

# GAMS Installation and System Notes for Unix

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## INSTALLATION

To install GAMS, please follow the steps below as closely as possible. We advise you to read this entire document before beginning the installation procedure:

1. Choose a location for the GAMS system directory (the directory where the GAMS system files should reside). We recommend to choose a name that indicates the distribution of GAMS you are installing. For example, if you are installing the 23.3 distribution, a good choice for the GAMS system directory would be `/usr/gams/23.3`. If the directory where you want to install GAMS is not below your home directory, you may need to have root privileges on the machine.
2. Create the GAMS system directory, for instance `/usr/gams/23.3`. Go to this directory. Make sure `pwd` returns the name of this directory correctly.
3. Transfer the distribution file into the GAMS system directory. This file is available from the GAMS DVD or via the web in one large self-extracting zip archive with a `_sfx.exe` file extension. You can run the archive (e.g. `linux_x86_32_sfx.exe` on a Linux 32bit system) directly from the DVD to extract the necessary files to the system directory. For example, you might execute the following commands:

```
mkdir /usr/gams/23.3
cd /usr/gams/23.3
/dev/dvd/linux/linux_x86_32_sfx.exe
```

4. To mount the GAMS DVD, you may need to be logged in as root. We assume you want to mount the DVD over the directory `/dvd`. If the directory you want to mount over does not exist, you must create it now. Once this directory is created, mount the DVD, using the appropriate command. The correct arguments for the mount command vary from machine to machine. After mounting the DVD, view the `README.TXT` file on it to find the subdirectory containing the GAMS system for your machine.
5. If you transferred the distribution file via the web, check that it has the execute permission set. If you are not sure how to do this, just type in the command, e.g. `chmod 755 linux_x86_32_sfx.exe`.
6. Check if the file `gamslice.txt` exists in the GAMS system directory. The license files is nowadays sent via email. If no license file is present, GAMS will still function in the demonstration mode but can only solve small problems. Student and demonstration

systems do not include a license file. A license file can easily be added later, so if you cannot find a license file, you can safely proceed without one.

7. Run the program `./gamsinst`. This will unpack files if necessary. It will also prompt you for default solvers to be used for each class of models. If possible, choose solvers you have licensed since unlicensed solvers will only run in demonstration mode. These solver defaults can be changed or overridden by:
  - (a) rerunning `./gamsinst` and resetting the default values
  - (b) setting a command line default, e.g. `gams trnsport lp=bdmlp`
  - (c) an option statement in the GAMS model, e.g. `option lp=bdmlp;`
8. Add the GAMS system directory to your path (see 'ACCESS TO GAMS' below).
9. To test the installation, log in as a normal user and run a few models from your home directory, but not the GAMS system directory:

```
LP:      trnsport (objective value: 153.675)
NLP:     chenery  (objective value: 1058.9)
MIP:     bid      (optimal solution: 15210109.512)
MINLP:   procsel (optimal solution: 1.9231)
MCP:     scarfmcp (no objective function)
MPSGE:   scarfmge (no objective function)
```

10. If you move the GAMS system to another directory, remember to rerun `./gamsinst`. It is also good practice to rerun `./gamsinst` when you add or change your license file if this has changed the set of licensed solvers.

## ACCESS TO GAMS

To run GAMS you must be able to execute the GAMS programs located in the GAMS system directory. There are several ways to do this. Remember that the GAMS system directory in the examples below may not correspond to the directory where you have installed your GAMS system.

1. If you are using the C shell (`csh`) and its variants you can modify your `.cshrc` file by adding the second of the two lines given below:

```
set path = (/your/previous/path/setting )
set path = ( $path /usr/gams/23.3 ) # new
```
2. Those of you using the Bourne (`sh`) or Korn (`ksh`) shells and their variants can modify their `.profile` file by adding the second of the three lines below:

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```
PATH=/your/previous/path/setting
PATH=$PATH:/usr/gams/23.3 # new
export PATH
```

You should log out and log in again after you have made any changes to your path.

3. You may prefer to use an alias for the names of the programs instead of modifying the path as described above. C shell users can use the following commands on the command line or in their `.cshrc` file:

```
alias gams /usr/gams/23.3/gams
alias gamslib /usr/gams/23.3/gamslib
alias gamsbatch /usr/gams/23.3/gamsbatch
```

The correct Bourne or Korn shell syntax (either command line or `.profile`) is:

```
alias gams=/usr/gams/23.3/gams
alias gamslib=/usr/gams/23.3/gamslib
alias gamsbatch=/usr/gams/23.3/gamsbatch
```

Again, you should log out and log in in order to put the alias settings in `.cshrc` or `.profile` into effect.

4. Casual users can always type the absolute path names of the GAMS programs, e.g.:  
`/usr/gams/23.3/gams trnsport`