

# **Installing GEMPACK Release 12 on Windows PCs**

**(chapter 2 of GEMPACK Manual)**

Complete GEMPACK documentation is contained in the file GPManual.htm supplied with GEMPACK. We have extracted Chapter 2 of that document, describing how to install GEMPACK on a Windows PC, to form this smaller PDF file which may be easily printed out.

**GEMPACK Software**  
**Melbourne, Australia**  
<http://www.gempack.com/>

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This is part of the documentation of the GEMPACK Software System for solving large economic models, developed in Melbourne, Australia.

## 2 Installing GEMPACK on Windows PCs [gpd6.1]

This chapter tells you how to install GEMPACK Release 12 on a Windows PC. To install an earlier Release of GEMPACK, please refer to the install documents that accompanied the earlier Release.

Some parts of the install procedure differ between the Executable-Image and the Source-Code versions of GEMPACK — the text below will indicate these differences.

All components of GEMPACK are contained in a single install package, which you might download or receive on a USB drive.

- The install package for Executable-Image GEMPACK might have a name like `gpei-12.0-000-install.exe`.
- The install package for Source-Code GEMPACK might have a name like `gpssc-12.0-000-install.exe`.

The package will install

- Windows (GUI) programs such as ViewHAR, ViewSOL, TABmate, AnalyseGE, WinGEM and RunGEM.
- electronic versions of the GEMPACK user documentation (HTM and PDF files).
- many examples of models built using GEMPACK.

The Executable-Image package will also install a number of vital command-line programs such as TABLO.EXE and GEMSIM.EXE. The Source-Code package instead installs *Fortran source code* files for these programs: during installation these sources are compiled to produce TABLO.EXE and GEMSIM.EXE.

### 2.1 Preparing to install GEMPACK [gpd6.2]

#### 2.1.1 System requirements [gpd6.2.1]

Requirements for installing GEMPACK are:

- The PC must be running Windows 7 or later.
- The PC must have at least 2GB free hard disk space.
- The PC should have at least 4GB of memory (RAM), and preferably 8GB. Click on Help | About in the main menu of My Computer. This will tell you how much physical memory is available to Windows. The amount of memory you have limits the size of models you can build and run. Small models may use less than 128 MB of RAM, while large models may need 2GB or more. Windows itself uses up much memory. And to do useful things with GEMPACK, you'd very often need to have several GEMPACK Windows programs and perhaps an MSOffice application open at the same time. Each running program uses up RAM.
- If you are installing Source-Code GEMPACK you need **first** to install and test one of the supported Fortran compilers listed at <http://www.copsmodels.com/gpfort.htm>. That page links to compiler-specific instructions.
- You will need administrator access to the PC. In a work environment, you may need IT Support to obtain administrator access.
- 64-bit versions of GEMPACK will only work on a 64-bit version of Windows. 32-bit versions of GEMPACK will work on either 32-bit or 64-bit Windows. The install package will detect your Windows version and suggest the right version for you.

#### 2.1.2 Your GEMPACK licence file [gpllc]

The installation procedure will ask where to locate your GEMPACK licence file — so you should find it yourself before installing. This small file will have suffix ".GEM" and was probably sent to you as a zipped email attachment, or might be located on the USB drive containing the install package. During installation, a copy of the file, named LICEN.GEM, is placed in the GEMPACK folder (ie, the folder where GEMPACK is installed).

You could also use the LICEN.GEM file in the GEMPACK directory from a previous install of Release 12 GEMPACK (but a Release 11 or earlier licence will not work).

If you cannot find your GEMPACK licence file, you can still install GEMPACK. In this case:

- The Executable-Image installer will create a temporary licence file which last a few months but restricts model size.
- Source-Code GEMPACK cannot be used without a licence.

Then, after installation, you should manually place a copy of your licence file, renamed if necessary to LICEN.GEM, into your GEMPACK folder.

### 2.1.3 Where to install [instdir]

First decide where to install GEMPACK, bearing the following in mind:

- The ideal plan is to install GEMPACK in a folder C:\GP to which the user has read/write/modify access.
- If you have another or earlier release of GEMPACK already installed in C:\GP, you should probably leave it on your hard disk until you have successfully installed and tested Release 12.0 (in case an unexpected problem occurs). You should rename the directory containing the previous release, so you can install Release 12.0 of GEMPACK in C:\GP. For example, if you currently have Release 11.0 GEMPACK in C:\GP, rename that directory to, say, C:\GP110, and install Release 12.0 into C:\GP. If you use the same GEMPACK directory as before, other GEMPACK-related Windows programs such as RunDynam and RunGTAP will automatically use the latest version of GEMPACK.
- The name of the GEMPACK directory should not contain Chinese or other non-English characters or parentheses ["(", ")"]. Also, it's best to avoid extremely long folder names. See section 7.1 for more details.
- It's best if both the GEMPACK programs and the user's model files are stored on a local hard drive (not a network drive).
- You should configure your antivirus program to exclude from real-time scanning both the GEMPACK directory (usually C:\GP) and folders containing the user's model files and simulations. See section 2.1.6 below.

### 2.1.4 Notes for IT support [itsupport]

You can install GEMPACK as Administrator, and run as Limited or Standard user, as long as permissions are set to allow Limited or Standard users to access needed files. Users of GEMPACK need to be able to read and execute the programs in the GEMPACK directory. In their working directories, Limited Users need full rights to read, write, execute and delete files.

Users of Source-code GEMPACK need to be able to create their own EXE files using their Fortran compiler.

The software requires that users be able to open and use a command prompt (cmd.exe) window, and to run BAT scripts.

Please assist the user by switching off "Hide file extensions of known file types" (From Explorer, Tools...Folder Options...View).

If you are installing GEMPACK on a network please see section 2.9.4.

### 2.1.5 [Source-code only] Testing the Fortran installation [gpd6.3.3]

Skip this section if you are installing Executable-Image GEMPACK.

Before installing Source-Code GEMPACK you need to test your Fortran installation by compiling and running a small 'Hello World!' program. The webpage <http://www.copsmodels.com/gpfort.htm> links to compiler-specific instructions for installing and testing your Fortran. **It is important that the 'Hello World!' test succeeds before you install GEMPACK.**

The test requires that specific Fortran files are present on the PATH. These files are:

- ifortvars.bat for the Intel compiler.

- gfortvars.bat for the GFortran compiler.

The GFortran installer should automatically add the right folders to your PATH. For Intel, you need to edit the PATH variable [the web instructions tell you how].

### 2.1.6 Configure Anti-virus programs [\[antivirus\]](#)

Some user report that anti-virus programs delete GEMPACK programs or prevent GEMPACK programs from being installed. To avoid such problems you could, before installing GEMPACK:

- Create the GEMPACK folder into which you plan to install (normally C:\GP).
- Configure your anti-virus program to exclude your GEMPACK folder from real-time virus checking. There are some instructions how to do this on the GEMPACK web site at <http://www.copsmodels.com/gpconfav.htm>.

You may choose also to exclude from virus-checking the folders where GEMPACK-related work will be done — anti-virus programs can slow down simulations (especially RunDynam simulations). See point 3, section 30.

## 2.2 Installing GEMPACK [\[gpd6.4\]](#)

Exit from all Windows programs before beginning the install procedure.

Use Windows Explorer to locate the GEMPACK install package; double-click to run it.

1. The "User Elevation" dialog will appear; you may need to supply the Administrator password, or simply agree to run the install.
2. Welcome and Copyright warning. To agree to the copyright conditions click Next.
3. Destination Location. Here you choose where GEMPACK will be installed; we refer to this directory as the GEMPACK directory. We recommend that you accept the suggested C:\GP directory. You may choose another existing or new directory by clicking the Browse button. If you do so, when you return to the original screen check carefully that the folder or directory name is what you want. Sometimes the install program adds \GP to the end of the name you have selected. In choosing a folder name, avoid names that contain non-English characters or parentheses. Avoid installing under the Program Files directory: Windows may prevent you changing files there.
4. Changes to your PATH and Environment. The Install program can make changes to your PATH and the Environment variable called GPDIR. We **strongly recommend** that you agree to these changes. If you do not, you must make these changes yourself later: see section 2.8.
5. Selecting a GEMPACK licence file. If the Installer does not find an existing LICEN.GEM in the GEMPACK directory you may click Browse to select your licence file for installation. If there already is a LICEN.GEM file in your chosen GEMPACK directory, the Installer will not overwrite it, and the Browse button will be disabled. If the existing licence file is an old or wrong licence it is your responsibility to later place the correct Release 12 licence file into your GEMPACK directory, renamed if necessary to LICEN.GEM.
6. [Source-code only] Select Fortran Compiler. Indicate which Fortran compiler you will use. This compiler should be installed and working, as described above.
7. Ready to begin installation. You may review your settings; click Back to make changes or Next to begin the installation. The Install program copies many files to your GEMPACK directory. If installing from a USB drive, leave it inserted until the installation is complete.
8. [Source-code only] Continue with compiling libraries and executable images. After file copying is finished you are prompted to launch BuildGP by clicking Next. When you click on Next, the install program will exit and the BuildGP program will be launched. BuildGP builds the GEMPACK libraries and executable images of the Fortran-based GEMPACK programs. This will take several minutes. If all goes well, you will eventually see a message saying that the libraries and images have been built successfully. In that case, just click OK and go on to section 2.8. If there is a problem, see section 2.2.2.

9. [Source-code only] Continue with compiling libraries and executable images. After file copying is finished you are prompted to launch BuildGP by clicking Next. When you click on Next, the install program will exit and the BuildGP program will be launched. BuildGP builds the GEMPACK libraries and executable images of the Fortran-based GEMPACK programs. This will take several minutes. If all goes well, you will eventually see a message saying that the libraries and images have been built successfully. In that case, just click OK and go on to section 2.8. If there is a problem, see section 2.2.2.
10. For some versions of GEMPACK, you are required to "activate" your licence. A dialog will appear which asks for your name, city and email address. Fill these in; then click the Request Activation Code button. You should soon receive an email containing a 12-letter code, which you enter (or paste) into the activation program. If all is well, your licence will be permanently activated on that PC. For more details see section 2.2.3.

### 2.2.1 If a warning appears after installing [pcawarning]

Sometimes, just after installing GEMPACK, a warning screen appears, titled "Program Compatibility Assistant" and announcing that **"This program might not have installed correctly"**. You are offered two options (a) "Reinstall using recommended settings", or (b) "This program installed correctly. We believe that the warning is needless and that you should click **"This program installed correctly"**".

### 2.2.2 [Source-code only] If an error occurs [gpd6.4.1.1]

If an error occurs during the BuildGP process, you will be told the name of the procedure when the error occurred. We suggest that you note this name on paper, then exit from BuildGP. Usually an Error log is shown. This should give you some idea what is happening.

Possible Checks and Actions to try:

- Check that there is plenty of room on your hard disk — if not, you will need to delete some files to create space.
- Check that Fortran is installed and on your path (see section 2.1.5).
- Check that the name of the GEMPACK directory does not contain spaces or Chinese or other non-English characters (See section 7.1).
- Install all over again. Or, you could try re-running just the final, BuildGP, stage. To do this, open a command prompt (DOS box) in your GEMPACK directory and type "BuildGP". Check the GEMPACK directory and compiler choices, then click .Start Build..
- If an error reappears, please notify support@gempack.com. If an Error log has been created, please send it with details of what happened.
- BuildGP checks that there is enough free disk space on the drive you chose for the GEMPACK directory. You can override these checks if you disagree or you can exit from BuildGP, clear some more disk space and then rerun BuildGP. You can read more about BuildGP in section 2.9.1.

### 2.2.3 Some GEMPACK licences require activation [activation]

Some GEMPACK and RunDynam licences require to be "activated" in order to continue using TABLO or GEMSIM on your PC.

- Limited-size, Introductory and 'Course' licences (handed out at a training course) do not require activation.
- At the final stage of installation, you will be asked if you wish to activate your licence on the PC you are using. This is the best time to do it.
- However, you could choose to run the activation program (GPactivate.exe) later (perhaps after installing the correct licence file). You can go on using a licence which has not been activated for a 'grace period' of 30 days.
- For a given PC and licence, activation is permanent, and does not need to be repeated. But you may need to activate again if you install an upgraded version of GEMPACK, or dramatically change your PC hardware.

- There is a generous limit on the number of times per year each licence can be activated. You can activate an individual licence on several PCs — the limit is greater for site licences. If you exceed the limit you can email GEMPACK sales to ask for the limit to be increased.

More information about licence activation can be found at <http://www.copsmodels.com/gpactivation.htm>.

### 2.2.4 GEMPACK licence [gpd6.4.4]

Your GEMPACK licence must be called LICEN.GEM and it must be placed in your GEMPACK directory (that is, the directory in which you installed GEMPACK). The installer may have already done this: if so, skip this section.

If you already have a Release 12 licence on your computer in another directory, please copy the file LICEN.GEM to your current GEMPACK directory.

See section 1.6 for details about GEMPACK licences.

### 2.2.5 Changes to your PATH and Environment [gpd6.4.4a]

If (against our advice) you did **not** allow the Install program to make changes to your PATH and the Environment variable called GPDIR, you must now make these changes yourself: see section 2.8.

## 2.3 Testing the Installation [gpd6.5]

The following test should be performed whether you have the Executable-Image or the Source-Code version of GEMPACK.

The test runs a simulation with the small Stylized Johansen model [SJ].

Create a folder, for example, C:\TEMP, where you can do the test. Copy the following files from the Examples subdirectory of your GEMPACK folder (probably C:\GP\EXAMPLES) to your test folder (eg C:\TEMP):

```
SJ.TAB  SJ.HAR  SJLB.CMF
```

Open a command prompt (DOS box) by going Start..Run and type in "cmd" and hit OK. This will start a command prompt running. Type in the command

```
cd /d C:\TEMP
```

to move to your test folder (assuming that you are testing in C:\TEMP). Then type

```
dir sj*.*
```

You should see that the example files listed above are in the test folder.

### Step 1: running TABLO

Now type:

```
tablo -pgs SJ
```

You should see many messages flash past. If the messages end with

```
(Information file is 'C:\temp\SJ.inf'.)
(The program has completed without error.)
Total elapsed time is: less than one second.
```

go straight on to Step 2 below.

If on the other hand you see:

```
'tablo' is not recognized as an internal or external command,
operable program or batch file.
```

then the GEMPACK folder is **not** on your PATH. Please check the steps in section 2.8 and then repeat this part of the testing.

If the messages ended with something like:

```

%% Stopping now because of fatal GEMPACK licence problem reported earlier.
[Search for "%%" in the LOG file to see the earlier message.]
(ERROR RETURN FROM ROUTINE: TABLO )
(E-Licence information unavailable.)
(The program terminated with an error.)

```

then your GEMPACK folder contains no licence (or the wrong licence). The error message will tell you where TABLO looked for the licence file. Please check that your Release 12 licence file (it must be called LICEN.GEM) is in your GEMPACK directory. If TABLO looks for LICEN.GEM in a directory which is different from the one in which you installed GEMPACK, check the parts of section 2.8 which relate to the Environment variable GPDIR. Repeat this testing once you have remedied any problems.

### Step 2: running GEMSIM

Assuming Step 1 (TABLO) worked OK, type

```
gemsim -cmf sjlb.cmf
```

You should see many messages flash past, ending with

```

(The program has completed without error.)
Total elapsed time is: less than one second.
(Output has also been written to log file 'C:\temp\sjlb.log'.)

```

Congratulations — you have just run a simulation!

If this simulation does not work, start again at section 2.2. If again you have problems, see section 2.5.

If you have the Executable-Image version of GEMPACK, go straight on to section 2.6. If you have the Source-Code version of GEMPACK, you need to do the further tests in the next section.

## 2.4 [Source-code only] Re-Testing the Installation [gpd6.5s]

This test agains runs a simulation with the small Stylized Johansen model [SJ]. However, while the previous test used GEMSIM (useful whether you have either the Executable-Image or the Source-Code version of GEMPACK), the next test uses a Tablo-generated program (SJ.EXE) to run the simulation. You need the Source-Code version of GEMPACK to create Tablo-generated programs.

Again use the command prompt (DOS box) in your test folder, as described previously.

### Step 1: running TABLO

Type in the command

```
tablo -wfp SJ
```

You should see messages flash past, ending with

```

Successful completion of TABLO.
The program is
'sj.for'.
This program
  o can create the Equations file
  o can carry out multi-step simulations
*****
(Information file is 'C:\temp\sj.inf'.)
(The program has completed without error.)
Total elapsed time is: less than one second.

```

### Step 2: running LTG

Assuming Step 1 (TABLO) worked OK, type

```
LTG SJ
```

You should see your Fortran compiler (Intel or GFortran) at work, ending with the message:

```
sj.EXE made successfully
```

If there is a problem, please check that you have installed Fortran correctly as described in section 2.1.5.



**Step 3: running a simulation with SJ.EXE**

Assuming Step 2 (LTG) worked OK, type

```
SJ -cmf sjlb.cmf
```

You should see many messages flash past. If the message ends with:

```
(The program has completed without error.)
Total elapsed time is: less than one second.
(Output has also been written to log file 'C:\temp\sjlb.log'.)
```

the test was successful and you should go on to section 2.6.

**2.5 If you still have problems** [\[witsend\]](#)

If, after re-checking all steps on the install procedure, you still have problems, please run ViewHAR and select

Help | About ViewHAR/Diagnostics | Diagnostics

Save this information in a file, and email it to support@gempack.com. Be sure to describe just when and how the problem appeared.

**2.6 More simulations to test GEMPACK and WinGEM** [\[gpd6.5.3\]](#)

After you have installed GEMPACK correctly, you will want to start using it! If you are new to GEMPACK, we recommend that you work through the introductory Chapters 3 and 4 of the main GEMPACK manual.

To test that GEMPACK and WinGEM are working correctly, we suggest that you carry out the simulations with Stylized Johansen in section 3.4. If you have source-code GEMPACK, run the simulations using a TABLO-generated program as described in section 3.5.2. If you have Executable-Image GEMPACK, use GEMSIM as described in section 3.5.3. In either case, check that the results of the simulation are as expected (see, for example, section 3.7).

If any of these tests does not work, re-check the installation steps described above.

**2.7 Working with GEMPACK** [\[gpd6.6\]](#)

The following sections contain other information relevant to working with GEMPACK.

**2.7.1 New model's directory location** [\[gpd6.6.2\]](#)

We suggest that you put each new model you build in a separate directory on the hard disk, outside of the GEMPACK directory (usually C:\GP). Your PATH setting should ensure that the GEMPACK programs are found correctly. Conversely if your PATH and GPDIR are not set correctly, the GEMPACK programs will not run.

When you use WinGEM with any model, make sure that you set WinGEM's working directory to point to the directory containing the files for this model (as spelled out in section 3.4.2).

**2.7.2 [Source-code only] GEMSIM or TABLO-generated programs ?** [\[gpd6.6.3\]](#)

Both source-code and executable versions of GEMPACK allow you to use the program GEMSIM to run TABLO programs which solve your model or perform other tasks. There are 2 stages:

- **TABLO:** first converting your TABLO program to GSS/GST files that GEMSIM can use.
- **GEMSIM:** to run a simulation or perform a calculation.

The source-code version of GEMPACK offers the alternate 3-stage approach of:

- **TABLO:** first converting your TABLO program to a Fortran program.
- **LTG:** then converting (compiling) the Fortran program to an EXE file.
- **RUN:** then running the EXE file to solve your model or perform another task.

Compared to GEMSIM, the TABLO-generated programs [EXE files] run faster with models that have a large database (some CPU times are reported in Chapter 74). However, the additional LTG stage can take

some time — this is roughly proportional to the size of the TAB file. If you are going to run the EXE a number of times<sup>1</sup>, and if your model has a large database, you will soon recoup the time spent doing LTG. But if you are:

- in the model development stage, where you keep changing the TAB file;
- running a model with a smaller database; or
- running a program that merely manipulates data.

you may well find the simpler GEMSIM approach to be quicker.

### 2.7.3 Text editor [gpd6.6.4]

When installing and using GEMPACK, you will need to be able to edit text files. This is best done using a text editor (that is, an editor designed especially for handling text files).

We recommend that you use GEMPACK's text editor: TABmate. TABmate has syntax highlighting which is helpful if you are writing or debugging TABLO Input files. TABmate can also be used for other text files, can open several files at the same time and has various Tools which are useful for GEMPACK development.

Other text editors include NotePad (which is supplied with Windows) and VIM and EMACS (which each have their devoted followers). If you use a word processor (such as Microsoft Word) to edit text files, be careful to save the resulting file as a text file.

### 2.7.4 If you installed in a new directory (not C:\GP) [gpd6.4.3]

If you did NOT install GEMPACK in C:\GP, you may need to help some Windows programs to find and use GEMPACK programs. For example, in RunDynam, click on the Options menu and use menu items such as Which ViewSOL to use to tell the program which versions of ViewSOL, ViewHAR and AnalyseGE to use. In RunGTAP, Click on Tools..Options and then use the various Change buttons to tell RunGTAP where to find Gemsim, ViewHAR, ViewSOL, TABmate, AnalyseGE, Tablo etc.

### 2.7.5 If a program runs out of memory [gpd6.6.5]

GEMPACK programs may require more memory than is available on your computer. If so you will receive a message saying that the program is stopping because it is unable to allocate sufficient memory. Often this error occurs because you have forgotten to condense your model, or have not condensed it enough (see chapter 14).

Other possible remedies include:

- Free up more memory by closing down any other running applications; then try to rerun the task.
- Buy more memory; however, 32-bit Windows cannot support more than 4 GB, and will only allocate 2 GB to a program.
- If your PC has at least 4GB of memory and you are running 64-bit Windows, check that you are running 64-bit GEMPACK [and for source-code, a 64-bit compiler].

### 2.7.6 Copying GEMPACK programs to other PCs [gpd6.6.9]

If you have a GEMPACK site licence, you are entitled to install GEMPACK on PCs covered by your site licence, for example, within the same department or institute. An individual GEMPACK licence entitles you to install GEMPACK only on other PCs used by you.

You are allowed to send copies of your TABLO-generated programs to other people. However, such programs may require an Introductory licence if they are used with a larger model. The model size limits are set out in Chapter 63.

Versions of TABLO and GEMSIM programs must match exactly. Hence, do not send GSS/GST files generated by TABLO to others — the GSS/GST files would only work if used with the right GEMSIM

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1. Recursive dynamic models solved using RunDynam normally require that the model is solved 1-3 times for each simulated year.

version (that matched your TABLO). Rather send only the TAB file — then the recipient can use their matching TABLO and GEMSIM programs.

## 2.8 Manually setting the PATH and GPDIR [\[gpd6.4.2\]](#)

For GEMPACK to run, you must make sure that the GEMPACK directory (usually C:\GP) is on your PATH, and that the Environment variable GPDIR is set to the GEMPACK directory.

If you did not allow the installer to make changes to your PATH and the Environment variable GPDIR (see section 2.2), you must make the required changes yourself, as described next.

### 2.8.1 Checking and setting PATH and GPDIR [\[gpd6.4.2.1\]](#)

The usual method to change the PATH and set the Environment variable GPDIR is by editing the System Properties. The important changes are that

- the directory into which you installed GEMPACK (the GEMPACK directory) must be on the system Path.
- the system environment variable GPDIR must be set equal to the GEMPACK directory.

You will need administrator access to make these changes. Follow the steps below to check that the installer made these changes, or to make them yourself:

1. For users of Windows 7 or later, if you are not using an administrator level account you will be prompted for an administrator password during this procedure. Right click on Computer. From the right click menu select Properties then click on the Advanced tab. This brings up the System Properties dialogue window, click on Environment Variables to bring up the Environment Variables dialogue window. Notice that the top half of the window contains user variables, the bottom contains system variables.
2. Edit the system Path variable and add the GEMPACK directory, noting the following. Entries must be separated by a semicolon ";". New entries may be added between any existing entries, however we recommend adding to the beginning of the Path. For example, suppose your GEMPACK directory is C:\GP, then the system path should look like C:\GP;C:\mingw-w64;%SystemRoot%... . If you have a previous GEMPACK directory on the Path delete it and add the new GEMPACK directory to the beginning of the system Path.
3. Add a new (or edit the existing) system environment variable GPDIR to have value set to the GEMPACK directory. This must be the same directory you added to the beginning of the system Path in the previous step.
4. Click on the Ok button to accept these changes to the Environment.

These changes will take effect when you next start a program or open a new command prompt. Test these changes by opening a new command prompt and entering "SET". This should show the altered path and the environment variable GPDIR. If you don't see the changes you expect got to the environment troubleshooting section and work through the points in the next section [2.8.2](#).

### 2.8.2 Trouble-shooting environment variables [\[envvartrouble\]](#)

If you have made changes to the system Path or variable GPDIR which have had the effect you expected, please try the following:

- Reboot your computer and check the values of the system Path and GPDIR again, by opening a new DOS box and entering "SET". Usually this is not necessary, however on rare occasions we have noticed that environment changes are slow to propagate to the rest of the system.
- Check the user Path and GPDIR variables; if a value has been set for both a user and system variable of the same name then, with the exception of the Path variable, the user variable will dominate. This could explain why GPDIR does not have the value you expect. To check the values of user variables for user account Jane for example, you must be logged on as Jane. On Windows 7 and later you can edit the user variables by going to Control Panel, then find User Accounts which depending on the display mode may be in the group User Accounts and Family Safety. From the User Accounts dialogue window click on

"Change my environment variables". Check that GPDIR is not set as a user variable, if it is delete it. Bad user environment variables are more likely to be a problem for upgrade installations rather than new installations.

- Check the values of the system Path and GPDIR variables by working through section 2.8.1.

## 2.9 Technical Topics [gpd6.7]

In this section we discuss various technical topics. We expect that most GEMPACK users can happily ignore these.

### 2.9.1 [Source-code only] Running BuildGP [gpd6.7.3]

The program BuildGP is designed to carry out the following tasks:

1. Check your system to see: if Fortran is installed, if there is enough disk space, whether the licence is in the correct place, and if the PATH and GPDIR environment variables are correctly set.
2. Make the GEMPACK libraries by compiling many groups of subroutines.
3. Make the Fortran-based GEMPACK programs (executable images) by compiling the programs and linking to the libraries.

Usually BuildGP does all these automatically when you install GEMPACK. However, there may be situations when you need to run BuildGP yourself. For example, if you discovered a GEMPACK bug, you might be sent a patch file to repair the problem. Detailed instructions would come with the patch file. We provide only brief notes here.

Run the program BUILDGP.EXE in the GEMPACK directory from the command prompt or from My Computer or Windows Explorer.

Check that BuildGP correctly displays your GEMPACK directory and compiler (GFortran or Intel).

Now click on the Start build button.

If you installed GEMPACK successfully with one compiler (say, GFortran), and you later wished to use another compiler (say, Intel), you do not need to install again. It is enough to merely re-run BuildGP. If you want to repeatedly switch between compilers, see the notes at <http://www.copsmodels.com/gpmultifort.htm>.

### 2.9.2 File association [gpd6.6.7]

"File association" is the Windows mechanism due to which (for example):

- the ViewHAR icon is displayed beside HAR files in Explorer
- if you double-click a HAR file, it opens in ViewHAR

These happen because files suffixed HAR are "associated" with ViewHAR.exe. Usually the "association" is set up at install time. Only one program can be associated with each file type — so programs might compete to possess more popular suffixes. To stop such contests, Windows may prevent a program from changing an existing association. This may mean, for example, that the GEMPACK installer cannot associate TABmate with TAB files (because Microsoft wants the TAB suffix for Visual Studio). In such cases, you must set up the association manually. You can change the HAR file association as follows:

- in Windows Explorer, right-click on a HAR file and choose Open with....
- check box Always use the selected program should be ticked.
- Use the Browse button to select the latest ViewHAR.exe.

### 2.9.3 Keep and Temporary directories and GEMPACK Windows programs [gpd6.6.8]

Programs often need to have folders to store user configuration choices, or to write temporary files. Windows provides default folders for these purposes.

GEMPACK Windows programs store user configuration choices in INI files which are (by default) located below a folder chosen by Windows. We call that folder the "Keep" folder. For example, for user "John", the INI file for TABmate might be located at:

C:\Users\John\My Documents\GPKEEP\TABmate\TABmate.ini

Similarly GEMPACK Windows programs by default write temporary files in a subdirectory of the temporary folder provided by Windows<sup>2</sup>.

For very unusual cases, GEMPACK gives a way to avoid problems with the Keep and the default Temporary directories by setting environment variables called GPKEEP and GPTEMP. Set a new environment variable called GPKEEP if you want to change the usual Keep Directory. Set a new environment variable called GPTEMP if you want to change the default temporary directory without changing the environment variable TMP.

In RunGEM, WinGEM, AnalyseGE and RunDynam there are Menu Options within the programs which allow you to set your Temporary directory to a directory of your choosing. The program remembers this Temporary directory setting. When you start the programs for the first time, the default temporary directory is set from the value of the TMP or TEMP environment variable.

If you are having problems with these features of one of the GEMPACK Windows programs, consult the relevant Help file for details and advice.

#### 2.9.4 Installing GEMPACK on a network [gpd6.8]

Some organisations have found it desirable to run the Source-code Version of GEMPACK and the associated Fortran compiler from a network. For example, this can reduce the need for separate copies of the compiler.

Below are some pointers to using GEMPACK and/or Fortran on a network.

- Everyone needs read and execute permissions for the GEMAPCK folder but only the administrator may need write access.
- GEMPACK programs do not write to any subdirectories of the Windows directory.
- A range of [environment changes](#), such as to PATH and GPDIR, will need to be made for each user. The [Keep and Temporary directories](#) and the TMP or TEMP environment variables need to point to folders that are unique to each user.
- Input, temporary and output files for a simulation should be located on the PC which is running the simulation — the aim is to avoid large amounts of data travelling over the network.

#### 2.9.5 Uninstalling GEMPACK [gpd6.7.6]

To uninstall GEMPACK from your computer, use the standard Add/Remove Programs method. If that fails you could simply:

- Delete the whole GEMPACK directory (and its subdirectories).
- Remove the changes to your PATH and environment (see section [2.8.1](#)).
- Delete any desktop links to GEMPACK programs.

#### 2.9.6 Finding GEMPACK Version and Release Information [identver]

Especially when troubleshooting, it may be useful to check which version of GEMPACK (or of a particular GEMPACK program) you are using. You may wish to know the:

- GEMPACK release no., such as 10.0, 11.2, or 12.0;
- [GEMPACK version](#) — either Executable-image or Source-code
- GEMPACK licence type, which should match your GEMPACK version.
- Version no. for an individual program; for example TABmate Version 1.32

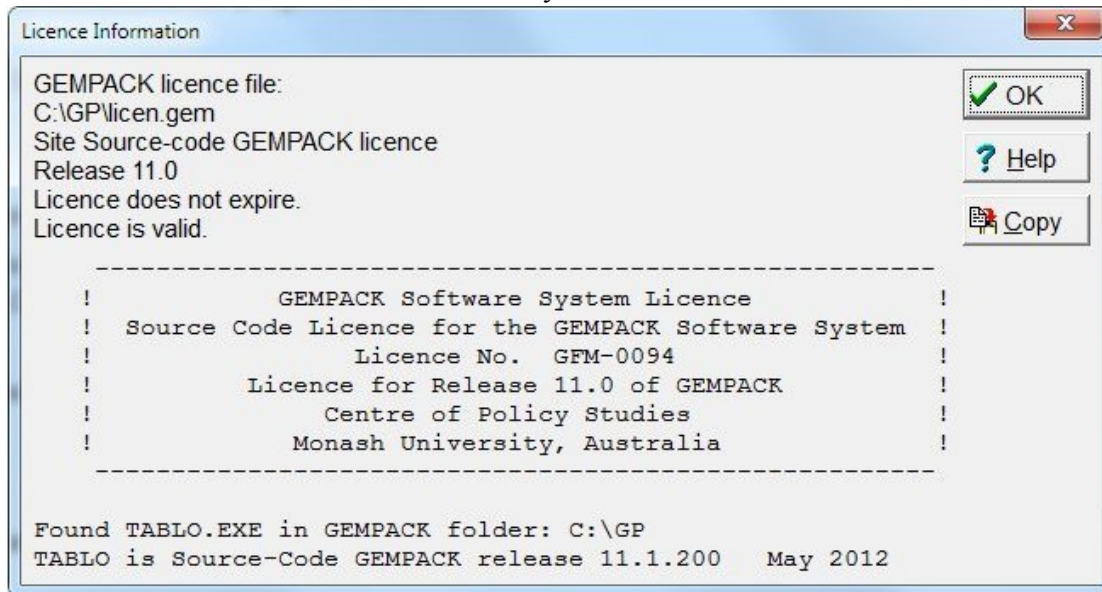
Most GEMPACK Windows programs (like ViewHAR and TABmate) give two methods to gather the information above.

---

2. Windows stores temporary files in (a) the folder named in environment variable TMP, if that exists, or (b) in the folder named in environment variable TEMP, if that exists, or (c), the usual default, in a folder under the user folder. Thus if your Environment variable TMP is set to C:\TEMP, the default temporary directory for WINGEM would be C:\TEMP\GPTEMP\WINGEM.

**First**, the **GEMPACK Licence** command (usually under the Help Menu) shows:

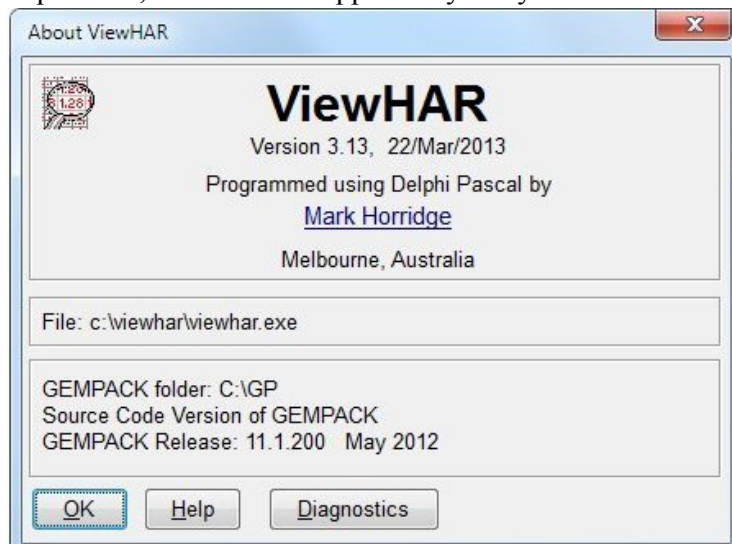
- the name of your licence file, which will be located in your GEMPACK folder.
- the GEMPACK release no. of that licence file. Eg, A GEMPACK 10 licence can be used to run programs from GEMPACK Release 10 *or earlier* Releases.
- the GEMPACK Version of that licence file — usually Executable-image or Source-code. An Executable-Image licence will not suffice to use Source-Code GEMPACK.
- whether your licence has expired or is size-limited to smaller models.
- your licence details and no. (eg: GFM-0094). The last four digits of this are your customer no.
- if TABLO.EXE is present in your GEMPACK folder, additional lines at the bottom of the Licence Information window show the Version and Release information for that copy of TABLO.EXE — which should match the Version and Release of your licence file.



**Figure 2.1 GEMPACK licence command**

**Second**, the **About/Diagnostics** command (also usually under the Help Menu) shows:

- the name and Version no. of the program; eg, ViewHAR Version 3.13
- the location and filename of the EXE file
- if TABLO.EXE is present in your GEMPACK folder, the GEMPACK Version and Release information for that copy of TABLO.EXE
- a Diagnostics button that displays much more information, which can be saved in a file. If you have a problem, GEMPACK support may ask you to send them this "diagnostics file".



**Figure 2.2 About/diagnostics**

Program Version and GEMPACK Release Information for **Command-line or Fortran-based GEMPACK programs** is contained in the first 4 or 5 lines of the log file (if there is one) or in the first 4 or 5 lines of screen output when you run that program from the command-line. Usually this information has scrolled off the top of the Command prompt window before you have time to read it. You may need to scroll back to see it. Or, to capture the output to a file, type:

```
sltoht <nul: >temp.log
```

and then examine the top of file temp.log. You might see something like:

```
<SLTOHT  Version 5.52  January 2011>  
  This program accesses some of the routines in the GEMPACK software release  
<GEMPACK Release 11.1.200  May 2012>
```

In ViewHAR the History command will show you Program Version and GEMPACK Release Information about **the program that created a HAR file** — see section [50.1](#). The same information is echoed to the log whenever a Command-line GEMPACK program reads a HAR file.