



VIRTUAL  
CABLE

# VDI with UDS Enterprise 3.6 and Microsoft Azure



**UDS**  
ENTERPRISE

3.6



## Index

Introduction .....	2
UDS Enterprise on Microsoft Azure .....	3
Where to begin.....	3
1. Necessary elements.....	5
Deploy UDS servers .....	20
▪ Upload disk images.....	20
▪ Disk creation.....	22
▪ Create UDS virtual servers .....	29
▪ UDS server configuration .....	35
▪ Create base machines or templates in Microsoft Azure .....	45
UDS Enterprise Administration .....	59
Azure service provider integration .....	59
▪ Creation of base services .....	70
▪ Creation of a Service Pool .....	76
Azure AD integration as UDS Enterprise “Authenticator” .....	84
Tasks to perform in Azure .....	84
Tasks to perform in UDS Enterprise.....	91
About VirtualCable.....	99

## Introduction

Azure is a proprietary Microsoft platform that provides cloud services. Some of its advanced features include the ability to run virtual machines, virtual applications, databases, backups, and many other tasks. It integrates countless cloud services that are necessary to develop, test, implement and manage virtual machines (VMs).

This guide “**VDI with UDS Enterprise and Microsoft Azure**” will help you understand the procedure to deploy and configure the UDS Enterprise components on the platform. This document shows, through real examples, how to create resource groups, storage accounts, containers and any necessary resources so that UDS Enterprise can deploy virtual desktops on this platform.

Also, one of the procedures to create virtual machines (which will be used as base machine or template), the steps to migrate machines from an existing environment (VMware, Hyper-V, etc...) to Microsoft Azure and the simplest way of converting a MV disk to .vhd format (disk format recognized in Azure) are detailed.

## UDS Enterprise on Microsoft Azure

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

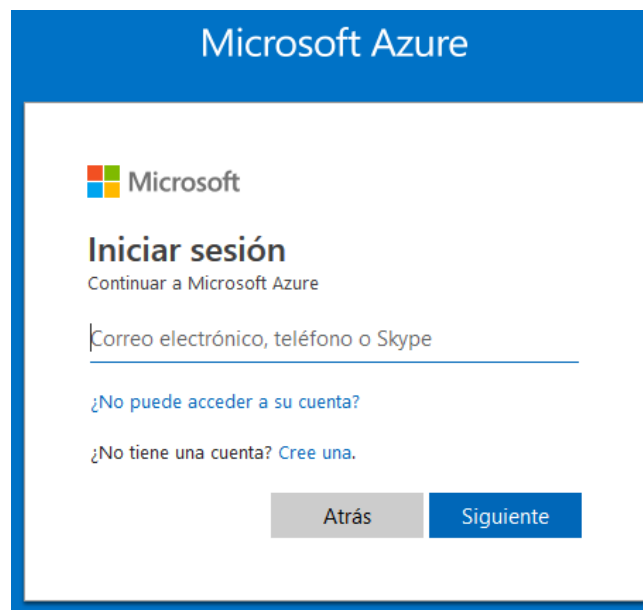
UDS Enterprise will allow to deploy self-generated virtual desktops and virtual application sessions on the Microsoft Azure platform.

To install and configure UDS Enterprise, you must request VirtualCable its components (UDS-Server, UDS-Tunnel and MySQL Database -optional-) and a serial number (Free/ Evaluation/ Enterprise).

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

### Where to begin

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



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 proper functioning of UDS Enterprise on an Azure platform.

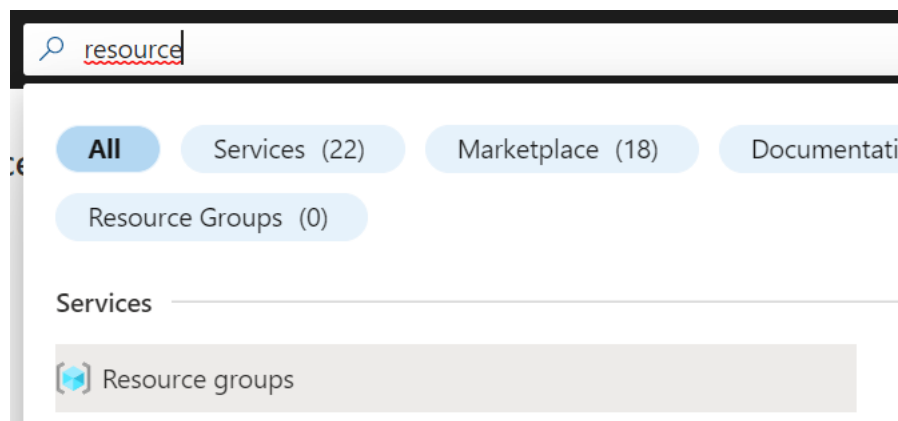
## 1. Necessary elements

- Resource Groups

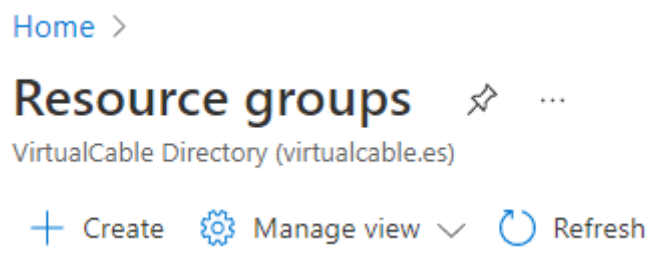
A "**Resource Group**" in Azure groups a collection of assets into logical groups for provisioning, monitoring and access control easily or even automatically, for more effective management.

You 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 it by following these steps:

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




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







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

## 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](#) 

### Project details

Subscription * 	VirtualCable Pago por Uso 
Resource group * 	UDS_Enterprise_3 

### Resource details

Region * 	(Europe) France Central 
--	---

**Review + create**

< Previous

Next : Tags >

- Review all the data and if they are correct, click on "**Create**":

## Create a resource group

 Validation passed.

Basics   Tags   Review + create

### Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_3
Region	France Central

**Create**

< Previous

Next >

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

Home >

## Resource groups [✦](#)

VirtualCable Directory

[+](#) Add 
 [⚙️](#) Manage view 
 [↻](#) Refresh 
 [↓](#) Export to CSV 
 [🏷️](#) Assign tags 
 [⋮](#)

Showing 1 to 5 of 5 records. No grouping

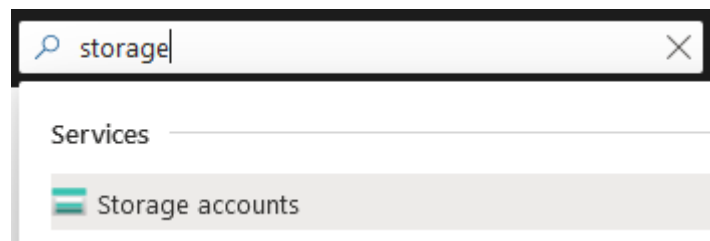
<input type="checkbox"/>	Name ↑↓	Subscription ↑↓	Location ↑↓
<input type="checkbox"/>	<a href="#">🔗 UDS_Enterprise_3</a>	VirtualCable Pago por ...	France Central

### ▪ Storage Accounts

The next item you will need will be a "*Storage account*". This element will allow you 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 it by following these steps:

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








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

Home >

## Storage accounts

VirtualCable Directory

+ Add  Manage view  Refresh  ↓


Filter by name... Subscription == all

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

Choosing the rest of the available options **"Performance", "Region", "Redundancy"** do not affect the operation/deployment of UDS, but they can affect the final cost.


## Create storage account


Basics Networking Advanced 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 to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.


Subscription \*  


Resource group \*    
[Create new](#)



**Instance details**



The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name \*   

Location \*  

Performance   Standard  Premium

Account kind   

Replication   

[Review + create](#) [< Previous](#) [Next : Networking >](#)

4. In the “*Advanced*” section, mark the options that interest you.

## 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) ⓘ

5. In the “*Networking*” section, select the options that interest you.

## 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, select the options that interest you

[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, select the options that interest you.

## 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 ⓘ

8. In the *“Review”* section, 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](#)

9. 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

Subscription equals all Add filter More (2)

No grouping ▾ List view


<input type="checkbox"/> Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓
<input type="checkbox"/>  storageuds3	Storage account	StorageV2	UDS_Enterprise_3	France Central

### ▪ Container

Once you have a valid "*Storage account*" you will need to have a "*Container*" to upload the disk images from the UDS servers.

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



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

 **storageuds3 | Containers** ⚙️

Storage account

<< + Container

**Data storage**

-  Containers
-  File shares

**Name**

2. Indicate a descriptive name for the new "**Container**" and select the "**Public access level**" appropriate to your needs. Click on "Create" to finish its creation.

## New container ×

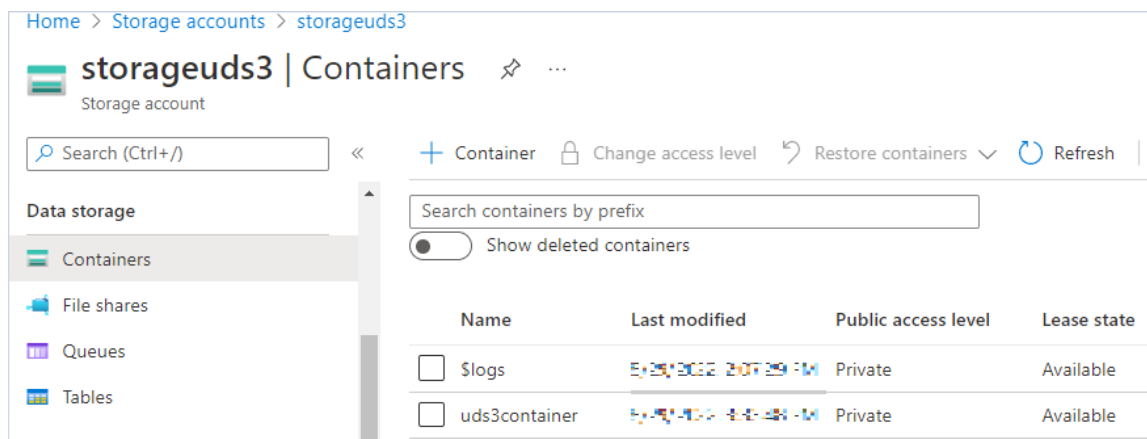
**Name \***

**Public access level** ⓘ



---

3. Confirm that the "**Container**" has been created correctly:



Home > Storage accounts > storageuds3

**storageuds3 | Containers** Storage account

Search (Ctrl+/) << + Container  Change access level  Restore containers  Refresh

Search containers by prefix

Show deleted containers

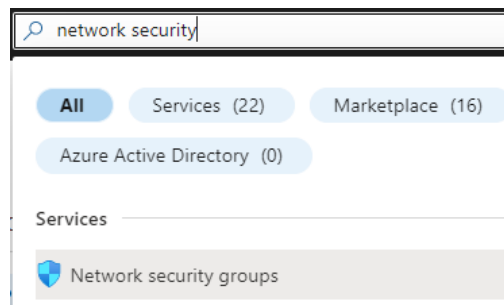
Name	Last modified	Public access level	Lease state
<input type="checkbox"/> \$logs	5/25/2022 2:07:29 PM	Private	Available
<input type="checkbox"/> uds3container	5/25/2022 2:07:29 PM	Private	Available

- **Network security groups**

Another of the elements 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 must be configured for the correct operation of UDS:

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



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

[Home](#) >

## Network security groups

VirtualCable Directory (virtualcable.es)

[+](#) Create
 [⚙️](#) Manage view
 [↻](#) Refresh
 [↓](#) Export to CSV
 [🔗](#) Open query

Subscription equals **all**

Resource group equals **all**

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

## Create network security group

[Basics](#)
[Tags](#)
[Review + create](#)

### Project details

Subscription \*

Resource group \*

[Create new](#)

### Instance details

Name \*

Region \*

[Review + create](#)

[< Previous](#)

[Next : Tags >](#)

[Download a template for automation](#)

- Review all the data and if they are correct click on “*Create*”:

## Create network security group ...

✔ Validation passed

Basics
Tags
Review + create

**Basics**

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_3
Region	France Central
name	UDS3-Server

**Tags**

None

---

Create

< Previous

Next >

Download a template for automation

- 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

Subscription equals all

+ Add filter

More (2)

No grouping

List view

<input type="checkbox"/> Name ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓	Flow log ↑↓
<input type="checkbox"/> <span style="color: #0070c0;">🛡️</span> UDS3-Server	UDS_Enterprise_3	France Central	VirtualCable Pago por ...	
<input type="checkbox"/> <span style="color: #0070c0;">🛡️</span> UDS3-Tunnel	UDS_Enterprise_3	France Central	VirtualCable Pago por ...	



5. 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:

Home > Network security groups >

UDS3-Server | Inbound security rules  
Network security group

Search (Ctrl+/) << **+ Add** Default rules Refresh

Settings

- Inbound security rules
- Outbound security rules
- Network interfaces

Priority	Name
65000	AllowVnetInBound
65001	AllowAzureLoadBalar
65500	DenyAllInBound

6. You will need to configure 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 necessary to access the UDS components and the service they will offer:

Component	Port	Role
UDS Server	443	Login panel access
UDS Tunnel	443, 10443	Access to servicies and HTML5

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

## Add inbound security rule ✕

UDS3-Server

Source ⓘ  
Any ▼

Source port ranges \* ⓘ  
\*

Destination ⓘ  
Any ▼

Service ⓘ  
Custom ▼

Destination port ranges \* ⓘ  
443 ✓

Protocol  
 Any  
 TCP  
 UDP  
 ICMP

Action  
 Allow  
 Deny

Priority \* ⓘ  
100

Name \*  
UDS3-Server ✓

Description  
UDS Login ✓

Add Cancel

Once you have entered the data as shown in the screenshot, 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 or deny the traffic. A security rules can't have the same priority and direction as an existing rule. You can't delete default security rules, but you them with rules that have a higher priority. [Learn more](#)

Filter by name

Port == all    Protocol == all    Source == all    Destination == all    Action == all

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 100	UDS3-Server	443	TCP	Any	Any	<input checked="" type="checkbox"/> Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	<input checked="" type="checkbox"/> Allow
<input type="checkbox"/> 65001	AllowAzureLoadBala...	Any	Any	AzureLoadBalancer	Any	<input checked="" type="checkbox"/> Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	<input checked="" type="checkbox"/> Deny

b) **UDS Tunnel:** You must create an access rule to the UDS Tunnel server where you allow traffic through 443 TCP and 10443 TCP ports:

### Add inbound security rule ✕

UDS3-Tunnel

Source  ⓘ

Source port ranges \*  ⓘ

Destination  ⓘ

Service  ⓘ

Destination port ranges \*  ⓘ

Protocol  
 Any  
 TCP  
 UDP  
 ICMP

Action  
 Allow  
 Deny

Priority \*  ⓘ

Name \*

Description

Activar Windows  
 Ve a Configuración para activar Windows.

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

UDS3-Tunnel | Inbound security rules ☆ ...

Network security group

+ 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](#)

Filter by name

Port == all Protocol == all Source == all Destination == all Action == all

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 100	UDS3_Tunnel	443,10443	Any	Any	Any	✔ Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✔ Allow
<input type="checkbox"/> 65001	AllowAzureLoadBalanc...	Any	Any	AzureLoadBalancer	Any	✔ Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	✘ Deny

## Deploy UDS servers

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

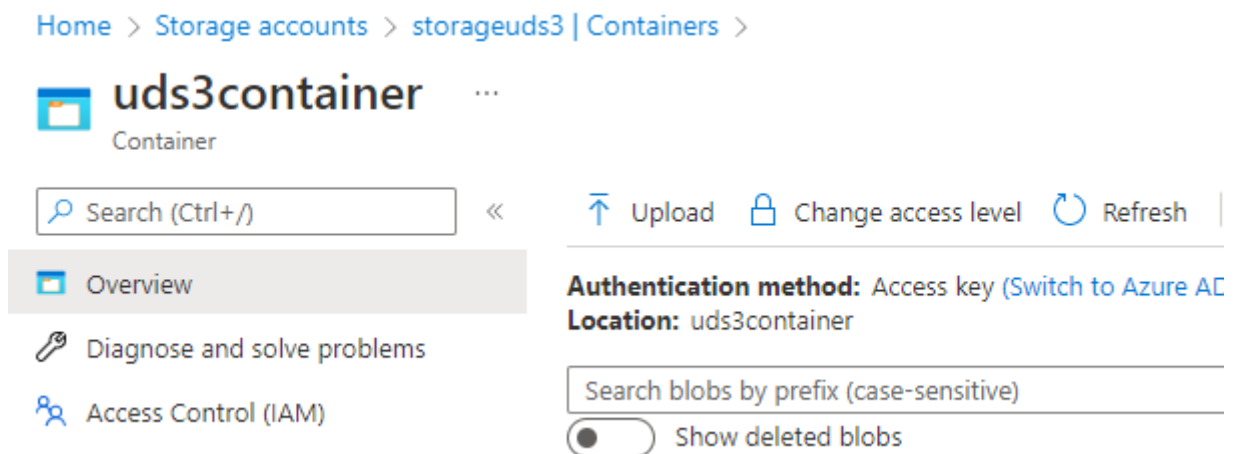
If the version of UDS to install is Enterprise, you should also upload the MySQL database server to the platform (if you use the UDS Enterprise Evaluation Edition version, you can activate a local database included in the UDS server).

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


- Upload disk images




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


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





Home > Storage accounts > storageuds3 | Containers >

 **uds3container** ...  
Container

Search (Ctrl+/,) << |  Upload  Change access level  Refresh

 Overview

 Diagnose and solve problems

 Access Control (IAM)

**Authentication method:** Access key (Switch to Azure AD)


**Location:** uds3container

Search blobs by prefix (case-sensitive)

Show deleted blobs

2. Indicate the disk image in the "**Files**" section. In "**Blob type**" select "**Page blob**" and click on "**Upload**":

### Upload blob ✕



1 file(s) selected: UDS-Server-azure7b96.3.6.0.vhd  
 Drag and drop files here or [Browse for files](#)

Overwrite if files already exist

^ Advanced

Blob type ⓘ

Upload .vhd files as page blobs (recommended)


Block size ⓘ

Access tier ⓘ

Upload to folder

3. The image will start to be imported and you will have to wait until the upload process finishes. Once finished, you will proceed to the next task, which will consist of generating a disk from the image:

---


UDS-Server-azure7b96.3.6.0.vhd

---

**NOTE:**

Depending on the size of the disk images and the connection speed, 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, you will see that within the **“Container”** you will have the UDS images available.

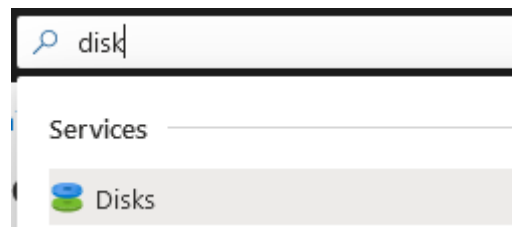
Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
<input type="checkbox"/> UDS-Dbserver-azured994.3.6.0.vhd	2023-09-28 10:04:11	Hot	Not Archived	Page blob	10 GiB	Available
<input type="checkbox"/> UDS-Server-azure7b96.3.6.0.vhd	2023-09-28 10:04:11	Hot	Not Archived	Page blob	8 GiB	Available
<input type="checkbox"/> UDS-Tunnel-azure7a78.3.6.0.vhd	2023-09-28 10:04:11	Hot	Not Archived	Page blob	14 GiB	Available

## ▪ Disk creation

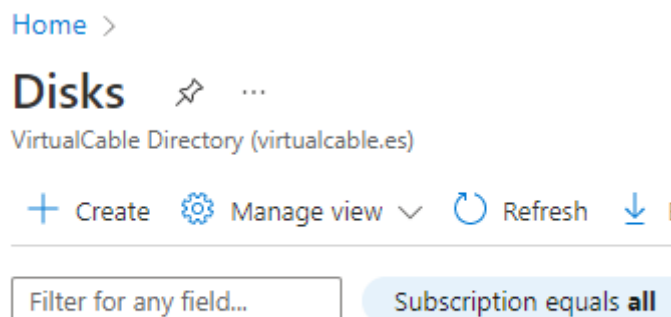
Once you have the images of the different UDS components uploaded to the Azure platform, you will proceed to deploy virtual disks based on these images.

From the virtual disks that we will create next, you will generate the virtual machines that will form the UDS environment:

1. In the list of **“Services”**, look for **“Disk”** and click on it:



2. Click on **“Add”** to add a new disk.



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

**NOTE: The machines may only contain one disk**

## 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 * ⓘ	<input type="text" value="VirtualCable Pago por Uso"/>
Resource group * ⓘ	<input type="text" value="UDS_Enterprise_3"/> <a href="#">Create new</a>

### Disk details

Disk name * ⓘ	<input type="text" value="UDS3-Server-Disk"/>
Region * ⓘ	<input type="text" value="(Europe) France Central"/>
Availability zone	<input type="text" value="None"/>
Source type ⓘ	<input type="text" value="Storage blob"/>
Source subscription ⓘ	<input type="text" value="VirtualCable Pago por Uso"/>
Source blob * ⓘ	<input type="text"/> <a href="#">Browse</a>

In “*Source blob*” click on “*Browse*” to select the previously imported disk.

You must select the “*Storage accounts*” that contains the disk images:



## Storage accounts

+ Storage account Refresh

Show classic storage accounts

Name	Type	Resource Group
storageuds3	Standard-LRS	UDS_Enterprise_3


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

## Containers







storageuds3

+ Container Refresh

Search containers by prefix

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

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

Name	Modified	Access tier	Archive status	Blob type
 UDS-Dbserver-azure994.3.6.0.vhd				Page blob
 UDS-Server-azure7b96.3.6.0.vhd				Page blob
 UDS-Tunnel-azure7a78.3.6.0.vhd				Page blob

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

Source type <sup>ⓘ</sup>

Source subscription <sup>ⓘ</sup>

Source blob \* <sup>ⓘ</sup>  [Browse](#)

OS type <sup>ⓘ</sup>  None (data disk)  Linux  Windows

Security type <sup>ⓘ</sup>

VM generation <sup>ⓘ</sup>  Generation 1  Generation 2

Size \* <sup>ⓘ</sup> **9 GiB**  
Standard HDD LRS  
[Change size](#)

You select the “*Storage type*” and in “*Custom disk size (GB)*” you indicate 9 as the disk size for the UDS-Server component:

## Select a disk size ×

Browse available disk sizes and their features.

Storage type ⓘ

Standard HDD ▼

Size	Disk tier	Max IOPS	Max throughput
32 GiB	S4	500	60
64 GiB	S6	500	60
128 GiB	S10	500	60
256 GiB	S15	500	60
512 GiB	S20	500	60
1024 GiB	S30	500	60
2048 GiB	S40	500	60
4096 GiB	S50	500	60
8192 GiB	S60	1300	300
16384 GiB	S70	2000	500
32767 GiB	S80	2000	500

Create a custom size

Enter the size of the disk you would like to create. You will be charged the same rate for your provisioned disk, regardless of how much of the disk space is being used. For example, a 200 GiB disk is provisioned on a 256 GiB disk, so you would be billed for the 256 GiB provisioned.

Custom disk size (GiB) \*

9 ✓

### NOTE:


The disk sizes for the different UDS Enterprise 3.6 components will be as follows

Component	Size in GB
UDS-Server	9
UDS-Tunnel	14
MySQL	9

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

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

## 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	UDS3-Server-Disk
Availability zone	None
Source type	Storage blob
Source subscription	VirtualCable Pago por Uso
Source blob	https://storageuds3.blob.core.windows.net/uds3container/UDS-Server-azure.3.5.0.vhd
OS type	Linux
Security type	Standard
VM generation	V1

### Size

Size	9 GiB
Storage type	Standard HDD LRS

### Encryption

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

### Advanced

Enable shared disk	No
--------------------	----



[Create](#)

[< Previous](#)








[Next >](#)

[Download a template for automation](#)




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








**Disks**  

VirtualCable Directory (virtualcable.es)



 Create 
  Manage view 
 Refresh 
  Export to CSV 
  Open query | 
  Assign tags

---








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

<input type="checkbox"/>	Name 	Storage account type 	Size (G... 	O... 	Resource group 	Location 
<input type="checkbox"/>	 UDS3-Server-Disk	Standard HDD LRS	9	-	UDS_Enterprise_3	France Central




- You 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

---







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

Showing 1 to 4 of 4 records.    List

<input type="checkbox"/>	Name 	Storage type 	Size (G... 	Owner 	Resource group 	Location 
<input type="checkbox"/>	 UDS3.6-DBase-Disk	Standard HDD LRS	11	-	UDS_Enterprise_3	France Central
<input type="checkbox"/>	 UDS3.6-Server-Disk	Standard HDD LRS	9	-	UDS_Enterprise_3	France Central
<input type="checkbox"/>	 UDS3.6-Tunnel-Disk	Standard HDD LRS	14	-	UDS_Enterprise_3	France Central

**NOTE:**

Once the disks are deployed, you can delete the images from the “Container” to avoid causing an unnecessary cost.

Name	Modified	Access tier	Archive status	Blob type
 UDS-Dbserver-azured994.3.6.0.vhd				Page blob
 UDS-Server-azure7b96.3.6.0.vhd				Page blob
 UDS-Tunnel-azure7a78.3.6.0.vhd				Page blob

Delete blob(s)

Are you sure you would like to delete the selected blobs?

1. Blobs in leased state are locked for deletion and will be skipped.
2. Folder deletion is not supported and any selected folders will be skipped. To delete a folder, delete all containing blobs.

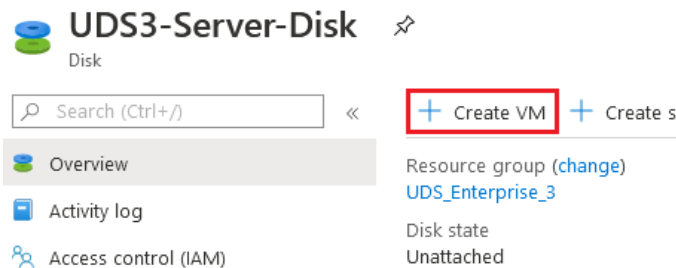
Also delete blob snapshots

## ■ Create UDS virtual servers

The last task that you 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 machines will be created 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 "**Image**" is selected in the virtual disk previously selected and, finally, indicate the "**Size**" of the virtual machine.

### Create a virtual machine ...

⚠ Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

**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 \*

Resource group \*  [Create new](#)

**Instance details**

Virtual machine name \*

Region

Availability options

Security type

Image \*  [See all images](#) | [Configure VM generation](#)

VM architecture  Arm64  x64

i Arm64 is not supported with the selected image.

Run with Azure Spot discount

Size \*  [See all sizes](#)

NOTE:

The recommended resources for the installation of the UDS components are shown in the following table (even if very small deployments are going to be carried out, we can reduce these resources, being able to choose the type B1s, 1vCPU and 1 GB of vRAM, for all items).

Component	vCPU	vRAM (GB)
UDS-Server	2	2
UDS-Tunneler	2	2
MySQL	2	1

- In the “**Disks**” section, 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 deleted when the virtual machine is deleted.**

## Create a 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

**i** Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

### OS disk

OS disk type

Standard HDD (locally-redundant storage)

Delete with VM

Key management

Platform-managed key

Enable Ultra Disk compatibility

Ultra disk is supported in Availability Zone(s) 2,3 for the selected VM size Standard\_B1s.

- In the “**Networking**” section, you must indicate a “**Virtual network**” to connect the server (if you do not have one created, you will need to create one), a “**subred**”, and for the UDS-Server and UDS-Tunnel components you will assign a new “**Public IP**”.


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

## Network interface

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

Virtual network * ⓘ	<input type="text" value="UDS_Enterprise_3-vnet"/>
	<a href="#">Create new</a>
Subnet * ⓘ	<input type="text" value="default (10.1.0.0/24)"/>
	<a href="#">Manage subnet configuration</a>
Public IP ⓘ	<input type="text" value="(new) UDS3.6-Server-ip"/>
	<a href="#">Create new</a>
NIC network security group ⓘ	<input type="radio"/> None <input type="radio"/> Basic <input checked="" type="radio"/> Advanced
Configure network security group *	<input type="text" value="UDS3-Server"/>
	<a href="#">Create new</a>
Delete public IP and NIC when VM is deleted ⓘ	<input checked="" type="checkbox"/>
Enable accelerated networking ⓘ	<input type="checkbox"/>
	The selected image does not support accelerated networking.

## Load balancing

You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#) 

Place this virtual machine behind an existing load balancing solution?

## NOTE:

The public IP addresses assigned by default will be dynamic. Although once the VMs is created, you can generate a DNS name associated with this IP or even force the machine to have a static public IP (the UDS-Tunnel component will also need to be assigned a public IP, but for the MySQL database it will not be necessary. Therefore, in this case, you will select “None”).



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

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](#)

- In the **"Advanced"** tab you will leave all the default options and click on **"Review + create"**.

## Create a virtual machine ...

Basics Disks Networking Management **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

**i** Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. [Learn more about custom data for VMs](#) ⓘ

User data

[Review + create](#)

[< Previous](#)

[Next : Tags >](#)

6. Check that all the configuration is correct and click on "**Create**" to create the virtual machine.

✓ Validation passed

Basics   Disks   Networking   Management   Monitoring   Advanced   Tags   Review + create

UDS3.6-Server-Disk  
Image

Standard B1s  
1 vcpu, 1 GiB memory

### Basics

Subscription	VirtualCable Pago por Uso
Resource group	UDS_Enterprise_3
Virtual machine name	UDS3.6-Server
Region	France Central
Availability options	No infrastructure redundancy required
Security type	Standard
Image	UDS3.6-Server-Disk - Gen1
Size	Standard B1s (1 vcpu, 1 GiB memory)
Authentication type	SSH public key
Username	azureuser
Key pair name	UDS3.6-Server_key
Azure Spot	No

### Disks

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

### Networking

Virtual network	UDS_Enterprise_3-vnet
Subnet	default (10.1.0.0/24)
Public IP	(new) UDS3.6-Server-ip
NIC network security group	UDS3-Server

- Once the process of creating the new VM is finished, you will verify that you already have the new machine within the “*Virtual machines*”. service. To view it, you must search in the list of “*Services*”: “*Virtual machines*” and click on it:



You will see the new virtual machine created and powered on:

[Home](#) >


## Virtual machines

VirtualCable Directory




[+](#) Add 
 [🕒](#) Reservations 
 [☰](#) Edit columns 
 [🔄](#) Refresh 
 | 
 [🏷️](#) Assign tags 
 [▶](#) Start

**Subscriptions:** VirtualCable Pago por Uso

6 items

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Status	Resource group ↑↓	Location ↑↓	Source
<input type="checkbox"/>	 UDS3-Server	Virtual machine	Running	UDS_Enterprise_3	France Central	Disk

- Repeat the process with the UDS-Tunnel component and also with the MySQL Database server if necessary.

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓
<input type="checkbox"/>	 UDS-DBbase	Virtual machine	VirtualCable Pago por ...	UDS_Enterprise_3	France Central	Running
<input type="checkbox"/>	 UDS3.6-Server	Virtual machine	VirtualCable Pago por ...	UDS_Enterprise_3	France Central	Running
<input type="checkbox"/>	 UDS3.6-Tunnel	Virtual machine	VirtualCable Pago por ...	UDS_Enterprise_3	France Central	Running

**NOTE:**

In the database server, it will not be necessary to indicate 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 you have all the UDS components deployed as virtual machines, you will proceed to configure them.

To do this, access the “*Virtual machines*” service. If you have the MySQL component, you will start configuring it.

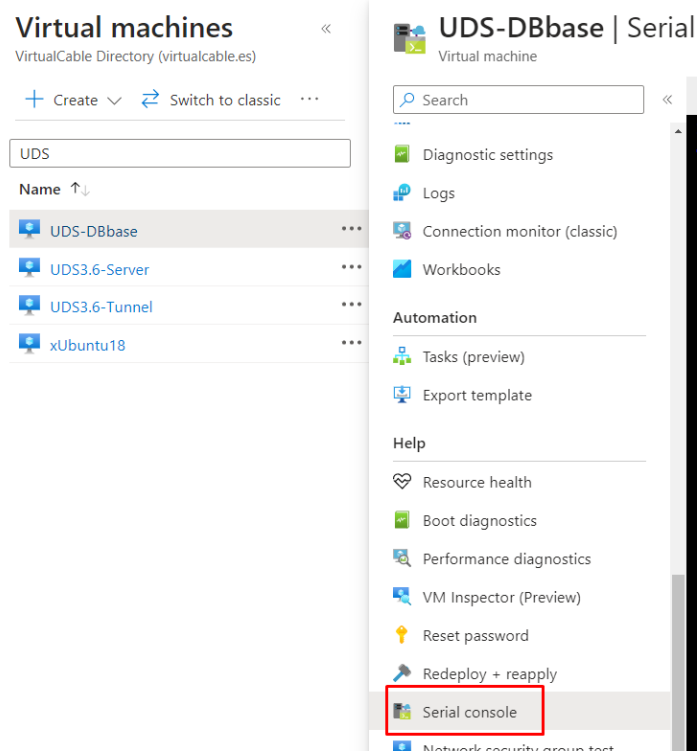
### ○ MySQL database configuration

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 DB instance ready to use with UDS Enterprise with the following data:

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

To confirm that the server has a valid IP assigned via DHCP you will have to connect via “*Serial console*”. You will access the “*Virtual machines*” service, you will select the virtual machine that contains the MySQL DB and in the “*Support + troubleshooting*” menu you will select “*Serial console*”.



**NOTE:**

The connection will take a few seconds to establish. Once connected, you must place the mouse on it and press the “enter” key.

You will validate 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.

```

* This machine is provided as a very basic mysql server, without any security ad
don.
* Change root password (ssh root login is ENABLED by default)
* Provide a custom name for this machine. you can use hostnamectl set-hostname -
-static YOUR_SERVER_NAME to do this.
* Protect access to this machine, because it contains defaults that are publicly
available, such as root password and database passwords.
* By default, cockpit is installed and available at https://SERVER_IP:9090. You
can uninstall it if desired with apt-get remove cockpit
* Consider updating the software (using apt, dselect, etc..) as a first step bef
ore using it in any environment (production or not)
* Update the keyboard layout if needed: use dpkg-reconfigure keyboard-configurati
on, then service keyboard-setup restart for this. Default keyboard lang is Spani
sh
* 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 fire
wall, etc..) in 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: 10.1.0.6
Cockpit interface is at https://10.1.0.6:9090
root@dbbroker-360:~#

```

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

*ip a*

```

root@dbbroker-360:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group
t 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
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP grou
ult qlen 1000
    link/ether 60:45:bd:6c:3a:32 brd ff:ff:ff:ff:ff:ff
    inet 10.1.0.6/24 brd 10.1.0.255 scope global eth0
        valid_lft forever preferred_lft forever
root@dbbroker-360:~#

```

Once you confirm that you have network connectivity, you will proceed to configure the UDS Server component.

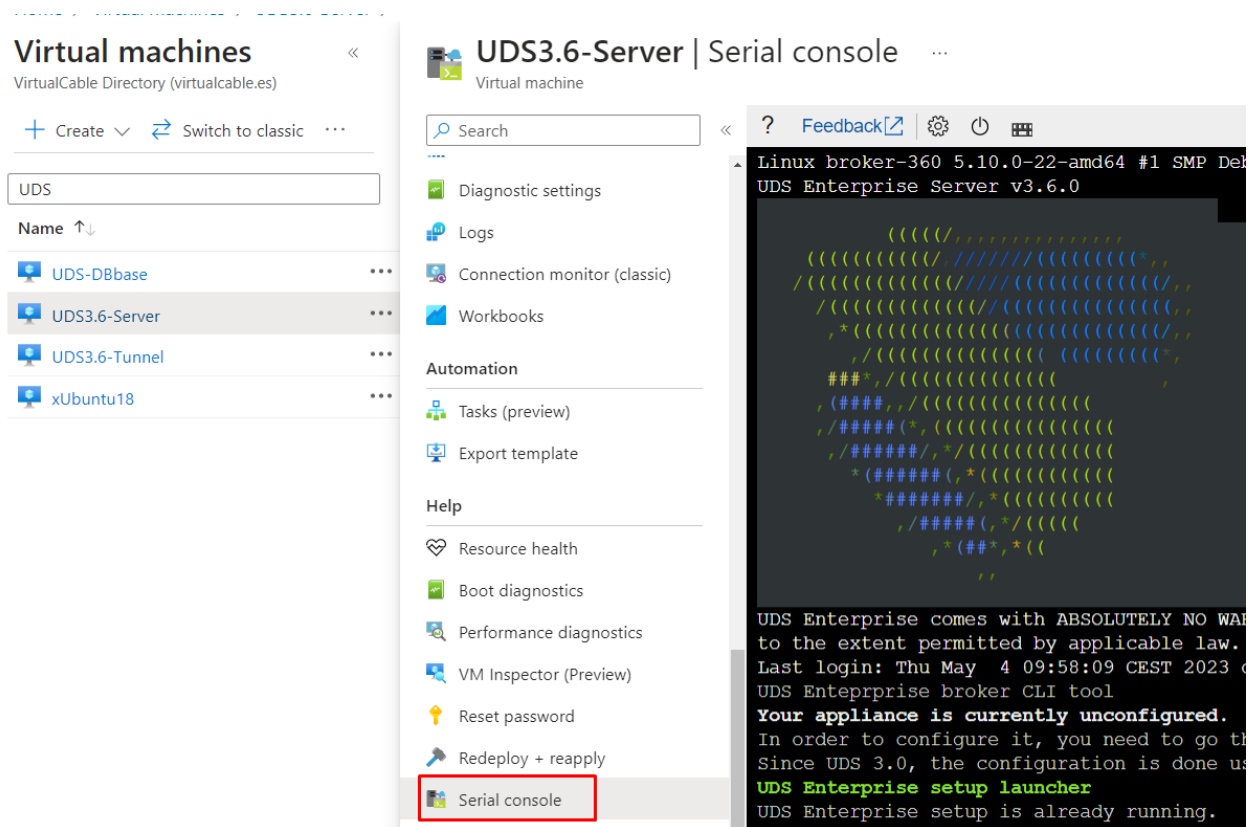
**NOTE:**

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 you will need to confirm that the server has been assigned an IP address.

To confirm that the server has a valid IP assigned via DHCP, you will have to connect via **“Serial console”**. You will access the **“Virtual machines”** service, you will select the virtual machine that contains the UDS server, and in the **“Support + troubleshooting”** menu you will select **“Serial console”**.



**NOTE:**

The connection will take a few seconds to establish. Once connected, you must place the mouse on it and press the “enter” key.



You will validate 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).

```
root@broker-360:~# uds setup
UDS Enterprise broker CLI tool
UDS Enterprise setup launcher
Your appliance IP is 10.1.0.4. We are going to start the web setup process for you right now.
To configure your appliance, please go to this URL: https://10.1.0.4:9900
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: pUviYYjy

          _ _ _ _ _
         / / / / /
        / / / / /
       / / / / /
      / / / / /
     / / / / /
    / / / / /
   / / / / /
  / / / / /
 / / / / /
/ / / / /

Use this code to configure your appliance.
root@broker-360:~#
```

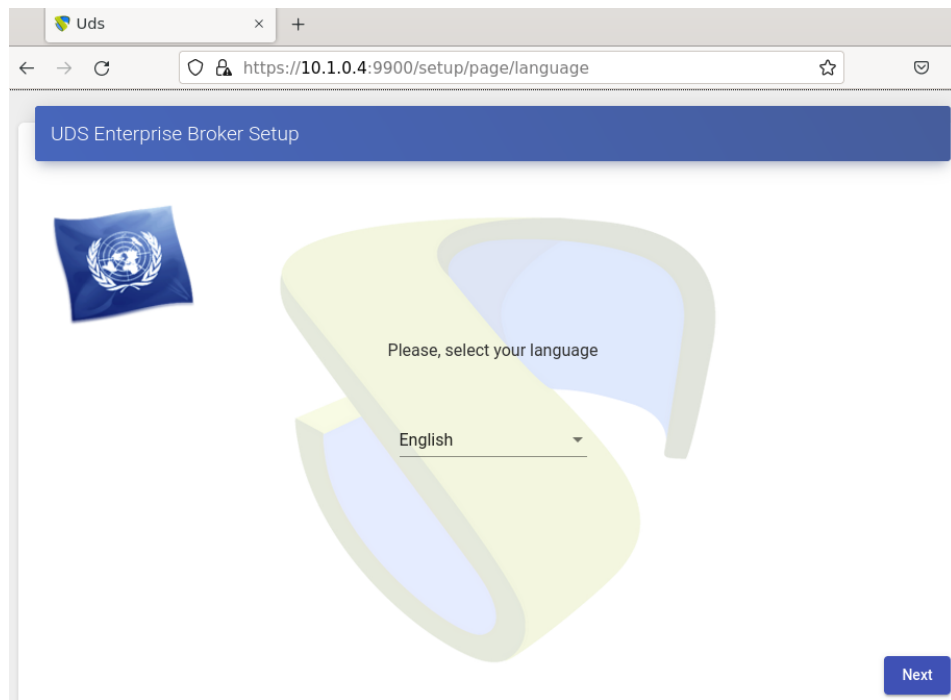
If the server has not been assigned an IP address automatically, you must do so through the command: **uds ip**

**NOTE:**

For more information on the `uds ip` command, consult the UDS Enterprise 3.6 Installation, administration and user manual in the [Documentation](#) section of our website.

You 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, you must enter the IP address of the UDS server and port 9900.





Here you will indicate all the necessary data (IP data, serial to activate the subscription, credentials, etc ...) to configure the server.

For more information on the UDS server configuration, consult the UDS Enterprise 3.5 installation, administration and user manual.

**NOTE:**

During the wizard configuration procedure, it will request the configuration data from the database server. In the case of using an external server, you must indicate the data of the previously configured MySQL server (IP address, instance, user and password).

- UDS Tunnel Configuration

The UDS Tunnel component is the element that will provide you with secure access to virtual desktops through 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 you will need to confirm that the server has been assigned an IP address.

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

Search (Ctrl+/)

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

```

? Feedback [?] [⚙️] [🔌] [🖨️]
2020/05/31 18:14:34.295574 ERROR Ext
2020/05/31 18:14:34.305881 INFO Ext
2020/05/31 18:14:34.307964 INFO Ext
2020/05/31 18:14:34.346156 INFO Ext
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 addrgenmode eui
" } ]
2020/05/31 18:14:34.371355 INFO Ext
2020/05/31 18:14:35.116354 INFO Ext
[ 58.222082] hv_balloon: Received
[ 58.226074] hv_balloon: Data Size
2020/05/31 18:19:34.957492 INFO Ext
[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. Once connected, you must place the mouse on it and press the "enter" key.

You will validate on the UDS Tunnel 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):

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

If the server has not been assigned an IP address, you should automatically do so through the command: `uds ip`

In order for the UDS Tunnel to trust the self-signed certificate of the UDS Server 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 tell 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

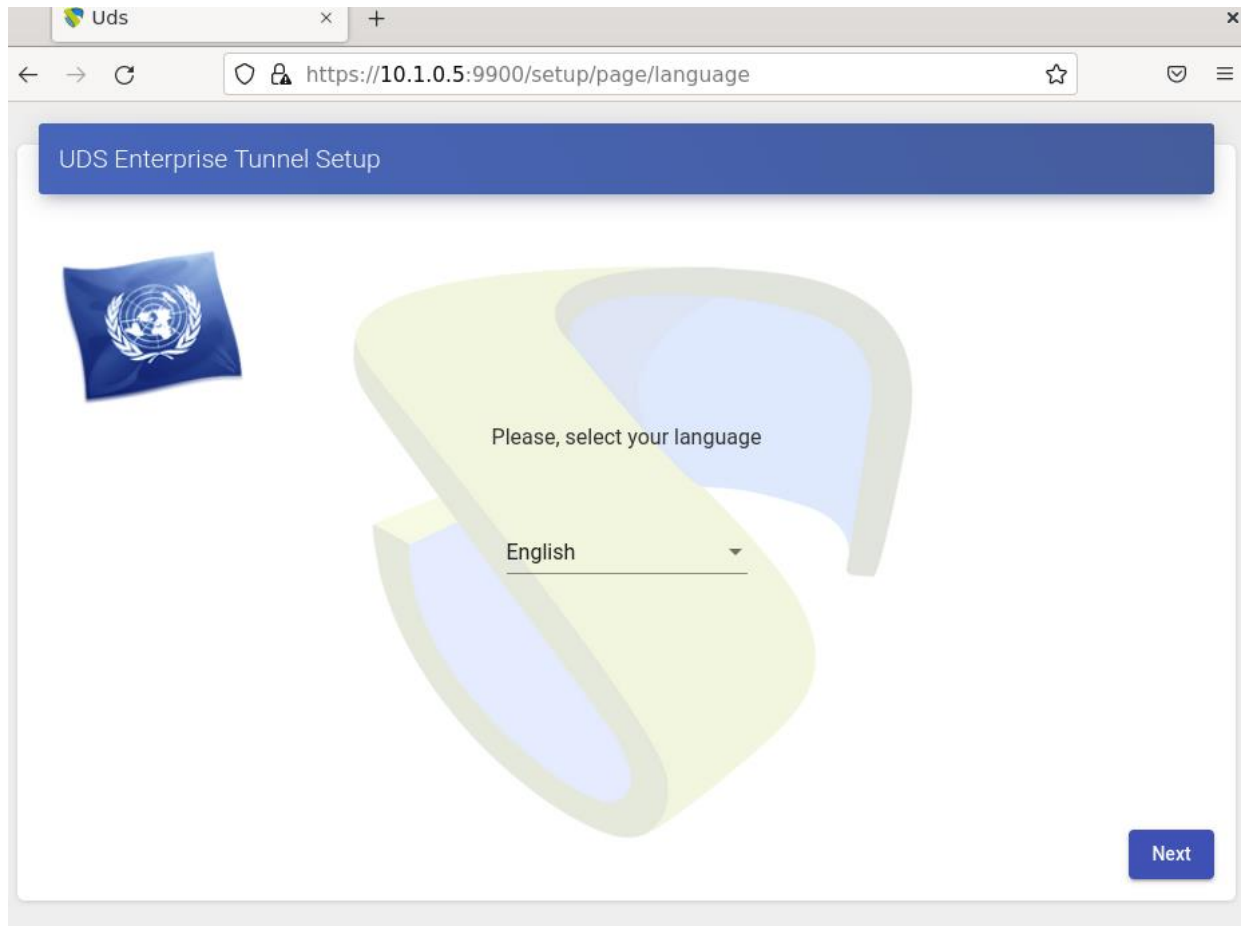
```

Once the process is done we can continue with the Tunnel configuration

**NOTE:**

For more information on the uds ip command, consult the UDS Enterprise 3.6 installation, administration and user manual.

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



Here, you will indicate all the necessary data (IP data, credentials, certificates, etc...) to configure the server.

It will be necessary to take into account that in the connection section with the UDS Server, we will have to indicate the hostname of the Server indicated in the previous step.



Connection type	HTTPS (secure connection)
Server	uds
Port	443
Authenticator	Administration

For more information on the UDS Tunnel server configuration, see the UDS Enterprise 3.6 installation, administration and user manual.

**NOTE:**

During the wizard configuration procedure, it will request the UDS server connection data.

- Create base machines or templates in Microsoft Azure

For UDS to deploy virtual desktops on the Azure platform, it is necessary to have a base machine or template on which the new UDS self-generated desktops will be based. This base machine can be deployed in different ways. Below you can find a procedure that will allow you to migrate templates already installed and configured on other virtual platforms (vSphere, KVM, etc...) to the Azure platform.

The first thing you should 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 you to convert disks of different formats (vmdk from VMware, qcow2/raw from KVM, etc...) to .vhd format. It is very important to keep in mind that the disk image needs to have the total size (Fixed Size). "Thin" (Dynamically Expanding) format is not supported.

Before migrating the template machine, you must ensure that it will have a valid access mode (type SSH or RDP) 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.

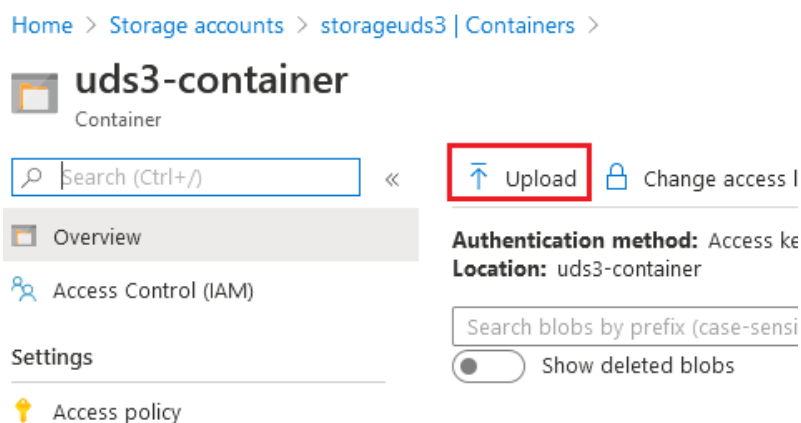


Another important point to keep in mind is the network configuration. It needs to be configured to take IP address via DHCP. In Windows O.S. templates, it is necessary to have the valid network driver installed to detect it on the Azure platform (if the machine is exported from a Hyper-V platform it will already be embedded).

Once you have the disk image converted to the format supported by Azure (.vhd), you will proceed to upload it to the platform and deploy the new base machine. You will perform the following tasks described below (the procedure will be very similar to the one you 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. Indicate the disk 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 to be imported and you will have to wait until the upload process finishes. Once finished, you will proceed to the next task: generating a disk from the image.

Current uploads

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

xUbuntu18.vhd	<span style="color: green;">✔</span> 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, you will see that within the “*Container*” you will have available the disk image of our base machine/template.

[↑ Upload](#) | [🔒 Change access level](#) | [🔄 Refresh](#) | [🗑 Delete](#) | [↔ Cha](#)


---

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

**Location:** uds3-container

Search blobs by prefix (case-sensitive)

Show deleted blobs

Name	Modified	Blob type	Size	Lease state
<input type="checkbox"/>  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 [⌵](#)

---

**Subscriptions:** VirtualCable Bas

- In the “**Basics**” section, select the subscription, the “**Resource group**” on which it will be registered, indicate a descriptive name for the element, the “**Region**”, and in “**Source type**” 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 \* ⓘ  ▼

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.

You must select the “**Storage accounts**” that contains the disk images:

## Storage accounts

+ Storage account [Refresh](#)


Name	Type	Resource Group
storageuds3	Standard-LRS	UDS_Enterprise_3

Once inside, you select the "*Container*" previously created.

## Containers ✕

storageuds3

+ Container 
 ↻ Refresh

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

Finally, select the imported image 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	Acces...	Blob type	Size	Lease state
 xUbuntu18.vhd	5/5/2020, 12:0...		Page blob	15 GiB	Available

Select

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

OS type ⓘ

- None (data disk)
- Linux
- Windows

Security type ⓘ

Standard ▼

VM generation ⓘ

- Generation 1
- Generation 2

VM architecture ⓘ

- x64
- Arm64

**i** 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”**:

## 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](#)

- You will wait for the disk to be created and, once this task is finished, you will see that you 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 <a href="#">↑↓</a>	Storage account type <a href="#">↑↓</a>	Size (G..)
<input type="checkbox"/>	 xUbuntu18-Disk	Standard HDD LRS	25

### NOTE:

Once the disk is unfolded, you can delete the image of the "Container" to avoid it causing an unnecessary cost.

- o Base machine creation

You will create the base machine/template from the disk itself:

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

Home > Disks >



## xUbuntu18-Disk



Disk

Search (Ctrl+[/](#))



[+](#) 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, you will choose the options that best suit your needs. Once finished, you 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, verify that you 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 


xU

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 template name cannot start with the letters “UDS”. If you start with these letters, it will not be displayed or available in the UDS administration to be used as “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).



- Base machine access and configuration

Once the virtual machine is deployed, you should be able to access it. To know what the public IP address of the machine is, you will click on it in the “*Virtual machines*” service. In the “*Overview*” section you will look at the value “*Public IP address*”.

## xUbuntu18

Virtual machine

 Connect  Start  Restart  Stop  Capture  Delete  Refresh  Open in mobile  CLI / PS  Feedback

 We recently resolved a problem with your virtual machine. 

### ^ Essentials

Resource group ([move](#)) : [UDS\\_Enterprise\\_3](#)

Status : Running

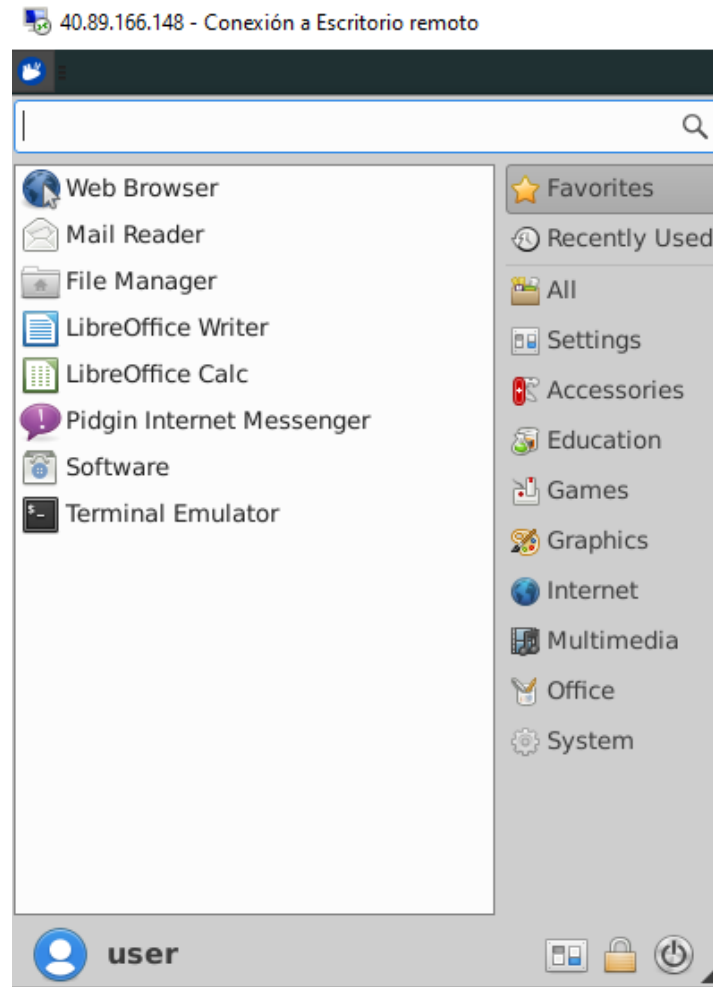
Location : France Central

Operating system : Linux

Size : Standard B1s (

Public IP address : [51.103.32.130](#)

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

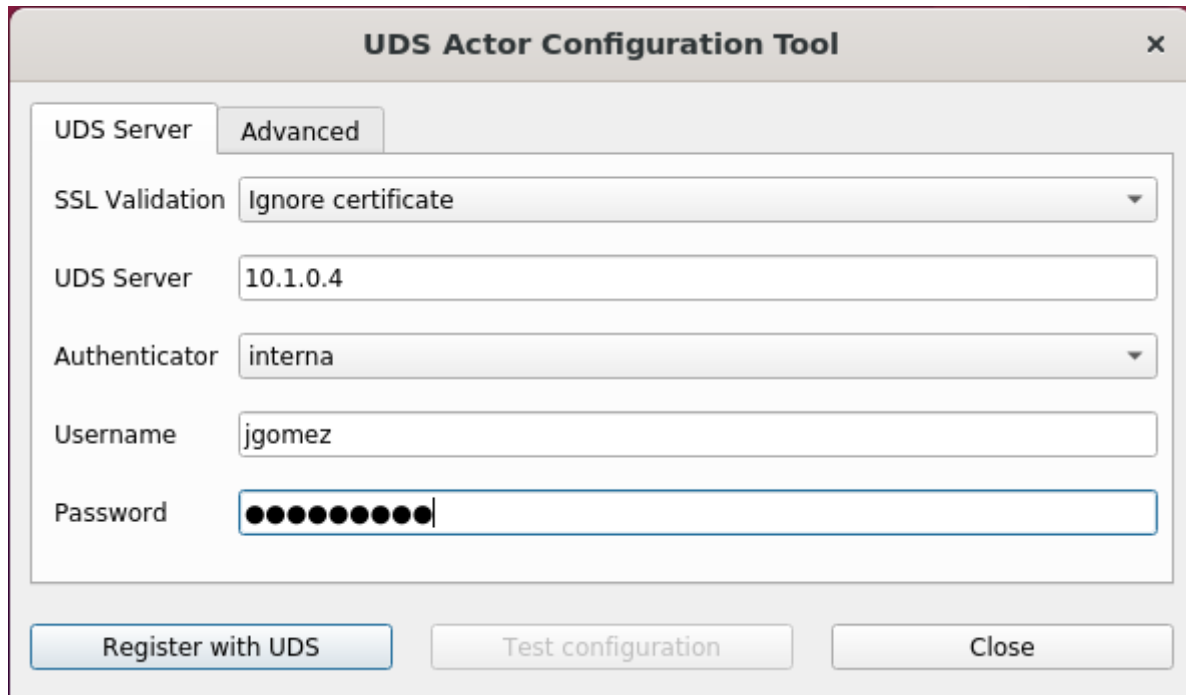


**NOTE:**

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

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



**NOTE:**

If you want to view the configuration of the UDS Actor in an Ubuntu OS through RDP, you will have to execute the following command from a console:

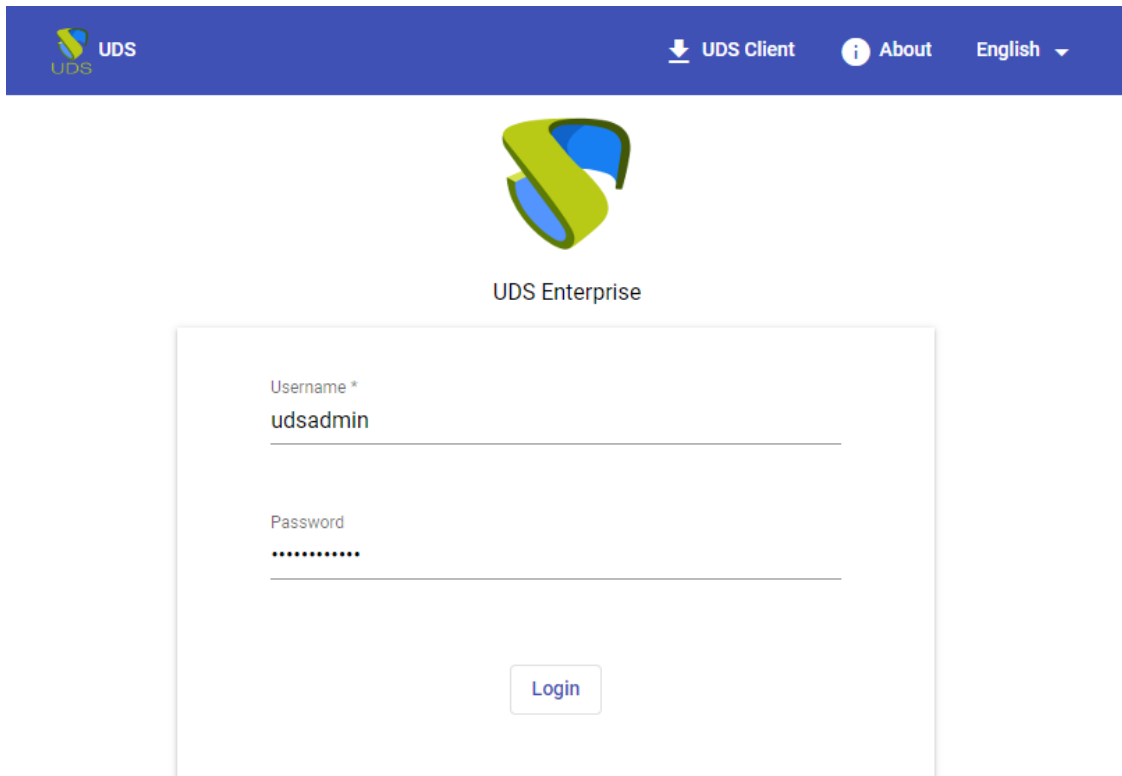
```
xhost + && sudo QT_X11_NO_MITSHM=1 /usr/sbin/UDSActorConfig
```

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

## UDS Enterprise Administration

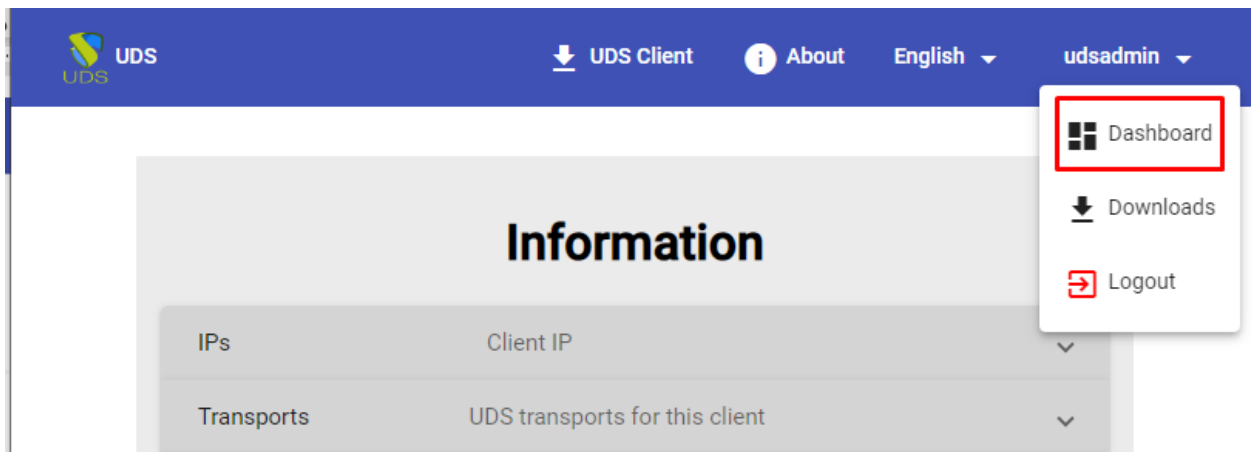
### Azure service provider integration

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

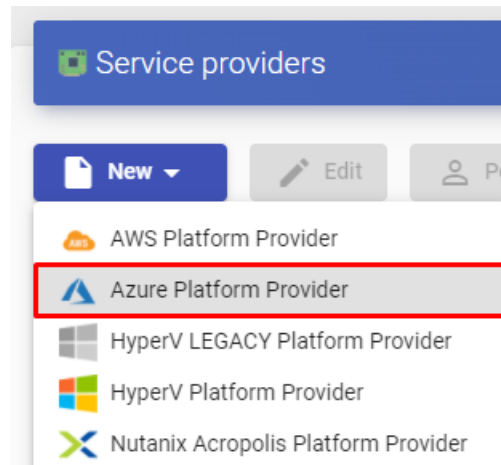


The screenshot shows the UDS Enterprise login portal. At the top is a blue navigation bar with the UDS logo on the left and links for 'UDS Client', 'About', and 'English' on the right. Below the navigation bar is the UDS logo and the text 'UDS Enterprise'. The main content area is a white login form with two input fields: 'Username \*' containing 'udsadmin' and 'Password' containing a masked password. A 'Login' button is centered below the fields.

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



Within the UDS administration, access the “*Services*” menu and click on “*New*” to register a new “*Service provider*”. Select “*Azure Platform Provider*”.



To make it possible 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 you can obtain directly from said platform:

## New provider

Main

Advanced

Tags

Tags for this element

Name \*

Azure

Comments

Tenant ID \*

Client ID \*

Client Secret \*

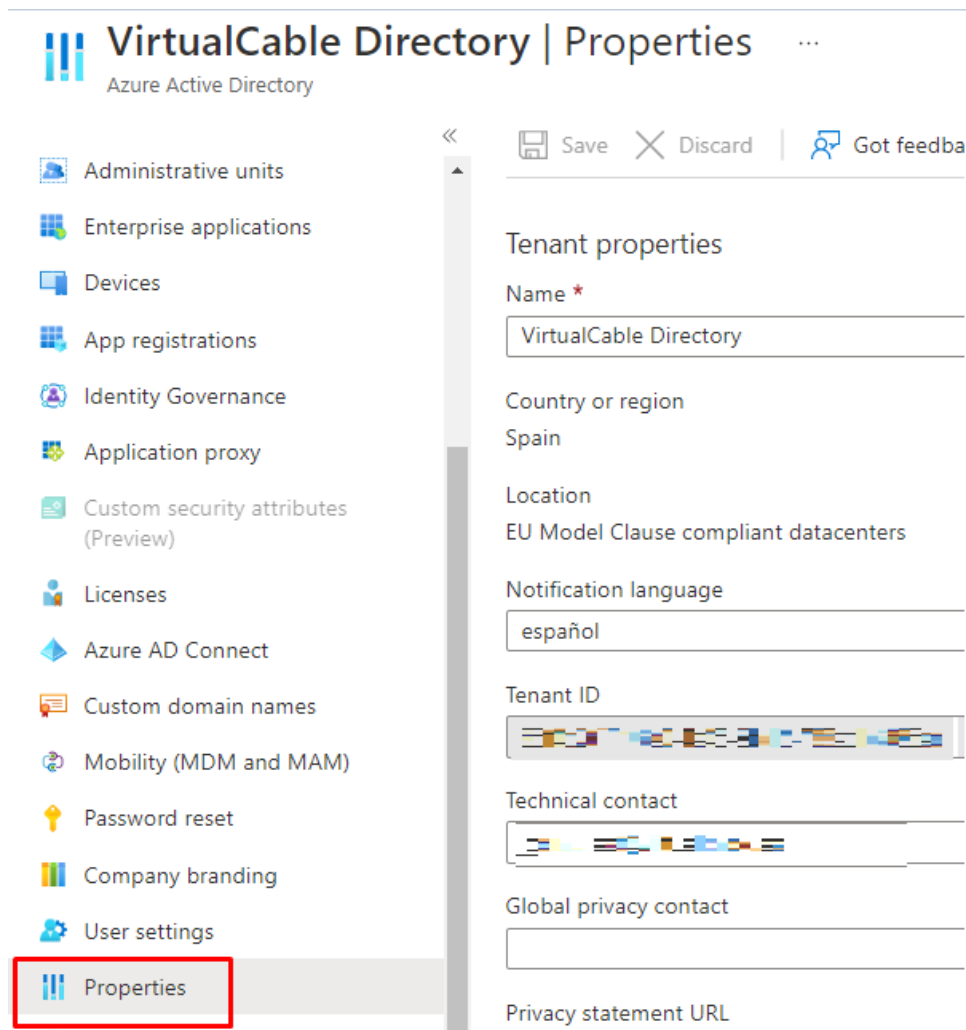
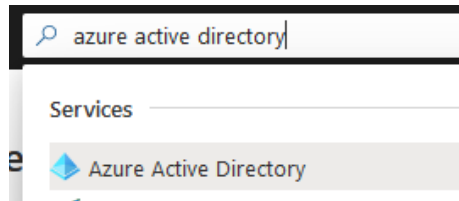
Subscription ID \*

test

Discard & close

Save

- **Tenant ID:** This value can be obtained from the *"Azure Active Directory"*, *"Properties"*, and *"Directory ID"*.



- **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 you will go to the service *"App registrations"* and click on *"New application registration"*.



[Home](#) >

## App registrations

[+ New registration](#) [🌐 Endpoints](#) [🔑 Troubleshoot](#)

 Welcome to the new and improved App registrations (now

**All applications** | Owned applications

In the creation wizard, 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
udserver3	UDS_Enterprise-vnet/default
Operating system	DNS name
Linux (debian 10.4)	uds3.francecentral.cloudapp.azure.com
Size	

Once the data is indicated, click on "*Register*":

## \* 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](#)

**NOTA:** El campo URI puede ser la dirección local del servidor UDS

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

## App registrations

[+ New registration](#)
[🌐 Endpoints](#)
[🔧 Troubleshooting](#)
[🔄 Refresh](#)
[⬇ Download](#)
[📄 Preview features](#)

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

🔍 Start typing a display name or application (client) ID to filter these r...

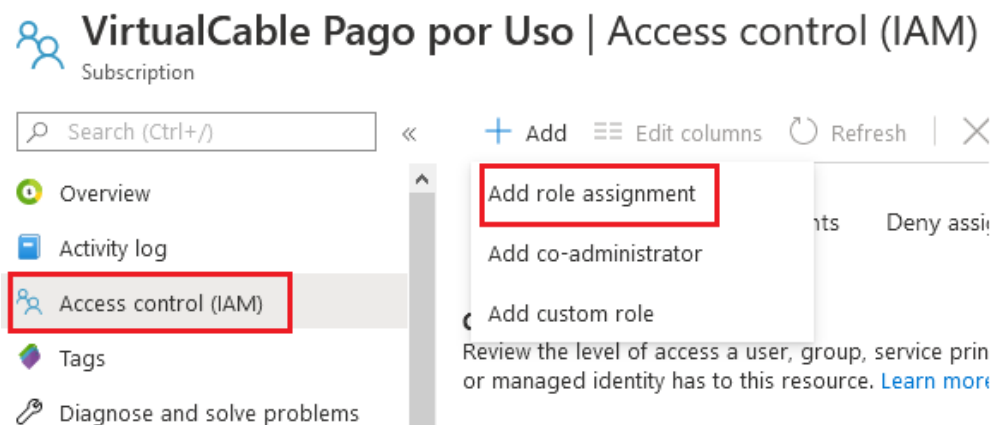
+ Add filters

1 applications found

Display name	Application (client) ID	Created on
UD UDS_Enterprise_35	75811a3-7ed4-44e0-ba3e-1...	3/14/20...

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

To have a valid "*Client ID*" that can be used by UDS, you must give UDS permissions on your subscription. To do this, select your 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

Search (Ctrl+/)

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

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

- 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](#)

Indicate the role, in this case "*Contributor*", select that the access will be for "*Azure AD user, group, or service principal*" and write 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

Got feedback?

Role **Members** Review + assign

**Selected role**  
Contributor

**Assign access to**

User, group, or service principal  
 Managed identity

**Members**

+ Select members

Name	Object ID	Type
UDS_Enterprise_35	541cef71-82f8-4dc7-a31d-665df675697d	App

Description

You can see the App with the assigned role:

## Add role assignment

Got feedback?

Role Members **Review + assign**

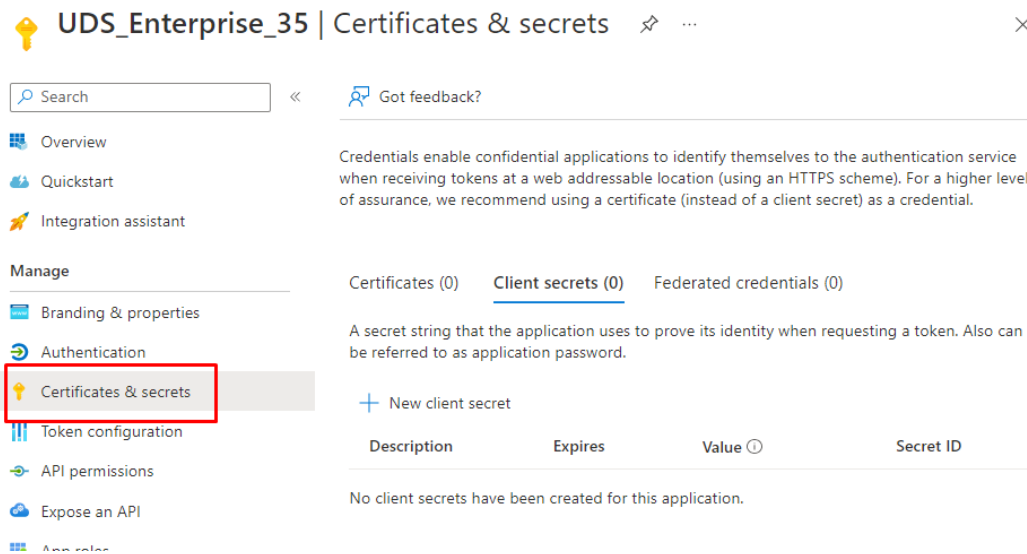
**Role**  
Contributor

**Scope**  
/subscriptions/d0e72996-5e70-48c5-b047-45d99f9b5c88

**Members**

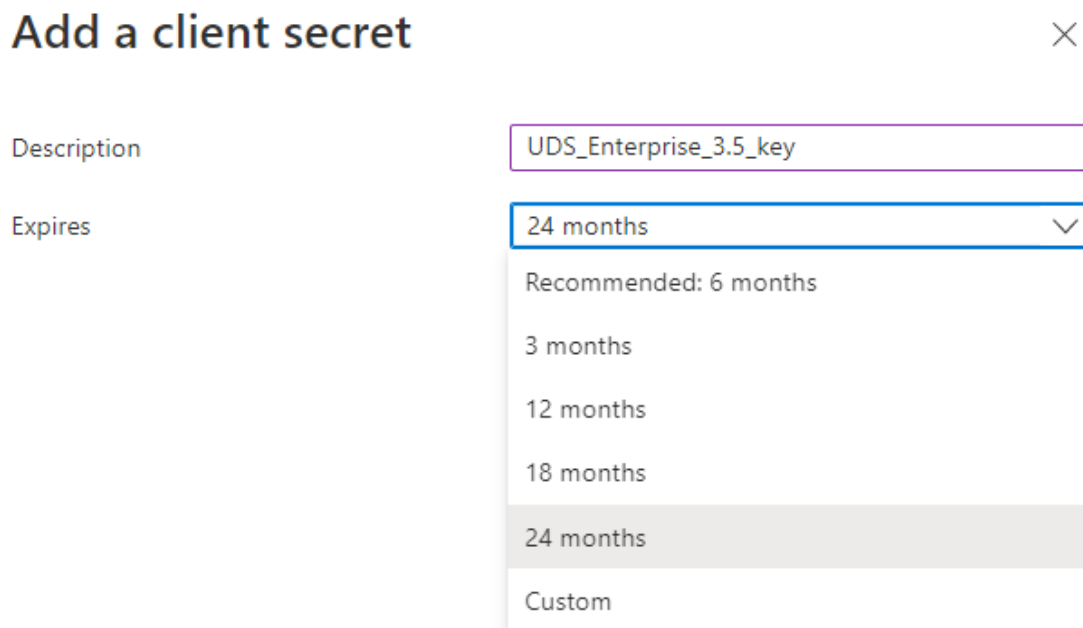
Name	Object ID	Type
UDS_Enterprise_35	541cef71-82f8-4dc7-a31d-665df675697d	App

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



The screenshot shows the Azure portal interface for the application 'UDS\_Enterprise\_35'. The left-hand navigation pane is visible, with 'Certificates & secrets' highlighted in a red box. The main content area shows the 'Client secrets (0)' tab selected. Below the tab, there is a description of client secrets and a '+ New client secret' button. A table with columns 'Description', 'Expires', 'Value', and 'Secret ID' is present, but it is currently empty, displaying the message '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*”:



The screenshot shows the 'Add a client secret' dialog box. It has a title bar with a close button (X). The 'Description' field contains the text 'UDS\_Enterprise\_3.5\_key'. The 'Expires' field is a dropdown menu with '24 months' selected. The dropdown menu is open, showing options: '24 months' (highlighted), 'Recommended: 6 months', '3 months', '12 months', '18 months', and 'Custom'.

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

UDSServer3.6 | 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 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	UW... (obscured)	...

**Subscription ID:** To obtain this value, access the “*Subscriptions*” service. Identify your subscription and copy the value of “*Subscription ID*”:

VirtualCable Pago por Uso

Subscription

Search  Cancel subscription Rename Change directory Switch Offer

- Overview
- Activity log
- Access control (IAM)

Essentials

Subscription ID : 01f72945-5e70-43e5-b0d7-457999e5388

Directory : VirtualCable Directory (virtualcable.es)

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

## New provider

Main      Advanced

Tags  
Tags for this element

Name \*  
Azure

Comments  
Comments for this element

Tenant ID \*  
32b0c21f-9a4e-4280-82f1-2f1e212c1e21

Client ID \*  
c78314c5-7e24-4d4e-81a6-594511e7

Client Secret \*  
\$J34h8m7tE50u1ng81nc17h4G2h0m

Subscription ID \*  
e1a27996-67d4-45b0-741d-8999e21103


### NOTE:

Although the test does not come out correct, you can save the provider and thus not lose the indicated data. Subsequently, you can check which of the values is wrong (the "Client Secret" will only be visible during its creation).

Service providers

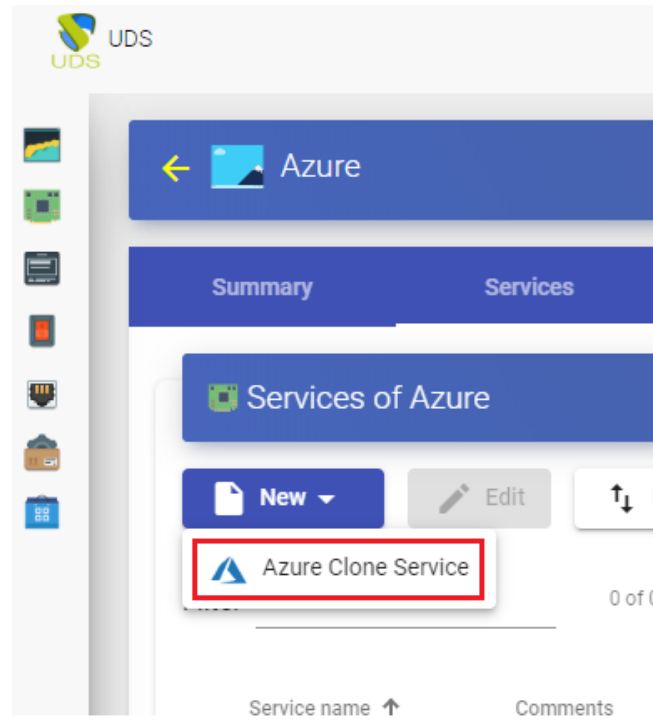
             

Filter      1 - 1 of 1      |< < > >|      ↻

Name ↑	Type	Comments	Status	Services	User Services
<input type="checkbox"/>  Azure	Azure Platform Provider		Active	0	0

## Creation of base services

When you have a valid "*Service provider*" connected to the Azure platform, you can create services based on templates. In order to do this, access the provider (with a double click or right button - "*Detail*") and in the "*Services*" tab click on "*New*" - "*Azure Clone Service*".





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

- Main:
  - **Name:** Descriptive name of the base service.
  - **Resource Group:** Select the Azure "*Resource Group*" under which you have your base machine or template.
  - **Virtual Machine:** base machine or template that you will use to deploy virtual desktops (with the UDS Actor installed and configured).
  - **Machine Size:** Amount of resources that the virtual desktops automatically deployed by UDS will have (this list will show all the types of machines available in Azure. Therefore, you must ensure that the chosen type is supported by your Azure subscription).
  - **Machine Names:** Root name of the virtual desktops generated by UDS.
  - **Name Length:** The 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 9 machines can be created, 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 in the Azure environment and associated with the selected "*Resource Group*" to which the virtual desktops will be connected (there must be connectivity with the UDS-Server component).
  - **Subnet:** Existing Azure environment subnet to which virtual desktops will connect.
  - **Security Group:** You can indicate a "*Security Group*" to assign to virtual desktops. In this example, when both the UDS components and the self-generated desktops are on the same network, you will select "*None*", since you do not want to apply any.

**New service**

Main      Network      Advanced

---

Network \*

UDS\_Enterprise-vnet ▼

---

Subnet \*

default ▼

---

Security Group \*

None ▼

---

- Advanced:
  - **Caching policy:** Disk Cache Settings.
  - **Pricing tier:** Redundancy level applied.
  - **Accelerated network:** Enable the power to use this technology (it cannot be used with most types of machines, only with: D/DSv3, E/ESv3, Fsv2 and Ms/Mms and S.O. Linux).

## New service

Main

Network

Advanced

Caching policy \*

ReadWrite

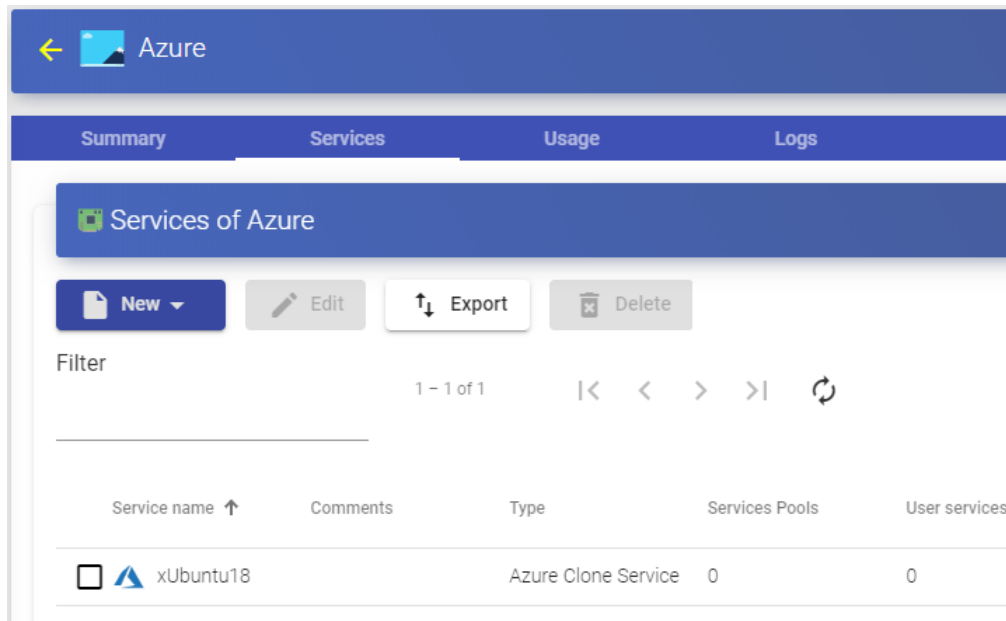
Pricing tier \*

Premium\_LRS

Accelerated network

No

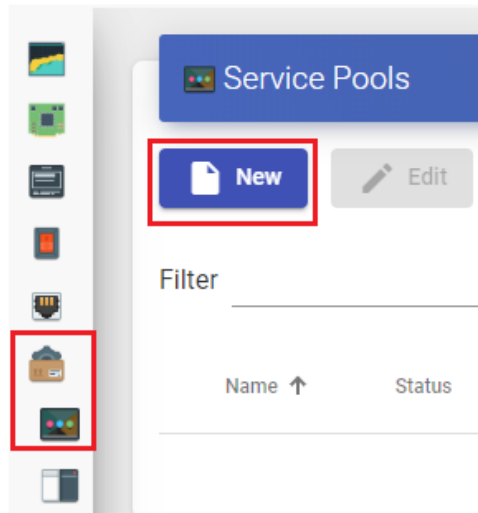
Click on **“Save”** and you will already have a valid base service to automatically deploy virtual desktops:



## ■ Creation of a 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 the persistence policy of the generated desktops) and a **“Transport”** (to connect 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 you have the elements mentioned above (**“Authenticator”**, **“OS Manager”** and **“Transport”**) you can create **“Service Pools”**. In order to do this, access the **“Pools”**, section, open the **“Service Pools”** tab and click on **“New”**.



In the “*Main*” tab you will indicate the name of the service (this name will be visible to users) and 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 we will use one for Linux O.S. 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, you will indicate the initial desktops that will generate UDS and those to be kept in the cache (in Azure the use of the L2 cache is not available).

In this example, we are going to indicate that UDS automatically creates 4 desktops and we always have at least 2 available in the 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

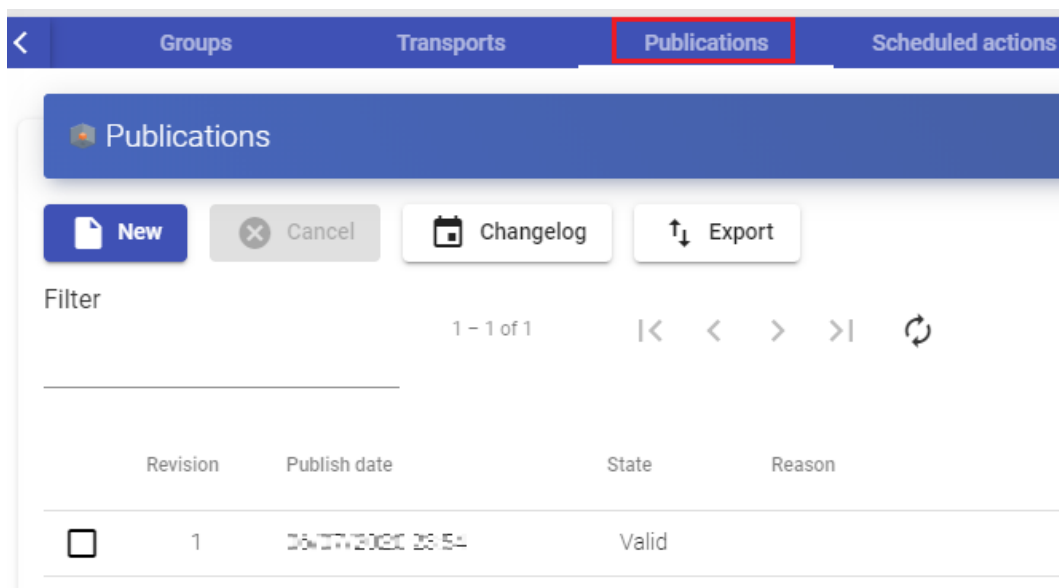
Save



**NOTE:**

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

Selecting the "*Service Pool*" and opening the "*Publications*" tab you will check if the publication has been generated correctly. When in a "*Valid*" state, the system will start to auto-generate the virtual desktops indicated in the cache parameters.



	Revision	Publish date	State	Reason
<input type="checkbox"/>	1	26/11/2020 20:54	Valid	

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

← Desktop Ubuntu





Summary Assigned services **Cache** Groups Transports Publications

Cached services

Logs Export Delete Filter 1 - 3 of 3 |< < > >| ↻

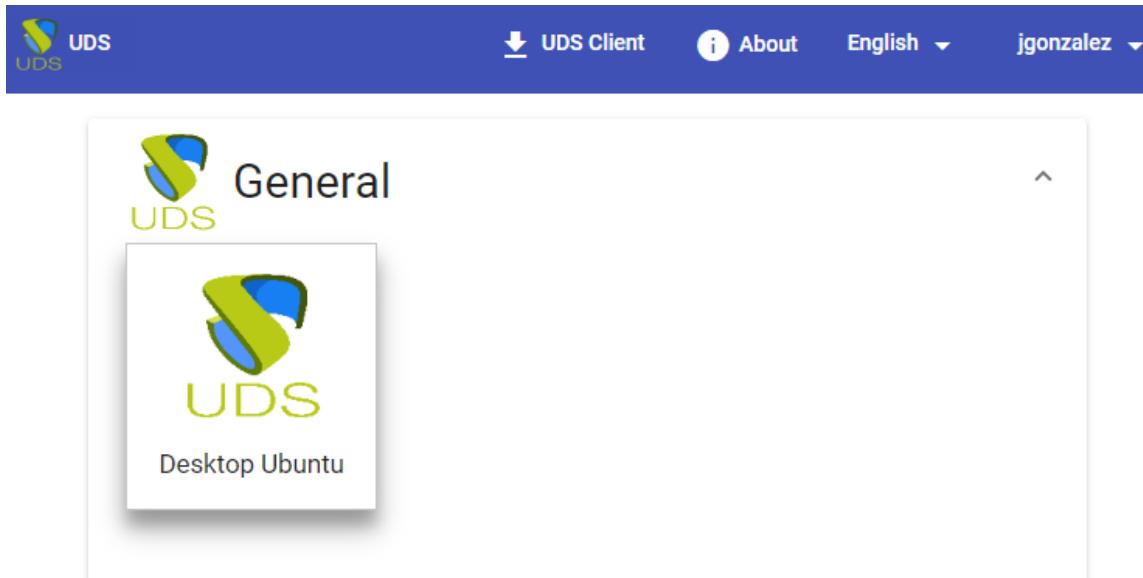
Creation date	Revision	Unique ID	IP	Friendly name	State	Cache level	Actor version
<input type="checkbox"/> 05/04/2023 12:11	1	60:45:BD:6E:84:7F	unknown	Ubuntu-000	Waiting OS	1	3.6.0
<input type="checkbox"/> 05/04/2023 12:11	1	60:45:BD:6C:A6:07	unknown	Ubuntu-001	Waiting OS	1	3.6.0
<input type="checkbox"/>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

In the Azure environment you 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 (that is, the UDS Actor installed in the template has finished applying the necessary settings), they will be available for users to access.

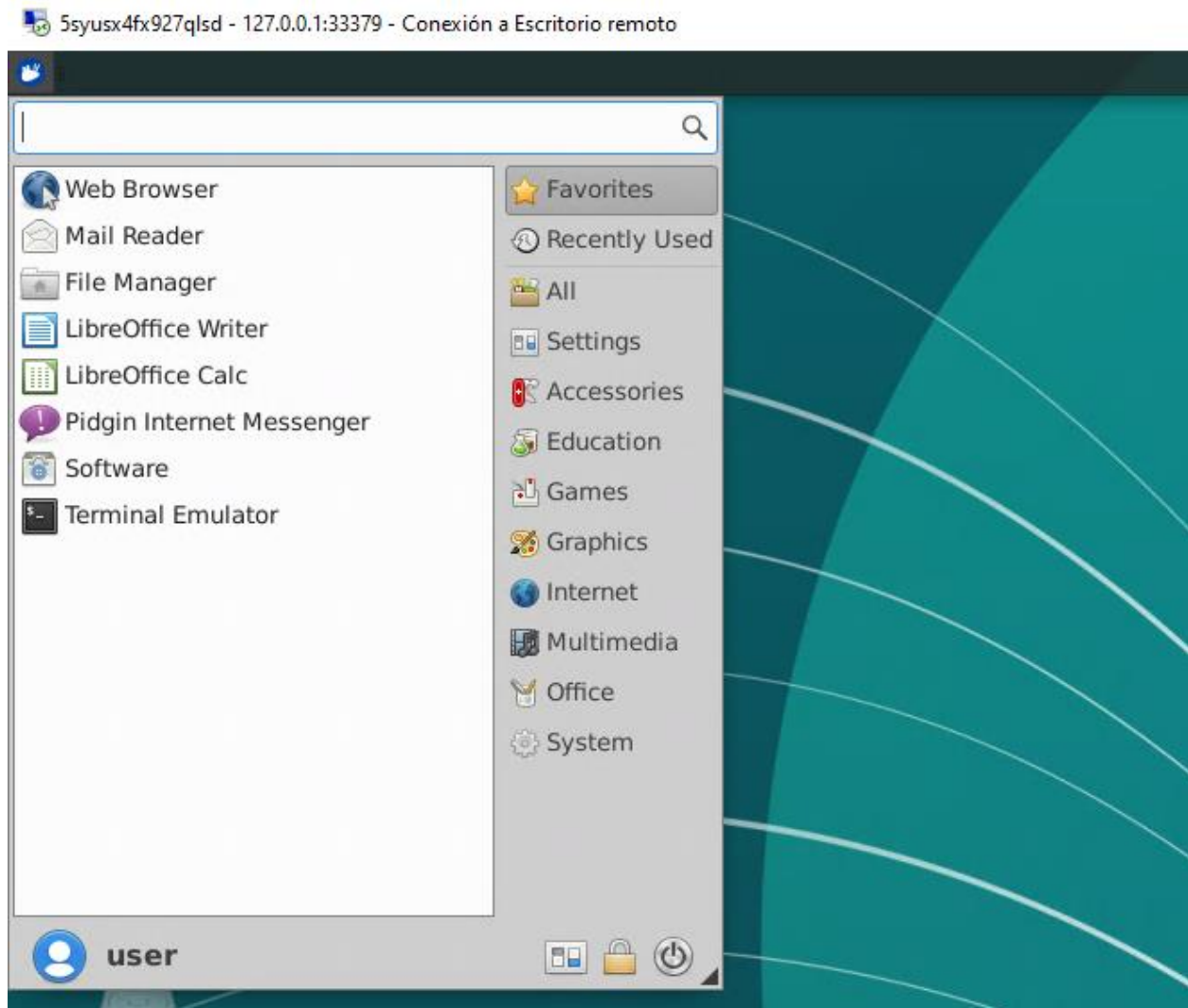
You will access the services window with a user (it is not possible to use the system administrator super-user) and you will see the available service.



**NOTE:**

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

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



**NOTE:**

If you are outside the network configured in Azure, it will be necessary to use tunnelled 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).

## Azure AD integration as UDS Enterprise “Authenticator”

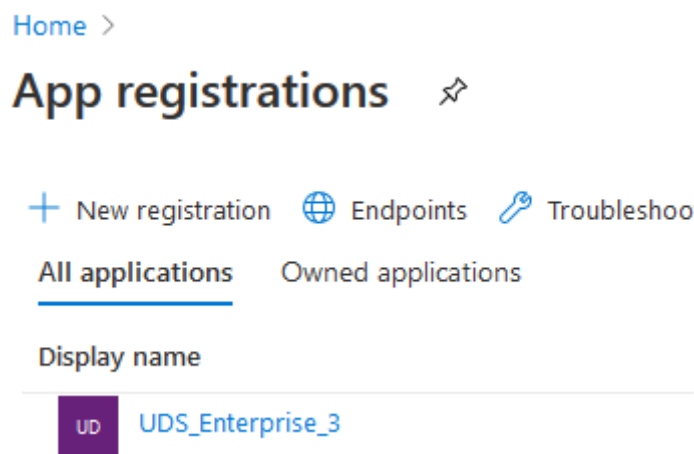
UDS allows integration with the Azure authentication system, called “*Azure Active Directory*”. Through this integration, it will be possible to validate users registered in this authenticator in the UDS login portal and allow them to access desktop services and virtual applications.

To allow the correct integration between UDS and “*Azure Active Directory*” it will be necessary to carry out some preliminary tasks on the Azure platform.

### Tasks to perform in Azure

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

To register the application you 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” in order to view all the existing ones.

In the creation wizard, you will indicate the name of the application, who will be able to access it and in the **“Redirect URI”** section you will indicate **“Web”** with any URL (it does not need to exist, it will not be used).

## Register an application ... ×

### \* Name

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

UDS\_35\_AzureAD ✓

### 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://sample ✓

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 data of the application is indicated, you will click on **“Register”** and you will check that it has been created correctly (if you do not see it, you will click on **“View all applications”**):

[Home](#) >


## App registrations ✦ ... ×

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

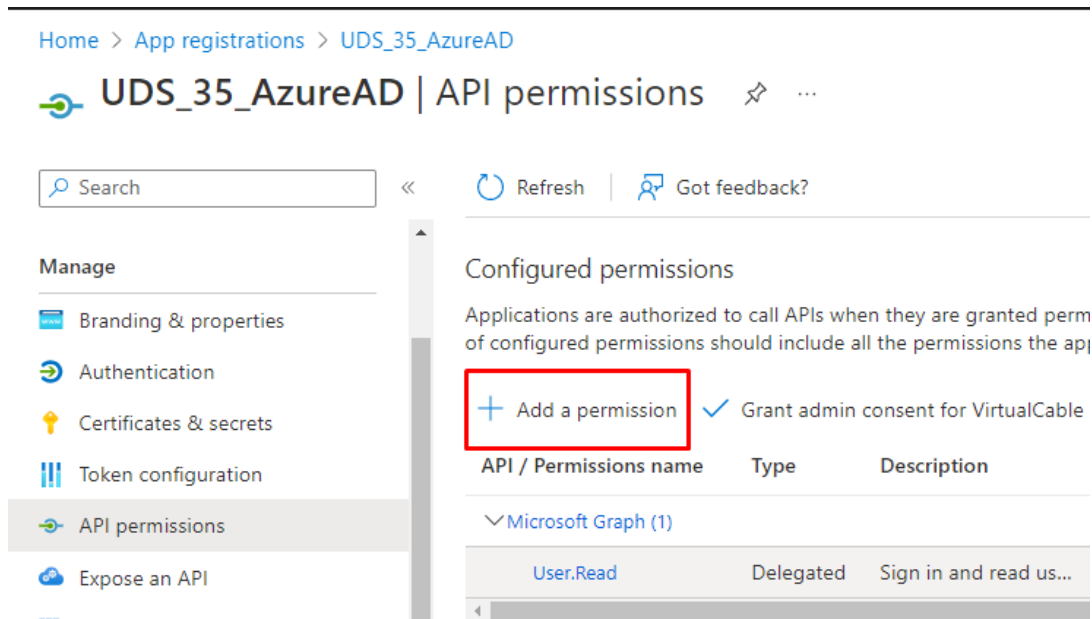
**All applications** Owned applications Deleted applications

[+](#) Add filters

4 applications found

Display name <span>↑↓</span>	Application (client) ID	Created on <span>↑↓</span>	Certificates & secrets
 UDS_35_AzureAD	8c02d15a-df2d-4548-912c-f14b0bc7e09f	3/14/2023	-

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



Home > App registrations > UDS\_35\_AzureAD

UDS\_35\_AzureAD | API permissions

Search

Refresh | Got feedback?

**Manage**

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

**Configured permissions**

Applications are authorized to call APIs when they are granted perm of configured permissions should include all the permissions the api

**+ Add a permission** ✓ Grant admin consent for VirtualCable

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


**Microsoft APIs** APIs my organization uses My APIs

Commonly used Microsoft APIs




**Microsoft Graph**

Take advantage of the tremendous amount of data in Office 365, Azure AD, Exchange, OneDrive, and more with a single endpoint.



Azure DevOps



Azure Key Vault

Within "*Microsoft Graph*", select "*Application permissions*" to apply for 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

You 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

group.read.all

Permission

**Group (1)**

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 na...	Type	Description	Admin consent req...	Status
▼ Microsoft Graph (4) <span style="float: right;">...</span>				
Directory.Read.All	Application	Read directory data	Yes	⚠ Not granted for VirtualC... <span style="float: right;">...</span>
Group.Read.All	Application	Read all groups	Yes	⚠ Not granted for VirtualC... <span style="float: right;">...</span>
User.Read	Delegated	Sign in and read user profile	-	<span style="float: right;">...</span>
User.Read.All	Application	Read all users' full profiles	Yes	<span style="float: right;">...</span>

Remove permission

Once you have the necessary permissions, click on **"Grant admin consent for..."** and 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](#)

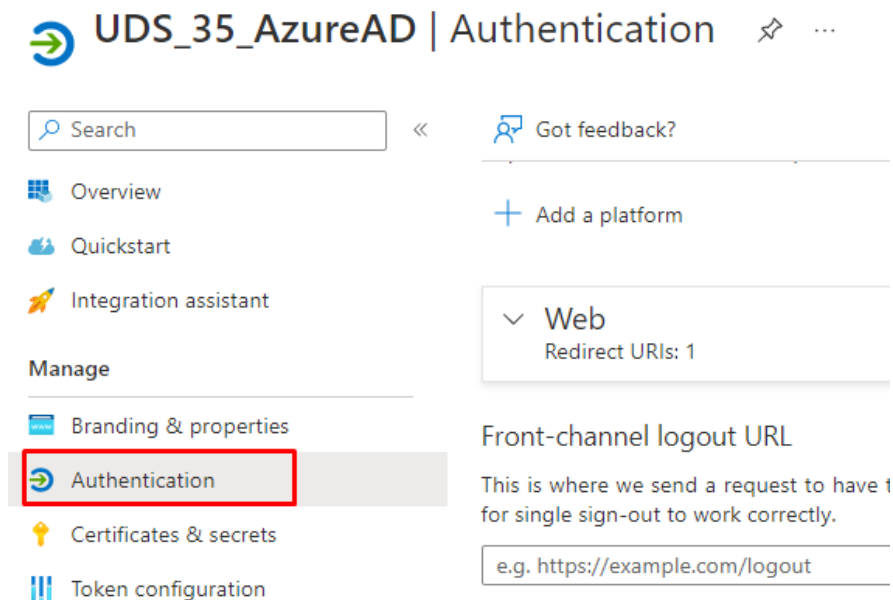
+ Add a permission  Grant admin consent for VirtualCable Directory

API / Permissions na...	Type	Description	Admin consent req...	Status
▼ Microsoft Graph (3) <span style="float: right;">...</span>				
Directory.Read.All	Application	Read directory data	Yes	⚠ Not granted for VirtualC... <span style="float: right;">...</span>
Group.Read.All	Application	Read all groups	Yes	⚠ Not granted for VirtualC... <span style="float: right;">...</span>
User.Read.All	Application	Read all users' full profiles	Yes	⚠ Not granted for VirtualC... <span style="float: right;">...</span>

Confirm that the permissions have been applied:

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

To finish with the configuration of the App, you will need to access the “*Manage*” menu and select “*Authentication*”:



UDS\_35\_AzureAD | Authentication

Search

Got feedback?

Overview

Quickstart

Integration assistant

Manage

Branding & properties

**Authentication**

Certificates & secrets

Token configuration

+ Add a platform

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.

e.g. https://example.com/logout

In the “*Implicit grant and hybrid flows*” section, you will 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 architecture (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.](#)

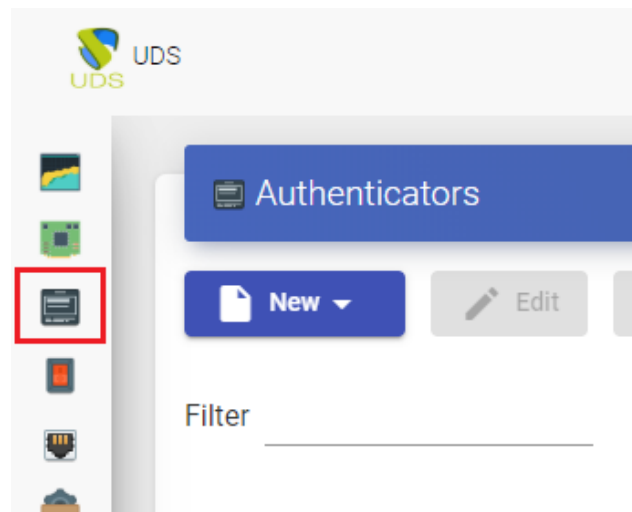
Select the tokens you would like to be issued by the authorization endpoint:

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

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

## Tasks to perform in UDS Enterprise

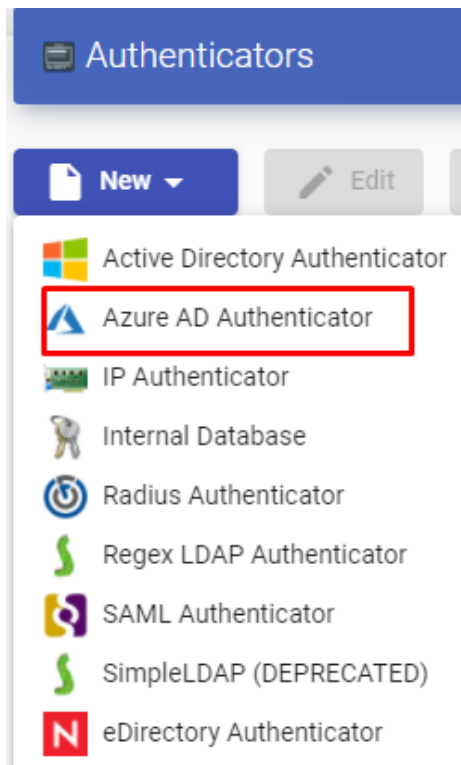
From the UDS administration, you will proceed to register the new authenticator of type "*Azure Active Directory*". In order to do this, validate yourself on the UDS login portal with a user with administrative permissions and access the "*Authenticators*" section.



### NOTE:

In UDS you can have different types of authenticators registered in the system. The priority field will define which authenticator will be shown to users by default.

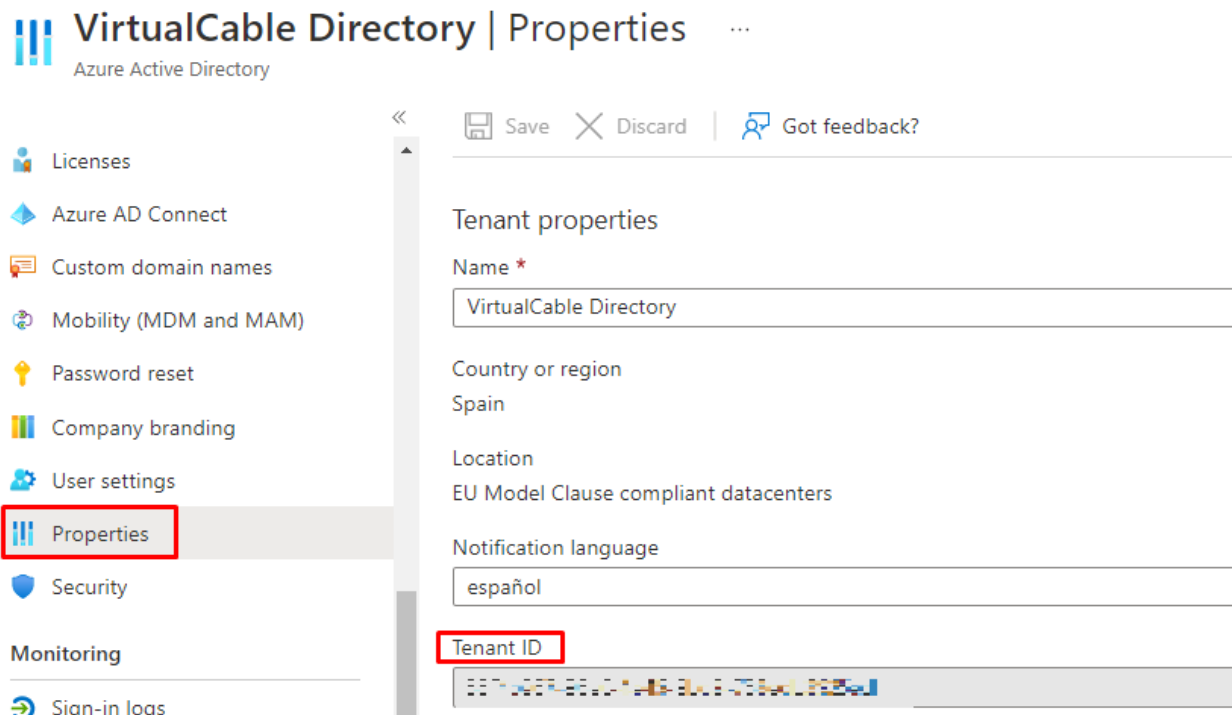
Click on "*New*" and select "*Azure AD Authenticator*".



Within the wizard, you must indicate a series of necessary data:

- **Main:**

- **Name:** Authenticator name.
- **Priority:** Priority, of this authenticator in the list of authenticators available. 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 service "*Azure Active Directory*", "*Properties*", "*Directory ID*".



**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**  
[Redacted]

Left sidebar menu items: Licenses, Azure AD Connect, Custom domain names, Mobility (MDM and MAM), Password reset, Company branding, User settings, **Properties**, Security, Monitoring, Sign-in logs.

- **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 [📄](#)

**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*") and access "*Certificates & secrets*".






## UDS\_35\_AzureAD | Certificates & secrets ...

<<

 Got feedback?

-  Overview
-  Quickstart
-  Integration assistant

### Manage

-  Branding & properties
-  Authentication
-  **Certificates & secrets**
-  Token configuration
-  API permissions

Credentials enable confidential applications to identify themselves to (for example, a web application or a service). For a higher level of assurance, we recommend using a cer

Certificates (0) Client secrets (0) Federated credentials

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

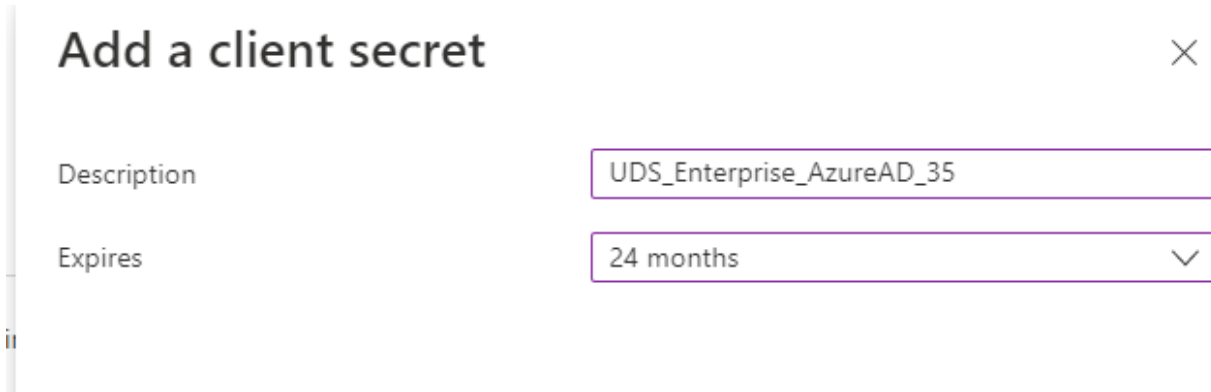
**+ New client secret**

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*":

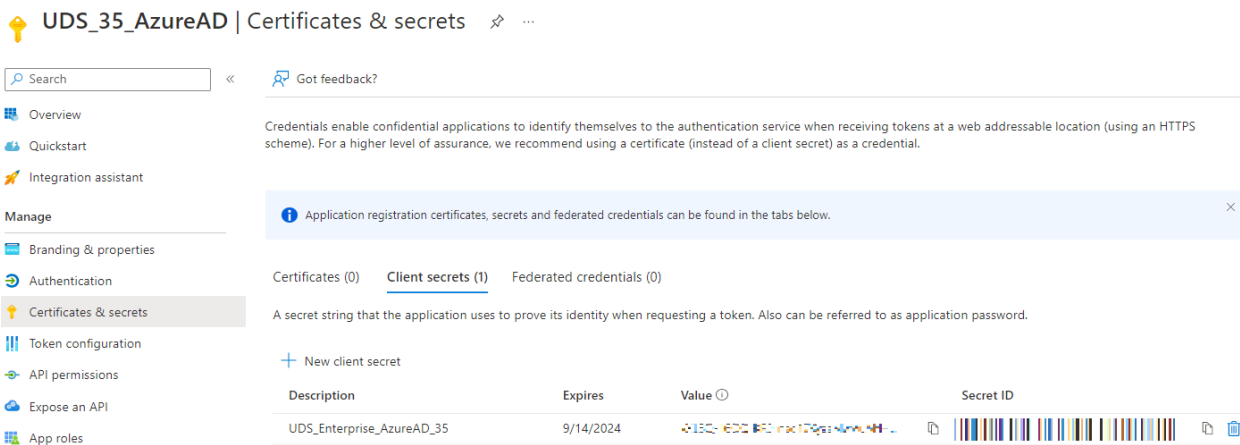


**Add a client secret** [X]

Description: UDS\_Enterprise\_AzureAD\_35

Expires: 24 months [v]

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



UDS\_35\_AzureAD | 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.

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	[Secret Value]	[Secret ID]



Once you have all the fields filled in, you 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 *		
95f14a28-783e-044e-459c-bd2c-7308ed02925ec		
Client ID *		
8c02e78a-41f8-4343-8a71-881316ae270f		
Client Secret *		
600_6Q-1E0Q KPC rsd174jzslWvAu4N~_gM77cm		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="background-color: #0056b3; color: white; padding: 5px 10px; border-radius: 3px;">Test</div> <div style="border: 1px solid #ccc; padding: 5px 10px; border-radius: 3px; display: flex; gap: 10px;"> <span>Discard &amp; close</span> <span style="background-color: #0056b3; color: white; padding: 5px 10px; border-radius: 3px;">Save</span> </div> </div>		

Once the correct connection has been verified, you will click on **“Save”** to save it.

### NOTE:

If the test indicates that there is an error, you can save the connector by clicking on **“Save”** to avoid losing data such as the **“Client Secret”** and, later, review the causes of the connection error.

The last task to complete the integration of UDS with the **“Azure Active Directory”** authenticator will be to indicate the access URL allowed in the Azure environment.

In the **"Authenticators"** section of UDS administration, select the authenticator previously created. Edit it by accessing the **"Advanced"** tab. You will need to copy the value of the **"Callback"** field.

## Edit Authenticator

Main **Advanced** Display

---

Callback

---

Proxy

---

Enable School Data Sync Integration  
 No

Azure Logout method.

---

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

Home > App registrations >

### UDS3\_AzureAD | Authentication

Search (Ctrl+/) Save Discard Got feedback?

- Overview
- Quickstart
- Integration assistant (preview)

Manage

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

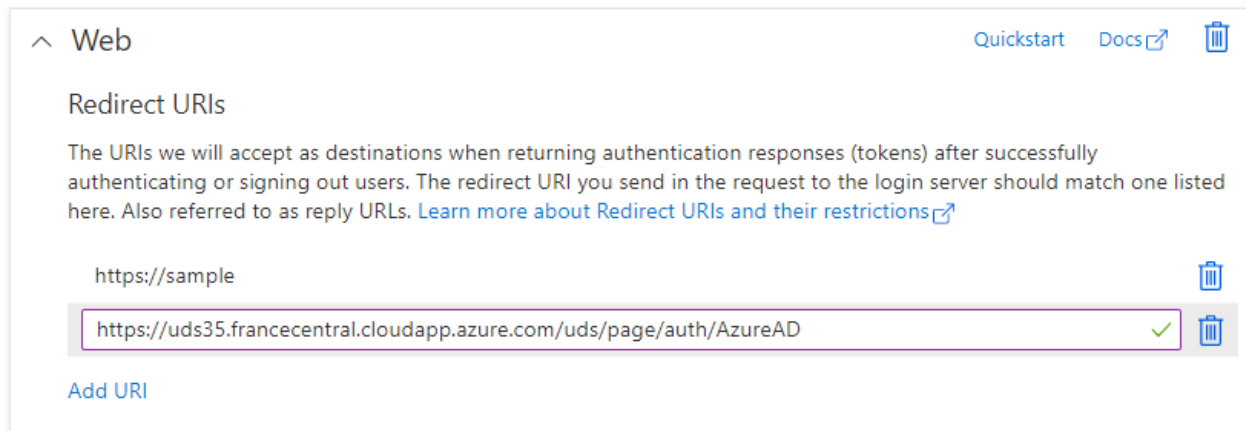
Web

Redirect URIs

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

[Add URI](#)

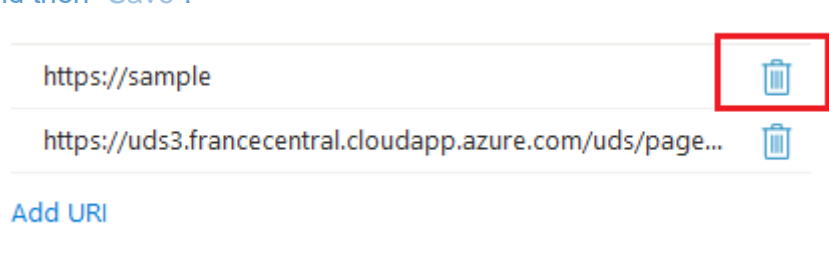
Within **"Authentication"**, click on **"Add URI"** and paste the value copied from the UDS administration from the **"Callback"** field of the authenticator.



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

**NOTE:**

The URL indicated in the creation of the App can be removed (in this case `https://sample`). Click on the delete icon and then **"Save"**.



After completing these steps, users can authenticate themselves with the user credentials configured in an **"Azure Active directory"** authenticator.

**NOTE:**

In order for a user to be able to validate in the UDS login portal with the Azure authenticator, he must belong to a group of users previously registered in the UDS administration.

## About VirtualCable

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 professionals have more than 30 years of experience in IT and software development and more than 15 in virtualization technologies. Millions of Windows and Linux virtual desktops with UDS Enterprise are deployed all over the world every day.