

# GAUSS Mathematical & Statistical System™

## 7.0 Update

### New GAUSS 7.0

#### New features and enhancements:

- Structure pointers
- GAUSS data archives
- Supports files larger than 2Gb
- Supports multiple library paths
- Over 30 new commands, including:
  - New numerical integration procedure for integrals over infinite intervals
  - New thread-safe functions
  - Functions for creating and opening data files
- Completely redesigned documentation

#### Available Platforms:

32-bit: Windows, Linux, Mac OS X (Power PC and Intel), HP UX11

64-bit: Windows Itanium 2, Linux AMD, Mac OS X (Power PC), Solaris

 GAUSS 7.0 includes several significant new enhancements, including support for files larger than 2Gb in size, the addition of structure pointers, GAUSS Data Archives, and a variety of new functions.

#### Structure Pointers

Structures were a significant addition to the GAUSS Programming Language. Structure pointers allow you to avoid unnecessary data copying when passing structures in and out of procedures, making it possible to write faster programs than ever before.

For example,

```
struct myStructure d;  
d.x = rndn(1000,100);  
d = myProc(d);
```

If myProc edits any members of d, then myProc will first make a local copy of it. The return from myProc is then copied back to d when the procedure ends.

Using structure pointers, you could define myProc to return 0 arguments and call myProc as follows:

```
struct myStructure d;  
d.x = rndn(1000,100);  
myProc(&d);
```

Passing a pointer to d into myProc causes the procedure to modify d directly rather than making a copy of it.

#### GAUSS Data Archives

New data set type that will hold multiple matrices, N-dimensional arrays, strings, and string arrays.

#### New Functions

- New numerical integration procedure for integrals over infinite intervals
- New multivariate normal and student's t cumulative distribution functions
- New thread-safe functions:
  - dstatmt
  - loessmt
  - qprogmt
- New functions for creating and opening data files:
  - datacreate
  - datacreatecomplex
  - dataopen
  - dataload
  - datasave
- Additional new commands:
  - convertsatostr
  - convertstrtosa
  - searchsourcepath

#### Additional New Features

- Files larger than 2Gb are now supported
- GAUSS 7.0 now supports multiple library paths
- Documentation has been completely redesigned to be easier to use.



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