

# Linux 32-64bit 環境內安裝 PGI Workstation 軟體

PGI 2012 版

1. 現今PGI已經無光碟版本全部皆由官方載點下載，因此從  
[http://www.pgroup.com/support/download\\_pgi2012.php?view=current](http://www.pgroup.com/support/download_pgi2012.php?view=current)下載的檔案，會有<tarfile>.tar.gz 的檔案，在 RedHat 環境以 *Superuser* 身分執行解壓縮及安裝：

```
# tar -zxvf <檔名>.tar.gz
```

2. 移到解壓縮之資料夾下：

```
# cd /tmp/pgi 此範例為將解壓縮完的部分移到/tmp/pgi資料夾底下
```

3. 開始安裝：

```
# ./install
```

4. 啟動安裝後會出現產權聲明內容，詳閱說明後回答『accept』，繼續安裝。

```
PGI End-User License Agreement
```

```
NOTICE: PLEASE READ THIS DOCUMENT CAREFULLY BEFORE DOWNLOADING, COPYING OR  
USING THE LICENSED SOFTWARE. THIS END-USER LICENSE AGREEMENT (ELA) IS A LE  
AGREEMENT BETWEEN YOU, THE LICENSEE (A SINGLE PERSON, INSTITUTION, OR LEGAL  
ENTITY) ("YOU"), AND STMICROELECTRONICS, N.V., A DUTCH CORPORATION, HAVING  
PRINCIPAL PLACE OF BUSINESS AT STRAWINSKYLAAN 1725, TOWER B 17TH FLOOR,  
1077 XX AMSTERDAM, THE NETHERLANDS, ACTING FOR THE PURPOSE OF THIS ELA
```

```
::
```

```
::
```

```
and effect. 1, 3, 6, 7, 8, 9, 10, 12, and 13.
```

```
13) Controlling Law and Complete Agreement
```

```
This Agreement shall be construed and interpreted under the laws of  
the state of New York, not including its conflict of laws principle  
If any provision of this ELA, or portion thereof, is found to be  
unenforceable, that provision shall be enforced to the maximum exte  
possible and the remainder of this ELA shall continue in full force  
and effect.
```

```
YOU ACKNOWLEDGE THAT YOU HAVE READ THIS ELA AND AGREE TO BE BOUND BY ITS  
TERMS. YOU FURTHER AGREE THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT  
OF AGREEMENT BETWEEN YOU AND ST AND THAT IT SUPERSEDES ANY PRIOR AGREEMENT,  
ORAL OR WRITTEN, ANY PROPOSAL, AND ANY OTHER COMMUNICATIONS BETWEEN YOU AND  
ST RELATING TO THE SUBJECT MATTER OF THIS ELA.
```

5. 詢問安裝方式為『本地安裝』或是『網路安裝』，在此我們選擇『1』安裝。

```
Do you accept these terms? (accept,decline) accept

A network installation will save disk space by having only one copy of the
compilers and most of the libraries for all compilers on the network, and
the main installation needs to be done once for all systems on the network.

1 Single system install
2 Network install

Please choose install option: 1
```

6. 詢問安裝目錄，這裡我們建議將它安裝於 /opt/pgi。

```
This script installs PGI Workstation products for the Linux operating system.
Please note that all Trademarks and Marks are the properties of their respective
owners.

Please specify the directory path under which the software will be installed.
The default directory is /opt/pgi, but you may install anywhere you wish,
assuming you have permission to do so.

Installation directory? [/opt/pgi] /opt/pgi
```

7. 詢問是否安裝 ACML

```
This release of PGI software includes the ACML, which is a tuned math library
designed for high performance on AMD64 machines, including Opteron(TM) and
Athlon(TM) 64, and includes both 32-bit and 64-bit library versions.

If you have installed ACML with a previous PGI 2012 release, or in a
separate PGI 2012 download, you do not need to install it again.

More information about the ACML can be found at the AMD Developer web site,
http://www.developwithamd.com/acml

Install the ACML? (y/n) y
```

::

閱讀完說明後(accept)

```
or modification of this License will be binding unless in writing and signed
by a duly authorized representative of AMD.
```

```
Do you accept these terms? (accept,decline) 
```

續 7.

- 選要裝 (1) ACML 5.1.0 或
  - (2) ACML 5.1.0 using FMA4
- 選(1)鍵入 1、選(2)鍵入 2

```
Do you accept these terms? (accept,decline) accept

This PGI version links with ACML 5.1.0 by default.  Also available:
(1) ACML 5.1.0
(2) ACML 5.1.0 using FMA4
Enter another value to override the default (1)
```

8. 選擇是否安裝 CUDA Toolkit Components

- 有 GPU 選擇 y
- 無 GPU 則選擇 n

```
This release of PGI software includes the NVIDIA CUDA Toolkit.  PGI's
accelerator compilers and CUDA Fortran use components from this Toolkit.

This release contains CUDA 4.1 and CUDA 4.2.  If you have not installed
these versions from PGI previously, you should install these now.

More information about CUDA technology can be found at the NVIDIA web site,
http://www.nvidia.com/object/cuda\_home.html

Install CUDA Toolkit Components? (y/n) y
```

::  
::

若選擇 y 看完說明後選擇 **accept** , 若擇 n 則無此選項。

```
* Windows
- CUDA Runtime: cudart.dll
- CUDA FFT Library: cufft.dll
- CUDA BLAS Library: cublas.dll

* MacOS
- CUDA Runtime: libcudart.dylib
- CUDA FFT Library: libcufft.dylib
- CUDA BLAS Library: libcublas.dylib

* Linux
- CUDA Runtime: libcudart.so
- CUDA FFT Library: libcufft.so
- CUDA BLAS Library: libcublas.so

The following terms and conditions apply to Licensee's use of the
components listed above ("Redistributable Components") of the SOFTWARE:

1. Customer may transfer, redistribute or sublicense, the license
rights pursuant to Section 2.1.1 of this Agreement in connection with
the Redistributable Components to end users of Licensee's products.
```

## 9. 是否安裝 JAVA JRE 6.0 21

```
Do you accept these terms? (accept,decline) accept
This release of PGI software includes the JAVA JRE 6.0_21. PGI's graphical
debugger and profiler use components from this package. If you choose not
to install JAVA, you will be limited to running command line versions of pgdbg
and pgprof, using the -text option.

The JAVA JRE will be installed into

/opt/pgi/linux86/2012/java

and will not affect applications other than PGI's pgdbg and pgprof

Install JAVA JRE 6.0 21? [yes] yes
```

看完說明後一樣 accept，然後開始安裝

```
For inquiries please contact: Oracle Corporation, 500 Oracle Parkway,
Redwood Shores, California 94065, USA.

Do you accept these terms? (accept,decline) accept
Installing software into /opt/pgi (this may take some time).
#####
```

## 10. update/create Link choose

```
If you use the 2012 directory in your path, you may choose to
update the links in that directory to point to the 12.6 directory

Do you wish to update/create links in the 2012 directory? (y/n) y
```

## 11. 是否安裝 MPICH1，這裡選 n。

```
Do you wish to install MPICH1? (y/n) n
```

## 12. Remote execution method 這裡選 ssh

```
Remote execution method? (rsh,ssh) rsh
```

### 13. 產權碼產生方式，選 3。

```
All PGI software is license-managed. This program will walk you through the
steps required to download and install your license keys. An active Internet
connection is required. If you don't have an Internet connection, please see
the PGI Installation Guide that came with your software for alternatives to
generating and installing license keys.
```

```
You will need to know the following information.
```

- \* Does this computer access the Internet directly or through some sort of proxy connection?
- \* If a proxy is used, you'll need the address (URL) of the proxy server.
- \* Does the proxy require authentication? If so, you'll need to know the username and password.
- \* To login to the PGI website to generate license keys, you need either a PGI web account (username and password) or a PIN code from the PGI order confirmation email message from PGI Sales.

```
If this computer is behind a firewall at your site, please make sure it can
access the Internet.
```

- 1 Generate a license key for this computer
- 2 Configure and start a license server on this computer
- 3 All of the above
- 4 I'm not sure (quit now and re-run this script later,)

```
What do you want to do?
```

### 14. 詢問上述檔案是否為唯讀檔，建議選擇『n』。

```
Do you want the files in the install directory to be read-only? (y/n)
```

### 15.

執行下列指令或加到各使用者目錄下的<\*.shrc>檔案中，使每次開機皆能正常使用 PGI Compiler ( 下面依照預設的安裝路徑編寫 )：

**csch:**

```
set path = ( /opt/pgi/linux86_64/12.6/bin $path )
setenv MANPATH "$MANPATH":/opt/pgi/linux86_64/12.6/man
setenv PGI /opt/pgi
setenv LM_LICENSE_FILE $PGI/license.dat
```

**bash, sh or ksh:**

```
PATH=/opt/pgi/linux86_64/12.6/bin:$PATH
MANPATH=$MANPATH:/opt/pgi/linux86_64/12.6/man
LM_LICENSE_FILE=/opt/pgi/license.dat
PGI=/opt/pgi
export PATH MANPATH LM_LICENSE_FILE PGI
```

編寫好後離開，再重新 login 以便存入系統內。

## 17.

各語言執行 compiler(其參數可利用 menu 查閱, -V 為顯示版本資訊):

- (1) For Fortran 77, use "pgf77 -V \*.f"
- (2) For Fortran 95, use "pgf95 -V \*.f"
- (3) For HPF, use "pghpf -V \*.f"
- (4) For C++, use "pgCC -V \*.c"
- (5) For ANSI C, use "pgcc -V \*.c"

## 18.

啟動 License manager daemon:

```
# cd $PGI/linux86_64/12.6/bin
# lmgrd.rc start
# cp $PGI/linux86_64/12.6/bin/lmgrd.rc /etc/rc.d/init.d/lmgrd
# ln -s /etc/rc.d/init.d/lmgrd /etc/rc.d/rc3.d/S90lmgrd
# ln -s /etc/rc.d/init.d/lmgrd /etc/rc.d/rc5.d/S90lmgrd
```

.....此以 RedHat 版本的文字介面為範本, 若非文字視窗或不同版本, 依實際位址、方式放置

## 19.

試著編寫一段 Fortran 程式 test.f 驗證安裝過程無誤:

```
# vi test.f
PROGRAM test
WRITE(*,*) "Successful"
STOP
END
```

```
# pgf90 -V test.f
# a.out
```

視窗上出現編寫的 test.f 內容, 便可得知安裝成功。

Successful!!

## 20.

申請 license 請參照本公司網站 <http://www.wavelink.com.tw> 下“ Downloads à , 軟體安裝手冊 à 『PGI License 申請步驟說明』 ” 檔案, 但下面有幾點事項請注意!!

- (1) 原則上祇要有軟硬體的更新, license 就必須重新申請一次, 故請 User 在安裝並申請 license 之前先確認在設備不會再更動。或請在更新前將 license.dat 備份, 安裝完畢後複製到資料夾內確認能否再使用, 如無法使用才重新申請!!
- (2) 第一次申請 license 時, PGI 網站立即產生所需要的 license.dat 檔案內容; 但第二次以後申請, 則需要一天工作天; 一旦申請太過頻繁, 原廠會以較嚴苛方式加以管理、限制使用者申請 license。