e6.4.0.0.vhd


NOTE:

Depending on the size of the disk images and the speed of the connection, this process can take several minutes.

This process will need to be repeated with the UDS Tunnel component and with the MySQL Database server (in case you want to use this element).

Finally we will see that inside the "**Container**" we will have the UDS images available.

[Home](#) > [Storage accounts](#) > [storageuds | Containers](#) >







 **uds4** ...
Container

 Overview

 Diagnose and solve problems

 Access Control (IAM)




> Settings

 Upload  Change access level  Refresh  Delete  Change tier  Acquire lease

Authentication method: Access key ([Switch to Microsoft Entra user account](#))

Location: uds4

 Add filter

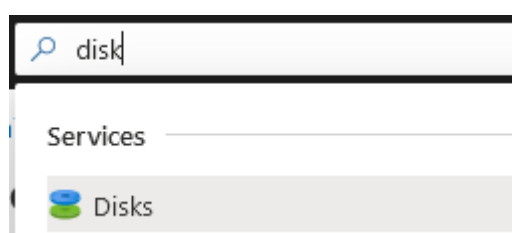
Name	Blob type	Size	Lease state
<input type="checkbox"/>  UDS-Dbserver-azure7746.4.0.0.vhd	Page blob	24 GiB	Available
<input type="checkbox"/>  UDS-Server-azure00e6.4.0.0.vhd	Page blob	16 GiB	Available
<input type="checkbox"/>  UDS-Tunnel-azure1efb.4.0.0.vhd	Page blob	20 GiB	Available

▪ Disc Creation

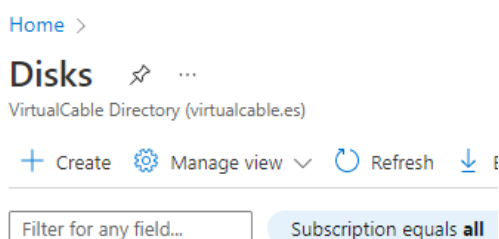
Once we have the images of the different UDS components uploaded to the Azure platform, we will proceed to deploy virtual disks based on these images.

From the virtual disks that we will create next, we will generate the virtual machines that will make up the UDS environment:

1. In the "**Services**" list, we look for "**Disk**" and click on it:



2. Click on "**Create**" to add a new album.



- In the "**Basics**" section, we select the subscription, the "**Resource group**" on which it will be registered, we indicate a descriptive name for the element, the "**Region**", and in "**Source type**" we indicate "**Storage blob**".

NOTE: Machines may only hold one disk.

[Home](#) > [Disks](#) >

Create a managed disk ...

Basics Encryption Networking Advanced Tags Review + create

Select the disk type and size needed for your workload. Azure disks are designed for 99.999% availability. Azure managed disks encrypt your data at rest, by default, using Storage Service Encryption. [Learn more about disks.](#)

Project details

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

Subscription * ⓘ

Resource group * ⓘ [Create new](#)

Disk details

Disk name * ⓘ ✓

Region * ⓘ

Availability zone

Source type ⓘ

Source subscription ⓘ

Source blob * ⓘ [Browse](#)

In "**Source blob**" click on "**Browse**" to select the previously imported disc.

We must select the "**Storage accounts**" that contains the disk images:

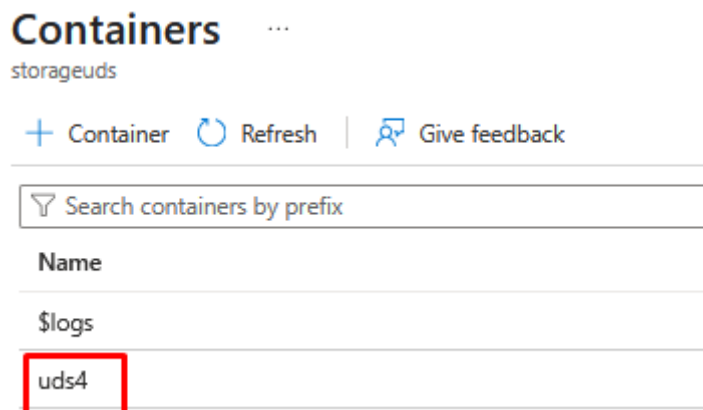
Storage accounts ...

[+ Storage account](#) [Refresh](#) | [Give feedback](#)

☐ Show classic storage accounts

Name	Type	Resource Group
storageuds	Standard-LRS	UDS_Enterprise_4



Once inside, select the "**Container**" created earlier.







Finally, select the image imported in the previous step (in this case for the UDS-Server) and click on "**Select**".


Name	Mo	Ac	Ar	Blob type	Size	Lease state
 UDS-Dobserver-azure7746.4.0.0.vhd	5...			Page blob	24 GiB	Available
 UDS-Server-azure00e6.4.0.0.vhd	5...			Page blob	16 GiB	Available
 UDS-Tunnel-azure1efb.4.0.0.vhd	5...			Page blob	20 GiB	Available



In "**OS type**" we will indicate that it is "**Linux**" and in "**Size**" we click on "**Change size**".


Source type  Storage blob 



Source subscription  VirtualCable Pago por Uso 


Source blob *  <https://storageuds.blob.core.windows.net/uds4/UDS-Server-azure00e6.4.0.0.vhd> 
[Browse](#)

OS type  ☐ None (data disk)
☒ Linux
☐ Windows

Security type  Standard 

VM generation  ☒ Generation 1
☐ Generation 2

VM architecture  ☒ x64
☐ Arm64
 Arm64 VM architecture is not supported with generation 1 virtual machines.

Size *  1024 GiB
 Premium SSD LRS
[Change size](#)

Select the appropriate "**Storage type**" and in "**Custom disk size (GiB)**" we specify 17 as the disk size for the UDS-Server component:

Select a disk size ...

Browse available disk sizes and their features.

Storage type ⓘ

Standard HDD (locally-redundant storage) ▼

Size	Disk tier	Provisioned IOPS
32 GiB	S4	500
64 GiB	S6	500
128 GiB	S10	500
256 GiB	S15	500
512 GiB	S20	500
1024 GiB	S30	500
2048 GiB	S40	500
4096 GiB	S50	500
8192 GiB	S60	1300
16384 GiB	S70	2000
32767 GiB	S80	2000

Custom disk size (GiB) * ⓘ

17 ✓

OK

NOTE:

The disk sizes for the different components of UDS Enterprise 4 will be as follows:

Component	Size in GB
UDS-Server	17
UDS-Tunnel	21
MySQL	25

Click on "**Review + Create**", check that all the data is correct and click on "**Create**":

Create a managed disk ...

✓ Validation passed

Basics Encryption Networking Advanced Tags Review + create

Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_4
Region	France Central
Disk name	UDS-Server4-Disk
Availability zone	No infrastructure redundancy required
Source type	Storage blob
Source subscription	VirtualCable Pago por Uso
Source blob	https://storageuds.blob.core.windows.net/uds4/UDS-Server-azure00e6.4.0.0.vhd
OS type	Linux
Security type	Standard
VM generation	V1
VM architecture	x64

Size

Size	17 GiB
Storage type	Standard HDD LRS

Create

< Previous

Next >


[Download a template for automation](#)

- We will wait for the disk to be created and, once the task is finished, we will see that we have it available to later generate the virtual machines.

Disks

VirtualCable Directory (virtualcable.es)

[+ Create](#) [Manage view](#) [Refresh](#) [Export to CSV](#) [Open query](#) | [Assign tags](#)




server4	Subscription equals all	Resource group equals all	Location equals all	
Showing 1 to 1 of 1 records.				
No grouping				
List				
<input type="checkbox"/> Name ↑↓	Storage type ↑↓	Size (G... ↑↓	Owner ↑↓	Resource group ↑↓
<input type="checkbox"/>  UDS-Server4-Disk	Standard HDD LRS	17	-	UDS_Enterprise_4
				France Central

- We will repeat the process with the UDS-Tunnel component and, if necessary, also with the MySQL Database server.

Disks

VirtualCable Directory (virtualcable.es)

[+ Create](#) [Manage view](#) [Refresh](#) [Export to CSV](#) [Open query](#) | [Assign tags](#)

uds	Subscription equals all	Resource group equals all	Location equals all	Add filter
Showing 1 to 4 of 4 records.				
No grouping				
List				
<input type="checkbox"/> Name ↑↓	Storage type ↑↓	Size (G... ↑↓	Owner ↑↓	Resource group ↑↓
<input type="checkbox"/>  UDS-DBServer4-Disk	Standard HDD LRS	25	-	UDS_Enterprise_4
<input type="checkbox"/>  UDS-Server4-Disk	Standard HDD LRS	17	-	UDS_Enterprise_4
<input type="checkbox"/>  UDS-Tunnel4-Disk	Standard HDD LRS	21	-	UDS_Enterprise_4
				France Central

NOTE:

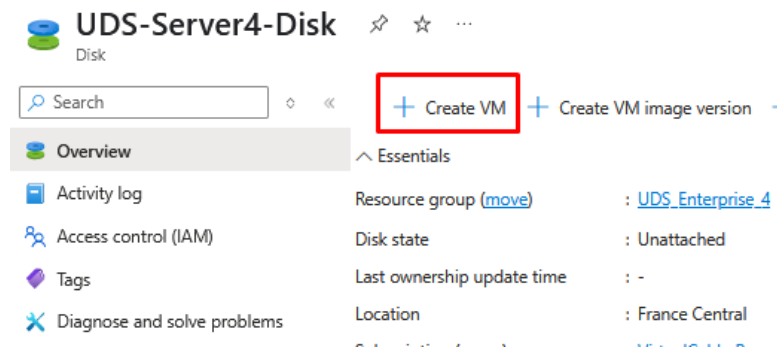
Once the disks have been deployed, we can remove the images from the "Container" in order to avoid unnecessary cost.

Creation of UDS servers

The last task we will perform in the process of importing/creating the UDS components will be the creation of the virtual machines based on the disks created in the previous step.

The creation of the machines will be carried out from the disks themselves:

1. Select the previously created disk (from the "**Disk**" service) and click on "**Create VM**":



In the "**Basics**" section, select the "**Resource group**" on which it will be registered, indicate a descriptive name for the new virtual machine (in this case for the UDS-Server component), confirm that the previously selected virtual disk is selected in "Image" and, finally, indicate the "**Size**" of the virtual machine.

Create a virtual machine ...

[Help me create a low cost VM](#)
[Help me create a VM optimized for high availability](#)
[Help me choose the right V](#)

[Basics](#)
[Disks](#)
[Networking](#)
[Management](#)
[Monitoring](#)
[Advanced](#)
[Tags](#)
[Review + create](#)

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

Project details

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

Subscription * ⓘ VirtualCable Pago por Uso ▼
 Resource group * ⓘ UDS_Enterprise_4 ▼
[Create new](#)

Instance details

Virtual machine name * ⓘ UDS-Server4 ✓
 Region ⓘ (Europe) France Central ▼
 Availability options ⓘ No infrastructure redundancy required ▼
 Security type ⓘ Standard ▼
 Image * ⓘ UDS-Server4-Disk - x64 Gen1 ▼
[See all images](#) | [Configure VM generation](#)
 VM architecture ⓘ
☐ Arm64
☒ x64
Arm64 is not supported with the selected image.
 Run with Azure Spot discount ⓘ ☐
 Size * ⓘ Standard_B2s - 2 vcpus, 4 GiB memory (32,25 €/month) ▼
[See all sizes](#)

Note:

The minimum recommended resources for the installation of UDS components are shown in the following table (in environments with low workload it is possible to assign fewer resources to the servers, specifically in the vCPUUs section).

Component	vCPU	vRAM (GB)
UDS-Server	4	4
UDS Tunnels	4	4
MySQL	2	3

- In the "**Disks**" section, we leave all the options by default, since it is not necessary to add an extra disk.

If we select the "**Delete with VM**" option, the disk will also be erased at the time of deleting the virtual machine.

Basics Disks Networking Management Monitoring Advanced Tags Review + create

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 ☐

OS disk

OS disk size

OS disk type

Delete with VM ☒

Key management

Enable Ultra Disk compatibility ☐

Ultra disk is supported in Availability Zone(s) 1,2,3 for the selected VM size Standard_B2s.

- In the "**Networking**" section we must indicate a "**Virtual network**" to which we can connect the server (if we do not have one created, we will create one), a "**subnet**", and for the UDS-Server and UDS-Tunnel components we will assign a new "**Public IP**".

In "**NIC network security group**" we will select "**Advanced**" and choose the "**Security group**" created in previous steps appropriate for each server.

If we choose the option "**Delete public IP and NIC when VM is deleted**" the public IP created for this machine will be deleted at the time of deleting the virtual machine.

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.

[Learn more](#)

Network interface

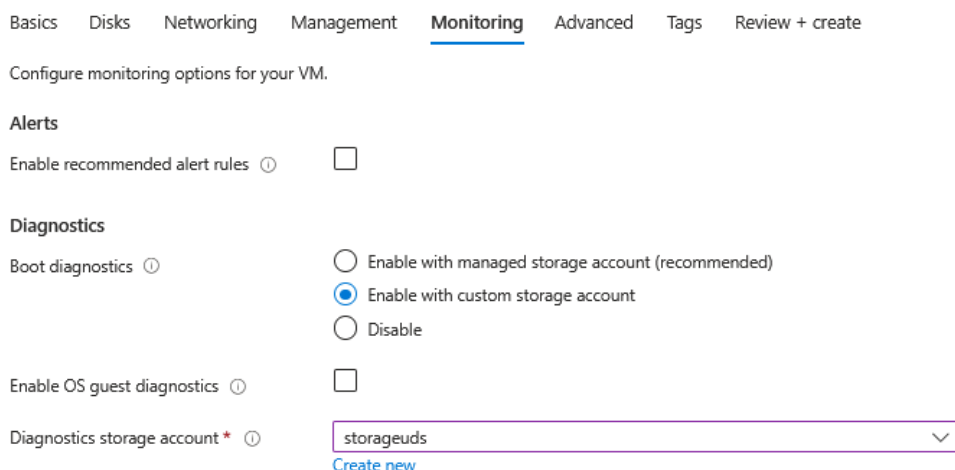
When creating a virtual machine, a network interface will be created for you.

Virtual network * ⓘ	<div>UDS_Enterprise_3-vnet</div> <div>Create new</div>
Subnet * ⓘ	<div>default (10.1.0.0/24)</div> <div>Manage subnet configuration</div>
Public IP ⓘ	<div>(new) UDS-Server4-ip</div> <div>Create new</div>
NIC network security group ⓘ	<div><input type="radio"/> None</div> <div><input type="radio"/> Basic</div> <div><input checked="" type="radio"/> Advanced</div>
Configure network security group *	<div>UDS-Server</div> <div>Create new</div>
Delete public IP and NIC when VM is deleted ⓘ	<input checked="" type="checkbox"/>

Note:

The public IP address assigned by default will be dynamic, although once the VM is created we can generate a DNS name associated with this IP or even force the machine to have a static public IP (it will also be necessary to assign a public IP to the UDS-Tunnel component, but it will not be necessary to the MySQL database, therefore in that case we will select "None").

- In the "**Monitoring**" tab we enable the "**Boot diagnostics**" option that will allow us to view a screenshot of the boot and subsequent status of the virtual machine. In addition, this option is necessary to be able to access the "**Serial console**" (when enabling "**Boot diagnostics**" it will be necessary to indicate a "**Storage account**"). In this case we select the one created previously to avoid creating a new one).



Basics Disks Networking Management **Monitoring** Advanced Tags Review + create

Configure monitoring options for your VM.

Alerts

Enable recommended alert rules ☐

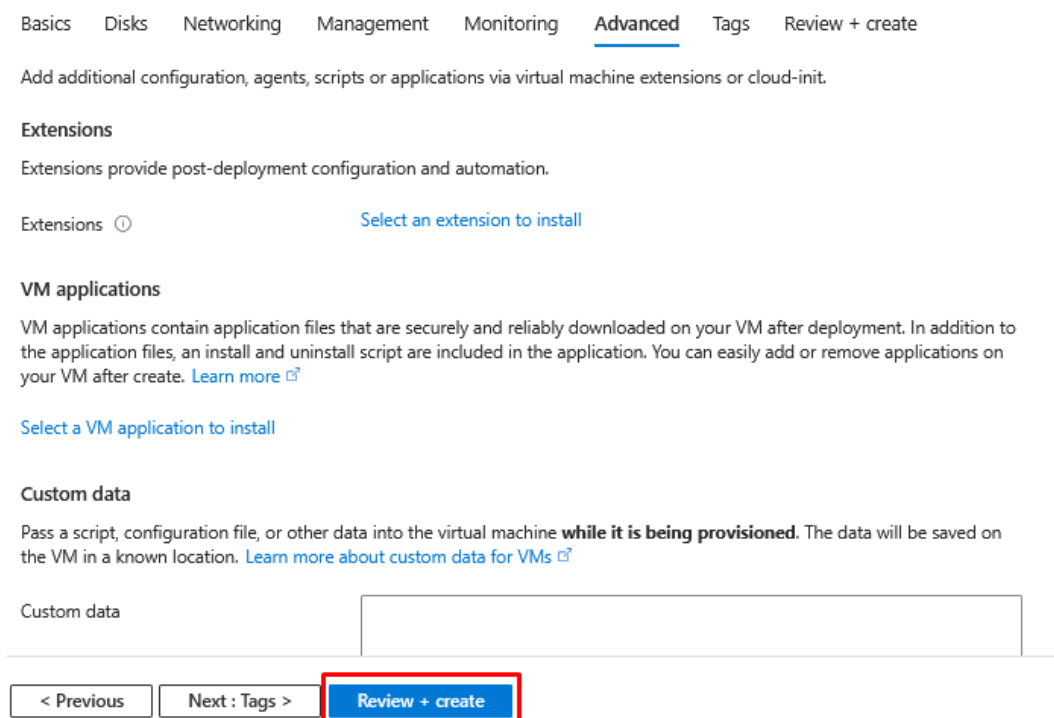
Diagnostics

Boot diagnostics ☒ Enable with managed storage account (recommended)
☒ Enable with custom storage account
☐ Disable

Enable OS guest diagnostics ☐

Diagnostics storage account * [Create new](#)

- The "**Advanced**" tab can leave all the options by default and click on "**Review + create**".



Basics Disks Networking Management Monitoring **Advanced** Tags Review + create

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Extensions

Extensions provide post-deployment configuration and automation.

Extensions [Select an extension to install](#)

VM applications

VM applications contain application files that are securely and reliably downloaded on your VM after deployment. In addition to the application files, an install and uninstall script are included in the application. You can easily add or remove applications on your VM after create. [Learn more](#)

[Select a VM application to install](#)

Custom data

Pass a script, configuration file, or other data into the virtual machine **while it is being provisioned**. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#)

Custom data

< Previous Next : Tags > **Review + create**

- We will check that all the configuration is correct and click on "**Create**" to create the virtual machine.

Create a virtual machine ...

✓ Validation passed



Help me create a low cost VM

Help me create a VM optimized for high availability

Help me choose a VM

Basics Disks Networking Management Monitoring Advanced Tags **Review + create**

UDS-Server4-Disk
Image

Standard B2s
2 vcpus, 4 GiB memory

Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_4
Virtual machine name	UDS-Server4
Region	France Central
Availability options	No infrastructure redundancy required
Zone options	Self-selected zone
Security type	Standard
Image	UDS-Server4-Disk - Gen1
VM architecture	x64
Size	Standard B2s (2 vcpus, 4 GiB memory)
Enable Hibernation	No
Authentication type	SSH public key
Username	azureuser
SSH Key format	RSA
Key pair name	UDS-Server4_key
Azure Spot	No

Disks

OS disk size	Image default
OS disk type	Standard HDD LRS
Use managed disks	Yes
Delete OS disk with VM	Enabled
Ephemeral OS disk	No

- Once the process of creating the new VM is finished, we will verify that we already have the new machine within the "**Virtual machines**" service. To be able to view it, we must look for "Virtual machines" **in the "Services"** list and click on it:



We'll see the new virtual machine created and powered on:

Virtual machines

Get started

Create

Switch to classic

Reservations

Manage view

Refresh

Export to CSV

Open query

uds-

Subscription equals all

Type equals all

Resource group equals all

Add filter

More

Showing 1 to 1 of 1 records.

No grouping

List view

<input type="checkbox"/>	Name	Subscription	Resource group	Location	Status	Op...	Size	Public IP
<input type="checkbox"/>	UDS-Server4	VirtualCable Pago por Uso	UDS_Enterprise_4	France Central	Running	Linux	Standard_B2s	4.251.104.

- We will repeat the process with the UDS-Tunnel component and also with the MySQL Database server if necessary.

<input type="checkbox"/>	Name ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating syst...
<input type="checkbox"/>	UDS-DBServer4	VirtualCable Pago por Uso	UDS_Enterprise_4	France Central	Running	Linux
<input type="checkbox"/>	UDS-Server4	VirtualCable Pago por Uso	UDS_Enterprise_4	France Central	Running	Linux
<input type="checkbox"/>	UDS-Tunnel4	VirtualCable Pago por Uso	UDS_Enterprise_4	France Central	Running	Linux

NOTE:

On the database server it will not be necessary to indicate either a "Public IP" or a "Security Group", since it will not be accessible from the outside and only the UDS server will need access to it.

■ UDS Server Configuration

Once we have all the UDS components deployed as virtual machines, we will proceed to configure them.

To do this, we will access the "*Virtual machines*" service and, if we have the MySQL component, we will start with it.

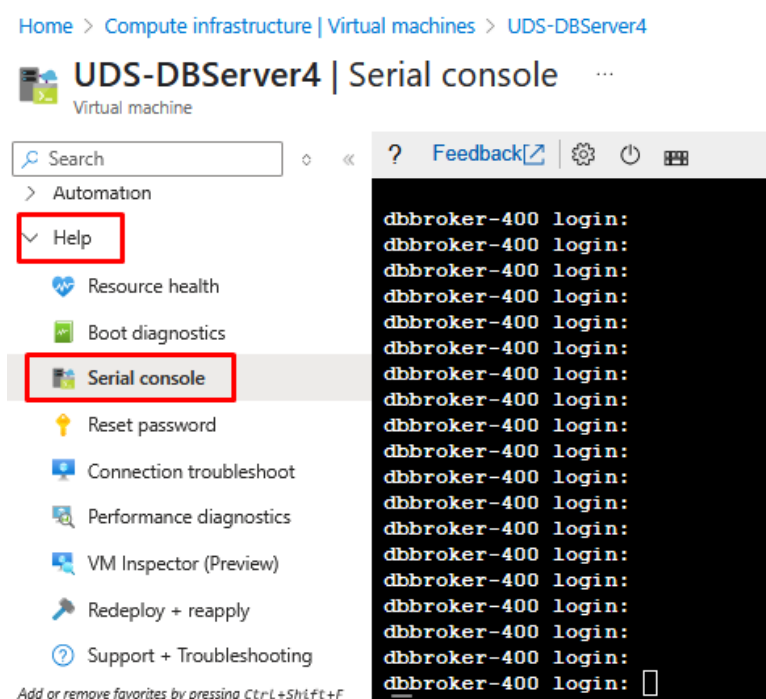
○ MySQL Database Configuration

If you are using the MySQL database provided by the VirtualCable team, it will already be pre-configured and you will only have to verify that you have IP connectivity (by default the network is configured by DHCP).

This MySQL server has created a database instance ready to use with UDS Enterprise with the following data:

- **Instance name:** uds
- **User:** uds
- **Password:** uds

In order to confirm that the server has a valid IP assigned via DHCP we will have to connect via "*Serial console*". We will access the "*Virtual machines*" service, select the virtual machine that contains the MySQL database and in the "*Support + troubleshooting*" menu we will select "*Serial console*".



NOTE:

The connection will take a few seconds to establish and once connected, we will have to place the mouse inside and press the "enter" key.

We will validate ourselves on the MySQL server with the following credentials:

- **User:** root
- **Password:** uds

It will directly indicate the assigned IP address and relevant information about the security and configuration of the server itself.

```
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.

IMPORTANT NOTES:
* This machine is provided as a very basic mysql server, without any security add
* Change root password (ssh root login is ENABLED by default)
* Provide a custom name for this machine. you can use hostnamectl set-hostname --
VER NAME to do this.
* Protect access to this machine, because it contains defaults that are publicly a
as root password and database passwords.
* By default, cockpit is installed and available at https://SERVER_IP:9090. You c
if desired with apt-get remove cockpit
* Consider updating the software (using apt, dselect, etc..) as a first step befo
any environment (production or not)
* Update the keyboard layout if needed: use dpkg-reconfigure keyboard-configuratio
keyboard-setup restart for this. Default keyboard lang is Spanish
* Set the timezone: use dpkg-reconfigure tzdata

* THIS MACHINE IS INTENDED ONLY TO BE USED IN AN INTERNAL AND TRUSTED LAN.

You will need to take security actions (such as changing passwords, enabling firew
order to secure this machine.

Default mysql root password: Without password
Default uds database password: uds
Default listen address of mysql server: 0.0.0.0 (all addresses)

Default network mode: DHCP

Detected IP: 10.1.0.12
Cockpit interface is at https://10.1.0.12:9090
root@dbbroker-400:~#
```

If we want to confirm that the network configuration is correct, we can use the command:

IP A


```
root@dbbroker-400:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 60:45:bd:19:fd:95 brd ff:ff:ff:ff:ff:ff
    inet 10.1.0.12/24 brd 10.1.0.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::6245:bdf:fe19:fd95/64 scope link
        valid_lft forever preferred_lft forever
root@dbbroker-400:~#
```

Once we confirm that we have network connectivity, we will proceed to configure the UDS Server component (If a DHCP server is not available on the network, a fixed IP address must be indicated in the /etc/network/interfaces file).

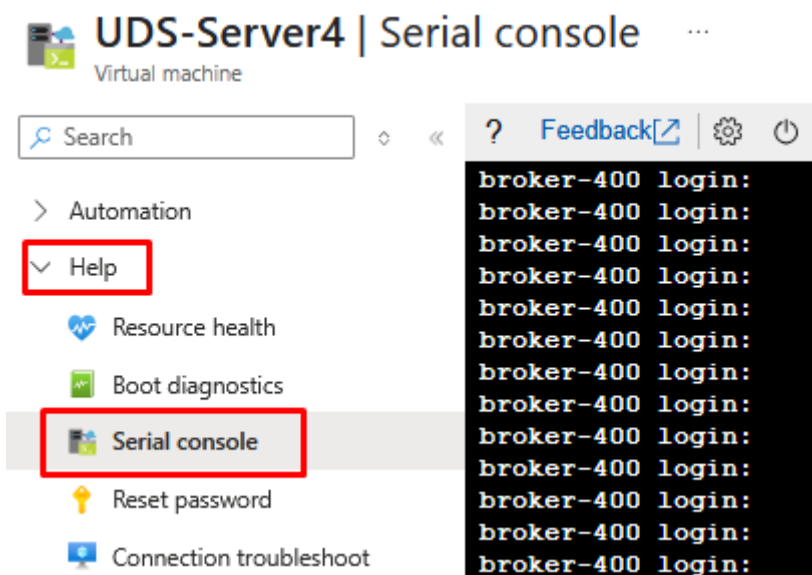
NOTE:

The use of fixed IPs is recommended for all UDS components

o UDS Server Configuration

The UDS-Server component is the main element of the UDS environment. It has a configuration wizard accessible via web browser. Before accessing this configuration wizard, we will need to confirm that the server has been assigned an IP address.

In order to confirm that the server has a valid IP assigned via DHCP we will have to connect via "**Serial console**". We will access the "**Virtual machines**" service, select the virtual machine that contains the UDS server and in the "**Support + troubleshooting**" menu we will select "**Serial console**".





NOTE:

The connection will take a few seconds to establish and, once connected, we will have to place the mouse inside and press the "enter" key.

We will validate ourselves on the UDS server with the following credentials:

- **User:** root
- **Password:** uds

It will directly indicate the assigned IP address and information to access the server configuration wizard (through port 9900).

[illegible]

If the server has not been assigned an IP address automatically, we must do it through the command: **uds ip**

NOTE:

For more information about the `uds ip` command, consult the UDS Enterprise Installation, Administration and User Manual in the Documentation section of our website.

We will need a virtual machine within the Azure environment and in the UDS server subnet to access the server configuration wizard via web browser. In the browser we must indicate the IP address of the UDS server and port 9900.

From here we will indicate all the necessary data (IP data, serial to activate the subscription, credentials, etc...) to configure the server.

For more information on the configuration of the UDS server, consult the UDS Enterprise installation, administration and user manual.

NOTE:

During the setup procedure of the wizard, you will ask us for the configuration data of the database server. In the case of using an external server, we must indicate the data of the MySQL server previously configured (IP address, instance, username and password).

o UDS Tunnel Configuration

The UDS Tunnel component is the element that will provide us with secure access to virtual desktops over the Internet. It will also be responsible for establishing the HTML5 connection (HTML5 Transport for desktops and vApps). It has a configuration wizard accessible via web browser. Before accessing this configuration wizard, we will need to confirm that the server has been assigned an IP address.

In order to confirm that the server has a valid IP assigned via DHCP, we will have to connect via "**Serial console**". We will access the "**Virtual machines**" service, select the virtual machine that contains the UDS Tunnel server and in the "**Support + troubleshooting**" menu we will select "**Serial console**".

[Home](#) > [Virtual machines](#) > [UDS3-Tunnel | Serial console](#) >

Virtual machines

VirtualCable Directory

[+ Add](#) [⌚ Reservations](#) ...












UDS3

☒ Name ↑↓

- ☒  UDS3-Tunnel ...
- ☐  UDS3-Server ...
- ☐  UDS3-dbserver ...

UDS3-Tunnel | Serial console

Virtual machine

-  Logs
-  Connection monitor
- Support + troubleshooting**
 -  Resource health
 -  Boot diagnostics
 -  Performance diagnostics (Pre...)
 -  Reset password
 -  Redeploy
 -  Maintenance
 -  **Serial console**
 -  Connection troubleshoot
 -  New support request

```
? Feedback [?] [Settings] [Power] [Refresh]
2020/05/31 18:14:34.295574 ERROR ExtH
2020/05/31 18:14:34.305881 INFO ExtH
2020/05/31 18:14:34.307964 INFO ExtH
2020/05/31 18:14:34.346156 INFO ExtH
R_UP> mtu 65536 qdisc noqueue state
00:00:00 brd 00:00:00:00:00:00 promi
5536 gso_max_segs 65535 " }, { "name
pfifo_fast state UP mode DEFAULT gro
:ff:ff promiscuity 0 addrngenmode eui
" }]}
2020/05/31 18:14:34.371355 INFO ExtH
2020/05/31 18:14:35.116354 INFO ExtH
[ 58.222082] hv_balloon: Received
[ 58.226074] hv_balloon: Data Size
2020/05/31 18:19:34.957492 INFO ExtH
[WALinuxAgent]
2020/05/31 18:29:34.146714 INFO Daem
bin/waagent -run-exthandlers' is suc
UDS Enterprise Tunnel v3.0.0 tunnel
tunnel login: [ ]
```

NOTE:

The connection will take a few seconds to establish and, once connected, we will have to place the mouse inside and press the "enter" key.



- **User:** root
- **Password:** uds

```
Linux tunnel-360 5.10.0-22-amd64 #1 SMP Debian 5.10.178-3 (2023-04-22) x86_64
UDS Enterprise Tunnel v3.6.0
```

```
(((((//))))))
(((((((//))))(((((^)))
/((((((((//))))(((((//)))
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,/#####(*,(((((((//))))
,/#####/,*/(((((((//))))
*(#####(,*(((((((//))))
*#####/,*(((((((//))))
,/#####(,*(((((((//))))
,*(#*#*,*((
```

UDS Enterprise comes with ABSOLUTELY NO WARRANTY,
to the extent permitted by applicable law.

Last login: Thu May 4 11:21:27 CEST 2023 on ttys0

```
root@tunnel-360:~# uds setup
UDS Enterprise tunnel CLI tool
UDS Enterprise setup launcher
Your appliance IP is 10.1.0.5. We are going to start the web setup process for you right now
To configure your appliance, please go to this URL: https://10.1.0.5:9900
Note that, by default, UDS Appliance generates self signed certificates.
If you want to use your own certificates, please copy them to /etc/certs/ folder.
The setup process will be available until finished or the appliance is rebooted.
Your setup code is: 5ieo-L7P
```

In order for the UDS Tunnel to trust the UDS Server's self-signed certificate and to be able to validate the connection, we will have to use the "uds trust" command.

```
root@tunnel-360:~# uds trust -h
UDS Enterprise tunnel CLI tool
usage: uds trust [-h] [-c] HOSTNAME PORT

positional arguments:
  HOSTNAME      Hostname of the remote server.
  PORT          Port of the remote server.

optional arguments:
  -h, --help    show this help message and exit
  -c, --chain    Trust the certificate full chain.
root@tunnel-360:~#
```

```
root@tunnel-360:~# uds trust 10.1.0.4 443
UDS Enterprise tunnel CLI tool
Reading certificate from server 10.1.0.4:443 done
Certificate name: uds
Valid from: 2023-05-03 13:45:58
Valid until: 2033-04-30 13:45:58
Fingerprint: 45c4057ccfb7868c46a7a380d14eb7469154aae7ba01eac02e3fbd6e6b3158b5
Issuer: CN=uds,O=UDS Enterprise Self Signed Certificate,L=Madrid,ST=Madrid,C=ES
Subject: CN=uds,O=UDS Enterprise Self Signed Certificate,L=Madrid,ST=Madrid,C=ES
Serial number: 96437732967641467136199749799254345613867698568
Self signed: Yes
Writing certificate to trust file (/usr/local/share/ca-certificates/uds.crt)... done
Ensuring that the name uds resolves to the IP 10.1.0.4...
updating /etc/hosts... done
Updating trusted database...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...

done.
done.
Trusted certificate installed
```

Once done we will have to indicate to the UDS Tunnel the name of our UDS Server "uds"

Ensuring that the name uds resolves to the IP 10.1.0.4...

Editing the /etc/hosts file

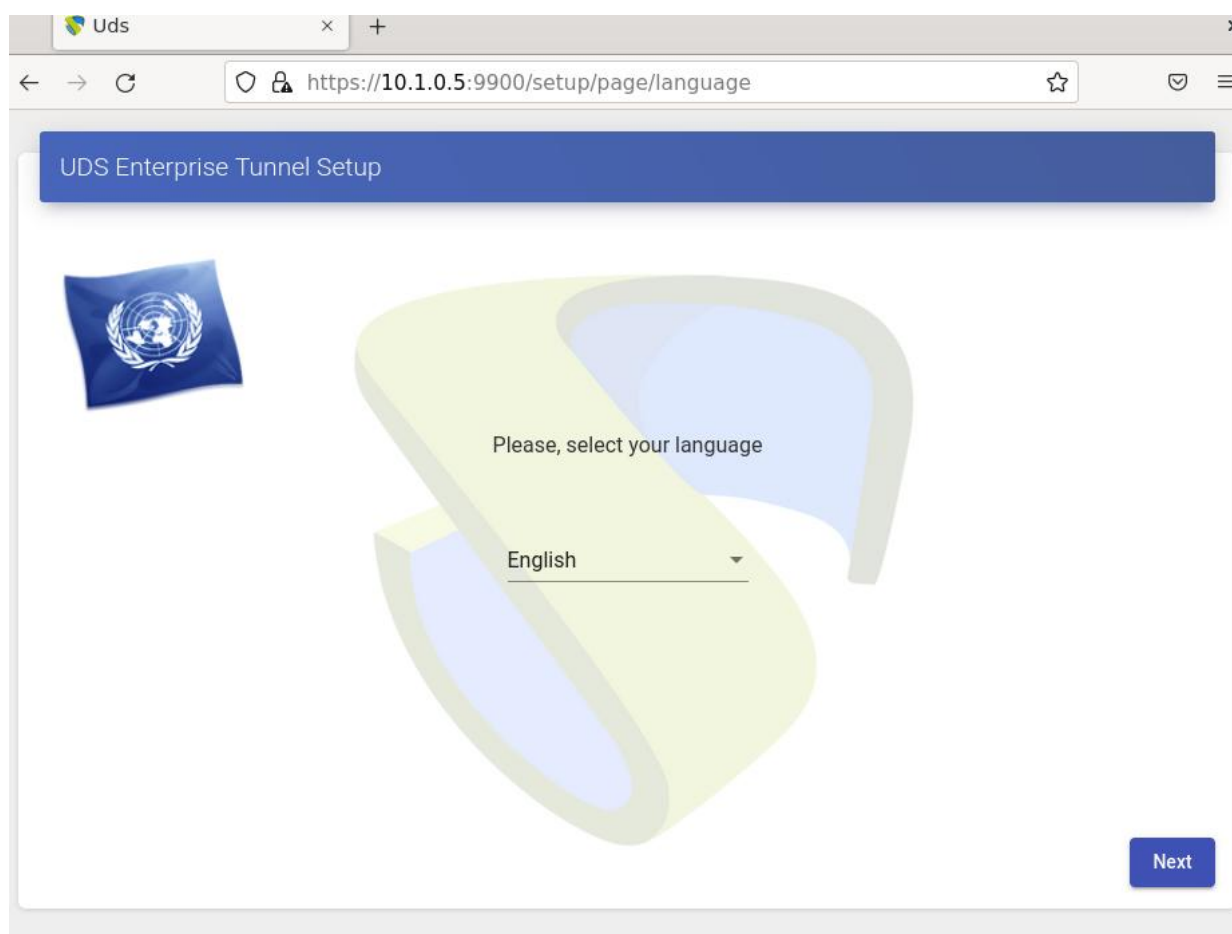
```
# Autogenerated by UDS installer
127.0.0.1      localhost
127.0.1.1      tunnel-360.domain.local tunnel-360
10.1.0.4       uds
```

Once the process is done, we can continue with the configuration of the Tunnel.

NOTE:

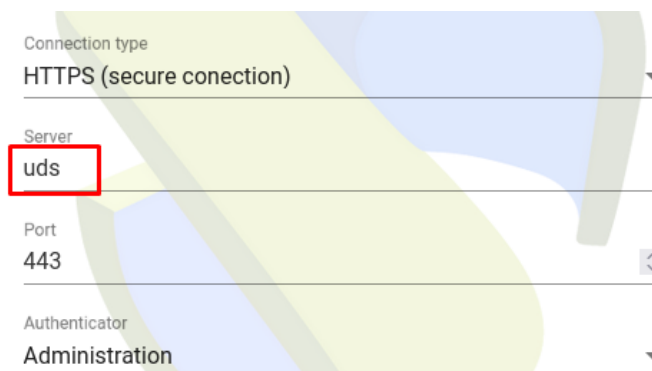
For more information about the `uds ip` command, consult the UDS Enterprise Installation, Administration and User Manual

We will need a virtual machine within the Azure environment and in the UDS Tunnel server subnet to access the server configuration wizard via web browser. In the browser we must indicate the IP address of the UDS Tunnel server and port 9900:



From here we will indicate all the necessary data (IP data, credentials, certificates etc...) to configure the Tunnel.

It should be noted that in the section on connection with the UDS Server, we will have to indicate the hostname of the Server indicated in the previous step



The screenshot shows a configuration form with the following fields:

- Connection type:** HTTPS (secure connection) (dropdown menu)
- Server:** uds (text input, highlighted with a red box)
- Port:** 443 (text input)
- Authenticator:** Administration (dropdown menu)

For more information on the configuration of the UDS Tunnel server, consult the UDS Enterprise installation, administration and user manual.

NOTE:

During the configuration procedure of the wizard it will ask us for the connection data of the UDS server.

▪ Create base machines or templates in Microsoft Azure

In order for UDS to deploy virtual desktops on the Azure platform, it is necessary to have a base machine or template on which the new desktops autogenerated by UDS will be based. This base machine can be deployed in different ways. Below we will show a procedure that will allow us to migrate templates already installed and configured on other virtual platforms (vSphere, KVM, etc...) to the Azure platform.

The first thing we must do is have a disk image of the base virtual machine in .vhd format. There are many free tools (such as [StarWind converter](#), [qemu-img](#), etc...) that allow us to convert disks of different formats (vmdk from vmware, qcow2/raw from KVM, etc...) to .vhd format. It is very important to note that the disk image has to be at the Fixed Size. "Thin" format (Dynamically Expanding) is not supported.

Before migrating the template machine, it is important that we make sure that it will have a valid access mode (SSH or RDP type), in order to be able to access it once it is hosted on the Azure

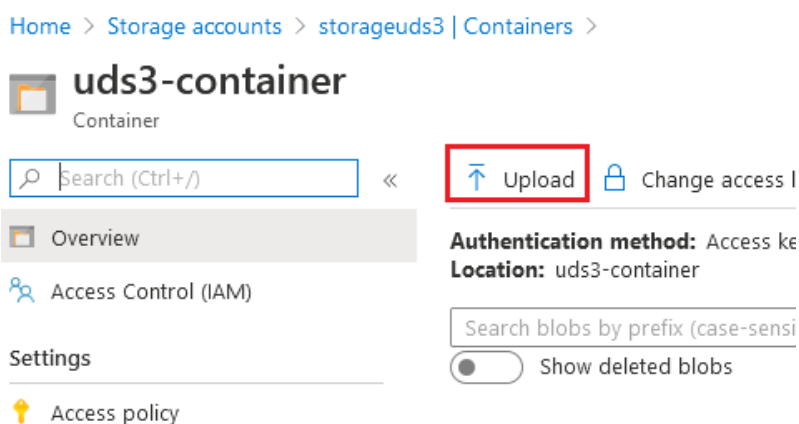
platform (this platform does not have a console to manage, configure and modify the machines). The base machine used in this example has access enabled/installed via SSH and RDP.

Another important point to consider is the network configuration. It needs to be configured to take IP address via DHCP. In template With Windows OS, it is necessary to have the valid network driver installed for it to be detected on the Azure platform (if the machine is exported from a Hyper-V platform it will already be embedded).

Once we have the disk image converted to the format supported by Azure (.vhd), we will proceed to upload it to the platform and deploy the new base machine. We will perform the following tasks described below (the procedure will be very similar to the one we have used to deploy the UDS component Appliances):

○ Upload .vhd disk image to a "Container"

1. Access the "**Container**" ("**Storage accounts**", in the "**Blob service**" section, click on the existing "**Container**") and click on "**Upload**":



2. We indicate the disc image in the "**Files**" section. In "**Blob type**" select "**Page blob**" and click on "**Upload**".

Upload blob



uds3-container/

Files ⓘ

"xUbuntu18.vhd"



☐ Overwrite if files already exist

^ Advanced

Authentication type ⓘ

Azure AD user account

Account key

Blob type ⓘ

Page blob



☒ Upload .vhd files as page blobs
(recommended)

Block size ⓘ

4 MB



Upload to folder

Upload

- The image will start importing and we will have to wait until the upload process is finished. Once finished, we will proceed to the next task, which will consist of generating a disc from the image.

Current uploads

Dismiss: [Completed](#) [All](#)

xUbuntu18.vhd	 15 GiB / 15 GiB	...
---------------	---	-----

NOTE:

Depending on the size of the disk images and the speed of the connection, this process can take several minutes.


Finally, we will see that inside the "**Container**" we will have the disk image of our base machine / template available.

[Upload](#)
[Change access level](#)
[Refresh](#)
[Delete](#)
[Cha](#)

Authentication method: Access key ([Switch to Azure AD User Account](#))

Location: uds3-container

☐ Show deleted blobs

Name	Modified	Blob type	Size	Lease state
 xUbuntu18.vhd	6/5/2020 12:05	Page blob	15 GiB	Available

Virtual Disk Creation

- Access the "**Disk**" service and click on "**Add**" to add a new disk.

[Home](#) >

Disks

VirtualCable Directory

[+ Add](#)
[Edit columns](#)

Subscription: VirtualCable Bag

- In the "**Basics**" section, we select the subscription, the "**Resource group**" on which it will be registered, we indicate a descriptive name for the item, the "**Region**", and in "**Source type**" we indicate "**Storage blob**":

Create a managed disk ...

[Basics](#)
[Encryption](#)
[Networking](#)
[Advanced](#)
[Tags](#)
[Review + create](#)

Select the disk type and size needed for your workload. Azure disks are designed for 99.999% availability. Azure managed disks encrypt your data at rest, by default, using Storage Service Encryption. [Learn more about disks.](#)

Project details

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

Subscription * ⓘ

VirtualCable Pago por Uso

Resource group * ⓘ

UDS_Enterprise_3

[Create new](#)

Disk details

Disk name * ⓘ

xUbuntu18-Disk

Region * ⓘ

(Europe) France Central

Availability zone

None

Source type ⓘ

Storage blob

Source subscription ⓘ

VirtualCable Pago por Uso

Source blob * ⓘ

https://storageuds3.blob.core.windows.net/uds3container/UBUNTUazure.vhd

[Browse](#)

In "**Source blob**" click on "**Browse**" to select the previously imported disc.

We must select the "**Storage accounts**" that contains the disk images:

Storage accounts

[+ Storage account](#)
[Refresh](#)

storageuds3		
Name	Type	Resource Group
storageuds3	Standard-LRS	UDS_Enterprise_3

Once inside, select the "**Container**" created earlier.

Containers

storageuds3

+ Container

Refresh

Name	Last modified	Public access level	Lease stat
uds3-container		Private	Available

Finally, select the image imported in the previous step (in this case for the UDS-Server) and click on "**Select**".

uds3-container

Container

Upload

Refresh

Authentication method: Access key ([Switch to Azure AD User Account](#))
Location: uds3-container

+ Add filter

Name	Modified	Access...	Blob type	Size	Lease state
xUbuntu18.vhd	5/5/2020, 12:0...		Page blob	15 GiB	Available

Select

In "**OS type**" we will indicate the OS and in "**Size**" we click on "**Change size**" and choose the resources of our template machine (in the size of the disk, we will always indicate 1 GB more).

OS type ⓘ

☐ None (data disk)
☒ Linux
☐ Windows

Security type ⓘ

Standard

VM generation ⓘ

☒ Generation 1
☐ Generation 2

VM architecture ⓘ

☒ x64
☐ Arm64
Arm64 VM architecture is not supported with generation 1 virtual machines.

Size * ⓘ

25 GiB
 Standard HDD LRS
[Change size](#)

3. Click on "**Review + Create**", check that all the data is correct and click on "**Create**":

NOTE: Machines may only hold one disk.

Create a managed disk ...

✓ Validation passed

Basics Encryption Networking Advanced Tags Review + create

Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_3
Region	France Central
Disk name	xUbuntu18-Disk
Availability zone	None
Source type	Storage blob
Source subscription	VirtualCable Pago por Uso
Source blob	https://storageuds3.blob.core.windows.net/uds3container/UBUNTUazure.vhd
OS type	Linux
Security type	Standard
VM generation	V1
VM architecture	x64

Size

Size	25 GiB
Storage type	Standard HDD LRS

Encryption

Encryption type	Platform-managed key
-----------------	----------------------

Create

< Previous

Next >

[Download a template for automation](#)

4. We will wait for the disk to be created and, once the task is finished, we will see that we have it available to later generate the template virtual machine.

[Home](#) >

Disks ...


VirtualCable Directory (virtualcable.es)

[+](#) Create [⚙️](#) Manage view [v](#) [🔄](#) Refresh [↓](#) Export to CSV

Filter for any field...

Subscription equals **all**

Resource

<input type="checkbox"/>	Name 	Storage account type 	Size (G..
<input type="checkbox"/>	 xUbuntu18-Disk	Standard HDD LRS	25

NOTE:

Once the disk is unfolded, we can remove the image from the "Container" in order to avoid it producing an unnecessary cost.

○ Creation of base machine


The creation of the base machine / template will be done from the disk itself:


Select the previously created disk (from the "**Disk**" service) and click on "**Create VM**":


Home > Disks >


xUbuntu18-Disk ...


Disk

<< [+ Create VM](#) [+ Create snapshot](#)  Delete

 Overview

 Activity log

 Access control (IAM)

 Tags

^ Essentials

Resource group (move)	: UDS Enterprise 3
Disk state	: Unattached
Location	: France Central
Subscription (move)	: VirtualCable Pago

In the virtual machine creation wizard, we will choose the options that best suit our needs. Once finished, we will check that all the configuration is correct and click on "**Create**" to create the virtual machine.

Create a virtual machine ...

✓ Validation passed

xUbuntu18-Disk
Image

Standard B1s
1 vcpu, 1 GiB memory

Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_3
Virtual machine name	xUbuntu18
Region	France Central
Availability options	No infrastructure redundancy required
Security type	Standard
Image	xUbuntu18-Disk - Gen1
Size	Standard B1s (1 vcpu, 1 GiB memory)
Authentication type	SSH public key
Username	azureuser
Key pair name	xUbuntu18_key
Public inbound ports	SSH
Azure Spot	No

Disks

OS disk type	Standard HDD LRS
Use managed disks	Yes
Delete OS disk with VM	Disabled
Ephemeral OS disk	No

Create

< Previous

Next >

[Download a template for automation](#)

Once the process of creating the new VM is finished, we will check that we already have the new machine, within the "**Virtual machines**" service.

[Home](#) >

Virtual machines

VirtualCable Directory (virtualcable.es)

[+](#) Create [↔](#) Switch to classic [⌚](#) Reservations [⚙️](#) Manage view [🔄](#) Refresh [↓](#) Export to CSV [🔗](#) Open query

[Subscription equals all](#) [Type equals all](#) [Resource group equals all](#) [Location equals all](#)

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓
<input type="checkbox"/>	xUbuntu18	Virtual machine	VirtualCable Pago p...	UDS_Enterprise_3	France Central	Running

NOTE:

The name of the template cannot begin with the letters "UDS". If it starts with these letters, it will not be displayed or available in the UDS administration to be used as a "base machine". It is recommended to create a specific "Network Security Group" for this machine allowing ports to access it. For example, 22 (SSH) or RDP (3389).

o Access and configuration of base machine

Once the virtual machine has been deployed, we should be able to access it. To find out what the machine's public IP address is, click on it in the "**Virtual machines**" service. In the "**Overview**" section we will look at the value of "**Public IP address**".

xUbuntu18

Virtual machine

[»](#) [🔗](#) Connect [▶](#) Start [↺](#) Restart [⏏](#) Stop [📷](#) Capture [🗑️](#) Delete [🔄](#) Refresh [📱](#) Open in mobile [📄](#) CLI / PS [🗨️](#) Feedback

i We recently resolved a problem with your virtual machine. →

^ Essentials

Resource group ([move](#)) : [UDS_Enterprise_3](#)

Status : Running

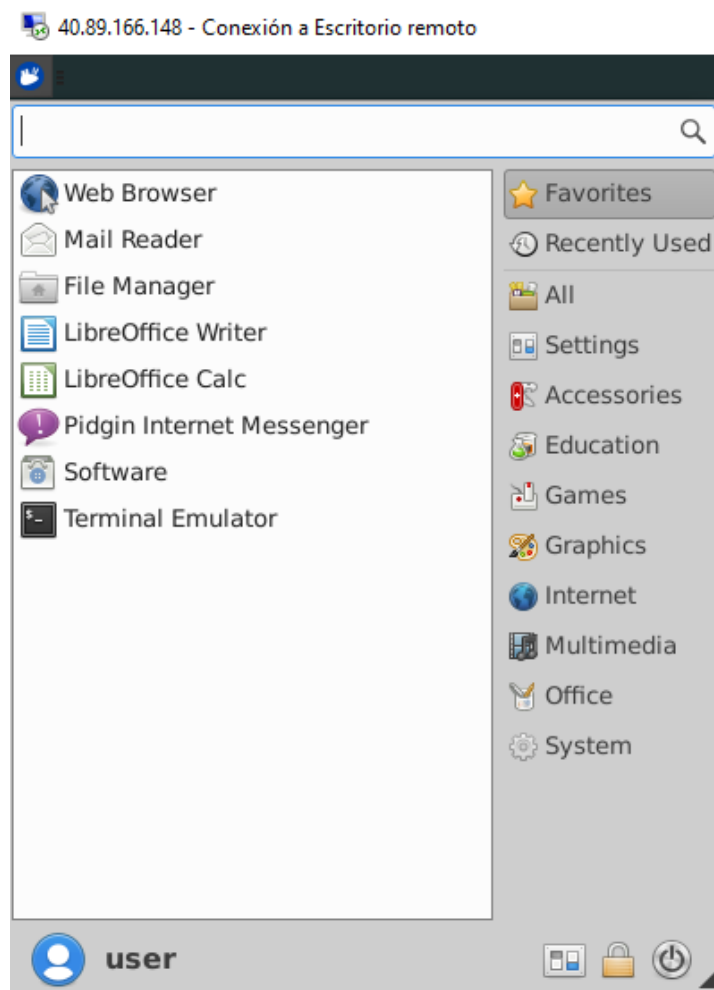
Location : France Central

Operating system : Linux

Size : Standard B1s (

Public IP address : [51.103.32.130](#)

In this example we will connect via RDP to access the template and install and configure the UDS Actor:

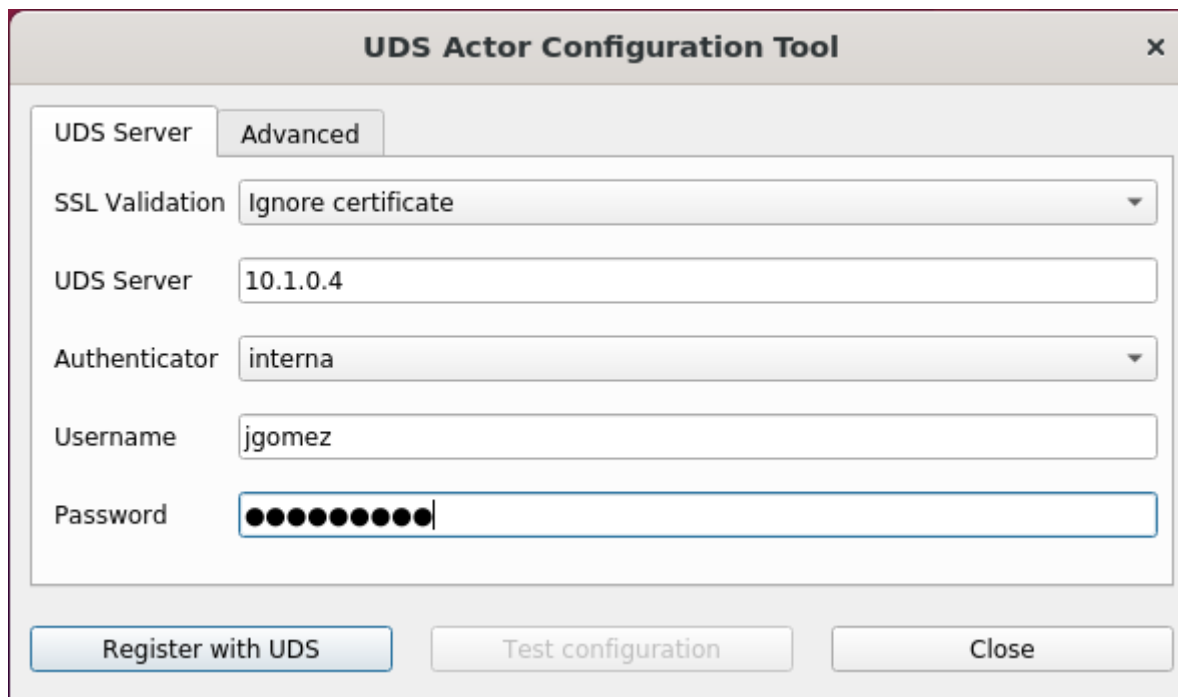


NOTE:

You can consult the UDS Enterprise Installation, Administration and User Manual in the [Documentation section](#) of the UDS Enterprise website for more details on the installation of the UDS Actor.

During the configuration of the UDS Actor, we can indicate in the connection data against UDS Server the local DNS address/name or also the IP or public DNS (in the case of using IP addresses instead of names, it is necessary to make sure that these addresses are not dynamic, since they can change with the switch-on/off of the virtual machines).

In this example we will use the local IP address of the UDS Server:



NOTE:

If we want to view the configuration of the UDS Actor on an Ubuntu OS through RDP, we will have to run the following command from a console:

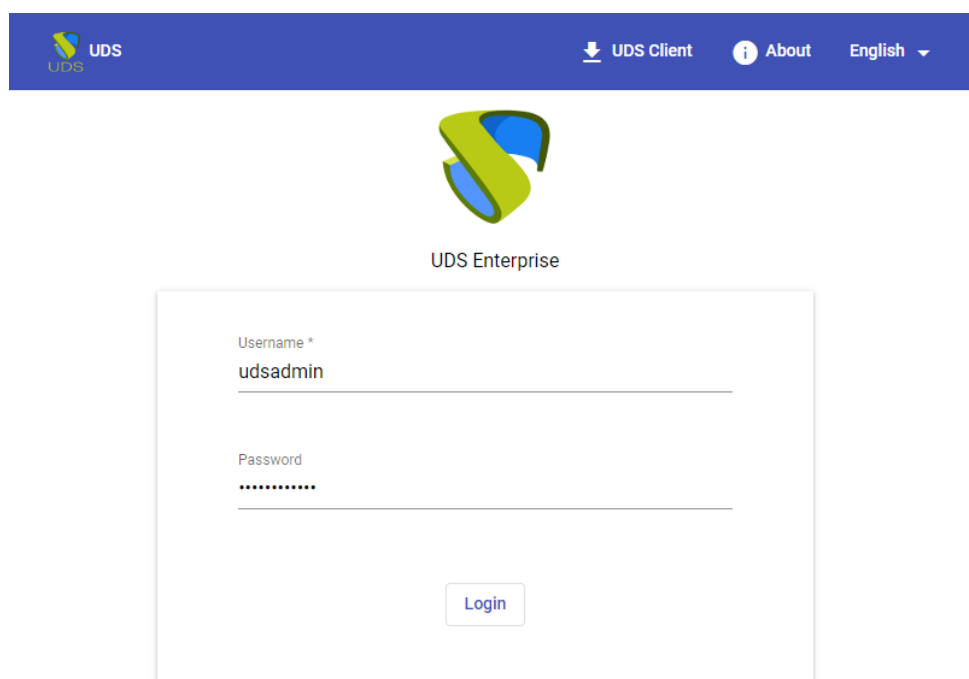
```
xhost + && sudo QT_X11_NO_MITSHM=1 /usr/sbin/UDSActorConfig
```

Once all these tasks are completed, we can **turn off the base machine or template** to use it with UDS Enterprise (it is not possible to publish a service if the base machine or template is turned on).

UDS Enterprise Administration

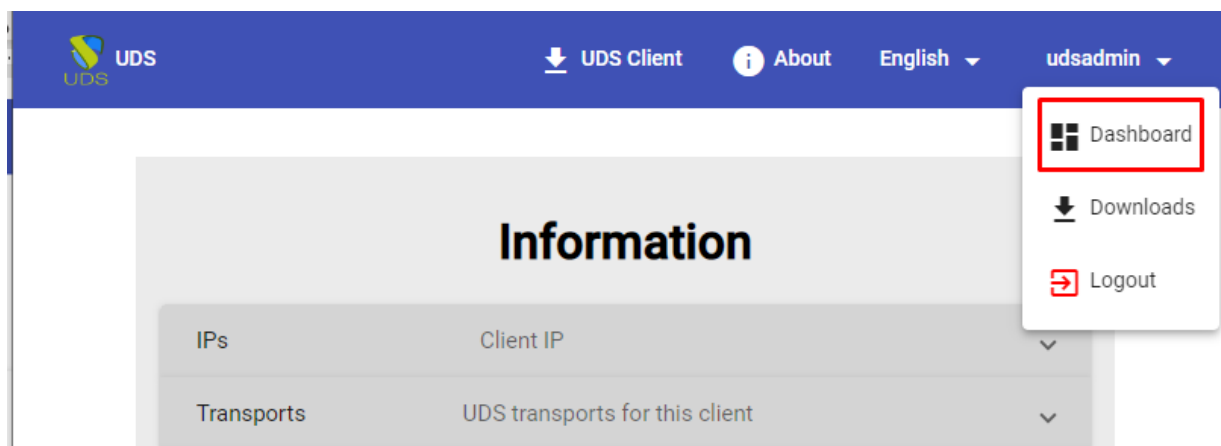
Azure Service Provider Integration

To integrate Azure as a UDS Enterprise service provider, we must access the UDS administration. To do this, we access via web browser the public IP address or name of the UDS Server component using port 443 and validate ourselves with an administrator user (in the first access we will use the system administrator user indicated in the UDS server configuration wizard).



The screenshot shows the UDS Enterprise login interface. At the top is a blue navigation bar with the UDS logo, a download icon for 'UDS Client', an 'About' link, and a language dropdown set to 'English'. Below the navigation bar is the UDS Enterprise logo and the text 'UDS Enterprise'. The main area contains a login form with two input fields: 'Username *' with the value 'udsadmin' and 'Password' with masked characters. A 'Login' button is positioned below the password field.

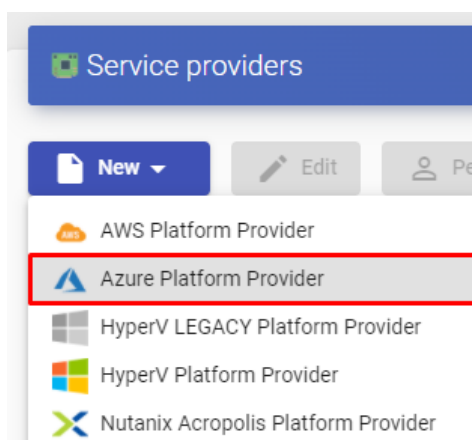
Once validated in the UDS login portal, we will access the "***Dashboard***" from the user menu.



The screenshot displays the UDS Enterprise dashboard after a successful login. The top navigation bar now includes the user name 'udsadmin' with a dropdown arrow. The user menu is open, showing three options: 'Dashboard' (highlighted with a red box), 'Downloads', and 'Logout'. The main content area is titled 'Information' and contains a table with two rows. The first row is labeled 'IPs' and shows 'Client IP' with a dropdown arrow. The second row is labeled 'Transports' and shows 'UDS transports for this client' with a dropdown arrow.

IPs	Client IP
Transports	UDS transports for this client

Within the UDS administration, we access the "**Services**" menu and click on "**New**" to register a new "**Service provider**". We select "**Azure Platform Provider**".

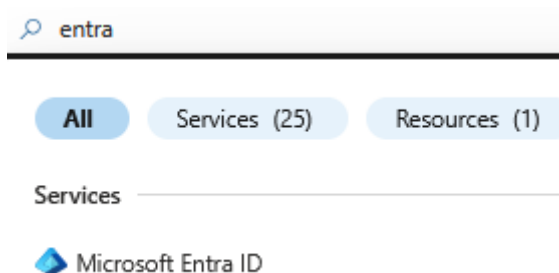


In order for UDS to connect to the Azure platform and to be able to automatically deploy virtual desktops, it will be necessary to indicate a descriptive name and a series of data that we can obtain directly from this platform:

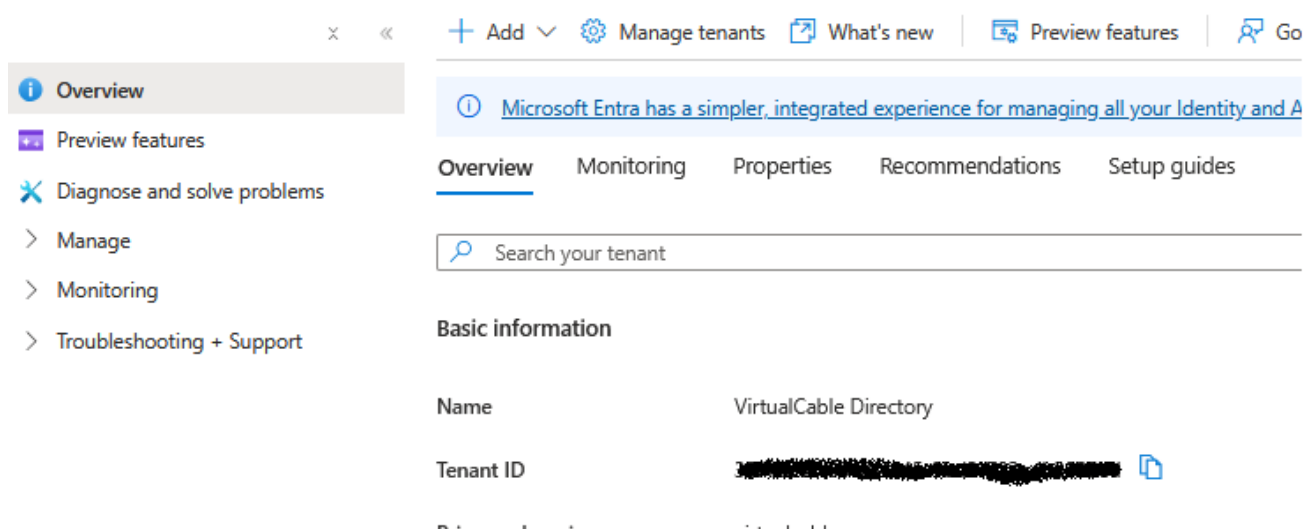
New provider

Main	Advanced
Tags	
Tags for this element	
Name *	
Azure	
Comments	
Tenant ID *	
Client ID *	
Client Secret *	
Subscription ID *	
test	Discard & close Save

- **Tenant ID:** This value can be obtained from the "*Microsoft Entra ID*", "*Overview*", "*Tenant ID*" service.

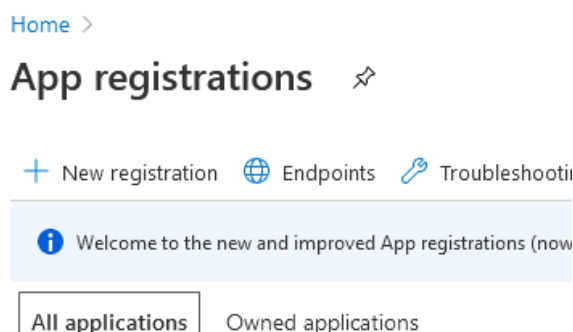


VirtualCable Directory | Overview ...



- **Client ID:** To obtain this value, it will be necessary to create a new "*Application registration*" and give it permissions on our Azure subscription.

To register the application we will go to the "*App registrations*" service and click on "*New application registration*".



In the creation wizard we will indicate a name, select a "**Supported account types**" and a "**Redirect URI**".

This last value will be extracted from the DNS name of the UDS server:

Computer name	Virtual network/subnet
udsserver3	UDS_Enterprise-vnet/default
Operating system	DNS name
Linux (debian 10.4)	uds3.francecentral.cloudapp.azure.com
Size	

Once the data has been entered, click on "**Register**":

* Name

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

UDS_Enterprise_35 ✓

Supported account types

Who can use this application or access this API?

- ☒ Accounts in this organizational directory only (VirtualCable 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.

Web ✓ <https://uds35.francecentral.cloudapp.azure.com>

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

NOTE: The Tab URI can be the local direction of the UDS Server

Once registered, we will check that it has been created correctly:

App registrations

[+ New registration](#)
[Endpoints](#)
[Troubleshooting](#)
[Refresh](#)
[Download](#)
[Preview features](#)

[All applications](#)
[Owned applications](#)
[Deleted applications](#)

[Add filters](#)

1 applications found

Display name ↑↓	Application (client) ID	Created on ↑↓
UD UDS_Enterprise_35	7581b3a2-70e2-441b-ba86-1...	9/14/21

The "**Application (client) ID**" column will indicate the "**Client ID**" that we must copy to UDS.

To have a valid "**Client ID**" that can be used by you, we must give it permissions on our subscription. To do this, select our Azure subscription ("**Subscriptions**" service) and in the "**Access control (IAM)**" option, click on "**Add**", selecting "**Add custom role**".

VirtualCable Pago por Uso | Access control (IAM)

Subscription

[Add](#)
[Edit columns](#)
[Refresh](#)

- Overview
- Activity log
- Access control (IAM)**
- Tags
- Diagnose and solve problems

[Add role assignment](#)
[Add co-administrator](#)
[Add custom role](#)

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

We indicate the role, in this case "**Contributor**", select that the access will be for "**Azure AD user, group, or service principal**" and type the start of the registered application name in the previous step. Once it appears as available, select it and click on "**Save**":

[Home](#) > [Subscriptions](#) > [VirtualCable Pago por Uso | Access control \(IAM\)](#) >

Add role assignment

[Assignment type](#) [Role](#) [Members](#) [Review + assign](#)

Select the type of role to assign. [Learn more](#)

Assignment type

- ☐ Job function roles
Grant access to Azure resources based on job function, such as the ability to create virtual machines.
- ☒ Privileged administrator roles
Grant privileged administrator access, such as the ability to assign roles to other users.

⚠ Can a job function role with less access be used instead?

[Assignment type](#) [Role](#) [Members](#) [Review + assign](#)

A role definition is a collection of permissions. You can use the built-in roles or you can create your own custom roles.

Assignment type: Privileged administrator roles

Type : All

Category : All

Name ↑↓

Description ↑↓

Owner

Grants full access to manage all resources, including the ability to assign roles in Azure RBAC.

Contributor

Grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC,

User Access Administrator

Lets you manage user access to Azure resources.

< Previous

Page

1

of 1

Next >

We will be able to see the App with the assigned role:

Assignment type Role **Members** Review + assign

Selected role


Owner

Assign access to




- ☒ User, group, or service principal
☐ Managed identity


Members

+ Select members

Name	Object ID	Type	
UDSServer3.6	30ed6552-b070-4503-835c-0...	App	

- **Client Secret:** This value will be obtained from the previously registered application. Click on it (in the "**App registrations**" service) and access "**Certificates & secrets**".

 UDS_Enterprise_35 | Certificates & secrets  ... 

Search <<  Got feedback?

Overview
Quickstart
Integration assistant

Manage


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

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 (0) **Client secrets (0)** Federated credentials (0)

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 	Secret ID
No client secrets have been created for this application.			

Within "**Certificates & secrets**" click on "**New client secret**". Add a description, select when it expires and click on "**Add**" to be able to copy the key:

Add a client secret



Description	<input type="text" value="UDS_Enterprise_3.5_key"/>
Expires	<div> 24 months ✓ </div> <div> Recommended: 6 months </div> <div> 3 months </div> <div> 12 months </div> <div> 18 months </div> <div> 24 months </div> <div> Custom </div>

Once added, it will allow us to copy the value (once this window is closed we will not be able to copy this value again, although we can generate a new one if necessary). We will use this value as "**Client Secret**" in UDS.

UDSServer3.6 | Certificates & secrets

[Got feedback?](#)

Overview
Quickstart
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App roles




































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


Application registration certificates, secrets and federated credentials can be found in the tabs below.

Certificates (0) **Client secrets (1)** Federated credentials (0)

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	Secret ID
UDS_Enterprise_3.6_key	5/3/2025	                                  	


VirtualCable Pago por Uso
☆ ...

Subscription

<<
🗑️ Cancel subscription
✎ Rename
➡ Change directory
➡ Switch Offer

🔑 Overview
📅 Activity log
👤 Access control (IAM)

^ Essentials

Subscription ID : 0072996-5-70-335-0147-45-899-5-88

Directory : VirtualCable Directory (virtualcable.es)

Once we have all the fields filled in, we will click on "**Test**" to verify that all the data is correct and we will save the parameters.

New provider

Main
Advanced

Tags
Tags for this element

Name *
Azure

Comments
Comments for this element

Tenant ID *
3801027967e4e3207c2f6b12f0101010

Client ID *
c783046-7e20-404e-b0e-30e959d11e0

Client Secret *
5UB-8-77E5-00b0-8E-000000000000

Subscription ID *
0072996-5-70-335-0147-45-899-5-88


Test

Discard & close

Save

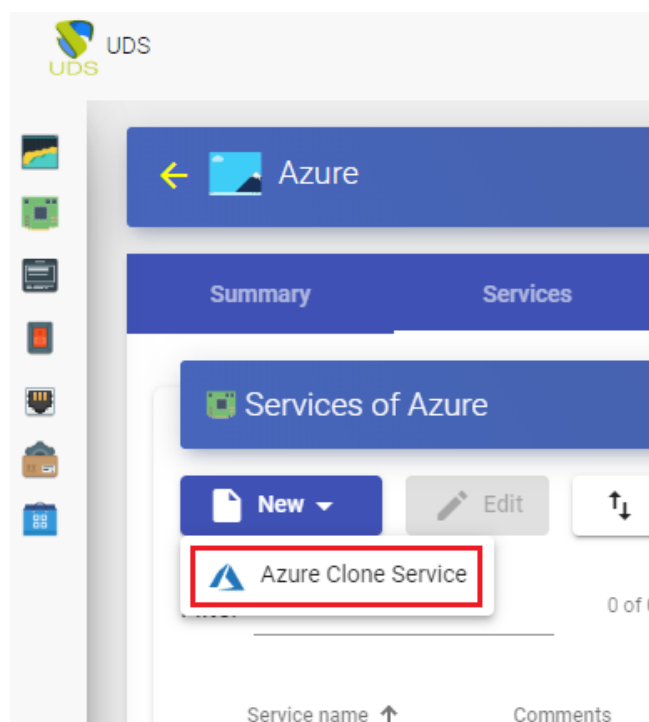
NOTE:

Even if the test does not come out correctly, we can save the supplier and thus not lose the indicated data. Later you can check which of the values is the wrong one (thinking especially of the "Client Secret" that will only be visible during its creation).

Service providers					
<div> <div>New ▾</div> <div>Edit</div> <div>Permissions</div> <div>Maintenance</div> <div>Export</div> <div>Delete</div> </div>					
Filter 1 - 1 of 1 <div> <div><<</div> <div><</div> <div>></div> <div>>></div> <div>↺</div> </div>					
Name ↑	Type	Comments	Status	Services	User Services
<input type="checkbox"/>  Azure	Azure Platform Provider		Active	0	0

■ Creating Base Services

When we have a valid **service provider** connected to the Azure platform, we can create template-based services. To do this, go to the provider (with double click or right click – "**Detail**") and in the "**Services**" tab and click on "**New**" – "**Azure Clone Service**".



To create a base service of type "**Azure Clone Service**" we will need to indicate:

- Main:
 - **Name:** A friendly name for the base service.
 - **Resource Group:** We select the Azure "**Resource Group**" under which we have our base machine or template.
 - **Virtual Machine:** base machine or template that we will use to deploy virtual desktops (with the UDS Actor installed and configured).
 - **Machine Size:** Amount of resources that the virtual desktops will have automatically deployed by UDS (this list will show all the types of machines available in Azure. Therefore, we must make sure that the chosen type is supported by our Azure subscription).
 - **Machine Names:** Root name that the virtual desktops generated by UDS will have.
 - **Name Length:** Number of digits of the counter for UDS machines. These digits will be joined to the "**machine names**" to form the DNS name of the virtual desktops (with 1 digit you can create 9 machines, with 2, 99, with 3, 999, etc...).

New service

Main

Network

Advanced

Tags

Tags for this element

Name *

xUbuntu18

Comments

Resource Group *

UDS_Enterprise_3

Virtual Machine *

xUbuntu18

Machine size *

B1s (Standard, 1 cores, 1.00 GiB, 2 max data disks)

Machine Names *

Ubuntu-

Name Length *

3

Discard & close

Save

○ Network:

- **Network:** Existing virtual network of the Azure environment and associated with the selected "**Resource Group**" to which the virtual desktops will connect (there must be connectivity with the UDS-Server component).
- **Subnet:** An existing subnet in the Azure environment to which the virtual desktops will connect.
- **Security Group:** We can indicate a "Security Group" to assign to virtual desktops. In this example, since both the UDS components and the autogenerated desktops are on the same network, we will select "**None**", since we do not want to apply either.

New service

Main Network Advanced

Network *

UDS_Enterprise-vnet

Subnet *

default

Security Group *

None

Discard & close Save

○ Advanced:

- **Caching policy:** Disk cache settings.
- **Pricing tier:** Level of redundancy applied.
- **Accelerated network:** Enables the use of this technology (cannot be used with most types of machines, only with: D/DSv3, E/ESv3, Fsv2 and Ms/Mms and Linux OS).

New service

Main Network Advanced

Caching policy *

ReadWrite

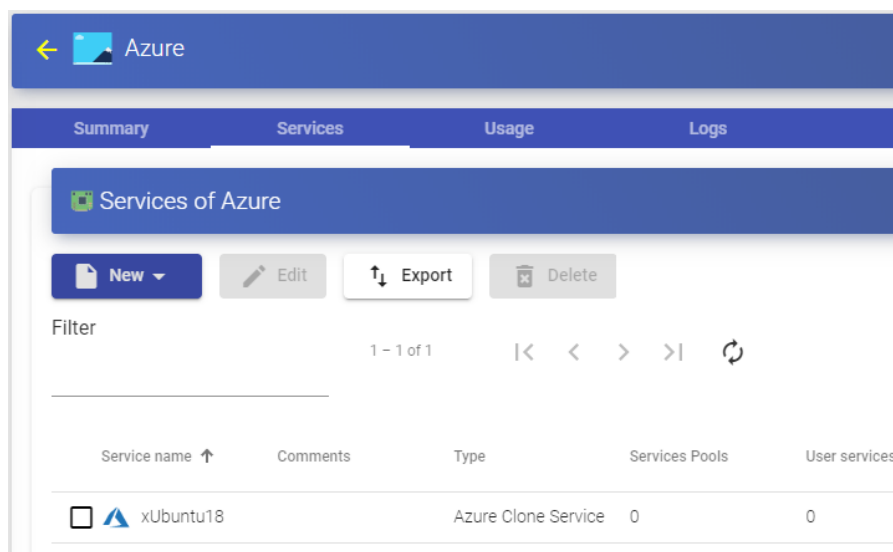
Pricing tier *

Premium_LRS

Accelerated network

☐ No

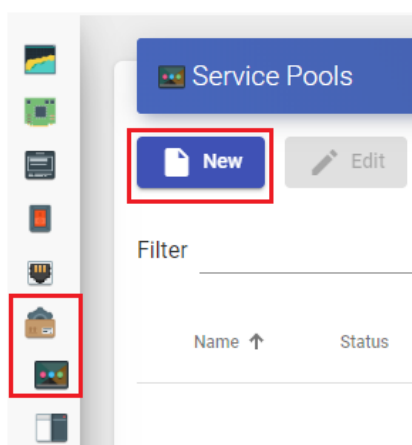
Click on "**Save**" and we will already have a valid base service to automatically deploy virtual desktops:



■ Creation of Service Pool

Before proceeding to create a service pool (to publish virtual desktops), it will be necessary to have at least one "**Authenticator**" with user groups (to validate and be able to assign the service to users), an "**OS Manager**" (to indicate the OS and persistence policy of the generated desktops) and a "**Transport**" (to make the connection to the desktop) previously configured. To see more details on how to configure these elements, you can access the UDS Enterprise Installation, Administration and User Manual in the [documentation section](#) of our website.

When we have the elements mentioned above ("**Authenticator**", "**OS Manager**" and "**Transport**") we can create "**Service Pools**". To do this, go to the "**Pools**" section, open the "**Service Pools**" tab and click on "**New**".



In the "**Main**" tab we will indicate the name of the service (this name will be visible to users) and we will select the previously created base service (in this case from the Azure platform and the xUbuntu18 base service) and an existing "**OS Manager**" (in this example one will be used for Linux OS and non-persistent type).

New service Pool

< Main Display Advanced >

Tags

Tags for this element

Name *

Desktop Ubuntu

Short name

Comments

Base service

Azure\xUbuntu18

OS Manager

Linux Non-Persistent

Publish on creation

☒ Yes

Discard & close Save

The parameters of the "**Advanced**" and "**Display**" tabs can be left by default. In the "**Availability**" tab we will indicate the initial desktops that UDS will generate and the cache desktops (in Azure the use of the L2 cache is not available).

In this example we will indicate that UDS automatically creates 4 desktops and always have at least 2 available in cache.

New service Pool

< Display Advanced Availability >

Initial available services

4

Services to keep in cache

2

Services to keep in L2 cache

0

Maximum number of services to provide

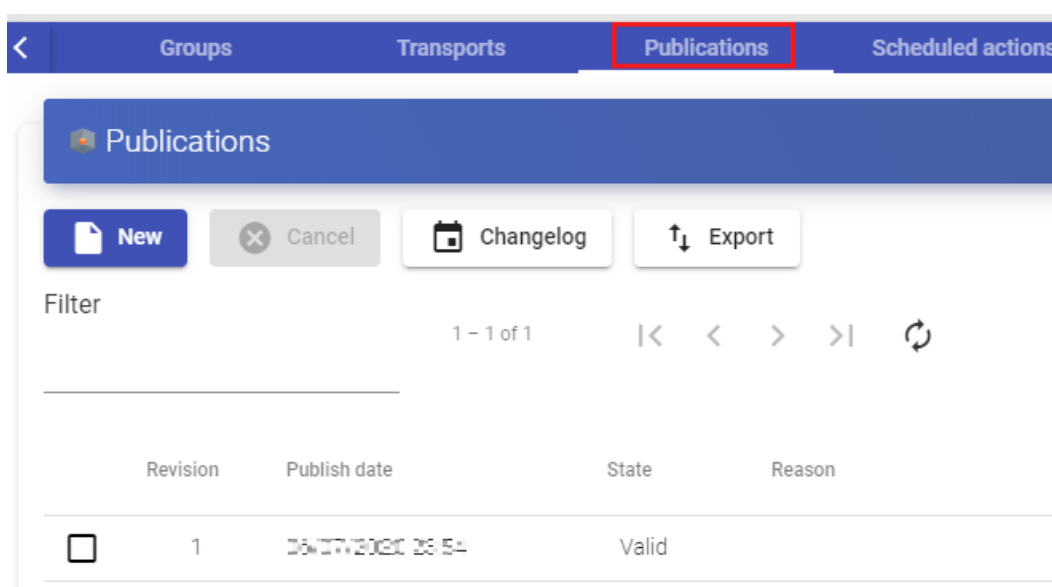
10

Discard & close Save

NOTE:

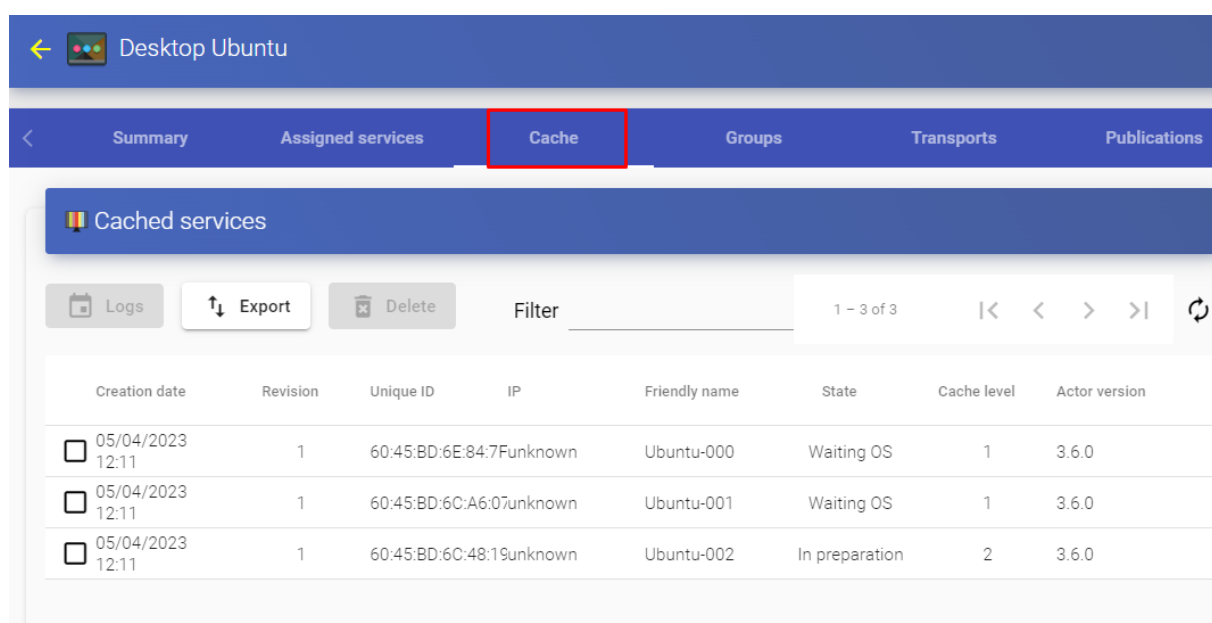
At the time of saving the configuration or publishing a new version, the base machine or template must be turned off.

By selecting the "**Service Pool**" and opening the "**Publications**" tab, we will check if the publication has been generated correctly. When in a "**Valid**" state, the system will begin auto-generating the virtual desktops indicated in the cache parameters.







	Revision	Publish date	State	Reason
<input type="checkbox"/>	1	05/04/2023 12:11	Valid	

In the "**Cache**" tab we can see how the desktops start to be generated.



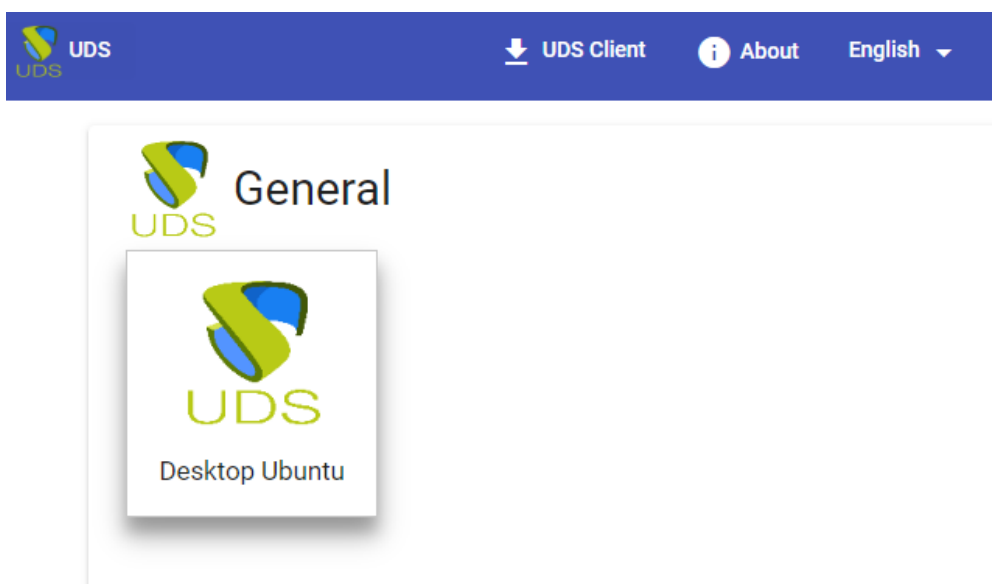
	Creation date	Revision	Unique ID	IP	Friendly name	State	Cache level	Actor version
<input type="checkbox"/>	05/04/2023 12:11	1	60:45:BD:6E:84:7Funknown	Ubuntu-000	Waiting OS	1	3.6.0	
<input type="checkbox"/>	05/04/2023 12:11	1	60:45:BD:6C:A6:07unknown	Ubuntu-001	Waiting OS	1	3.6.0	
<input type="checkbox"/>	05/04/2023 12:11	1	60:45:BD:6C:48:19unknown	Ubuntu-002	In preparation	2	3.6.0	

In the Azure environment we will also see how virtual desktops are generated:

<input type="checkbox"/>		UDS_Ubuntu_000_v1_3bcc91ee1b75c8_81d23287...	Virtual machine
<input type="checkbox"/>		UDS_Ubuntu_001_v1_3bcc91fa15be08_81d23287...	Virtual machine
<input type="checkbox"/>		UDS_Ubuntu_002_v1_3bcc920744997c_81d23287...	Virtual machine
<input type="checkbox"/>		xUbuntu18	Virtual machine

Once the desktops are in the "**Valid**" state (i.e., the UDS Actor installed in the template has finished applying the necessary configuration), they will be available for users to access.

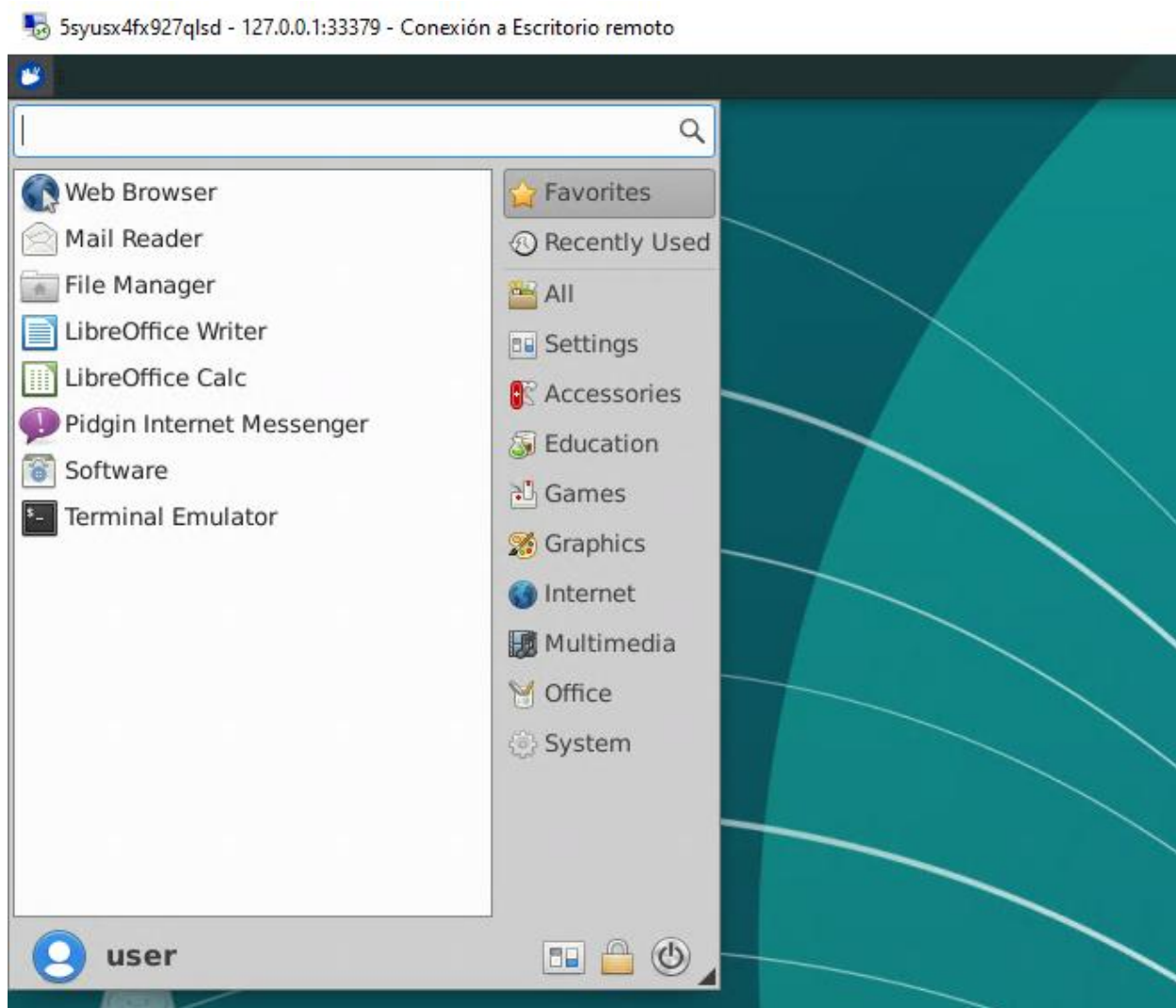
We will access with one user to the services window (it is not possible to use the super-user system administrator) and see the available service.



NOTE:

In order for the service to be viewed by users, the created "Service Pool" must be assigned a user group ("Groups" tab) and a transport ("Transports" tab).

We access it by clicking on the image (in this example an RDP transport has been configured).



NOTE:

If we are outside the network configured in Azure, it will be necessary to use tunneled transport (as you can see in the screenshot of the connection example, it is connecting to 127.0.0.1 since the connection is made via Tunnel).

Integration of Azure AD as UDS Enterprise "Authenticator"

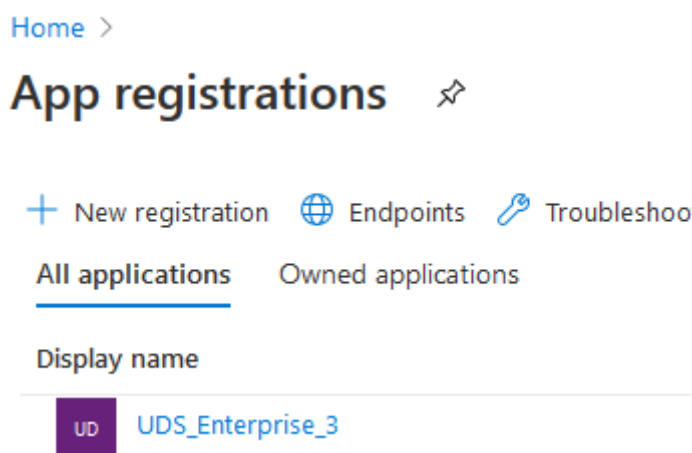
UDS allows integration with the Azure authentication system, called "**Azure Active Directory**". Through this integration, it will be possible to validate users registered in this authenticator in the UDS login portal and allow their access to desktop services and virtual applications.

To allow the correct integration between UDS and "**Azure Active Directory**" it will be necessary to perform some previous tasks on the Azure platform.

Tasks to perform in Azure

The first task we will perform in the Azure environment will be to create a valid "**App registrations**" to allow UDS to access "**Azure Active Directory**".

To register the application we will go to the "**App registrations**" service and click on "**New registration**".



NOTE:

In some cases it will be necessary to click on "View all applications" to be able to view all the existing ones.

In the creation wizard we will indicate the name of the application, who will be able to access it and in the **"Redirect URI" section** we will indicate **"Web"** with any URL (it is not necessary to exist, it will not be used).

Register an application



* Name

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



Supported account types

Who can use this application or access this API?

- ☒ Accounts in this organizational directory only (VirtualCable 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

Once all the application data has been entered, click on **"Register"** and check that it has been created correctly (if you don't see it, click on **"View all applications"**):

[Home](#) >

App registrations




[+ New registration](#) [🌐 Endpoints](#) [🔧 Troubleshooting](#) [🔄 Refresh](#) [⬇ Download](#) [🖨 Preview features](#) | [🗨 Got feedback?](#)

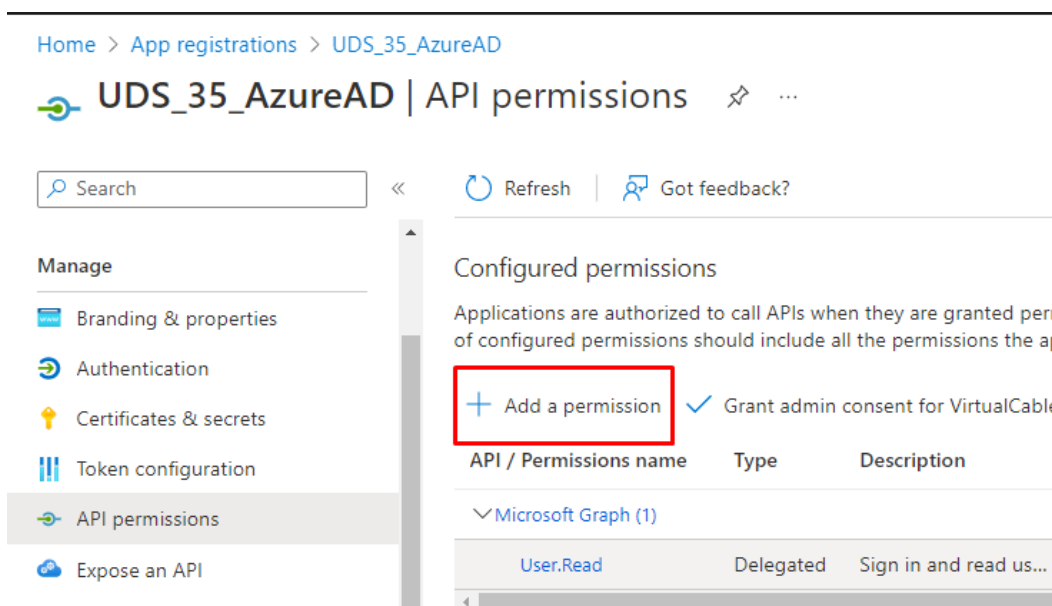
All applications Owned applications Deleted applications

[+ Add filters](#)

4 applications found

Display name ↑↓	Application (client) ID	Created on ↑↓	Certificates & secrets
 UDS_35_AzureAD	8c02d15a-df2d-4548-912c-f14b0bc7e09f	9/14/2023	-

After checking that it has been created correctly, we will access the App. In the "**Manage**" menu, click on "**API permissions**" and select "**Add a permission**".



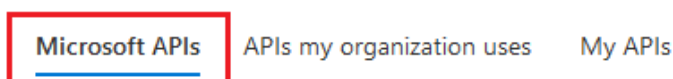
The screenshot shows the Azure portal interface for managing API permissions. The breadcrumb navigation is 'Home > App registrations > UDS_35_AzureAD'. The page title is 'UDS_35_AzureAD | API permissions'. On the left, the 'Manage' menu is visible with 'API permissions' selected. The main content area shows 'Configured permissions' with a note: 'Applications are authorized to call APIs when they are granted perm of configured permissions should include all the permissions the api'. A red box highlights the '+ Add a permission' button. Below this, a table lists the configured permissions:

API / Permissions name	Type	Description
Microsoft Graph (1)		
User.Read	Delegated	Sign in and read us...

Now select the "**Microsoft APIs**" tab and click on "**Microsoft Graph**"

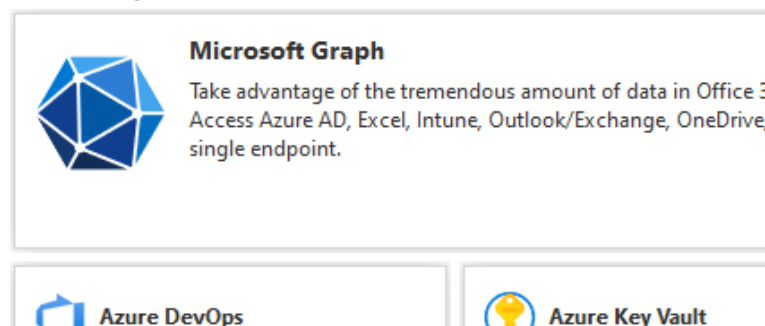
Request API permissions

Select an API



The screenshot shows the 'Select an API' section. There are three tabs: 'Microsoft APIs' (highlighted with a red box), 'APIs my organization uses', and 'My APIs'.

Commonly used Microsoft APIs



The screenshot shows the 'Commonly used Microsoft APIs' section. It features a card for 'Microsoft Graph' with a blue geometric icon. The text describes it as a way to take advantage of the tremendous amount of data in Office 365, Access, Azure AD, Excel, Intune, Outlook/Exchange, OneDrive, and a single endpoint. Below this, there are two more cards: 'Azure DevOps' and 'Azure Key Vault'.

Within "**Microsoft Graph**" we select "**Application permissions**" to apply the necessary permissions:

Request API permissions

[← All APIs](#)



Microsoft Graph

<https://graph.microsoft.com/> [Docs](#) [↗](#)

What type of permissions does your application require?

Delegated permissions

Your application needs to access the API as the signed-in user.

Application permissions

Your application runs as a background service or daemon without a signed-in user.

Select permissions

[expand](#)

Type to search

Permission

Admin consent required

We will apply the permissions:

- "**Directory.Read.All**"

Select permissions

[🔍](#) directory.read.all

Permission

✓ Directory (1)



Directory.Read.All ⓘ

Read directory data

- "**Group.Read.All**"

Select permissions

Permission

> Calls

∨ Group (1)

☐ Group.Create ⓘ
Create groups

☒ Group.Read.All ⓘ
Read all groups

"User.Read.All"

<input checked="" type="checkbox"/>	User.Read.All ⓘ Read all users' full profiles	Yes
<input type="checkbox"/>	User.ReadWrite.All ⓘ Read and write all users' full profiles	Yes

The "**User.Read**" permission, which is added by default, can be removed:

API / Permissions n...	Type	Description	Admin consent req...	Status
∨ Microsoft Graph (4)				...
Directory.Read.All	Application	Read directory data	Yes	⚠ Not granted for VirtualC... ...
Group.Read.All	Application	Read all groups	Yes	⚠ Not granted for VirtualC... ...
User.Read	Delegated	Sign in and read user profile	-	...
User.Read.All	Application	Read all users' full profiles	Yes	...

Remove permission

Once we have the necessary permissions, click on "**Grant admin consent for...**" and we accept:

Configured permissions


Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs. [Learn more about permissions and consent](#)

+ Add a permission		✓ Grant admin consent for VirtualCable Directory			
API / Permissions na...	Type	Description	Admin consent req...	Status	
▼ Microsoft Graph (3)					
Directory.Read.All	Application	Read directory data	Yes	⚠ Not granted for VirtualC...	...
Group.Read.All	Application	Read all groups	Yes	⚠ Not granted for VirtualC...	...
User.Read.All	Application	Read all users' full profiles	Yes	⚠ Not granted for VirtualC...	...

We confirm that the permissions have been applied:

API / Permissions n...	Type	Description	Admin c...	Status
▼ Microsoft Graph (3)				
Directory.Read.All	Application	Read directory data	Yes	✓ Granted for VirtualCable...
Group.Read.All	Application	Read all groups	Yes	✓ Granted for VirtualCable...
User.Read.All	Application	Read all users' full profil...	Yes	✓ Granted for VirtualCable...

To finish with the configuration of the App, we will need to access the "**Manage**" menu and select "**Authentication**":


UDS_35_AzureAD | Authentication

[Got feedback?](#)

[Overview](#)
[Quickstart](#)
[Integration assistant](#)

Manage

[Branding & properties](#)
[Authentication](#)
[Certificates & secrets](#)
[Token configuration](#)

Web
 Redirect URIs: 1

Front-channel logout URL
 This is where we send a request to have 1
 for single sign-out to work correctly.

In the "*Implicit grant and hybrid flows*" section, select "*ID tokens*" and click on "*Save*" to apply the change.

Implicit grant and hybrid flows

Request a token directly from the authorization endpoint. If the application is a SPA and doesn't use the authorization code flow, or if it is in JavaScript, select both access tokens and ID tokens. For ASP.NET Core web applications that use hybrid authentication, select only ID tokens. [Learn more about tokens.](#)

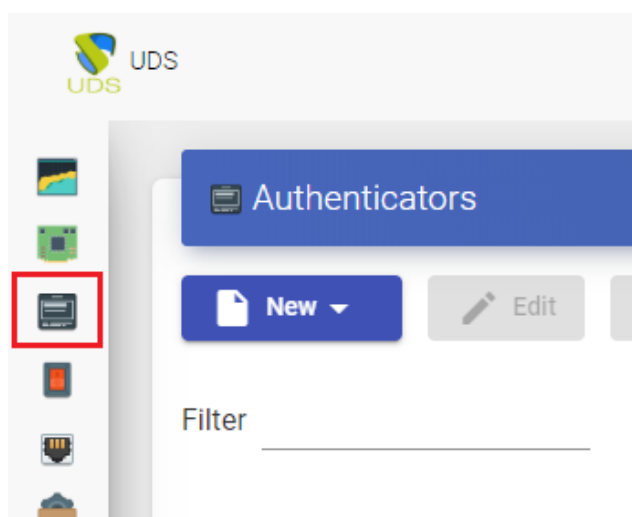
Select the tokens you would like to be issued by the authorization endpoint:

- ☐ Access tokens (used for implicit flows)
- ☒ ID tokens (used for implicit and hybrid flows)

The next task of the "*Azure Active Directory*" integration process with UDS will be carried out by the UDS administration itself.

Tasks to be performed in UDS Enterprise

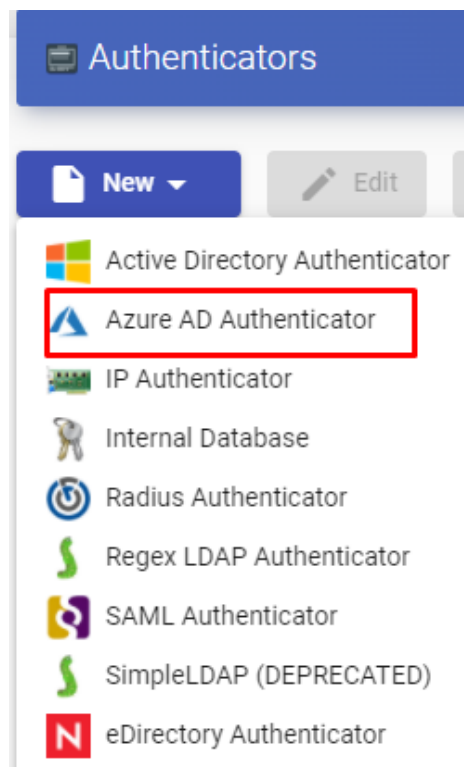
From the UDS administration, we will proceed to register the new authenticator of type "*Azure Active Directory*". To do this, we will validate ourselves in the UDS login portal with a user with administration permissions and we will access the "*Authenticators*" section.



NOTE:

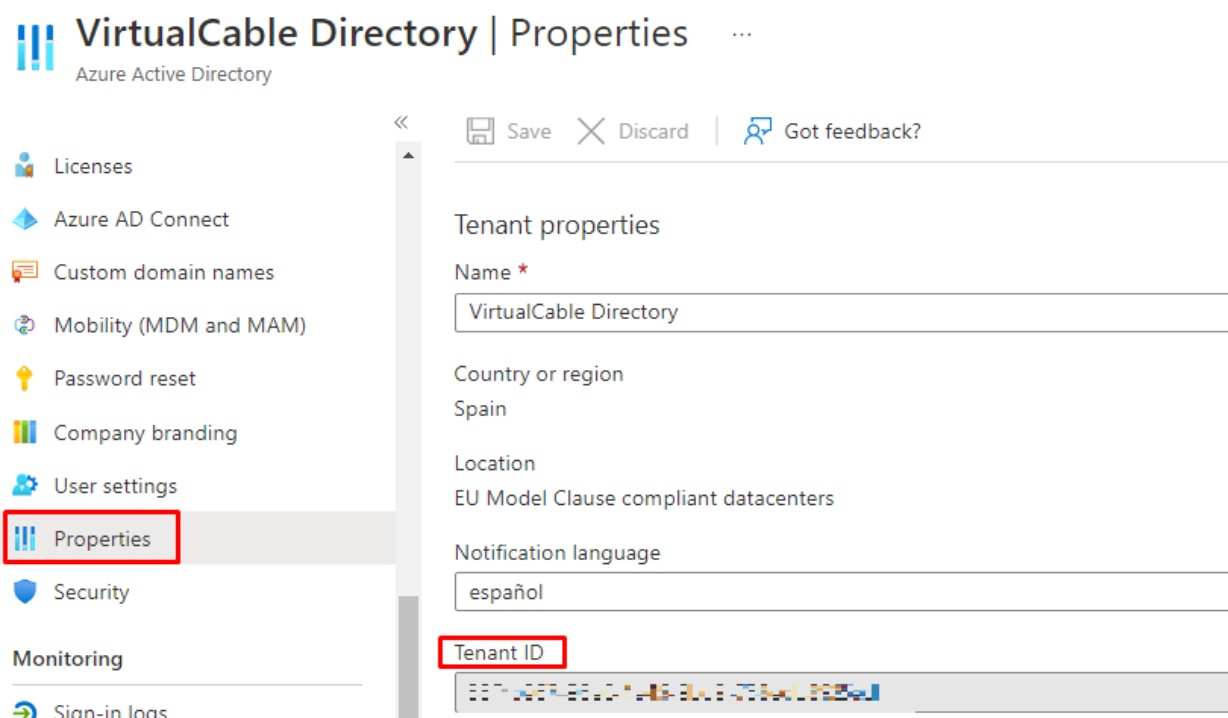
At UDS we may have different types of authenticators registered in the system. The priority field will define which authenticator will be displayed to users by default.

Click on "*New*" and select "*Azure AD Authenticator*".



Within the wizard we must indicate a series of necessary data:

- **Main:**
 - **Name:** Name of the authenticator.
 - **Priority:** Priority of this authenticator in the list of available authenticators. The lower the priority, the higher it is in the list of available authenticators (of all authenticators, the one with the lowest priority, including negative values, will be the default authenticator).
 - **Label:** Label assigned to this authenticator. You have to put it in the login URL to perform a direct validation without having to use the list of authenticators.
 - **Tenant ID:** This value can be obtained from the "*Azure Active Directory*", "*Properties*", "*Tenant ID*" service.



VirtualCable Directory | Properties ...

Azure Active Directory

Save Discard Got feedback?

Tenant properties

Name *
VirtualCable Directory

Country or region
Spain

Location
EU Model Clause compliant datacenters

Notification language
español

Tenant ID
[Long alphanumeric string]

- **Client ID:** To obtain this value it will be necessary to access the "**Application registration**" previously created and copy the value of "**Application ID**".

App registrations ...


[+ New registration](#) [Endpoints](#) [Troubleshooting](#) [Refresh](#) [Download](#) [Feedback](#)

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

All applications **Owned applications** Deleted applications

[+ Add filter](#)

2 applications found

Display name 


Application (client) ID


UD	UDS_35_AzureAD	8c02d15a-df2d-4548-912c-f14b0bc7e09f


- **Client Secret:** This value will be obtained from the previously registered application. Click on it (in the "**App registrations**" service) and access "**Certificates & secrets**".


UDS_35_AzureAD | Certificates & secrets ...

«


 Got feedback?


 Overview


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 Branding & properties

 Authentication

 **Certificates & secrets**

 Token configuration

 API permissions

Credentials enable confidential applications to identify themselves to (a specific scheme). For a higher level of assurance, we recommend using a certificate.

Certificates (0) **Client secrets (0)** Federated credentials

A secret string that the application uses to prove its identity when

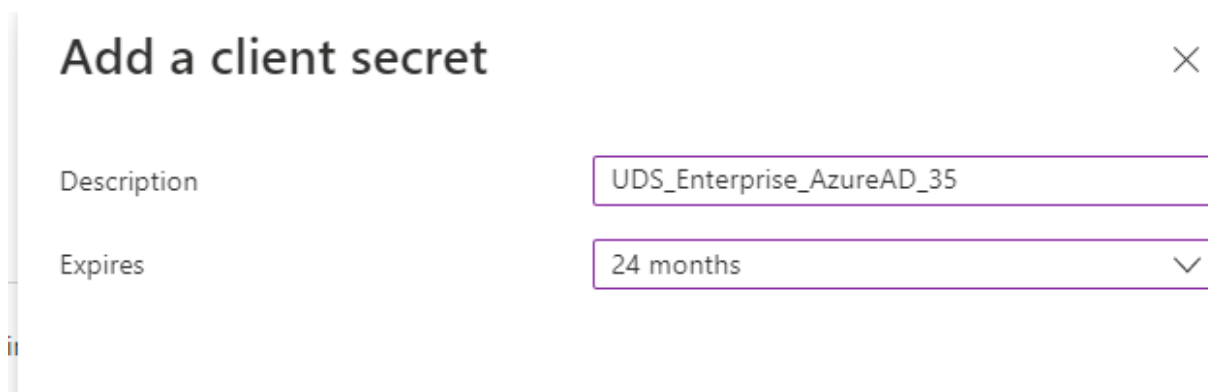
[+ New client secret](#)

Description



Expires

No client secrets have been created for this application.

Within "**Certificates & secrets**" click on "**New client secret**". Add a description, select when it expires and click on "**Add**" to be able to copy the key:



Once added, it will allow us to copy the value (once this window is closed we will not be able to copy this value again, although we can generate a new one if necessary). We will use this value as "**Client Secret**" in UDS.

 **UDS_35_AzureAD** | Certificates & secrets  ...

Search « [Got feedback?](#)

Overview
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Manage

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




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.

Application registration certificates, secrets and federated credentials can be found in the tabs below.

Certificates (0) **Client secrets (1)** Federated credentials (0)

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 	Secret ID
UDS_Enterprise_AzureAD_35	9/14/2024		

Once we have all the fields filled in, we will click on "**Test**" to verify the correct integration.

Edit Authenticator

Main	Advanced	Display
Tags		
Tags for this element		
Name *		
AzureAD		
Comments		
Comments for this element		
Priority *		
1		
Label *		
azure		
Tenant ID *		
35f1a067-5048-454c-bd5c-730edc0f25ec		
Client ID *		
8c02c13a-af58-4527-8a71-8135ae27f1		
Client Secret *		
HXL8Q-1E0Q RPS rxd17KyzslWwAU4N~_gM7Dcm		
<div>Test</div> <div>Discard & close</div> <div>Save</div>		

Once the correct connection has been verified, we will click on "**Save**" to save it.

NOTE:

If the test indicates that it has an error, you can save the connector by clicking on "Save" so as not to lose data such as the "Client Secret" and, later, review the causes of the connection error.

The last task to be performed to complete the integration of UDS with the authenticate "**Azure Active Directory**" will be to indicate the URL of access allowed in the Azure environment.

In the "**Authenticators**" section of the UDS administration, we select the authenticator created earlier. We edit it by accessing the "**Advanced**" tab. We will need to copy the value of the "**Callback**" field.

Edit Authenticator

Main **Advanced** Display

Callback
https://uds35.francecentral.cloudapp.azure.com/uds/page/auth/AzureAD

Proxy
Proxy used for connection to azure for HTTPS connections (use PROTOCOL://host:port, i.e. https://10.10.0.1:8080)



Enable School Data Sync Integration
☐ No

Azure Logout method.
Do not redirect

Test Discard & close Save

Once we have the value copied, we will access the Azure platform. In "**App Registrations**", select the previously created application for the integration of Azure AD with UDS and from the "**Manage**" menu click on "**Authentication**".

Home > App registrations >

 **UDS3_AzureAD | Authentication** 

Search (Ctrl+/) << Save Discard | Got feedback?

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Integration assistant (preview)

Manage

Branding
Authentication
Certificates & secrets
Token configuration
API permissions
Expose an API
Owners
Roles and administrators (Preview...)

Web

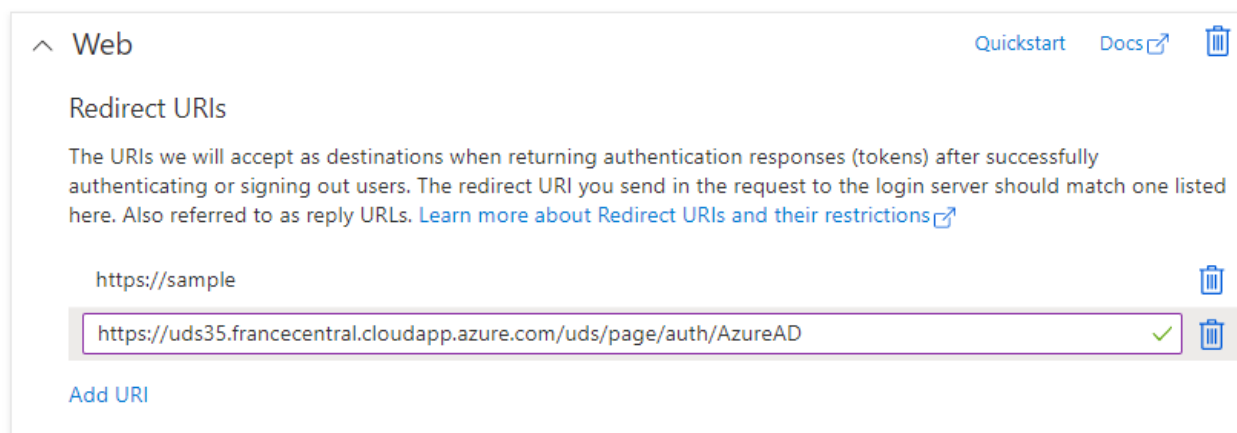
Redirect URIs

The URIs we will accept as destinations when returned after successfully authenticating users. Also refer to [Redirect URIs and their restrictions](#)

https://sample

Add URI

Within "**Authentication**", click on "**Add URI**" and paste the value copied from the UDS administration from the "**Callback**" field of the authenticator.



Web Quickstart Docs

Redirect URIs

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating or signing out users. The redirect URI you send in the request to the login server should match one listed here. Also referred to as reply URLs. [Learn more about Redirect URIs and their restrictions](#)

https://sample

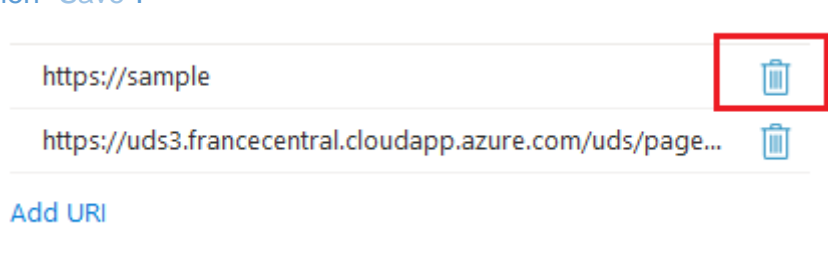
https://uds35.francecentral.cloudapp.azure.com/uds/page/auth/AzureAD ✓

Add URI

Click on "**Save**" to save the new "**URI**".

NOTE:

The URL indicated when creating the App can be deleted (in this case <https://sample>). Click on the delete icon and then "Save".



Web Quickstart Docs

Redirect URIs

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating or signing out users. The redirect URI you send in the request to the login server should match one listed here. Also referred to as reply URLs. [Learn more about Redirect URIs and their restrictions](#)

https://sample

https://uds3.francecentral.cloudapp.azure.com/uds/page...

Add URI

Once these steps are completed, users will be able to authenticate with the user credentials configured in an "**Azure Active directory**" authenticator.

NOTE:

In order for a user to be validated in the UDS login portal with the Azure authenticator, they must belong to a user group previously registered with the UDS administration.

About Virtual Cable

[Virtual Cable](#) is a company specialized in the **digital transformation** of the **workplace**. The company develops, supports and markets UDS Enterprise. Its team of experts has designed **VDI solutions** tailored to **each sector** to provide a unique user experience fully adapted to the needs of each user profile. Virtual Cable's professionals have **more than 30 years of experience** in IT and software development and more than 15 years in virtualization technologies. Every day, **millions of Windows and Linux virtual desktops are deployed with UDS Enterprise around the world**.