



# Basics Module 32 - Remote Desktop Services Environnement

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# 1 Introduction

## 1.1 PcVue version

This module is for PcVue version 11.0.

## 1.2 In this module you will learn

- ★ How to configure the PcVue architecture to use Remote Desktop Services.
- ★ How to run PcVue in a client session.
- ★ How to configure Windows Server to allow Remote Desktop Services sessions.

Note: Since Windows Server 2008, Terminal Server is not used. It is replaced by Remote Desktop Session Host.

Documentation : [http://msdn.microsoft.com/en-us/library/windows/desktop/dd979766\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/dd979766(v=vs.85).aspx)

Previous name	English	French
Terminal Services	Remote Desktop Services	Services Bureau à distance
Terminal Server	Remote Desktop Session Host (RD Session Host)	Hôte de session Bureau à distance
Terminal Services Licensing (TS Licensing)	Remote Desktop Licensing (RD Licensing)	Gestion de licences des services Bureau à distance
Terminal Services Gateway (TS Gateway)	Remote Desktop Gateway (RD Gateway)	Passerelle des services Bureau à distance
Terminal Services Session Broker (TS Session Broker)	Remote Desktop Connection Broker (RD Connection Broker)	Service Broker pour les connexions Bureau à distance
Terminal Services Web Access (TS Web Access)	Remote Desktop Web Access (RD Web Access)	Accès Web Bureau à distance
Terminal Services Virtualization	Remote Desktop Virtualization Host (RD Virtualization Host)	Serveur hôte de virtualisation des services Bureau à distance

## 1.3 Files used in this module

None.

## 1.4 Third party software used in this module

Windows Server 2012 with RDS role available.

## 2 This feature in PcVue architecture

There is no particular process in PcVue associated with the Windows Remote Desktop Services environment.

## 3 Concepts

### 3.1 Requirements

Using PcVue with Remote Desktop Services (RDS) requires the use of PcVue's network station architecture. This module uses many of the features covered in the Multi-station training module, and requires a good understanding of PcVue network configuration. Please make sure that you have read it before continuing with this module.

Demo mode does not allow this architecture to run a network dongle is mandatory.

The practical exercises can only be done using a server based operating system – either Windows Server 2008®, Windows Server 2012® or Windows Server 2012 R2®.

### 3.2 Architecture

The following picture shows the default architecture. The aim of RDS architecture is to be able to access PcVue from any RDS terminal connected to the Ethernet network.

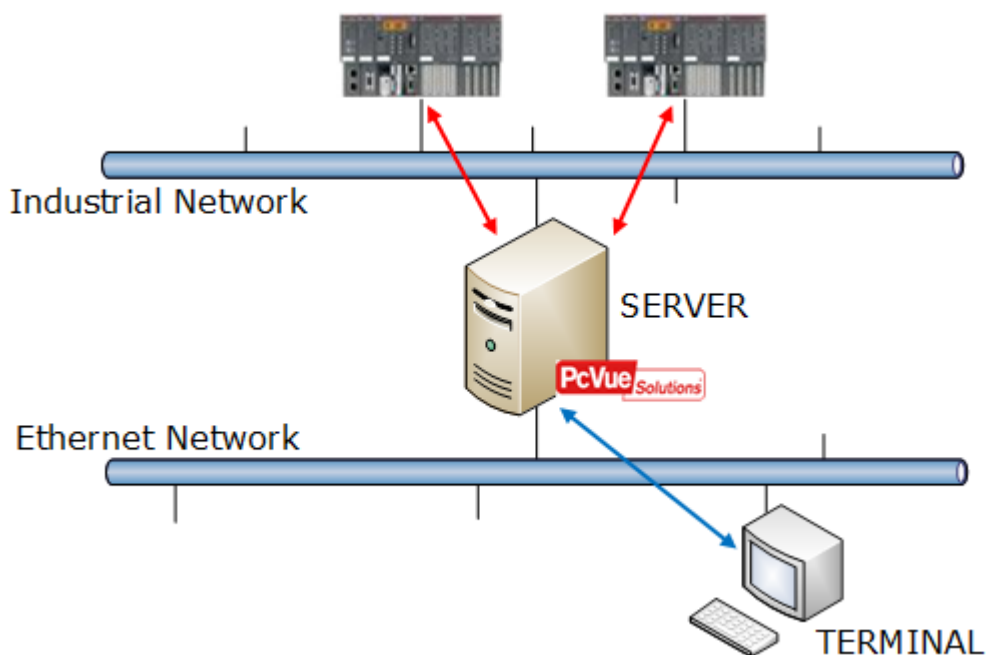


Figure 1

In this architecture, the PcVue SERVER connects to one or more devices using classical communication channels (OPC, native drivers...).

PcVue is only installed on the PC that is running either Windows Server 2008®, Windows Server 2012® or Windows Server 2012 R2®.

There is no PcVue installed on the TERMINAL side. There is only PcVue project present on the SERVER. The TERMINAL is connected to the SERVER using a Remote Desktop application (Known as the Remote Desktop Connection on Windows.)

The SERVER hosts two sessions: Interactive session (used by the server to communicate with equipment) and terminal session. The TERMINAL is only used to display the application that is running on the SERVER in the terminal session thru the Ethernet Network.

Of course it is possible to have 1 or more TERMINALS

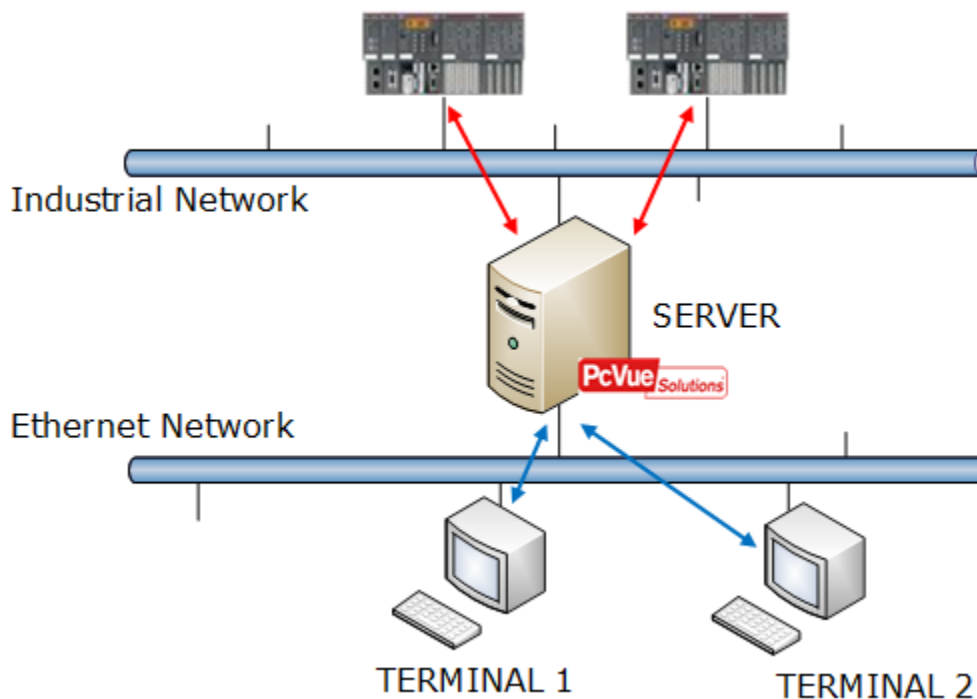


Figure 2

To create this kind of architecture in PcVue, you have to use the Networking configuration in the Application Explorer.

Each session is declared as a network station.

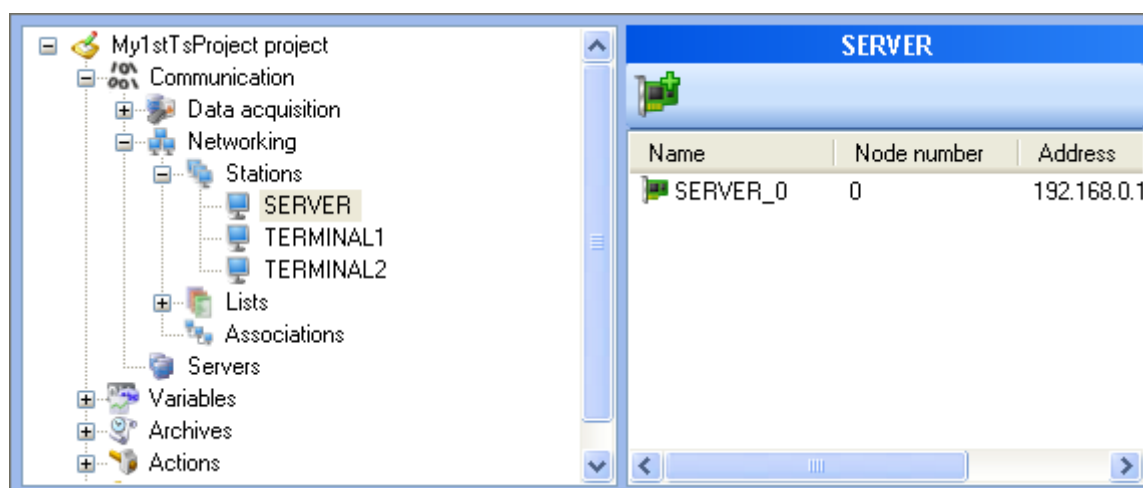


Figure 3

## 4 Windows Server Configuration

Before configuring your PcVue project to run in a Remote Desktop Services environment, you have to configure the Operating System adding a new role for Remote Desktop Services.

The following description is based on Windows Server 2012 R2®

### 4.1 Remote Desktop Services behaviour

Since Windows Server 2008®, you have been able to manage your server behaviour without having to use Add/remove Windows Components using a new application known as the Server Manager.

For the installation, there are two prerequisites: it is necessary to have an user belonging to the local administrator group and the server must be a member of an Active Directory Domain.

**Step 1.** On the server, open the Server Manager, click on Manage, then Add Roles and Features

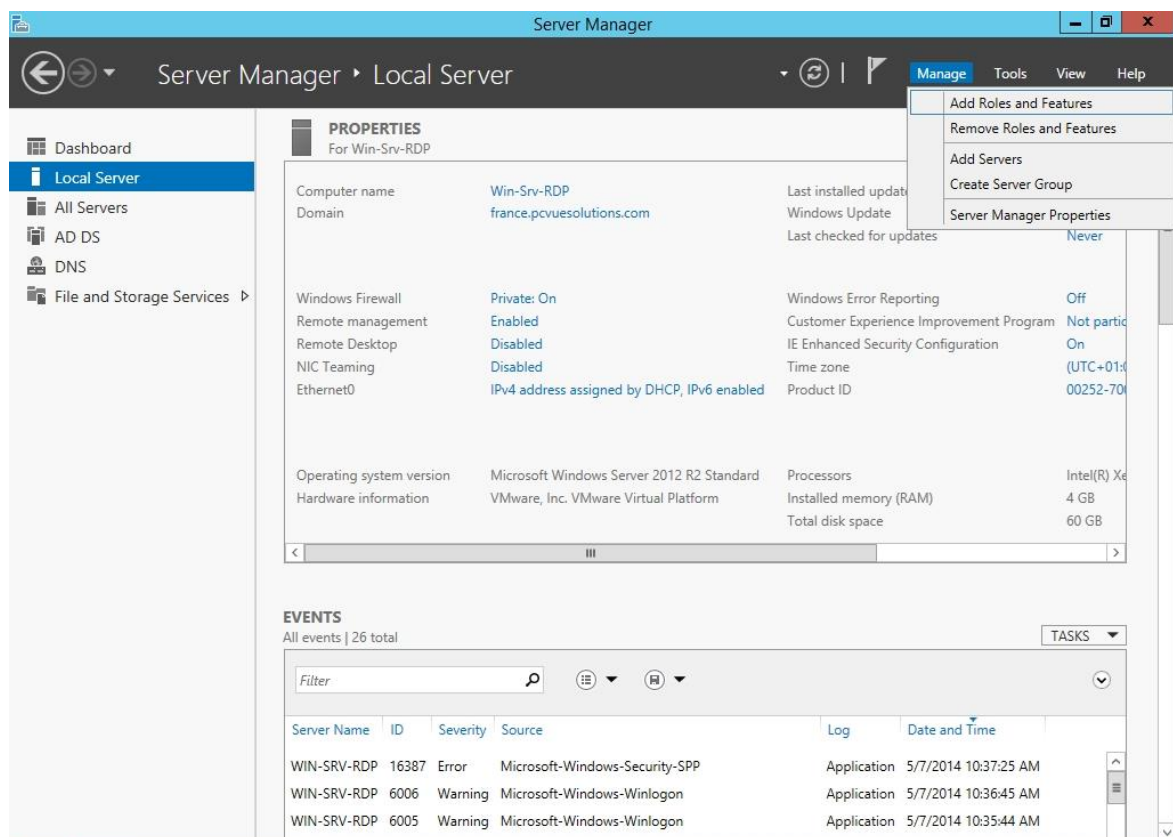
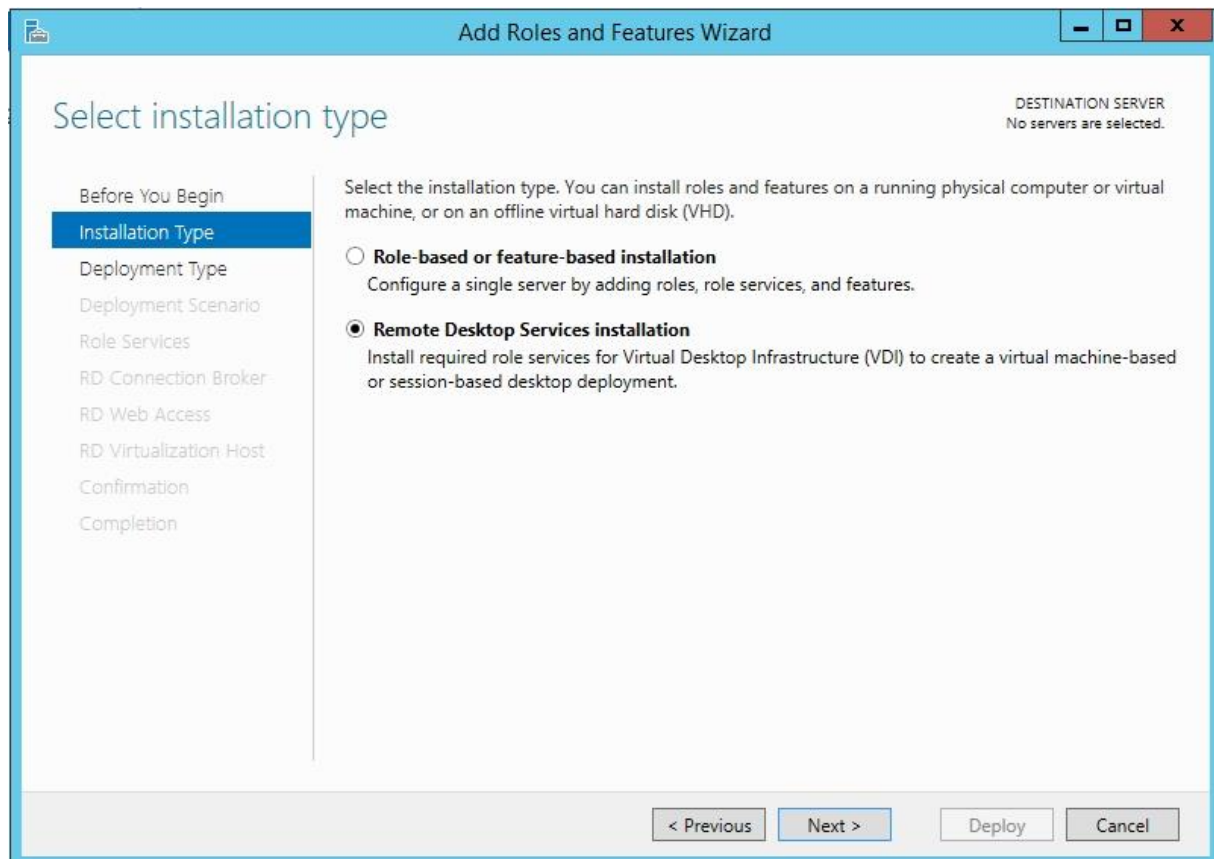


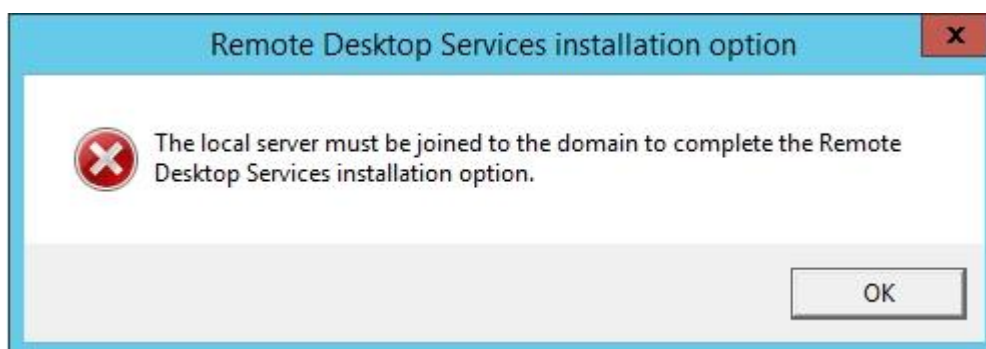
Figure 4

**Step 2.** The Add Roles and Features Wizard opens. Choose Remote Desktop Services installation.



**Figure 5**

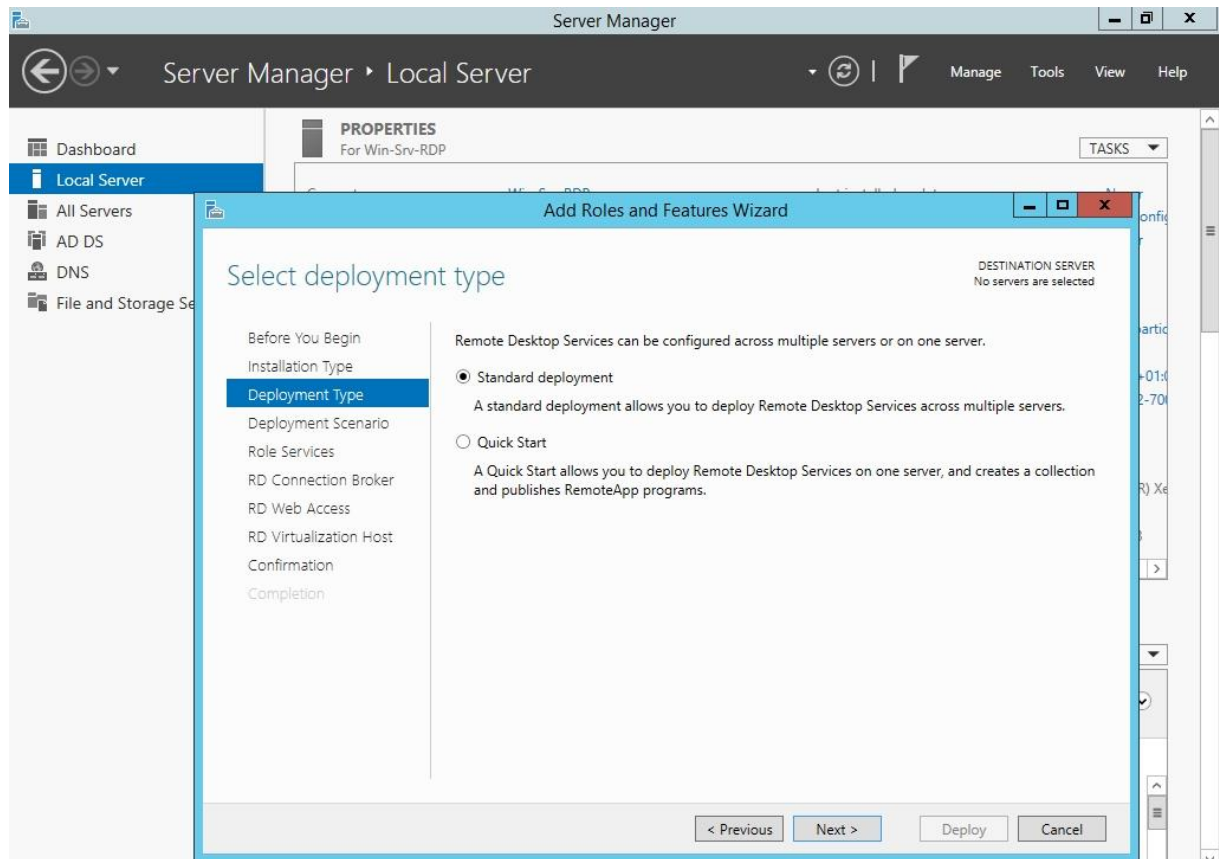
If your server is not a member of an Active Directory Domain, you will be prompted:



**Figure 6**

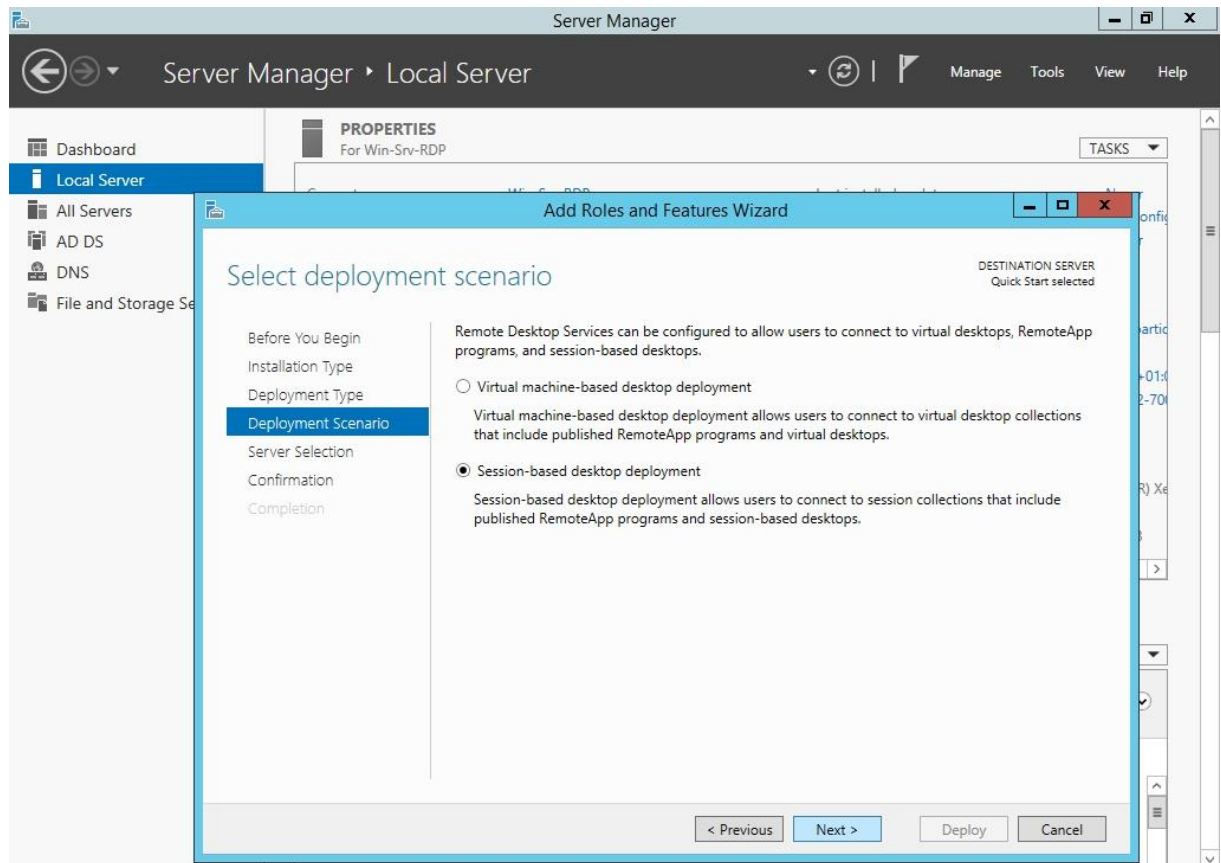


**Step 3.** Otherwise, you have to choose between Standard Deployment, or a Quick Start scenario. In most cases, you will use the quick start scenario, which installs and configure all roles and services needed by the Remote Desktop on one server (RD Connection Broker, RD Web access and RD Session Host).



**Figure 7**

**Step 4.** You have to choose between Virtual machine-based desktop deployment, which is out of our scope, and session-based desktop deployment.



**Figure 8**

## Step 5. Choose the local server to setup the role

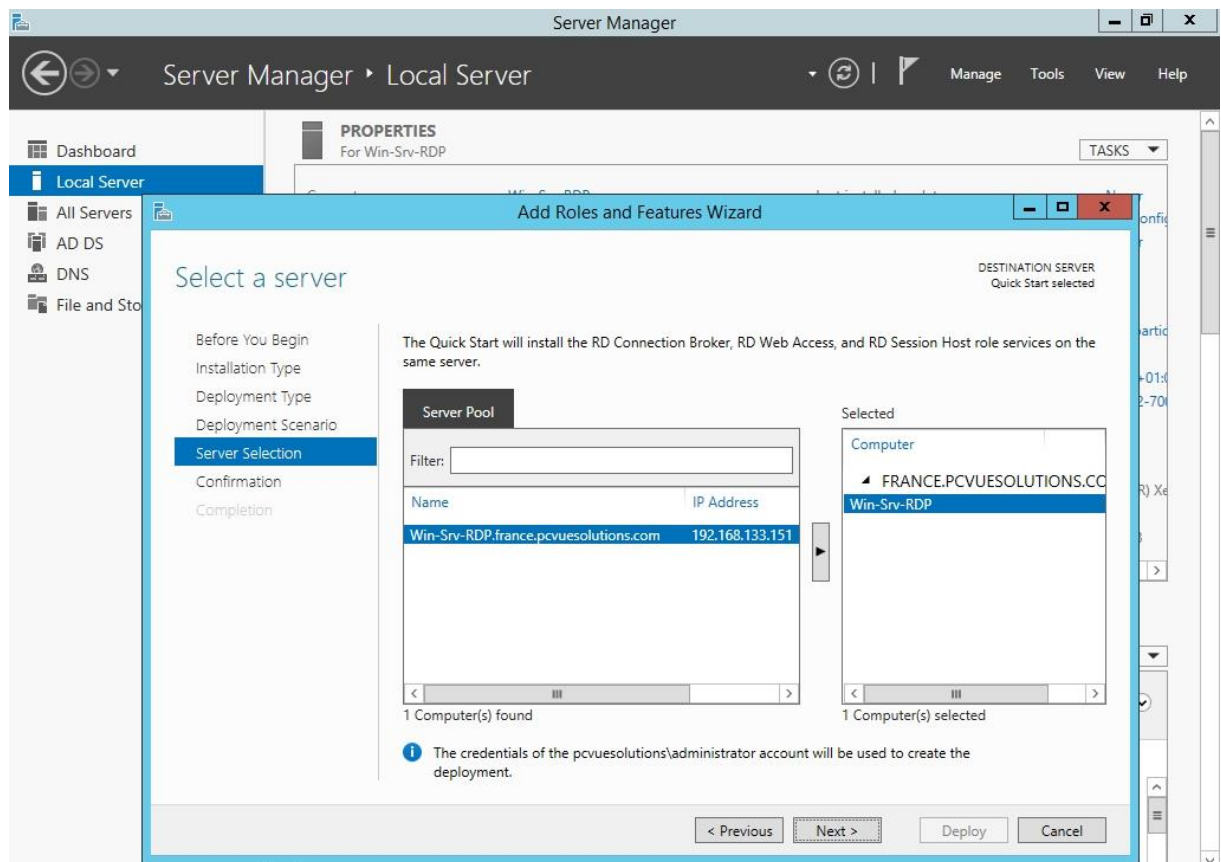
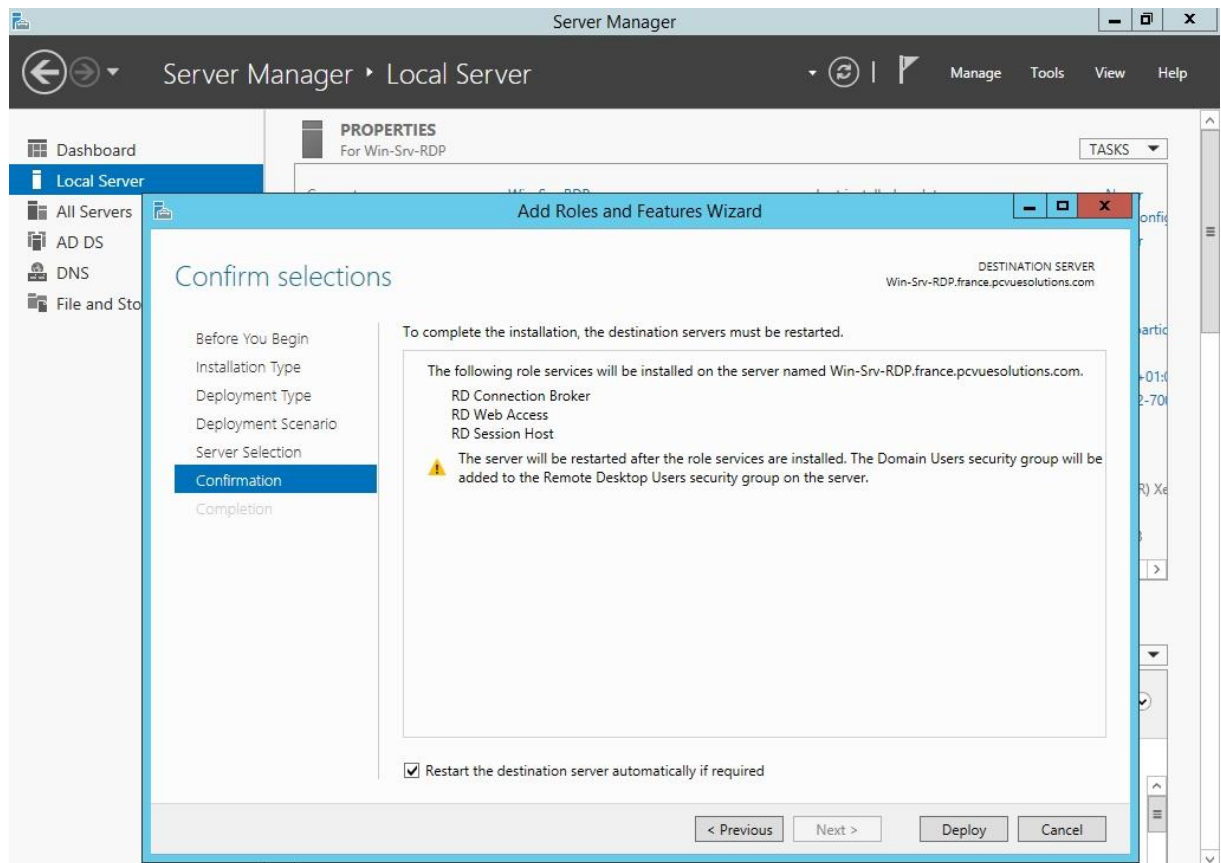


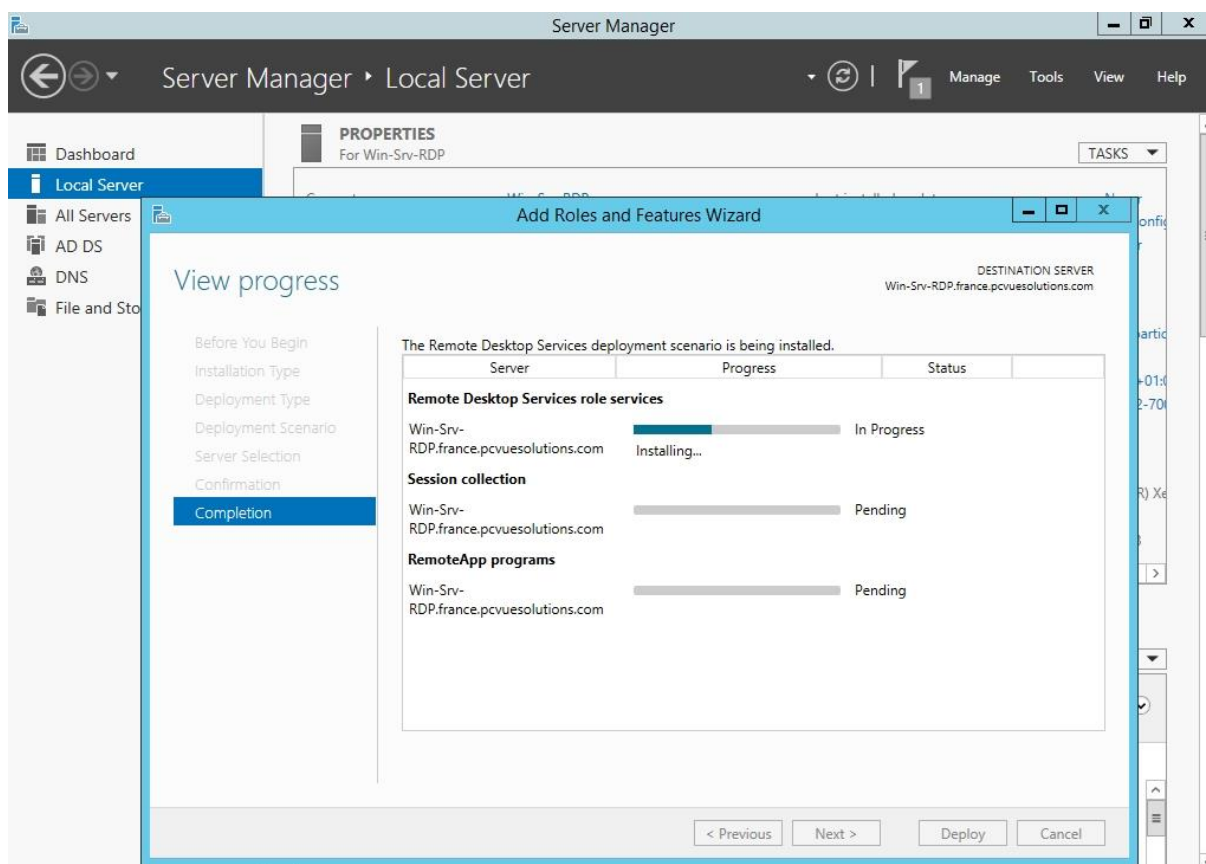
Figure 9

**Step 6.** You have to tick the checkbox “Restart the destination server automatically”, and click on “deploy”. The deployment begins, showing the progression of all Roles and Services installation.



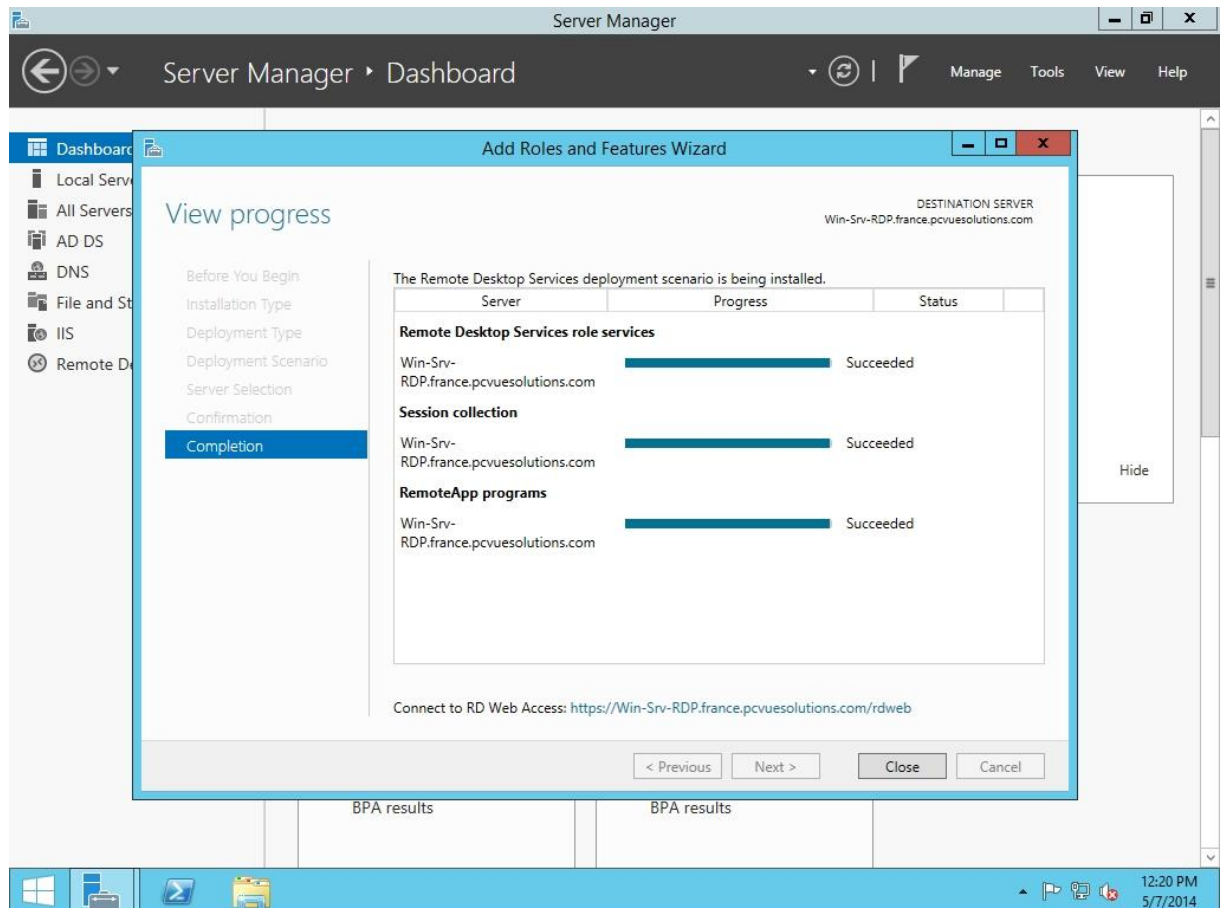
**Figure 10**

**Step 7.** Once the installation is done, you have to restart the server to complete the process.



**Figure 11**

**Step 8.** The server then reboots. You have to log on with the same account you have used to initiate the deployment. The server Manager opens automatically, and shows the progression of the desired features. When finished, you will have the following screen.



**Figure 12**

Note that a notification appears on the taskbar about licensing. The Remote Desktop Services will work 120 days without License. We will not see in this document how to setup and configure a license server.



To allow several connections from clients to a Remote Desktop server, you have to install Client Access Licenses (CALs). If this server is to manage the CALs you also have to install RDS Licensing Role.



## Exercise 1.

1. Configure the server with Remote Desktop Services role.

### 4.2 Windows Remote Desktop Services users

In the Windows Server configuration, Windows 'users belongs to groups.

Each user who needs to access to the Remote Desktop Services has to belong to the group defined during the Remote Desktop Services configuration.

Moreover, because these users will access thru RDP, they have to be member of Remote Desktop Users group.

### 4.3 Folders security

Because PcVue generates files during start-up phase, it is necessary to update the security folder definition on all PcVue folders.

Step 1. Right click on the PcVue Folder and select Properties.

Step 2. Selecting the security tab, add the Users group.

Step 3. Add the same groups as defined in the Remote Desktop Services configuration and select them as Full control.

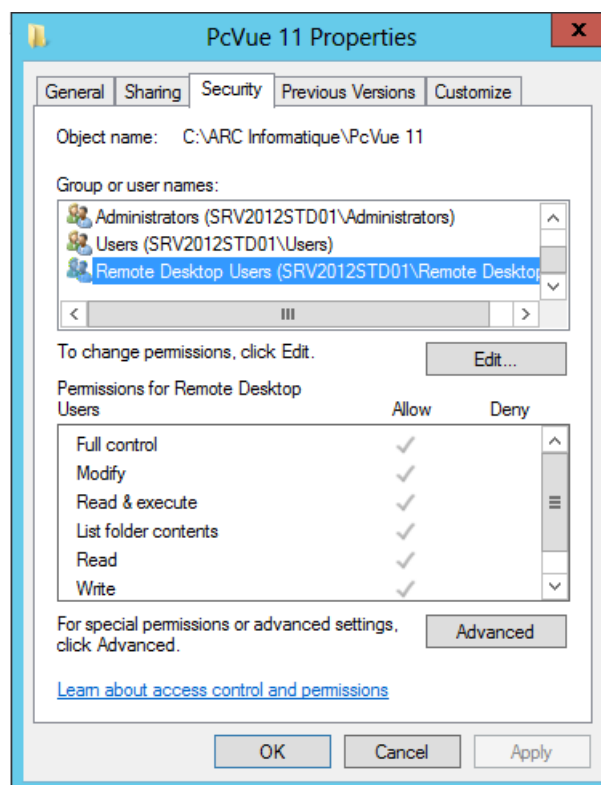


Figure 13



If your project isn't located under the PcVue path, then you have to define the same properties configuration on the project folder.



If you use the central project management, you must define the same right on the central versions folder.



## 5 PcVue Configuration

### 5.1 Network configuration

The multi-station architecture is configured using Application Explorer under Communication/Networking.

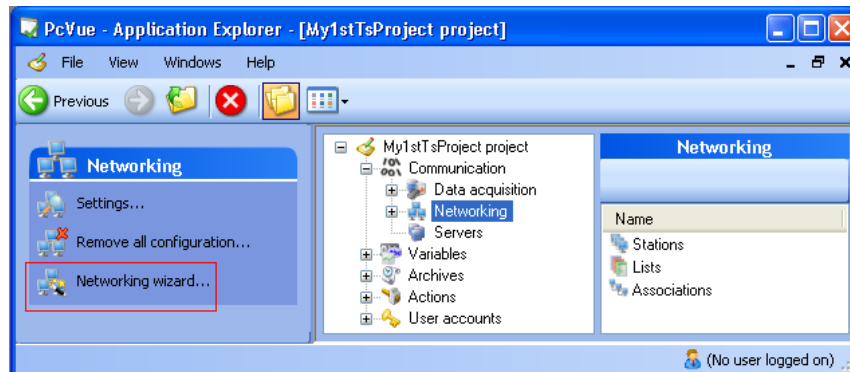


Figure 14

**Step 1.** Start the Networking wizard. It can be used to configure all the network architecture.

**Step 2.** Choose the option "With Remote Desktop Session Host server"

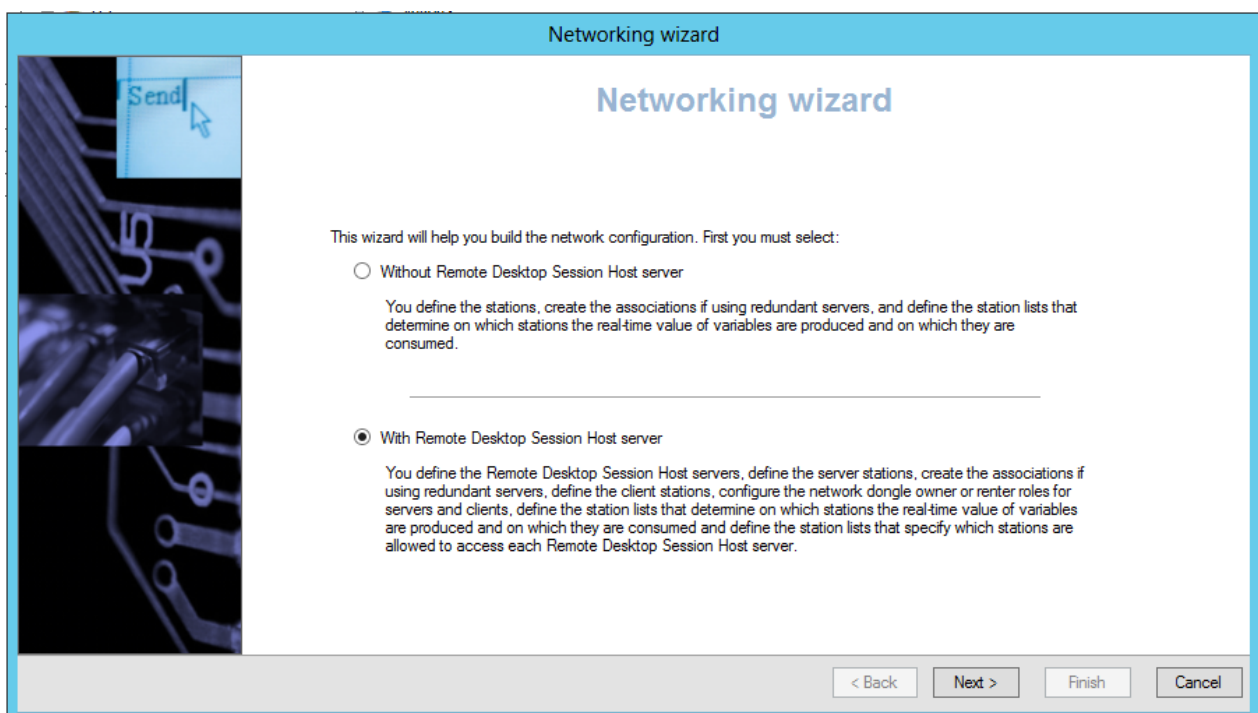


Figure 15

**Step 3.** Add the Remote Desktop Session host server with IP address or host name

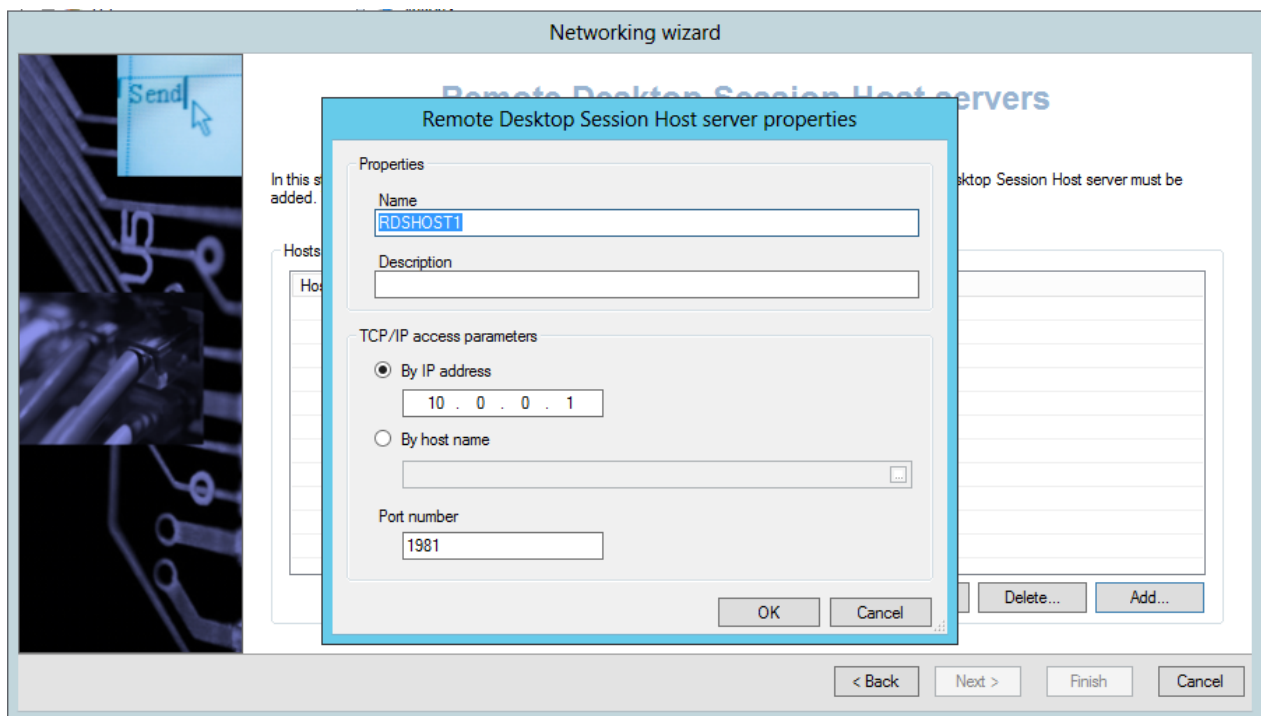


Figure 16

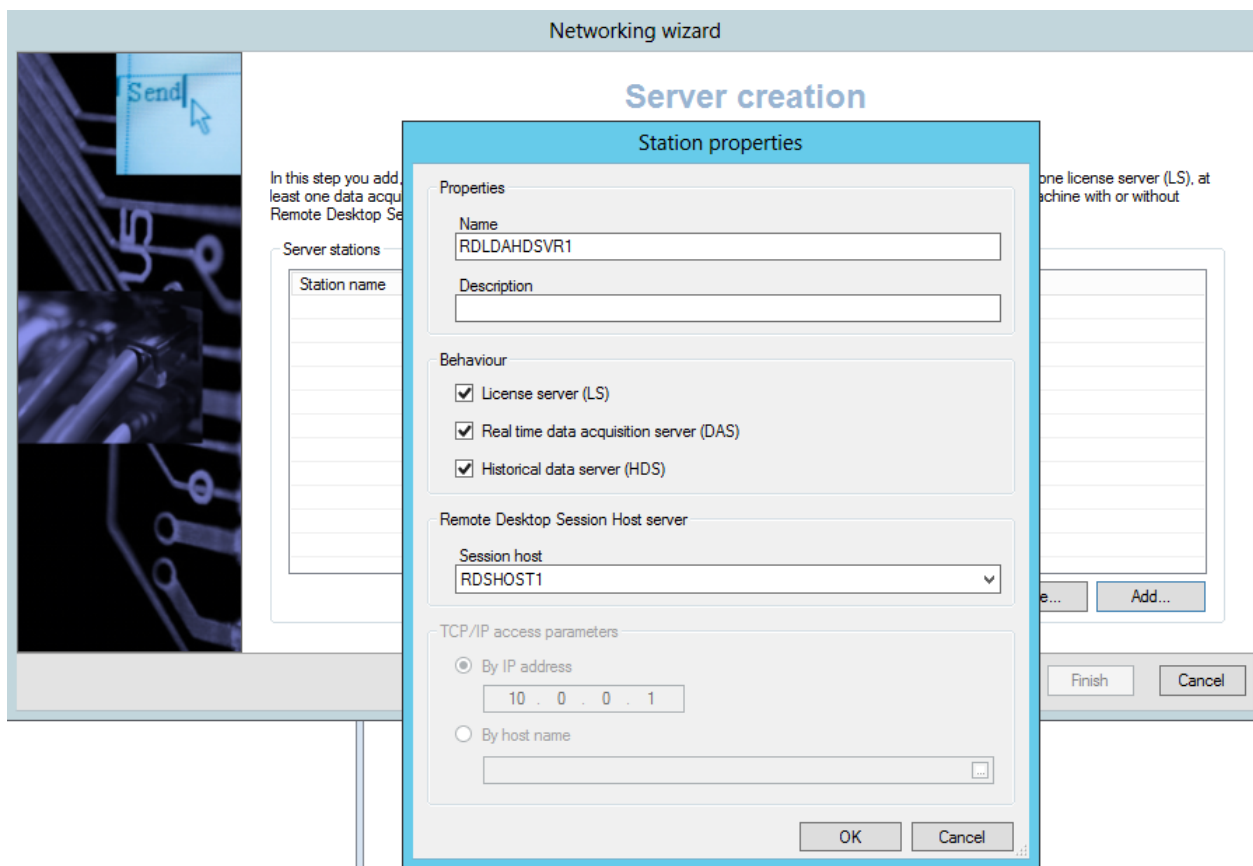


By default, PcVue multi-station communication uses the TCP port 1981.



Be sure the ports are not used by other software (netstat command)!  
Check that these specific ports are open in the firewall.

**Step 4.** In this step, you add server stations. A server has one or more of the following behaviours: License Server, Real-time Data Acquisition Server (DAS) and Historical Data Server (HDS).

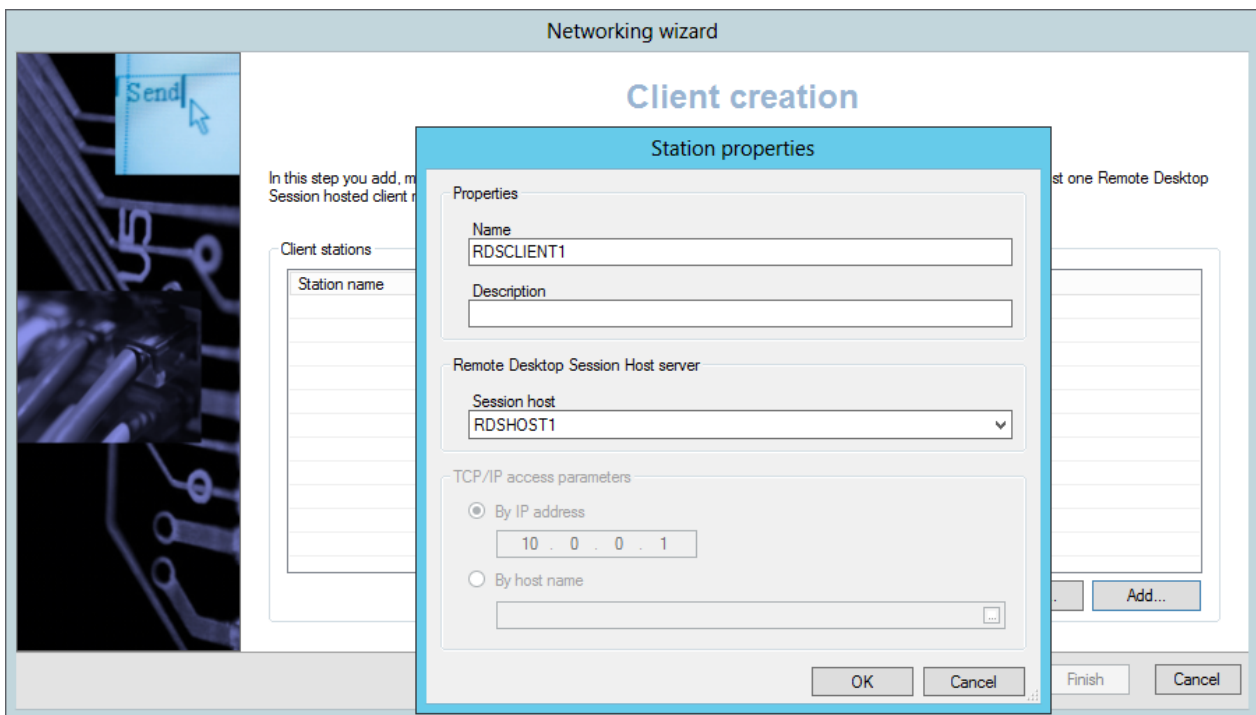


**Figure 17**

**Step 5.** Add one or more Real-time data acquisition server associations

**Step 6.** Add one or more Historical data server associations

**Step 7.** Add standalone client station and/or Remote Desktop Session hosted clients.



**Figure 18**

**Step 8.** This step is used for configuring the access to the dongle for each RDS client. It displays the client RDS list with their network dongle owner's name and their network dongle slot number.

The PcVue license is coded in the USB dongle. The problem is that all PcVue stations must share the same dongle. The only way to manage this situation is by using a special dongle known as a Network Dongle. To indicate to PcVue that the license is coded in a network dongle you must define the network dongle owner's name and the network dongle slot number.



**Figure 19**

In a network dongle, 3 different parts are coded:

Number <input type="text" value="123456"/>		Version <input type="text" value="8.0"/>	
Size <input type="text" value="5000"/>	Licenses <input type="text" value="2"/>	Size <input type="text" value="2000"/>	Licenses <input type="text" value="4"/>
Type <input type="text" value="Complete"/>	Type <input type="text" value="Run-time"/>	Type <input type="text" value="Run-time"/>	Type <input type="text" value="Run-time"/>
Network <input type="text" value="Yes"/>	Network <input type="text" value="Yes"/>	Network <input type="text" value="Yes"/>	Network <input type="text" value="Yes"/>
Protocols <input type="text" value="2"/>	Range <input type="text" value="Client"/>	Range <input type="text" value="Client"/>	Range <input type="text" value="Client"/>
<b>BASE</b>		<b>NETWORK1</b>	
		<b>NETWORK2</b>	

**Figure 20**



**BASE slot:** This license is used by the PcVue that is running in the console session.

**Slot 1 and slot 2 (shown as network1 and 2 just above):** Each slot contains 1 or more licenses. Each time a station starts it will take a license from a slot. You can have different licenses on each of slots but all licenses in a particular slot must be the same. (e.g. it could be 2 x 2000 tag licenses in slot 1 and 4 x 1000 tag licenses in slot 2).

Networking wizard

### Remote Desktop Session hosted client as network dongle renter

In this step a Remote Desktop Session hosted client station's role is always as network dongle renter, but you need to specify its network dongle slot number and its owner's station name or association name. You can return to this step at any time while the wizard is running.

Remote Desktop Session

Station name	RDSCLIENT1

**Station properties**

Properties

Name

Description

Network dongle role

☒ Renter

Network dongle location

Slot number

Owner's station name or association name

OK Cancel

**Figure 21**

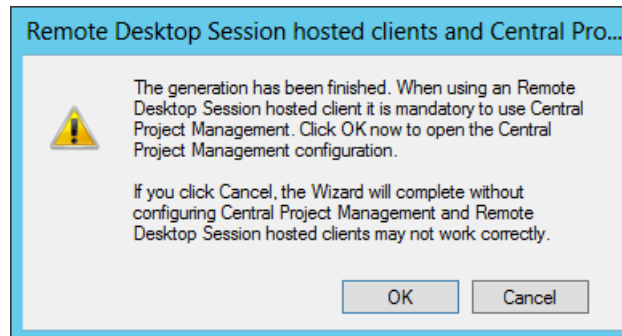


If you want to use a server association as owner's dongle, please contact technical support.

**Step 9.** In this step, you fix any IP address or host name conflicts and you see a networking architecture preview.

**Step 10.** Click on Finish and the networking configuration is generated.

After generation, a pop up advise you to use the central project management. We will see at the chapter 5.4.



**Figure 22**



## Exercise 2.

- a. Using the Networking Wizard, define an architecture that includes 1 server named RDSHOST1
- b. Add 2 clients (named RDSCLIENT1 and RDSCLIENT2) that will be hosted on the same computer.
- c. Once you complete the wizard, verify the station configuration and the option "Use different working folder for each Remote Desktop Session hosted client"

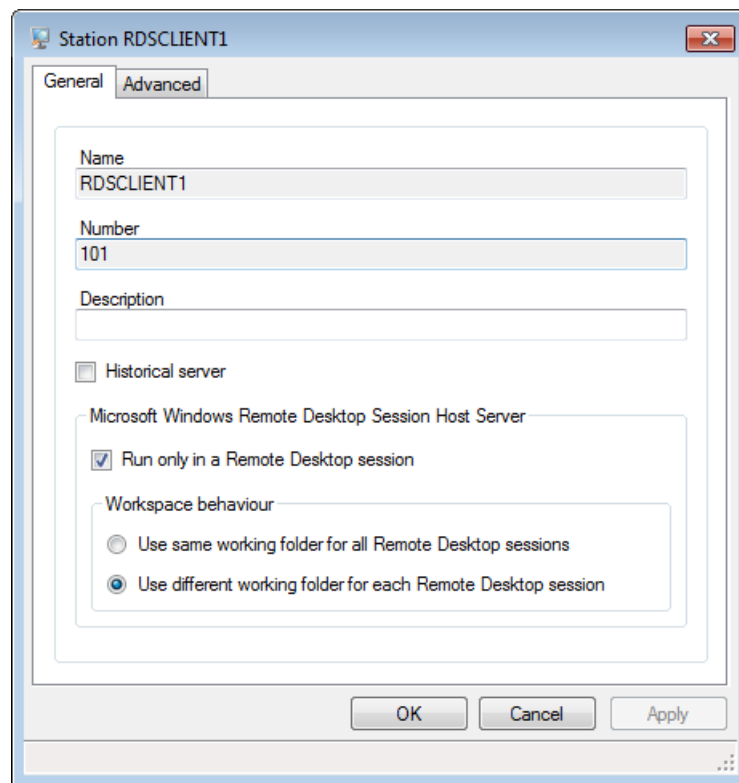


Figure 23

- d. Verify the network dongle role and location in the advanced tab.



### Exercise 3.

- a. Create 3 variables:
  - i. 1 register called RDS.REG
  - ii. 1 Alarm called RDS.ALARM
  - iii. 1 Bit called RDS.BIT
- b. For these 3 variables, define the Network distribution
- c. For these 3 variables, define the Network distribution by using LCALL as clients
- d. Create a new mimic that is using this 3 variables

The main points you have to keep in mind:

- ★ You just need to install PcVue on the server. It will host several sessions.
- ★ Each RDS session should be declared in PcVue as a client station.
- ★ It is necessary to define a specific TCP port per session/connection.

## 5.2 PcVue Shortcut

To indicate to PcVue that it is to be used in a Remote Desktop Services session we must add the following option to the PcVue shortcut.

★ -WTS <Project\_name>,<Client\_RDS\_List>.

- <Project\_name>: The name of the project with which PcVue will start.
- <Client\_RDS\_List>: The name of a client station list or the name of a specific station. By using a client station list the station number for the instance of the Supervisor will be selected automatically. The station number in the file INI.DAT is ignored.

Example: C:\....sv32.exe -WTS MODULE\_32, LCRDS\_RDSHOST1\_CLIENTS



The -station\_number command line switch MUST NOT be used when the Supervisor is running in a terminal on a Windows Remote Desktop Services.



Before PcVue 11, the network dongle access configuration was not available in the networking configuration. It was necessary to add the option-k to the PcVue RDS shortcut.

**Now, this option is obsolete.**



### Exercise 4.

- a. Create a new PcVue shortcut called RDS Session
- b. Add -WTS option to launch your project in a RDS session

Main points you have to keep in mind:

- ★ Your dongle can contain several licenses.
- ★ The -WTS option allows you to start PcVue in a RDS session with a station number automatically provided by PcVue.



### 5.3 PcVue SVTerminalServer service

Before running PcVue in a RDS session, you have to manually install the SV Terminal Server Service. Without this service, PcVue is not able to automatically provide a station number when you start a RDS session.

You will find it in the PcVue's BIN folder.

**Step 1.** Open a command prompt and locate the Supervisor's BIN folder in which the executable files are located.

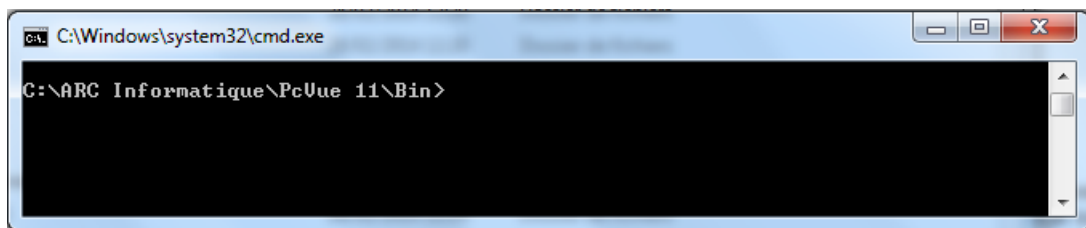


Figure 24

**Step 2.** Enter the following command in the command prompt :  
svTS.exe -Install

**Step 3.** Close the command prompt.

**Step 4.** Open the Windows' Control Panel and select Administrative Tools.

**Step 5.** Open Computer Management and locate the Services tool.

**Step 6.** Select SV Terminal Server Services and manually start the service.

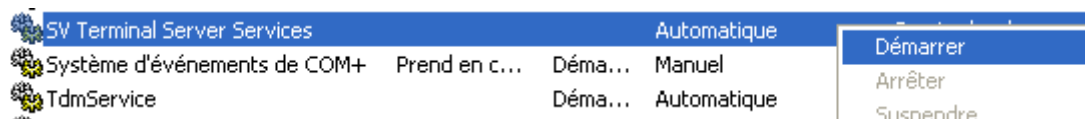


Figure 25



Without this service, the -WTS option will not be able to dynamically allocate a PcVue session station number.



Because this service is manually installed, it will not be uninstalled by removing PcVue.

If you need to update your PcVue version you must uninstall the service **BEFORE** removing PcVue by using the following command : svTS.exe - Install -u



### Exercise 5.

- a. Open a command prompt.
- b. Install the SV terminal server service.
- c. Launch the service.



Do you need to launch this service each time you restart your computer?



Main points you have to keep in mind:

- ★ The service is mandatory if you are using RDS configuration
- ★ You must install this service manually
- ★ If you want to update your PcVue version you **MUST** uninstall the service before you proceed with the update.

## Exercise 6.

### Exercise 7.



- Declare users that belong to the same user groups used during the Remote Desktop Services configuration.
- On the server, launch PcVue
2. Update the PcVue folder security properties by adding the needed user groups with full control
  3. Launch RDP and try to open a connection to the server with a valid user login.



Which station number does PcVue take? Why?



## 5.4 Project folder

### Exercise 8.



- Launch RDP and try to open a connection to the RDS server by using a valid user login.
- Launch PcVue by using the shortcut defined at the **Error! Reference source not found.**



What is the problem indicated by the pop up?

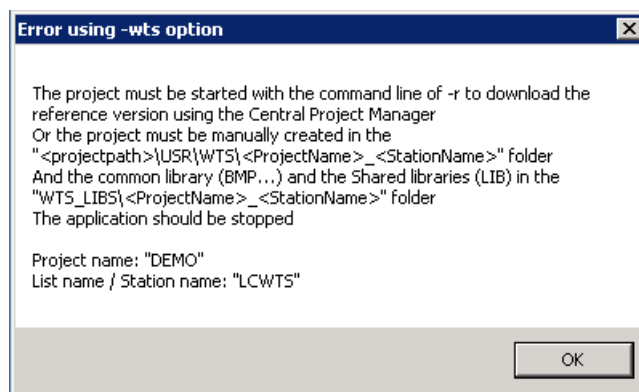


Figure 26



There are two possibilities: use the central project manager included in PcVue or manually copy the project.

The first option should be selected. It is necessary to configure the central project version. (See training module Central project management)

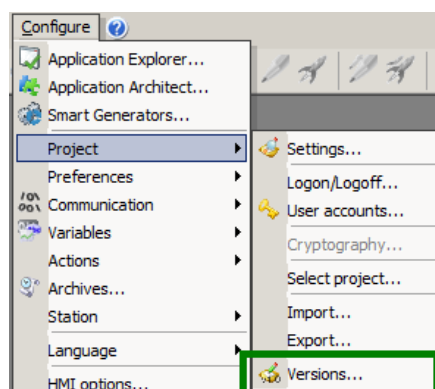


Figure 27

Choose the central versions folder and apply folders security defined at the section 4.3.

Create a new reference version of the project.

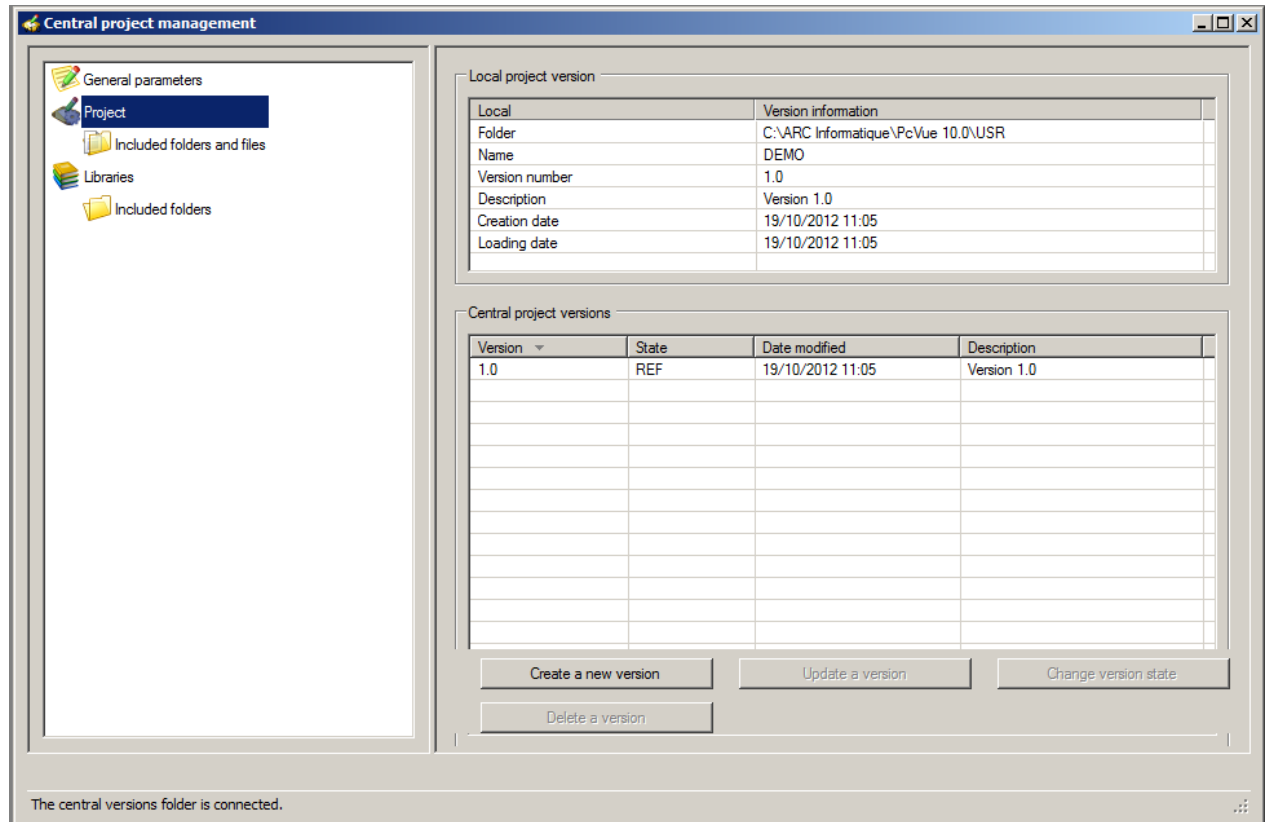


Figure 28

Add option -r to all shortcuts.



### Exercise 9.

- c. Launch RDP and try to open a connection to the RDS server by using a valid user login.
- d. Launch PcVue by using the shortcut defined at the **Error! Reference source not found.** plus -r



Which station number does PcVue take? Why?



On the server, open the Usr folder, what is in the WTS folder?



It is recommended to configure central libraries management if the project uses common library or custom common library. Common librairies are located to  
PcVue\WTS\_LIBS\<ProjectName>\_<StationName>

## Sum-up

- ★ Running PcVue in a Remote Desktop Services Environment is based on network architecture.
- ★ There are several projects installed on the server.
- ★ Specific options are required to launch PcVue in a RDS session.
- ★ Using Central project management is recommended.
- ★ The PcVue folder security has to be changed.