

**GAUSS™ 8.0**

***Quick-Start Guide***



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Part Number: 005630  
Version 8.0  
Revised February 21, 2008

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# Introduction 1

## Product Overview

GAUSS is a complete analysis environment suitable for performing quick calculations, complex analysis of millions of data points, or anything in between. Whether you are new to computerized analysis or a seasoned programmer, the GAUSS family of products combine to offer you an easy to learn environment that is powerful and versatile enough for virtually any numerical task.

Since its introduction in 1984, GAUSS has been a standard for serious number crunching and complex modeling of large-scale data. Worldwide acceptance and use in government, industry, and the academic community is a firm testament to its power and versatility.

# Getting Started **2**

## Installation Under UNIX/Linux/Mac OS X

1. Make a directory to install GAUSS in.
2. `cd` to that directory.
3. Unzip the `.gz` or `.zip` file if there is one.
4. Untar the `.tar` file.
5. Put the installation directory in the executable path.
6. Put the installation directory in the shared library search path.
7. Install the license; please refer to Chapter 5: Licensing for instructions.

For last minute information, see `README.term`.

## Installation Under Windows

### Machine Requirements

- A Pentium computer or higher.
- Operating System and Memory (RAM) requirements
  - Windows NT 4.0, SP6 IE4.0, 32 MB minimum, 256 MB or more recommended.
  - Windows 2000, 64 MB minimum, 256 MB or more recommended.
  - Windows XP, 128 MB minimum, 256 MB or more recommended.

- Free hard disk space requirements:  
Minimum of 100 MB free hard disk space, more may be needed depending on the size of matrices and the complexity of the program.
- Monthly defragmenting is recommended.

## Installation from Download

### Downloading

If you have current Premier Support, you can download the latest shipping release of the version of GAUSS you own from your Premier Support site. If you do not have current Premier Support, contact Aptech Systems, Inc., for the ftp download instructions.

### Installation

After downloading, unzip the software in a temp directory and run `setup.exe`.

## Installation from CD

Insert the GAUSS 8.0 compact disc into the CD-ROM drive, and setup should start automatically. If setup does not start automatically, click on `Start`, then click `Run`, and type `D:\setup.exe` in the dialog box (where `D:` is the drive letter of the CD-ROM drive).

You can use this procedure for the initial installation of GAUSS and for additions or modifications to GAUSS components.

To install the license, please refer to Chapter 5: Licensing for instructions.

# Documentation **3**

## GAUSS Quick-Start Guide

- Introduction
- Getting Started
- Documentation
- Support Services
- Licensing

## GAUSS User Guide

- Introduction
- Getting Started
- Using the Command Line Interface
- Introduction to the Windows Interface
- Using the Windows Interface
- Matrix Editor
- Library Tool
- GAUSS Source Browser
- GAUSS Help
- Language Fundamentals
- Operators
- Procedures and Keywords
- Sparse Matrices
- N-Dimensional Arrays

Working With Arrays  
Structures  
Run-Time Library Structures  
Libraries  
Compiler  
File I/O  
Foreign Language Interface  
Data Transformations  
The GAUSS Profiler  
Publication Quality Graphics  
Time and Date  
ATOG  
Error Messages  
Maximizing Performance  
Fonts Appendix  
Reserved Words Appendix  
Singularity Tolerance Appendix

## GAUSS Language Reference

Introduction  
Commands by Category  
Command Reference  
Obsolete Commands Appendix  
Colors Appendix

## Ordering Documentation

- GAUSS User Guide and Language Reference set (Part No. 005499)

For pricing information, please visit our Web site at: [www.Aptech.com](http://www.Aptech.com), or contact us at:

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E-mail for Academic Sales: [acsw@Aptech.com](mailto:acsw@Aptech.com) OR [info@Aptech.com](mailto:info@Aptech.com)  
E-mail for Government Sales: [govsw@Aptech.com](mailto:govsw@Aptech.com) OR [info@Aptech.com](mailto:info@Aptech.com)



# Support Services

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## Contacting Our Support Services

- To contact our support technicians under your Premier Support contract, please e-mail us at: [support@Aptech.com](mailto:support@Aptech.com) and include the following information:
  - Brief description of problem
  - Operating system version (Windows XP, Linux, Mac OS X, etc.)
  - GAUSS version and revision number
  - License ID of GAUSS
  - Your phone number and/or email address
  - Your name
- Our contact information:

Aptech Systems, Inc.  
P.O. Box 250  
Black Diamond, WA 98010 USA  
Phone: (360) 886-7100  
FAX: (360) 886-8922  
E-mail: [info@Aptech.com](mailto:info@Aptech.com)
- Our Web address is: [www.Aptech.com](http://www.Aptech.com).

# Licensing 5

## Licensing Under UNIX/Linux 32-bit

After you install GAUSS or the GAUSS Engine, go to the FLEXlm subdirectory and run the following command:

```
% ./lmutil lmhostid
```

Send the output to [license@aptech.com](mailto:license@aptech.com), and you will be sent a license code. Create a file called `gauss.lic` in the FLEXlm subdirectory, and copy the license code into it.

If you have purchased a Single User or Server Locked license, the program is now ready for use. If you have purchased a floating network license, you have to start the `lmgrd` license server daemon first. Go to the FLEXlm subdirectory and run the following command:

```
% ./lmgrd -c gauss.lic -l lmgrd.dl
```

For Network licensing see your system administrator to have the license daemon started automatically in the operating system start-up scripts.

For last minute information, see `README.term`.

## Licensing Under Windows 32-bit

### Single User License

1. E-mail or FAX your completed registration form containing your contact information, serial number and the hostid that was displayed during installation to Aptech Systems. NOTE: The information displayed is stored in the `hostid.txt` file in your `gauss8.0\flexlm` directory as well. Be sure to include your phone number, e-mail address and/or FAX number. E-mail is the preferred method for returning licenses.

If you need to obtain the hostid after installation:

- a. Open command prompt window\*
- b. `cd gauss8.0\flexlm`
- c. Type the command `notepad hostid.txt`
- d. Send the contents of this `hostid.txt` file along with your serial number by email to `license@aptech.com`.

If your machine is a laptop or your only connection is via modem you will need to verify your hostid after installation is complete by:

- a. Reboot machine
- b. Open a command prompt window\*
- c. `cd gauss8.0\flexlm`
- d. Type the command `lmhost >> hostid.txt`
- e. Type the command `notepad hostid.txt`

If the hostids are the same, please send us the results.

If they are not, please:

- a. Open a command prompt window\*
- b. `cd gauss8.0\flexlm`
- c. Type the command `lmhost -pin > hostid.txt`
- d. Send the contents of the `hostid.txt` file to Aptech.

E-mail to `license@Aptech.com`

or

FAX to (360) 886-8922

\*To open a command prompt window, click on the Start button in Windows, then click on Run, and type `cmd` in the dialog box.

2. Aptech will send you a license. Save it in a file called `gauss.lic` in the `gauss8.0\flexlm` directory using Notepad; Notepad is the only recommended text editor, do not use a word processing program.

***Caution:** Notepad may automatically add a `.txt` extension to files when you save them. Check to be sure that you have actually created a file named `gauss.lic`. Also, be aware that it is Windows default to hide file extensions.*

## Floating Network License

Every installation of GAUSS 8.0 can act as a Floating Network License server. You can have a single license server or 3 redundant servers.

### Install License Server(s)

Install GAUSS 8.0. For initial testing and trouble shooting you will need `GAUSS.exe` file installed. However, if you are short on hard drive space, after you have confirmed that the FLEXlm License Manager is running correctly, you can delete the shortcuts off the desktop and remove all files in the `gauss8.0` directory except for the `flexlm` directory.

### Obtain and Install License

To get the `hostid` of each license server, which is displayed during the GAUSS 8.0 install, it is also stored in the `gauss8.0\flexlm\hostid.txt` file.

1. E-mail or FAX your completed registration form containing your contact information, serial number and the `hostid` that was displayed during installation to Aptech Systems. NOTE: The information displayed, is stored in the `hostid.txt` file in your `gauss8.0\flexlm` directory as well. Be sure to include your phone number, e-mail address and/or FAX number. E-mail is the preferred method for returning licenses.

E-mail to [license@Aptech.com](mailto:license@Aptech.com)

or

FAX to (360) 886-8922

***Caution:** Notepad may automatically add a `.txt` extension to files when you save them. Check to be sure that you have actually created a file named `gauss.lic`. Also, be aware that it is Windows default to hide file extensions.*

2. Aptech will send you a license. Save it in a file called `gauss.lic` in the `gauss8.0\flexlm` directory using Notepad; Notepad is the only recommended text editor, do not use a word processing program.

3. Aptech will send you one or more licenses, depending on the number of increments you purchased. Save all of them in a file called 'gauss.lic'. Copy the gauss.lic file to the license server installation directory on each server.

### **Configure License Server(s)**

1. Launch LMTOOLS from the GAUSS 8.0 program group
2. Select the "Configuration using Services" radio button
3. Select "Configure Services" tab
  - a. Specify Service Name, we suggest "GAUSS License Server"
  - b. Complete the next 3 fields
  - c. "Path to the lmgrd.exe file"
  - d. "Path to the license file"
  - e. "Path to the debug log file" (specify a filename of your choice)
  - f. On NT, select "Use Services"
  - g. Select "Start Server at Power Up" box
  - h. Click "Save Service" button
4. Select "Start/Stop/Reread" tab
  - a. From the "Flexlm license Services installed on the computer" field, choose the name of the server to start.
  - b. Click on the "Start Server" button
5. Close LMTOOLS
6. Test by starting GAUSS on Server.

### **Configure Clients**

Copy the gauss.lic license file to the gauss8.0/flexlm directory on each client workstation where GAUSS is installed.

GAUSS is now ready to run.

### **Server Locked License**

1. Email or FAX your completed registration form containing your contact information, serial number and the hostid that was displayed during installation to Aptech Systems. Be sure to include your e-mail address and/or FAX number. E-mail is the preferred method for returning licenses.

E-mail to [license@Aptech.com](mailto:license@Aptech.com)

or

FAX to (360) 886-8922

If you need to obtain the hostid after the installation:

- a. Open a command prompt window
- b. `cd gauss8.0\flexlm`
- c. Run `lmhost.exe`

**Caution:** Notepad may automatically add a `.txt` extension to files when you save them. Check to be sure that you have actually created a file named `gauss.lic`. Also, be aware that it is Windows default to hide file extensions.

2. Aptech will send you a license. Save it in a file called 'gauss.lic' in the `gauss8.0\flexlm` directory using Notepad; Notepad is the only recommended text editor, do not use a word processing program.

GAUSS is now ready to run.

## Licensing Under Linux/Windows 64-bit or Mac OS X

### All Licenses

1. E-mail or FAX your completed registration form containing your contact information, serial number and platform type to Aptech Systems. Be sure to include your phone number, e-mail address and/or FAX number. E-mail is the preferred method for returning licenses.

E-mail to [license@Aptech.com](mailto:license@Aptech.com)

or

FAX to (360) 886-8922

2. Aptech will send you a license. Save it in a file called 'g.gkf' in the `gauss8.0` directory using a text editor such as Notepad, do not use a word processing program. Do not edit this information in any way.

GAUSS is now ready to run.