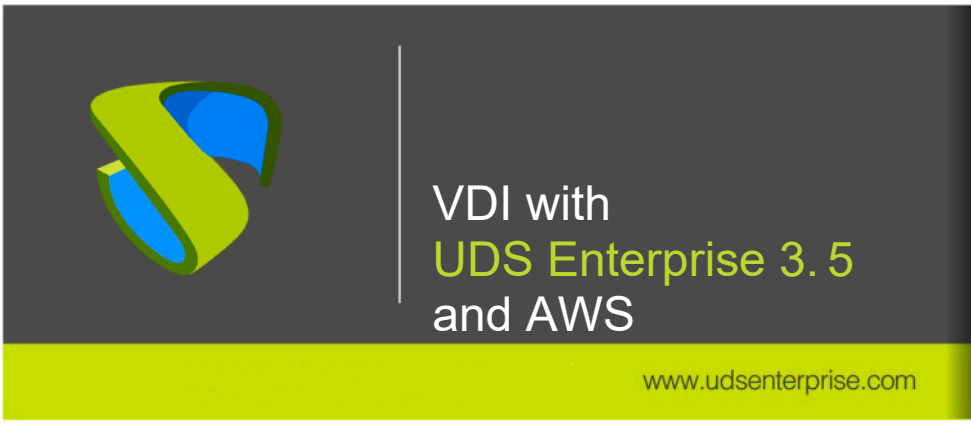

VDI with
UDS Enterprise 3. 5
and AWS
www.udsenterprise.com

Index

Introduction

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

This **VDI Guide with UDS Enterprise & AWS** will help you understand how to deploy and configure UDS Enterprise components on that platform. This document shows, through real examples, how to create the necessary resources so that UDS Enterprise can deploy virtual desktops on AWS.

UDS Enterprise on Amazon Web Services

Before carrying out the integration, it is recommended to invest some time in learning about the different configurable parts of UDS Enterprise (for more information visit our website. In the Documentation section you will find the UDS Enterprise Installation, Administration and User Manual). One of them is the Service Providers, an element of great importance for the configuration of AWS in UDS Enterprise.

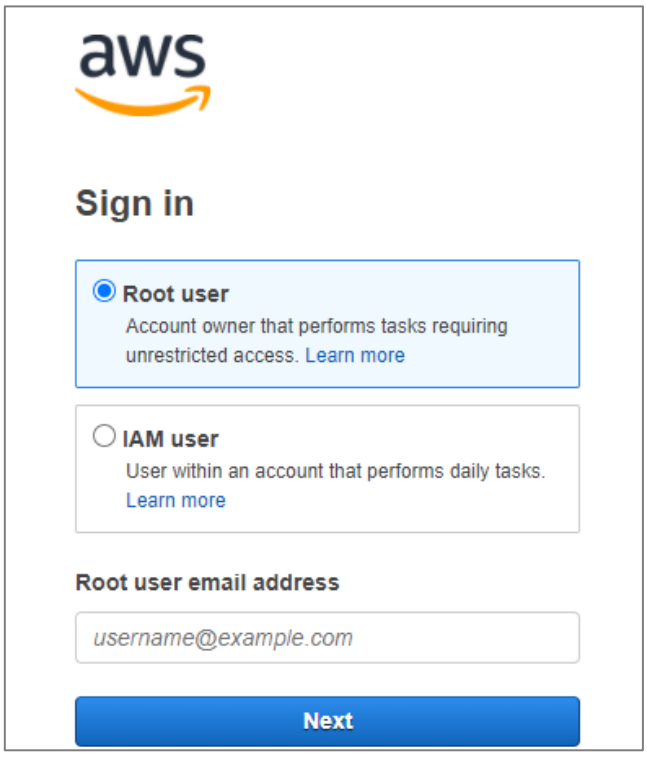
UDS Enterprise will enable the deployment of self-generated virtual desktops and virtual application sessions on the AWS platform. UDS components (Server, Tunnel, and Database) can be hosted in the AWS environment itself or can also be hosted on any other on-premise virtualization platform with connectivity to the AWS environment.

To import, install, and configure UDS Enterprise within an AWS environment, you must request its specific components for this environment (UDS-Server, UDS-Tunnel, and Database) and a serial number (Free/Evaluation/Enterprise) to Virtual Cable.

You must have a valid subscription on AWS with administration permissions on which to deploy UDS Enterprise components, virtual desktops, or Windows/Linux application servers.

Where do I start?

First, you must have an account with administrator privileges (you can use the “Root” account o ran IAM account with permissions) on the AWS platform. If you already have it, Log in to the portal.



If you already have an active UDS environment (on an on-premises virtual platform or another cloud platform) and you want to integrate it with AWS, you will need to make the necessary configurations at the network level so that there is communication between the UDS servers and the AWS environment. In this case you can go directly to the **"UDS Enterprise Administration"** section.

If you want to host UDS components within the AWS environment, the Virtual Cable team will provide you with those components in a specific format and you will need to perform a series of tasks to import them.

Deploying UDS Servers on AWS

The following is an example of how to deploy the servers that make up the UDS environment on an AWS platform. This guide details the steps to locate and create the UDS-Server component. The same tasks must be performed for the UDS-Tunnel server and the database.

If the version of UDS to be installed is Enterprise, it will be necessary to upload the database server to the platform. If you're using the UDS Free Edition or UDS Evaluation Edition you don't need to deploy a database server. You can activate a local database included in the UDS-Server instead, although this configuration will not allow you to upgrade the environment.

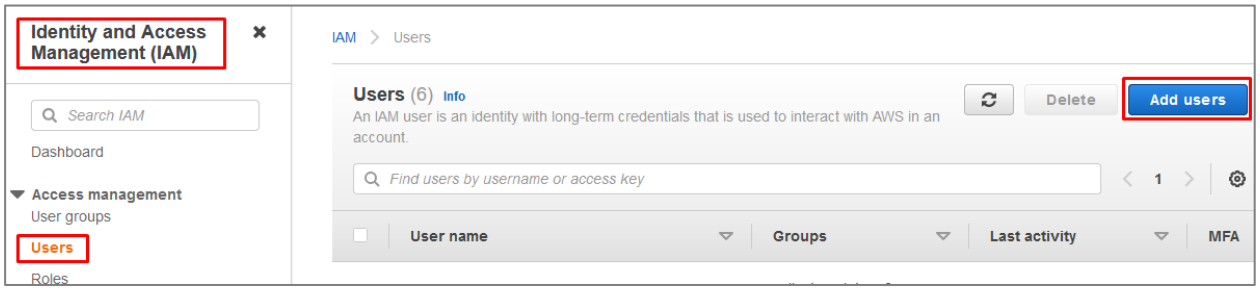
UDS servers will be provided by the Virtual Cable team in disk image format (. ova).

▪ User creation in IAM module

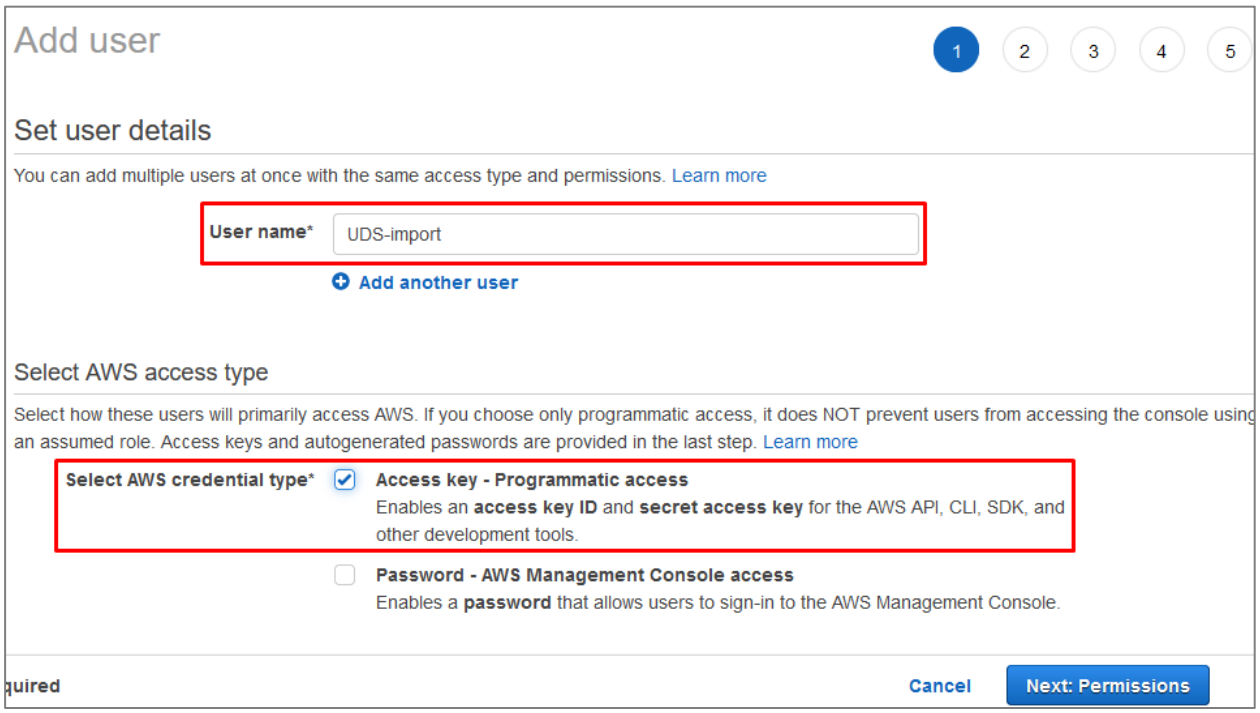
To import the UDS components you will need to have a user account (where you have the *"Access Key ID"* and the "*Secret Access Key*" available) with permissions, within the AWS IAM module. The required permissions will be: "*IAMFullAccess*", "*AmazonEC2FullAccess*" and "*AmazonS3FullAccess*".

If you do not have any previously created users or want to configure a specific one to be used by UDS (recommended), the following procedure will be performed:

Access the IAM module in your AWS environment (where have to have full permissions), within the menu select "*Access management*", the "*Users*" section, and "*Add users*":



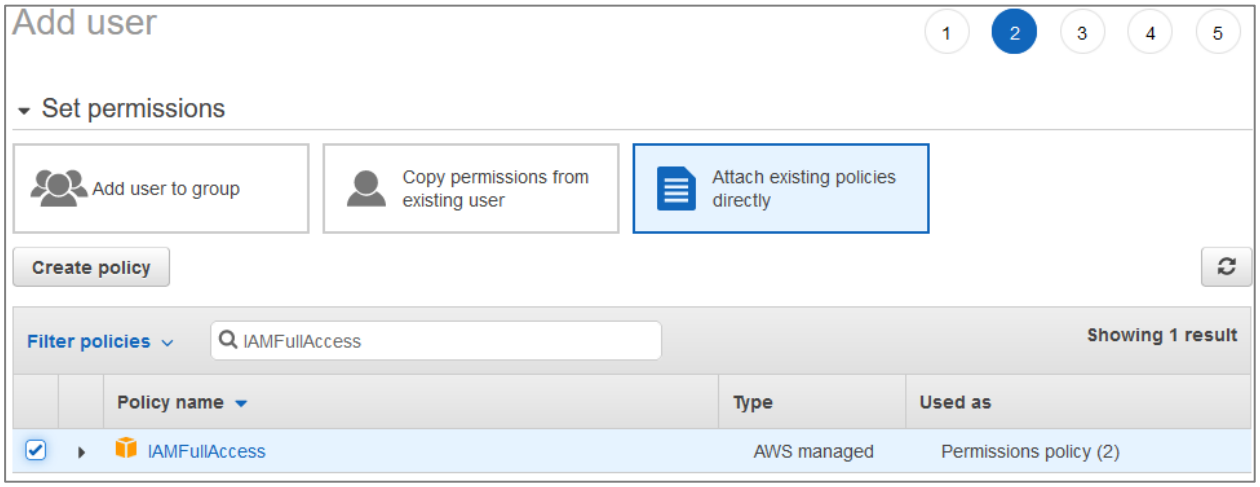
In the new user creation wizard, indicate a name and select "***Access key – programmatic access***":

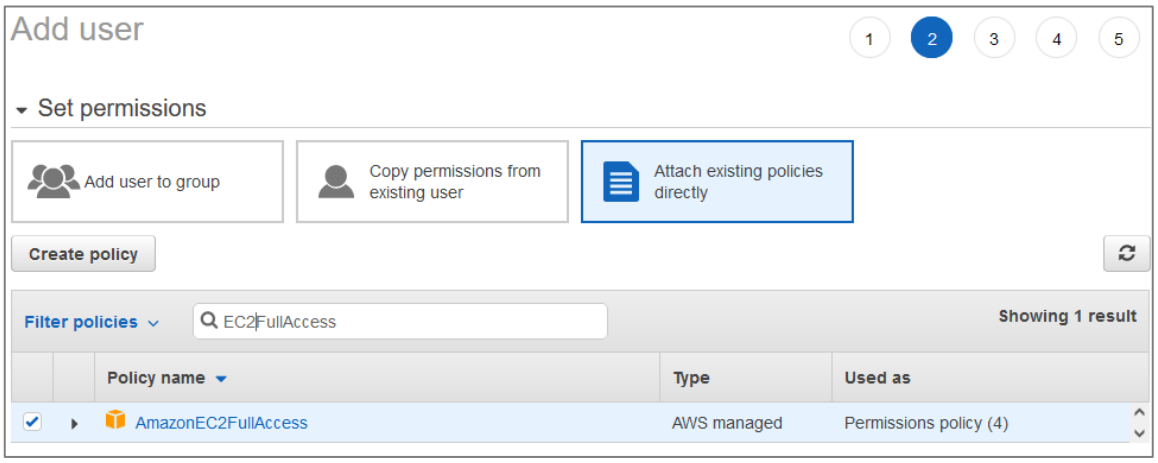


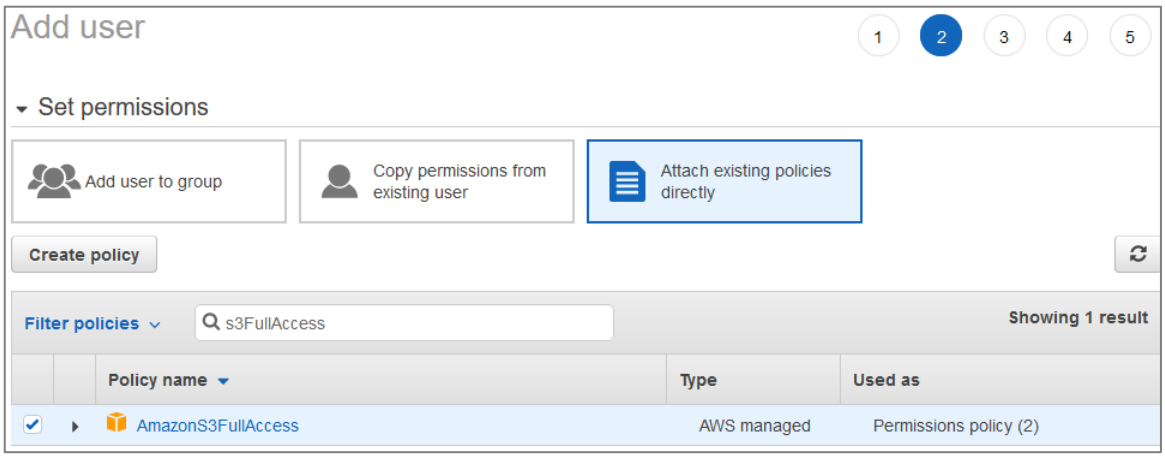
In the next step of the wizard, configure the necessary permissions that the user must have. You can create a group with specific permissions or assign them directly.

The permissions that the user must have will be: "***IAMFullAccess***", "***AmazonEC2FullAccess***" and "***AmazonS3FullAccess***".

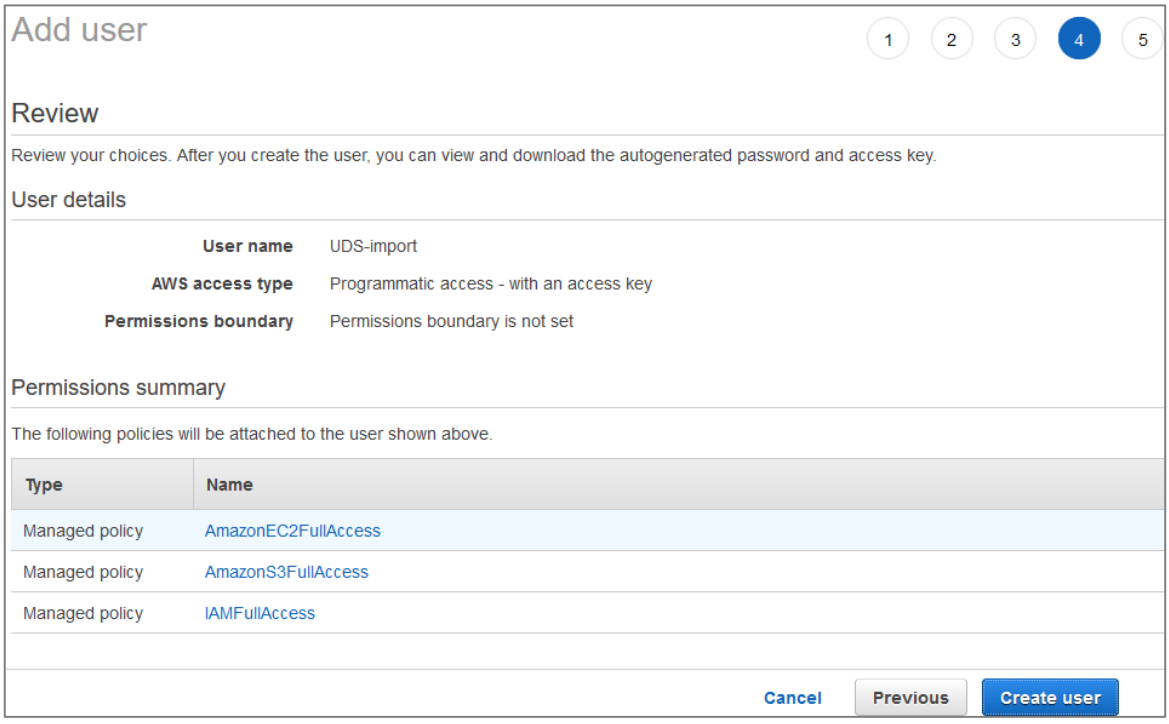
The following screenshot shows how to assign them directly, using the option "***Attach existing policies directly***". Using the policy finder, you check "***IAMFullAccess***", "***AmazonEC2FullAccess***" and "***AmazonS3FullAccess***":



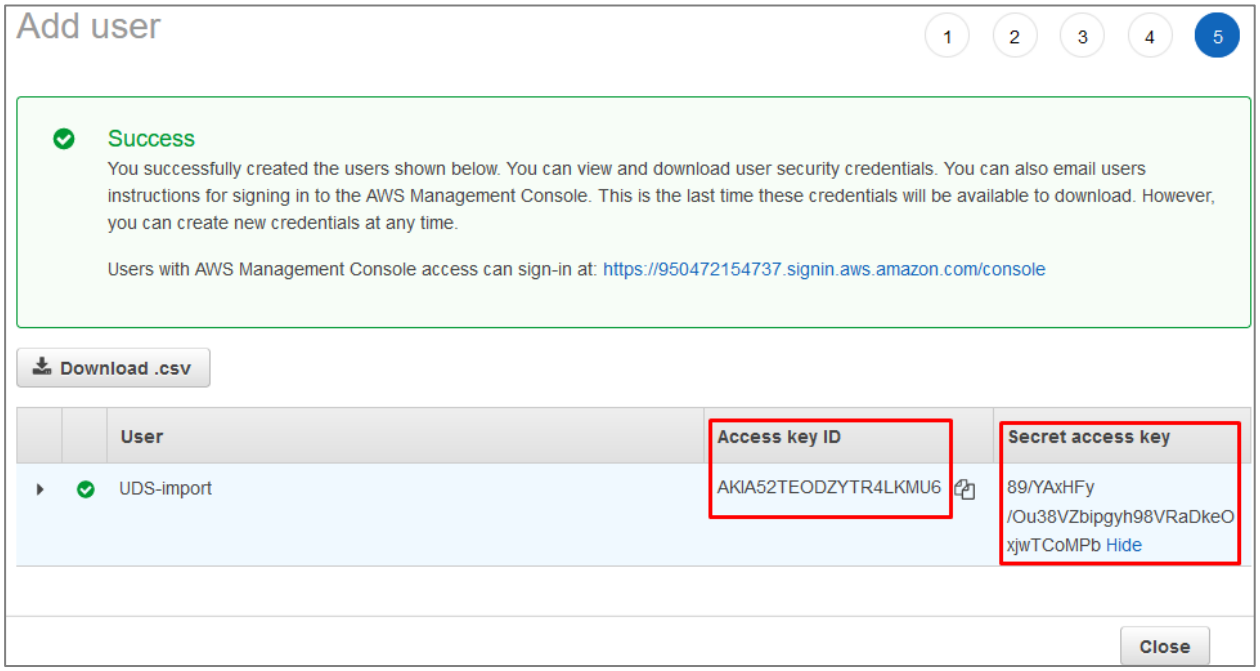




Follow the user creation wizard and check that all the data is correct:



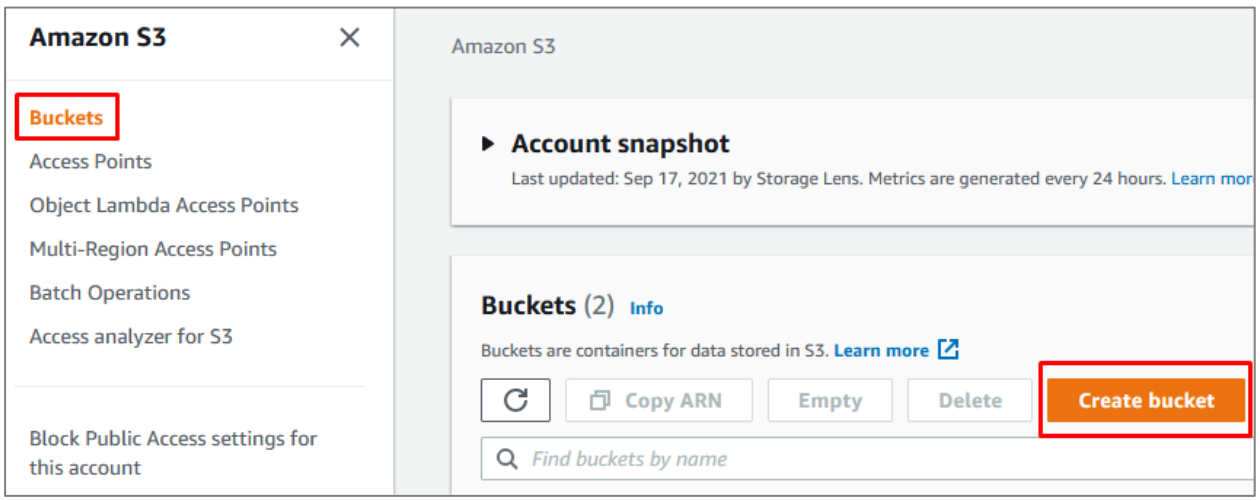
Proceed to create the new user with the assigned permissions. At this point it is very important that you copy the user's data: *"Access key ID"* and "*Secret Access key*" (especially the latter, since once the wizard window is closed this data will no longer be available, although it will be possible to generate a new "*Secret Access key*" if necessary).



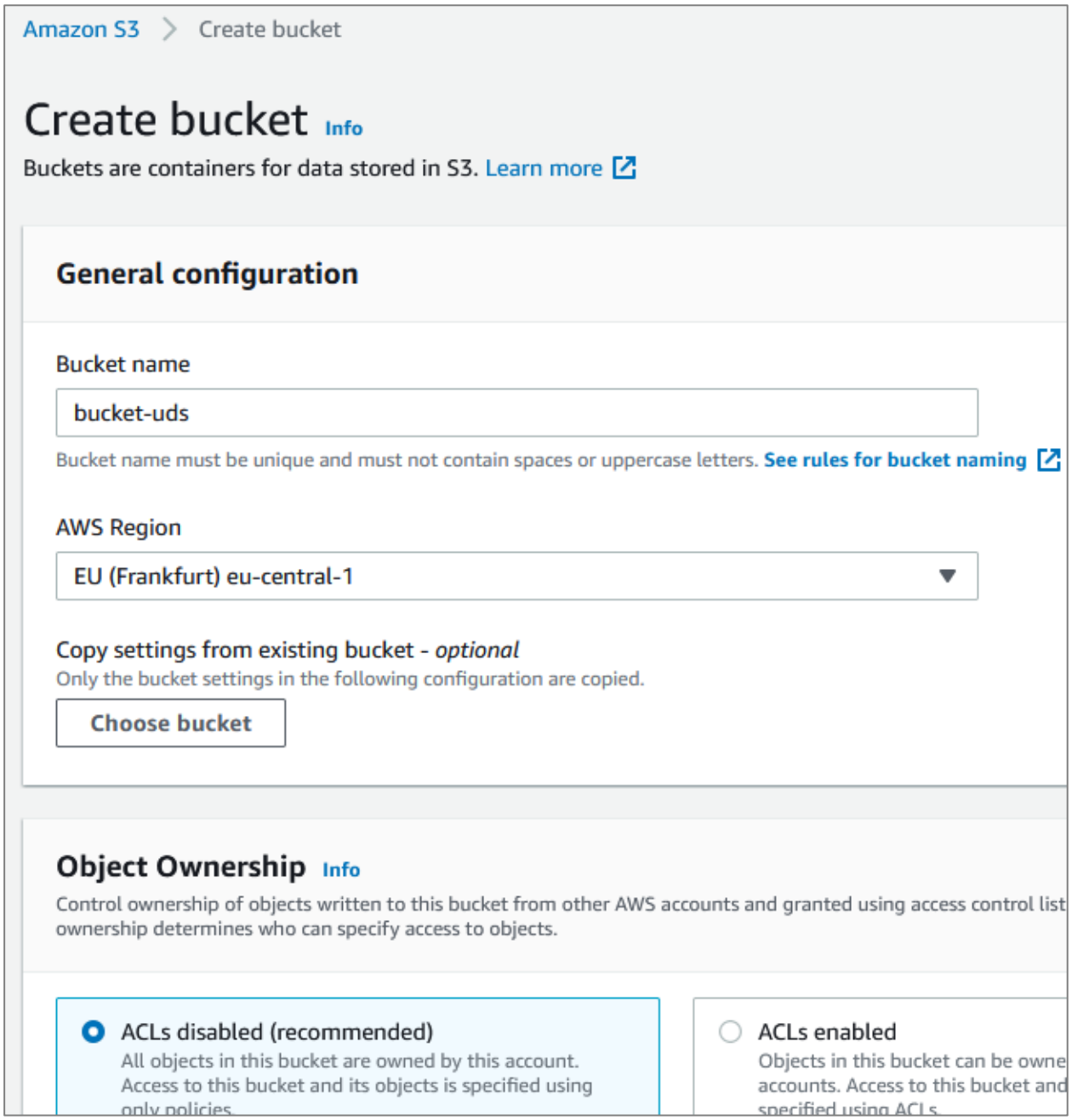
Creating a Bucket and Role

Once you have a user and the connection data, you must create a new bucket from the "***S3***" module of the AWS environment so that it can later be modified to contain the UDS components.

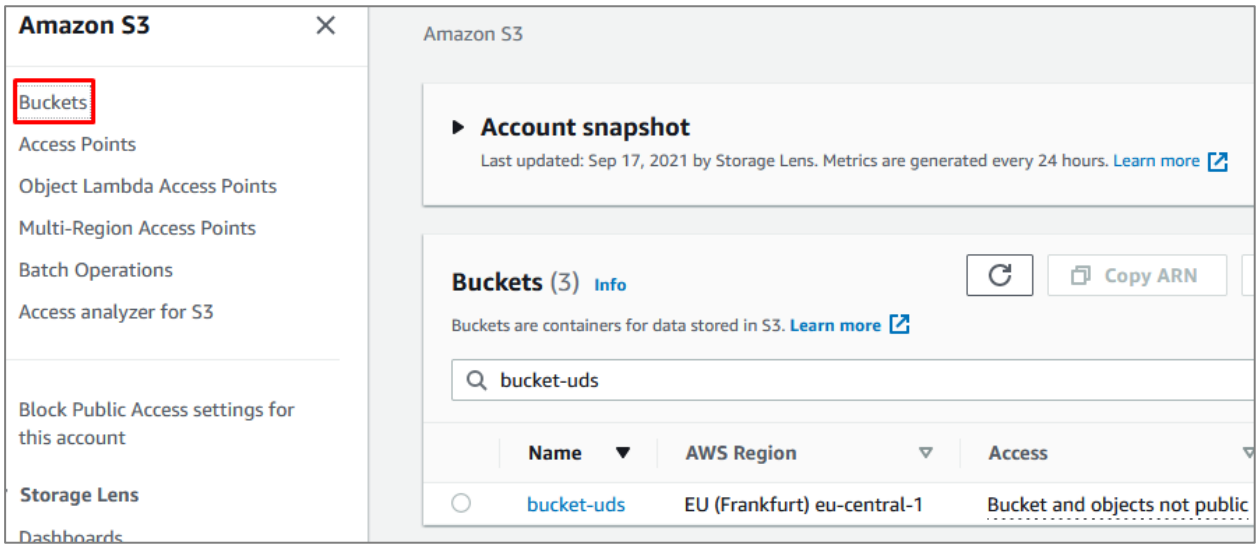
Access Amazon S3, go to "*Buckets*" and click on "*Create bucket*":



In the wizard, indicate a name, select your region and leave the rest of the options by default:



Create the bucket that will host the UDS servers:



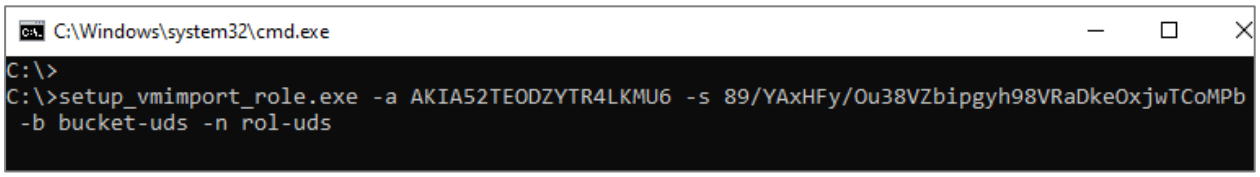
Now you have an application that will allow you to create a role and modify the bucket previously created in the AWS environment, with all the necessary configurations and permissions to import the UDS components.

Download the following application:

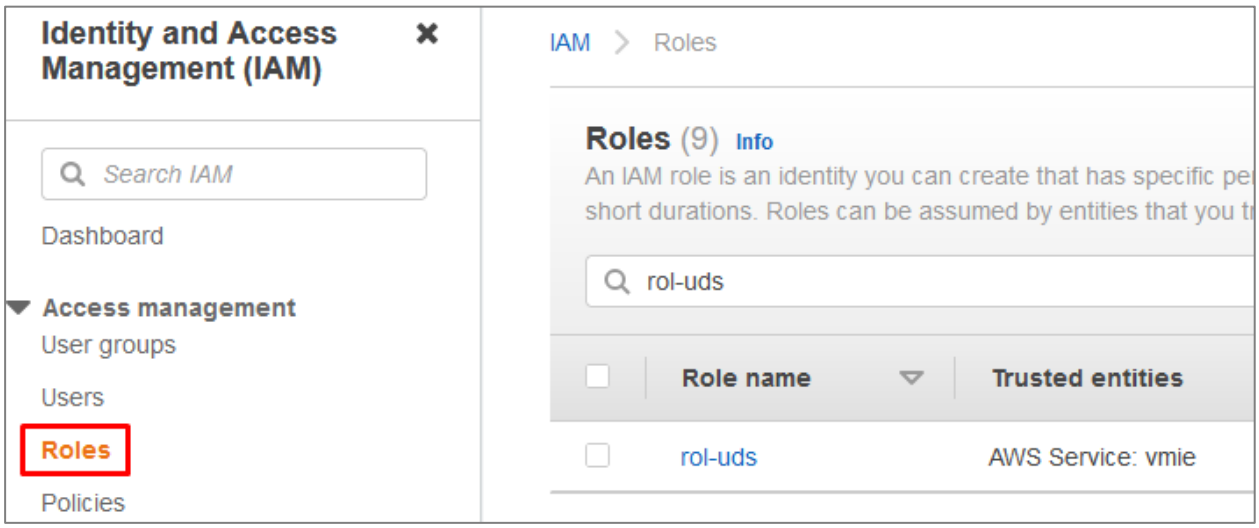
https://images.udsenterprise.com/files/AWS/UDS_Import/setup_vmimport_role.zip

Extract the.zip file and execute it by command line on a computer with Windows OS with the following parameters:

- **-a** : Access key of the user with permissions indicated in the previous point.
- **-s** : Secret Access Key of the user.
- **-b** : Name of the *"bucket"* that will be created in the AWS environment (S3) and that will serve to store the UDS servers.
- **-n** : Name of the role to be created in the AWS Environment (IAM) to allow the import of UDS servers.

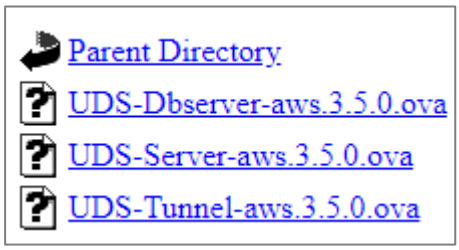


Once the command is executed, you can see how the role has been created in the IAM module of the AWS environment:



Importing UDS servers

To import the UDS components, you must have their images in .ova format:



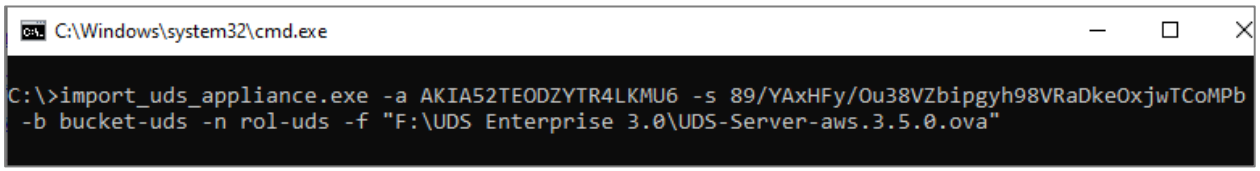
Once downloaded, you should run an application that will upload the UDS component to the indicated bucket of the AWS environment.

Download the following application:

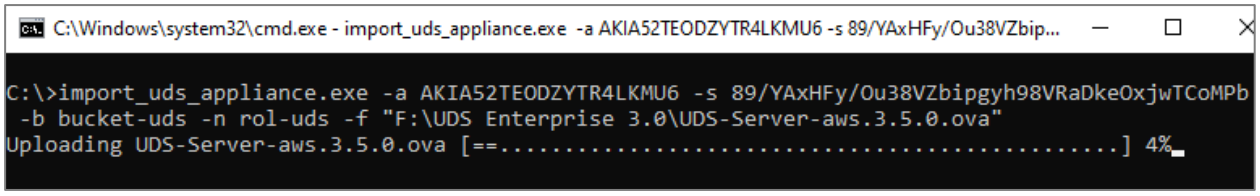
https://images.udsenterprise.com/files/AWS/UDS_Import/import_uds_appliance.zip

Extract the.zip file and execute it by command line on a computer with Windows OS with the following parameters:

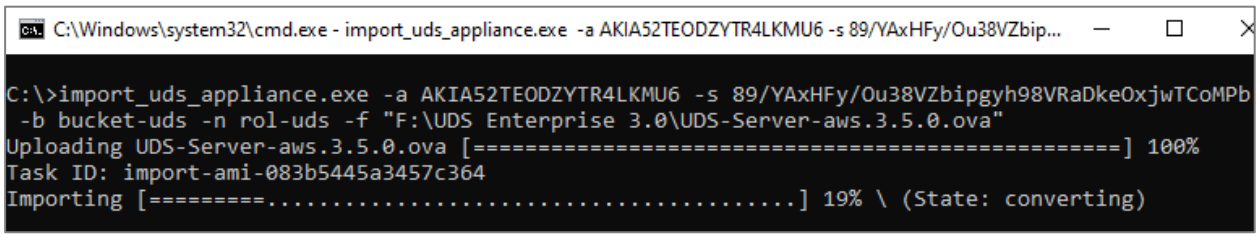
- **-a** : Access key of the user with permissions indicated in the previous point.
- **-s** : Secret Access Key of the user.
- **-b** : Name of the bucket that will be created in the AWS environment (S3) and that will serve to store the UDS servers.
- **-n** : Name of the role to be created in the AWS Environment (IAM) to allow the import of UDS servers.
- **-f** : Path of the UDS component to import (you can also indicate cloud repositories here, for example: **-f** https://images.udsenterprise.com/3.5/stable/aws/UDS-Server-aws.3.5.0.ova).



Once executed, wait for it to be uploaded:

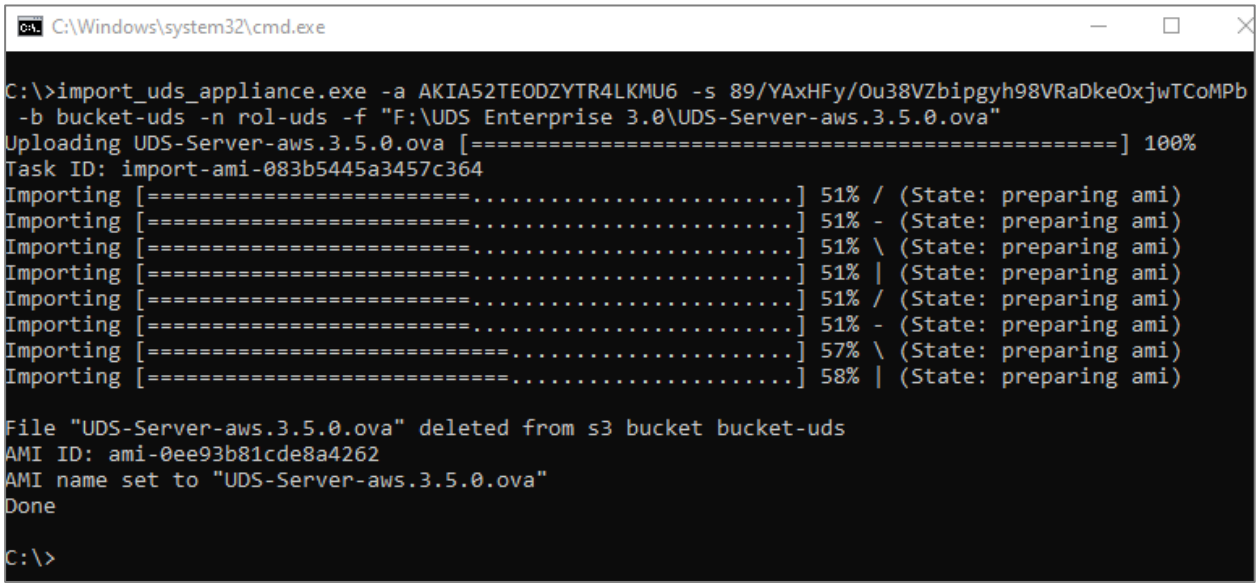


And the machine is imported:

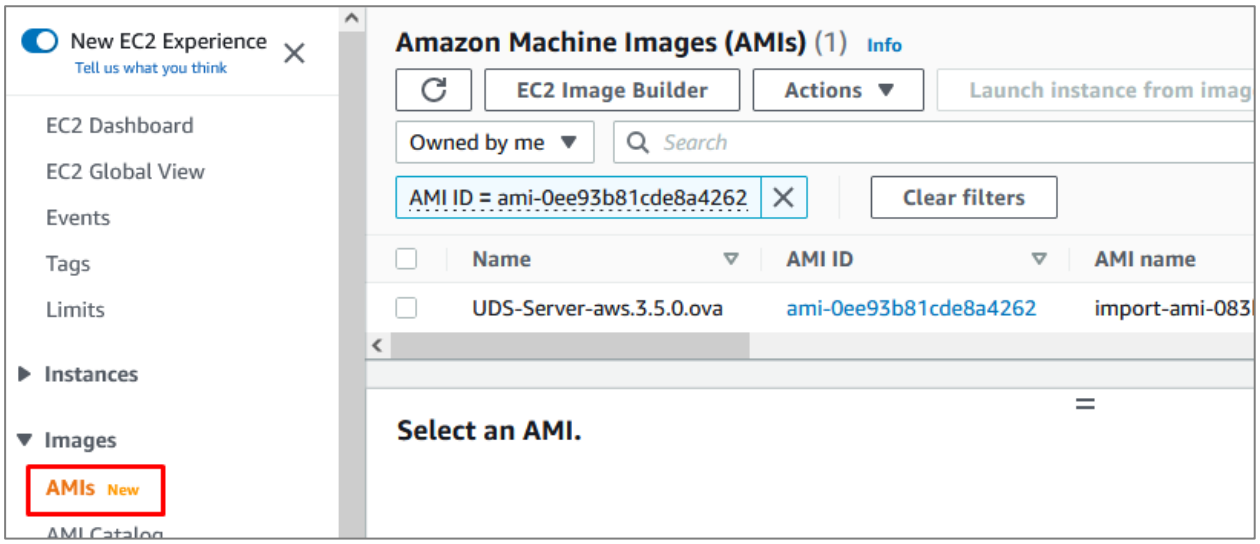


This last phase of the process can take several minutes. At this point the server imported into the bucket is converted and generates an AMI.

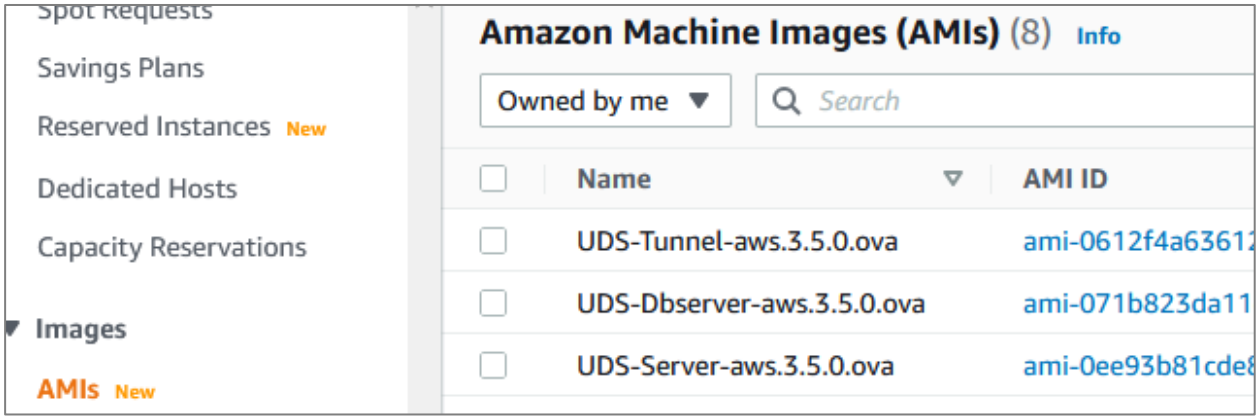
Once the process is finished, you'll have the UDS server as an AMI:



It will be available in the "*EC2*" dashboard of the AWS environment:



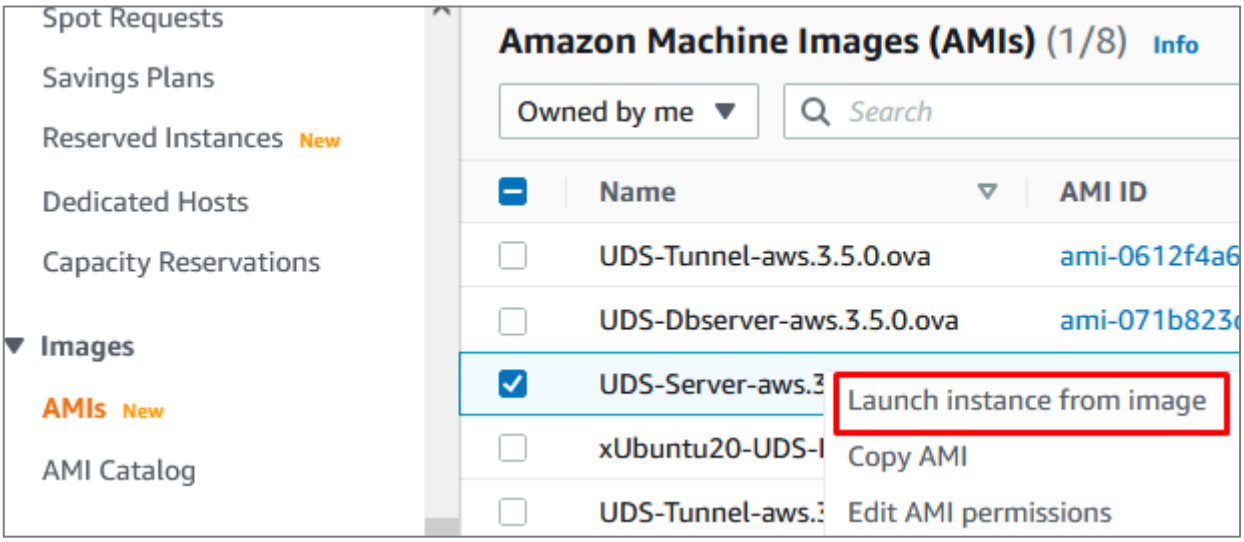
This import process must be repeated with the rest of UDS components:



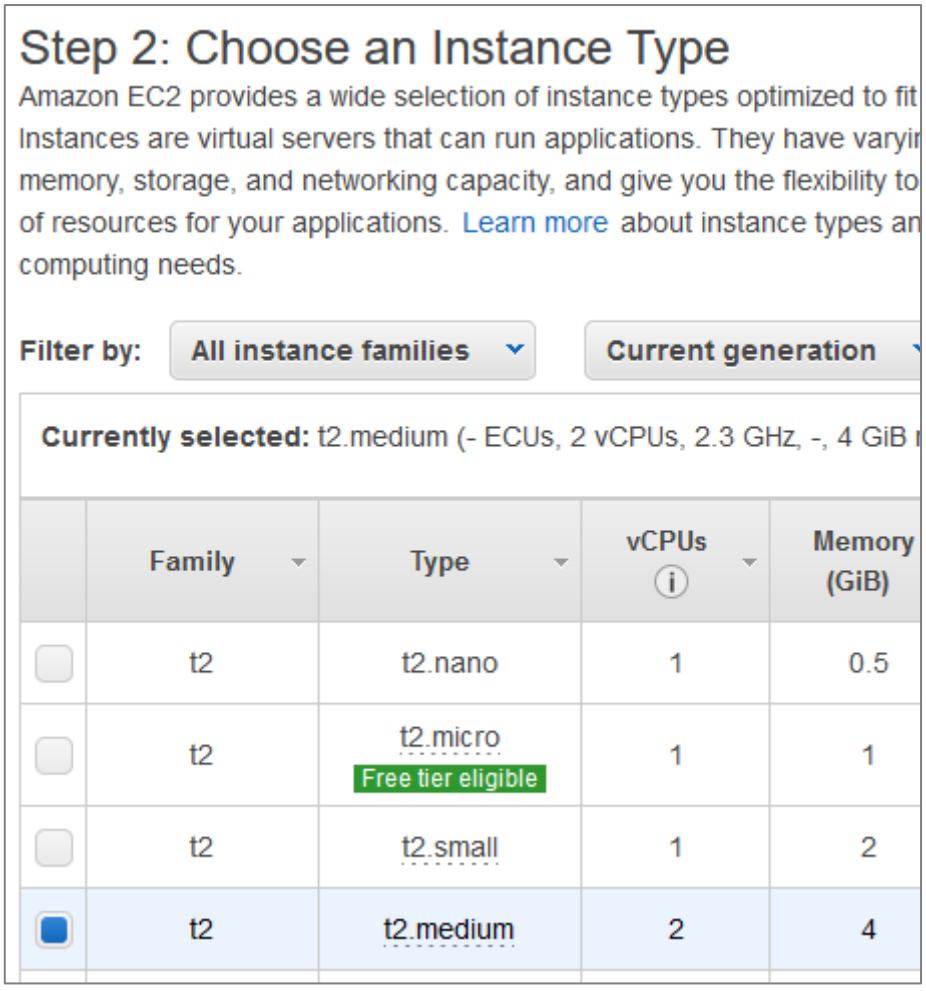
Creating UDS servers

The next step in deploying the UDS components is to create the virtual instance that will contain the UDS servers, based on the AMIs imported in the previous step.

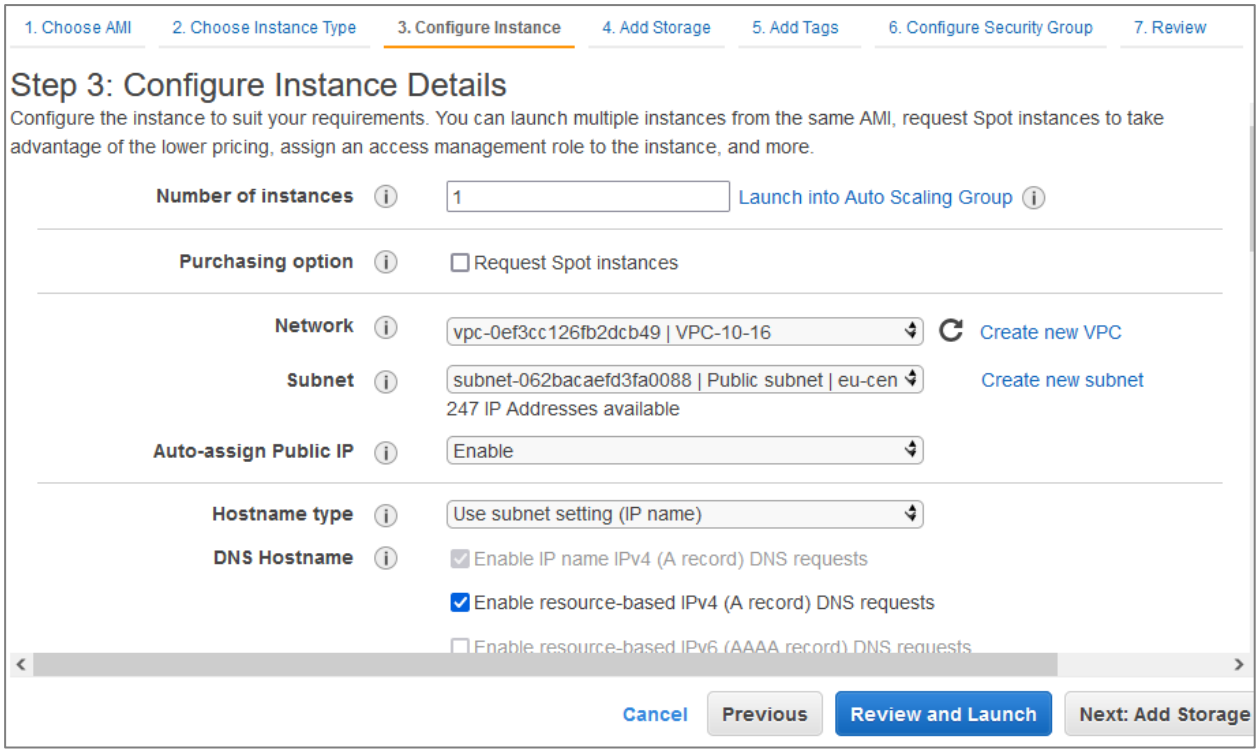
Within the*"EC2"* module of the AWS environment, access the *"AMIs"* section, select the UDS component and click on "***Launch instance from image***".



In the instance creation wizard, you must choose the appropriate type for each UDS component. The minimum requirements for all components are (DB server, UDS-Server and UDS-Tunnel): 2vCPUs and 2 GB of RAM.



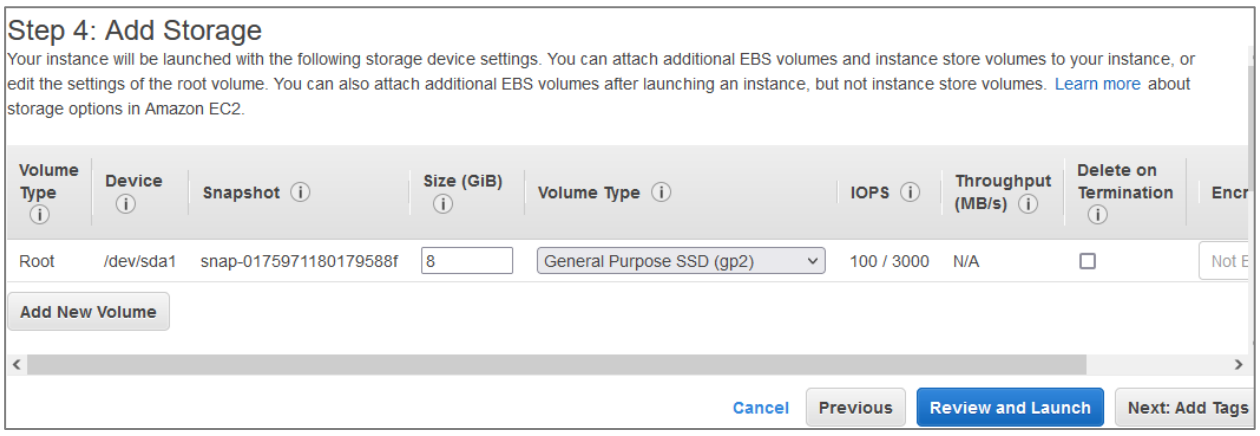
In the next step of the wizard, configure the details of the instance. You must indicate a valid network and subnet at least, to allow communication with other elements, and assign a public IP to have external access:



NOTE:

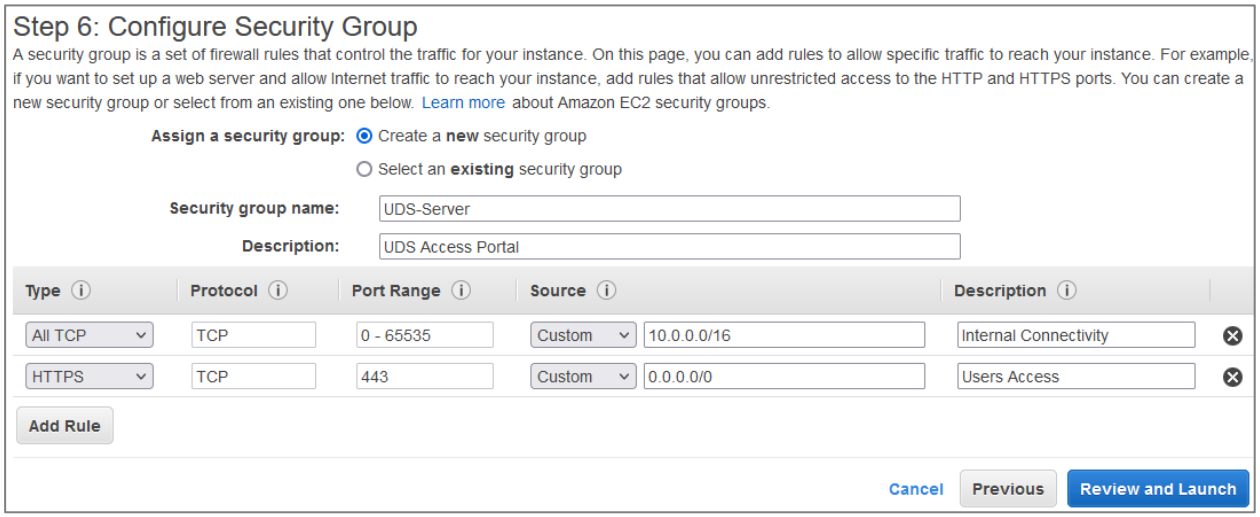
The database server will not need to have a public IP.

In step 4 of the wizard, indicate the type of storage:

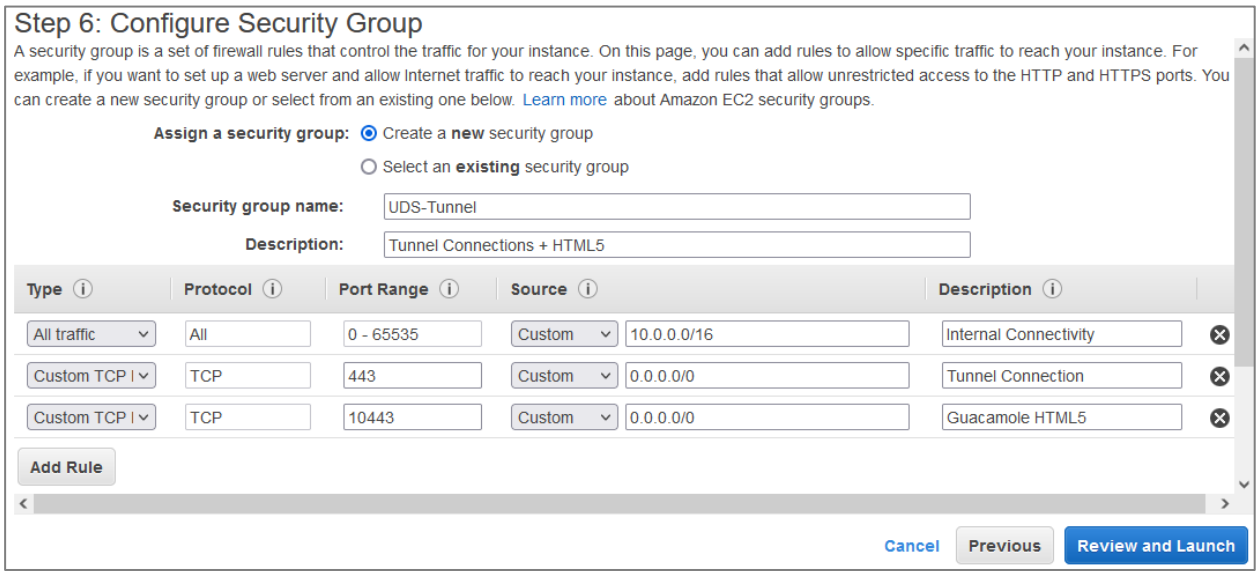


In step 6 of the wizard, create or select a "***Security Group***" with the necessary rules for each UDS component. Only UDS-Server and UDS-Tunnel servers will need input rules:

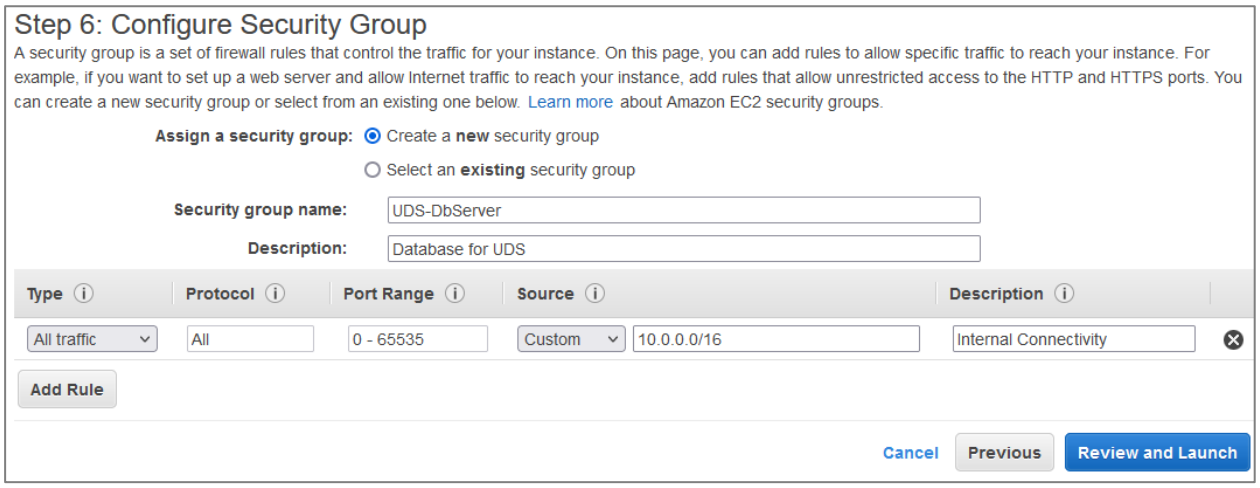
- **UDS server.** Port: 80/443 (for user and administrator access).



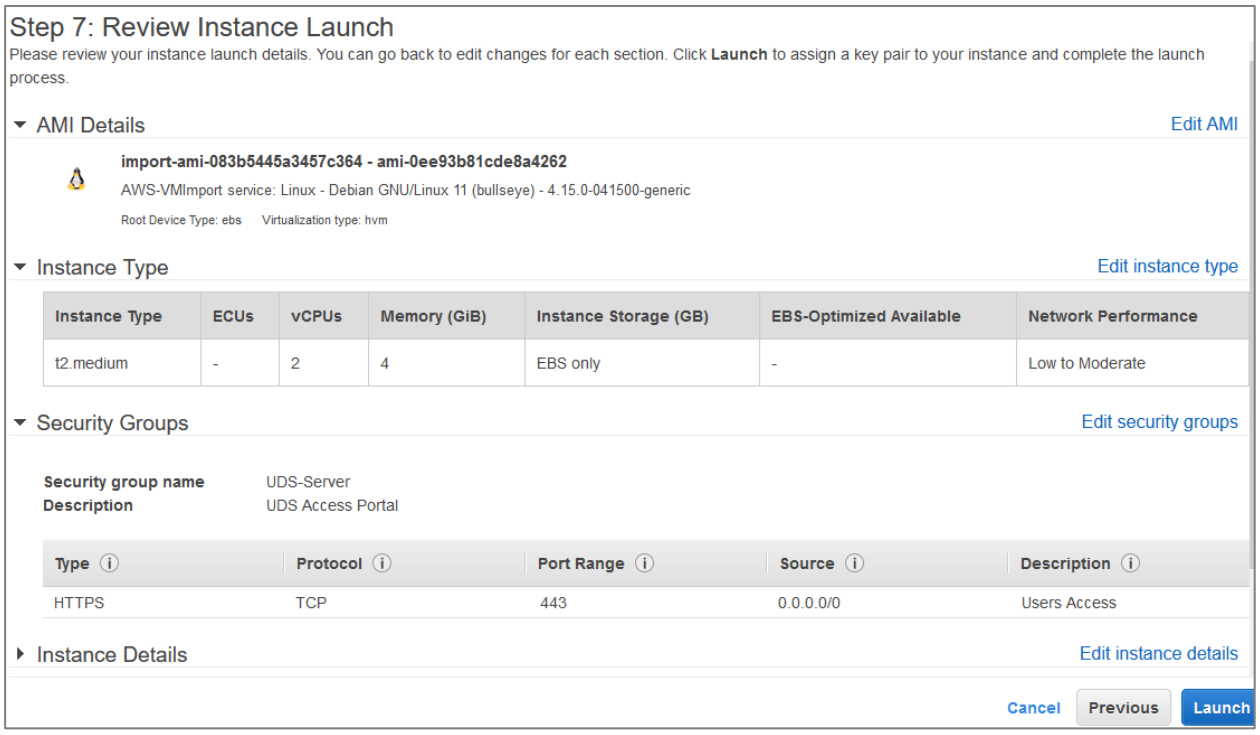
- **Tunnel server.** Port: 443 and 10443 (443 for tunneled connections and 10443 for HTML5 connections).



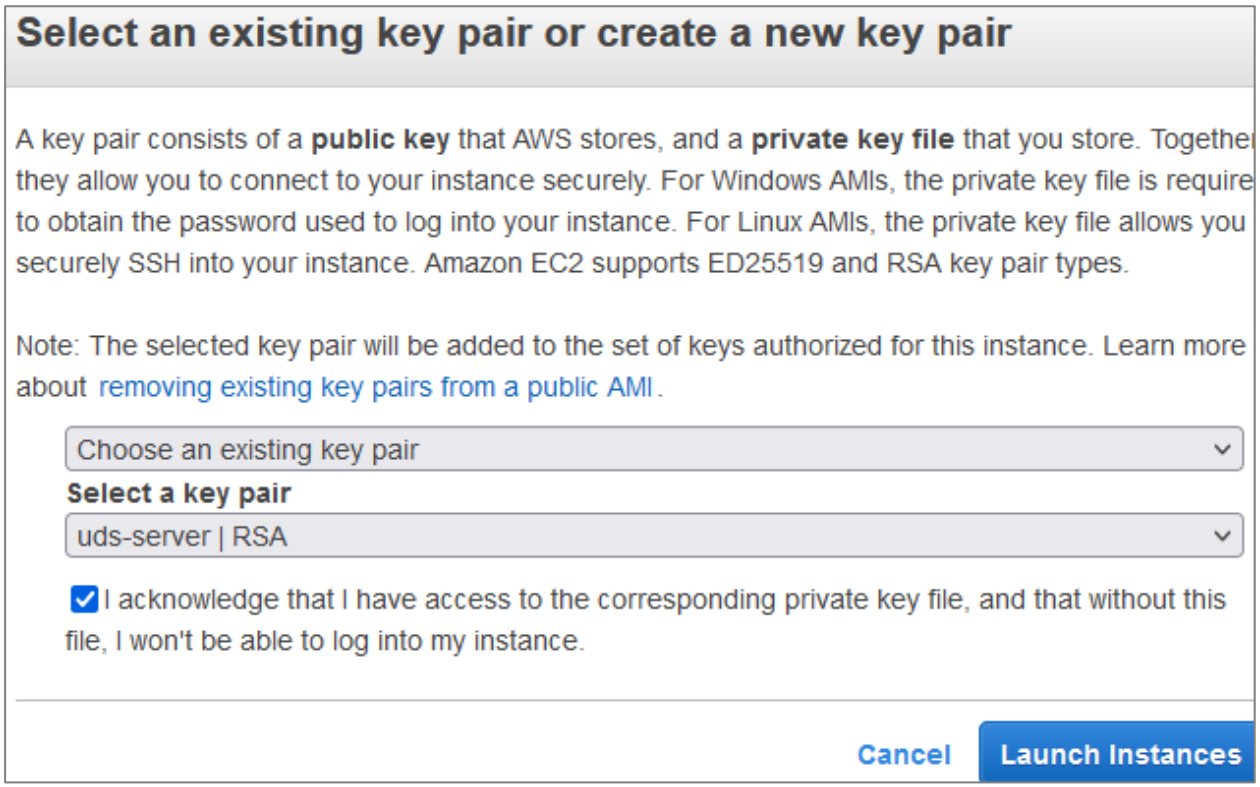
- **Dbserver:**



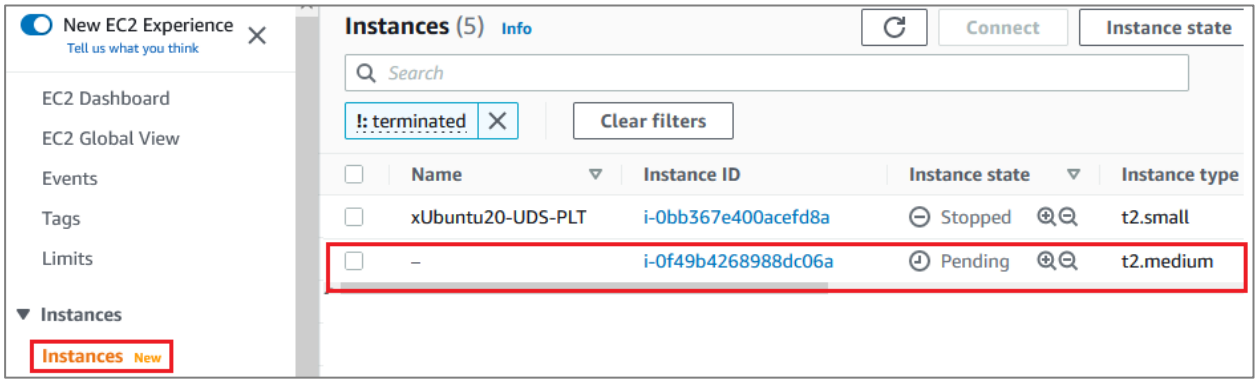
Check that all the data is correct and launch the instance:



Before, create or chose a "*Key pair*":

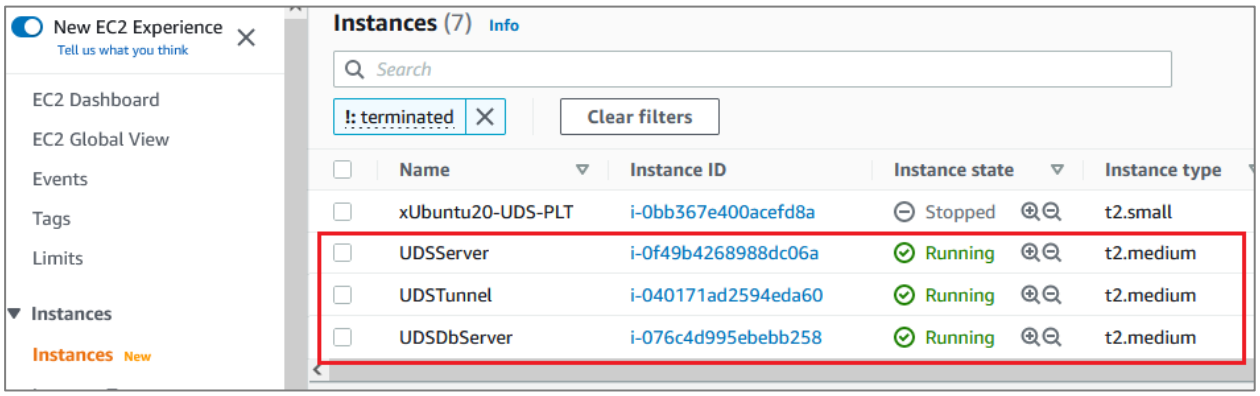


Once the instance is launched, you can access the *"Instances"* section of the *"EC2"* module of the AWS environment and visualize the creation of the UDS component:



Once started, you can indicate a descriptive name for the server:

Repeat the process with all UDS servers:



Configuring UDS servers

Once you have all the UDS components instantiated, proceed to their configuration.

This configuration example is based on a virtual machine deployed on the same network as the UDS servers to have direct connectivity with them.

Database configuration

If you are using the database provided by the Virtual Cable 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).

The default server credentials are:

- **User:** root
- **Password:** UDS

This server has a ready-to-use DB instance with UDS Enterprise with the following data:

- **Instance Name:** UDS
- **User:** UDS
- **Password:** UDS

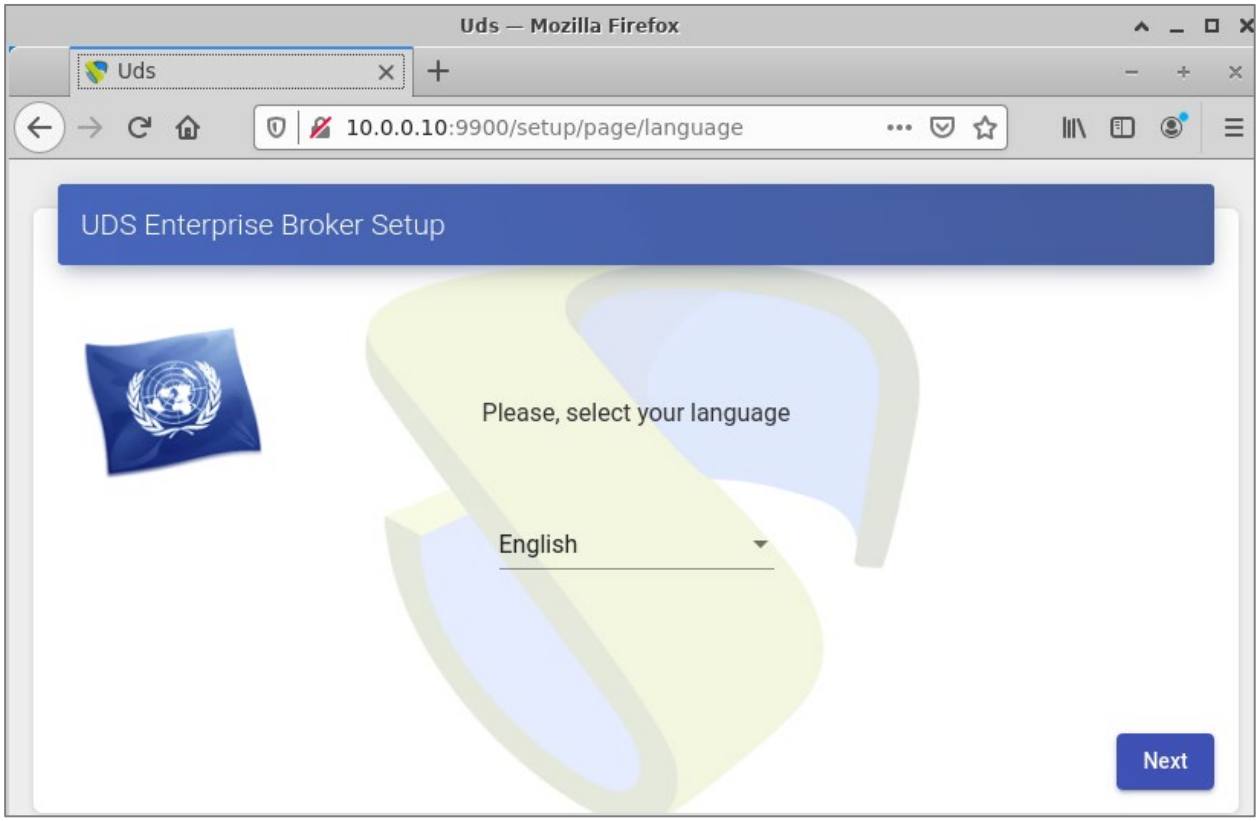
By default, the server has its network configuration via DHCP. Itis advisable to always use static addressing in all UDS components.

UDS Server configuration

The UDS-Server component is the main element of the UDS environment. Before accessing this configuration wizard, you need to confirm that the server has an IP address via DHCP assigned.

Once you know the IP address assigned to the server (selecting the instance, in the section "***Private IPv4 addresses***"), access via browser to the IP address of the UDS server with port 9900.

http://IP_Server:9900



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

For more information on UDS server configuration, go to the UDS Enterprise installation, administration, and user manual available in the Documentation section of the website.

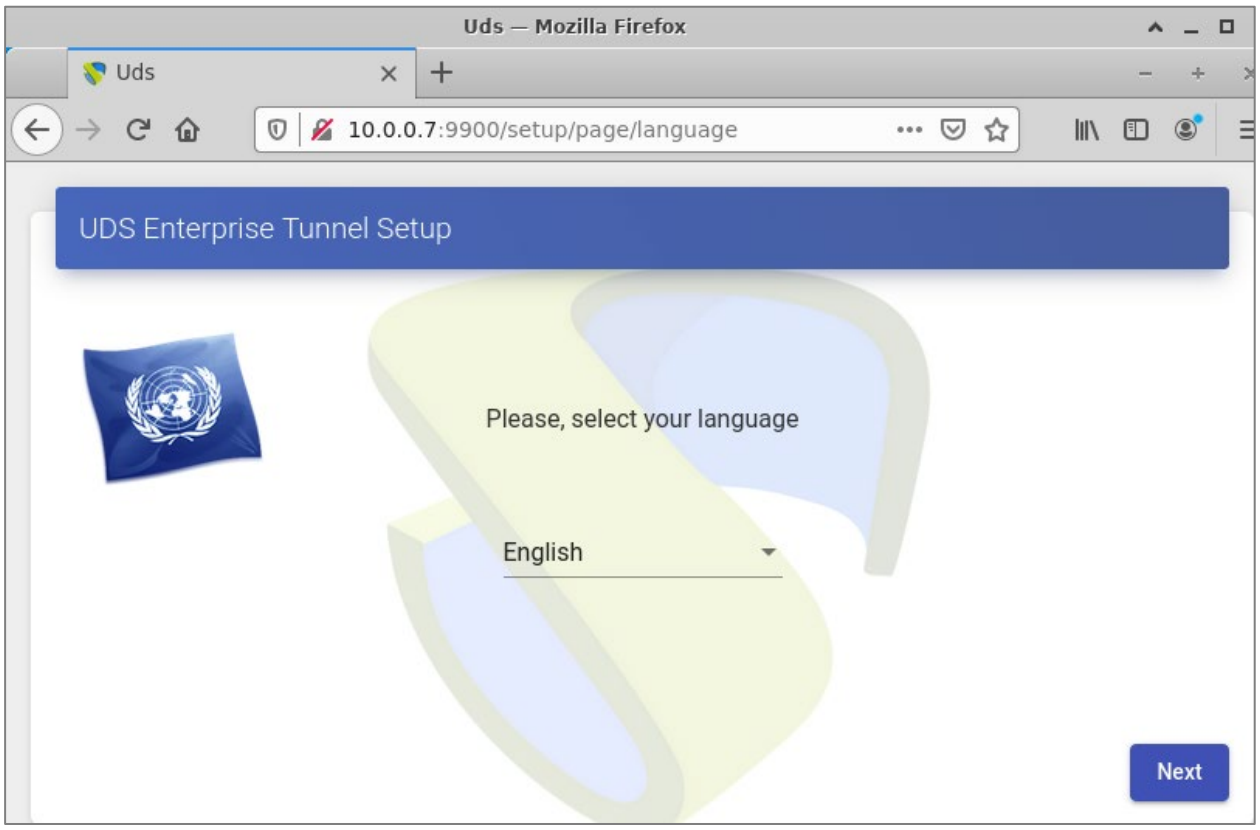
NOTE:
During the wizard configuration procedure, you will be asked for the configuration data of **the database** server. In the case of using an external server, you must indicate the data **of the database server** configured previously (IP address, instance, username and password).

○ UDS Tunnel configuration

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

Once you know the IP address assigned to the server (selecting the instance, in the section *"Private IPv4 addresses"),* access via browser to the IP address of the UDS- Server with port 9900

http://IP_Tunnel:9900



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

For more information on configuring the UDS-Tunnel server, go to the UDS Enterprise installation, administration, and user manual in the Documentation section of our website.

NOTE:
During the configuration procedure of the wizard the system will ask you for the connection data of the UDS server.

Creating base machines or templates on AWS

For UDS to deploy virtual desktops on the AWS platform, it is necessary to have a base machine or template on which the new desktops self-generated by UDS will be based. This base machine can be deployed in different ways. Among them, it is possible to import an existing template on another platform (using the same applications that you have used to import the different UDS components) or rely on the preconfigured machines (AMIs), offered by the AWS environment itself.

If you choose to import a template, it is important that you make sure that it will have a unique access mode (SSH or RDP type), in order to access it once it is hosted on the AWS platform (this platform does not have a console to be able to manage, configure and modify the machines).

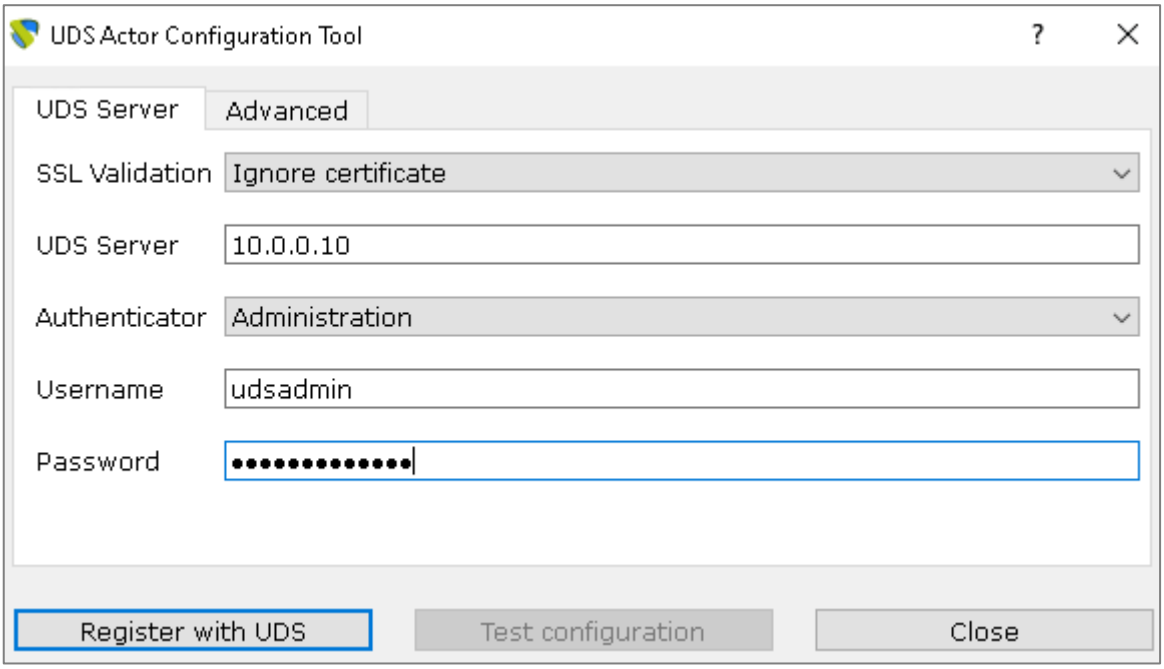
Another important point to keep in mind is the network configuration. Itis necessary that it is configured to take IP address via DHCP.

Base machine access and configuration

Once the base machine or template has been deployed and it is accessible via RDP, for example, you must install all the software that you need to have available on the virtual desktops deployed by UDS, perform the optimization configurations of the template, which are very important for the good performance of the machines (disable unnecessary services, optimization of the start time, etc...) and finally perform the installation of the UDS Actor.

NOTE:
For more information on installing the UDS Actor, have a look at the UDS Enterprise Installation, Administration and User Manual in the Documentation section of the UDS Enterprise website

During the configuration of the UDS Actor you must indicate in the connection data against UDS Server the local DNS address/name or IP or public DNS depending on the type of deployment (in the case of using IP addresses instead of names you have to make sure that these addresses are not dynamic and change when the servers are turned on/off).



NOTE:
In order to visualize the configuration of the UDS Actor in an Ubuntu O.S. through RDP, execute the following command from a console:

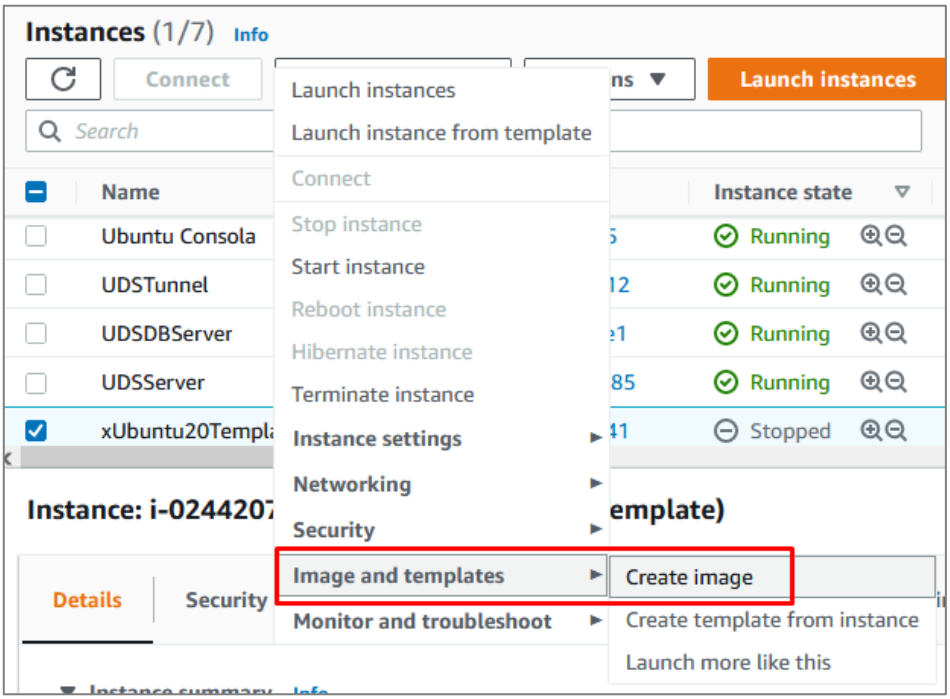
Ubuntu 18: `sudo QT_X11_NO_MITSHM=1 /usr/sbin/UDSActorConfig`

Ubuntu 20: `xhost + && sudo QT_X11_NO_MITSHM=1 /usr/sbin/UDSActorConfig`

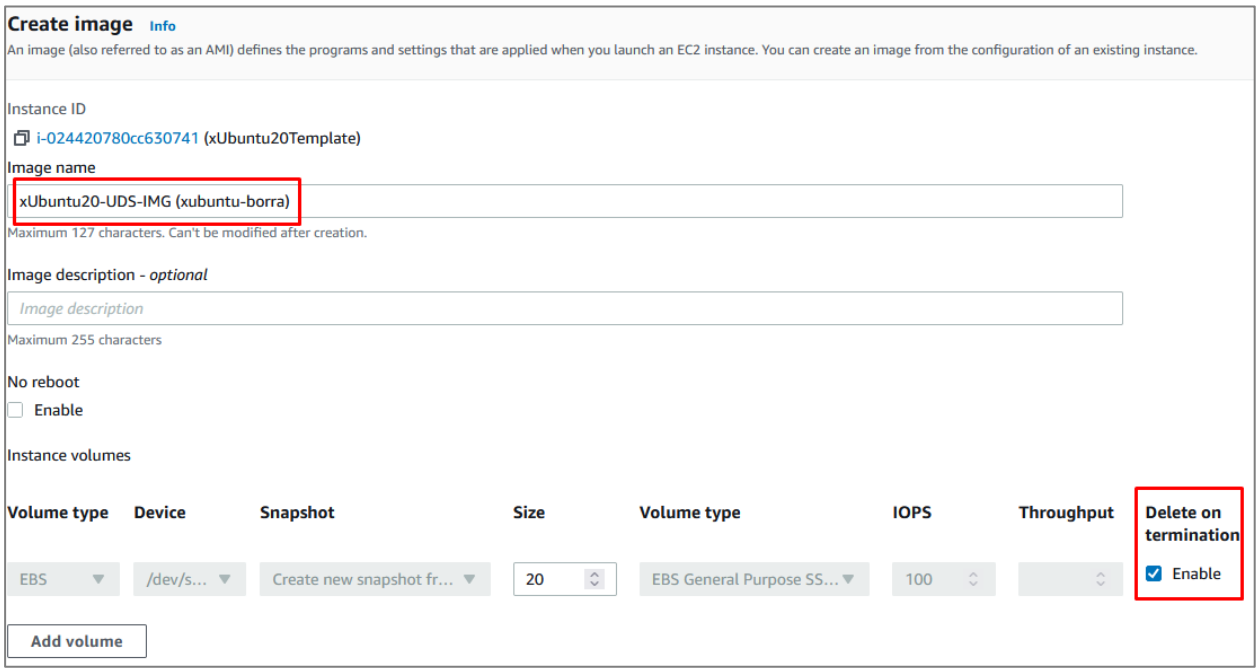
○ AMI Creation

Once the UDS Actor has been configured and installed, **you will be able to turn off the base machine or template** and create the AMI that you will use in UDS to generate the virtual desktops to which the users will make the connection.

After turning off the base machine or template, select it, click on "***Actions***", "***Image and templates***" and "***Create image***":

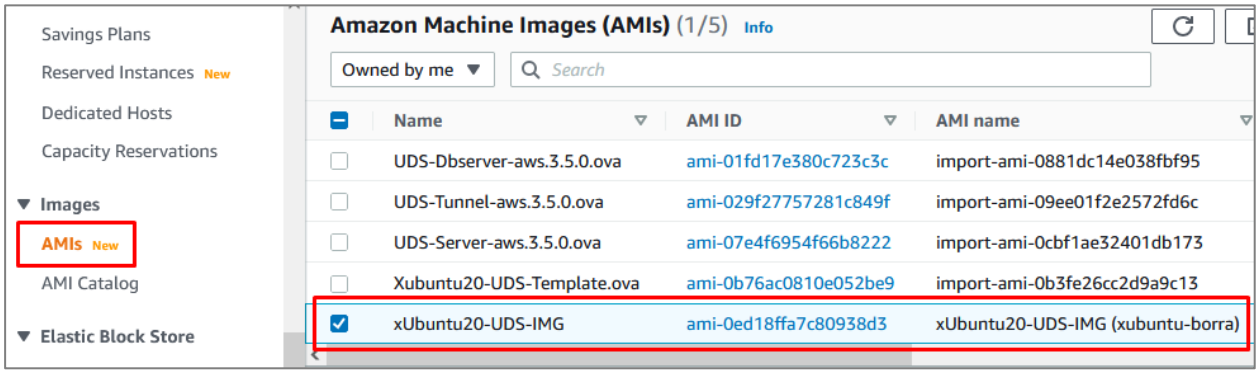


In the image creation wizard, indicate a descriptive name for the AMI, (it will be the one that you can visualize from the UDS administration console) and mark the "***Delete on termination***" option. Click on "***Create Image***" to generate the AMI:



NOTE:
To prevent orphaned volumes from being left on the platform, you must select the "**Delete on termination**" option.

After finishing the creation of the image, you will have it available in the AMIs section and you can rename it with a descriptive name:

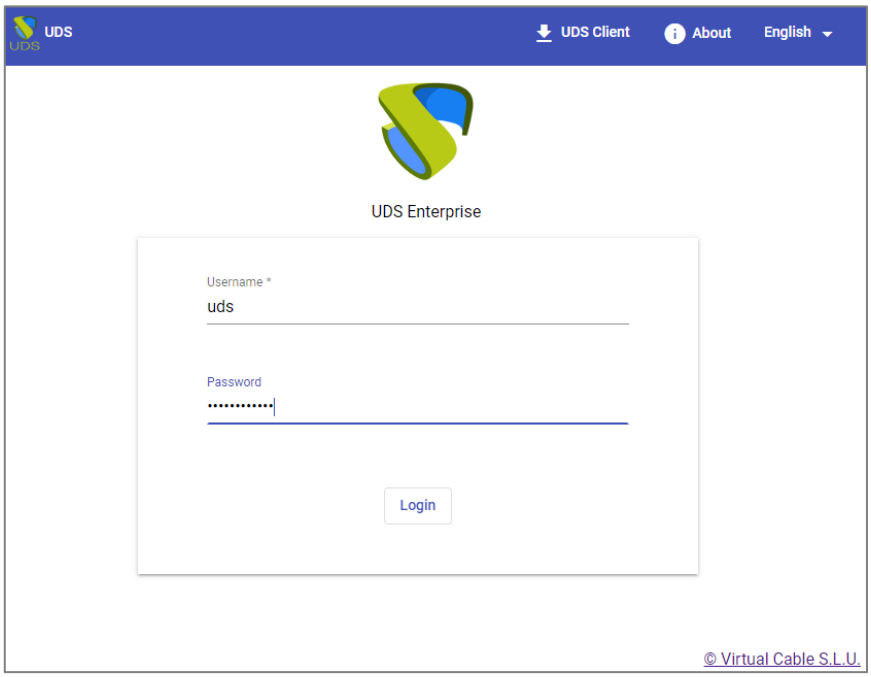


Once you have the image (AMI), you can access the UDS administration to continue with the process of configuration and deployment of VDI services.

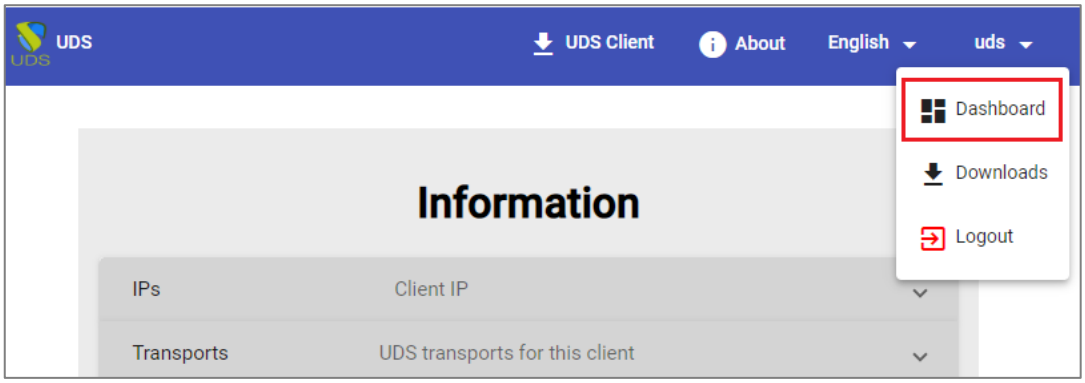
UDS Enterprise Administration

AWS service provider integration

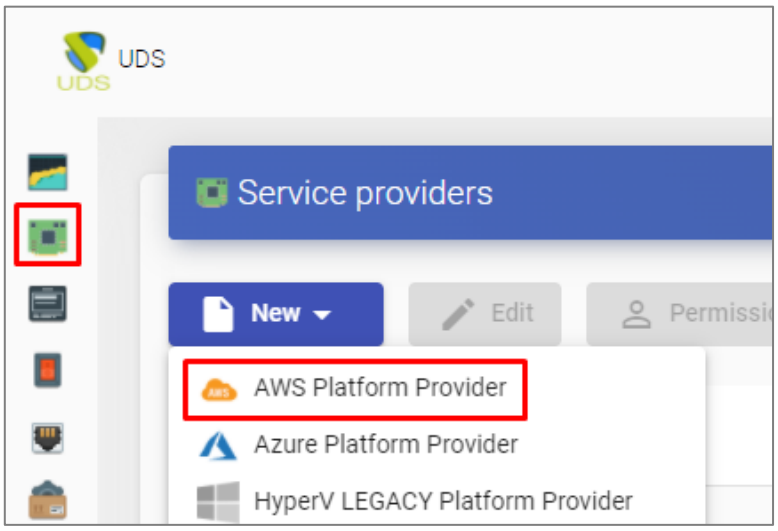
To perform the integration of AWS as a UDS Enterprise service provider, enter the UDS administration. Access via web browser the IP address or name of the UDS Server component and validate with an administrator user (in the first access, use the system administrator user indicated in the UDS-Server configuration wizard).



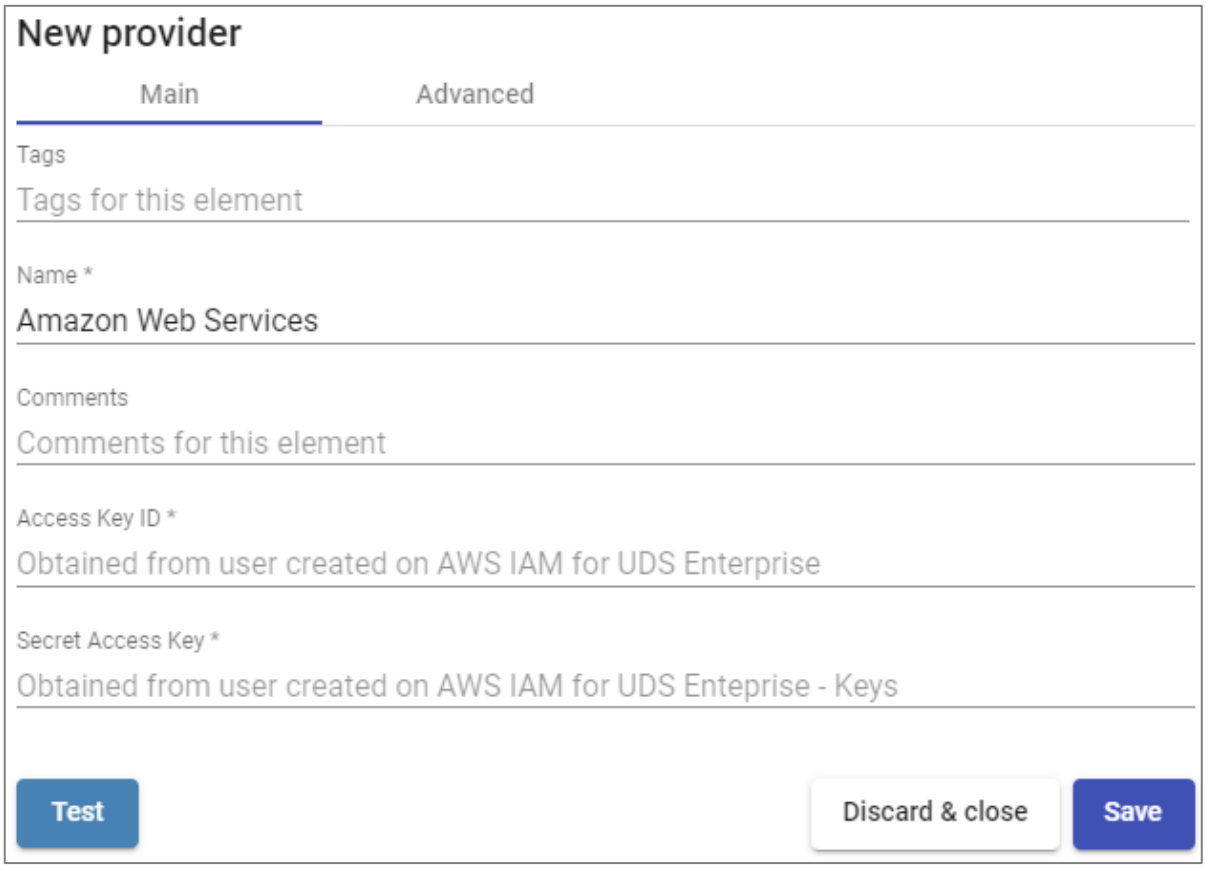
Once validated in the UDS login portal, access the *"Dashboard"* from the user menu.



Within the UDS administration, access the "***Services***" menu and click on "***New***" to register a new "***Service provider***". Select "***AWS Platform Provider***":



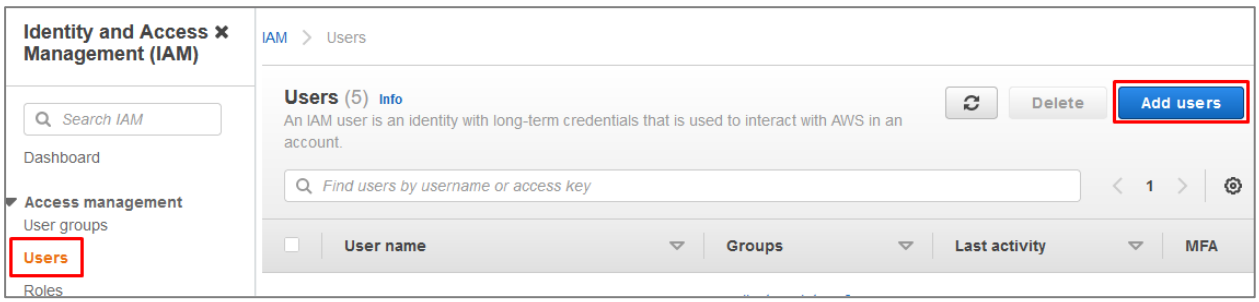
In order for UDS to connect to the AWS platform and be able to automatically deploy virtual desktops, it will be necessary to indicate the following data:



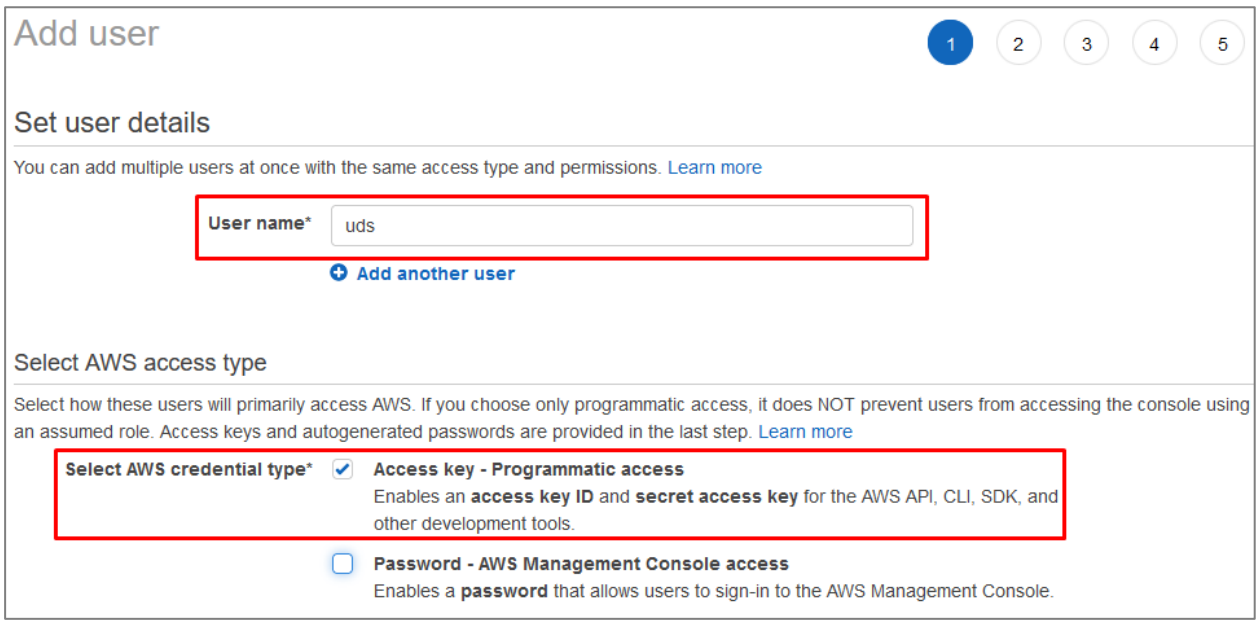
- **Main:** Enter a descriptive name, and the connection data with the AWS account. To obtain an "***Access Key ID***" and a "***Secret Access Key***" you will need to create a new user (or use an existing one) in the IAM module of the AWS console.

NOTE:
It is possible to use the same user that you have used to import the UDS machines, as long as you have all the data. In this example we are going to create a new user.

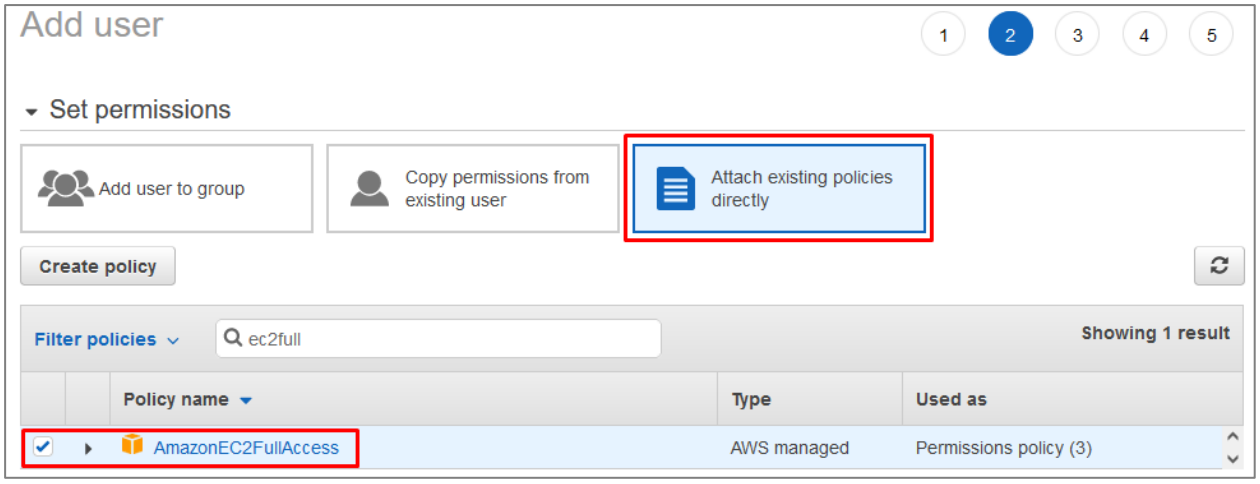
To create a new user, access the IAM module by selecting the menu *"Users"* and clicking on *"Add users"*:



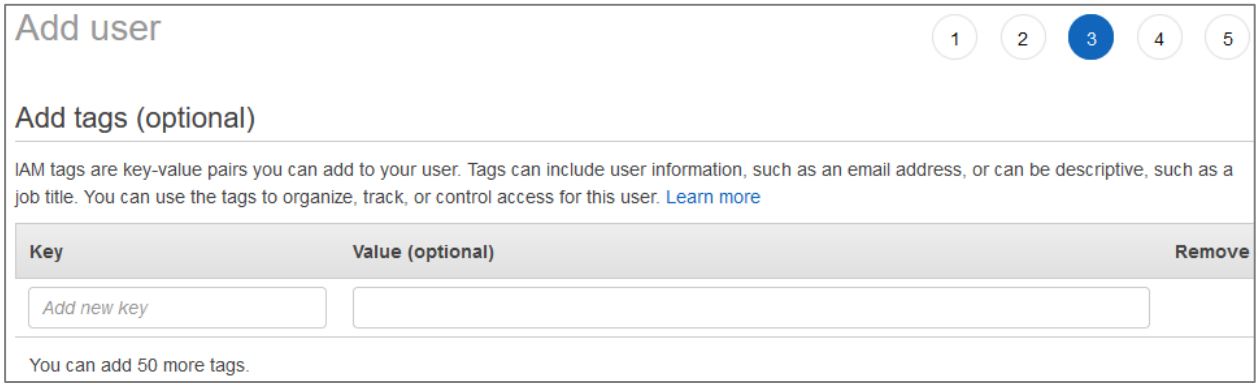
In the new user creation wizard, indicate a name and in *"Select AWS credential type"*, choose the option *"Access key – Programmatic access"*:



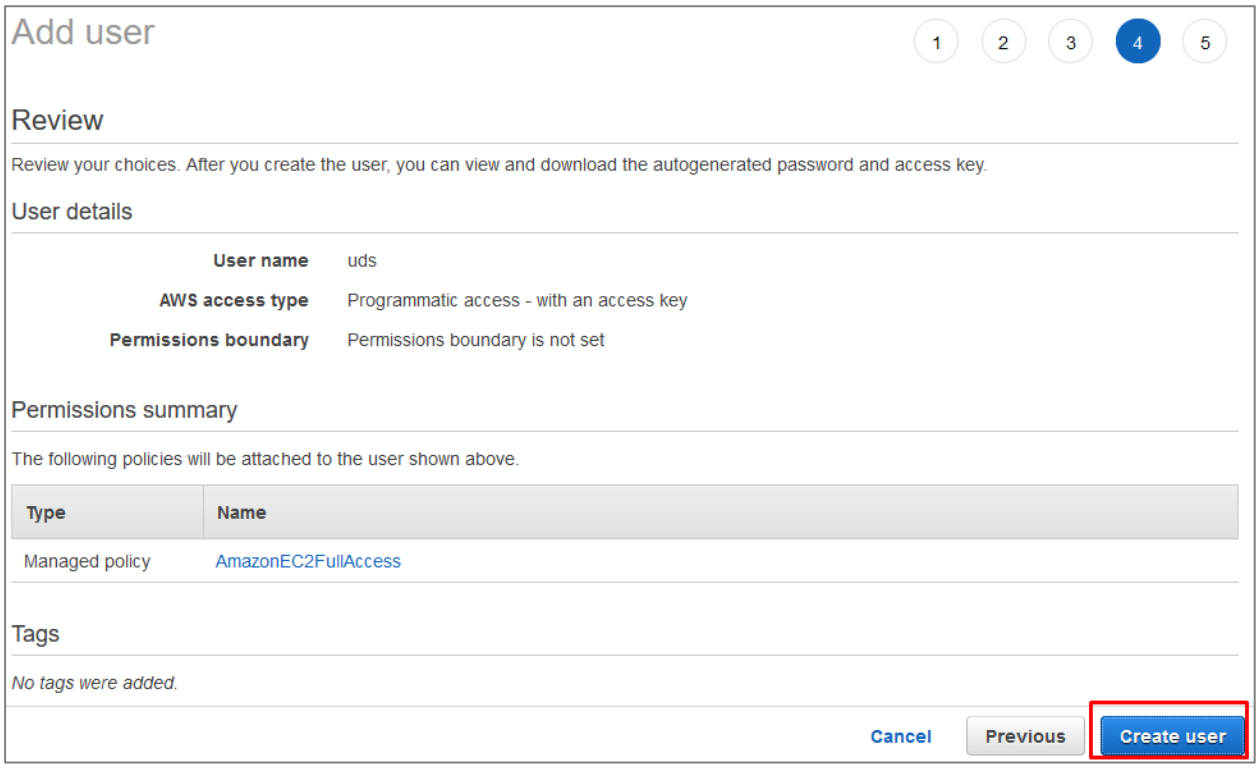
In the next step of the new user creation wizard, select the permissions. You can assign the user to a group with the permission assigned: *"AmazonEC2FullAccess"* or directly assign this permission to the user, as shown in the following screenshot:

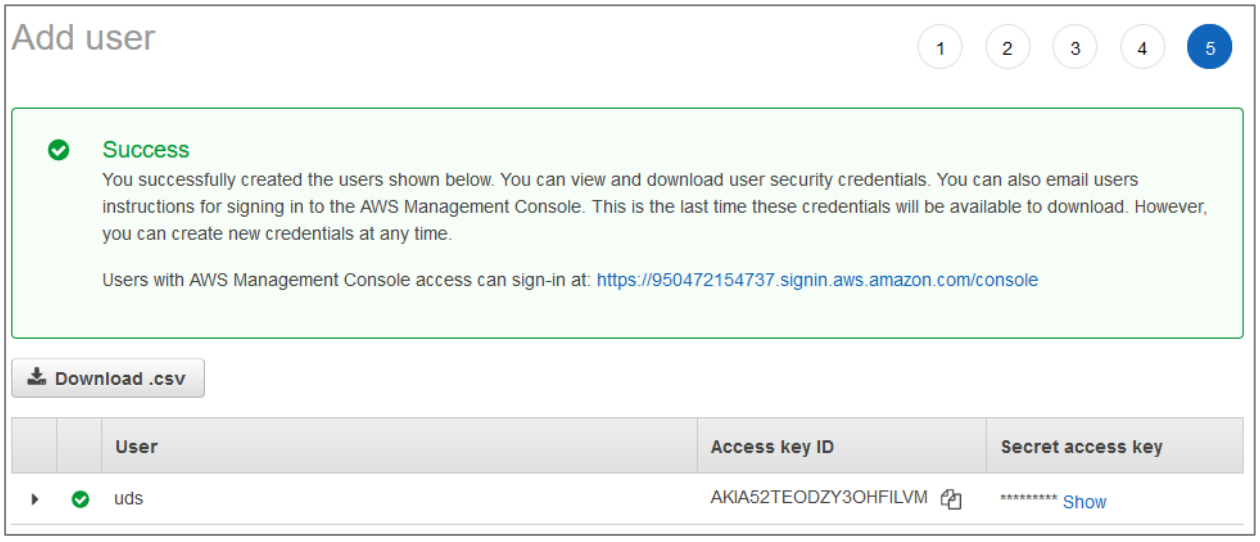


In step 3, if necessary, you can add tags for the user.



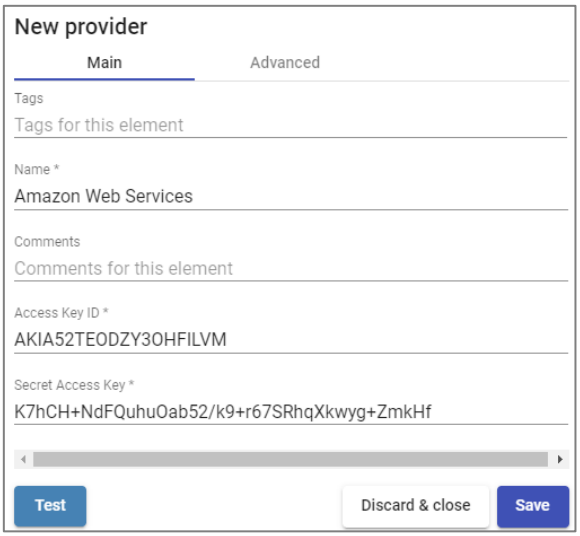
Finally, check that all the data are correct and proceed to the creation of the new user:



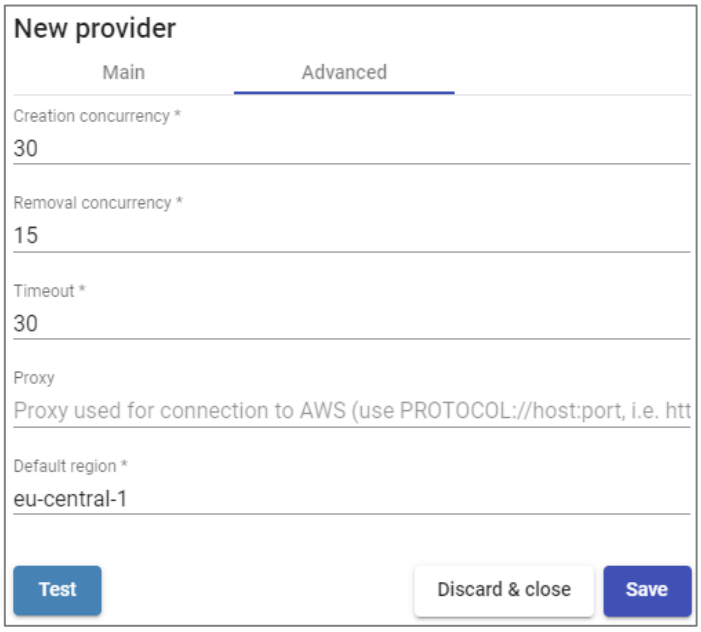


Once created, you already have the "***Access key ID***" and the "***Secret Access key***" to add it in the configuration of the service provider.

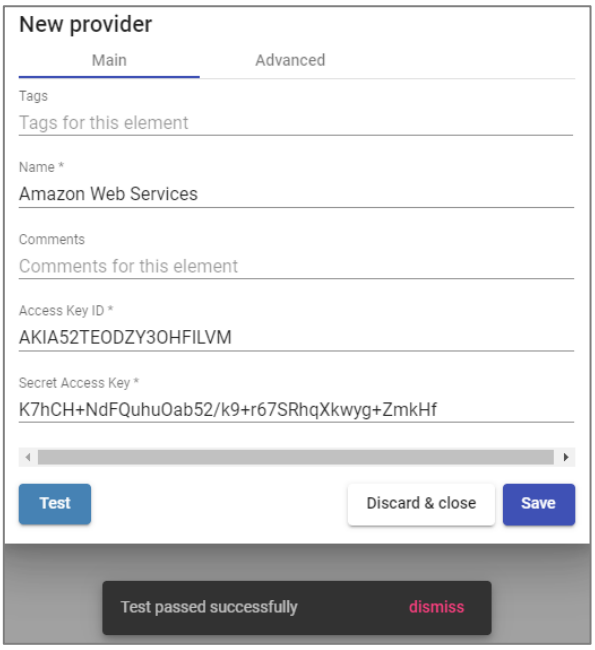
Keep in mind that the "***Secret Access key***" cannot be consulted again, although you can generate a new one.



- **Advanced:** Indicate the concurrency of creation and deletion, the timeout of the connection, if necessary, a proxy server (for communication between the UDS-Server and AWS) and the region of your EC2 environment.



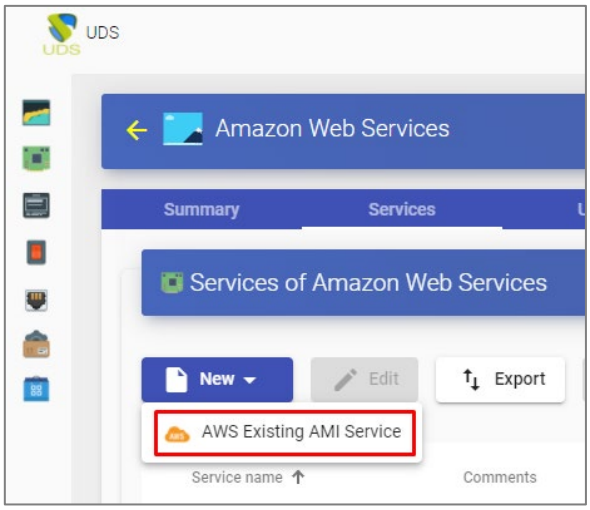
Perform a connection test with the service provider to confirm the correct integration and save.



NOTE:
Even if the test is not correct, you can save the provider and thus not lose the indicated data.

▪ Creating base services

When you have a valid "***Service provider***" connected to the AWS platform, you can create services based on "Amazon **Machine Images"** (AMIs). To do this, access the provider (with double click or right button – "***Detail***") and in the "***Services***" tab click on "***New***" – "***AWS Existing AMI Service***".

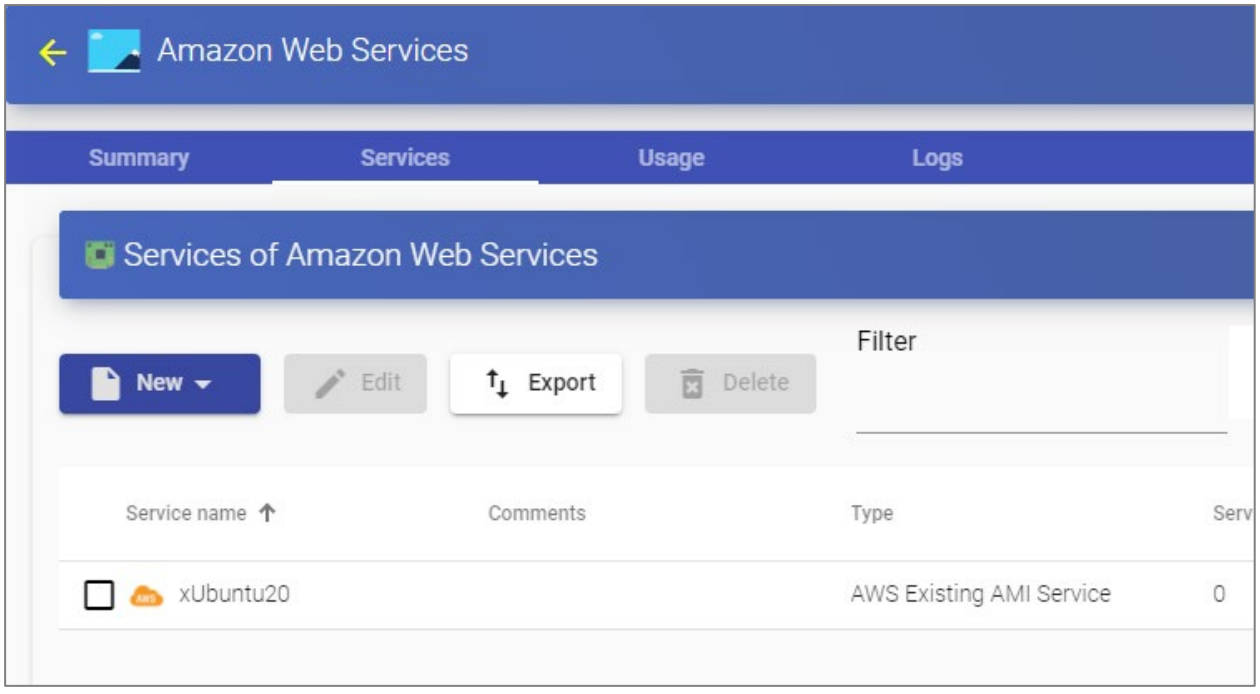


To create a "***AWS Existing AMI Service***" base service, indicate the following data:

- Main:
  - **Name:** Descriptive name of the base service.
  - **Region:** Location of the Amazon EC2 environment to work on.
  - **AMI:** Base machine image or template to deploy virtual desktops (with the UDS Actor installed and configured).
  - **Instance type:** Number of resources that the virtual desktops automatically deployed by UDS will have (in this list all the types of available machines will be shown. Therefore, you have to make sure that the type chosen is the right one for the service to be deployed).
  - **Key pair:** A set of security credentials that is used to prove your identity when you connect to an Amazon EC2 instance.
  - **Machine Names:** Root name that the virtual desktops generated by UDS will have.
  - **Name Length:** Number of digits of the counter for UDS machines. These digits will be joined to the "***machine names***" to form the DNS name of the virtual desktops (with 1 digit you can create 9 machines, with 2, 99, with 3, 999, etc).

- Network:
  - **VPC:** Existing virtual network of the AWS environment and to which the virtual desktops will be connected.
  - **Subnetwork:** Existing subnet to which the virtual desktops will be connected.
  - **Security Group:** A security group that will be assigned to the virtual desktops.

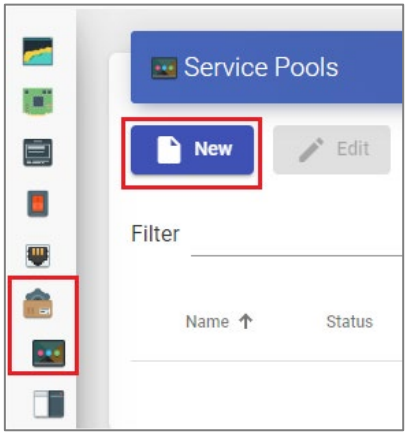
Save and you will already have a valid base service to automatically deploy virtual desktops on AWS:



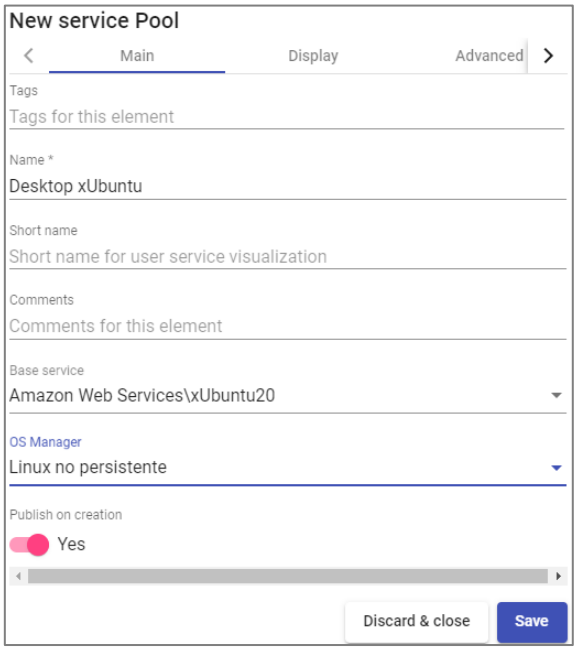
Creating a Service Pool

Before proceeding to create a services 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 O.S. and persistence policy of the generated desktops) and a "***Transport***" (to make the connection to the desktop) previously configured. To see more details of how to configure these elements you can access the Installation, Administration and User Manual of UDS Enterprise in the Documentation section of our website.

When you have the elements mentioned above ("***Authenticator***", "***OS Manager***" and "***Transport***"), you can create "***Service Pools***". Access the "***Pools***" section, open the "***Service Pools***" tab and click on "***New***".

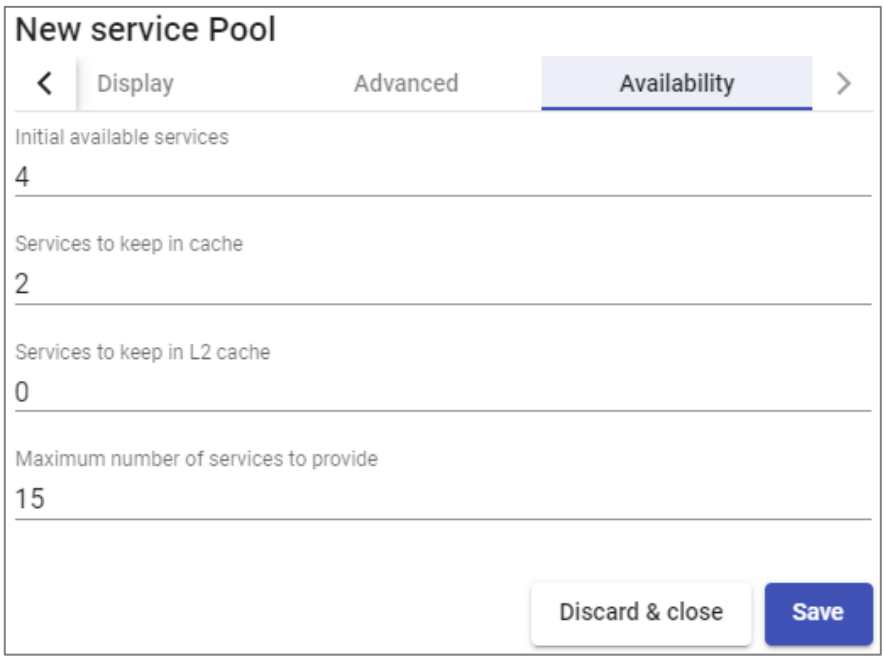


In the "***Main***" tab indicate the name of the service (this name will be visible to users) and select the base service created previously (in this case of the AWS silver form and the xUbuntu20 base service) and an existing "***OS Manager***" (in this example one will be used for Linux O.S. and non-persistent type).

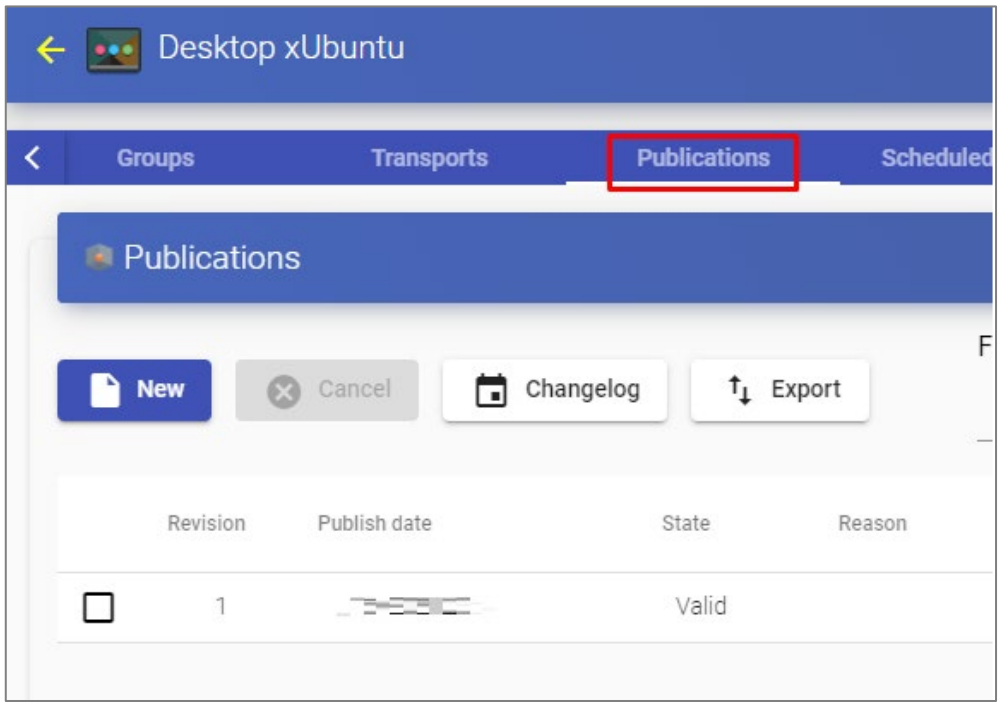


The parameters of the "***Advanced***" and "***Display***" tabs can be left by default. In the "***Availability***" tab indicate the initial desktops that UDS will generate and the ones in cache.

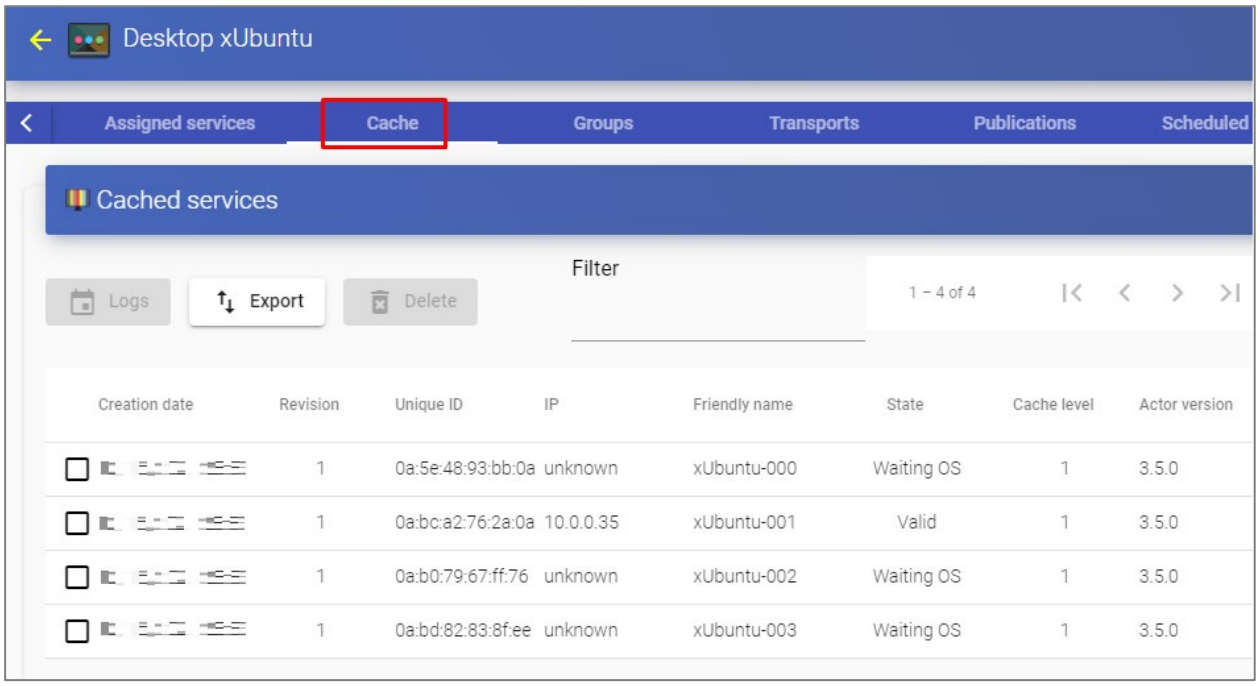
In this example, we have indicated UDS to automatically create 4 desktops and always have at least 2 available in cache.



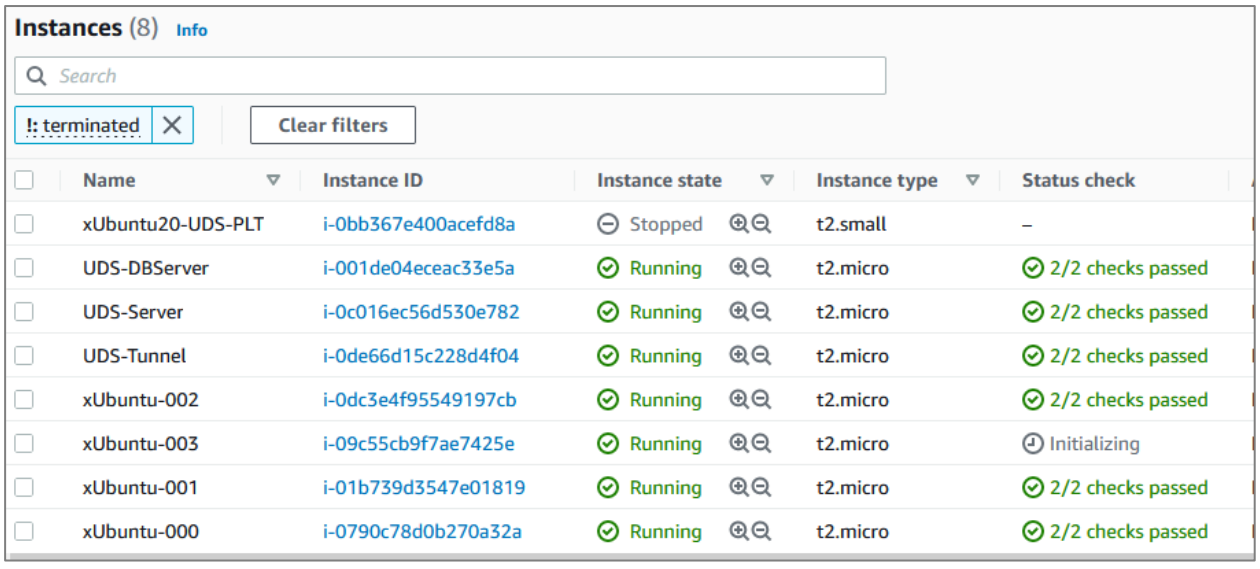
By selecting the "***Service Pool***" and opening the "***Publications***" tab, check if the publication has been generated correctly. When it is in a "***Valid***" state, the system will start autogenerating the virtual desktops indicated in the cache parameters.



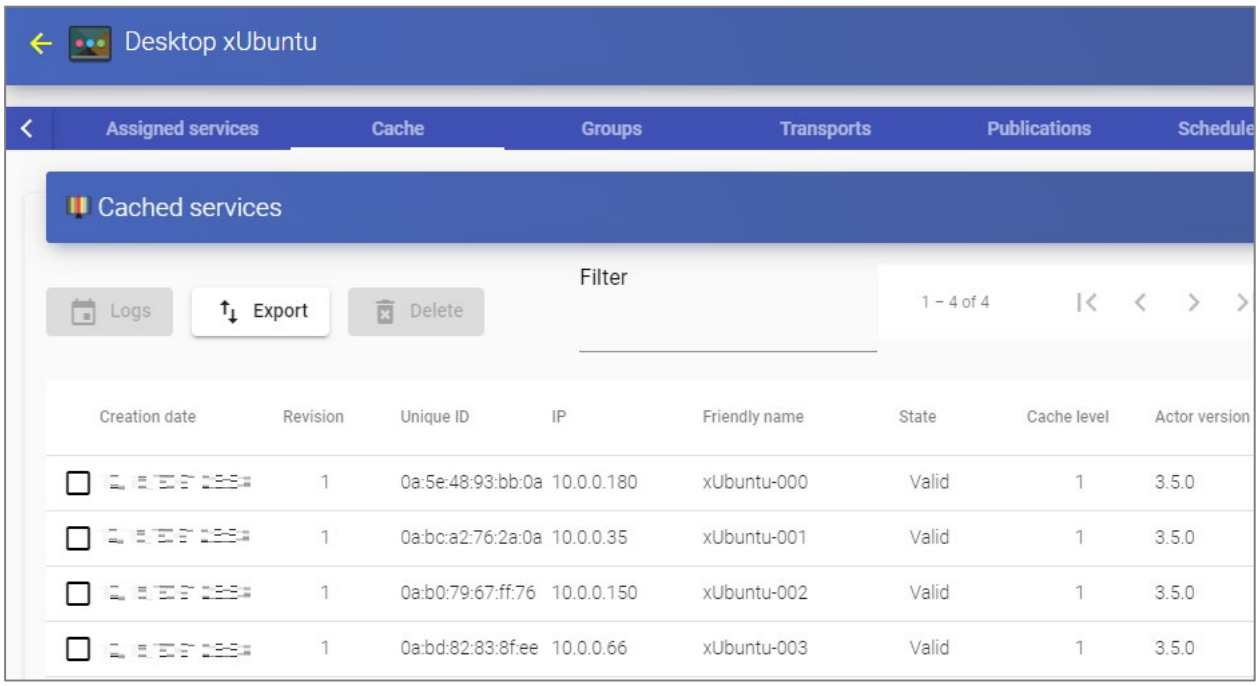
In the "*Cache*" tab you can see how the desktops start to be generated.



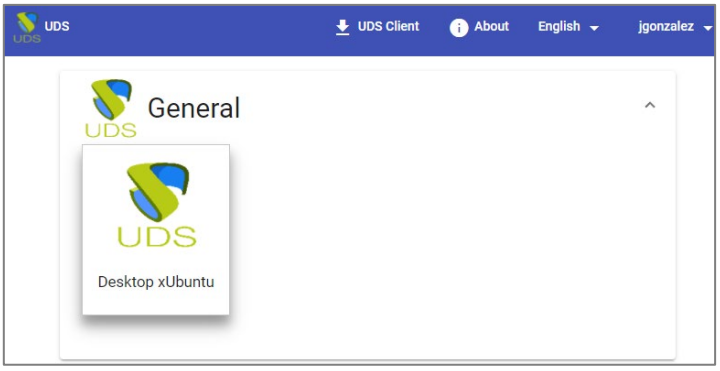
In the AWS environment also see how virtual desktops are generated:



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

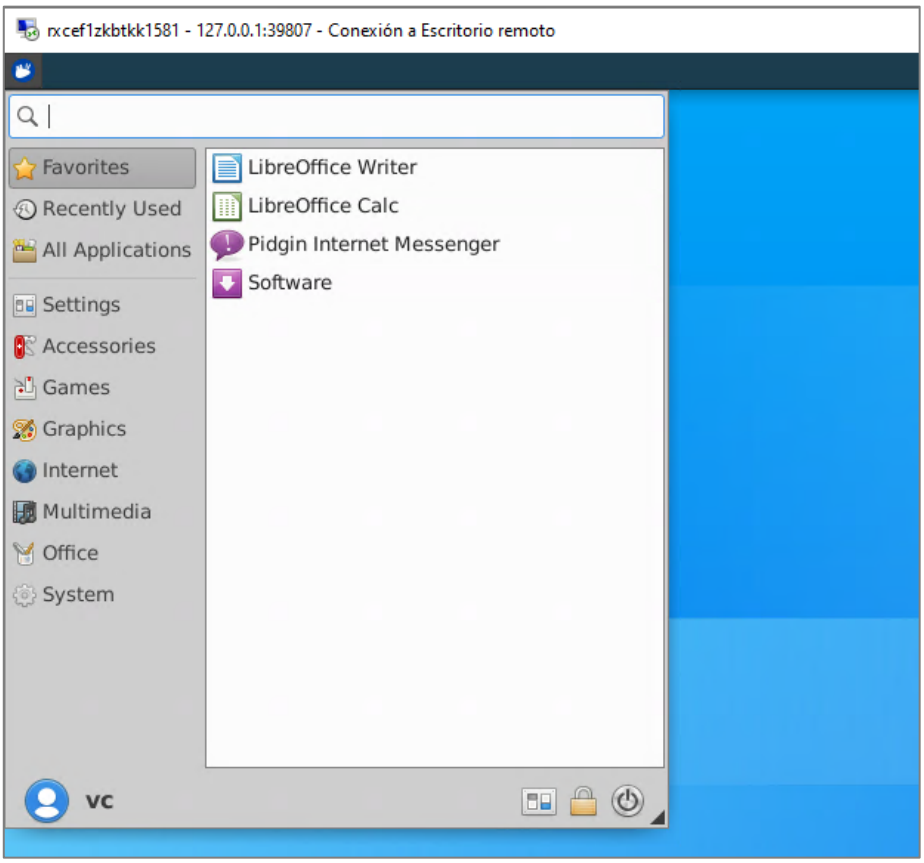


Access with a user to the services window (it is not possible to use the super-user administrator) and see the service available.



NOTE:
The "Service Pool" created must have a group of users (tab "Groups") and a transport (tab "Transports") assigned so that users can see it.

Access the service by clicking on the image (in this example an RDP type transport has been configured).



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

About Virtual Cable

Virtual Cable develops and markets UDS Enterprise through a subscription model by number of users, including support and updates.

The Virtual Cable team has more than 30 years of experience in IT and software development and more than 15 in virtualization technologies Every day millions of Windows and Linux virtual desktops with UDS Enterprise are deployed worldwide.

For more information, visit www.udsenterprise.com or email us at info@udsenterprise.com

Should you have any technical question, please refer to support@udsenterprise.com

For information on UDS Enterprise subscription system, support services, SLAs and other details regarding the software see this document.