



INSTALLATION GUIDE

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1. Introduction

The software PCP requires prior installation of a Linux-like environment to run on Windows:

- Cygwin

PCP uses three tools during its running:

- A file editor
- A VRML file display
- A PDF file display

The PCP download consists in a compressed file including:

- A “Outils” directory that includes the complete version of Cygwin and the tool pcpst1.exe to convert ST1 data files to PCP datd files
- The installation file of PCP
- The installation file of PCP on a server (only for network version)

2. Installation process

This installation has to be carry out on user stations for any version (single-user version or network version). However, for network versions, the installation on the server is different if the latter is not a user station. These two installations are described in this part.

2.1 Single-user version and network version (user station)

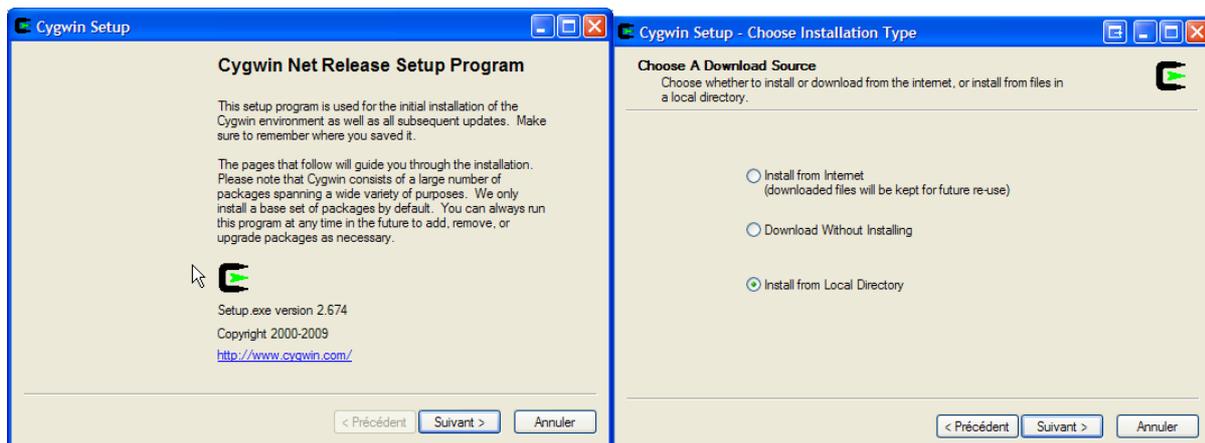
PCP must be installed on every user station.

First, unzip the PCP directory on your computer.

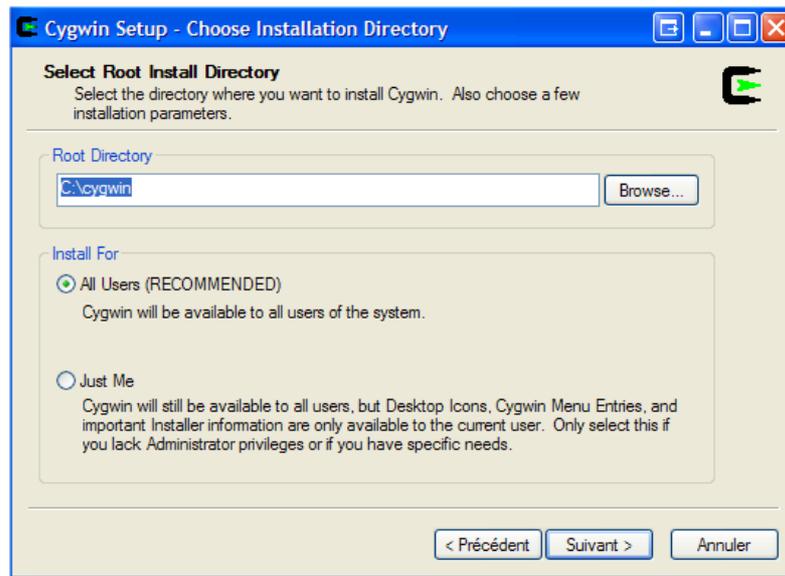
2.1.1 Cygwin installation process

Cygwin is a large collection of open source tools which provide functionality similar to a Linux distribution on Windows. Its installation file is in the “Outils” repertory.

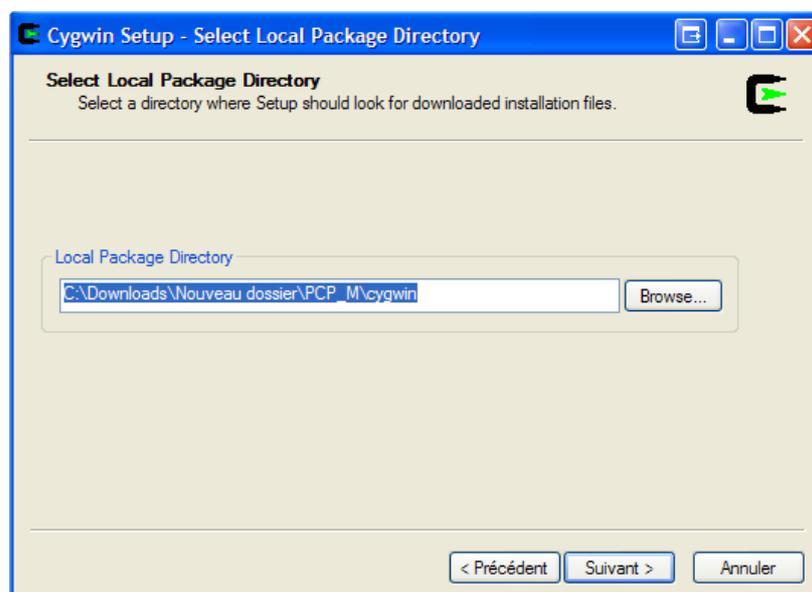
1. Run setup.exe in the Cygwin repertory
2. First dialog boxes : click on Next button and choose « Install from Local Directory ».



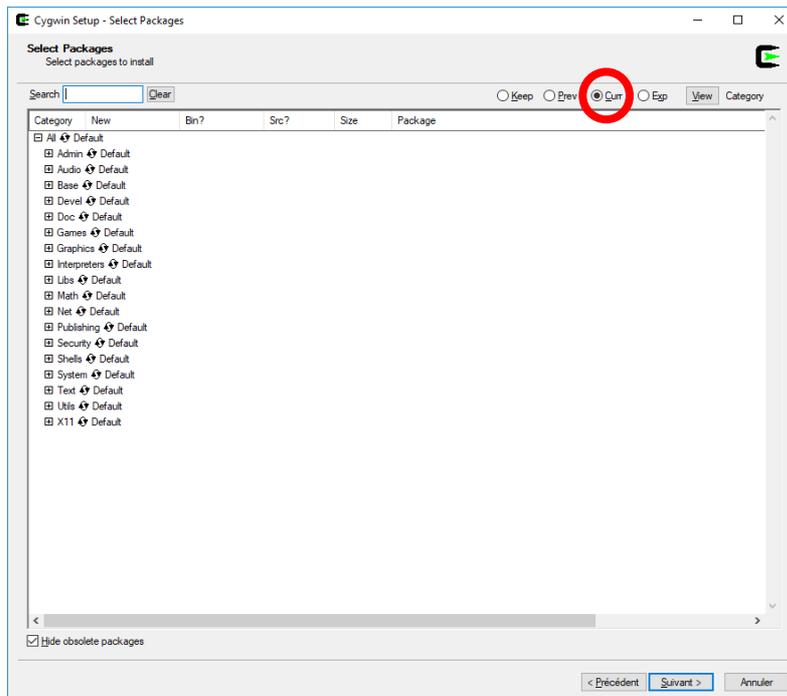
- Dialog box « Installation Directory » : it is highly preferable to click on Next button without modifying the options.



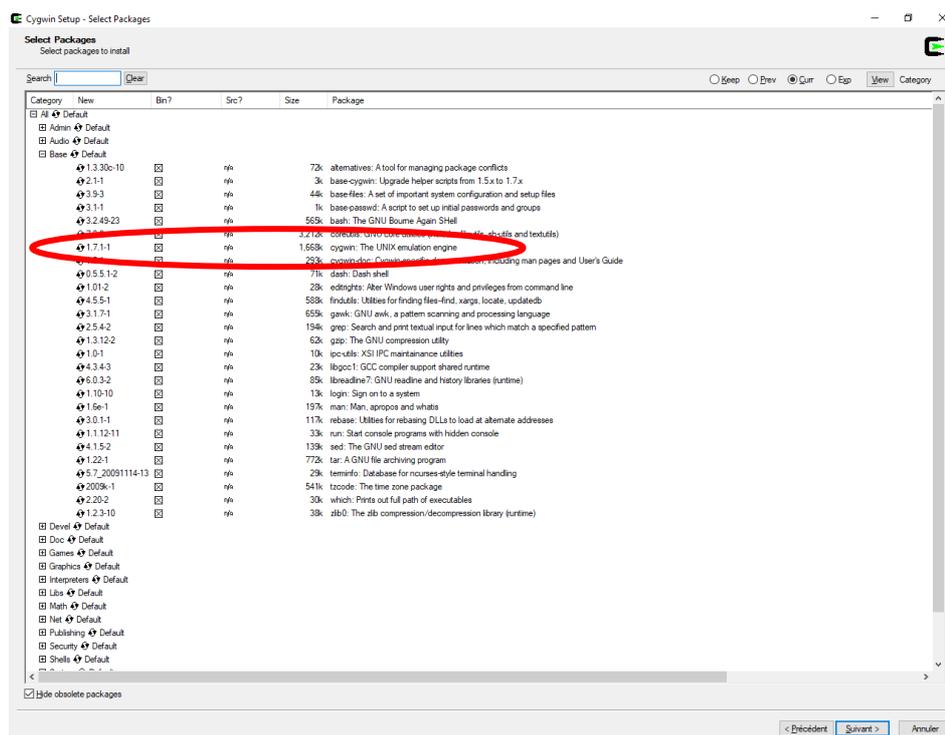
- Dialog box « Local Package Directory ». In « Root Directory », the path must point to the Cygwin directory from which you start its installation. Indeed, the software needs the directory `ftp%3a%2f%2fmirror.cict.fr%2fcygwin%2f` including essential libraries to run. By default, the path should be right. If it is not the case, change it with the “Browse...” button.



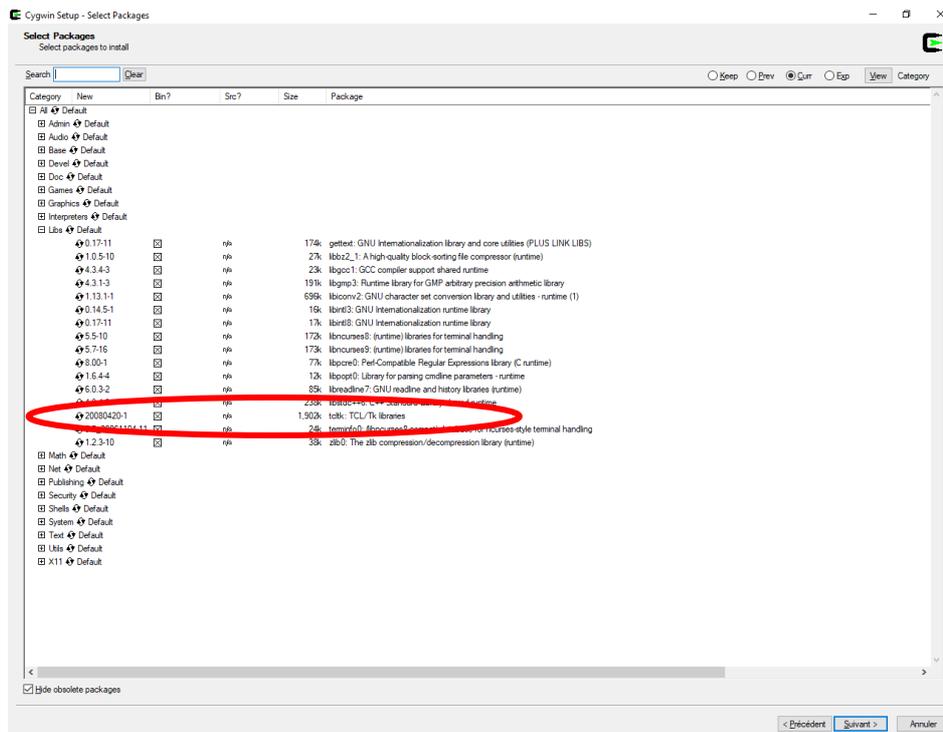
- Package selection box. This dialog box allows you to select packages to install, continue in “Curr” mode (check the radio button as below).



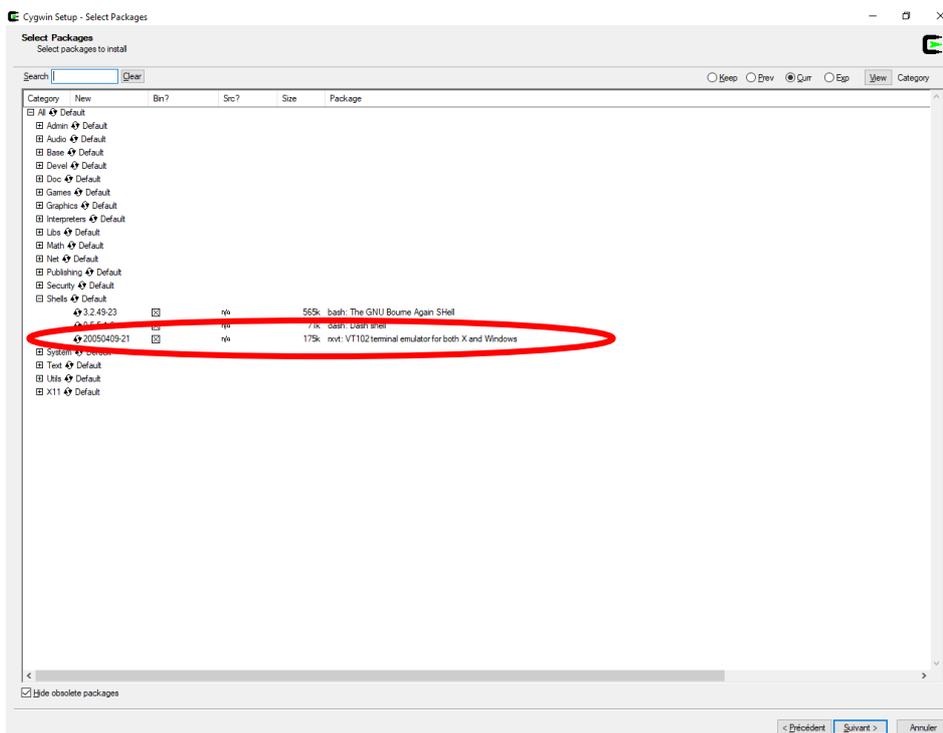
If it is not the case, select in the “base” category the “Cygwin: The Unix...” component by clicking on the “New” field and then by ticking the corresponding box of the “Bin?” field.



Do the same in the “Libs” category with the “tcltk: TCL/Tk...” component (click on the “New” field and then by ticking the corresponding box of the “Bin?” field).



Do the same in the “Shells” category with the “rxvt: VT102...” component.



Once the three components CYGWIN, TCLTK and RXVT are checked, move on to the next panel.

6. End the installation of CYGWIN.
7. Test CYGWIN.

Launch CYGWIN and execute the “date” command for exemple (it must return the system date) or “ps” (it must return the list of active processes).



```
Berton@Batoumi ~  
$ date  
Mon May 14 11:04:58 2012  
  
Berton@Batoumi ~  
$ ps  
  PID   PPID   PGID   WINPID  TTY  UID   STIME  COMMAND  
  1172    1   1172   1172   con 1006 11:04:57 /usr/bin/bash  
   320  1172   320   1372   con 1006 11:05:00 /usr/bin/ps  
  
Berton@Batoumi ~  
$  
$
```

Remarque :

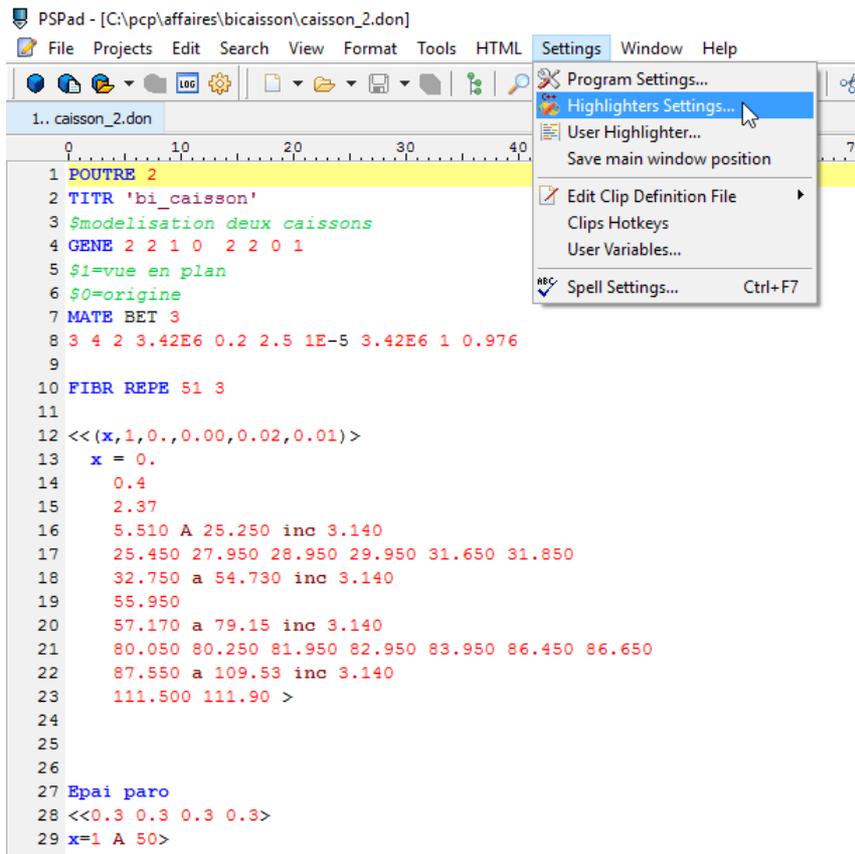
If CYGWIN does not work correctly, usual Unix commands are not recognised and you have to run again the installation setup (don't forget to close all opened applications).

2.1.2 Environment of the PCP software

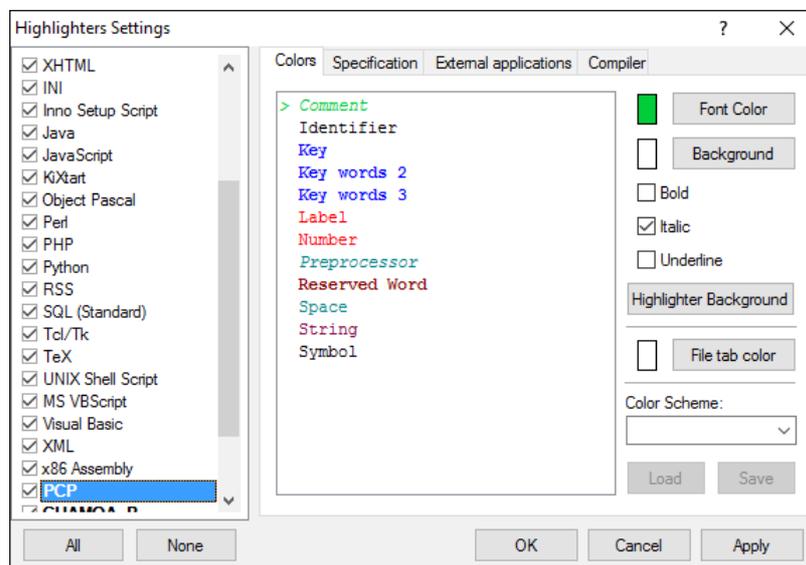
PCP needs three tools referenced in the file setconf.tcl of the pcp directory :

2.1.2.1 A file editor

We recommend the freeware source software PSPad which can be downloaded at the adresse www.pspad.com for which the setting file "pcp.ini" is provided during the installation of PCP. This file is in the PCP directory. Once PSPad is installed, you have to put this file in the pspad/syntax directory. Then, launch PSPad, click on "Settings" and "Highlighters Settings...".



If PCP does not appear in the list of colouring options, select one of the <not assigned> options at the end of this list, then click on the “Specification” tab. Choose PCP in the list of user highlighters.



Colouring options can be set with the “user hilghter” option under the previous option. Note: PCP allows the character “#” to write comments.

2.1.2.2 A display of VRML files

We recommend Solidview, downloadable on www.solidview.com, which offers a lite version sufficient for VRML file.

2.1.2.3 A display of PDF files

If your PC does not have this kind of software yet, you can download Adobe Reader, a free software to read and print PDF files

Website : www.adobe.fr

Download : <https://get.adobe.com/fr/reader/>

2.1.2.4 The finite element mesh generator GMSH (optional)

The software GMSH is necessary if you want to make a study with a finite elements computation software. With PCP, you can indeed automatically generate a mesh from the geometry you defined in PCP thanks to GMSH.

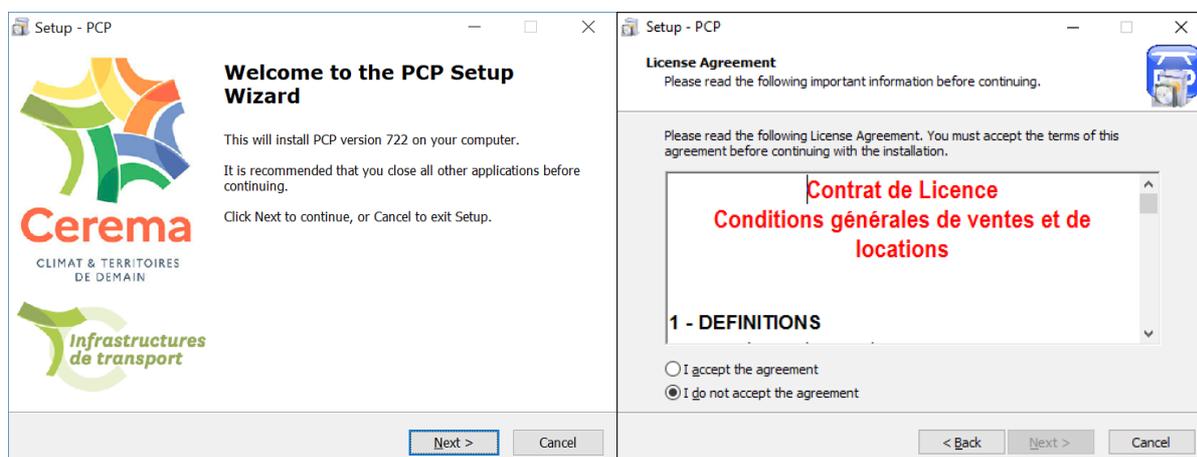
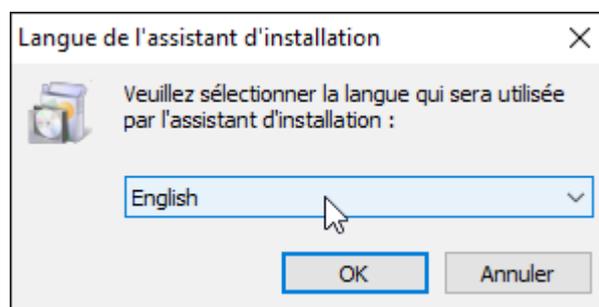
Website: <http://gmsh.info/>

GMSH must be installed in C:\gmsh. Be careful, since the 4.0.0 version of GMSH, the generated mesh file .msh has a different shape than the mesh file generated by previous versions of GMSH. PCP can't manage at the moment the new version (or next ones) with the prestressing. We recommend you to install the 3.0.6 version that stays compatible.

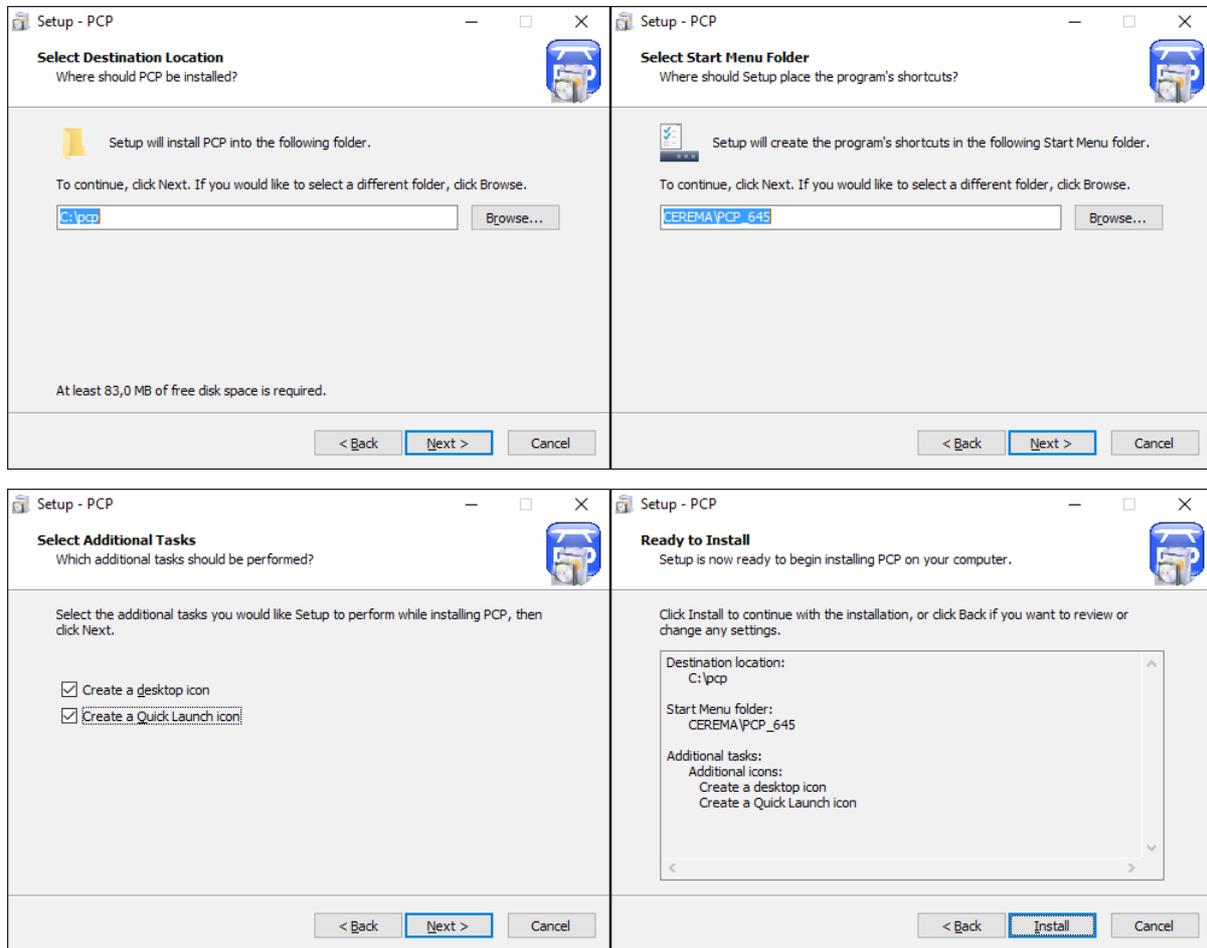
2.1.3 PCP installation process (single-user version)

1. Launch the installation

Double-click on the "Setup PCP_XXX_M.exe" file to start the installation of the software PCP. (XXX refers to a version number). Choose your language during the installation. The software interface is available in French or in English. The selection of the language here sets the language of the software, please choose carefully, although it is possible to change the language later.



By default, the software is installed in C. It is better not to modify the target folder. If a pcp directory already exists because of an old installation of PCP, delete it or rename it before. The directory of the start menu includes the number of the pcp version, or the number of the previously installed one. In this last case, please enter the right version number.



2. Adapt the “ pcp/setconf.tcl” file to your configuration

Edit the paths to the three software tools used by PCP (see chapter IV of this document).

Warning: in that path, the character “\” must be replace with “/”.

After the installation, the paths are set by default as follows:

spécifier ici le chemin d'accès au traitement de texte à utiliser (en remplaçant \ par /).

```
set Editeur "C:/Program Files/PSPad/PSPad.exe"
```

spécifier ici le chemin d'accès a l'afficheur VRML à utiliser (en remplaçant \ par /).

```
set Afficheur_vrml "C:/Program Files/Solid Concepts Inc/SolidView/sldview.exe"
```

spécifier ici le chemin d acces au reader Pdf à utiliser (en remplaçant \ par /).

set Afficheur_pdf "C:/Program Files/Adobe/Acrobat 7.0/Reader/AcroRd32.exe"

3. Copy the "affaires" directory

Copy the "affaires" directory which contains examples of PCP projects in a directory separate from the PCP directory.

4. Launch PCP

Do not forget to connect the USB protection key (dongle) each time you launch the PCP software.

Click on the PCP icon on the desktop or use the "Windows" button in the bottom-left corner of the screen.

5. To make your own projects, you can create new projects in the duplicated "affaires" directory, or you can create your own directory with your projects.
6. To change the language of the software interface, use the "Options" tab and "Language". You have to restart PCP to take this change into account.

7. Help

In the top right corner of the interface of PCP, click on the help button to start using PCP.

Important note: If you work on a project which have been previously processed by a former version of PCP, you have first to proceed with a cleaning of the project directory ("Fichier" menu and "Nettoyer Affaire"), and to update the printing format.

2.2 Installation process on the server

On the server, only the software Sur le serveur, seuls les logiciels related to the protection are necessary.

The execution of PCP_Dinkey.exe installs the executables DinkeyChange and DinkeyServer which are needed to use the PCP network version. They are installed by default in C:CEREMA/PCP_Dinkey. These executables are described in the protection part of this document.

With these executables, a file PCP_exemple.ini is created in the same directory. This file is used to set up DinkeyServer manually. They are the only necessary files on the server.

If you also want to use PCP to makes studies on the server, you need to install the network version as before. Thes executable DinkeyChange and DinkeyServer are included in the PCP directory in this case.

2.3 Uninstallation

The uninstallation procedure of PCP can be reached from the start Menu of Windows (Uninstall PCP procedure), or directly from the Windows explorer (file unins000.exe in the PCP directory).

3. Dongle protection

3.1 Introduction

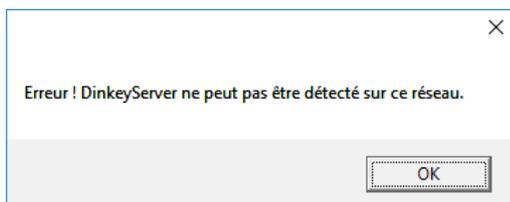
All versions (single_user or network version) of PCP are protected against simultaneous multiple uses thanks to a dongle (protection USB stick) DinkeyPro from Aplika company. The protection principle is simple : the dongle must be plugged into the computer, or the server (only for network version), to use PCP.

To order your dongle, please fill out the online order form on the engineering structures website of the Cerema.

<http://www.setra.fr/html/logicielsOA/LogicielsOA/logiciels.html>

If the software is used without any dongle, one of the following error will appear while opening a case :

For the network version:



For the single-user version:



3.2 Single-user Dongle

For a single-user version, the user just have to plug the dongle into a USB port of the computer before opening PCP.

3.3 Network Dongle

Before the first use of the network version of PCP, you must launch the DinkeyServer.exe software on the server and select the appropriate options in the settings window. The directory including this executable file must be visible for the user stations. To do that, you have to share the directory. Folder sharing is presented in the "Sharing of a Microsoft® network folder" of this document.

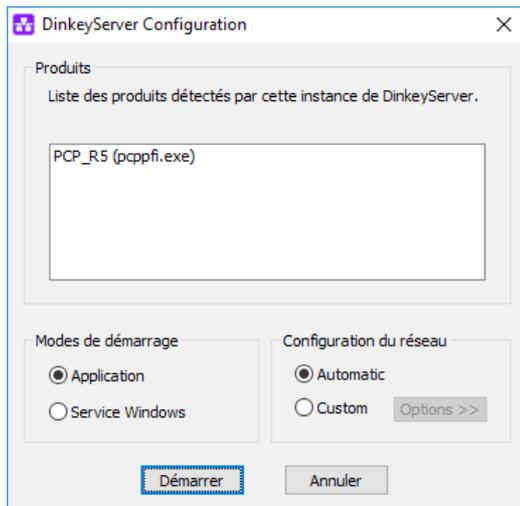


DinkeyServer icon

You can choose to start DinkeyServer as an application or as a Windows service:

- Windows service: if you choose this option, DinkeyServer will start automatically in the starting of your computer. This setting is recommended.

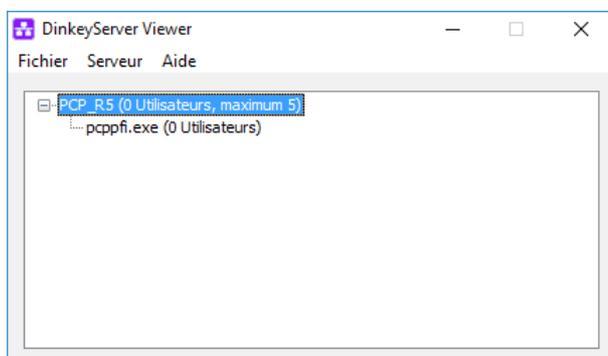
- Application: if you choose this option, DinkeyServer requires the connection of a user to start. If you want an automatic starting, you have to create a shortcut to DinkeyServer in the Startup-folder of the user and specify the appropriate parameters at the command line.



In the advanced section, you have to choose the IP address on which DinkeyServer will accept a connection. If your computer has only one IP address, this one will be selected and you could not modify it. You will have to choose a port number on which the server waits for a connection. Please choose a port in the list and note it if you have to set your firewall (see the configuration of firewalls section) with this information. If the port is already used when DinkeyServer is launched, the software will ask you to select another port.

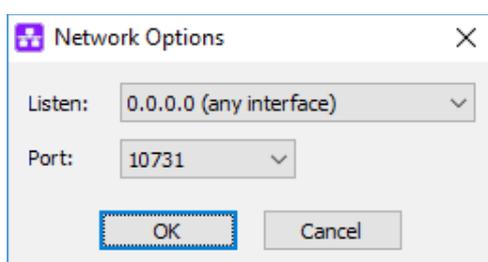
3.3.1 DinkeyServer monitor

When DinkeyServer starts as an application, it displays the DinkeyServer monitor. This window displays the DinkeyServer status, the product code in use and the connected network users. A DinkeyServer icon will appear in the Windows task bar. You can also open the server log file from the interface. The log file records the important events which occur during the server starting and which can be consulted to diagnose difficulties.



DinkeyServer monitor

When DinkeyServer starts as a service, no monitor will be displayed. Indeed, a service can't display the Graphical User Interfaces (GUIs). However, you can always use the DinkeyServer monitor by running DinkeyServer.exe with the command line parameter /viewer.



Line command parameters

DinkeyServer can receive parameters to control its behavior. Here is a list of these parameters:

/s	Configure DinkeyServer to install and start it as a service.
/a	Configure DinkeyServer to start as an application.
/q	Silent mode. Displays only errors.
/u	Uninstall the DinkeyServer service.
/viewer	Display only the DinkeyServer monitor.
/logfile	Open only the DinkeyServer file log.
/showconfig	Display the configuration information (listening port, ...) Only for Linux.
/listen=IPADDRESS	Configure the IP address on which DinkeyServer will accept connections (replace « IPADDRESS3 by the IP address of your choice). You will have to define this parameter only if your computer has more than one IP address.
/port=PORT	Configure the port on which DinkeyServer will wait for connections (replace « PORT » by the port number of your choice).
/?	Display a help window with these line command parameters.

3.3.2 General remarks

As every services, DinkeyServer can be controled by the Windows manager (Control Panel | Administrative Tools | Services). If you unplug and plug again a dongle on a computer on which DinkeyServer is running, you will have to restart DinkeyServer to detect it.

If you have several network cards on your computer, the auto detection of DinkeyServer while running the protected software can fail (this might also be because of the use of virtualization software as VMWare or VIRTUAL BOX, which install a virtual network adapter on your system). In this case, try to deactivate the network adapters that don't connect to the local network on which DinkeyServer is run. If you update a network dongle by using DinkeyChange (example: to increase the network user number), while DinkeyServer is running, DinkeyChange will indicate it to DinkeyServer which will update itself. In this case, you don't have to run DinkeyServer again. If you decrease the user number and if the new number is smaller than the current user number, then DinkeyServer will close the user number above the new limit.

3.3.3 Manual configuration of DinkeyServer

If DinkeyServer cannot be automatically detected on the network, you have to configure it manually. To do this, you can indicate on the client side the location of DinkeyServer. This can be done by creating a file <productcode>.ini (where <productcode> is the product code of your protected software). This file should be placed in pcp/appli/pfi on the user station.

Network licence type	Product code
----------------------	--------------

PCP_R3 (3 users)	PCP_R3
PCP_R4 (4 users)	PCP_R4
PCP_R5 (5 users)	PCP_R5
PCP_R50 (50 users)	PCP_R50

The file <productcode>.ini is in the following form:

```
[ddpro]
server=<ip address>:<port> OR server=<machine name>:<port>
autodetect=FALSE
```

Where the server key is used to indicate the internal IP address of the computer on which the keyserver is (DinkeyServer), or the name of that computer (for example, use the command “ipconfig” via a DOS-Box on the keyserver to know its IP address).

<port> indicates the value of the chosen port in DinkeyServer. In DinkeyServer, click on “Server” then on “Details” to display the port number.

Optionally, you also can indicate if you want the code to detect automatically the server, in the case where DinkeyServer can’t be found thanks to the IP address and the port you have specified. The default value is FALSE.

Example:

With a network version with 4 users, the file “PCP_R4.ini” is as follow:

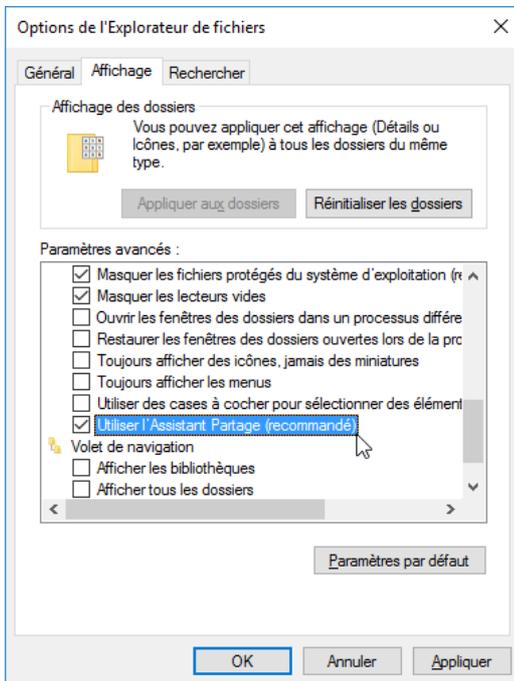
```
[ddpro]
server=192.168.1.4:32768
autodetect=FALSE
```

You have to make sure that a single session of DinkeyServer is running and no session is execute on the user station for example, ther will be a conflict otherwise. For each update of the key, you have to stop DinkeyServer and to restart it.

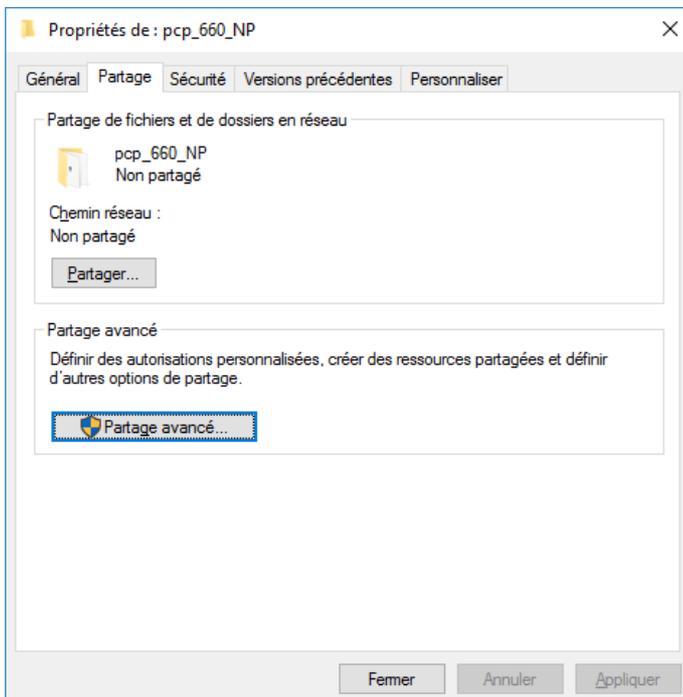
3.4 Sharing a Microsoft® network folder

To share a Microsoft® network folder on a PC running Windows 10, do as follow:

1. Thanks to the Windows search box, Cortana, open the explorer options of file explorer. Go to the view tab, select use share assistant and click OK.



2. On the folder to be share, right click and click “Properties”. On share tab, share the folder via network sharing files and folders, or via advanced sharing.



3.5 FireWalls setting.

Client machine may not access DinkeyServer if your FireWall is not properly configured.

- Your FireWall must allow incoming and outgoing TCP and UDP traffic for the dedicated port and IP to DinkeyServer.
- Your Firewall must allow DinkeyServer to accept incoming connections on the IP address and the port you have chosen during the DinkeyServer configuration.

Clients (your protected software) automatically detects DinkeyServer by doing a “multicast roadcast” on 239.255.219.182 and on every port that is configured to wait for a connection on DinkeyServer. Your FireWall must not block the traffic of these addresses.ports.

- On windows, the address and the port used by DinkeyServer can be known by clicking on Server | Server details from viewer menu.

Like most server applications, DinkeyServer accepts incoming connections by listening on a given IP address and on a port. If a FireWall software (of Windows or other one) is running on the computer on which DinkeyServer is used, then it needs to be configured to allow inbound connections for DinkeyServer. That is to say you have to add exceptions not to stop the traffic on the IP and the port used for Dinkeyserver. For Windows firewall, go to the control panel and click on “Allow an app or feature through Windows Firewall”.

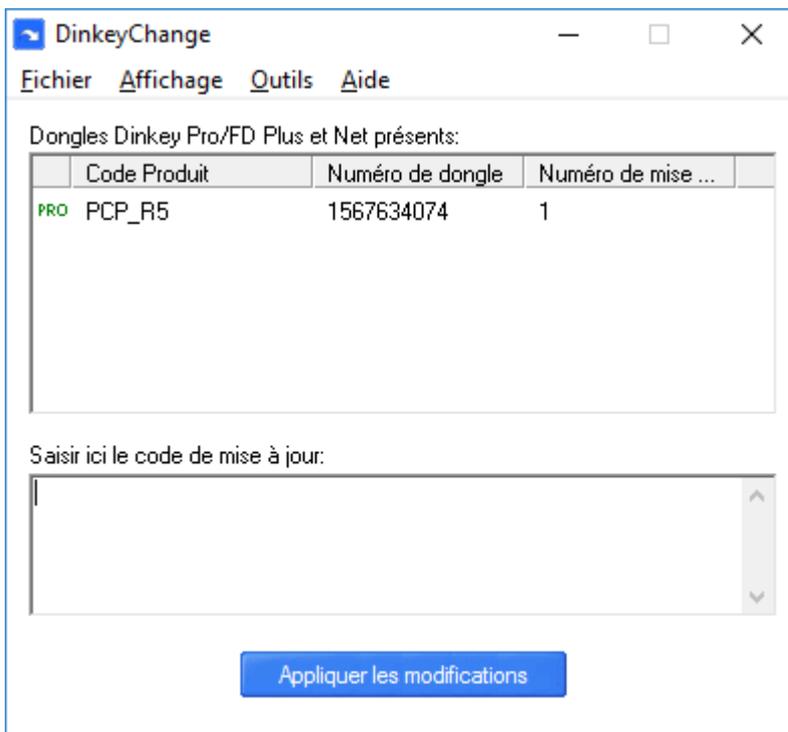
In the same way, if there is a Firewall between the computer using DinkeyServer and client machines, it has to be configured.

Note: Some antivirus programs may include a firewall.

3.6 Dongle update with DinkeyChange

DinkeyChange allows you to update dongles for paid versions without changing the physical key. The procedure is the same for both single-user and network.

To update your dongle, connect it to the computer in the case of a single-user version, or to the server for the network version. Launch the tool DinkeyChange that is in the installation directory of the software. The product code, the dongle number and the update number for the dongle will display.



DinkeyChange window

You have to generate a diagnostic file of the dongle (.dlpf) by clicking on “Outils/Tools”, and “Générer les diagnostics/generate the diagnostics”. Send the .dlpf file to the email box [DCSL support \(logiciels-
oa.dtitm@cerema.fr\)](mailto:DCSL_support(logiciels-
oa.dtitm@cerema.fr)) to get the update file.

You have then to open this file with « DinkeyChange.exe » with “file/fichier” and “open the update code file/ouvrir le fichier du code de mise à jour”, and the update is done. For the network version, do not forget to restart the Dinkeyserver application that is in the installation directory of the software (if needed, update the .ini file). If the problem is not solved, please contact the [DCSL support](#).



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