

Cray User Group Directory of User-submitted Software (CUGDUS)

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ABSTRACT: *CUGDUS is an electronic system to share information about tools and applications developed by Cray users among the Cray User Group. This paper presents the design concepts for a new World-Wide Web based user interface for CUGDUS.*

Introduction

CUGDUS was developed by Wayne Schroeder and his colleagues at SDSC in 1991 to collect information about application software and utilities developed by Cray users and to make this information available to the members of the Cray User Group. The original design was implemented as an electronic mail system based on the Netlib concept developed by Jack Dongarra and Eric Grosse.

Requests for information were sent to the CUGDUS email server which operated in the domain `cug.org` at SDSC. To submit information about a software package a user simply had to complete a form which was available via email and then to resubmit it to the CUGDUS email server.

Figure 1 shows an overview of the email based CUGDUS information repository.

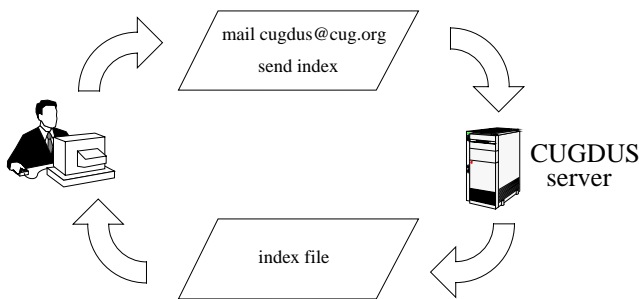


Figure 1: CUGDUS email-based information system

The CUGDUS information system was subdivided in four categories:

- Applications
- Libraries

- Utilities
- Systems (combinations of daemons, libraries, and utilities)

As a first step to the information repository a help file and an index file were available. The user simply had to submit an appropriate instruction to the CUGDUS email server. There was also an index file for each category. In addition to the index files the email interface also provided a search utility which was able to look for string patterns in all the CUGDUS index files.

Figure 2 shows an example of an index file for the category libraries.

```
*** from cugdus@sdsc.edu, Thu Mar 9 06:54:19 PST 1995
***
== CUGDUS Libraries Index ==
cfortran.h (UToronto) [CRAY Sun Vax SGI ...] A Bridge
between C and FORTRAN
ConvDEC (SDSC) [Cray] converts to/from DEC VAX data
formats; vectorized
ConvIEEE (SDSC) [Cray] converts to/from ieee data for-
mats; vectorized
```

Figure 2: Index file for category libraries

CUGDUS transition to WWW

To press ahead the use of CUGDUS we decided to transfer the email interface to the new CUG World-Wide Web server after the Barcelona CUG Conference. Wayne Schroeder converted the index file to HTML while preserving the original structure of the database. Thus the CUGDUS information repository could easily be installed on the new CUG WWW server. The main index file gives a short explanation about CUGDUS and provides links to the index files for the different CUGDUS categories. Figure 3 shows an example of the WWW index file for the category systems.

Each index file again provides links to the information files in the specific category.

CUGDUS Systems Packages

Package	Purpose	Contributor	Platform
CpuQuota	Part of SDSC CPU-time quota SW; monitors usage, holds jobs	SDSC	Cray
data_gsort	a better sorting algorithm for the data utility on Unicos 6.x	SABA	Cray
DMP_fallback	Media Groups and fallback mechanisms in DMP daemon to handle MSP failures	SABA	Cray
PTB_Async	Tool enabling data migration via SCP	John A.	Cray
ltrim	scheduler modification	NAS - NASA Ames Research Ctr	T-MP
JobMind	Dynamicly sets optimal NQS job run & timeout long jobs	SDSC	Cray
QFT	Queued File Transport	SDSC	Cray, VMS, UNIK Workstations
Qman	a package to monitor disk space requirements of batch jobs	SABA	Cray
QMON	NQS quota monitor that prevents users stuffing quotas	CSRD	Cray
Toolbin	Part of SDSC CPU quota SW; resource management utilities	SDSC	Cray
SPFS Schedulers: Executable File System	Disk Resource Scheduler	NASA Ames	T-MP,CRAY1

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Figure 3: Index file for category systems

How to contribute information for CUGDUS

For the submission of information about a software package a WWW interface based on HTML FORMs was implemented for CUGDUS. The WWW form provides several input fields and selection boxes to enter the necessary information for CUGDUS.

Entirely, the current release of the CUGDUS submission form covers the following input fields:

- Package title and revision
- Purpose summary
- Package type: program, subroutine/library, script, or set of programs
- Application area: Biology, Chemistry, CFD, Environmental, Geology/Seismic, Meteorology, Operating System, Programming Environments, Utilities, Visualization
- Short package description
- Submitter
- Contact
- Phone number
- Email address
- Company/Institution
- CUG Site Code
- Method of distribution and URL
- Distribution restrictions: US sites only, UNICOS sites only, or none
- Copyright: Public domain, not for resale, patents pending, or licensed
- License fee (if any)
- Hardware, operating system, and compiler(s)

- Program support: on a continuous basis, when schedule permits, or not supported
- Documentation: README file, Makefile, man pages, user documentation, installer/administrator documentation, and test data
- Portability to other UNIX systems
- Additional comments

The WWW submission can easily be adapted and extended to cover additional input fields.

Figure 4 shows an extract from the current WWW submission form.

The information submitted by the user is processed by a Perl script and then stored in HTML files on the CUGDUS server where each file contains the information for a single product or package. Figure 5 shows an example of the generated information file for the utility GLOT.

Summary information is extracted automatically from the individual files and added to the corresponding index file for the specific category.

CUGDUS status and access statistics

The CUGDUS information system is available on the World-Wide Web at URL:

<http://www.cug.org/CUG/CUGDUS/>

On September 30, 1996, information for 43 packages in 4 categories was available in CUGDUS.

CUGDUS Submission Form

To submit software to the Cray User Group Directory of User-submitted Software, fill in the following form and resubmit it. The completed form will be freely available from the CUG WWW server. The actual software will be distributed by you through the method of your choice (as described in the form).

Title:

Revision:

Summary:

Package type:

Application area:

Short description:

Submitter:

Contact:

Figure 4: CUGDUS submission form

Cray User Group Directory of User-submitted Software

Title	GPILOT
Revision	4.3E1
Purpose	CGM graphics file interpreter
Package type	Program
Application area	Visualization
Abstract	GPILOT can display a CGM graphics file onto a wide variety of terminal, or convert a CGM file from one format to another. GPILOT is a robust program, which has been ported to many platforms. Versions of GPILOT are used to create animations on video tape at PSC. The DRAWCGM package, available from PSC, can be used to generate CGM graphics, although vendor packages such as NCAR GMS, DISSFLA and DCS000 also can create CGM files.
Submitter	Phil Andrews
Contact	Arjuna Kar
Phone	412-268-2960
E-mail	kar@psc.edu
Company/Institution	Pittsburgh Supercomputing Center 4400 Fifth Avenue Pittsburgh, PA, 15213
CUG Site Code	PSC
Distribution method	anonymous FTP
URL	ftp://ftp.psc.edu/pub/gplot
Distribution restrictions	none
Copyright	Copyright by PSC. Users may do what they want with a copy of the software at their site, or redistribute the code without charge and without charge.
License required	no
License fee	n/a.
Hardware	Cray
Operating System	UNICOS 6.0
Completion	no
Program support	when schedule permits
Documentation	README file, Makefile, man pages, user documentation, test data
Portability to other UNIX systems	SUN, DEC/Convex, VAX/VMS, Macintosh, IBM PC (using xmon), HP, IBM RS6000

Figure 5: Information file for utility GPILOT

Table 1 shows the access statistic for CUGDUS since the transition to the CUG WWW server:

Table 1. CUGDUS statistics for 1996

month	# of accesses
April	16
May	19
June	14
July	14
August	17
September	4

New CUGDUS database concept

To simplify the adjustment of the CUGDUS information repository for future extensions a database concept has been design which will allow to store the information submitted by a user in a Postgres database. From the database the index files and the informations files will be generated on the fly as requested. Figure 6 shows the design of the new database concept.

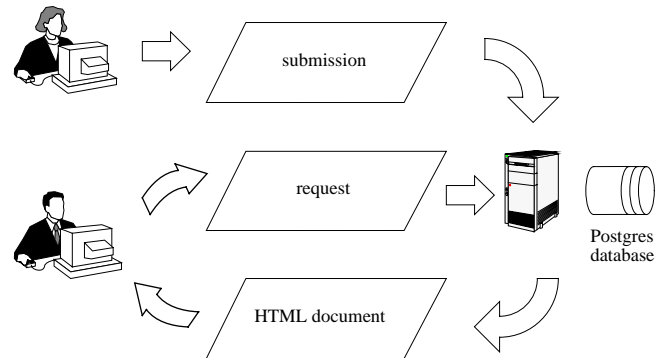


Figure 6: CUGDUS database concept

A WWW to SQL interface will be used to process the information submitted by the user and to store it in the database and to retrieve the information upon request to generate up to date HTML documents for CUGDUS. In addition, the database will also provide a full text searching facility through all the fields of the database.

Acknowledgments

The author wishes to thank Wayne Schroeder, SDSC, for initiating the CUGDUS project as an email-based information repository and for helping to transfer it to the World-Wide Web. Thanks also to Walter Wehinger in Stuttgart for providing resources for CUGDUS on the CUG WWW server.

References

- [1] Wayne Schroeder, Directory of User-Submitted Software, CUG NEWSletter, Vol. 6, No. 1, May 1992
- [2] Wayne Schroeder, CUGDUS Update, CUG NEWSletter, Vol. 6, No. 2, October 1992