REMOTE DESKTOP WEB PORTAL AND GATEWAY

Remote Desktop Web portal and Gateway

Remote Desktop Services Windows RDWeb RDGateway NPS

How To Configure MS Remote Desktop Services and RDWeb portal with OpenOTP

Note

OpenOTP plugin for Remote Desktop Web portal works on Windows Server 2012, 2016, 2019 & 2022.

1. Prerequisites

1.1 Remote Desktop Services Infrastructure

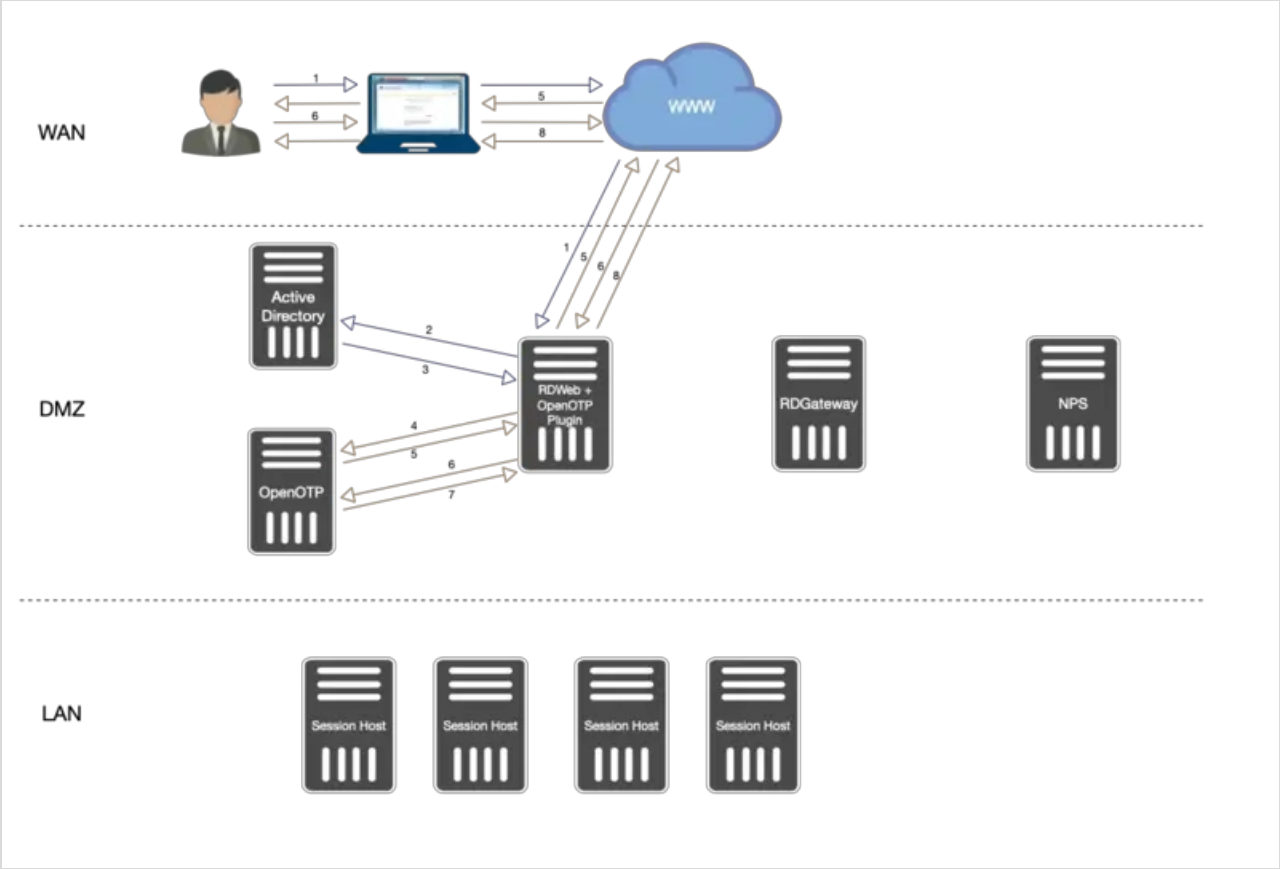
In this post, we will assume an existing Remote Desktop Services infrastructure installed and available. This post will not cover how to set up RDS. Please refer to the Microsoft documentation and/or the TechNet blog for details about how to install and configured Microsoft documentation.

1.2 WebADM/OpenOTP/Radius Bridge

For this recipe, you will need to have WebADM/OpenOTP installed and configured. If you would like to have Push Login Mode then Radius Bridge needs to be configured. Please, refer to WebADM Installation Guide, WebADM Manual and Radius Bridge to do it.

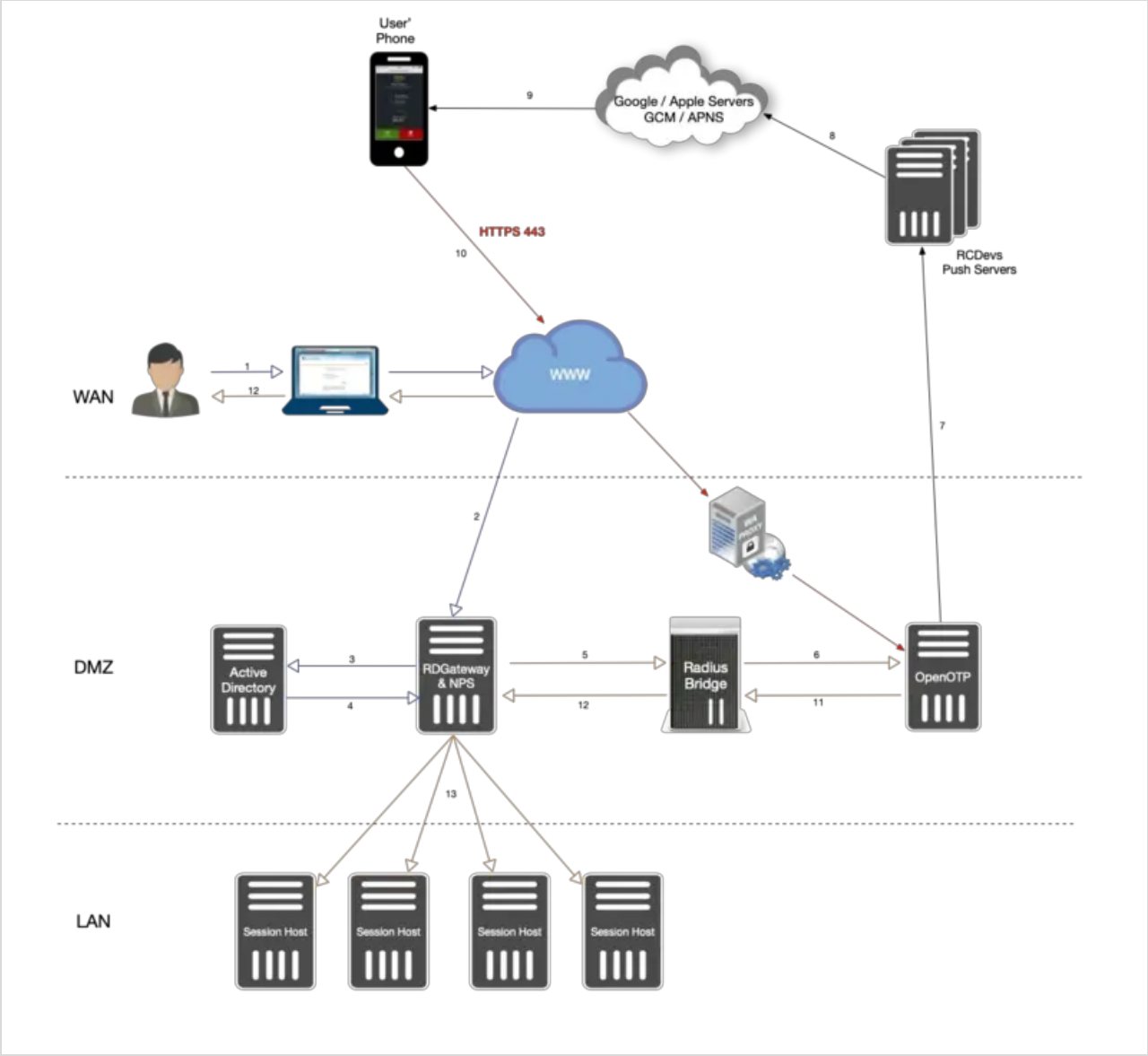
2. How to Secure RDWeb Access with OpenOTP

2.1 RDWeb Authentication Workflow (Challenge Mode)



1. **User Access to RDWeb login page, provide Username/Password. Credentials are sent to Kerberos.**
2. **Credentials are validated between RDWeb and Kerberos services.**
3. **If credentials are correct then a Kerberos ticket is provided to RDWeb for this user.**
4. **Once the first validation with Kerberos is ok, an OpenOTP login request is sent from the OpenOTP RDWeb Plugin installed on RDWeb server to OpenOTP server.**
5. **If LDAP Credentials are validated by OpenOTP server, then a challenge request is sent by OpenOTP to the RDWeb and will allow the user to provide the OTP.**
6. **The user is prompted to enter his OTP. The OTP is sent back to the OpenOTP server through the OpenOTP RDWeb plugin.**
7. **OpenOTP validates the OTP provided by the User.**
8. **If the OTP is validated by OpenOTP server then the authentication is a success.**
9. **The user has logged on the RDWeb interface and is able to download RDP files.**

2.2 RDWeb Authentication Workflow (Push Login Mode)



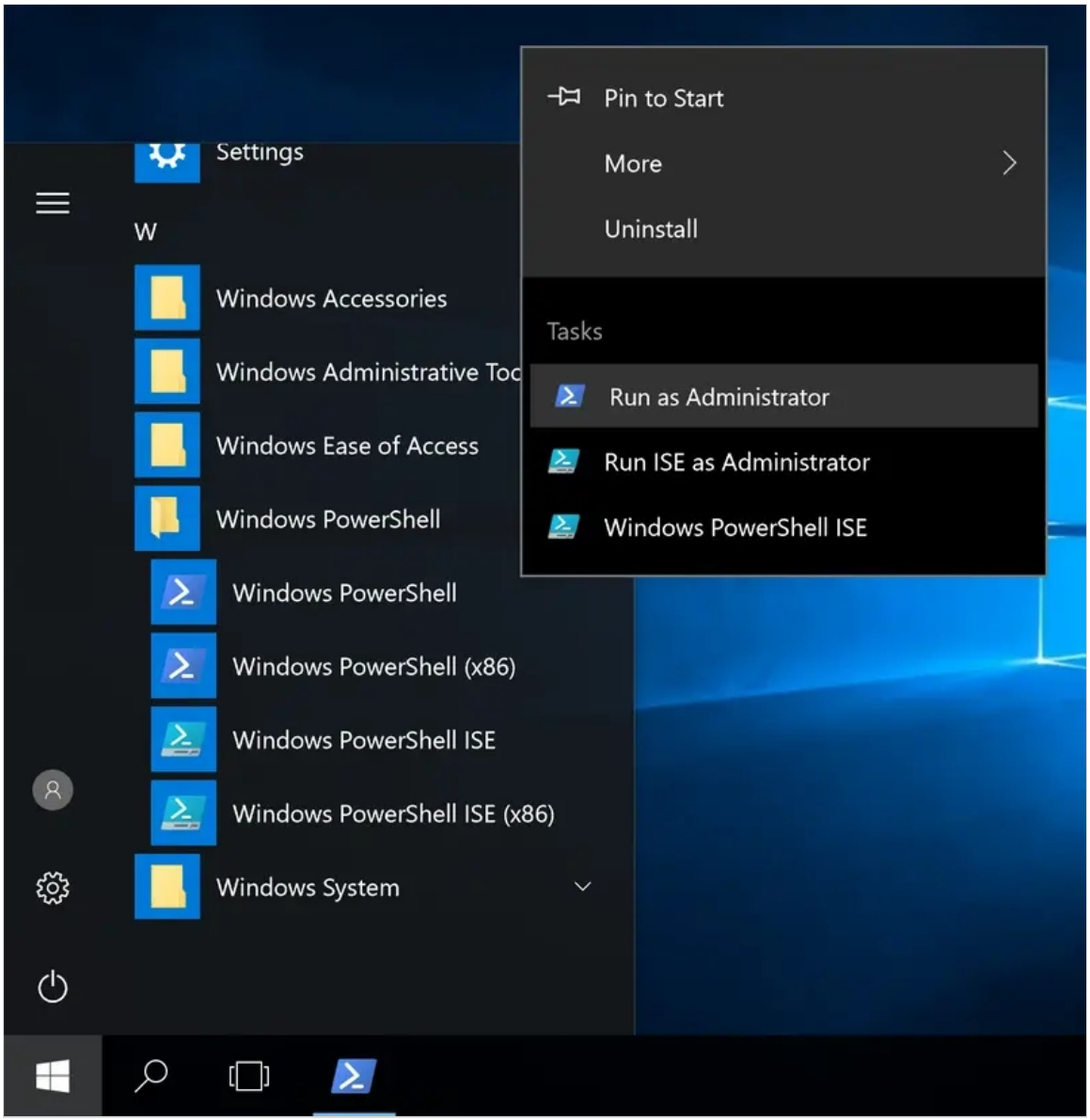
1. **The user initiates an RDP session with an RDP file previously downloaded from the RDWeb server.**
2. **The RDP connection start through the RDP client. The RDP client contacts the RDGateway. The RDGateway communicate with NPS to check users policies and resources allowed for this user.**
3. **At this step, the first validation with Kerberos is in progress.**
4. **A Kerberos ticket is created for this user and send back to NPS.**
5. **NPS act as a PROXY RADIUS too. Once NPS has received the Kerberos validation, a RADIUS *Access-Request* is sent to Radius Bridge by NPS.**
6. **The Radius *Access-Request* is translated into a SOAP *Login request* by Radius Bridge product to be managed by OpenOTP server. OpenOTP will validate LDAP credentials and send a push login request to the user' mobile.**
7. **If LDAP Credentials are validated by OpenOTP server, then a push login request is sent RCDevs Push servers.**
8. **RCDevs Push Servers communicate with Google/Apple Push services.**
9. **Google/Apple services. send the push notification on the user's mobile OpenOTP.**
10. **The user receives the push login request on his phone and has to Accept or Reject the login attempt.**

11. **The response from the mobile is sent to WAProxy server and WAProxy forward the mobile response to OpenOTP server.**
12. **OpenOTP manages the response and accept or reject the login attempt according to the mobile response.**
13. **OpenOTP sends a *SOAP access accept* request to Radius Bridge.**
14. **Radius Bridge translates the SOAP request into a RADIUS request. The response is sent to NPS. NPS receives the authorization from the RADIUS server to allow the connection for this user. The user is successfully authenticated in 2FA.**
15. **RDGateway allows the user to access to Session Hosts according to policies configured on NPS for this user and resources allowed.**

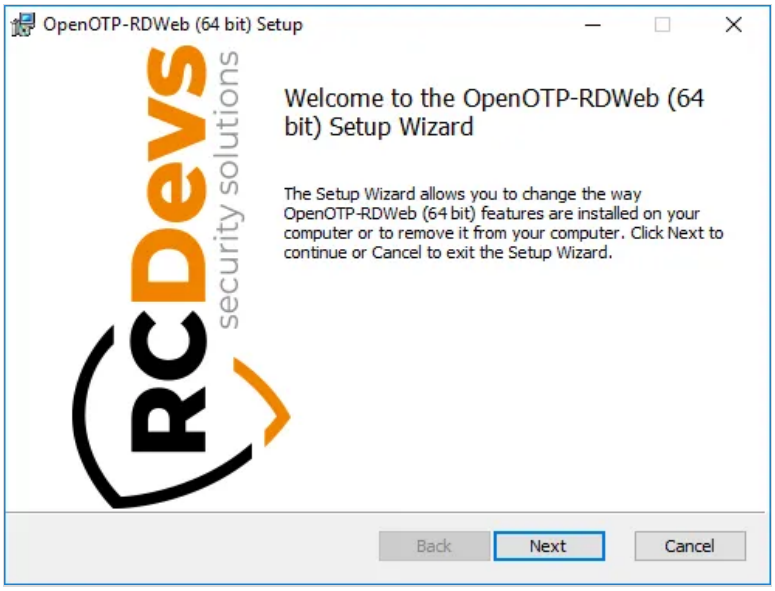
3. OpenOTP Plugin for RDWeb Installation

OpenOTP plugin for Microsoft RDS has to be installed on every RDWeb servers you have. You have to download the plugin on RCDevs Website at the following links OpenOTP Plugin for RDWeb Gateway.

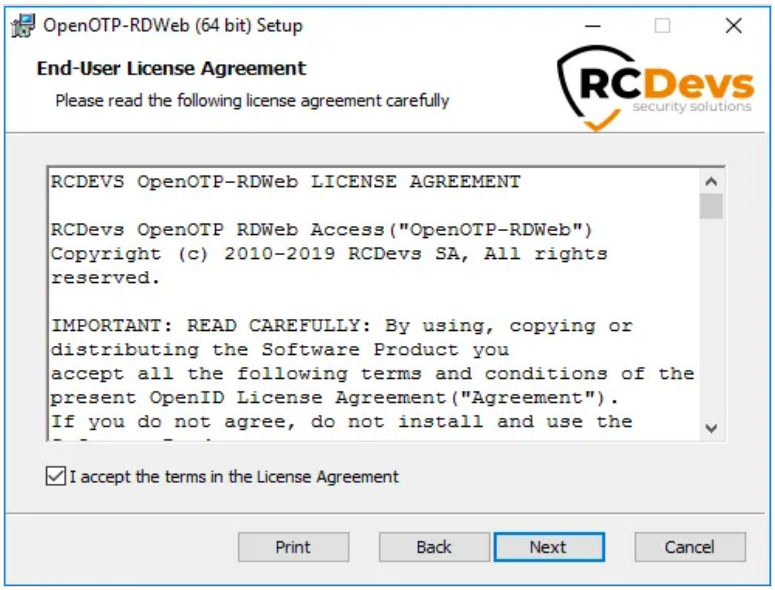
> ⚠ Note
>
> Administrative/elevated permissions are necessary on any workstation to correctly set up and/or change the OpenOTP Plugin for RDWeb's configuration. Please, run the Windows PowerShell as Administrator. Right click on the Windows PowerShell then select Run as Administrator.



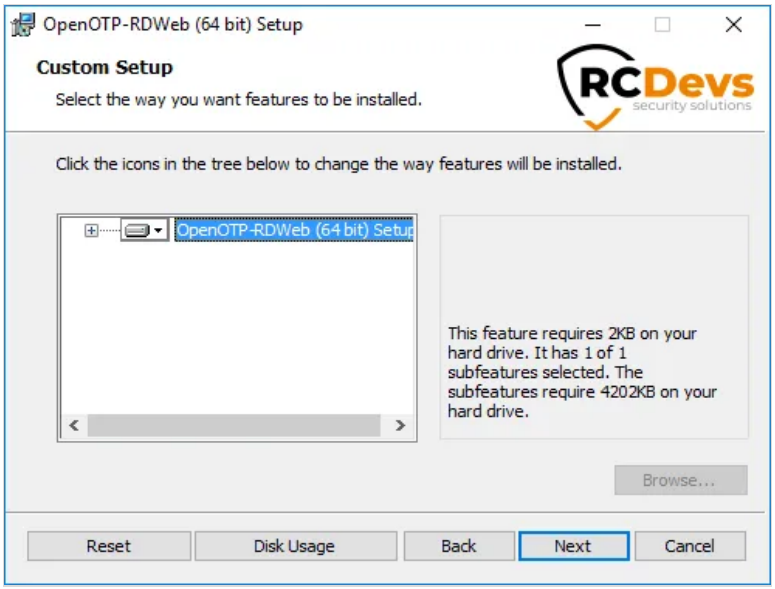
Extract files from the archive on your RDS server(s), run the MSI file in the Windows PowerShell as Administrator and click on `Next`.



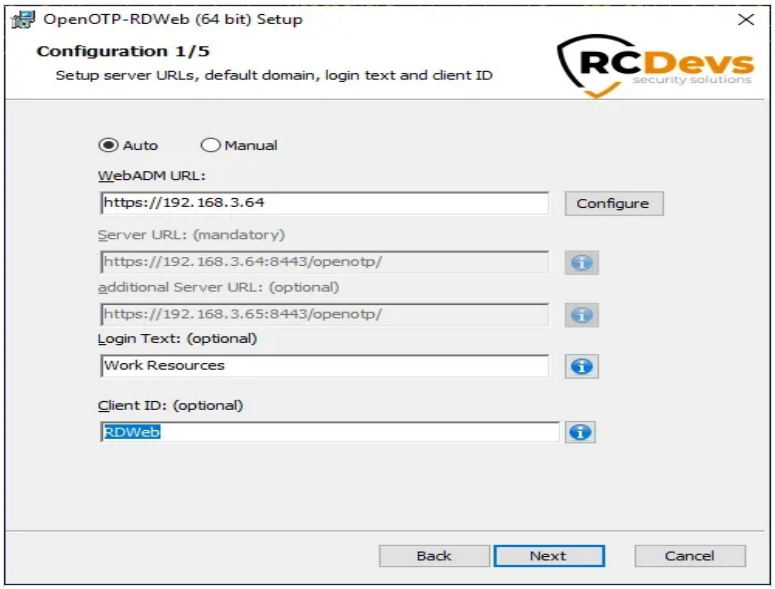
Accept the End-User License Agreement and click on `Next`.



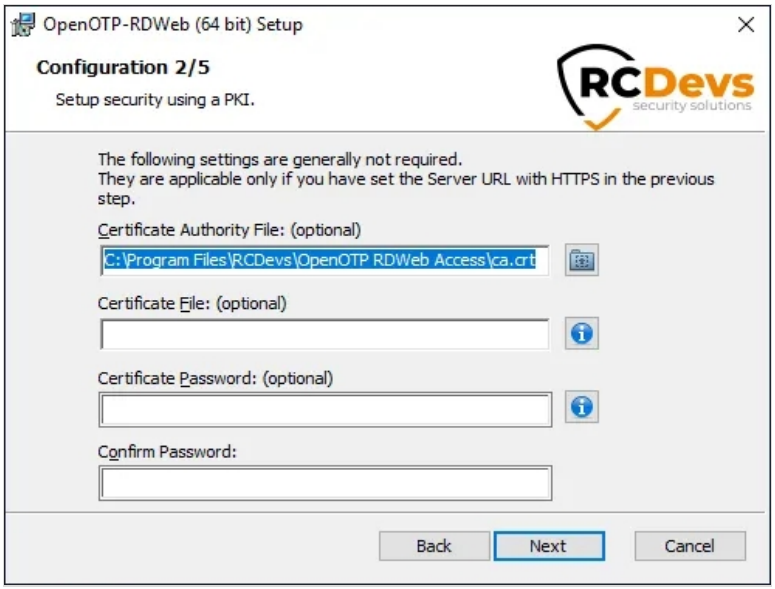
On the next page, choose your default folder location and click on `Next`.



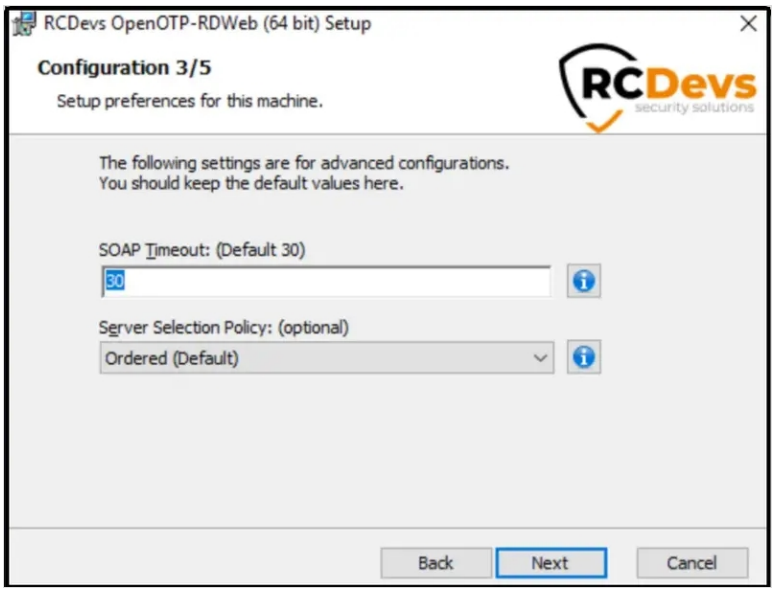
On this page, you have to configure one of your WebADM servers URL. If you are running a WebADM cluster, then both OpenOTP URLs should be automatically retrieve in the `Auto` mode. If your OpenOTP URL(s) can not be automatically retrieve, then configure URL(s) manually like below :



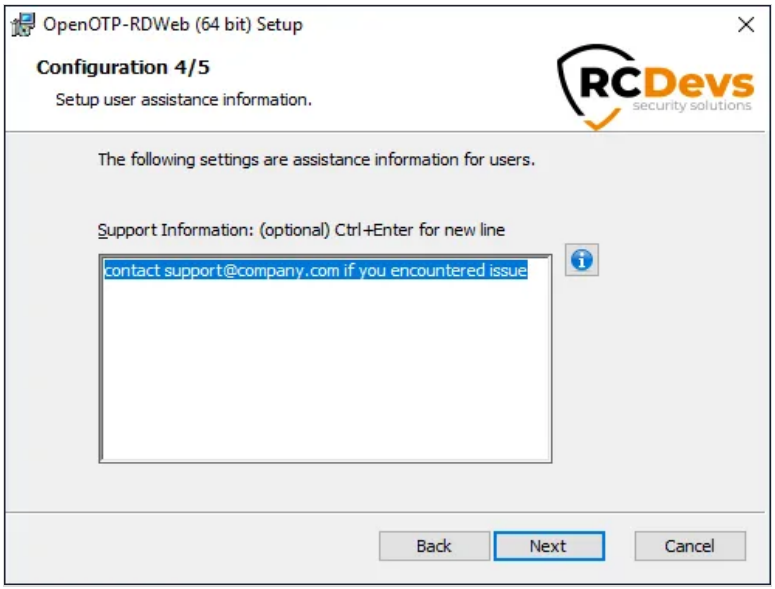
On the next page, the WebADM CA certificate is automatically retrieved and configured if you have chosen the `Auto` mode to return OpenOTP URL(s). Every other settings are optional. If you'd like to use a client certificate for enhanced security, please use this next screen to provide the detail. Clicking on the question marks (?) will provide additional help during the installation procedure.



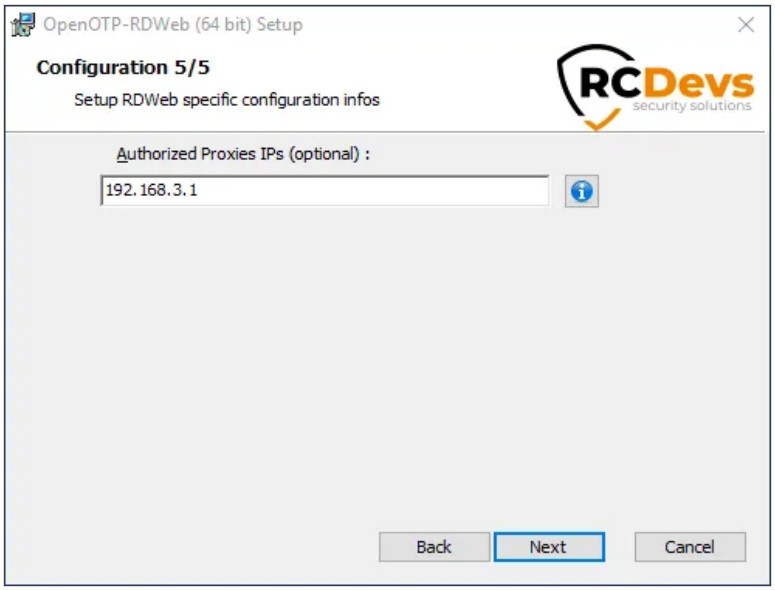
Click `Next` and the next page allows you to configure failover with OpenOTP, SOAP request timeout and UPN Mode. Keep the default configuration if you are not sure of what you need. Click on `Next`.



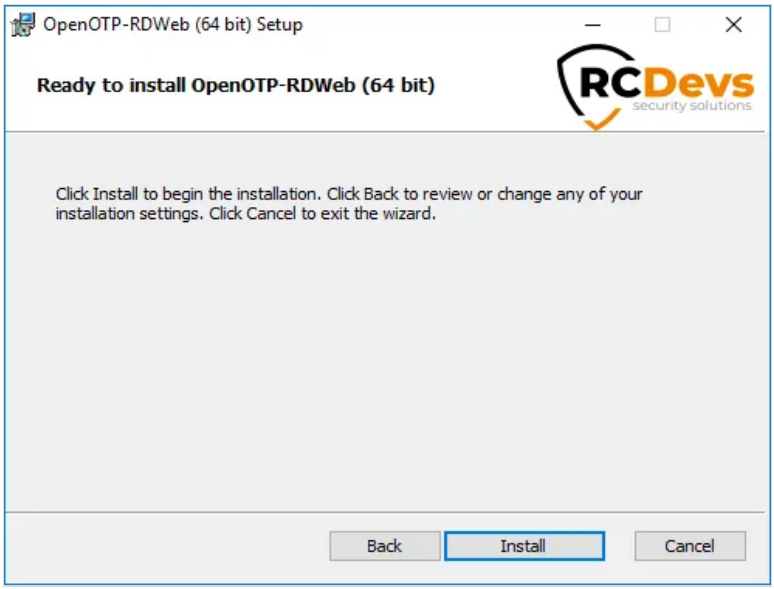
On the next page, you can configure a custom message when users need assistance.



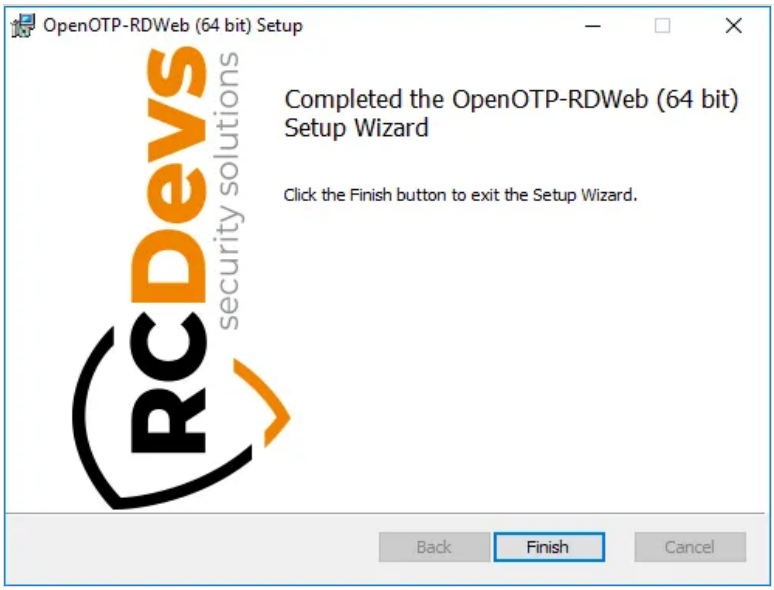
Click on `Next`. On that page, you can configure the reverse-proxy address(es) of your reverse-proxy if you are accessing RDWeb portal through a reverse-proxy. This is usefull for WebADM in order to know the real end-user IP in WebADM logs instead of the reverse-proxy IP(s). It is also usefull for WebADM if you want to use the `Per-Network Extra Policies` feature in your RDWeb client policy.



Click on `Next` and `Install`.



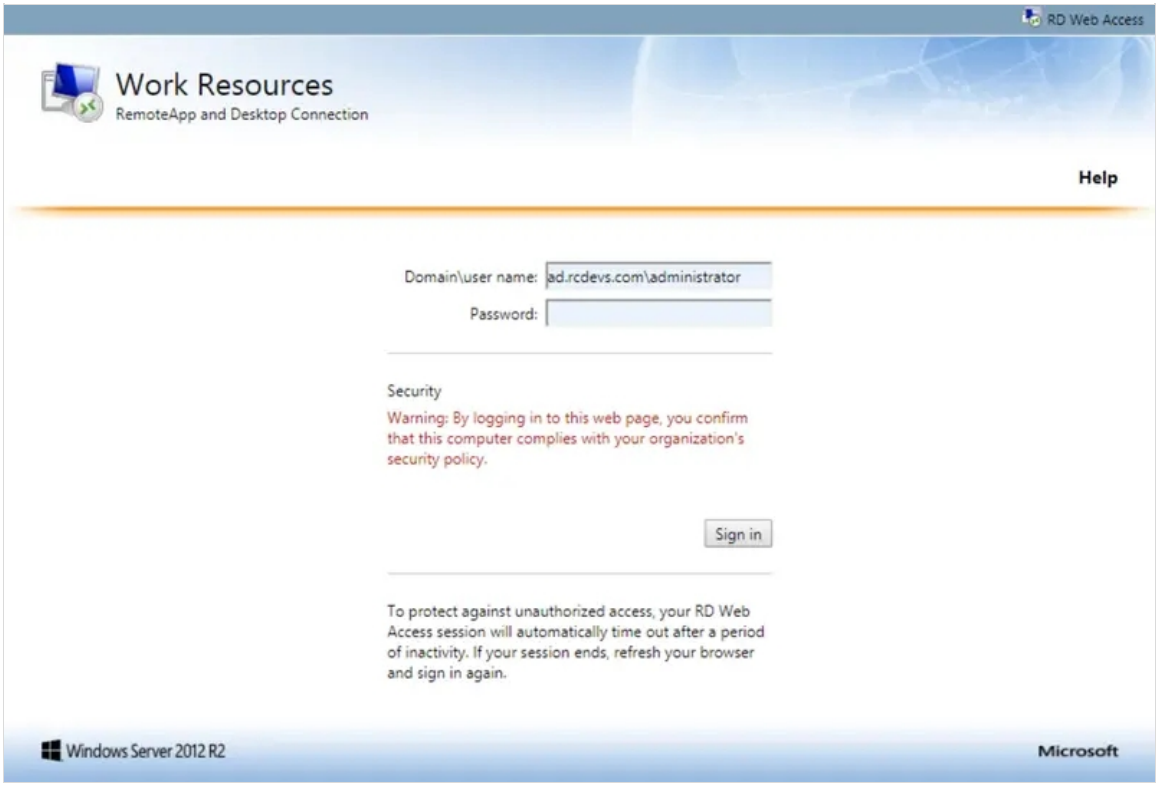
Installation is complete. Click on `Finish`.



⚠ Plugin Installation

Repeat this procedure on every RDWeb servers!

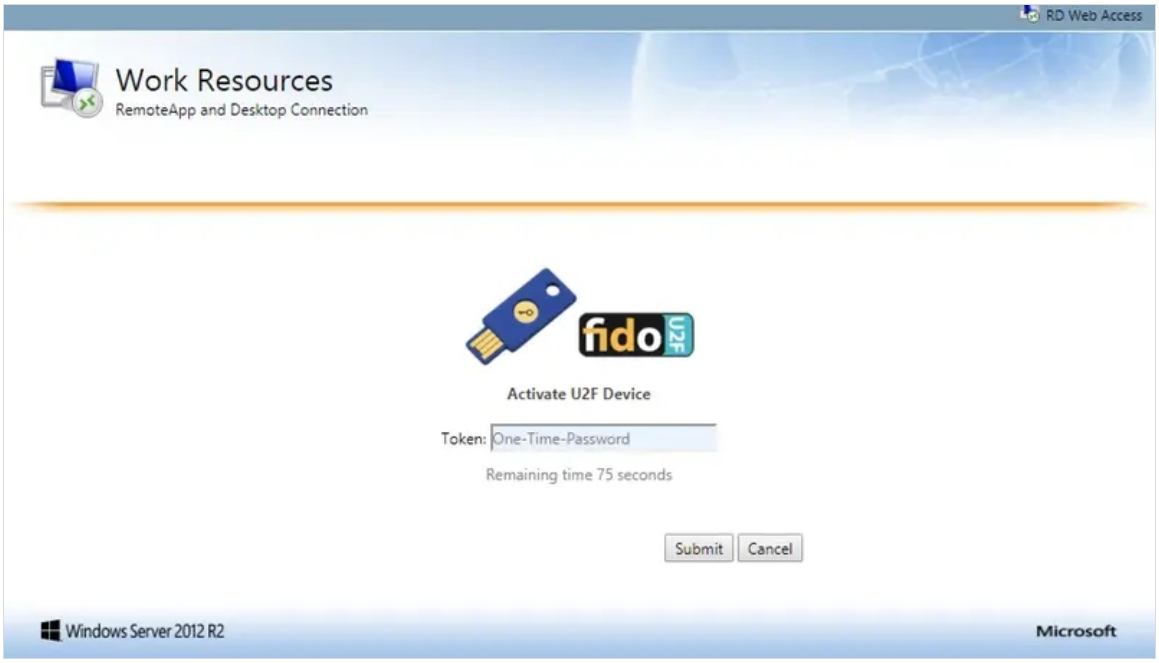
You are now able to log in on your RDWeb server with OpenOTP. Go to your RDWeb page and please enter your credentials:



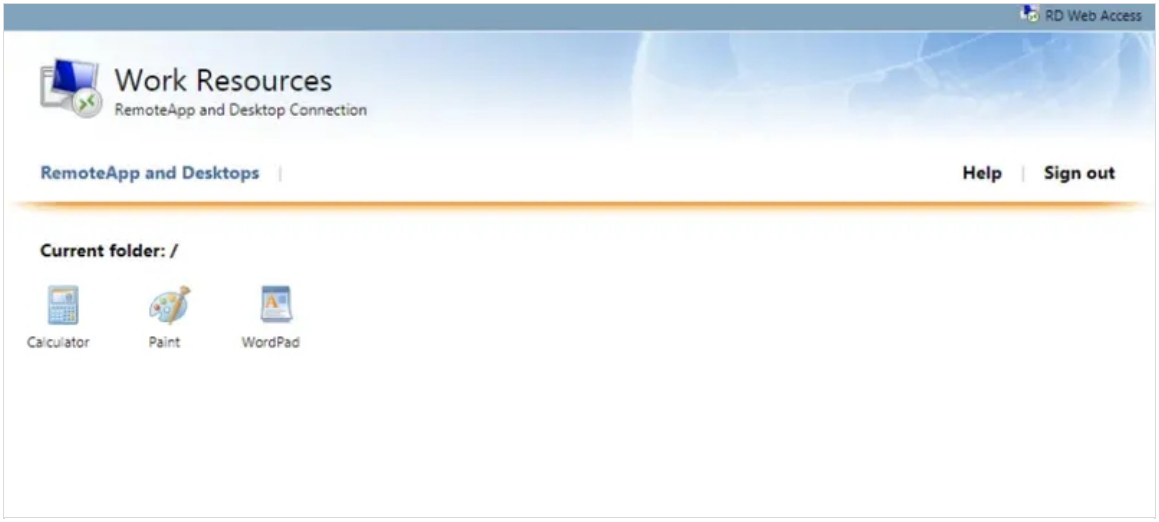
⚠ WebADM Authentication Policy

Here, WebADM is configured with the authentication policy LDAP + OTP but, LDAP credentials are not checked by WebADM/OpenOTP but by Windows. In any case, OpenOTP will only check the OTP password.

Enter your OTP password on the next screen and click on `Submit`.



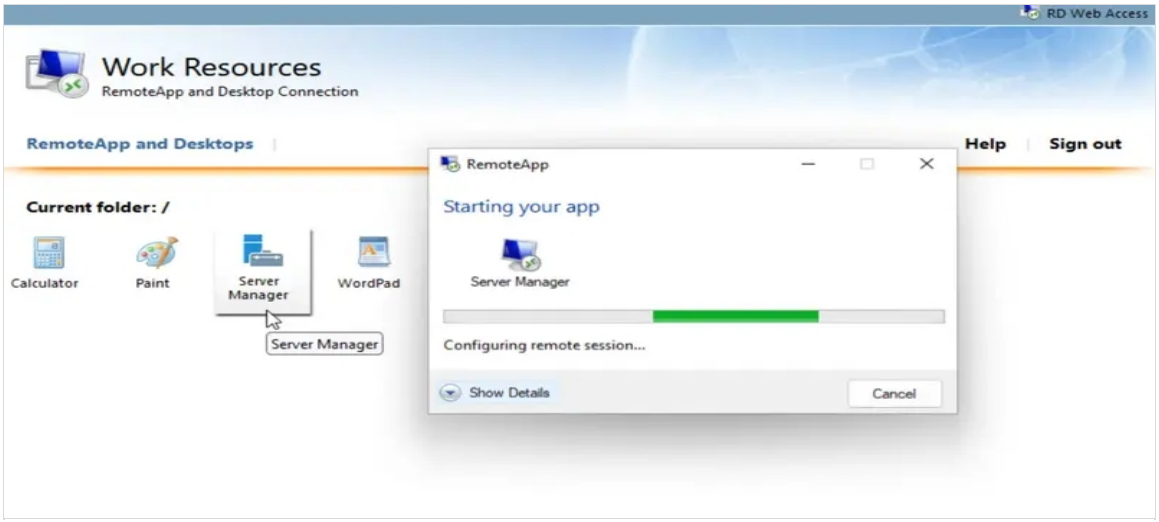
And you are logged on:

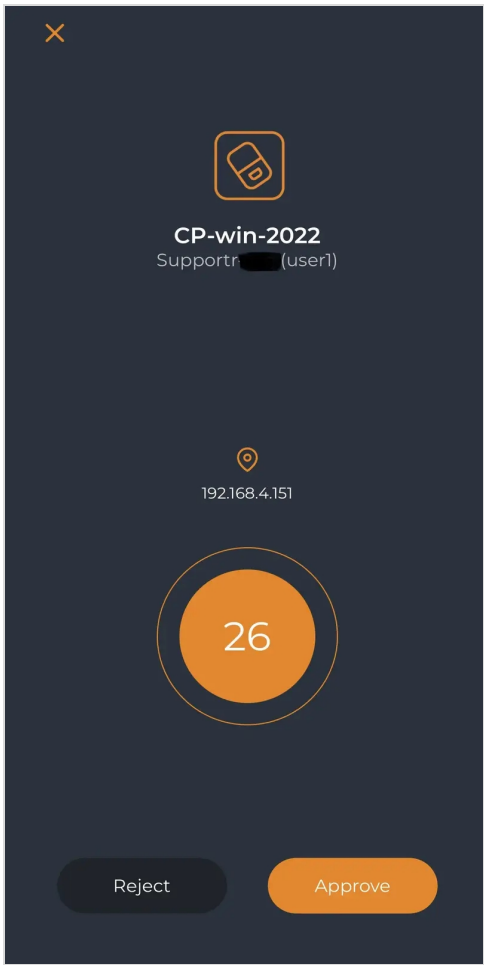


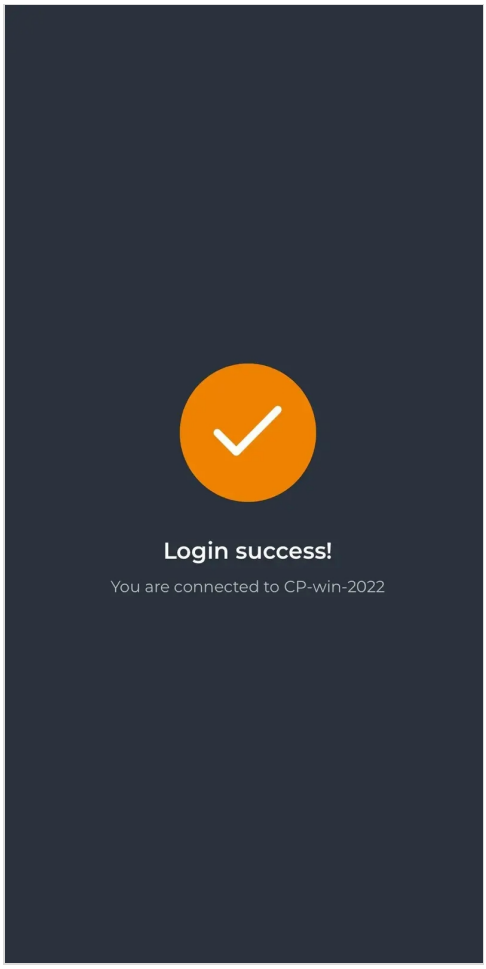
It's done for the RDWeb.

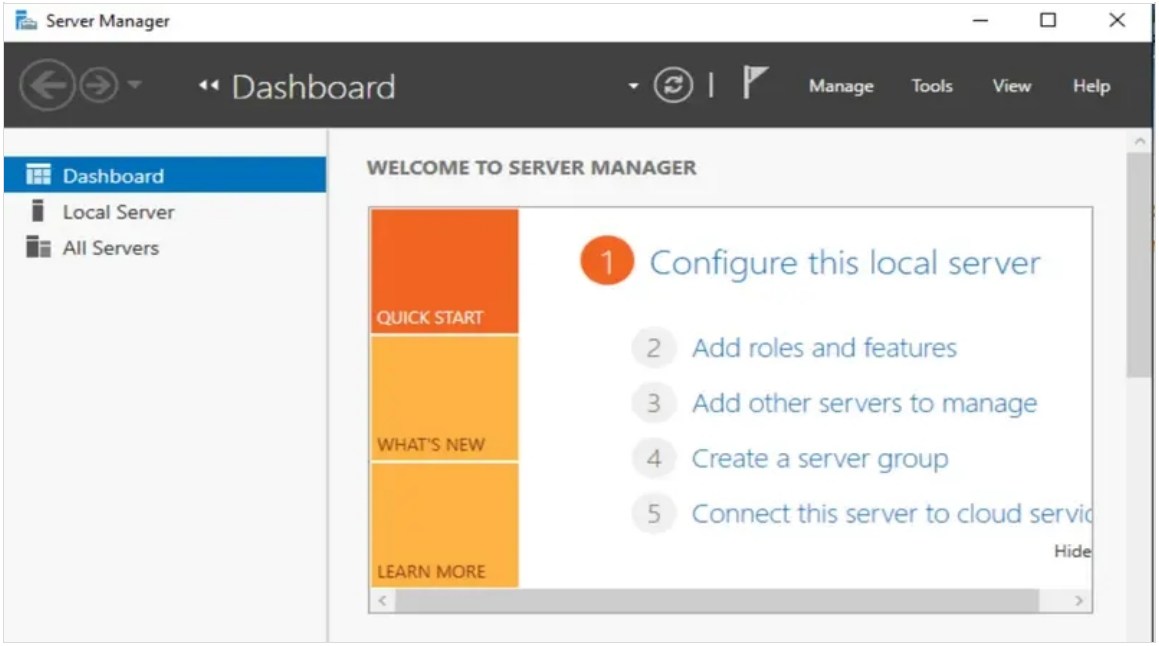
3.1 Enable MFA for the RDWeb Apps.

If you have Remote applications accessible through `RDWeb` portal, and you want to secure these applications access with `OpenOTP`, you have to install OpenOTP Plugin for Windows Login.


RD Web Access
Work Resources
RemoteApp and Desktop Connection
RemoteApp and Desktops
Help
Sign out
Current folder: /
Calculator
Paint
Server Manager
WordPad
Server Manager
RemoteApp
Starting your app
Server Manager
Configuring remote session...
Show Details
Cancel


CP-win-2022
Supportn [redacted] (user1)
192.168.4.151
26
Reject
Approve



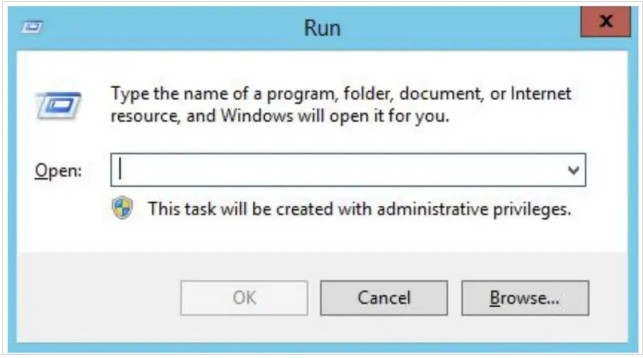


To enable `Multi-Factor Authentication (MFA)` for every connection, even if you close the published app, follow these steps:

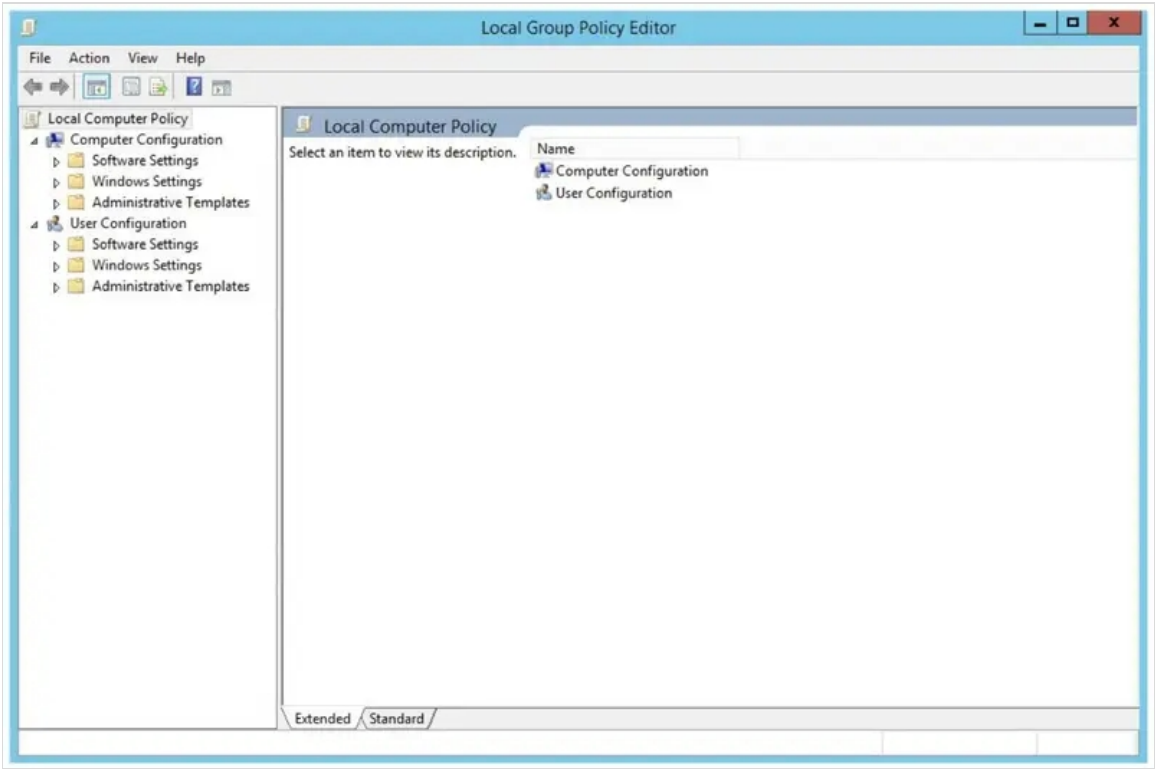
To ensure `MFA` is required for every connection, you need to activate the `set time limit for logoff of remoteapp sessions` option. This can be done under the host machine (Windows server).

Configuration Steps :

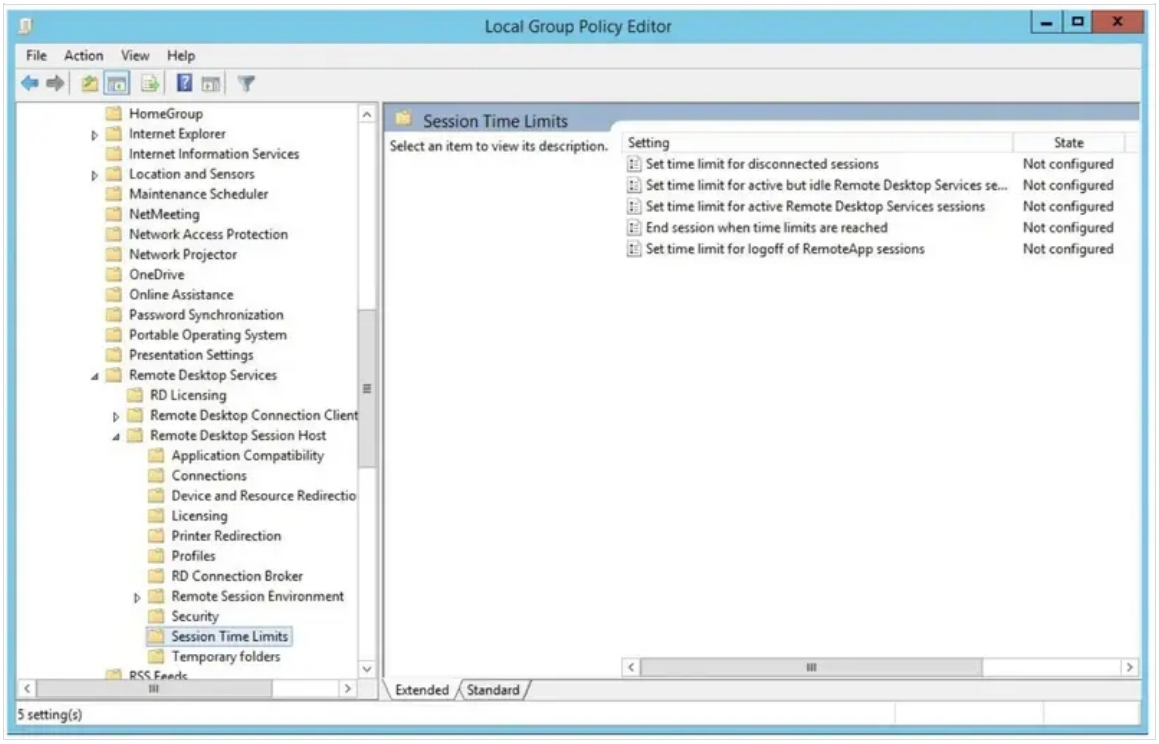
- Login with an administrator account, press “Window” + “R” to launch the “Run” window.



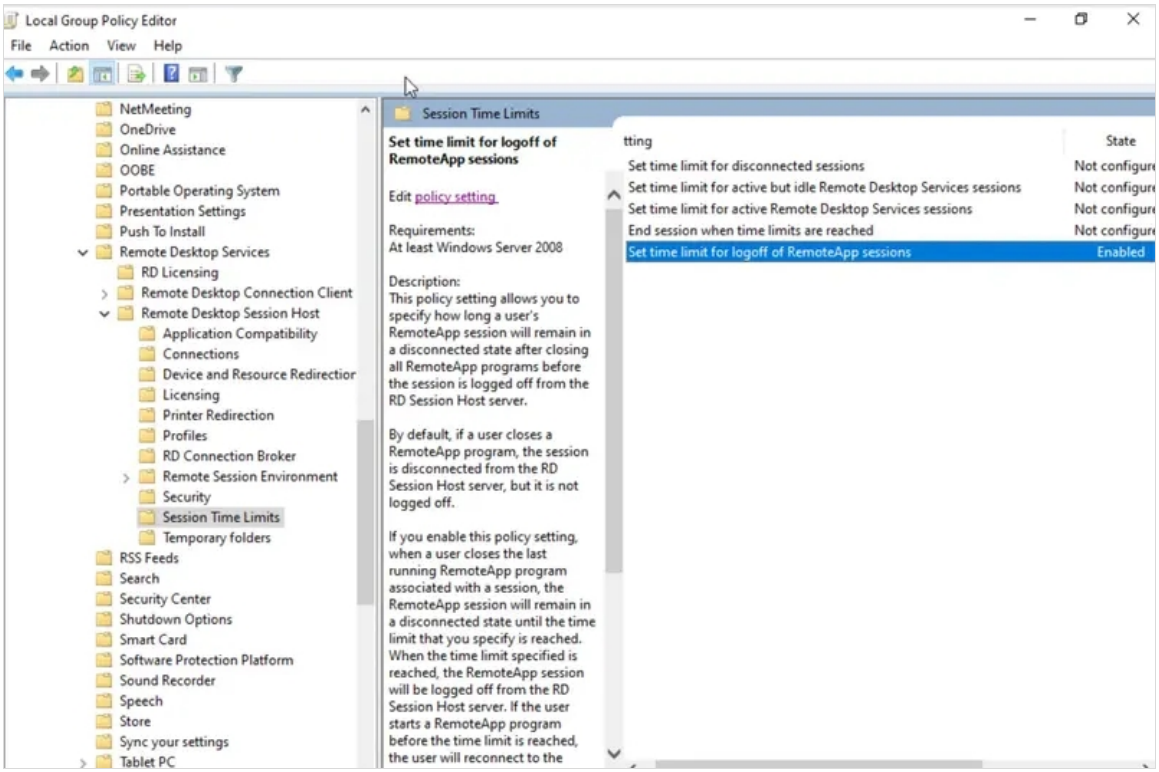
- Enter “gpedit.msc” and press “Enter” to enter the local group policy editor.



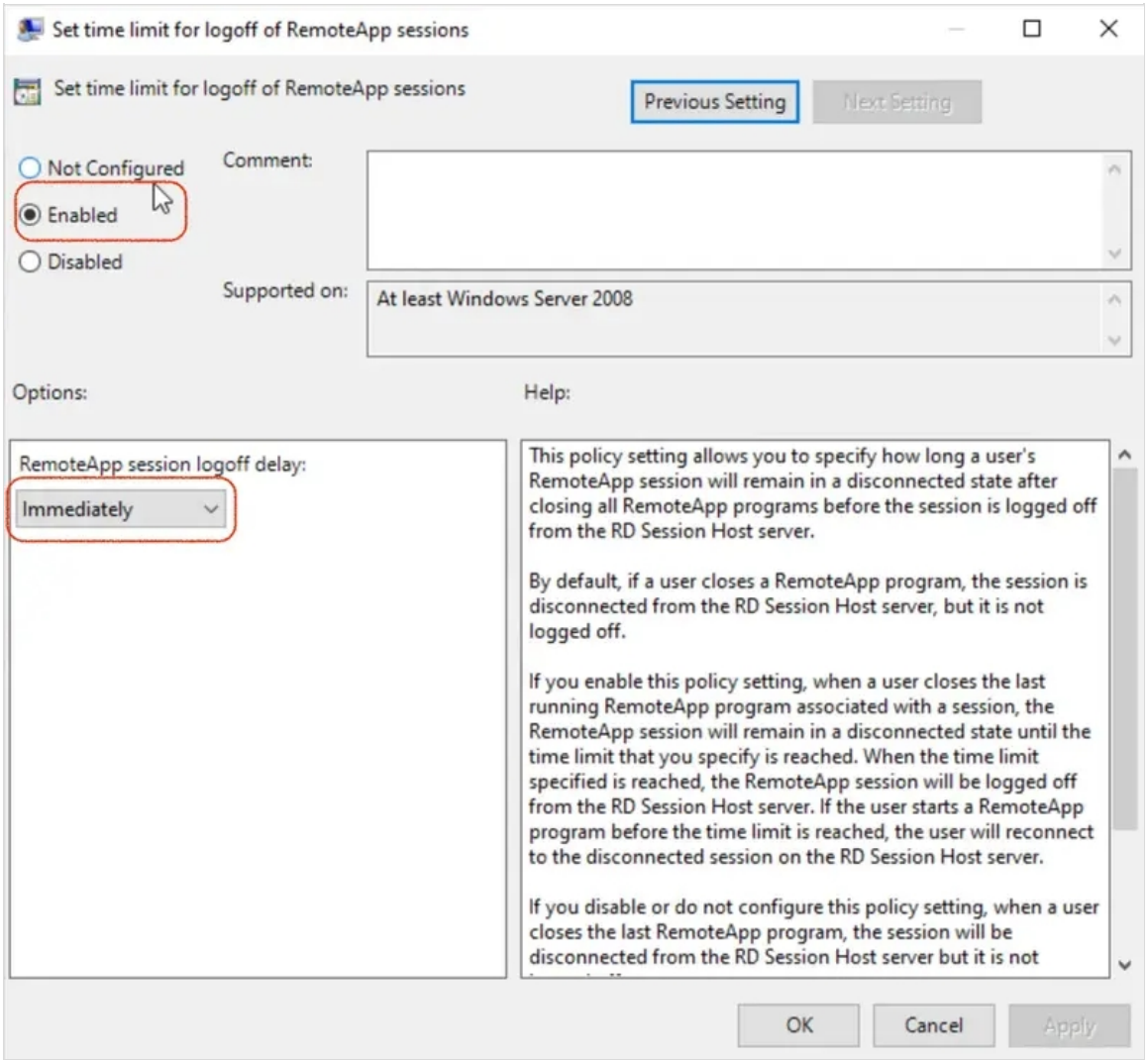
- Find ⊠ Computer Configurations-> Administrative Templates-> Windows Components-> Remote Desktop Services-> Remote Desktop Connection Host-> Session Time Limits.



› Select “Set Time Limit for Logoff of RemoteApp Sessions”, right click to select “Edit”.



› Select “Enabled”, and select a time at the options for “End a disconnected session”, and then click “OK” to apply the configurations.



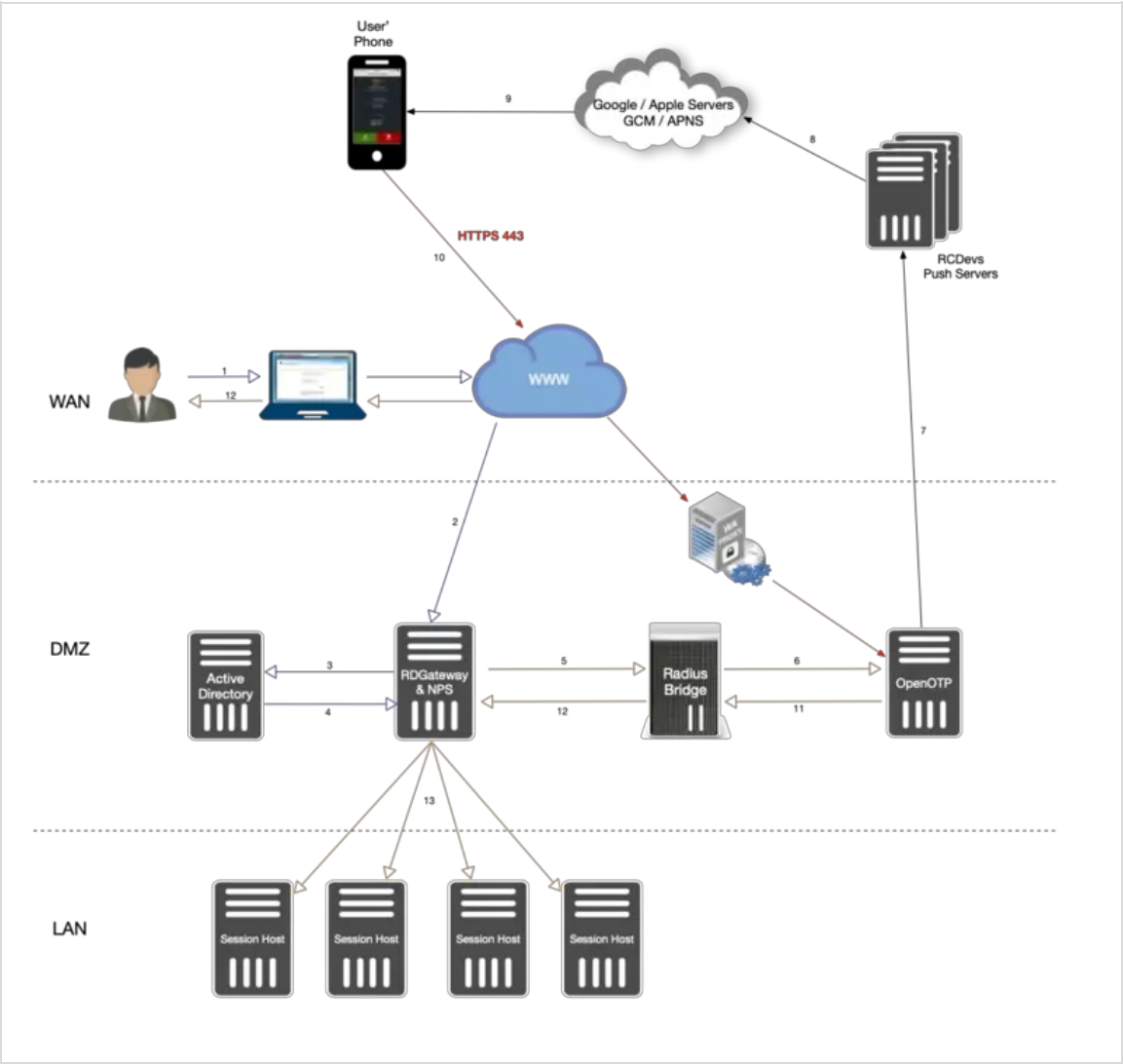
Now you can use the gpupdate /force command in PowerShell to forcibly update Group Policy.

4. How to configure RDGateway with NPS and OpenOTP over RADIUS

⚠ Push Login is mandatory in that scenario

The RDS scenario with NPS, OpenOTP and Radius Bridge can only work with the push login infrastructure. NPS didn't manage the RADIUS challenge, that's why it's mandatory to use the Push login.

4.1 Workflow



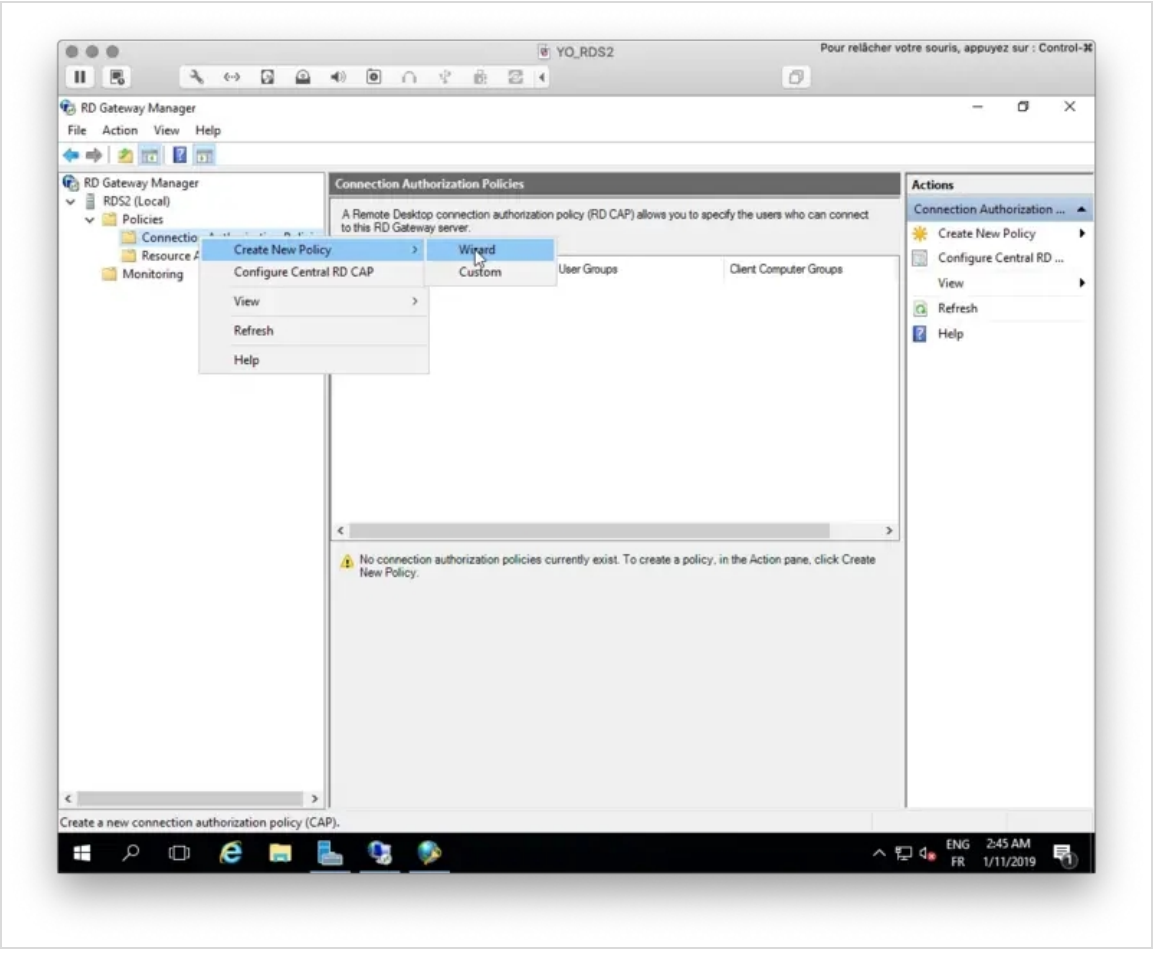
1. **The user initiates an RDP session with an RDP file previously downloaded from the RDWeb server.**
2. **The RDP connection starts through the RDP client. The RDP client contacts the RDGateway. The RDGateway communicate with NPS to check users policies and resources allowed for this user.**
3. **At this step, the first validation with Kerberos is in progress.**
4. **A Kerberos ticket is created for this user and send back to NPS.**
5. **NPS act as a PROXY RADIUS too. Once NPS has received the Kerberos validation, a RADIUS *Access-Request* is sent to Radius Bridge by NPS.**
6. **The Radius *Access-Request* is translated into a SOAP *Access request* by Radius Bridge product to be managed by OpenOTP server. OpenOTP will validate LDAP credentials and send a push login request to the user's mobile.**
7. **If LDAP Credentials are validated by OpenOTP server, then a push login request is sent RCDevs Push servers.**
8. **RCDevs Push Servers communicate with Google/Apple Push services.**
9. **The user receives the push login request on his phone and has to Accept or Reject the login attempt.**
10. **The response from the mobile is sent to WAProxy server and WAProxy forward the mobile response to OpenOTP server.**
11. **OpenOTP manages the response and accept or reject the login attempt according to the mobile response.**
12. **OpenOTP sends a « SOAP access accept » request to Radius Bridge.**

13. **Radius Bridge translates the SOAP request into a RADIUS request. The response is sent to NPS. NPS receives the authorization from the RADIUS server to allow the connection for this user. The user is successfully authenticated in 2FA.**
14. **RDGateway allows the user to access to Session Hosts according to policies configured on NPS for this user and resources allowed.**

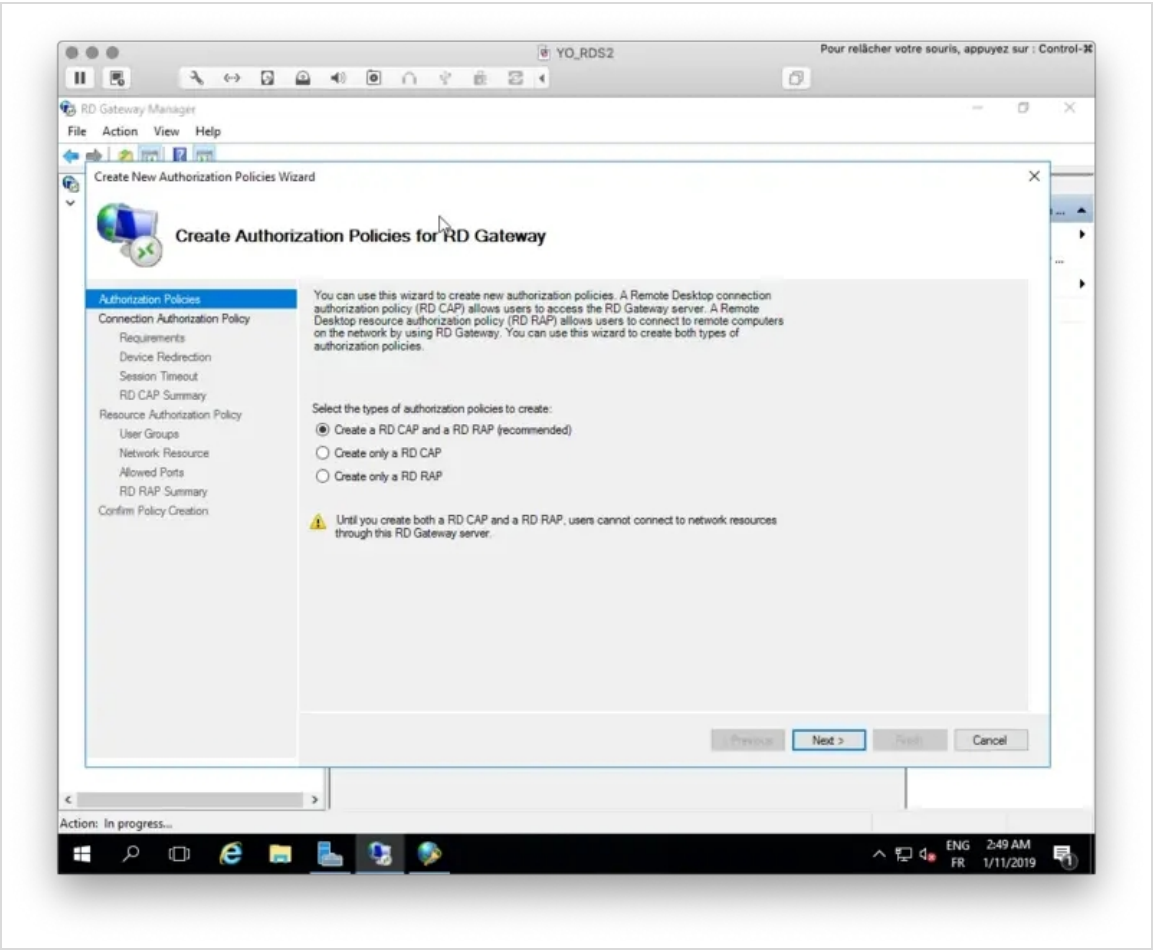
4.2 RDGateway Configuration

We will start by configuring the RDGateway component. Open the RD Gateway manager console.

Right click on `Connection Authorization Policies` > `Create New Policy` > `Wizard`.

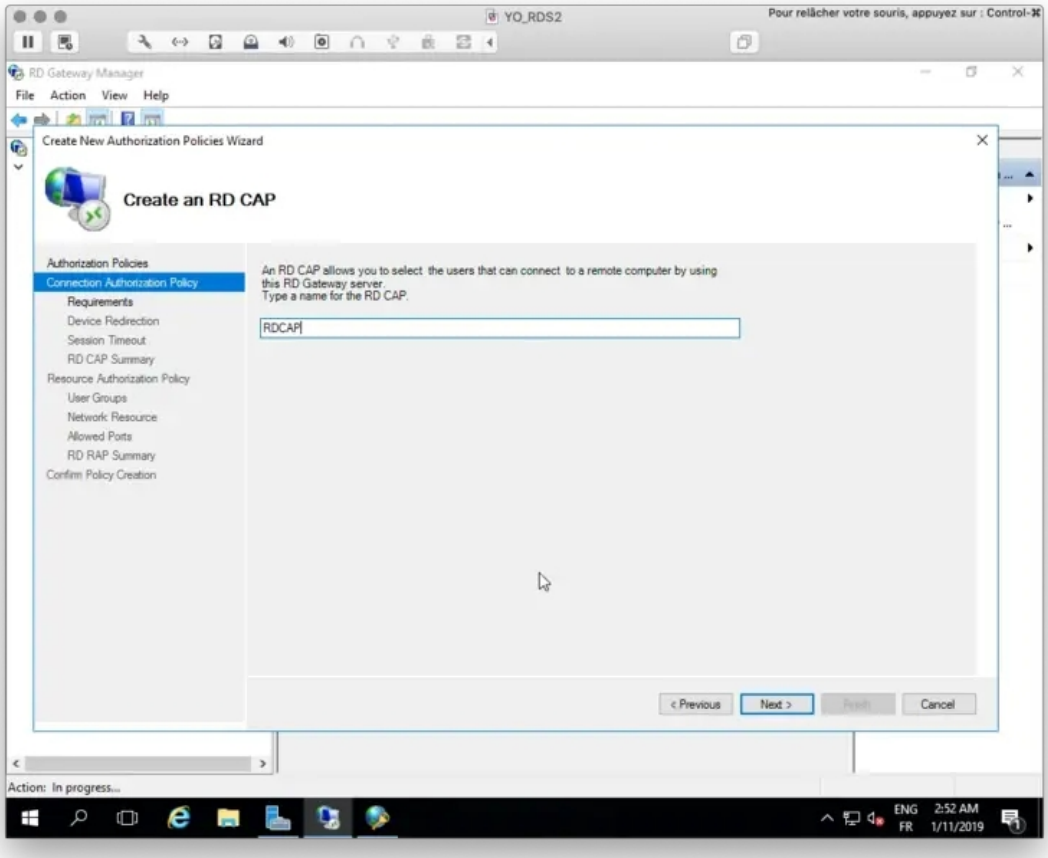


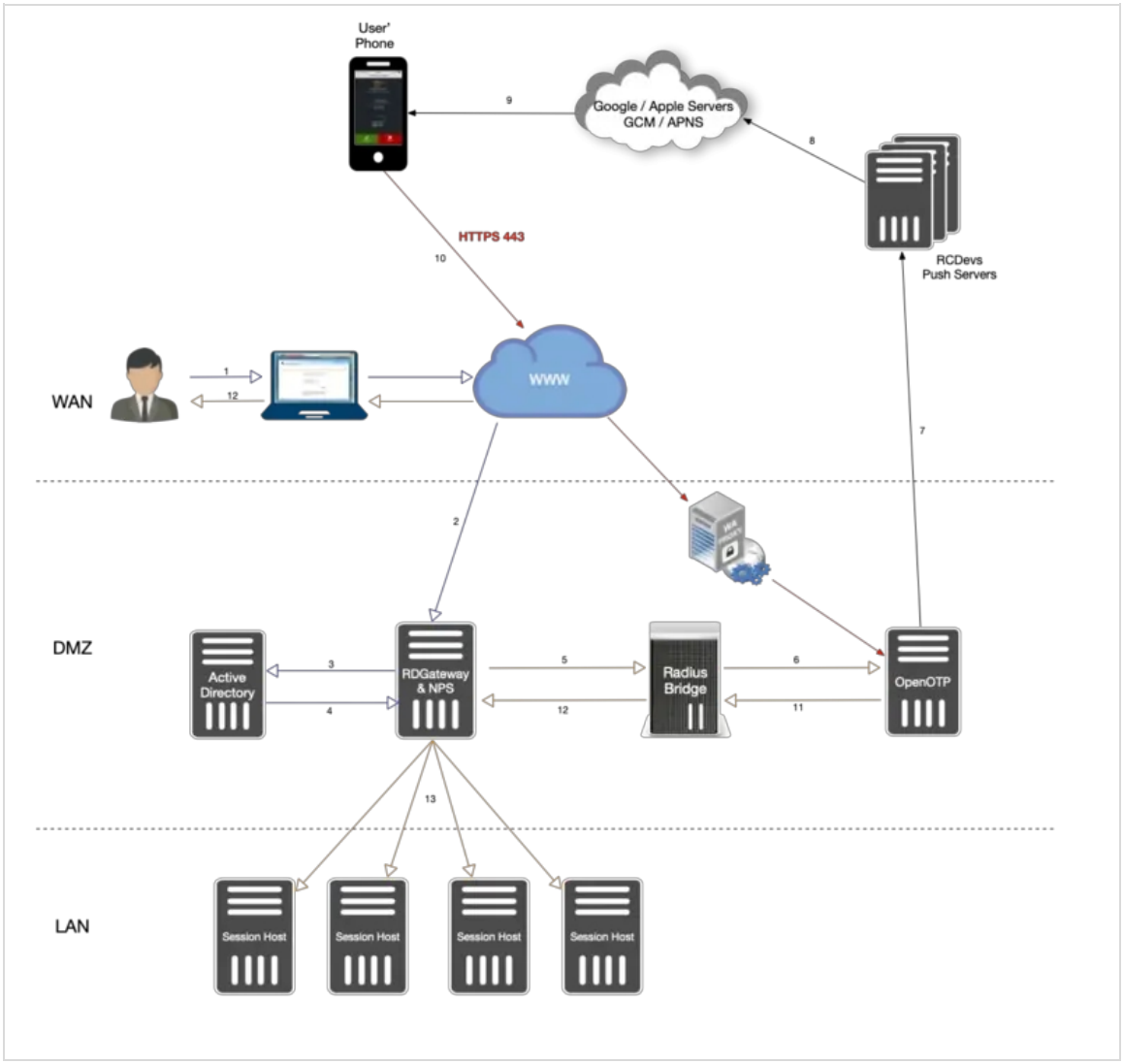
You will be prompted to the following screen:



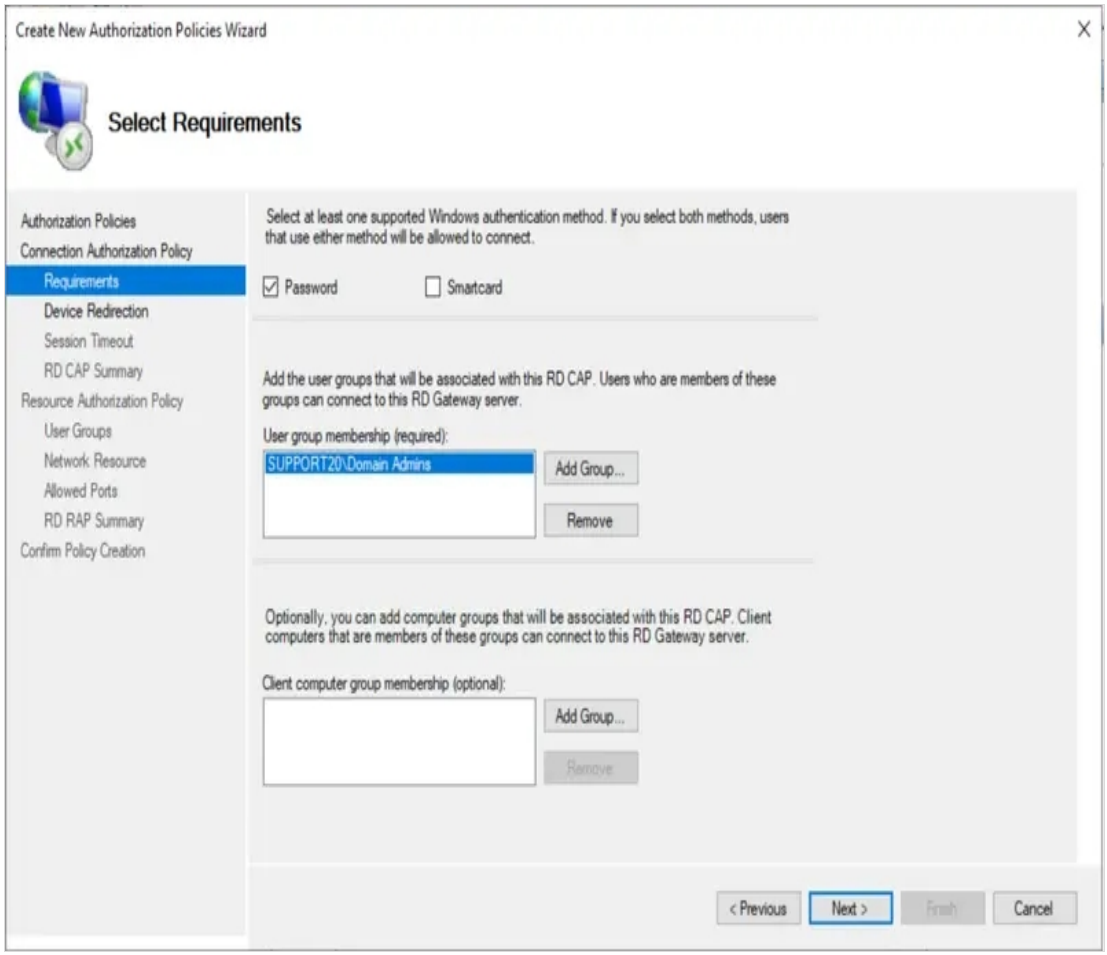
Select `Create an RD CAP and an RD RAP` option and click `Next`.

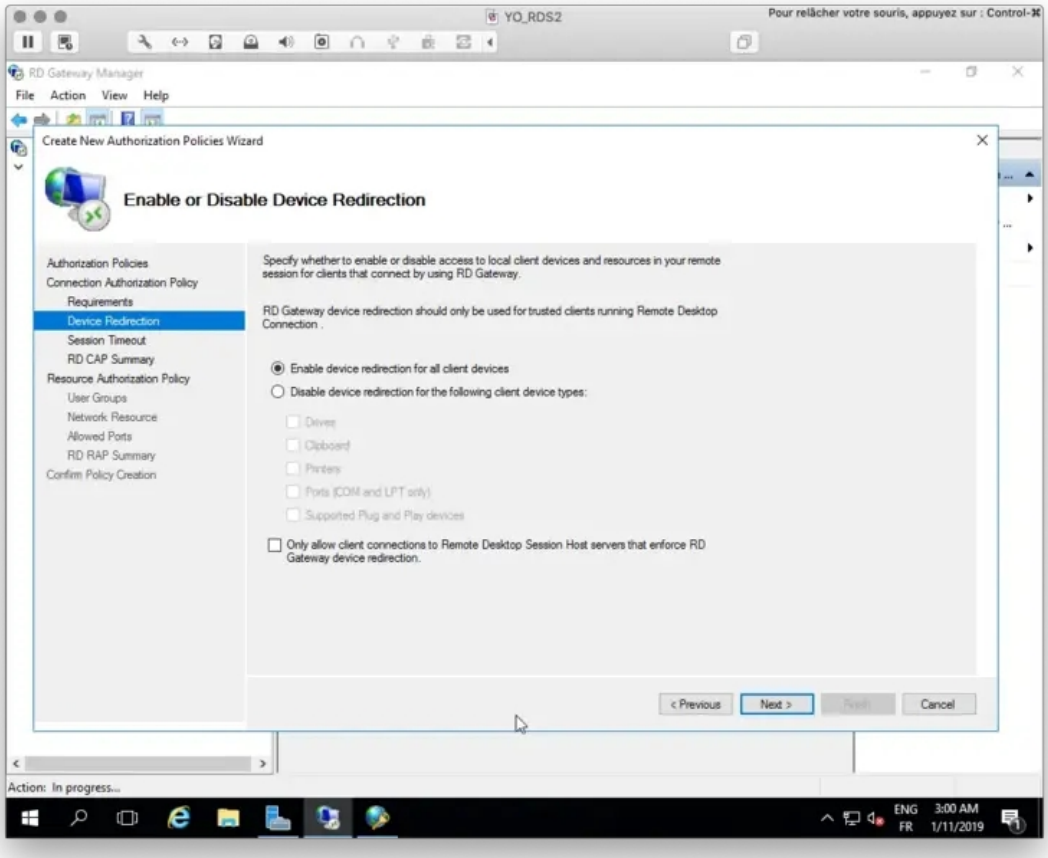
Provide a name for your RD CAP.

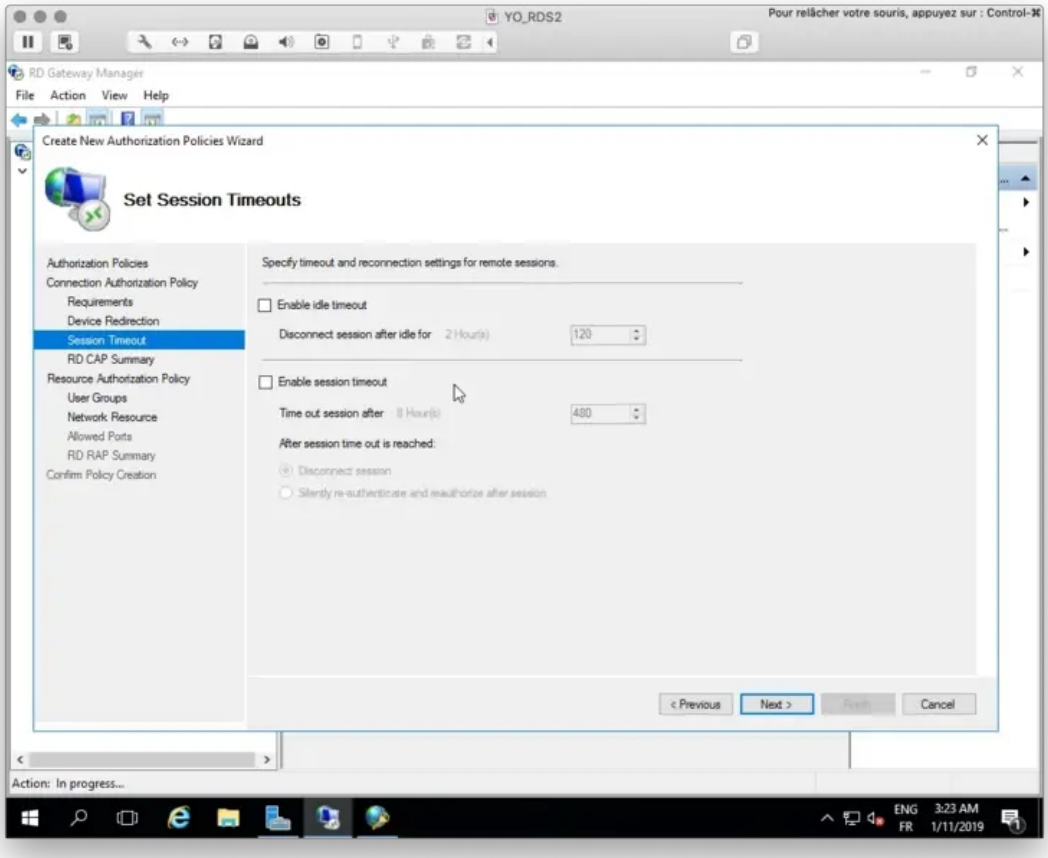

YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
RD Gateway Manager
File Action View Help
Create New Authorization Policies Wizard
Create an RD CAP
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
An RD CAP allows you to select the users that can connect to a remote computer by using this RD Gateway server.
Type a name for the RD CAP.
RDCAP
< Previous
Next >
Finish
Cancel
Action: In progress...
ENG
FR
2:52 AM
1/11/2019



Select your user group and a computer group membership.


Create New Authorization Policies Wizard
Select Requirements
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
Select at least one supported Windows authentication method. If you select both methods, users that use either method will be allowed to connect.
Password
Smartcard
Add the user groups that will be associated with this RD CAP. Users who are members of these groups can connect to this RD Gateway server.
User group membership (required):
SUPPORT20\Domain Admins
Add Group...
Remove
Optionally, you can add computer groups that will be associated with this RD CAP. Client computers that are members of these groups can connect to this RD Gateway server.
Client computer group membership (optional):
Add Group...
Remove
< Previous
Next >
Finish
Cancel


YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
RD Gateway Manager
File Action View Help
Create New Authorization Policies Wizard
Enable or Disable Device Redirection
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
Specify whether to enable or disable access to local client devices and resources in your remote session for clients that connect by using RD Gateway.
RD Gateway device redirection should only be used for trusted clients running Remote Desktop Connection .
Enable device redirection for all client devices
Disable device redirection for the following client device types:
Drives
Clipboard
Printers
Ports (COM and LPT only)
Supported Plug and Play devices
Only allow client connections to Remote Desktop Session Host servers that enforce RD Gateway device redirection.
< Previous
Next >
Finish
Cancel
Action: In progress...
ENG
FR
3:00 AM
1/11/2019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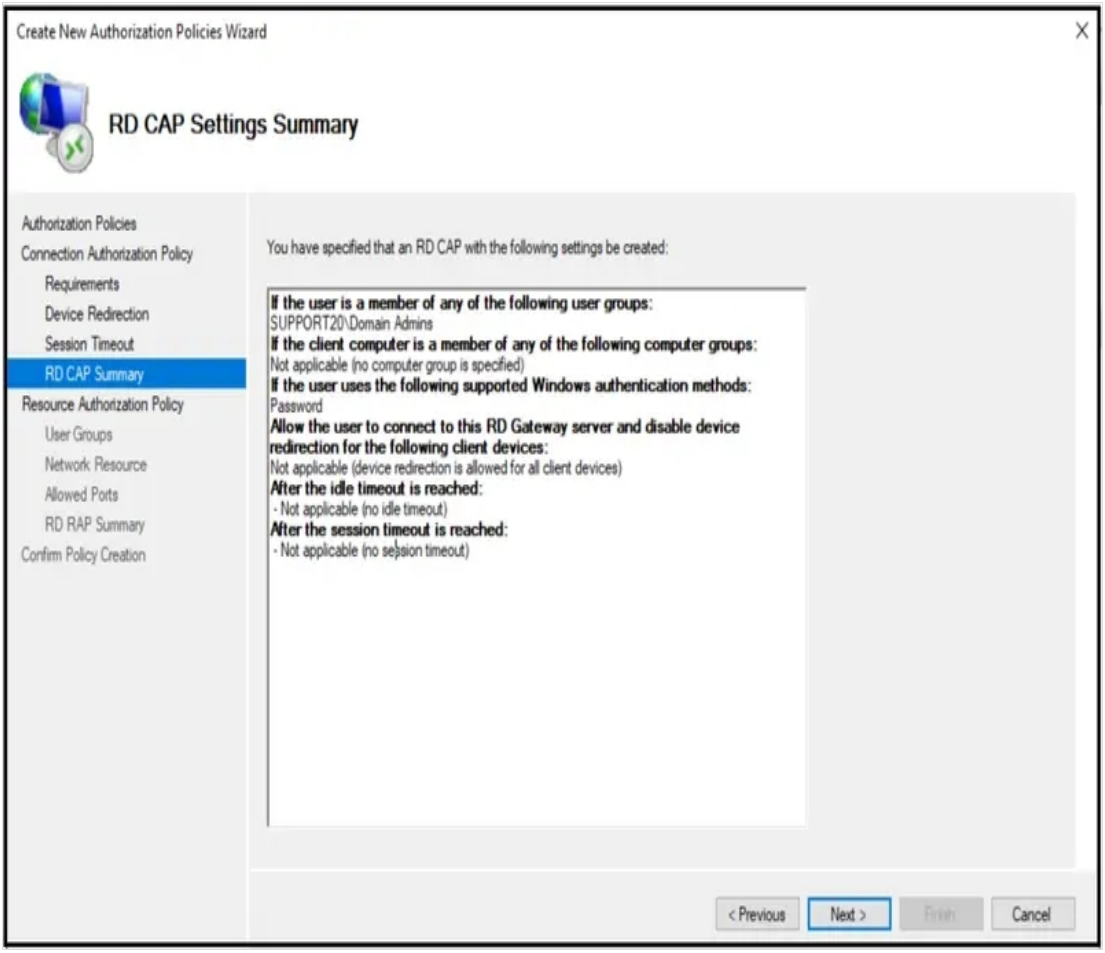
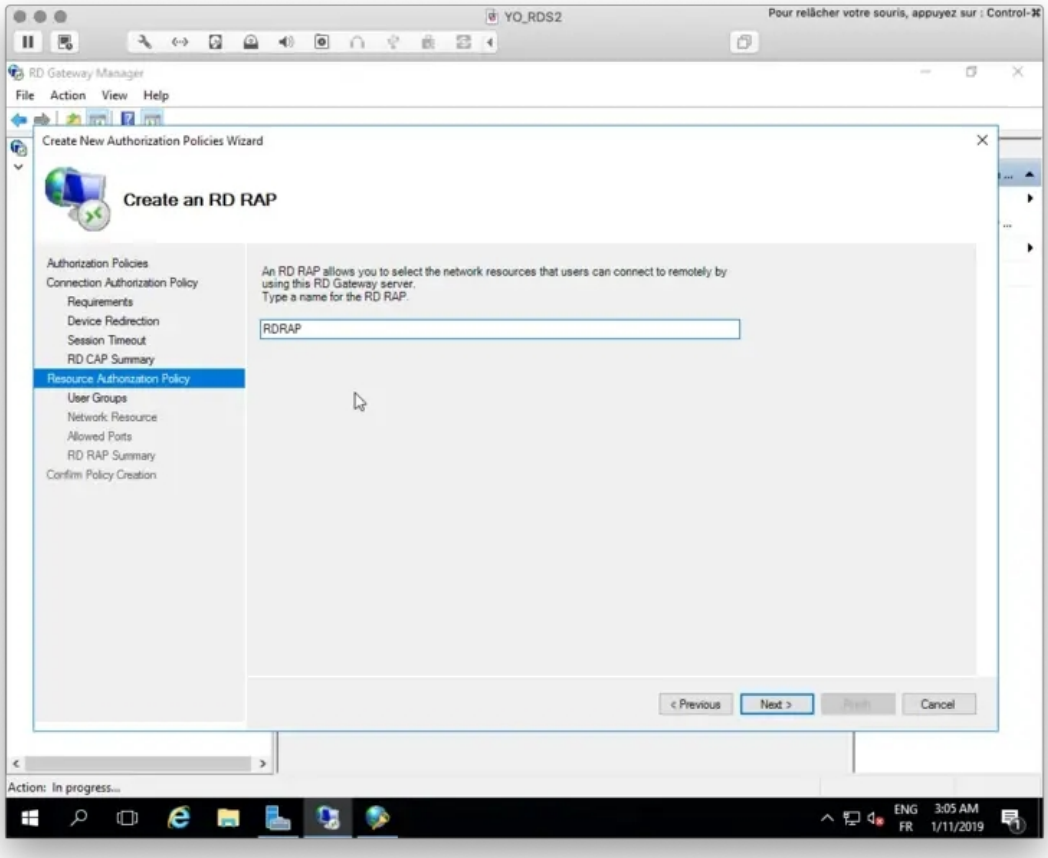
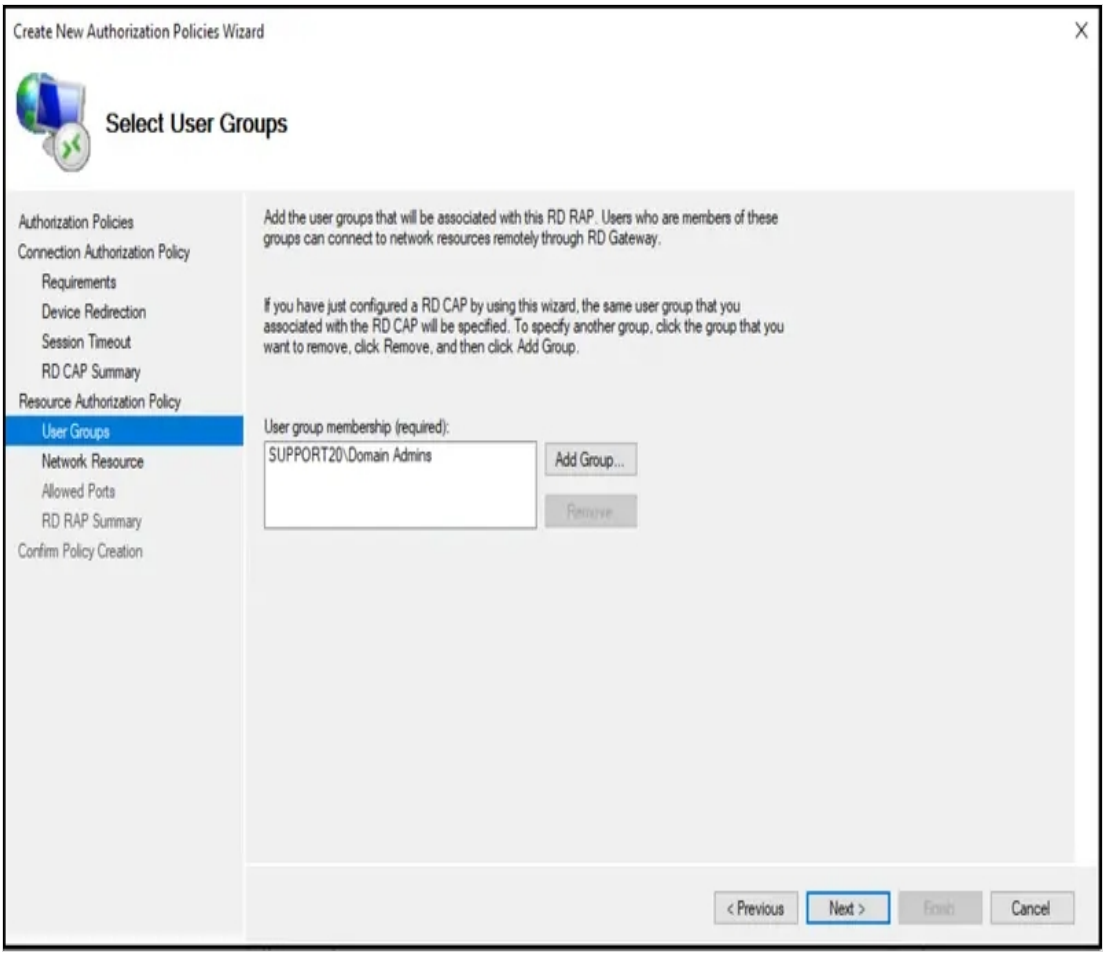
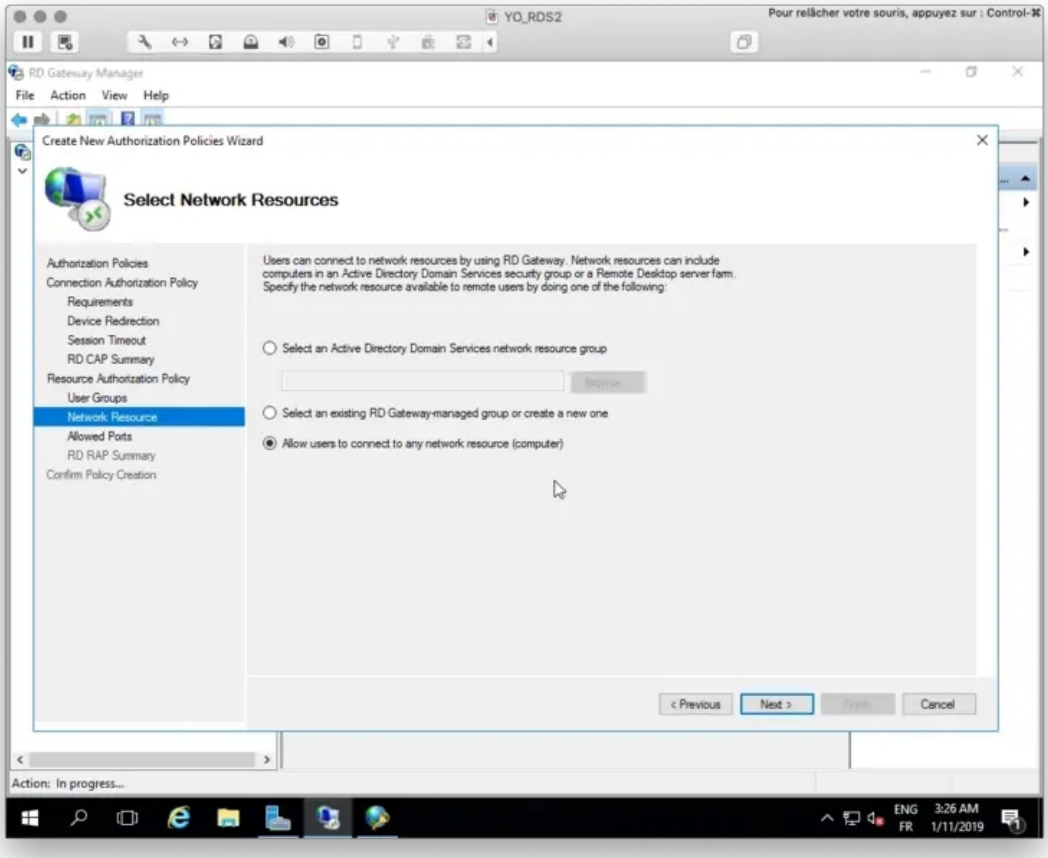
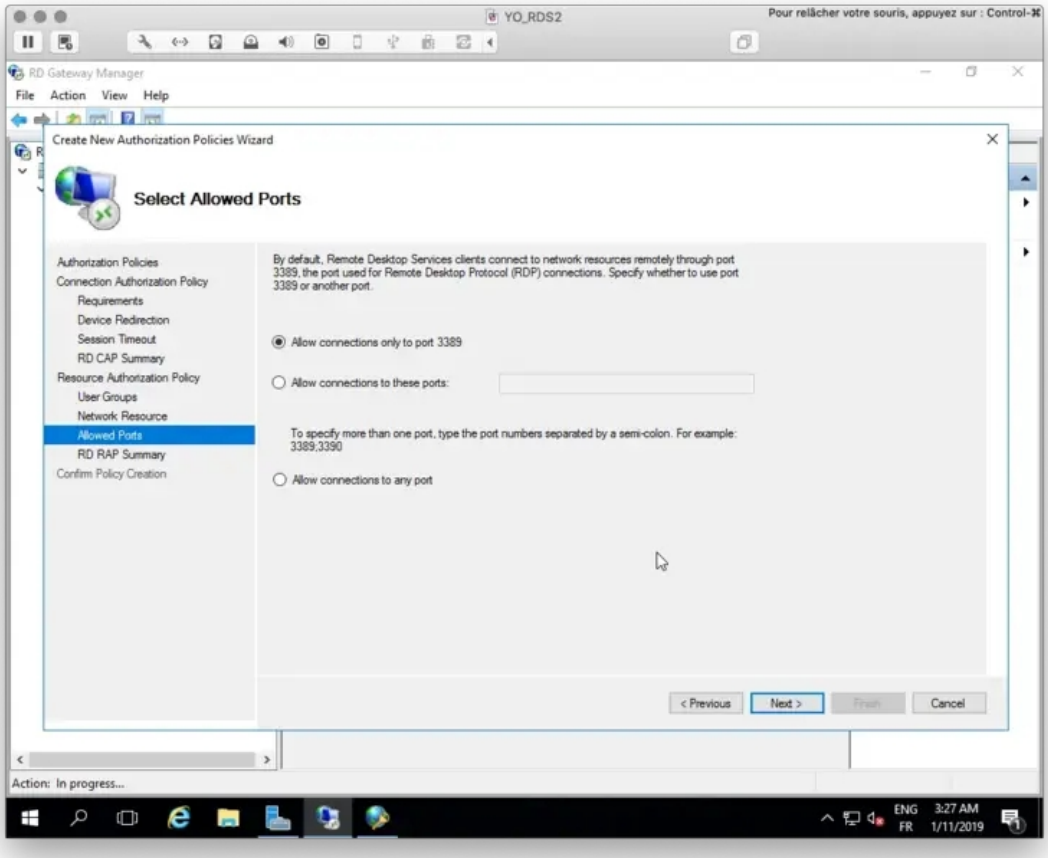
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
Specify timeout and reconnection settings for remote sessions.
Enable idle timeout
Disconnect session after idle for 2 Hour(s)
120
Enable session timeout
Time out session after 8 Hour(s)
480
After session time out is reached:
Disconnect session
Silently re-authenticate and reauthorize after session
< Previous
Next >
Finish
Cancel
Action: In progress...
ENG
FR
3:23 AM
1/11/2019

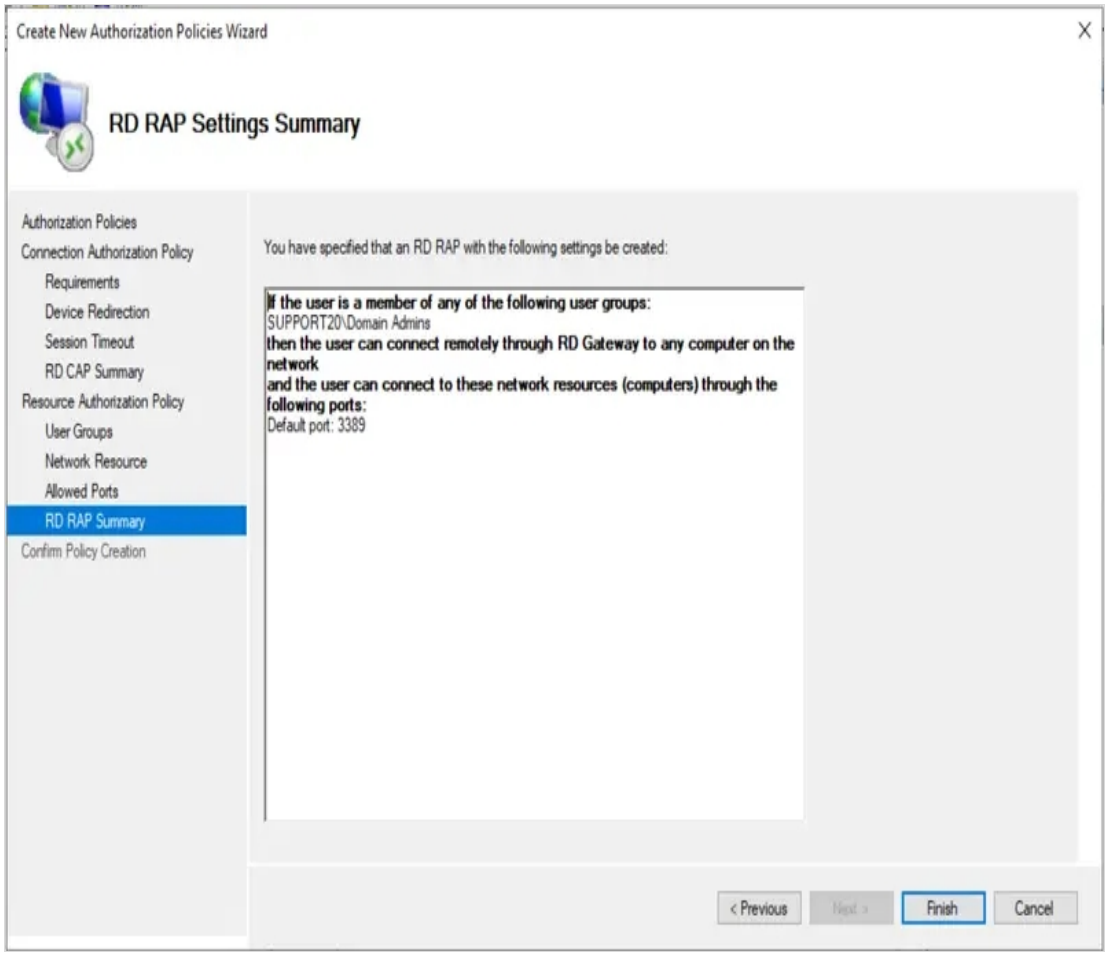

Create New Authorization Policies Wizard
RD CAP Settings Summary
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
You have specified that an RD CAP with the following settings be created:
If the user is a member of any of the following user groups:
SUPPORT20\Domain Admins
If the client computer is a member of any of the following computer groups:
Not applicable (no computer group is specified)
If the user uses the following supported Windows authentication methods:
Password
Allow the user to connect to this RD Gateway server and disable device redirection for the following client devices:
Not applicable (device redirection is allowed for all client devices)
After the idle timeout is reached:
- Not applicable (no idle timeout)
After the session timeout is reached:
- Not applicable (no session timeout)
< Previous
Next >
Finish
Cancel

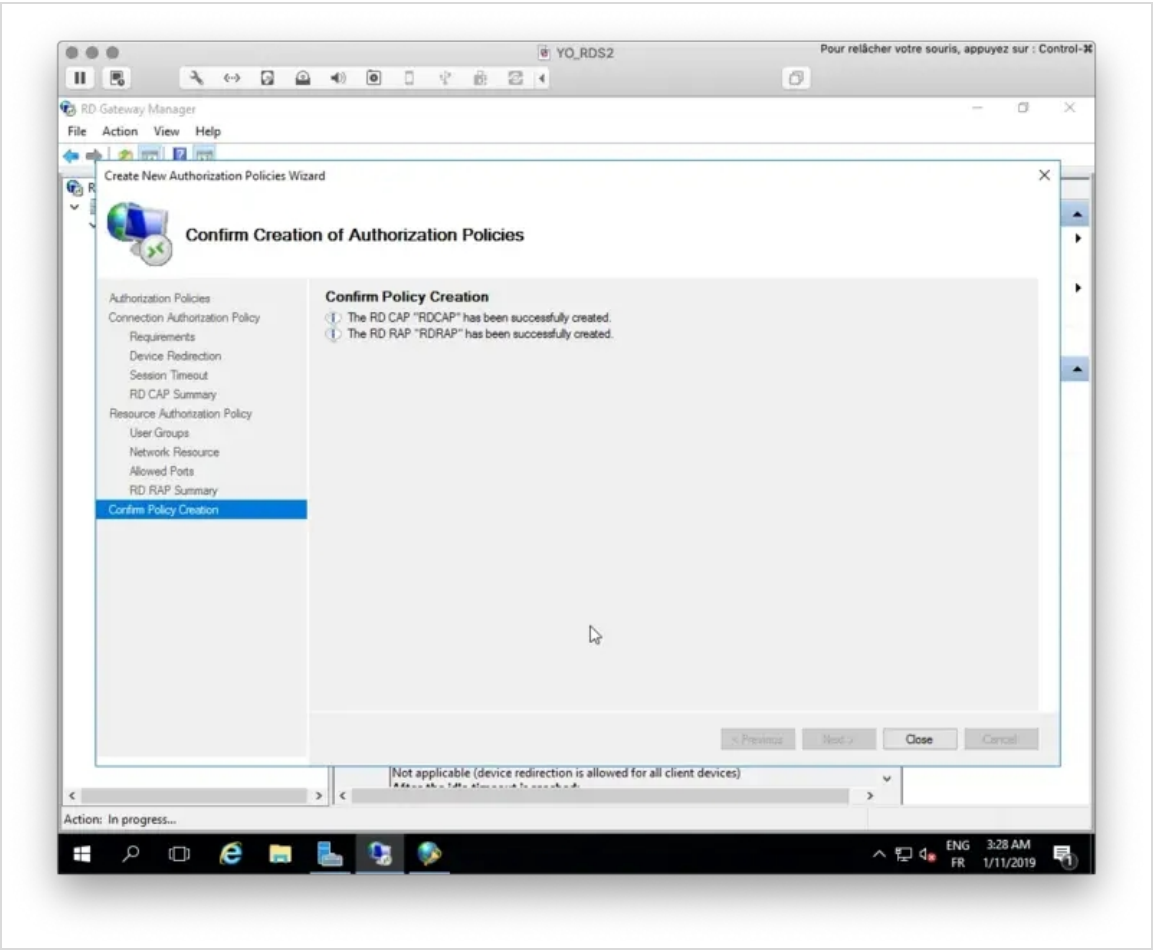

YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
RD Gateway Manager
File Action View Help
Create New Authorization Policies Wizard
Create an RD RAP
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
An RD RAP allows you to select the network resources that users can connect to remotely by using this RD Gateway server.
Type a name for the RD RAP.
RDRAP
< Previous
Next >
Finish
Cancel
Action: In progress...
ENG
FR
3:05 AM
1/11/2019


Create New Authorization Policies Wizard
Select User Groups
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
Add the user groups that will be associated with this RD RAP. Users who are members of these groups can connect to network resources remotely through RD Gateway.
If you have just configured a RD CAP by using this wizard, the same user group that you associated with the RD CAP will be specified. To specify another group, click the group that you want to remove, click Remove, and then click Add Group.
User group membership (required):
SUPPORT20\Domain Admins
Add Group...
Remove
< Previous
Next >
Finish
Cancel


YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
RD Gateway Manager
File Action View Help
Create New Authorization Policies Wizard
Select Network Resources
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
Users can connect to network resources by using RD Gateway. Network resources can include computers in an Active Directory Domain Services security group or a Remote Desktop server farm. Specify the network resource available to remote users by doing one of the following:
Select an Active Directory Domain Services network resource group
Browse...
Select an existing RD Gateway-managed group or create a new one
Allow users to connect to any network resource (computer)
< Previous
Next >
Finish
Cancel
Action: In progress...
ENG
FR
3:26 AM
1/11/2019

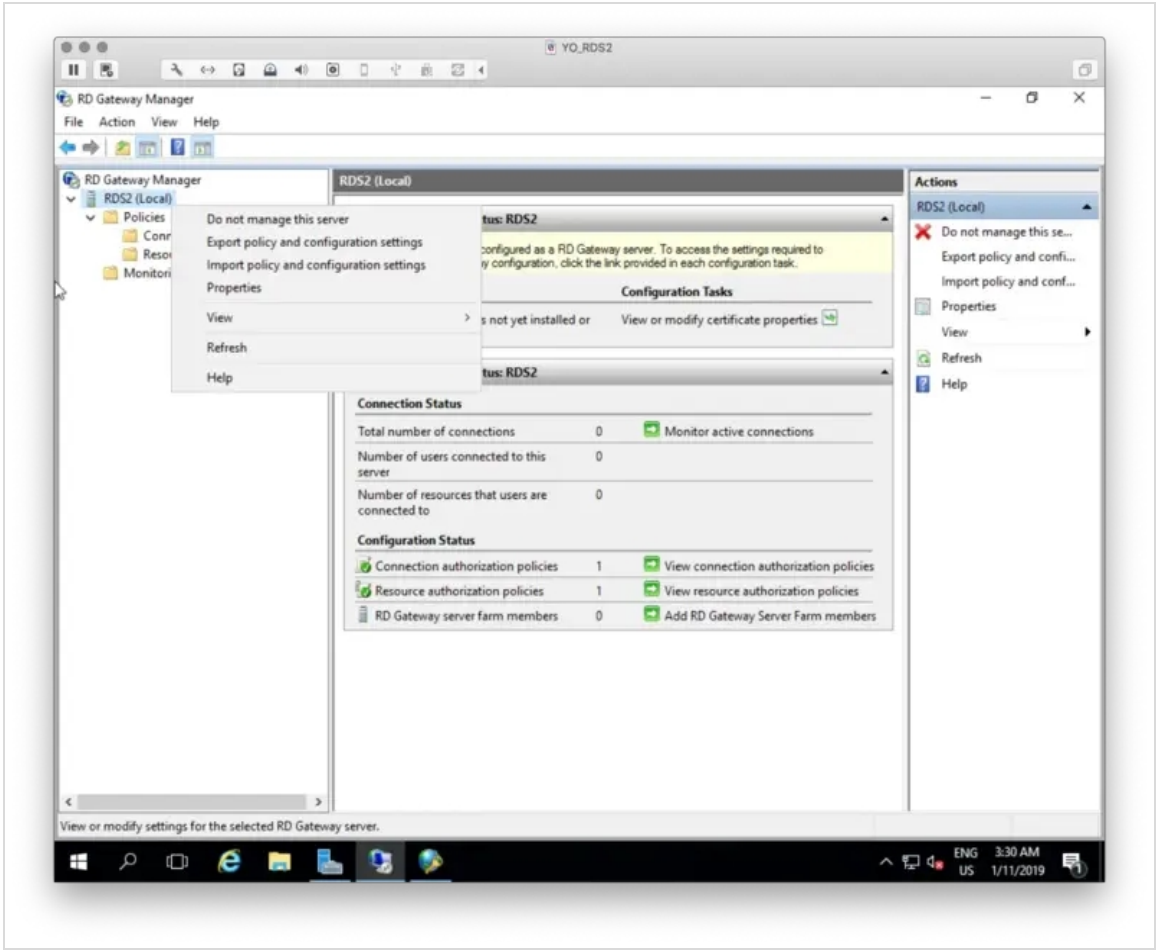

YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
RD Gateway Manager
File Action View Help
Create New Authorization Policies Wizard
Select Allowed Ports
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
By default, Remote Desktop Services clients connect to network resources remotely through port 3389, the port used for Remote Desktop Protocol (RDP) connections. Specify whether to use port 3389 or another port.
Allow connections only to port 3389
Allow connections to these ports:
To specify more than one port, type the port numbers separated by a semi-colon. For example: 3389;3390
Allow connections to any port
< Previous
Next >
Finish
Cancel
Action: In progress...
ENG
FR
3:27 AM
1/11/2019


Create New Authorization Policies Wizard
RD RAP Settings Summary
Authorization Policies
Connection Authorization Policy
Requirements
Device Redirection
Session Timeout
RD CAP Summary
Resource Authorization Policy
User Groups
Network Resource
Allowed Ports
RD RAP Summary
Confirm Policy Creation
You have specified that an RD RAP with the following settings be created:
If the user is a member of any of the following user groups:
SUPPORT20\Domain Admins
then the user can connect remotely through RD Gateway to any computer on the network
and the user can connect to these network resources (computers) through the following ports:
Default port: 3389
< Previous
Next >
Finish
Cancel

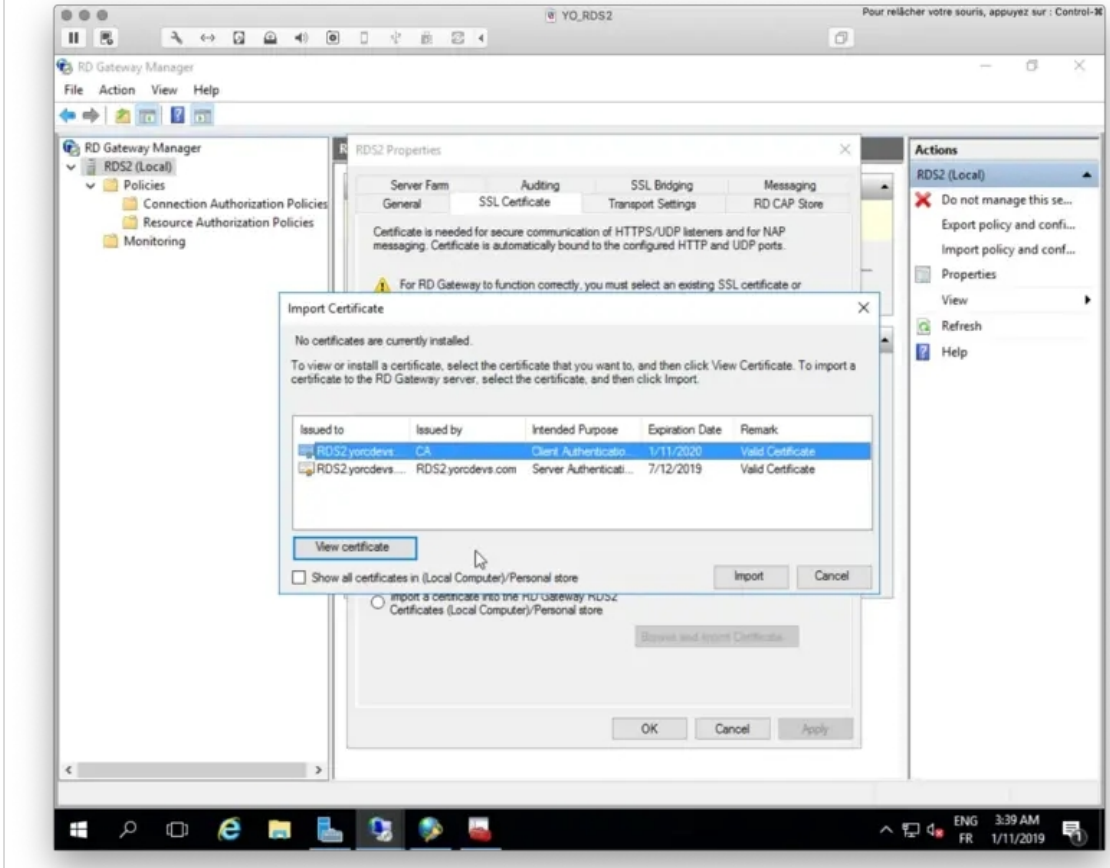


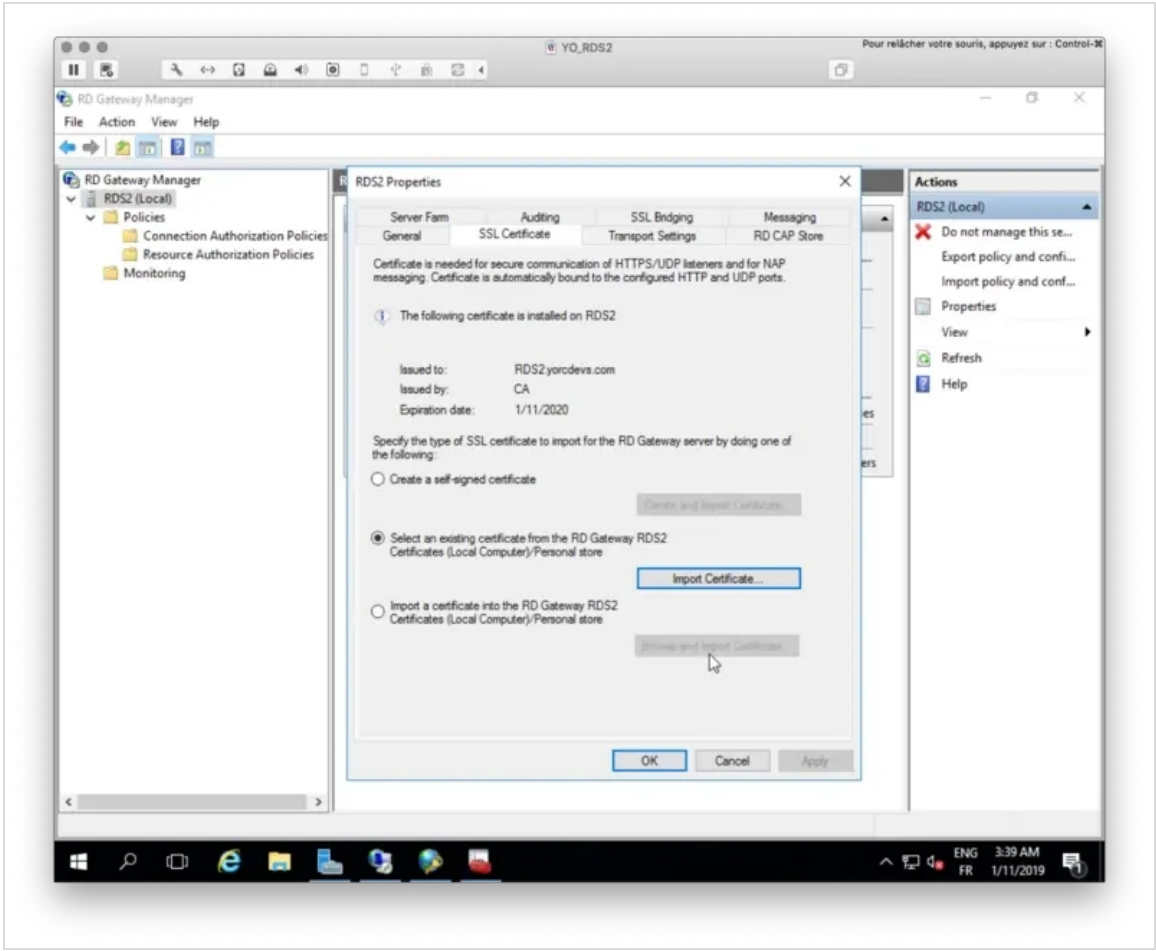
The configuration wizard is now finished.

Now click right on your server name under RD Gateway Manager console and select `Properties`.



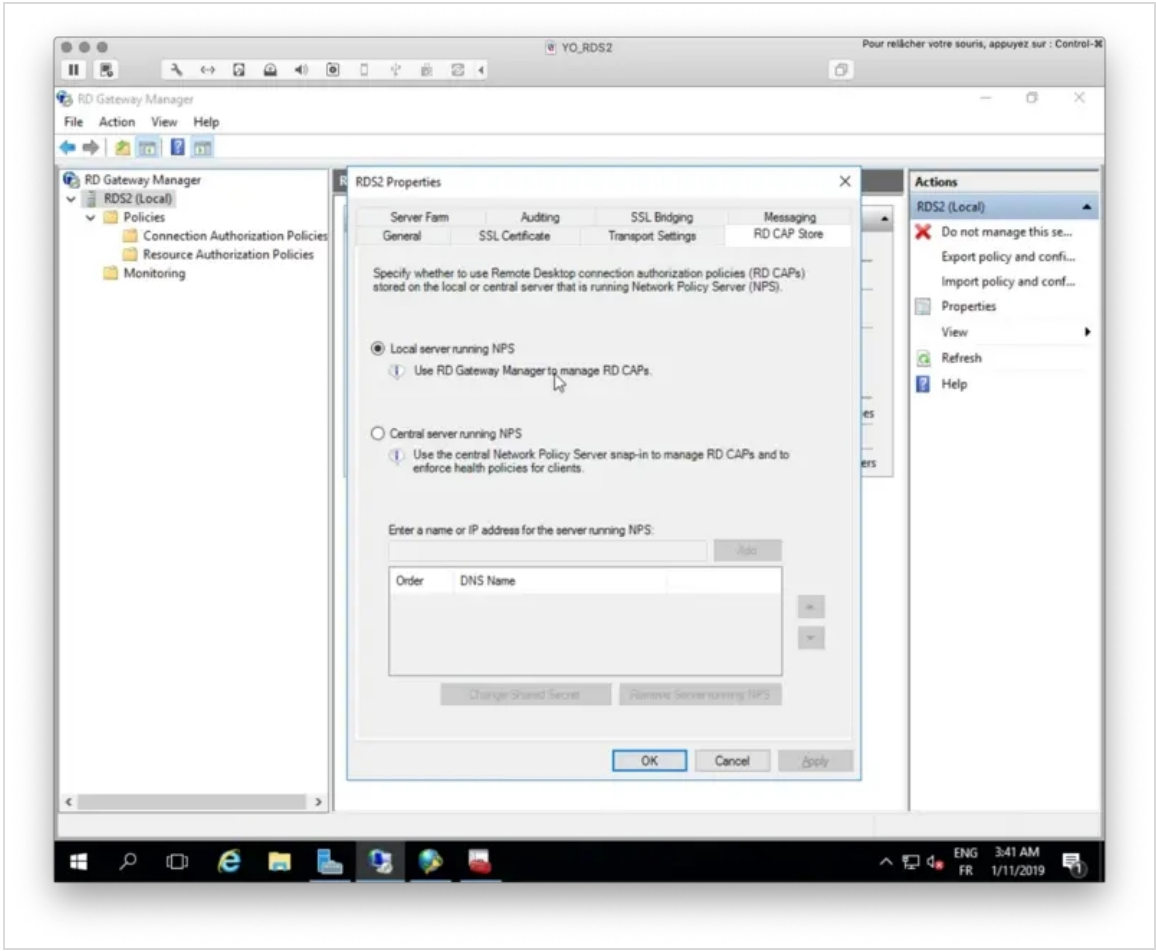
Under the `SSL Certificate` tab, select your Certificate signed by your CA or select a self-signed certificate. On my side, I select a certificate issued by my internal CA.


YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
RD Gateway Manager
File Action View Help
RD Gateway Manager
RDS2 (Local)
Policies
Connection Authorization Policies
Resource Authorization Policies
Monitoring
RDS2 Properties
Server Farm
Auditing
SSL Bridging
Messaging
General
SSL Certificate
Transport Settings
RD CAP Store
Certificate is needed for secure communication of HTTPS/UDP listeners and for NAP messaging. Certificate is automatically bound to the configured HTTP and UDP ports.
For RD Gateway to function correctly, you must select an existing SSL certificate or
Import Certificate
No certificates are currently installed.
To view or install a certificate, select the certificate that you want to, and then click View Certificate. To import a certificate to the RD Gateway server, select the certificate, and then click Import.
Issued to
Issued by
Intended Purpose
Expiration Date
Remark
RDS2.yorcdevs...
CA
Client Authenticatio
1/11/2020
Valid Certificate
RDS2.yorcdevs....
RDS2.yorcdevs.com
Server Authenticati...
7/12/2019
Valid Certificate
View certificate
Show all certificates in (Local Computer)/Personal store
Import
Cancel
Import a certificate into the RD Gateway RDS2 Certificates (Local Computer)/Personal store
OK
Cancel
Apply
Actions
RDS2 (Local)
Do not manage this se...
Export policy and confi...
Import policy and conf...
Properties
View
Refresh
Help
ENG
FR
3:39 AM
1/11/2019

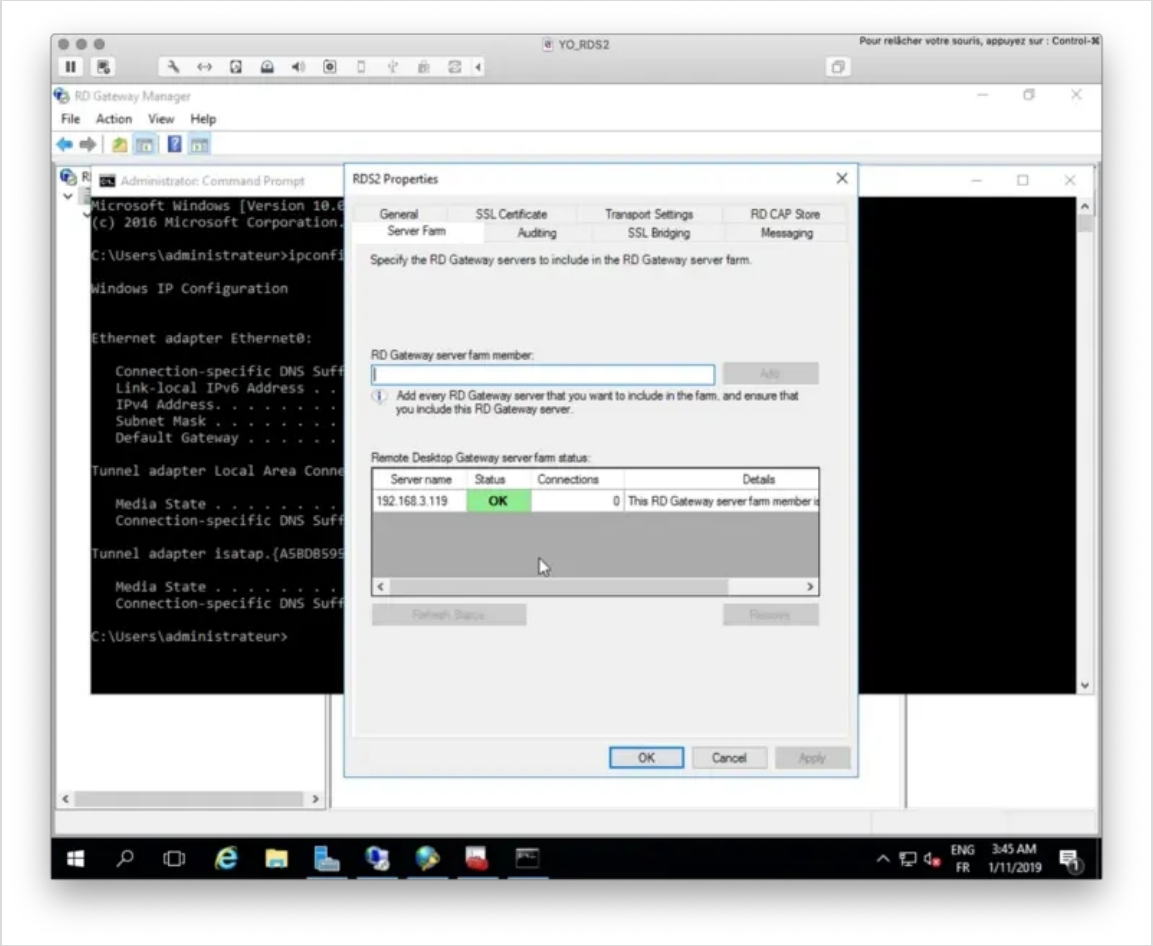


My certificate will now be used to trust the Gateway.

Now, go to `RD CAP Store` and choose the location of your NPS server. On my side, NPS is installed on the same server.



Under the `Server Farm` tab, add your current RD Gateway server(s).



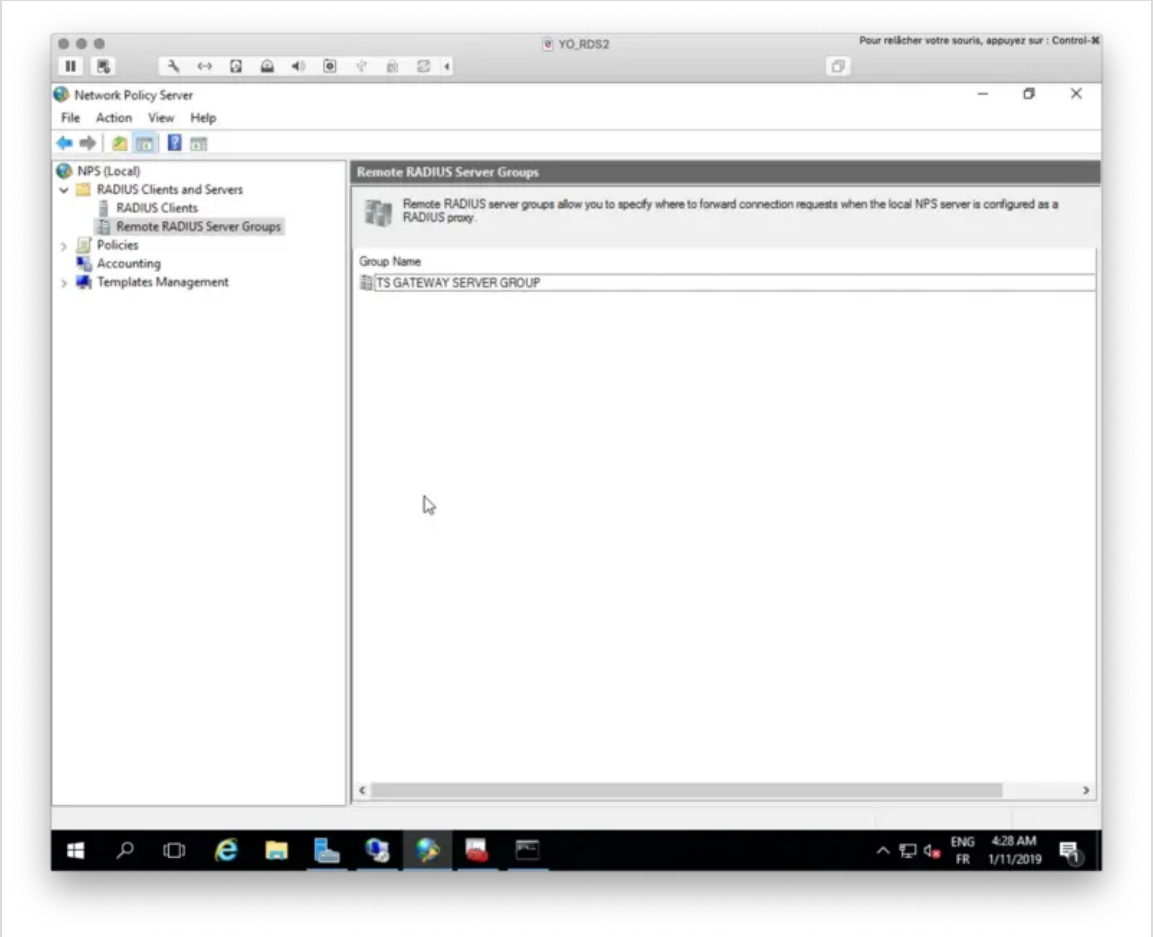
The configuration of RD Gateway is now finished!

4.3 NPS Configuration

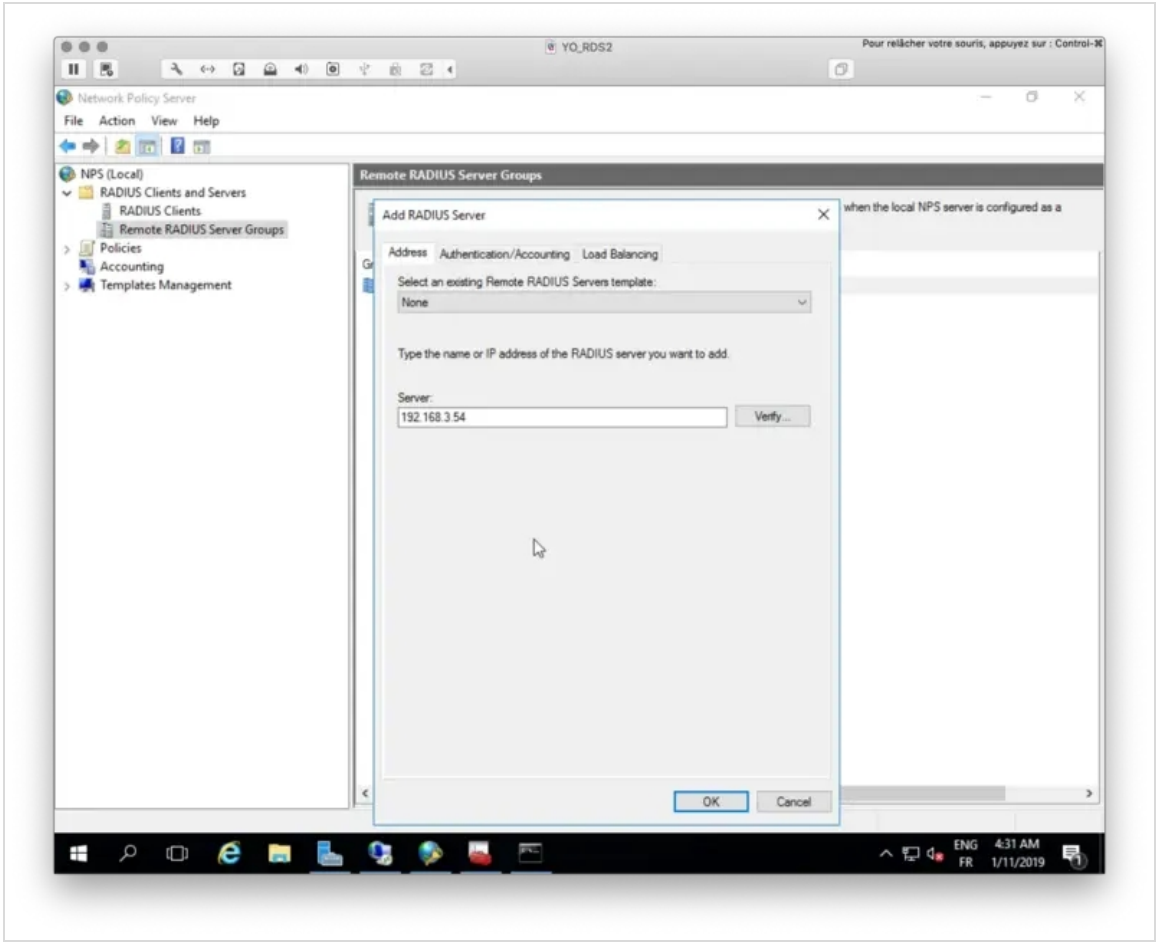
4.3.1 Remote RADIUS Server Groups

We will now configure the NPS component. NPS manages which user is able to log in on which resource, the authentication method…

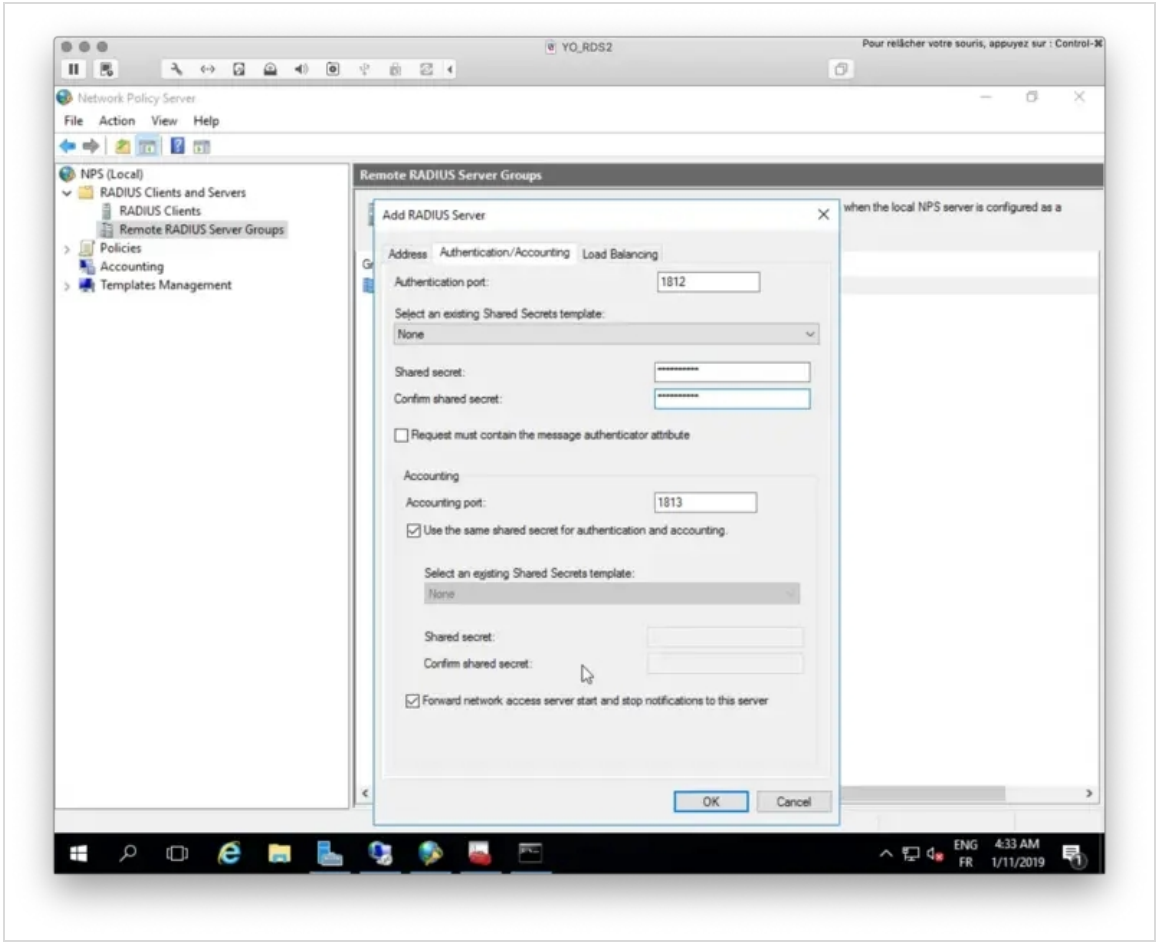
First, we will configure a `Remote RADIUS Server Group` and edit the default group `TS GATEWAY SERVER GROUP`.



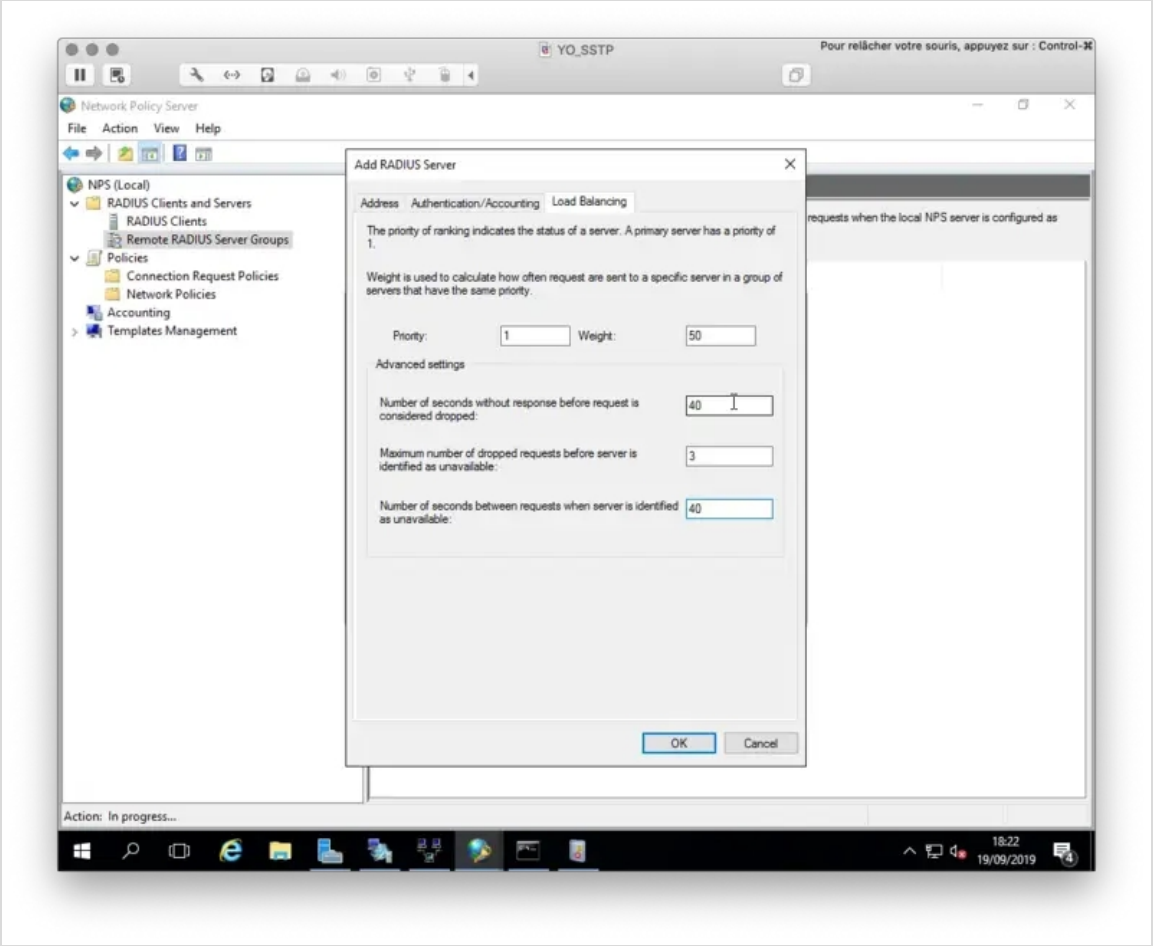
Right click > Properties on the `TS Gateway Server Group`. Under the General tab, click `Add` button to add a RADIUS Server. `192.168.3.54` is my Radius Bridge server installed on my OpenOTP/WebADM server.



On the Authentication/Accounting tab, configure your Radius secret.



Under the Load Balancing tab, configure your timeout value and the priority if you configure more than 1 server.



Once the configuration is done, click `Save` and `Ok`.

At this step, you can also configure the Radius Client and his secret on Radius Bridge Server to allow NPS to communicate with Radius Bridge.

```
vi /opt/radiusd/conf/clients.conf
```

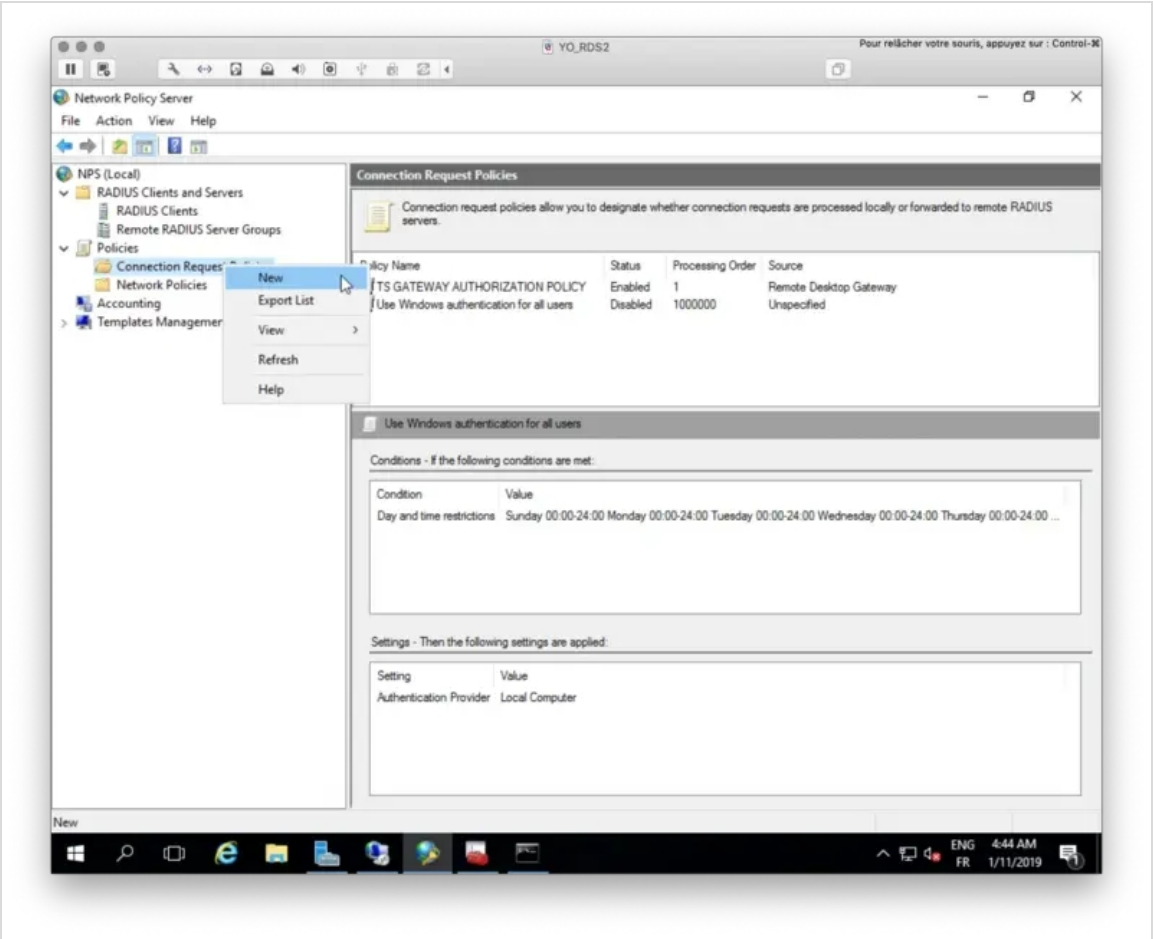
At the end of this file you should have your NPS Server configured like below:

```
client NPS {
      ipaddr = 192.168.3.119
      secret = testing123
}
```

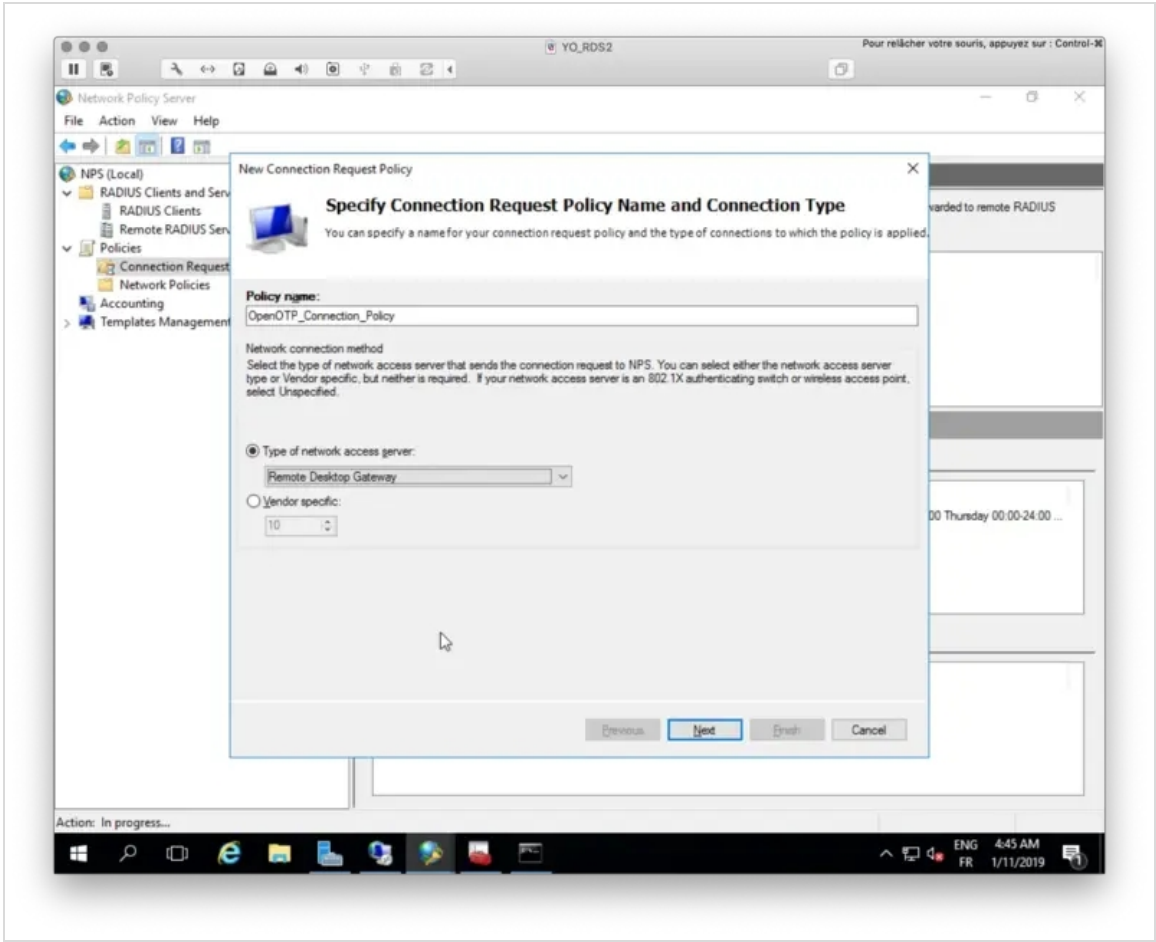
Your Radius Server is now configured at the NPS level.

4.3.2 Connection Request Policies

We will now create a new `Connection Request Policy`.

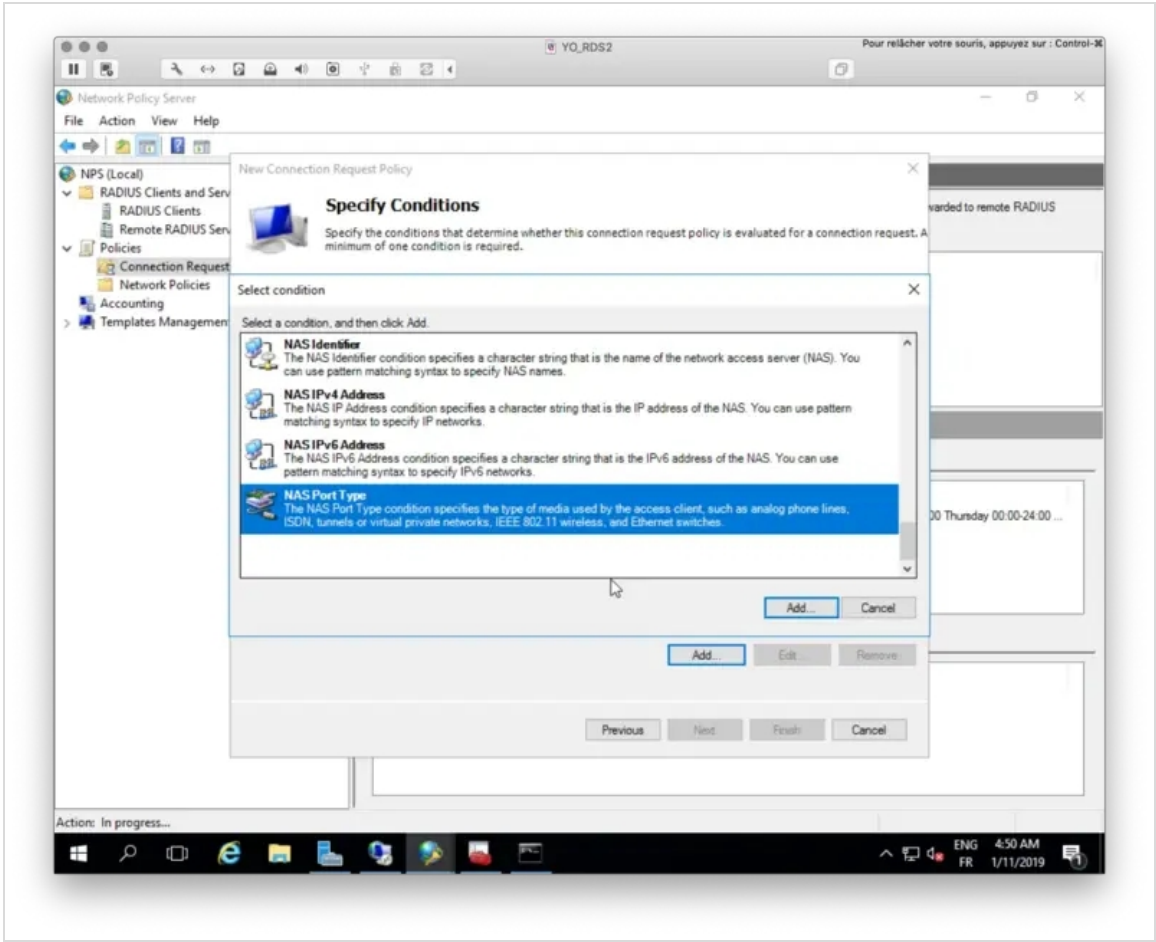


Name your policy and select `Remote Desktop Gateway` as `Type of network access server`.

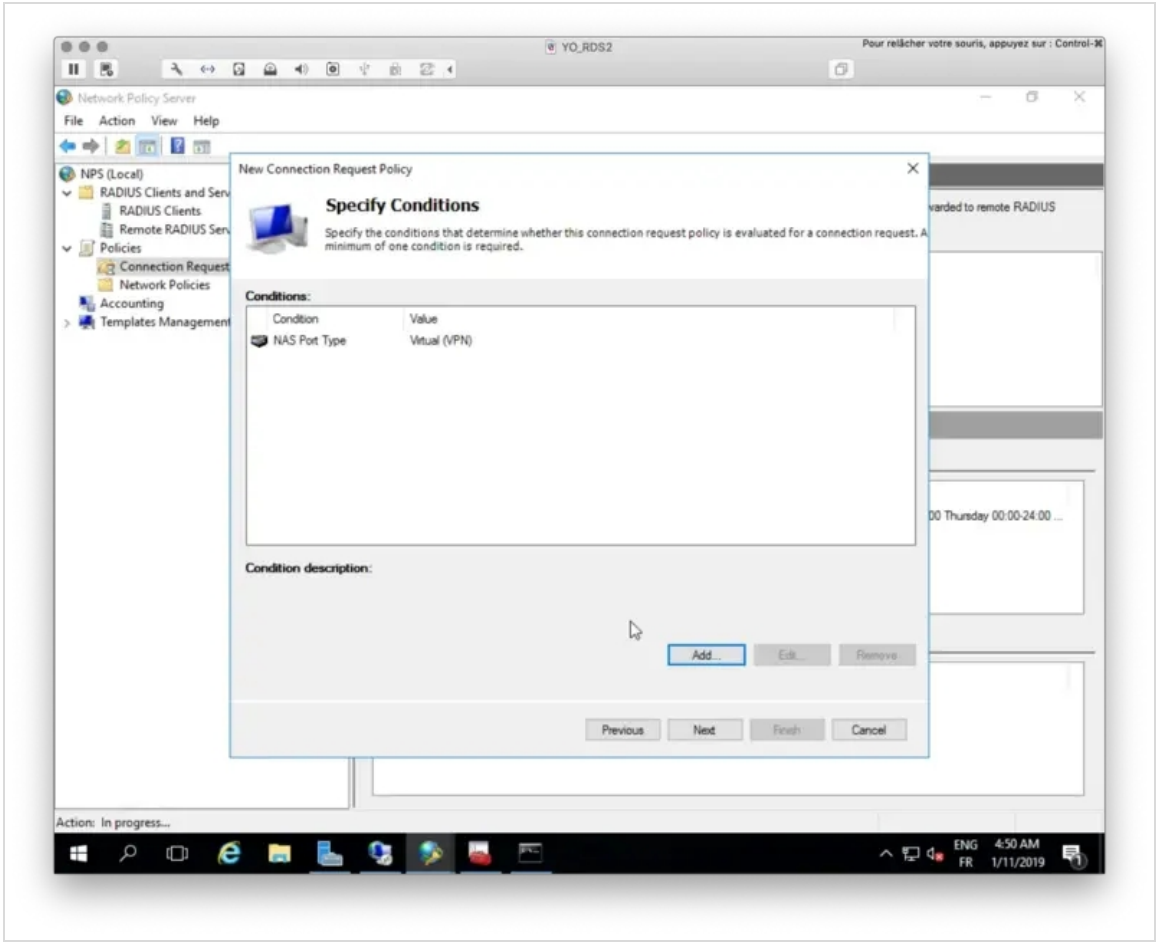


Click `Next`.

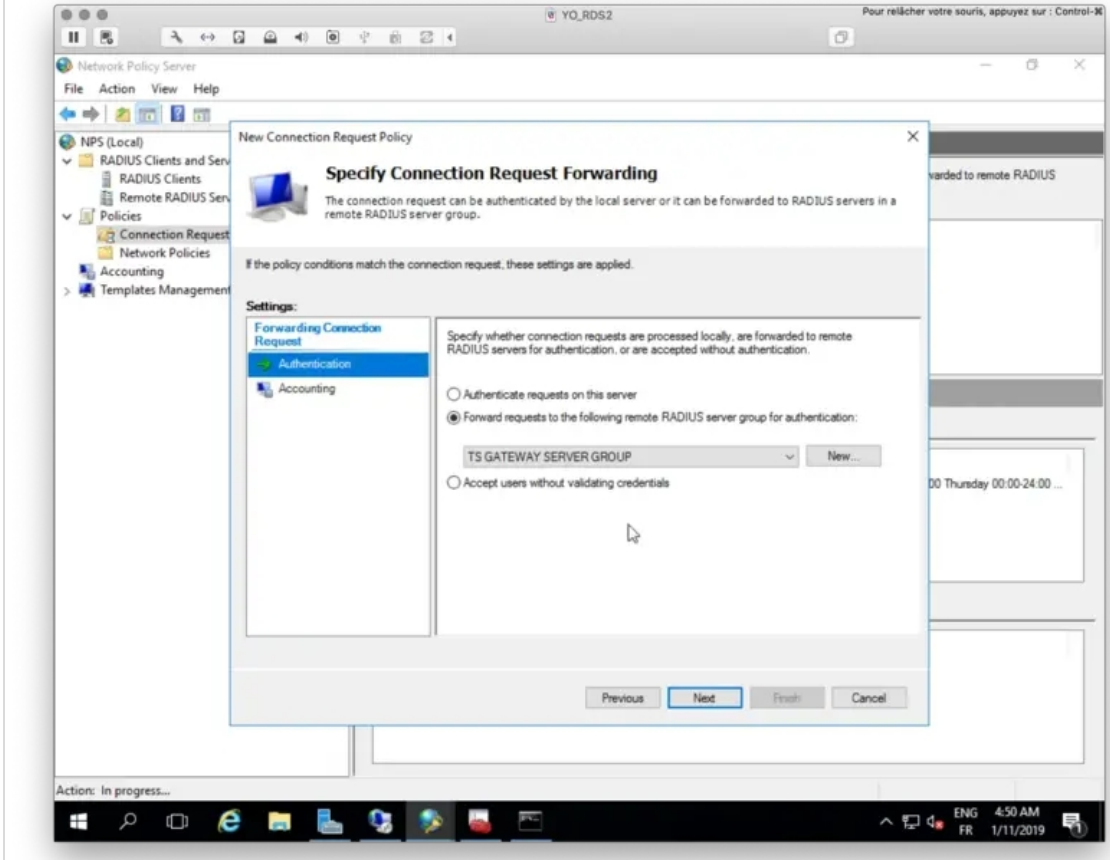
You have now to specify conditions of this policy.

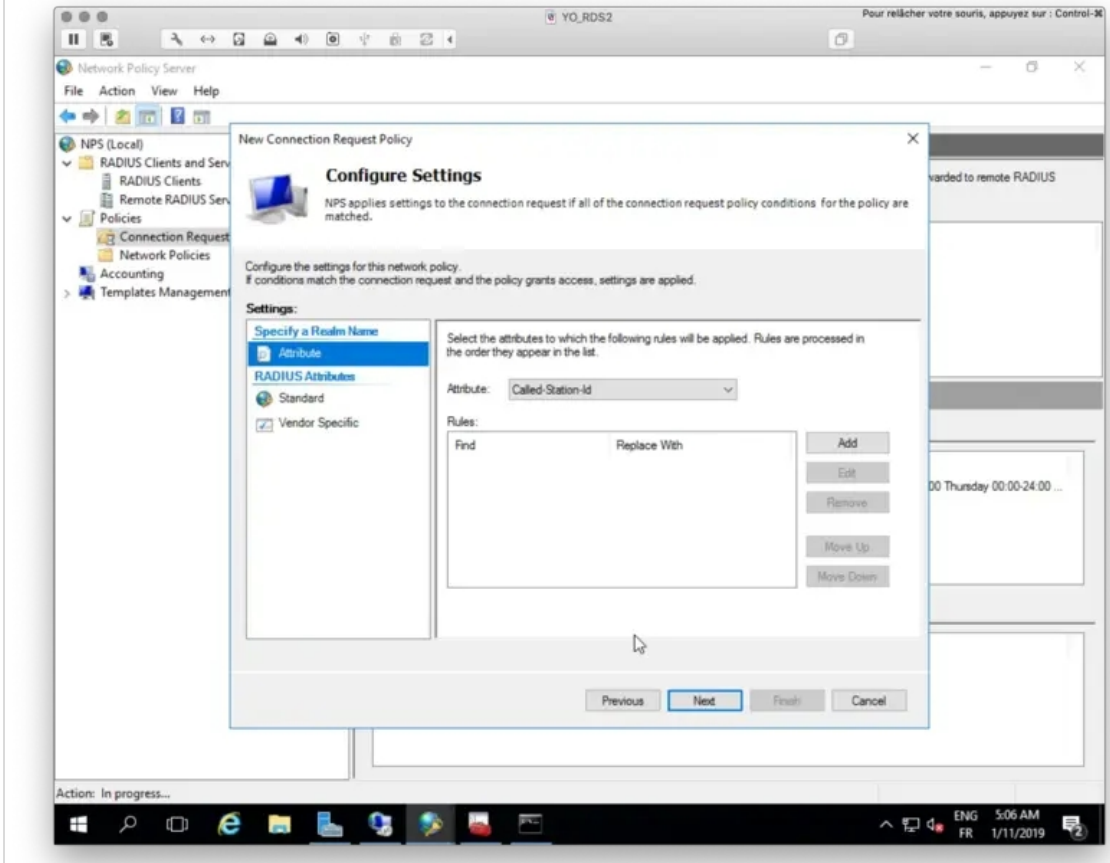


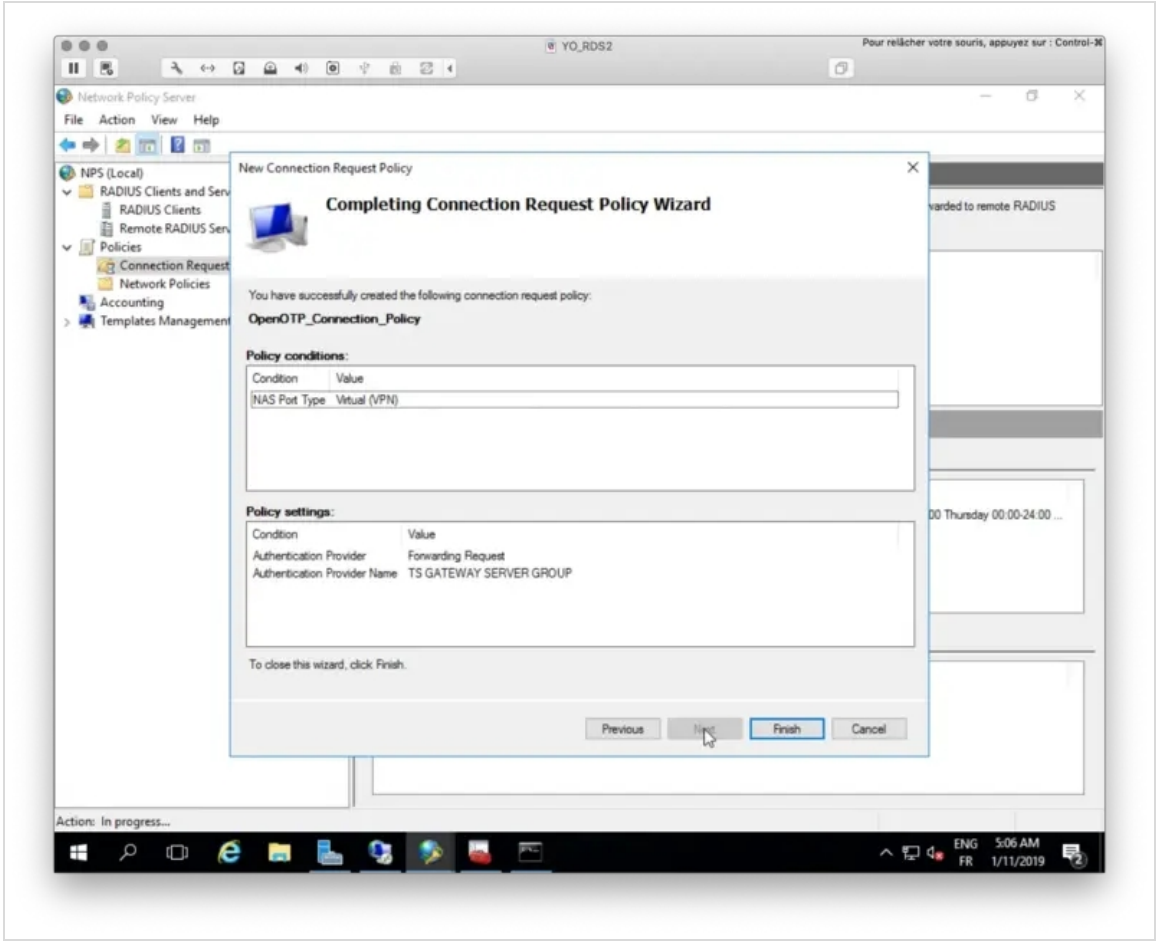
Select `NAS port Type` and then Virtual (VPN) as value.



Click `Next` and on the next page, select your Radius Server group previously configured.

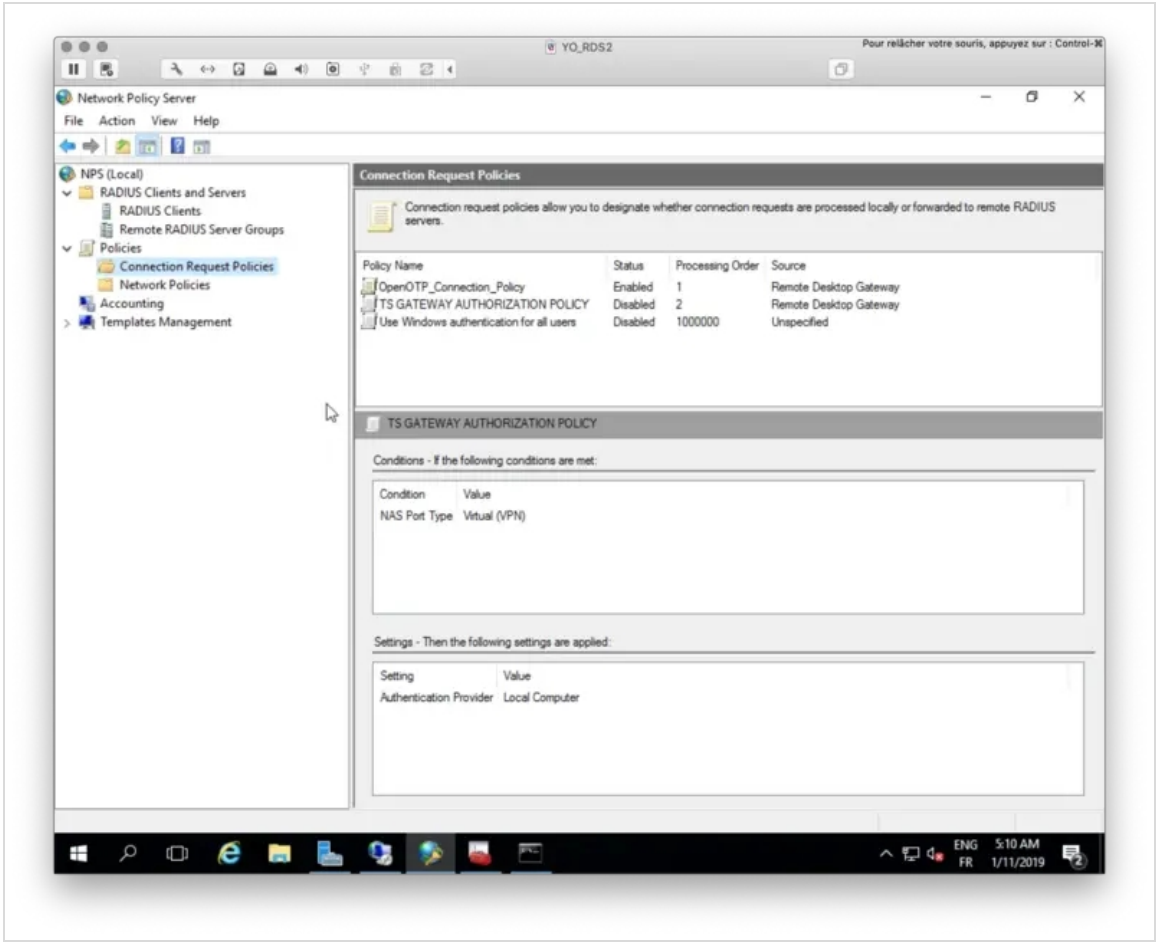

YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
Network Policy Server
File Action View Help
NPS (Local)
RADIUS Clients and Serv
RADIUS Clients
Remote RADIUS Serv
Policies
Connection Request
Network Policies
Accounting
Templates Management
New Connection Request Policy
Specify Connection Request Forwarding
The connection request can be authenticated by the local server or it can be forwarded to RADIUS servers in a remote RADIUS server group.
If the policy conditions match the connection request, these settings are applied.
Settings:
Forwarding Connection Request
Authentication
Accounting
Specify whether connection requests are processed locally, are forwarded to remote RADIUS servers for authentication, or are accepted without authentication.
Authenticate requests on this server
Forward requests to the following remote RADIUS server group for authentication:
TS GATEWAY SERVER GROUP
New...
Accept users without validating credentials
Previous
Next
Finish
Cancel
Action: In progress...
ENG
FR
4:50 AM
1/11/2019


YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
Network Policy Server
File Action View Help
NPS (Local)
RADIUS Clients and Serv
RADIUS Clients
Remote RADIUS Serv
Policies
Connection Request
Network Policies
Accounting
Templates Management
New Connection Request Policy
Configure Settings
NPS applies settings to the connection request if all of the connection request policy conditions for the policy are matched.
Configure the settings for this network policy.
If conditions match the connection request and the policy grants access, settings are applied.
Settings:
Specify a Realm Name
Attribute
RADIUS Attributes
Standard
Vendor Specific
Select the attributes to which the following rules will be applied. Rules are processed in the order they appear in the list.
Attribute:
Called-Station-Id
Rules:
Find
Replace With
Add
Edit
Remove
Move Up
Move Down
Previous
Next
Finish
Cancel
Action: In progress...
ENG
FR
5:06 AM
1/11/2019



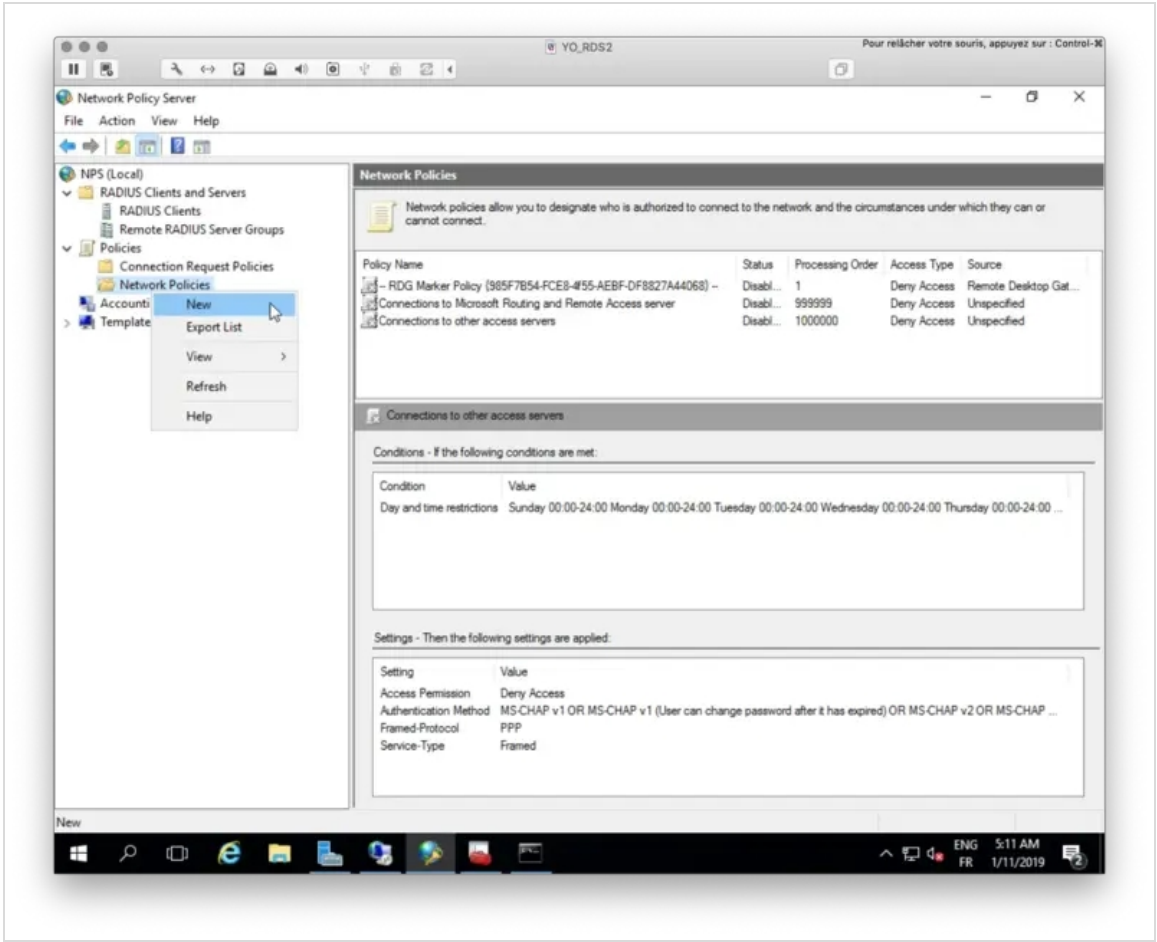
Click on `Finish` button.

My connection request policy is now created and activated.

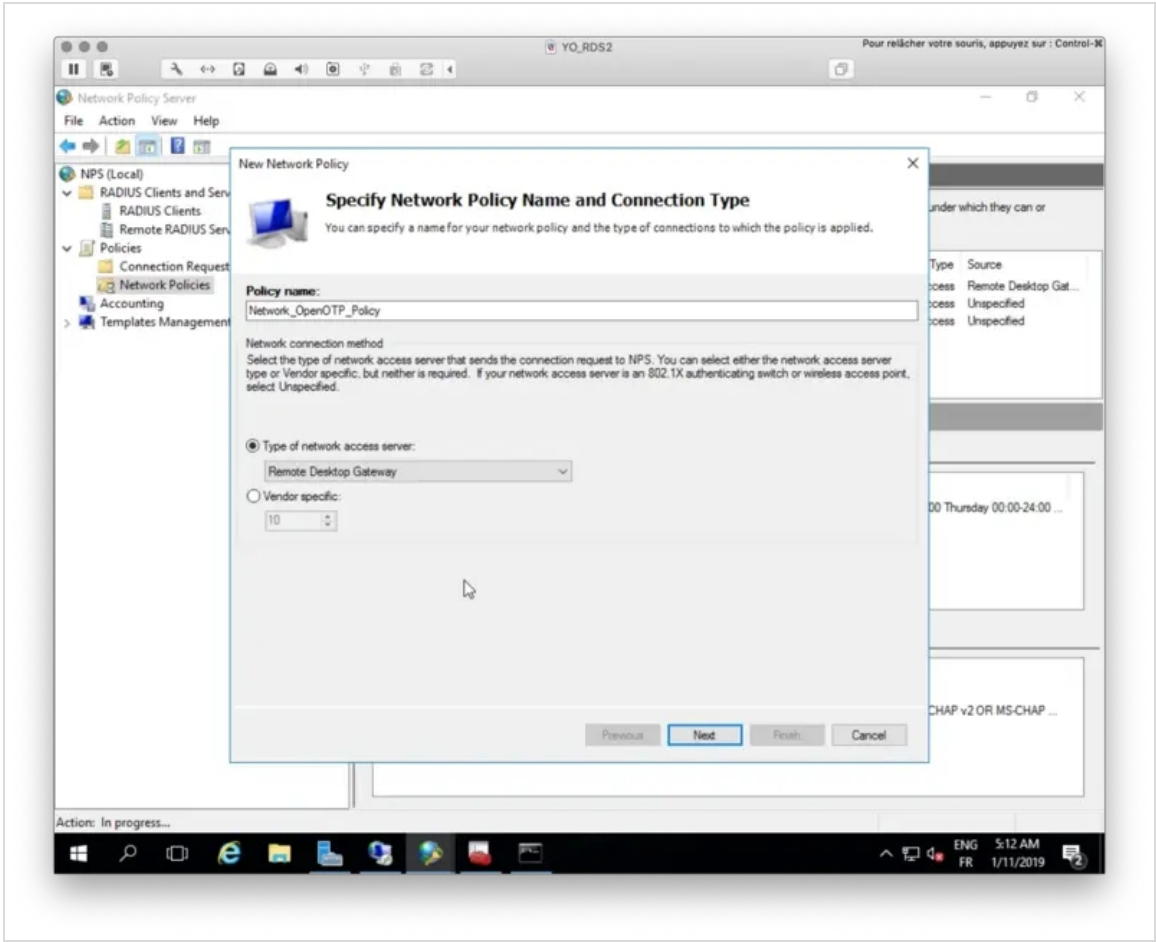


4.3.3 Network Policies

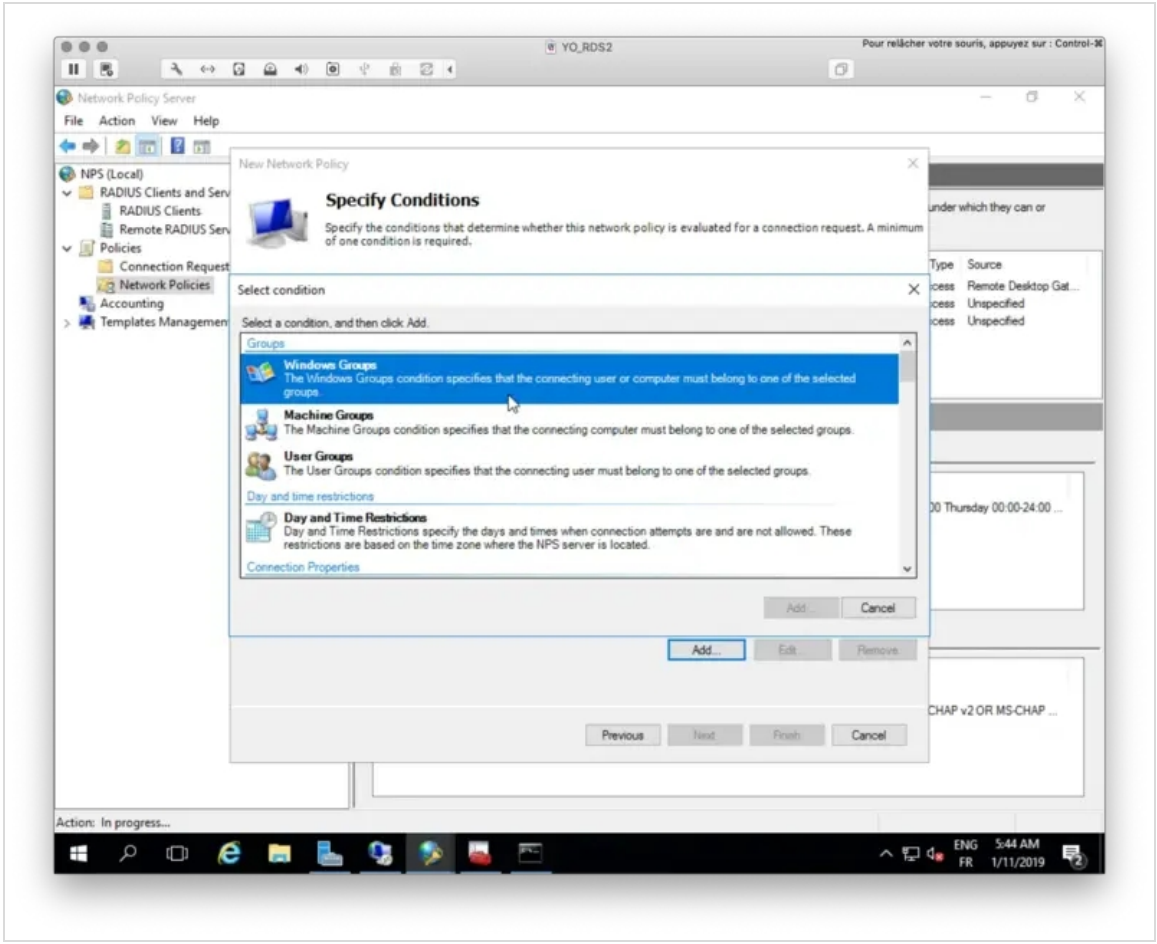
We will now configure a Network Policy through the NPS console. Right click on `Network Policies` > `New`.

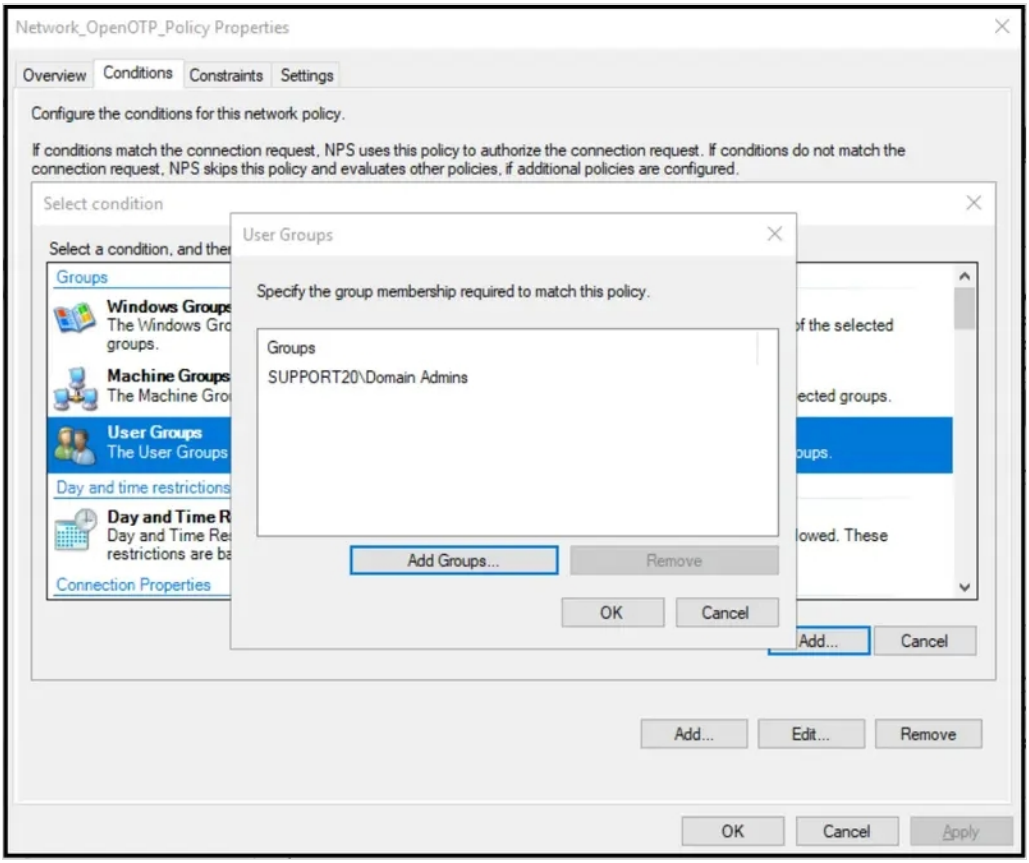


Name your Network Policy, select `Remote Desktop Gateway` as `Type of network access server` and then click `Next`.

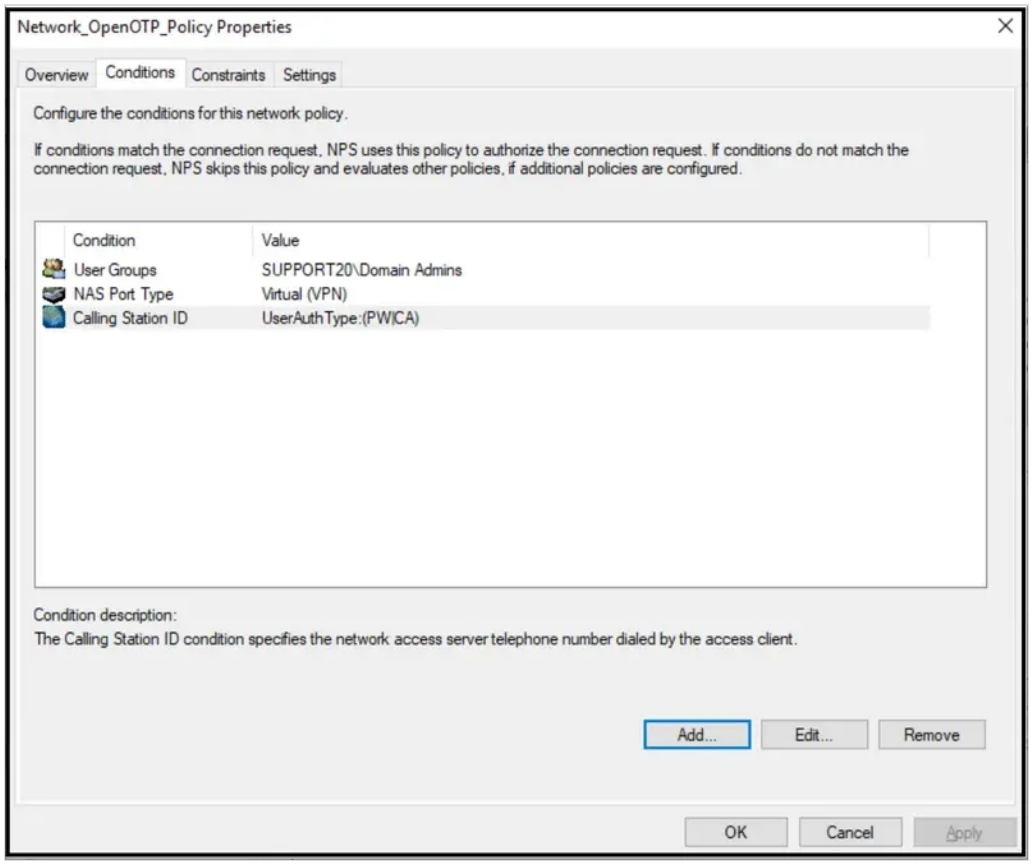


On the following screen, you have to specify conditions.


YO_RDS2
Pour relâcher votre souris, appuyez sur : Control-⌘
Network Policy Server
File Action View Help
NPS (Local)
RADIUS Clients and Serv
RADIUS Clients
Remote RADIUS Serv
Policies
Connection Request
Network Policies
Accounting
Templates Managemen
New Network Policy
Specify Conditions
Specify the conditions that determine whether this network policy is evaluated for a connection request. A minimum of one condition is required.
Select condition
Select a condition, and then click Add.
Groups
Windows Groups
The Windows Groups condition specifies that the connecting user or computer must belong to one of the selected groups.
Machine Groups
The Machine Groups condition specifies that the connecting computer must belong to one of the selected groups.
User Groups
The User Groups condition specifies that the connecting user must belong to one of the selected groups.
Day and time restrictions
Day and Time Restrictions
Day and Time Restrictions specify the days and times when connection attempts are and are not allowed. These restrictions are based on the time zone where the NPS server is located.
Connection Properties
Add...
Cancel
Add...
Edit
Remove
Previous
Next
Finish
Cancel
Type Source
Remote Desktop Gat...
Unspecified
Unspecified
Thursday 00:00-24:00
CHAP v2 OR MS-CHAP
Action: In progress...
ENG
FR
5:44 AM
1/11/2019

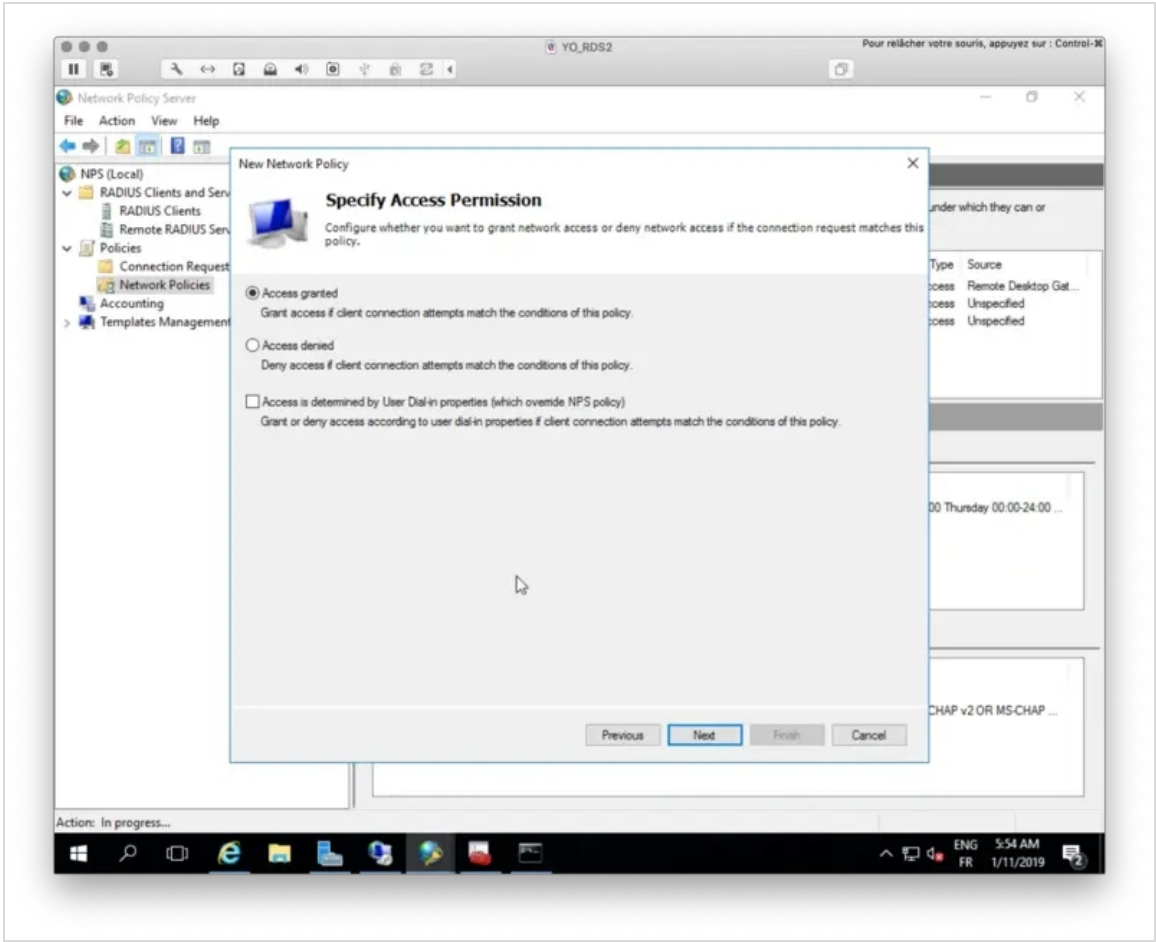

Network_OpenOTP_Policy Properties
Overview
Conditions
Constraints
Settings
Configure the conditions for this network policy.
If conditions match the connection request, NPS uses this policy to authorize the connection request. If conditions do not match the connection request, NPS skips this policy and evaluates other policies, if additional policies are configured.
Select condition
Select a condition, and ther
Groups
Windows Groups
The Windows Gro
groups.
Machine Groups
The Machine Gro
User Groups
The User Groups
Day and time restrictions
Day and Time R
Day and Time Re
restrictions are ba
Connection Properties
User Groups
Specify the group membership required to match this policy.
Groups
SUPPORT20\Domain Admins
Add Groups...
Remove
OK
Cancel
of the selected
ected groups.
oups.
lowed. These
Add...
Cancel
Add...
Edit...
Remove
OK
Cancel
Apply

You should have 3 following conditions configured in your `Network Policy`. For the `Calling Station ID` condition, put `UserAuthType:(PW|CA)` value.

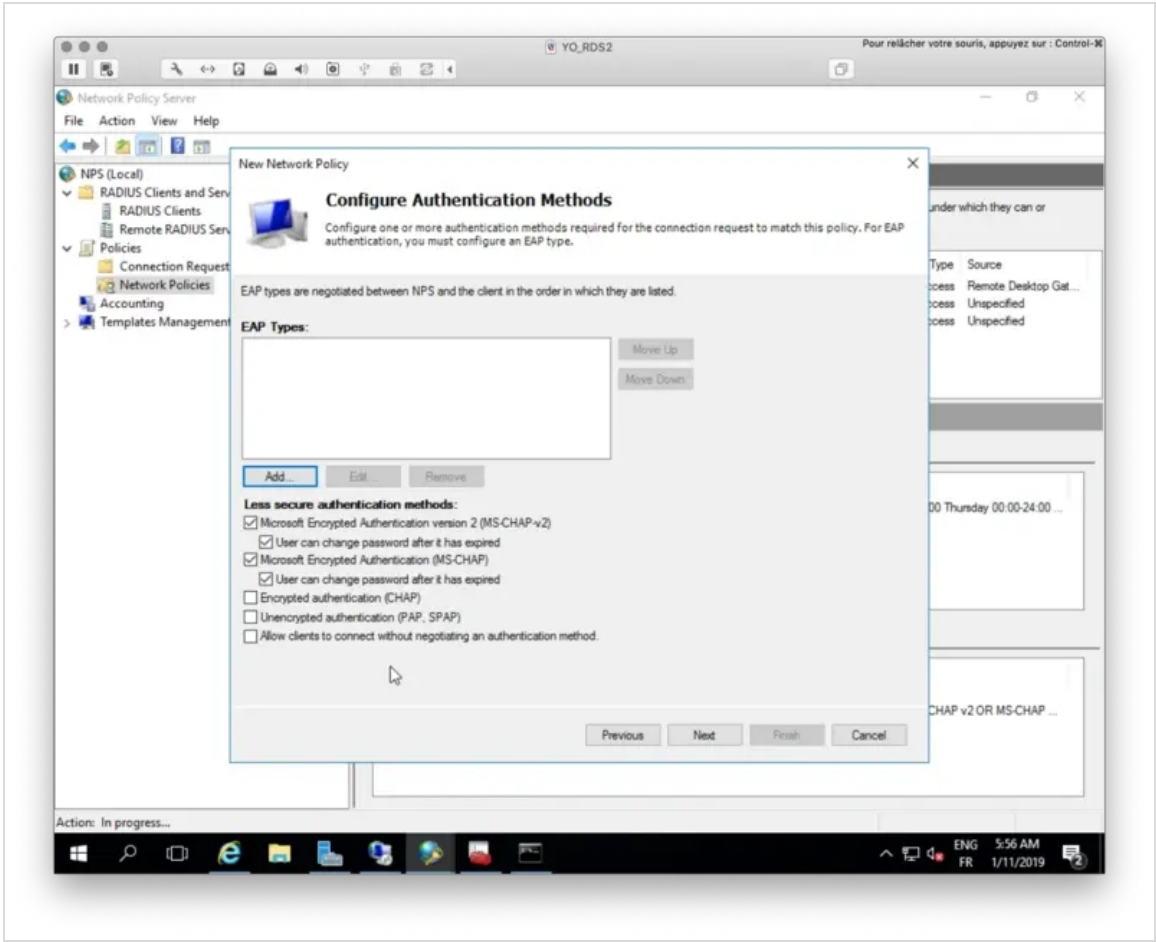


Once you have the 3 previous conditions configured, click `Next`.

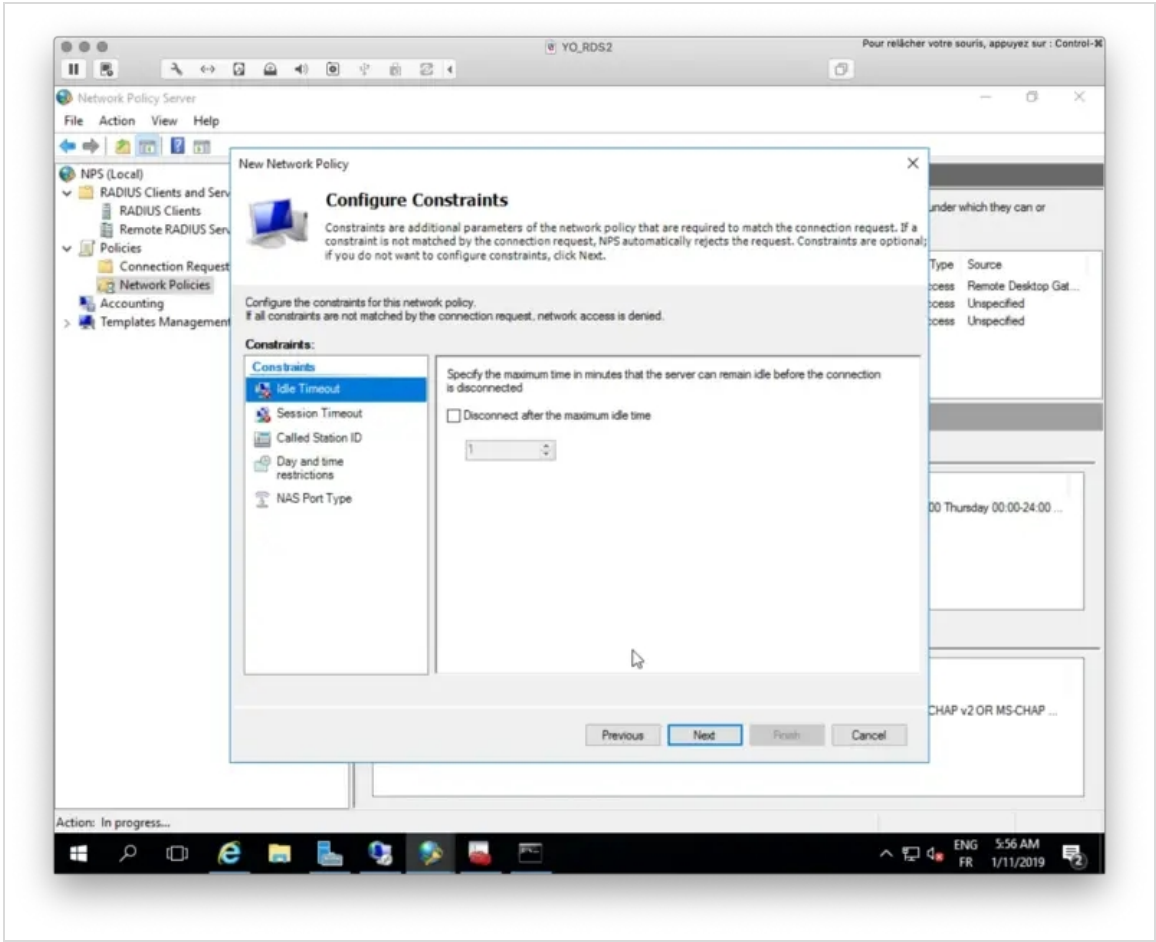
I configured this policy to allow the access so here I select `Access Granted`:



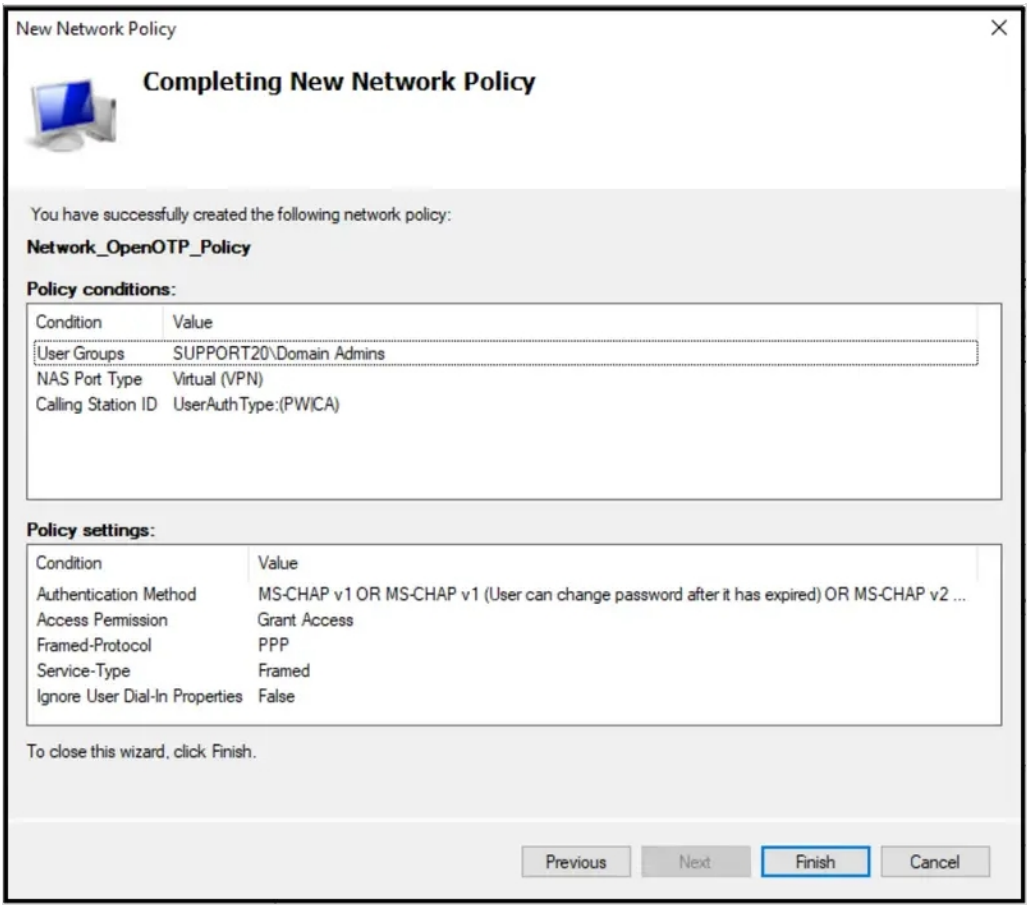
I keep these settings by default.

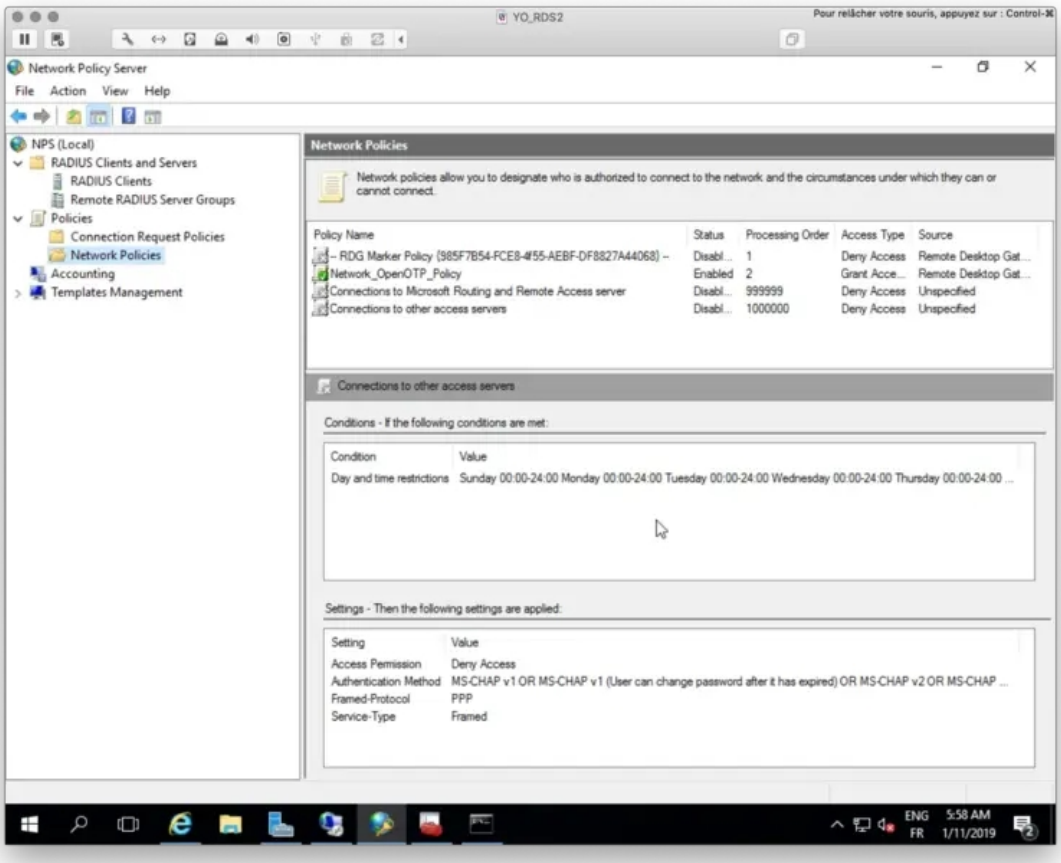


I keep these settings by default.



Here is a summary of my Network Policy.

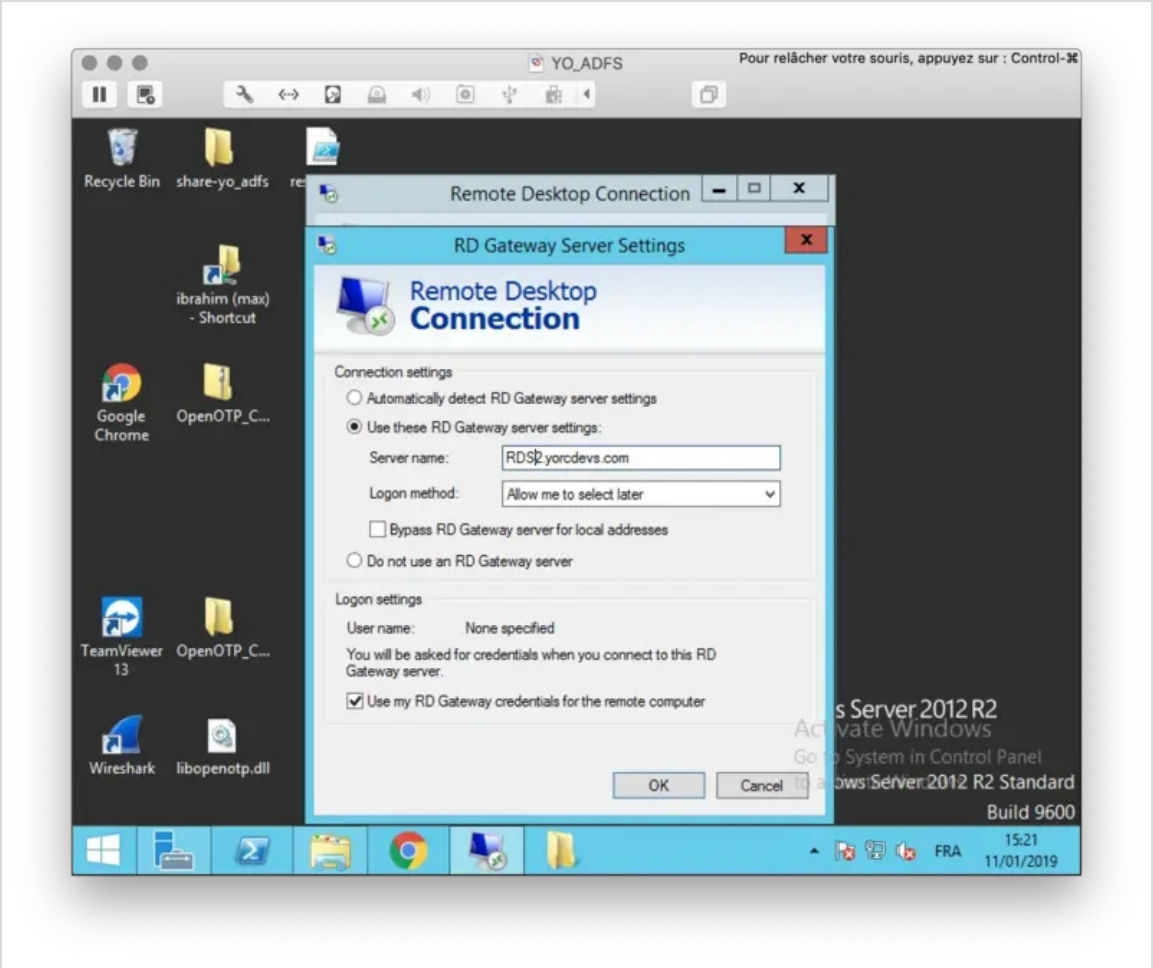

New Network Policy
Completing New Network Policy
You have successfully created the following network policy:
Network_OpenOTP_Policy
Policy conditions:
Condition
Value
User Groups
SUPPORT20\Domain Admins
NAS Port Type
Virtual (VPN)
Calling Station ID
UserAuthType:(PWICA)
Policy settings:
Condition
Value
Authentication Method
MS-CHAP v1 OR MS-CHAP v1 (User can change password after it has expired) OR MS-CHAP v2 ...
Access Permission
Grant Access
Framed-Protocol
PPP
Service-Type
Framed
Ignore User Dial-In Properties
False
To close this wizard, click Finish.
Previous
Next
Finish
Cancel


YO_RDS2
Network Policy Server
File Action View Help
NPS (Local)
RADIUS Clients and Servers
RADIUS Clients
Remote RADIUS Server Groups
Policies
Connection Request Policies
Network Policies
Accounting
Templates Management
Network Policies
Network policies allow you to designate who is authorized to connect to the network and the circumstances under which they can or cannot connect.
Policy Name
Status
Processing Order
Access Type
Source
-- RDG Marker Policy {985F7B54-FCE8-4f55-AEBF-DF8827A44068} --
Disabl...
1
Deny Access
Remote Desktop Gat...
Network_OpenOTP_Policy
Enabled
2
Grant Acce...
Remote Desktop Gat...
Connections to Microsoft Routing and Remote Access server
Disabl...
999999
Deny Access
Unspecified
Connections to other access servers
Disabl...
1000000
Deny Access
Unspecified
Connections to other access servers
Conditions - If the following conditions are met:
Condition
Value
Day and time restrictions
Sunday 00:00-24:00 Monday 00:00-24:00 Tuesday 00:00-24:00 Wednesday 00:00-24:00 Thursday 00:00-24:00 ...
Settings - Then the following settings are applied:
Setting
Value
Access Permission
Deny Access
Authentication Method
MS-CHAP v1 OR MS-CHAP v1 (User can change password after it has expired) OR MS-CHAP v2 OR MS-CHAP ...
Framed-Protocol
PPP
Service-Type
Framed
ENG
FR
5:58 AM
1/11/2019

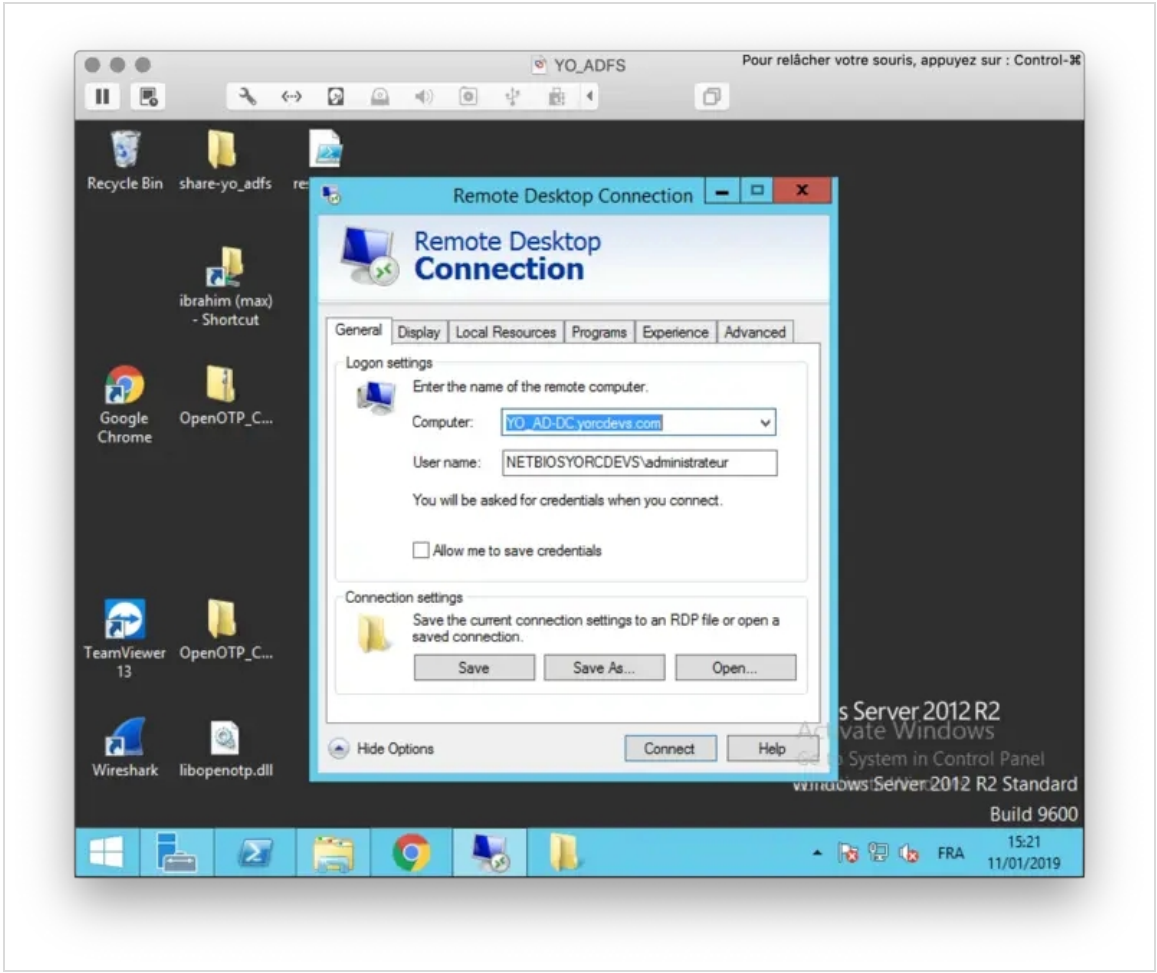
The NPS configuration is done. I should be able now to log in on a Session Host through my RD Gateway and NPS over RADIUS protocol.

4.4. Login Test with MFA Push Login

I start the default RDP client tool from Microsoft. In the advanced configuration, I configure my RD Gateway server address.



I will now try to log in remotely on my AD server, so I configured my AD server address:

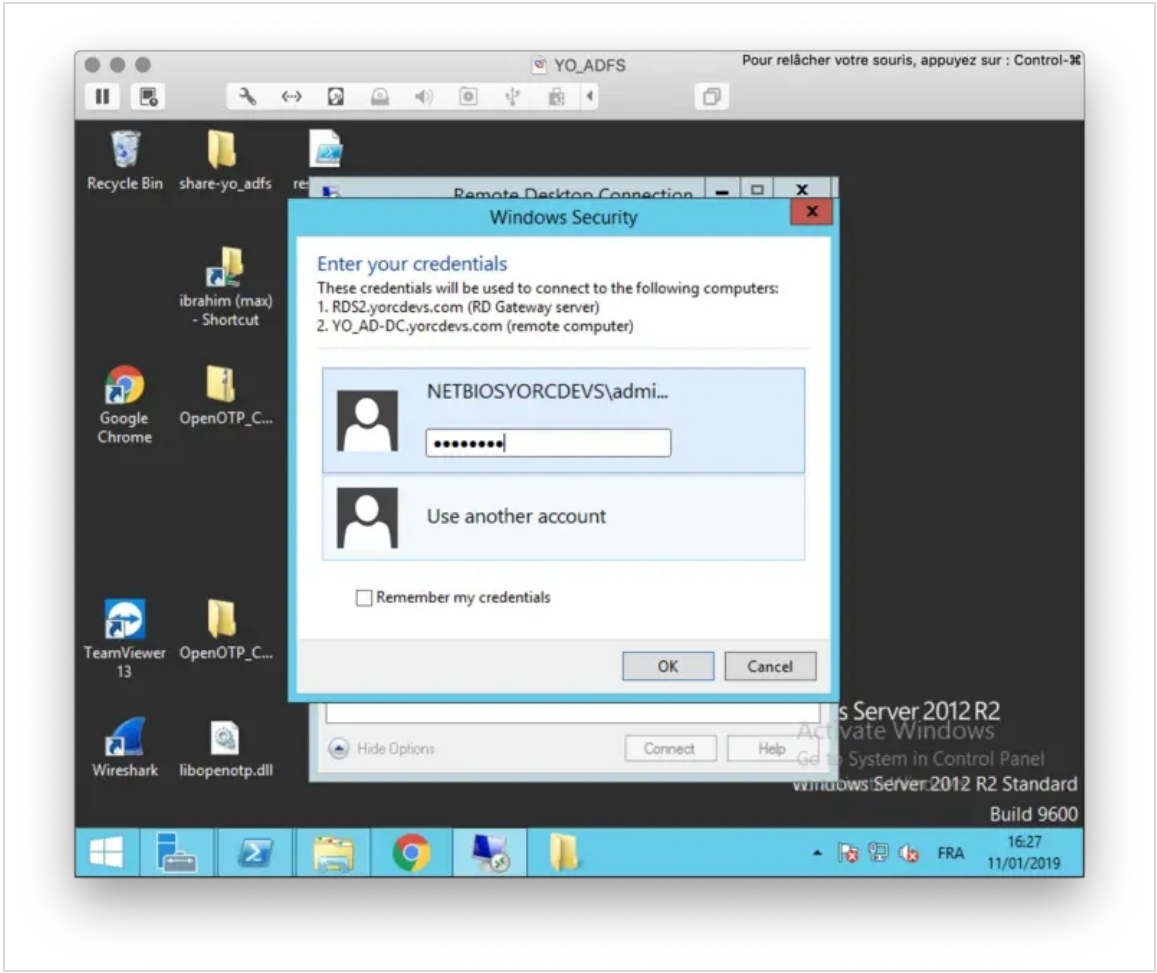


In the meantime, I've started my Radius Bridge component in debug mode with the following command to see in live the radius request sent by NPS:

```
/opt/radiusd/bin/radiusd debug
```

```
Listening on auth address * port 1812 bound to server default
Listening on auth proto tcp address * port 1812 bound to server default
Listening on auth address * port 1645 bound to server default
Listening on acct address * port 1813 bound to server default
Listening on acct address * port 1646 bound to server default
Listening on status address * port 18120 bound to server default
Listening on command file /opt/radiusd/temp/radiusd.sock
Ready to process requests
```

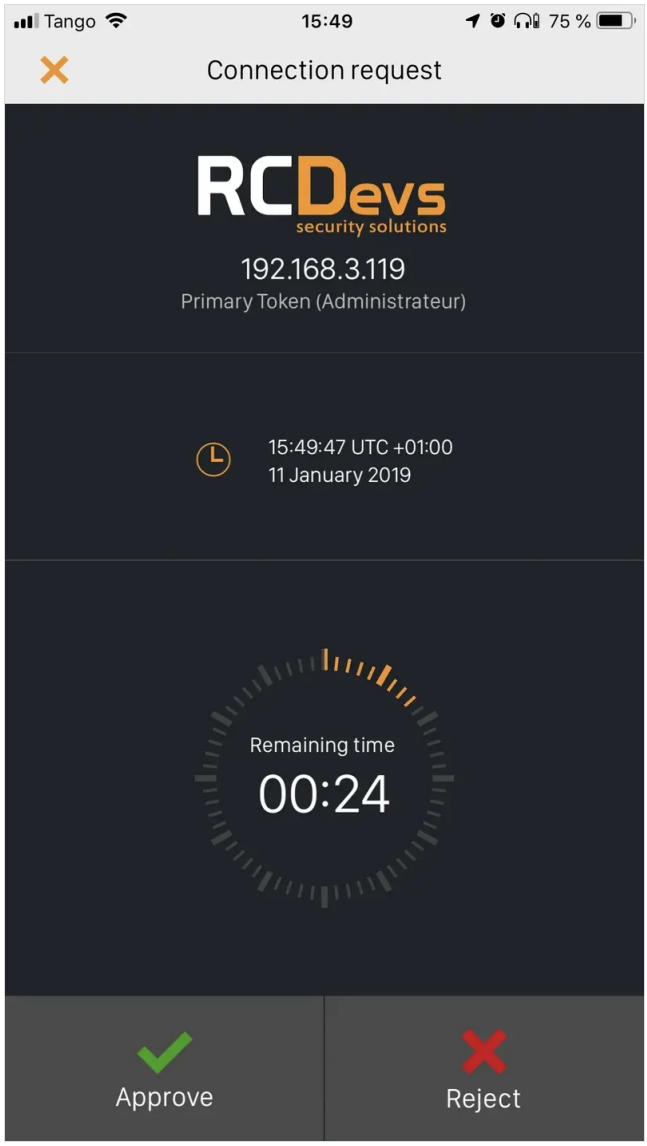
I perform the login now through my RDP client. I'm prompted to enter my Credentials:



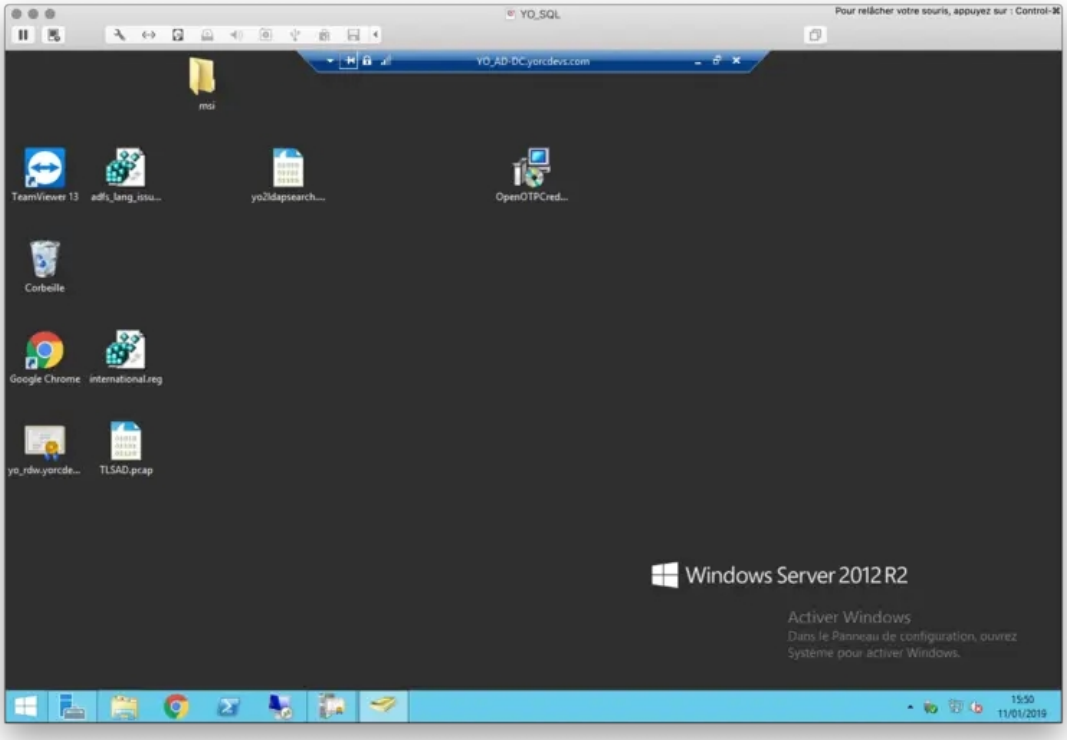
I press OK after providing my credentials, and then I see the RADIUS request coming on my Radius Bridge debug console:

```
(0) Received Access-Request Id 24 from 192.168.3.119:60706 to 192.168.3.54:1812 length 143
(0)   Service-Type = Voice
(0)   User-Name = "NETBIOSYORCDEVS\\administrateur"
(0)   Called-Station-Id = "UserAuthType:PW"
(0)   MS-Machine-Name = "YO_SQL2.yorcdevs.com"
(0)   MS-Network-Access-Server-Type = Terminal-Server-Gateway
(0)   NAS-Port-Type = Virtual
(0)   Proxy-State = 0xfe80000000000000c9e592a48d7b3d5c0000001b
(0) # Executing section authorize from file /opt/radiusd/lib/radiusd.ini
(0)   authorize {
(0) eap: No EAP-Message, not doing EAP
(0)     [eap] = noop
(0) pap: WARNING: No "known good" password found for the user.  Not setting Auth-Type
(0) pap: WARNING: Authentication will fail unless a "known good" password is available
(0)     [pap] = noop
(0)     [openotp] = ok
(0)   } # authorize = ok
(0) Found Auth-Type = OTP
(0) # Executing group from file /opt/radiusd/lib/radiusd.ini
(0)   Auth-Type OTP {
rlm_openotp: Found NPS Terminal-Server-Gateway request (password not requested)
rlm_openotp: Sending openotpNormalLogin request
rlm_openotp: OpenOTP authentication succeeded
rlm_openotp: Reply message: Authentication success
rlm_openotp: Sending Access-Accept
(0)     [openotp] = ok
(0)   } # Auth-Type OTP = ok
(0) Login OK: [NETBIOSYORCDEVS] (from client any port 0)
(0) Sent Access-Accept Id 24 from 192.168.3.54:1812 to 192.168.3.119:60706 length 0
(0)   Reply-Message := "Authentication success"
(0)   Proxy-State = 0xfe80000000000000c9e592a48d7b3d5c0000001b
(0) Finished request
Waking up in 9.9 seconds.
(0) Cleaning up request packet ID 24 with timestamp +9
Ready to process requests
```

I now received the push login request on my phone:



I approve the login request, and I am logged on my remote server:



5. Another scenario

Another scenario is also possible which consist on protect each session hosts with the OpenOTP Credential Provider for Windows login. The 2FA login will be performed by each session hosts instead of a centralized component.