VIRTUAL CABLE

# Windows Application Virtualization with UDS Enterprise 4.0

# Index

# 1. Introduction

The UDS Enterprise connection broker allows the deployment and management of Windows virtual application sessions through the Microsoft Remote Desktop Services (RDS) service. These virtual applications will be assigned to user groups so that they are accessible by users.

Access to remote application sessions can be done through Windows and Linux OS with the installation of the "**UDS Client**" component or through any other OS (Android, iOS, ChromeOS, etc...) who has a web browser with HTML5 connection mode.

The applications will run on Windows application servers, allowing several of them to be grouped together and run in high availability. These application servers must have the RDS role enabled and configured in order to be integrated with UDS.

The UDSRDSServer component (server agent used to manage vAPPs and control user sessions on RDS servers) must be installed on the application servers, this will allow the call to the applications and notify the user access and exit. In environments where there are several application servers, it will be possible to activate high availability and the load threshold can be indicated to obtain an optimal load balance of the resources of the servers.

For the correct operation and integration of UDS Enterprise with RDS servers, it is necessary to perform a series of tasks that are detailed in this document.

# 2. Required Items

To configure the different elements that will make up the vApp environment with UDS Enterprise to serve Windows virtual applications, we will need:

## 2.1. RDS Application Servers

The Windows servers that will be responsible for providing the application sessions can be hosted on a virtualization platform or be physical servers. UDS Enterprise allows you to create groups of application servers.

Application servers must have the RDS feature enabled, which will allow virtual application sessions to be created. The servers must belong to an AD domain and have the applications that are going to be enabled to users installed and configured.

If you have a configuration with several application servers, all of them must have the applications installed. If you have different applications installed or are intended for different uses, it is recommended to make different groups of servers.

Application servers must have sufficient resources (vCPUs, vRAMs, and disks) to be able to run applications.

## 2.2. Windows OS supported

To deploy virtual applications, it will be necessary to use the following OS:

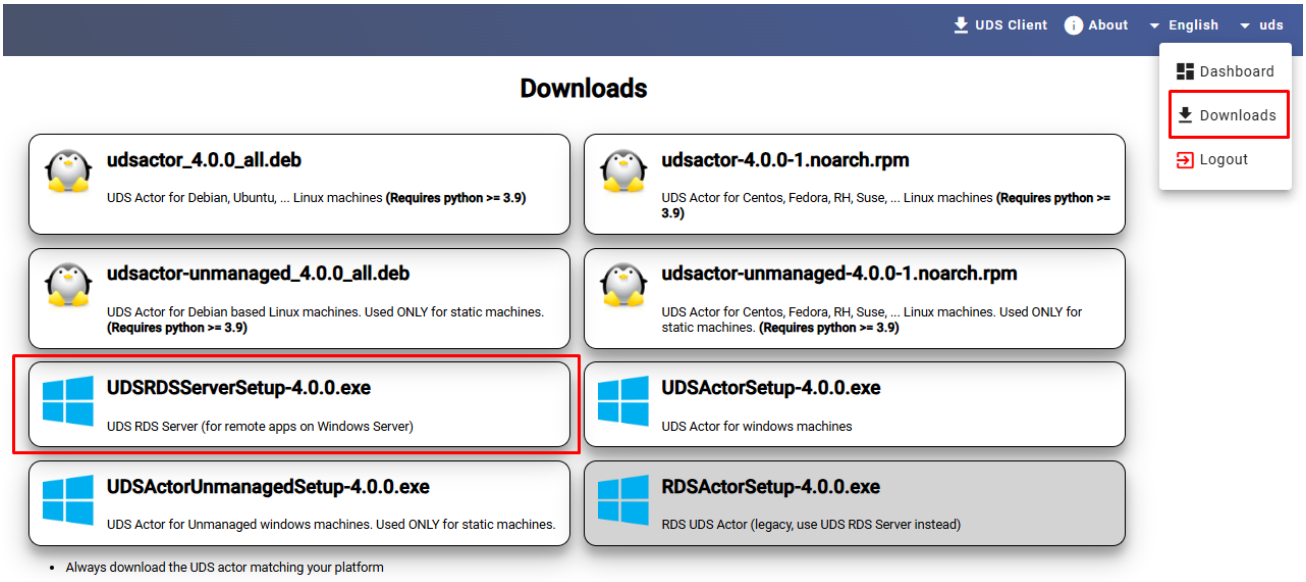
- Windows server 2016
- Windows server 2019
- Windows server 2022
- Windows server 2025

In this document we will use a Windows Server 2022 server, for the rest of the OS all the tasks to be performed will be the same.

## 2.3. UDS RDS Server

All application servers must have the UDS RDS Server agent installed and configured to facilitate access and control of the applications to users.

To download it, it is necessary to validate ourselves in the UDS Enterprise login portal with a user with administrator permissions. We will display the user menu and access the downloads. In this window we will download the UDS RDS Server for Windows machines.




**NOTE:** It is still possible to use the RDS Actor (RDSActorSetup-X.X.0.exe), but in future versions it will be discontinued.

## 2.4. Several

To carry out all the configuration on an RDS server, it will be necessary to have a domain user with administration permissions on the RDS server, in addition to an installed and configured UDS environment.

# 3. Application Server Configuration

Below are all the tasks required to be performed on the RDS application server.

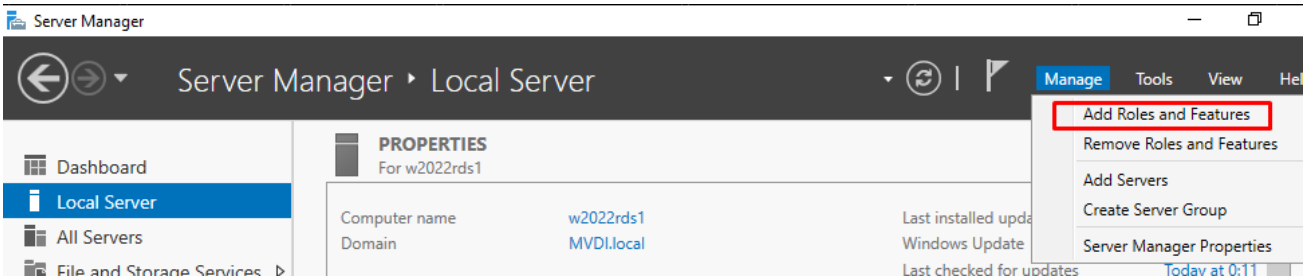
## 3.1. Remote Desktop Service (RDS) Installation

The following requirements must be met:

- Have an updated Windows Server 2016, 2019, 2022 or 2025 OS.
- The server must have a fixed IP address.
- The server must be part of an Active Directory (AD) domain.

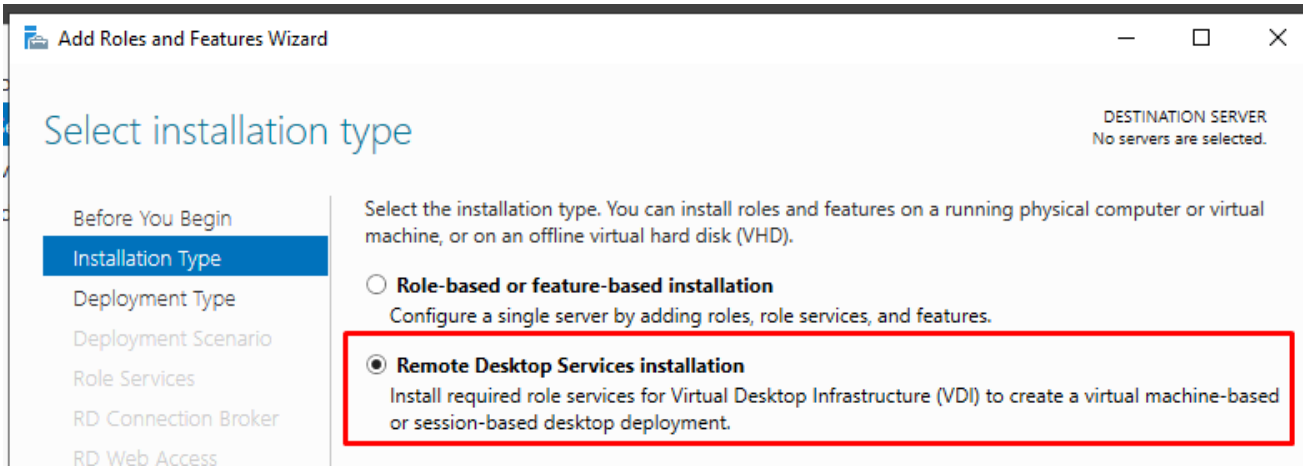
Once we have met the requirements, we move on to the installation by validating ourselves with a user with administration permissions on the server.

Access the "Server Manager" and click on "manage" on "Add Roles and Features".

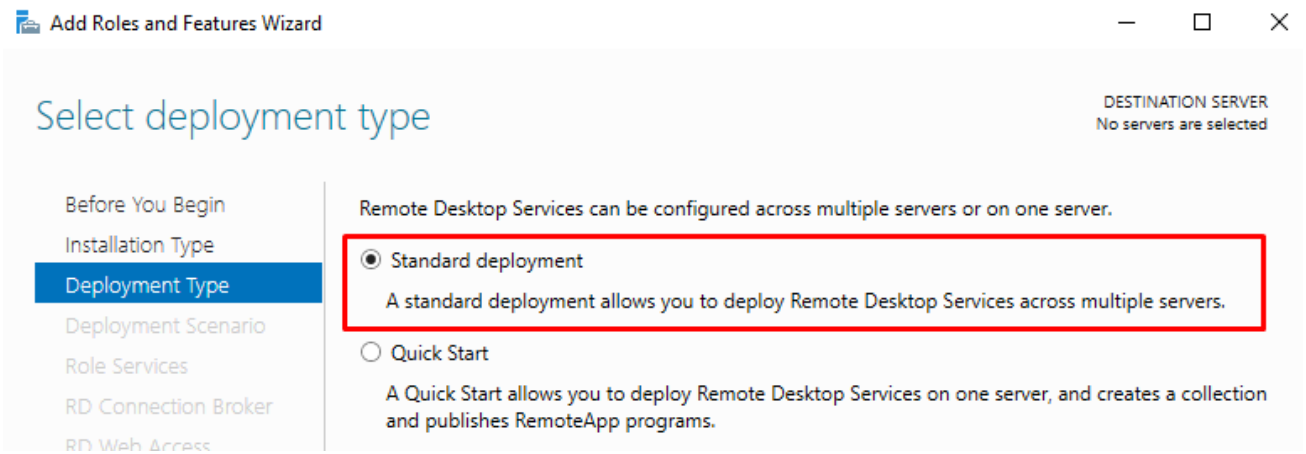



In the wizard we follow the following steps:

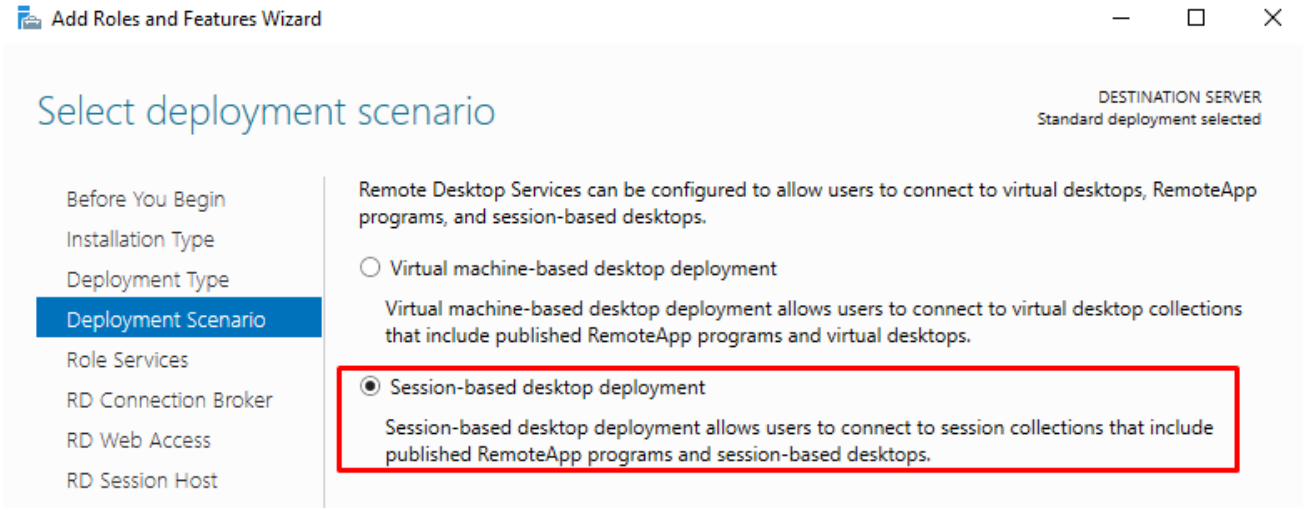
Type of Installation.



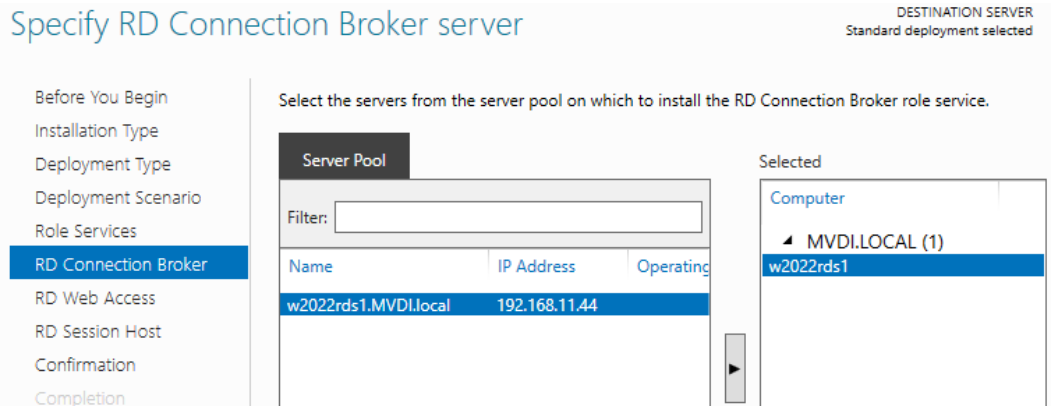

Type of deployment.

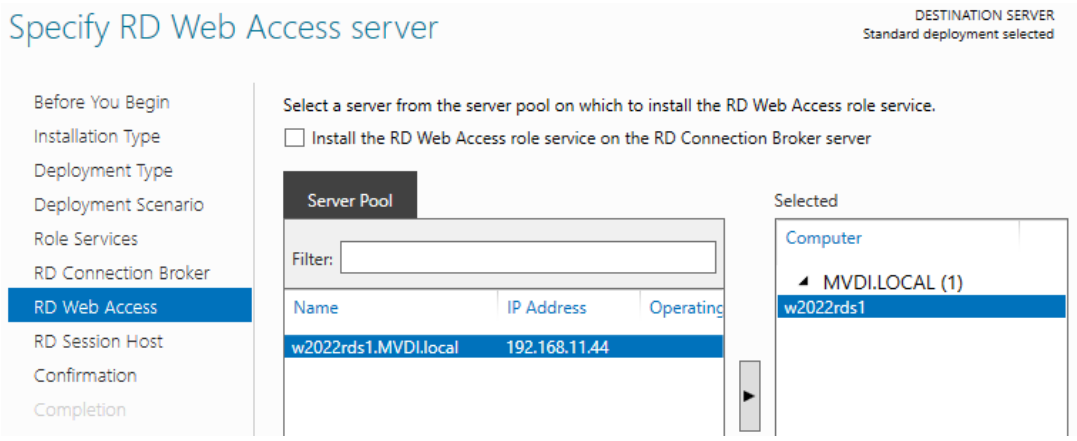


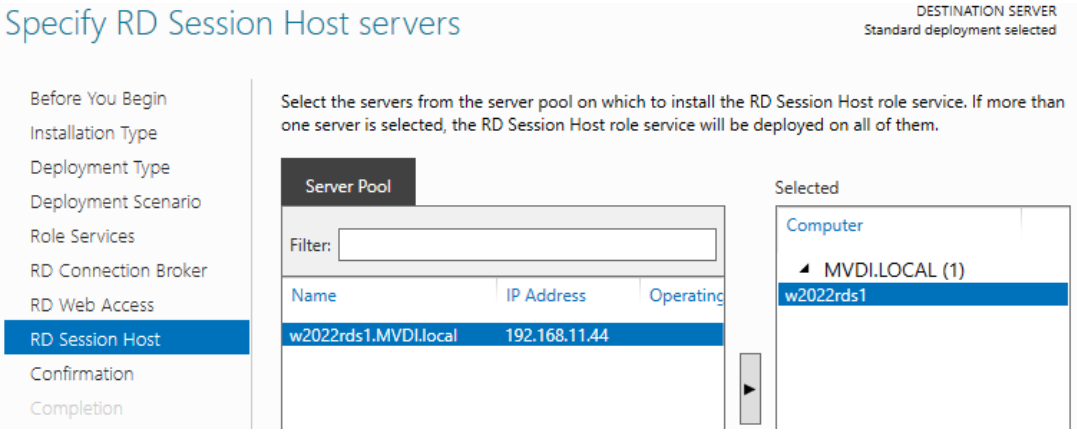

Deployment scenario:



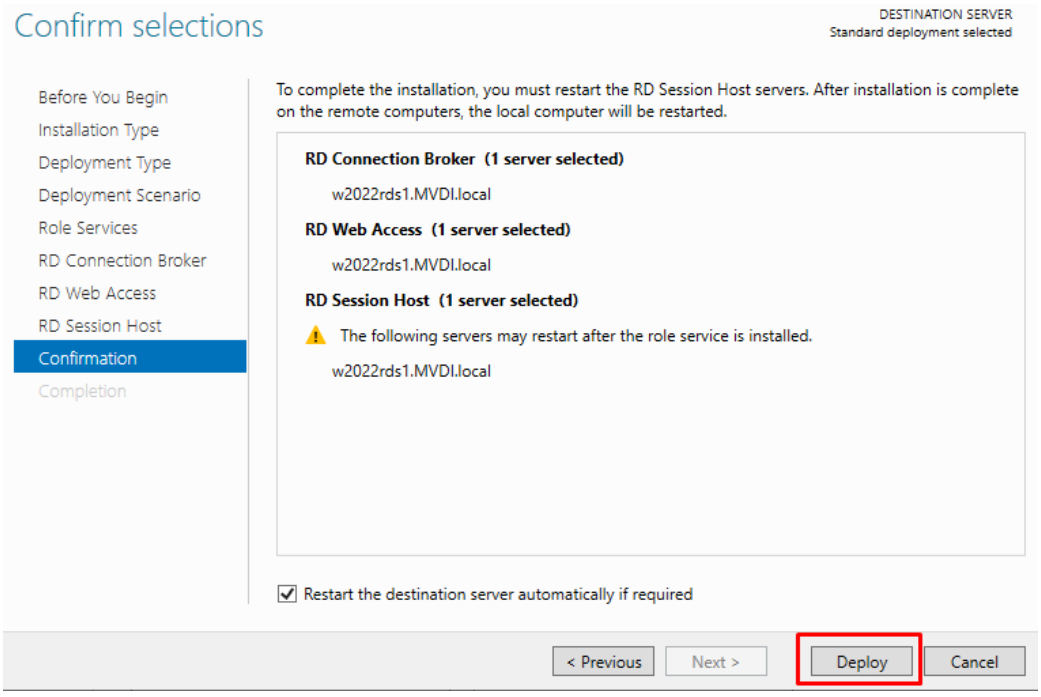

The server where each element will be installed must be indicated:

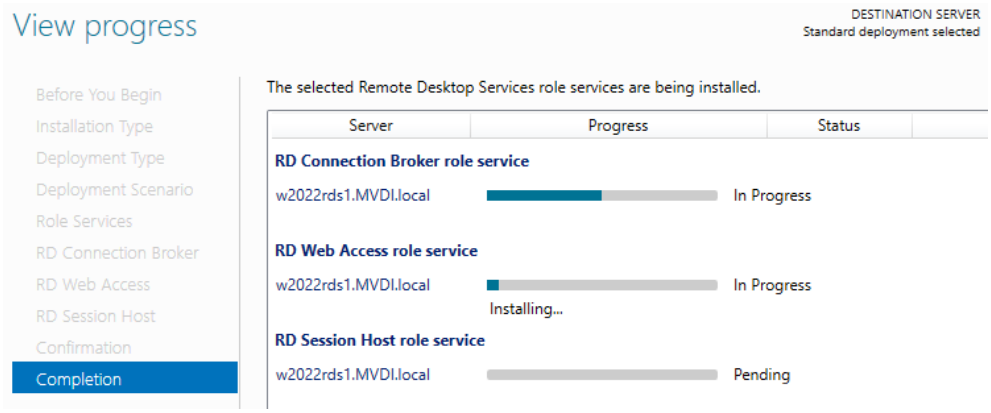




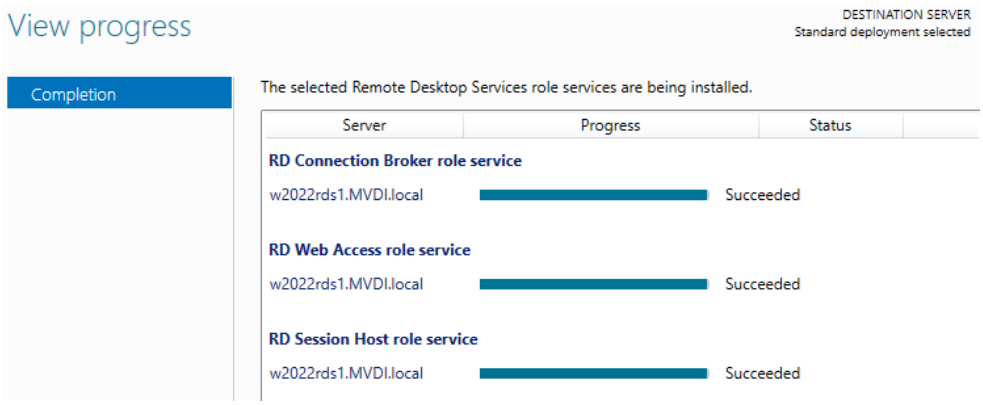




The installation is confirmed and it is deployed:



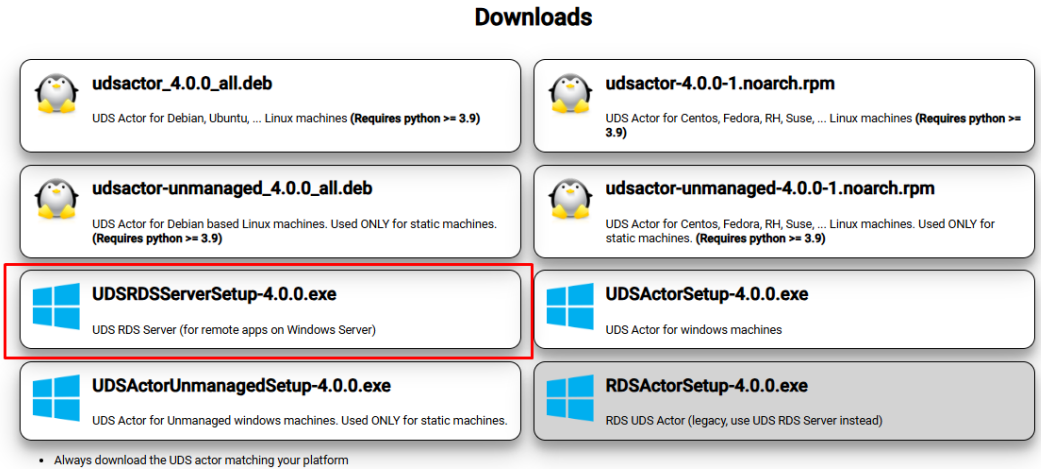



The server will automatically restart (if we have indicated this) and the installation will be completed:

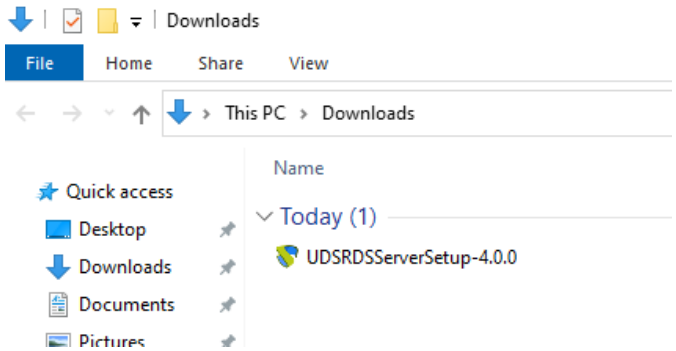


## 3.2. UDS RDS Server Installation

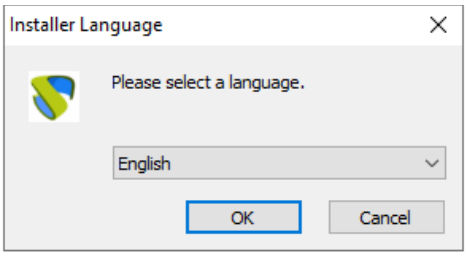
Before proceeding to install and configure an RDS collection, it is necessary to install the UDS RDS Server Agent. From the UDS Enterprise download page we select and download the UDS RDS Server.



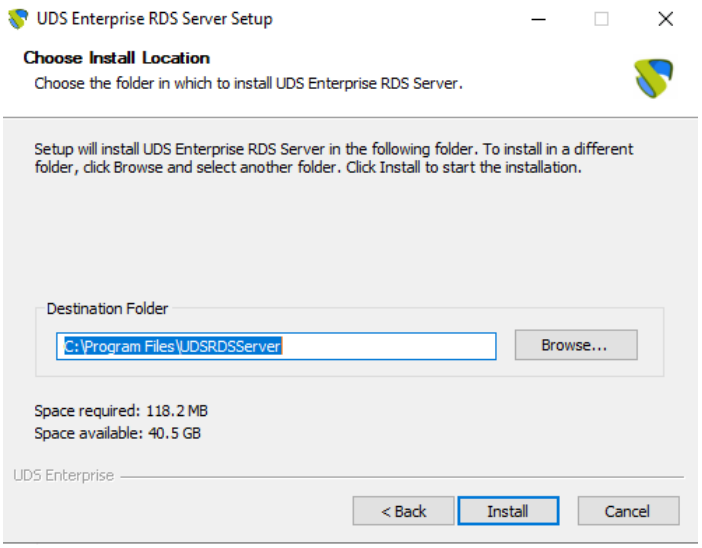

It is installed on the application server:



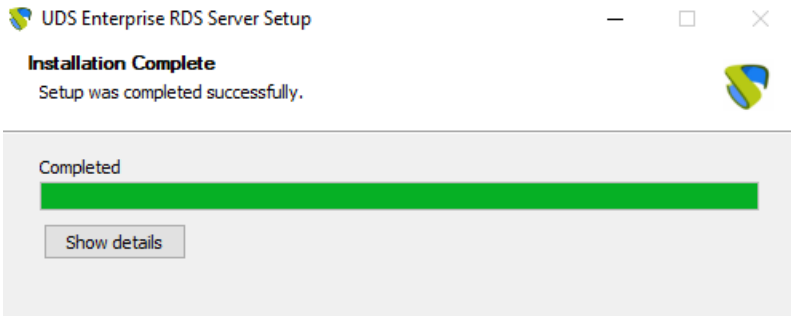

Select the language:



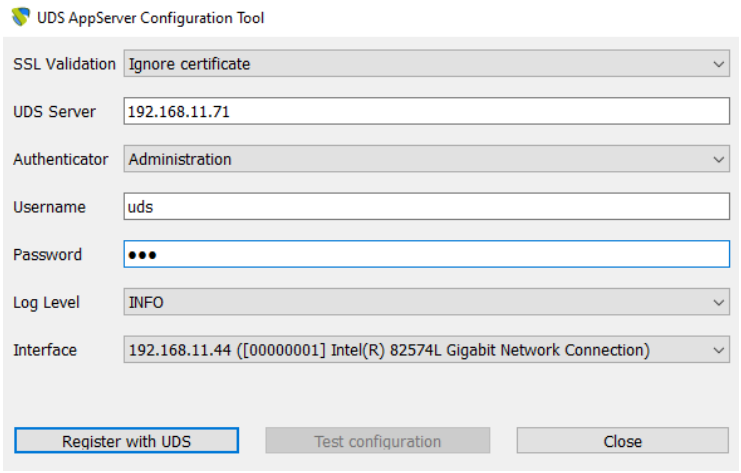
A location is selected and installed:



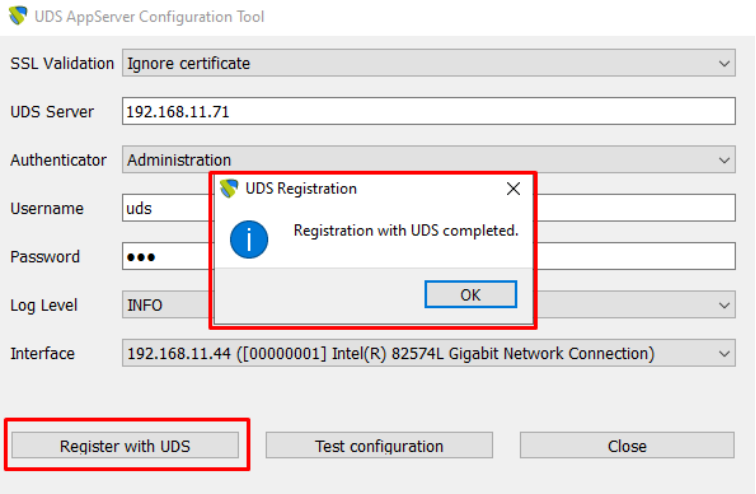

Once the installation is complete, we run the UDS Actor:



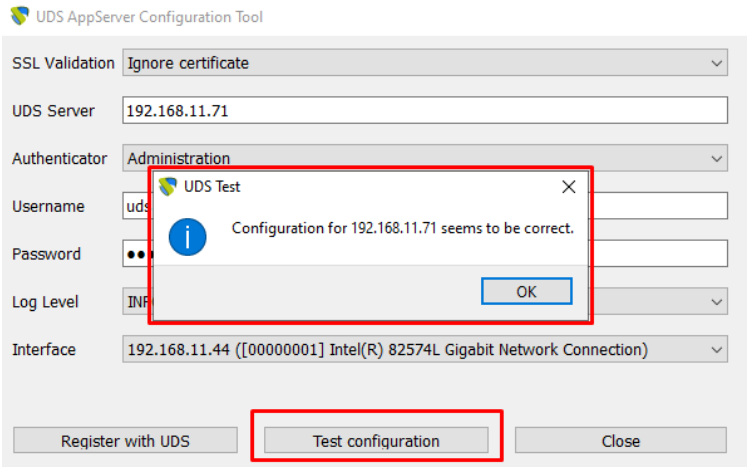

The address of the UDS server, an authenticator, and a user with administrator permissions belonging to the selected authenticator are indicated.



Once all the data has been entered, click on "**Register with UDS"** to register the Actor with our UDS server:




Click on "**Test configuration**" to confirm that all the data is correct:

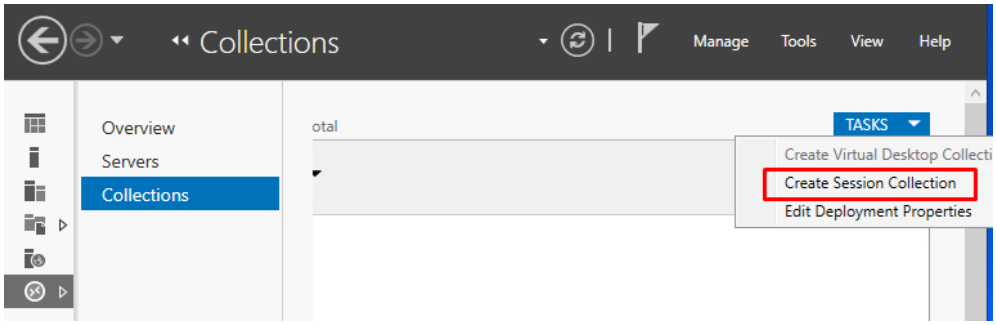



Once the UDS RDS Server for Windows RDS servers is installed, we will restart the server and we can proceed with the installation and configuration of the Microsoft Remote Desktop Services collection that will provide the application sessions.

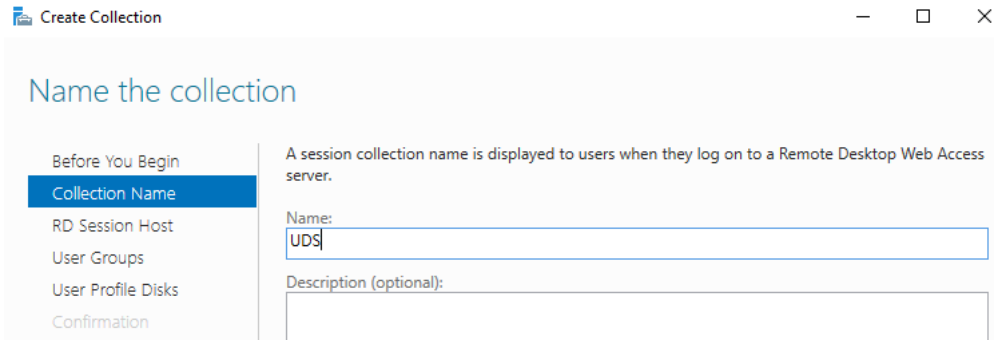
## 3.3. Configuring RDS with UDS Enterprise

Once the Remote Desktop Services role, the UDS RDS Server component have been installed and the server has been restarted, we proceed to the creation of a new RDS collection.

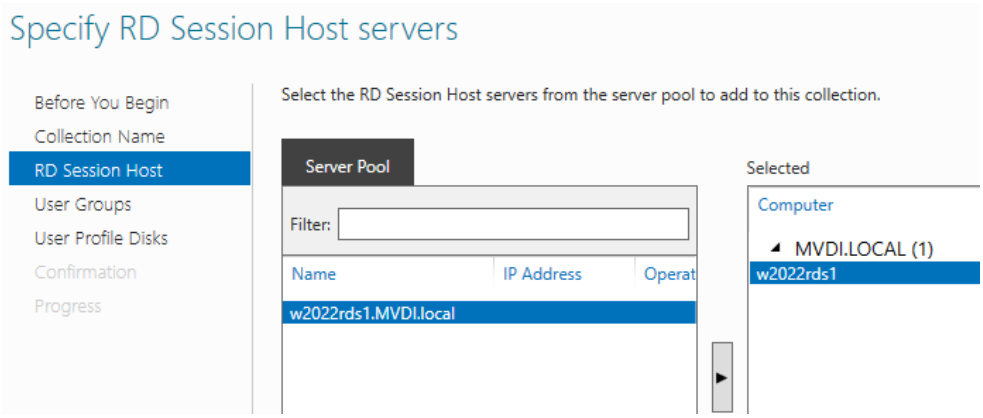
Select "**Create session collections**" or go to the "**Collections**" section and select "**Create Session Collection**":



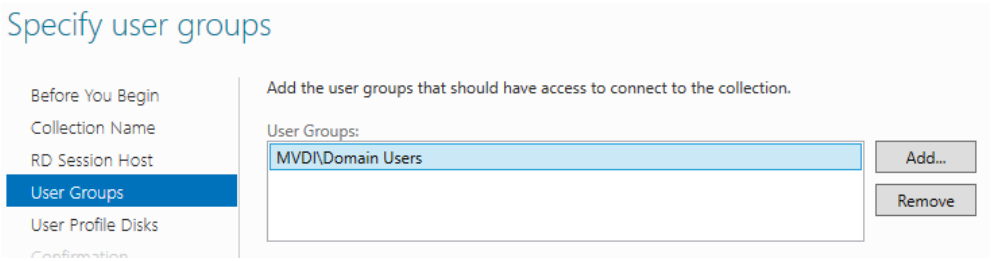

Select a name for the new collection.



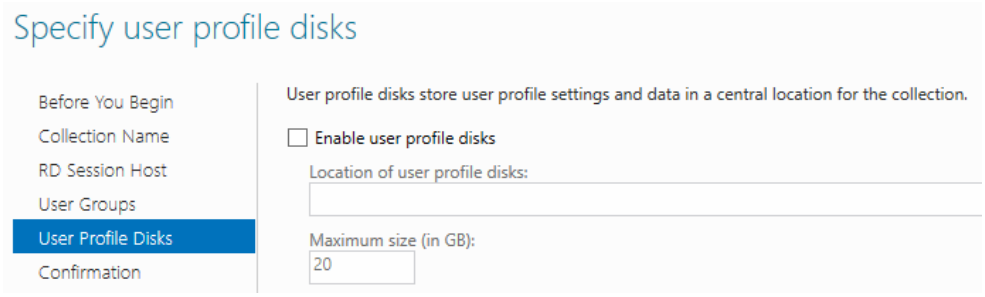

The "RD Session Host Servers" server is added:



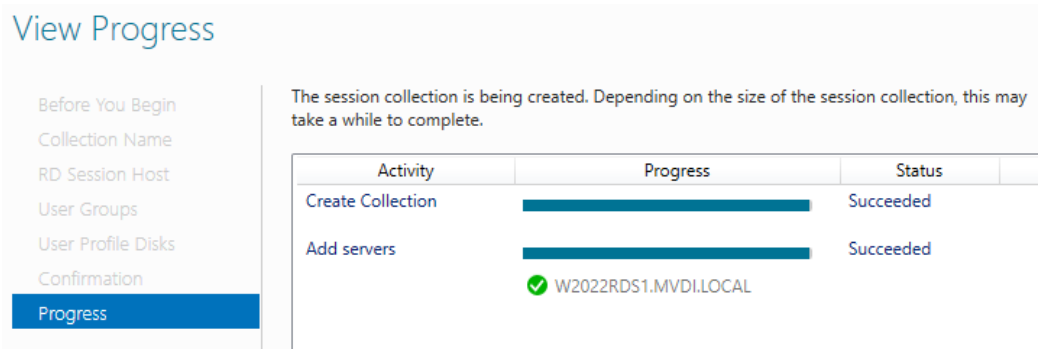

You select which groups of users will be able to access the collection. We leave the "Domain Users" group as it is by default to allow all users and perform group filtering from the UDS Enterprise administration.

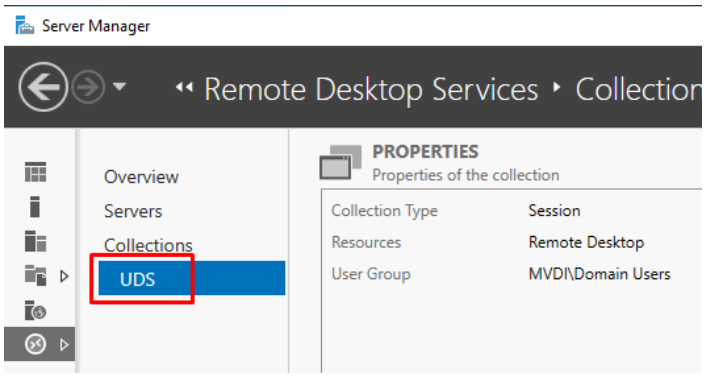



It indicates where we want to store the profile of the users. In case we do not enable it, a temporary profile will be created, which will be deleted when the user is disconnected.




Confirm and create the collection.



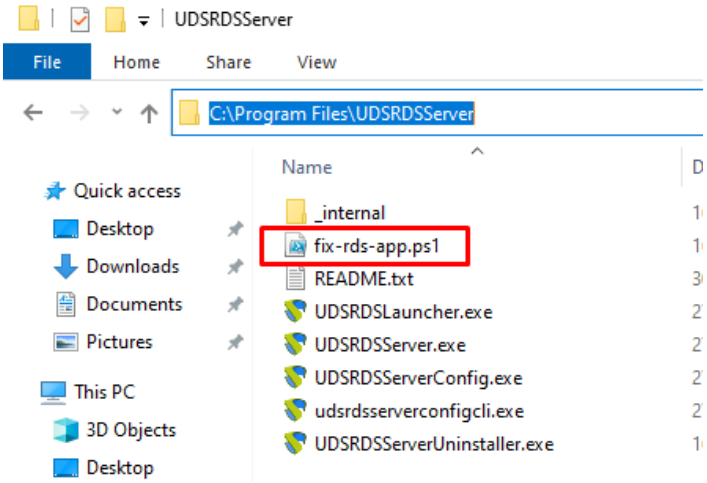



## 3.4. Publishing RDS Actor to RDS Server

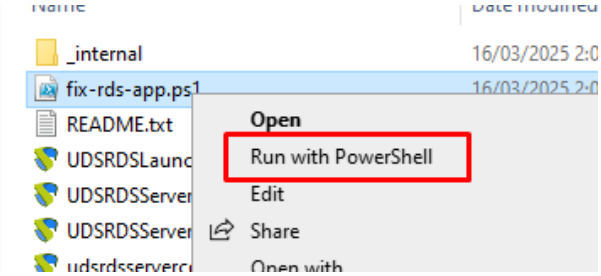
Once we have a collection, we will proceed to register the UDS RDS Server agent as "Remoteapp Programs". To do this, we can do it manually or by running the *fix-rds-app.ps1 script*

- **Automatic Script**

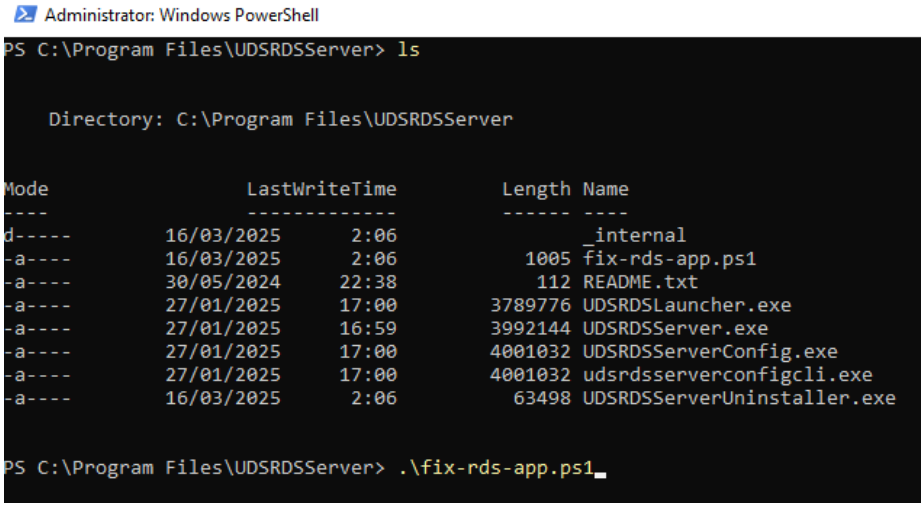
We must run the fix-rds-app.ps1 file from a Power Shell console with administrator permissions located in the default path: C:\Program Files\UDSRDSServer

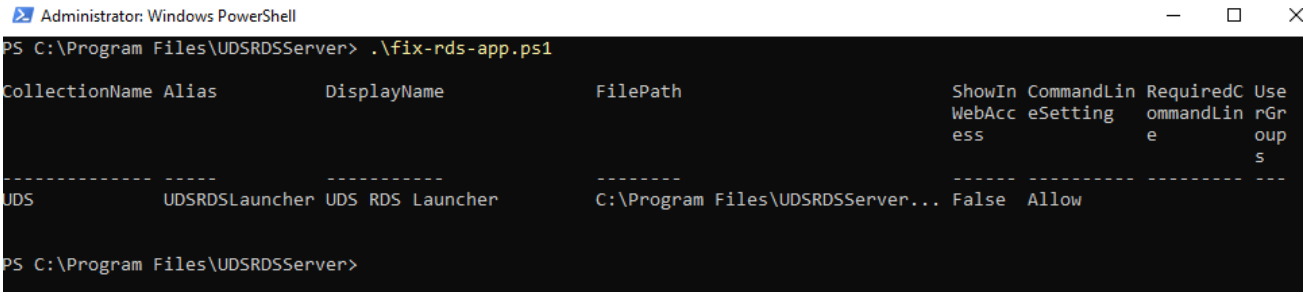



**NOTE:** It is also possible to go to the file and with the right mouse button execute "Run with PowerShell", but in case of any error it will not be possible to view it, so whenever possible it is recommended to run it via PowerShell console. Once executed, it is necessary to close "Server Manager" and reopen it to view the changes, since it is not updated automatically.

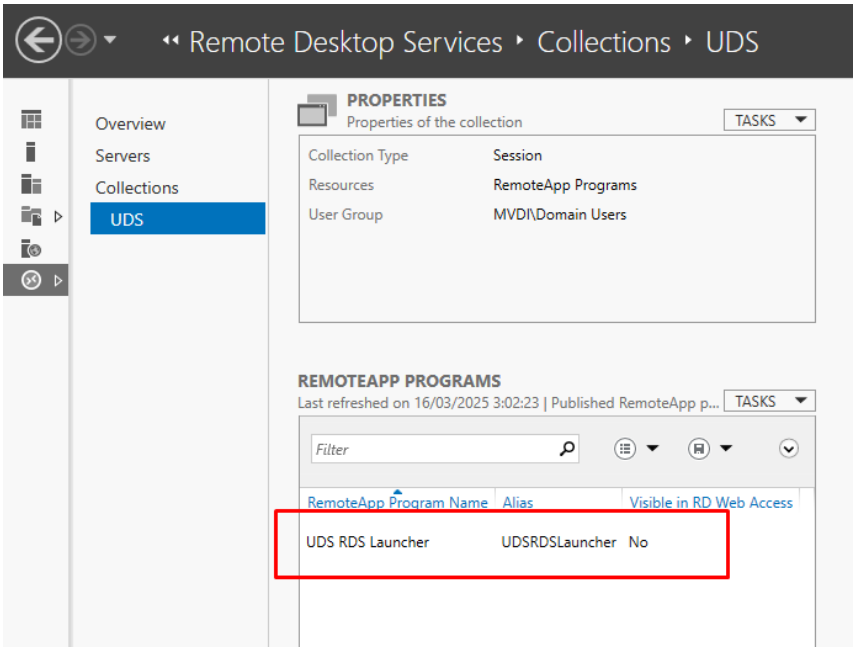


Launch the script:



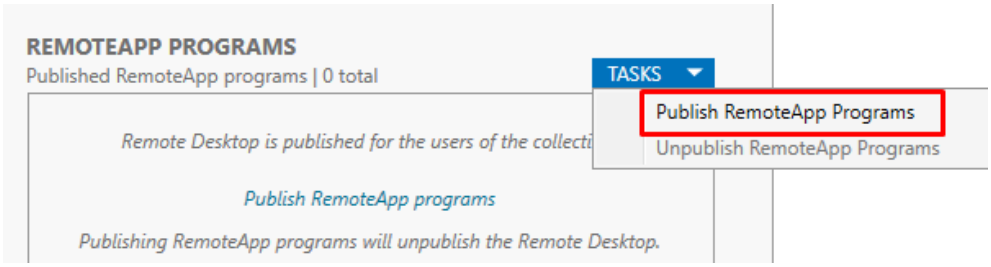




The script will be responsible for registering the UDS RDS server agent within the (existing) collection in the "Remoteapp programs" section; **to view it it will be necessary to close and reopen the "Server Manager" console**.

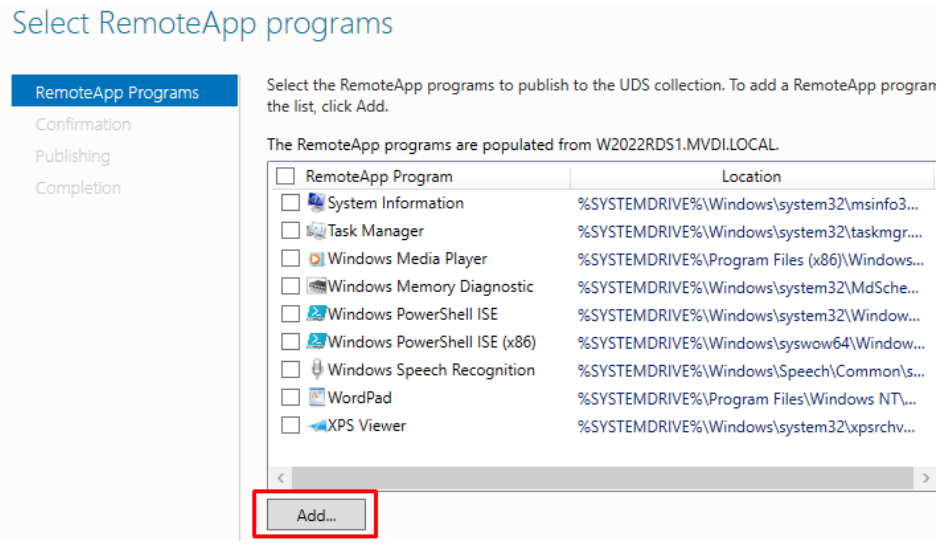


- **Manual registration**

In the "Remoteapp Programs" section, open the available tasks and select "Publish RemoteApp Programs".

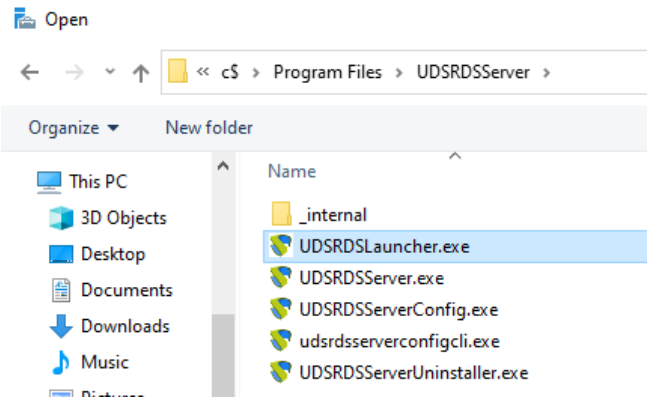



Click on "**Add**"

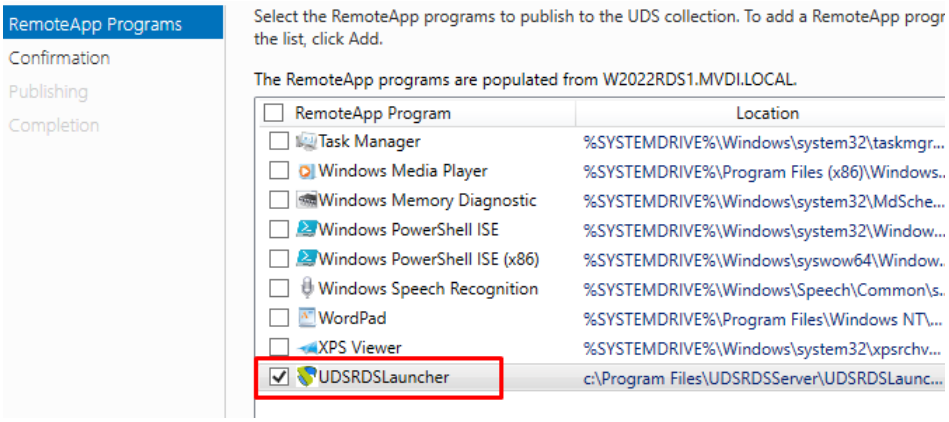



Select *UDSRDSLauncher.exe* in the default path:

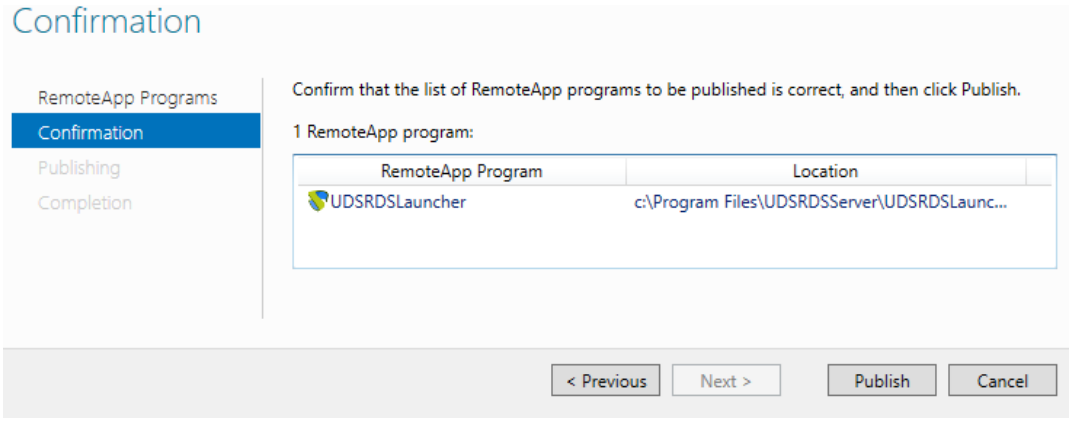
**C:\Program Files\UDSRDSServer**



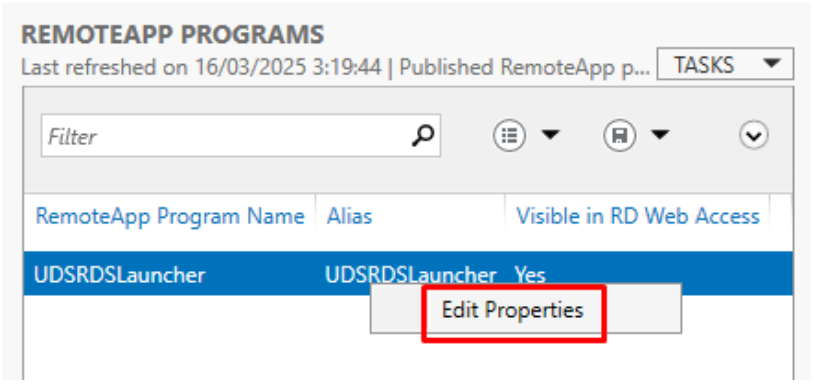
Confirm that it has been added correctly.



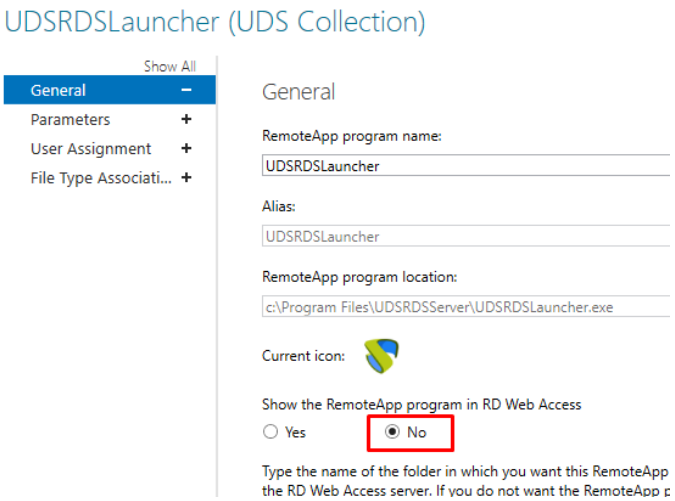

Launch the publication:



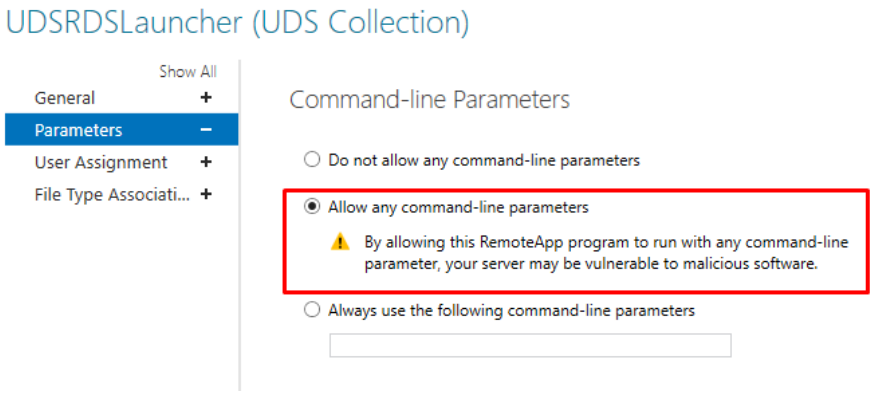

Once it is created, edit its properties:



In the "**General**" section we mark "**No**" in "**Show the RemoteApp program in RD Web Access**".

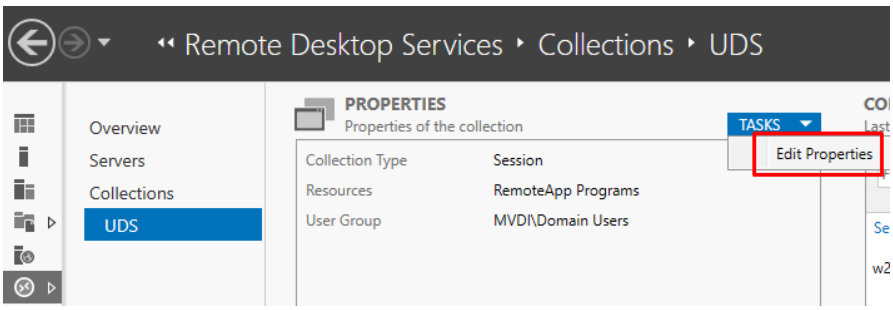



In the "**Parameters**" section we select "**Allow any command-line parameters**".

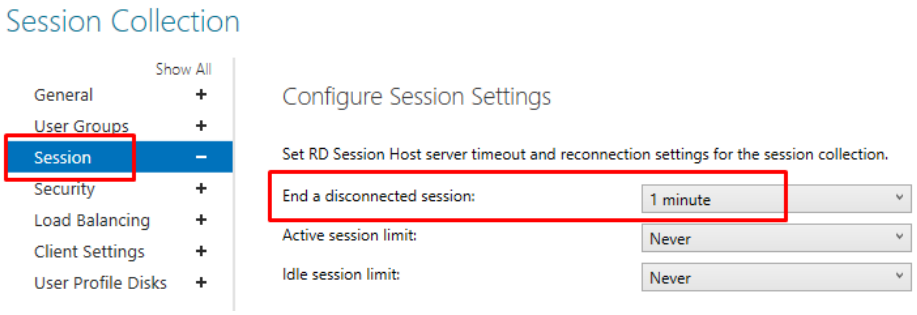



Changes are applied and accepted.

Additionally, it is recommended to indicate a time to end the sessions of disconnected users. This will free users and their licenses when they disconnect from your virtual app. To do this, we edit the properties of the collection:



In the "**Session**" section we indicate a minimum time for "**End a disconnected session**":




Once all these steps have been completed, we will have a valid RDS server to connect to the UDS server and be able to publish virtual applications for UDS Enterprise users.

# 4. UDS Enterprise Administration

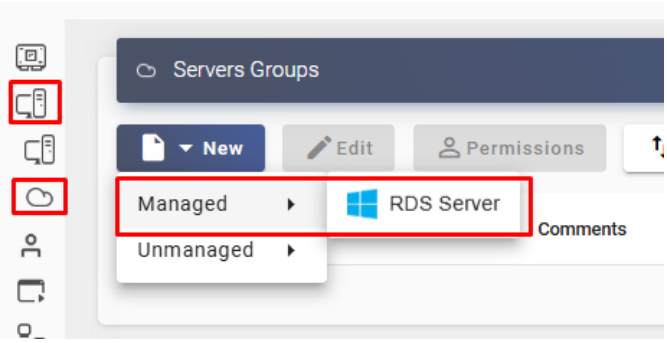
Once all the above steps have been completed and with an application server configured and ready to be used by UDS, the configuration will be carried out in the UDS administration to be able to publish virtual application session services.

We will access the UDS administration with a user with permissions and we will proceed to create the different elements to be able to publish the service through a service pool.

## 4.1. RDS Server Pool and Service Provider

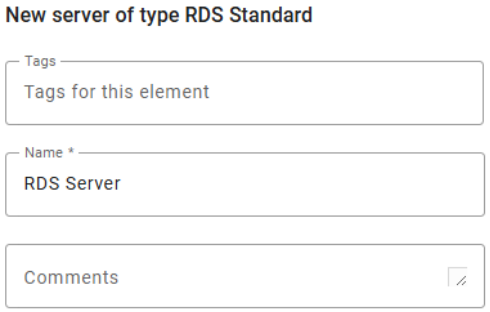
The first of the elements necessary to publish applications will be the creation of a service provider of type "RDS Platform Provider", for this we must previously have registered at least one group of servers that will contain the RDS servers configured previously.

In the UDS administration, we access the "Services" section and select "Servers". Click on "New" and select the type "Managed" – "RDS Server" to register a new group of servers managed by the UDS RDS Server agent.

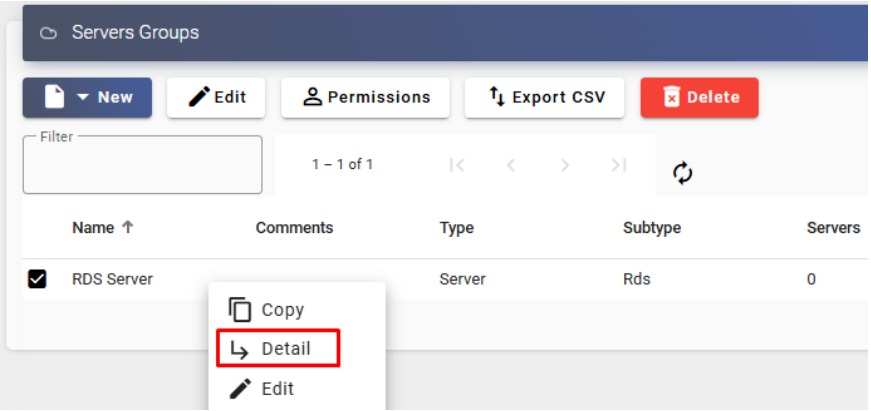



**NOTE:** if we use the "Unmanaged" - "RDS Server" type, it will be necessary to use the RDS actor, which will be discontinued in future versions and will not offer all the functionalities of the "Managed" mode with the UDS RDS Server agent.

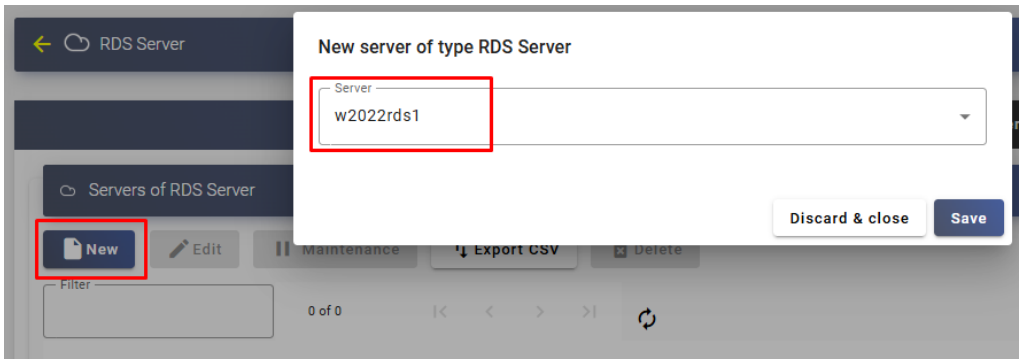
We provide a descriptive name for the server group and save the item.



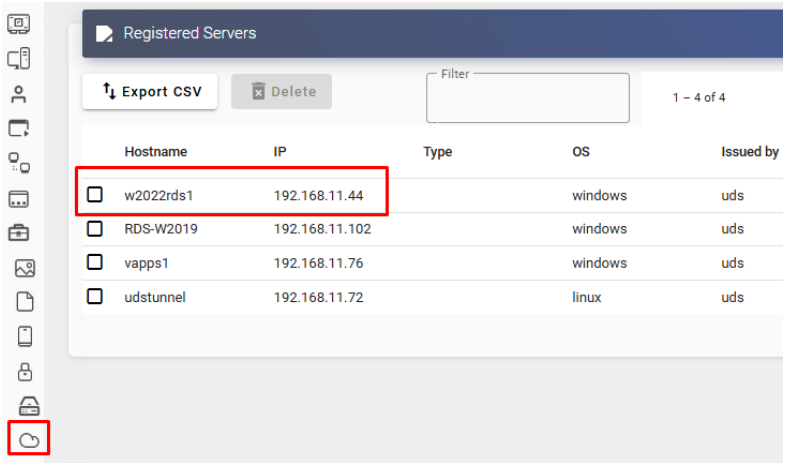
Enter the element by double-clicking on it or accessing its details



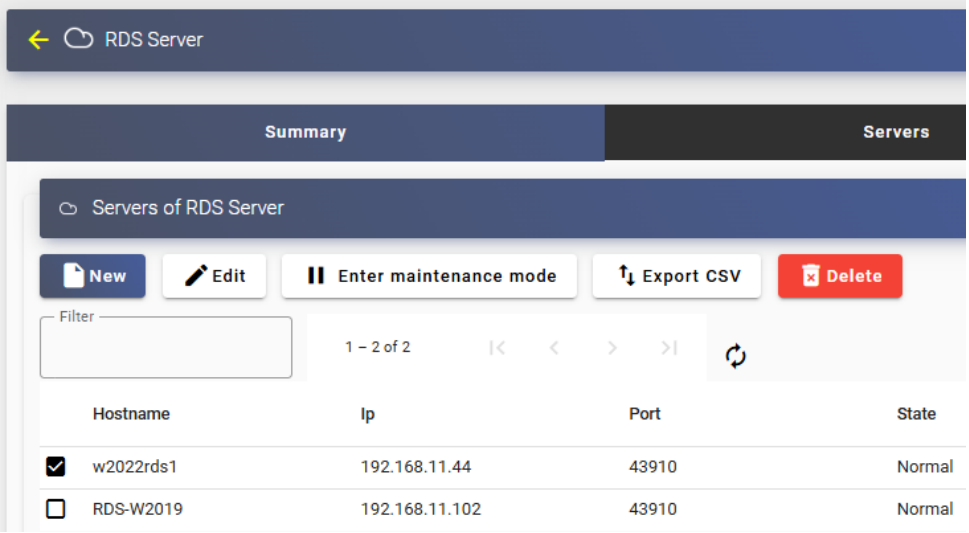

Click on "New" and add all the necessary RDS servers that will be part of this group of servers. The servers must be previously registered with the UDS server through the installation of the UDS RDS Server agent, if they have not been registered the drop-down menu will not appear to select it.




**NOTE:** All registered servers will appear in the "Tools" menu under "Tokens" – "Servers", if they do not appear in this section, they cannot be added to a group of servers and used by the RDS provider to serve virtual application sessions.

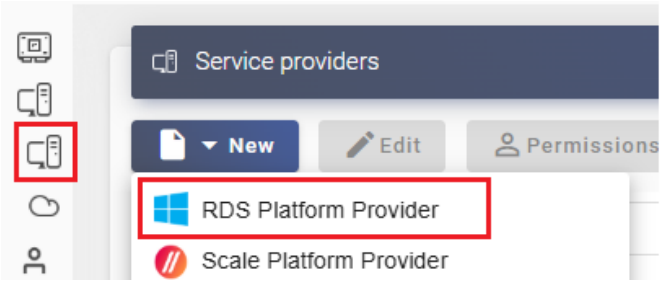


Once all the RDS servers that will make up the server group have been added, we will be able to view them and make sure that port 43910, which will be used for the correct communication between the RDS services and the UDS server, is allowed.

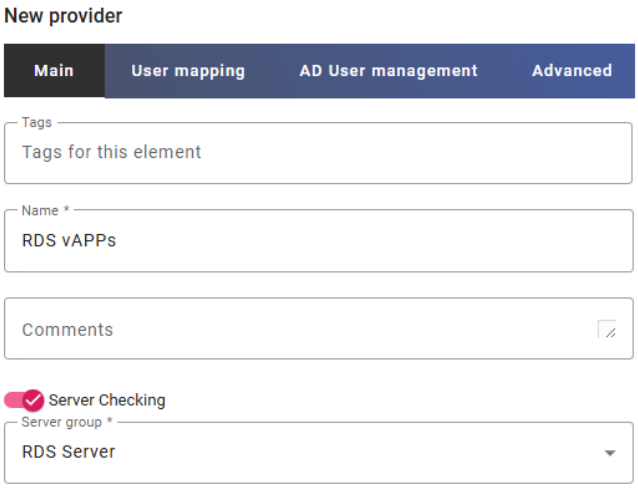



If we need to pause operations on a server, for example, for maintenance tasks, select it and click on "Enter maintenance mode" so that it is not used.

Once we have a valid server group, with at least one server registered, we will proceed to create the service provider of type "RDS Platform Provider". Go to the "Services" section and select "Providers". Click on "New" and select the type "RDS Platform Provider".




- In the "Main" tab, we will indicate a descriptive name for the element and indicate the server group (which contains the RDS servers that will run the applications), previously created and used by the provider. The "Server Checking" check will be important to enable if we want to provide the provider with high availability, allowing us to check the RDS server before launching an application and if it does not respond, pass the request to execute the application to another server in the group.




- The "User mapping" tabs (deprecated as of UDS version 4.0) and "AD User management" will allow us to map users who do not belong to UDS AD with others who do. For example, if we use users from an authenticator other than AD (Internal, IP, OpenLDAP, etc...) it will be possible to instruct the system to create an on-demand user in an AD and "match" it to the UDS authenticator user.

  **NOTE: If we use an Active Directory authenticator, it will not be necessary to enable automatic user mapping.**

  If we enable "**User auto creation on AD",** we must fill in the following fields:

  **User auto creation on AD:** "**Yes**" indicates that specific users self-created by UDS in an AD will be used to access applications.**No**" will use the user of the UDS login portal to access the applications (in this case it has to be an AD user).

  **AD Server**: IP or name of the Active Directory server where new users will be created (the server must have connection via LDAPs enabled).

  **Port**: Port used in the connection.

  **AD server OU for created users**: An organizational unit where new users will be created.

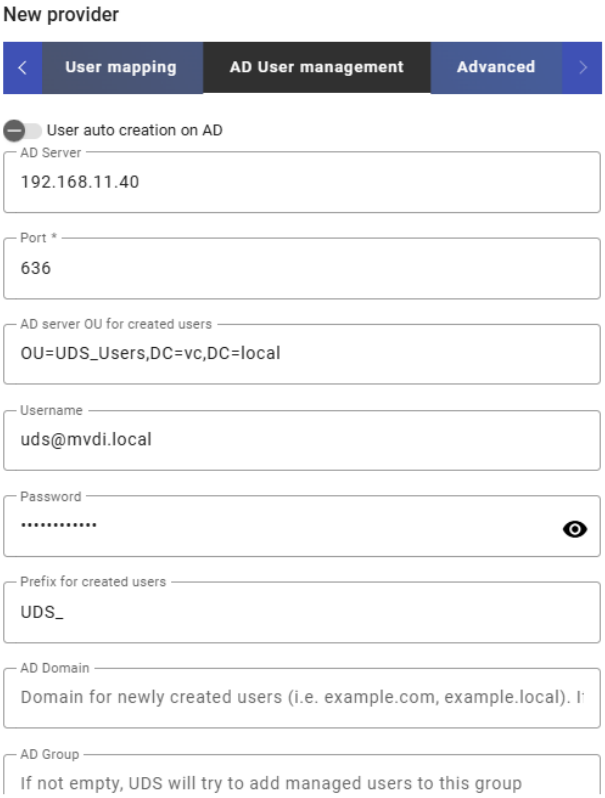
  **Username**: Domain user with permissions to create and delete users. In format: *user@dominio.xxx*

  **Password**: Password of the user indicated

  **Prefix for created users**: A prefix that will be added to the name of the user created in the AD. The final name of the created user will be: ***prefix+nombre_usuario***.

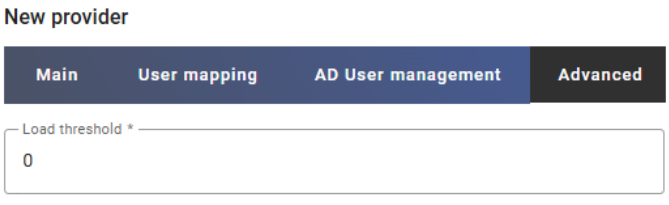
  **AD Domain**: Name of the domain where new users will register. If it is not indicated, the domain of the field: "Username" will be used.

**AD Group**: Name of the group (must exist) to which UDS will add the new users created.

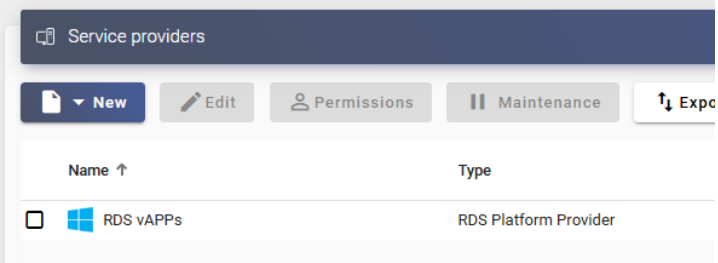



- In the "Advanced" tab, we can indicate the load balancing threshold of the servers that make up the server group. If the threshold is set to zero (default), the server in the pool that has the least resources in use will always be chosen (the calculation of resources in use is done taking into account the server's CPU and RAM usage).

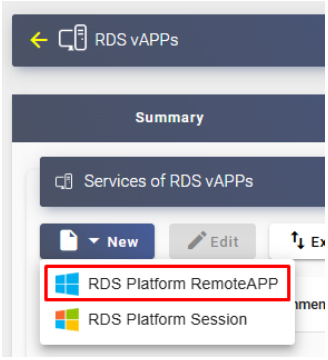
  When a value other than zero is indicated, it will be taken as the percentage of maximum usage that the server must have to host user sessions. For example, if we have 3 servers, with usage percentages: server1= 10%, server2= 50%, server3=80% and the threshold is indicated as 60%, the system will host the new user on server2, since it is closer to the indicated threshold, without going over.



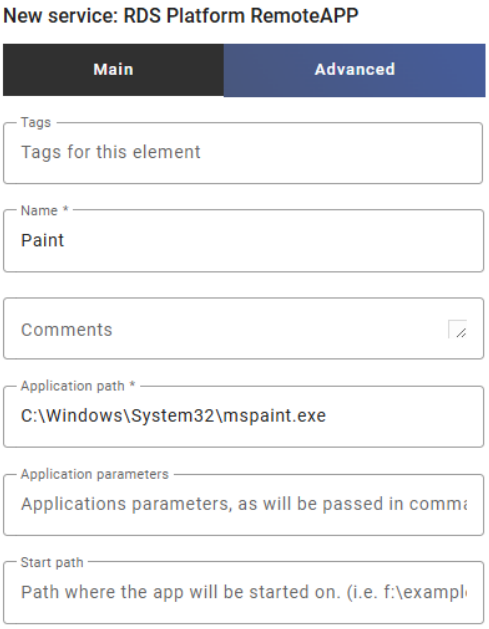

We save and we already have a valid RDS provider to start registering applications




We enter the provider with a "double click" or by accessing its details. Now click on "New" and select "RDS Platform RemoteAPP".




A name and the execution path of the application will be entered:

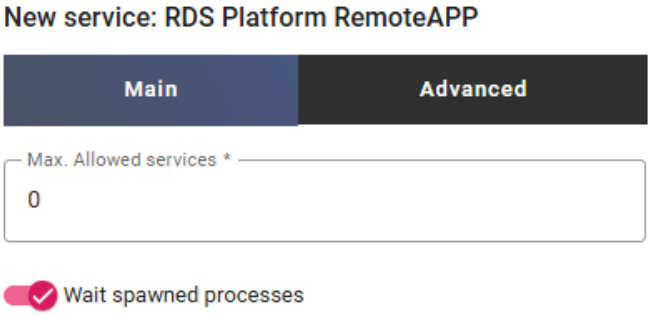



In addition, other parameters can be defined if desired:

- **Application Parameters**: Parameters can be passed to any application in this field to customize its execution (e.g., to a browser-type application, a homepage).
- **Start Path**: The path where the application will run.

In the Advanced section we can also indicate:

- **Max. Allowed services**: Maximum number of concurrent sessions that can be launched from the application (0 = unlimited).
- **Wait spawned processes**: If enabled, the detection of the app's end-of-use will be conditioned by the child apps that the parent app calls. It is recommended that you enable this option when a user is not using the app correctly.




## 4.2. Authentication Method

The way in which users will access the UDS Enterprise environment will be created and configured.

This step will be done in the "**authenticators**" tab, being able to choose between different authentication systems.

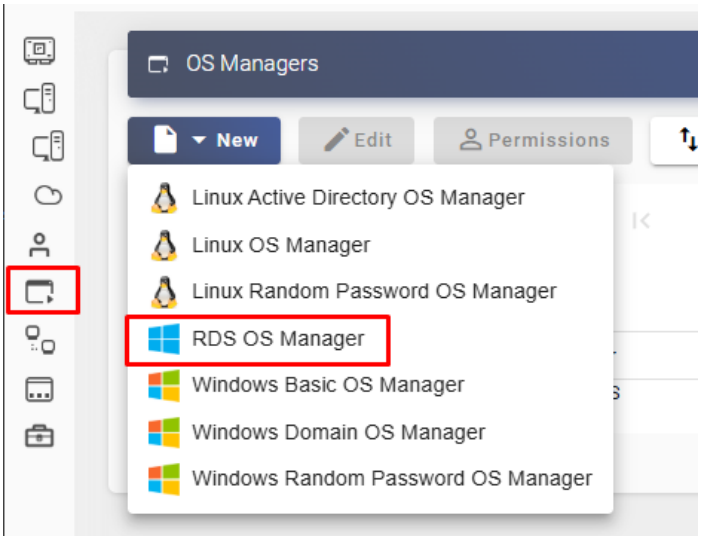
**NOTE: We must take into account the way in which our users will log in to UDS Enterprise, since in this case if the users who access UDS Enterprise do not do so through the AD to which the RDS server belongs, we must indicate in the service the mapping of users so that they are those with whom the application is accessed.**

This example will use an Active Directory-based authentication system.

For more information on how to register an authentication system, you can consult the "UDS Enterprise Administration Manual" in the documentation section.

## 4.3. OS Manager

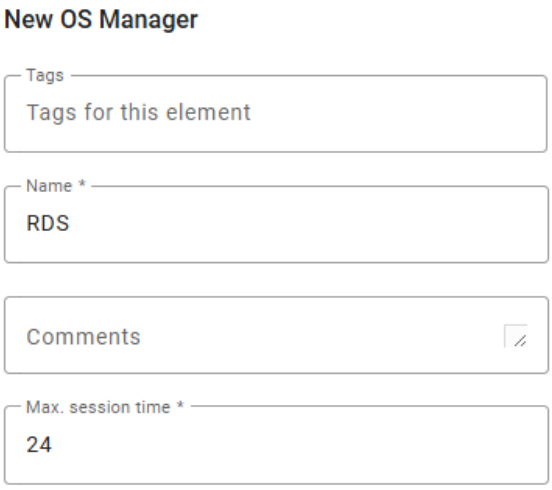
Within the "**OS Manager**" tab, clicking on "**New**" will select "**RDS OS Manager**".




In this type of OS Manager we will define the following parameters:

**Name:** Name of the "OS Manager".

**Max. session time:** Maximum time that the session of an application registered in UDS Enterprise will remain. Expressed in hours (0 = unlimited).



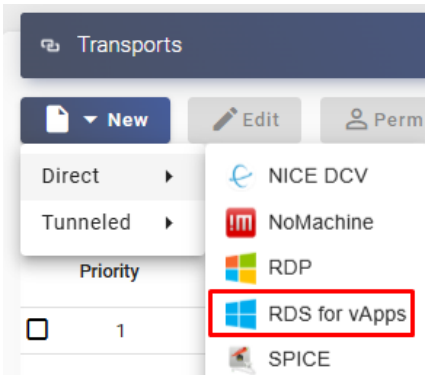
## 4.4. Transport

The way in which users will connect to your virtual application service will be created and configured.

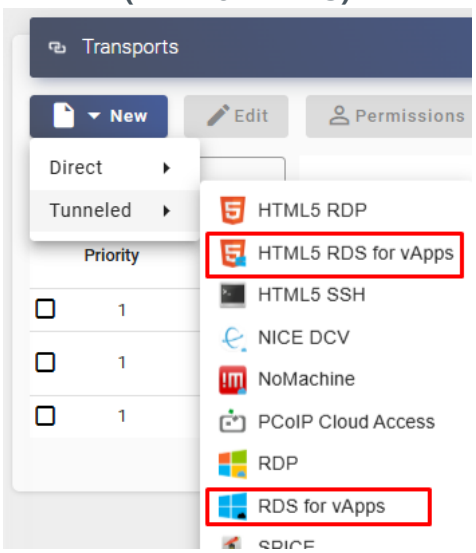
In the "**Connectivity > Transport**" tab, click on "**New**".

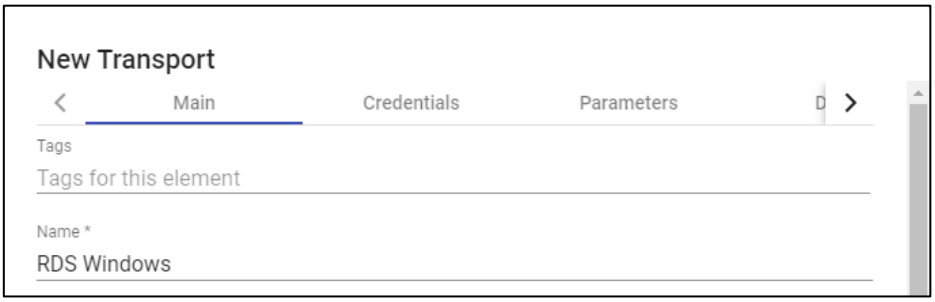
The appropriate transport will be configured for each case:

**Direct Connection (LAN)**




**Tunneled Connection (WAN o HTML5)**



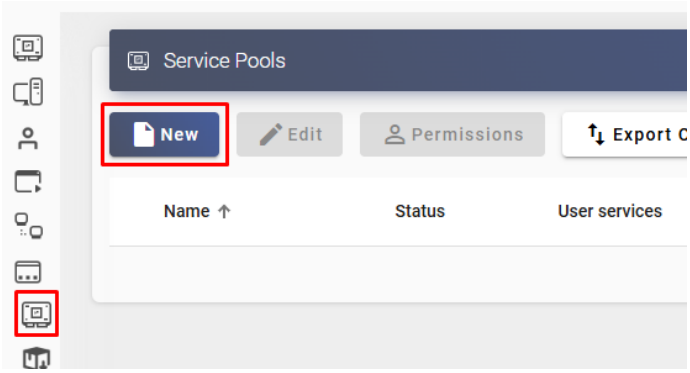

In this example, we'll use the "**RDS for vAPPs**" direct transport

For more information on how to create a transport for RDS applications, you can consult the "UDS Enterprise Administration Manual" in the documentation section.

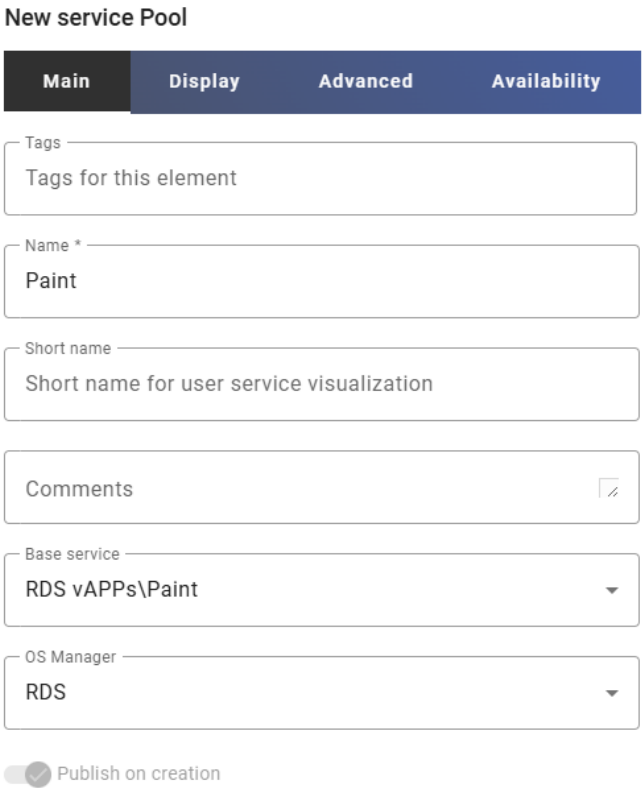
## 4.5. Service Pool

Once we have completed the previous steps and have all the necessary elements available, we will move on to configure the Service Pool.

In the "**Pools > Service Pool**" tab, click on "**New**".

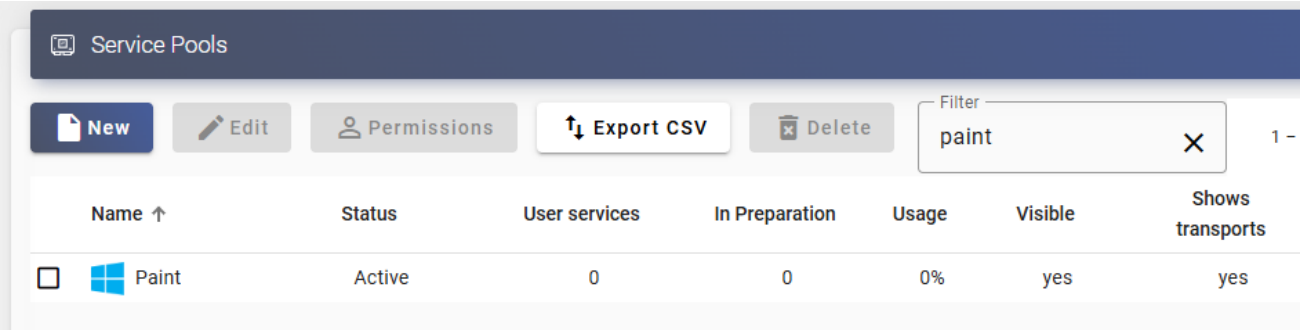



A descriptive name will be entered for the application to be published, the base service and its OS Manager.



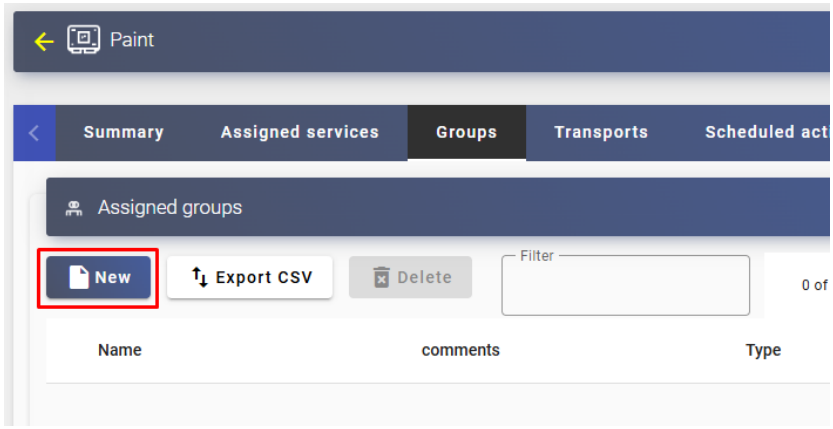

In the following tabs, among other things, we can indicate an image and grouping for the service, advanced permissions so that the user can perform actions, etc. For more information on the rest of the options of a service pool, you can consult the "UDS Enterprise Administration Manual" in the documentation section.

We save and we will have available the pool of services to assign who and how will access.




Once we have created the service, we will enter it (by double-clicking on it or entering its details) to assign user groups and transports:

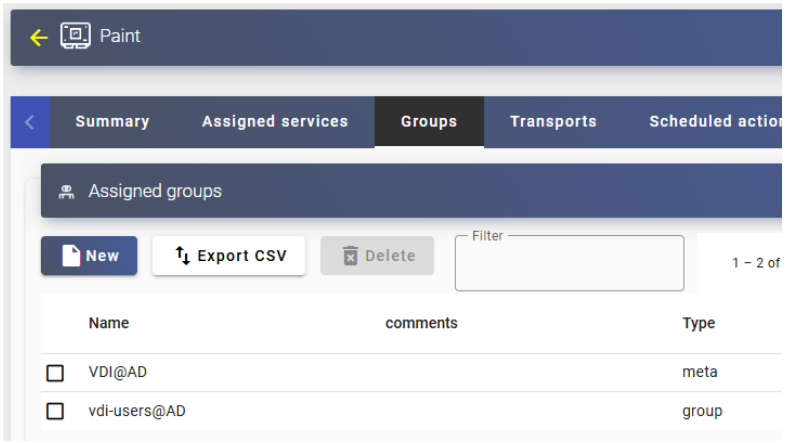
- **User groups:** In the "Groups" tab, click on "New", select an authenticator and a group and add it



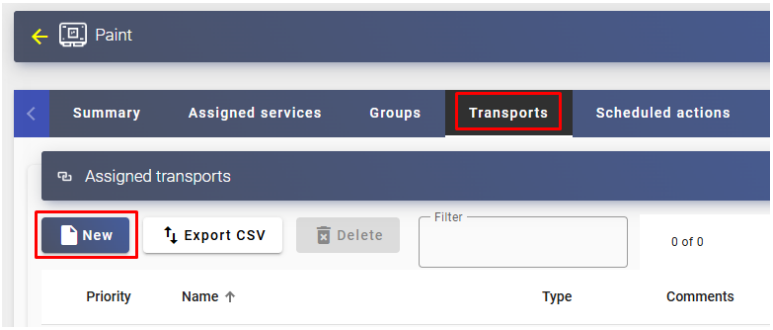


We will be able to add all the authenticators and groups that we need to access the application.

If you add non-Active Directory authenticators, you will need to have the user mapping option available from the service provider configured.

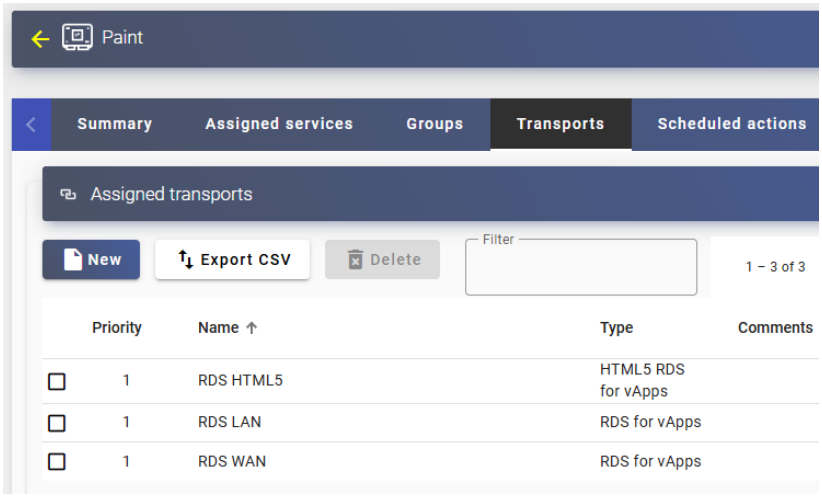



- **Transport:** In the "Transports" tab, click on "New", select a transport by which the service will be accessible.





We will be able to add all the transports we need, depending on the access mode required by the service (either via RDS for vAPPs, HTML5, etc...). Although we indicate a multitude of transports here, it is possible that the user will only be shown the appropriate ones based on their filtering policies (by IP source, device, etc...).

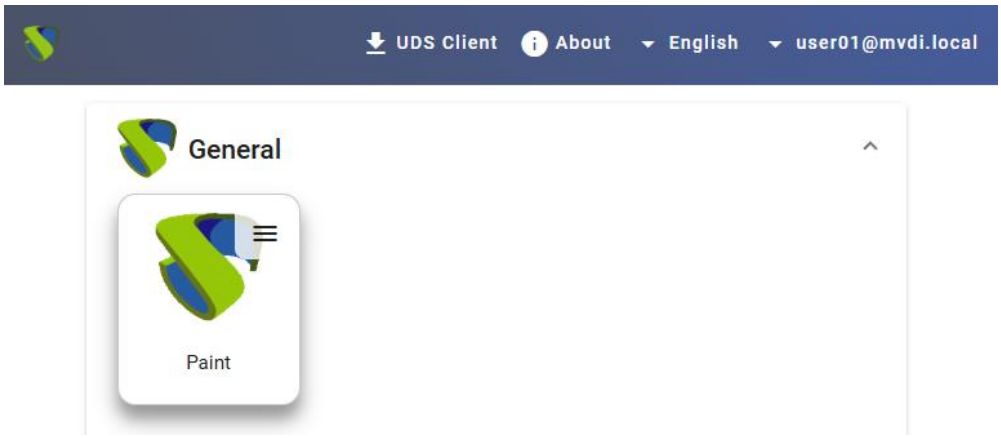


## 5. Access to Windows apps

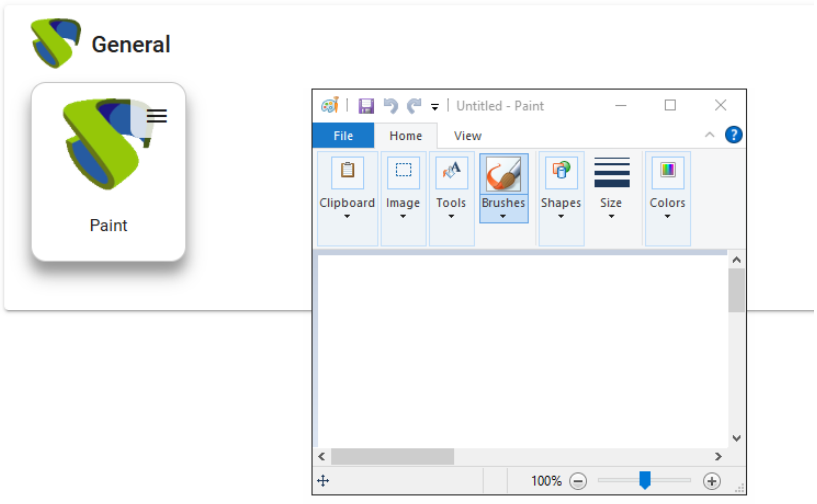
Once all the configuration is complete, access to the service will be possible. This access can be made from Windows OS (Server and Desktop) and from Linux OS through the UDS client and from any OS with a browser through the HTML5 connection mode.

We access the UDS Enterprise login portal and validate ourselves with an AD user integrated in UDS and who belongs to a group that is registered in said authenticator.

In the User Services window, you will be able to see the available service:

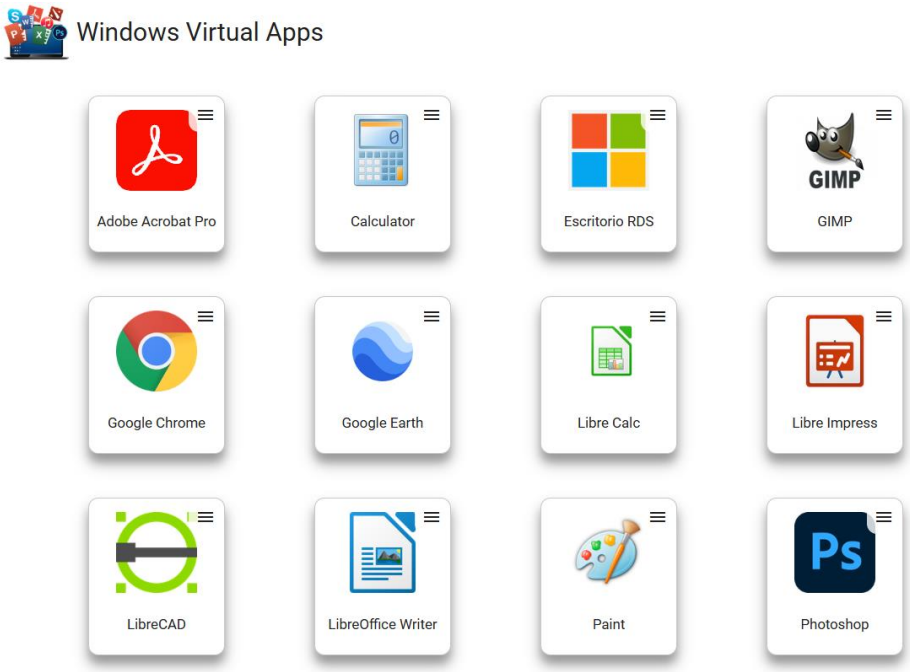



Depending on the configuration of the transport or via manual selection, it will be connected to the application.




**NOTE:** For the application to be visible to a user, it is necessary that it has been assigned a group to which the user belongs and has at least one mode of connection (transport), if these requirements are not met, the user will not be able to view said application.

A user can have unlimited applications available grouped in different ways based on their needs, it is also recommended to identify applications with their corresponding icon to make it easier for the user to identify.



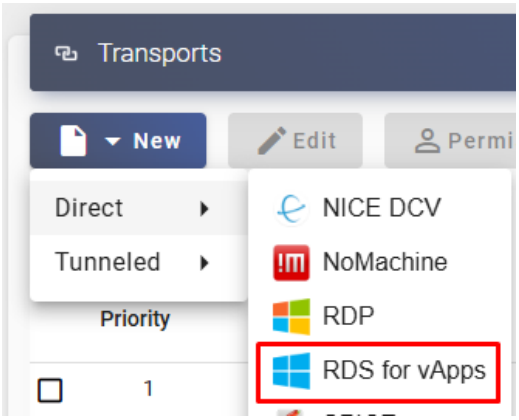
# 6. Different methods of accessing a vApp service

The same vApp service can be assigned one or more modes of access (transports), depending on the user's needs, for example, if it is connected from the corporate LAN or from an external network and depending on the OS of the device from which it is connected (Windows Linux, Android, etc...).

The transports must be previously defined and we will assign them to a specific application or we can use them generically for several applications.

## 6.1. Direct (LAN)

The direct transport that we can use for virtual application services is "RDS for vAPPs".

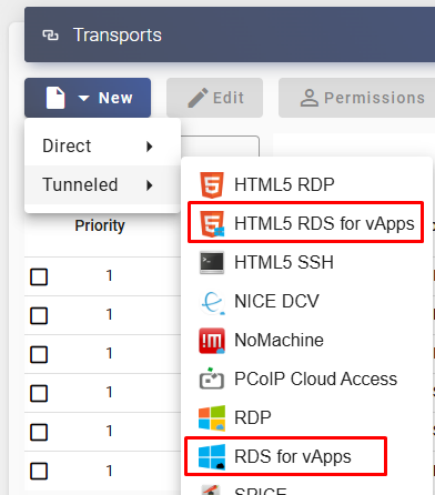



To successfully use this transport, the connecting client from which the user connects must meet the following requirements:

- Have the UDS Client component installed.
- Have a Windows or Linux OS.
- Have direct connectivity via port 3389 to the application servers that make up the RDS server pool.

## 6.2. Tunneling (LAN and WAN)

The tunneled transports that we can use for virtual application services will be "HTML5 RDS for vAPPs" and "RDS for vAPPs". Either of these two transports will require having a Tunnel server configured and registered with the UDS server.




- **HTML5 RDS for vAPPs:** This transport does not require the UDS Client component installed and its only requirement at the OS level of the connection client will be to have a current web browser. The app will be displayed directly in a browser tab.

  Within the "tunnel" tab of the transport, we must indicate a Tunnel server with the configured port that will be the one to which the user will connect. The address of this tunnel must be accessible by the user's connection client even if the access is from outside the LAN, in which case a previously configured public IP must be used.

- **RDS for vAPPs:** This transport requires the UDS Client component installed and the OS of the connection client to be Windows or Linux.

  Within the "tunnel" tab of the transport, we must indicate a Tunnel server with the configured port that will be the one to which the user will connect. The address of this tunnel must be accessible by the user's connection client even if the access is from outside the LAN, in which case a previously configured public IP must be used.

## 7. About Virtual Cable

UDS Enterprise is a new software concept to create a **fully** customized **workplace virtualization** platform. It provides **24x7 secure access**, from anywhere and on any **device** to all the applications and software of an organization or educational center.

It allows virtualization **of Windows** and **Linux** desktops **and** applications **in a single console**, as well as **remote access** to Windows, Linux and macOS computers. Its Open Source base guarantees **compatibility with any** third-party technology. It can be deployed **on-premise**, in public, private, hybrid or **multicloud** cloud. Even **combine** multiple environments at the same time and perform **automatic, intelligent overflows** to optimize performance and efficiency. All with a **single subscription**.

Virtual Cable is a company specialized in the **digital transformation** of the **workplace**. The company develops, supports and markets UDS Enterprise. It has recently been recognized as an ***IDC Innovator in Virtual Client Computing*** worldwide Its team of experts has designed **smart digital workplace solutions (VDI, vApp and remote access to physical computers)** tailored to **each sector** to provide a unique user experience fully adapted to the needs of each user profile. Virtual Cable's professionals have **more than 30 years of experience** in IT and software development and more than 15 years in virtualization technologies. Every day, **millions of Windows and Linux virtual desktops are deployed with UDS Enterprise around the world**.