HUGS

Houston Users' Group for Suns

Member Information

Name ____

Place of Employment ________________________________

Preferred Mailing Address ____________________________

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Telephone Number(s) ________________________________

Electronic Mail address ______________________________

Additional information (Other memberships, areas of expertise, etc.)

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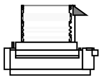
Note: Submission of this information to HUGS is for inclusion in the HUGS membership directory. Please omit any information that you do not wish to have distributed to other HUGS members. This directory is meant for the private use of HUGS members only.

Mail Form to:
Lynne Alexander Van Arsdale
6528 Sewanee Street
Houston, TX 77005

HUGS Minutes



April 9, 1991

Eric Townsend began the meeting at around 7:10 p.m. About 20 people attended. Everyone introduced themselves to the group.

SUG CDROM project: Dinah announced the CD-athon taking place April 20 and 21 at the Dublin Group office building. She received approval from the SUG board to give free SUG CD's to all who participate in the making of software for the CD.

Treasurer's report: Checking account contains $492.70. We will not file a form 990 with the IRS this year since we took in less than $25,000 this year and they did not send us a form (if they had sent us a form, we would have had to fill it out).

Don't forget to send your dues if you haven't paid since Sept. 1990.

Newsletter:

IWL has purchased ads for 3 months in a row. To insure that you will continue to receive a newsletter, fill out a directory form and mail it to Lynne VanArsdale, 6528 Sewanee, Houston, Tx. 77005 (lav@geoquest.com). Lynne apologized for not updating the US mail address database used for newsletter mailings. The email connection to Craig Fox who is mailing out the newsletters is broken. Hopefully the database will be updated by the mailing of the May newsletter.

Newsletter: Please send stuff for the newsletter.

Focal: Nothing this month.

Speakers: May-Advanced Software Automation and Hindsight will talk about a C decompiler. June-Jim Emmons, GeoQuest Systems, Inc. will speak about moving to X in the Sun environment.

If you are interested in becoming program coordinator, please talk with Dan. We need someone to volunteer for next year (starting August 1991).

Other Stuff: SUG board: The Brookline office is being set up. SUG is applying for non-profit status. The summer conference will be in Atlanta, June 17-19. It will be a technical conference (read "no exhibits") and the focus will be on SPARC.

Speaker:

Pat Shuff talked about NFS acceleration and tuning your networked system and network. His focus was on how to use what you have and make it work better without spending money. He focused on 5 areas: users, system, disk, network, and applications.

In considering users, calculate resources and distribute applications. Get a rough estimate of the number of NFS operations being performed and what it would take to overload the network. Do everything with shared memory if possible. Distribute jobs to machines best suited to perform the particular activity (graphics accelerators, database machines, etc.). Determine the bottleneck and try to offload it.

He reminded us that 4.0 and its derivatives need a pmeg patch that cures a problem with context switching. Running the system without the patch causes swapping problems and requires that the paging table be recalculated more than necessary. SunOS 4.1.1 fixes the problem.

Disk type also bears on performance. IPI disks were designed to serve large files and database-type applications. SCSI disks were designed to serve smaller files. Try to distribute the number of disks on a machine. Synchronous SCSI will be about 4 times faster than asynchronous because it does not spend a lot of time seeking.

Put swap space evenly on all disks. (If you have 10 clients and 2 servers, put 5 clients on each server.) Circumvent the file system if possible, i.e. access raw disk if your application allows, as many dbms's do.

The choice of network physical layer should be considered carefully. FDDI, in reality, only increases NFS speeds by about a factor of 2. In tuning a network look at the number of nfsd's, MAXUSERS, and use nfsstat and nfswatch to find out how your network is performing, where problems might be.

Programmers can make their applications run faster by using -O4 and -fast compiler switches. Beware: -O4 does not work for device drivers (loop counters in registers are ignored) and IEEE floating point precision may be degraded. Profile code and find out where the application spends the most time--use assembly to speed those parts up if necessary. Use dynamic linking.

Third parties (Interphase, Legato) offer NFS accelerators. Other NFS improvements come from increasing MAXUSERS to greater than 64 and decrease blocks of data to 4K. Optimize the number of biod's, especially if socket overflows are a problem. Reduce the number of symbolic links. Look at the number of NBUFS in the kernel (buffer cache buffers). It should be 112 for a system with more than 4 disks and 64 for a system with less than 4 disks. Do not increase NBUFS to more than 112 since Sun has gotten some funky errors by trying that.

Pat made his notes and some related papers available to all who wanted to copy them. Contact Pat at the local Sun office if you are interested. at the Sun office if you are interested.

And don't forget to send your dues if you haven't paid since Sept. 1990.

Respectfully submitted,

Lynne van Arsdale

What is the Sun User Group?

by Peter H. Salus, Executive Director

- Technical Conferences
- Annual Exhibit
- Donated Software Distribution
- README Newsletter
- Local User Group Support
- Newsgroup comp.org.sug

Sun User Group, Inc.
Suite 315
1330 Beacon Street
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office@sug.org

The Sun User Group, Inc., is an international not-for-profit technical and professional association. Our members are users, manufacturers, and resellers of hardware and software either produced or licensed by Sun Microsystems, or which expands or enhances the capabilities of such equipment. The Sun User Group encourages communication of innovative research and development of technology through its conferences, exhibits and publications.

The Sun User Group also serves as a distribution point for contributed software in tape and CD ROM formats.

The Sun User Group is incorporated in the Commonwealth of Massachusetts as a not-for-profit, educational organization.

Membership is

- open to all interested individuals
- only $40.00 (US) per year (International postage $15 extra)

Members receive:

- Discounts on Conference registrations
- Right to purchase contributed software
- Quarterly newsletter README
- Local Group support

Conferences

The Sun User Group sponsors two conferences per year, in June and in December. The December Conference has a large vendor exhibit. Each Conference features a day of tutorials and several days of technical sessions. The conferences are attended by members from around the world: the 1990 Conference in San Jose was attended by over 4000 individuals from 22 countries, plus 43 of the fifty United States and the District of Columbia.

Forthcoming conferences are:

Atlanta, GA, June 17-19, 1991
San Jose, CA, December 7-10, 1991
Washington, DC, June 1992
San Jose, CA, December 1992

The Sun User Group is dedicated to keeping in the forefront of Sun and Sun-licensed technology. The tutorials reflect the changing interests and demands of our technical and professional members.

Software Library

The Sun User Group makes available public domain (unsupported, donated) software. In the past, there have been software tapes; in 1991, keeping in the technological forefront, SUG is issuing a CD-ROM. Send email for further information.

README Newsletter

The Sun User Group publishes a quarterly newsletter, containing useful articles; User Group news; and Sun Microsystems and third-party vendor information. Submissions are encouraged, and may be sent to readme@sug.org . 1990 issues included articles concerning Superuser Privileges and about Domains and Networks.

Local User Groups

One of the ways of getting to know your colleagues is through a local user group. Local User Groups (LUGs) exist throughout the world. Currently, there are LUGs in 29 states and 18 countries. The Sun User Group supports these local groups with listings, literature, a mailing list (LUG-NUTS), and organizational assistance. Several international

LUGs have entered into formal arrangements with the Sun User Group to ensure that their members receive README and other benefits.

Get involved with your local user group.

Organization

The Sun User Group is governed by a Board of Directors, each of whom serves a three-year term. The 1991 Board members are:

Bim Toth, President (Harvard Univ.)

Doug Kingston, Vice-President (Morgan Stanley)

Dinah McNutt, Secretary , Technology Transfer Associates

Barry Shein, Treasurer , Software Tool & Die

Stan Hanks, Technology Transfer Associates

Bill LeFebvre, Northwestern Univ.

Rich Morin, Canta Forda Computer Lab.

Frode Odegard, Veda Technologies, Inc.

Mark Seiden, Seiden & Associates

CD-ROM SW Distribution, *continued from page 1*

getting product to market can not be matched by a service bureau. Working with a service bureau is normally a slow and expensive process due to the verification process needed for testing the layout and formatting of a disc.

"MAKEDISC", Young Minds ISO 9660/Rock Ridge formatting software is the ISV's core CD-ROM technology. It creates a finished CD-ROM disc image that can be sent to a CD pressing facility on tape or other electronic media for mastering and replication. A CD-ROM image can be tested before mastering by placing it in a hard disk partition and mounting it with the workstation's CD-ROM driver to emulate functionality of a real CD-ROM!

This UNIX program offers a major advantage over MS-DOS systems in that no dedicated hardware is required. The other major advantage is that all Unix style names and symbolic links are converted to ISO 9660 format automatically and can be read by Unix platforms that do not currently have their Rock Ridge drivers implemented. Makedisc solves the publisher's CD-ROM formatting nightmares with one simple to learn Unix command.

YOUNG MINDS, INC., is providing the Unix-based CD-ROM formatting software used by the majority of the Unix ISV's and Unix computer companies creating CD-ROMs today. Today, most ISO 9660 CD-ROMs distributed in the Unix market are formatted using Young Minds software. A partial client list includes Highland Software, LSI Logic, NeXT, Hewlett Packard, Tiger Media, McDonnell Douglas, Island Graphics, Harvard University, U.C Berkeley, Interleaf, JPL, CALS, NIST, Computer Signal and Sony, along with other major universities, Unix workstation manufacturers and ISV's. "Makedisc" is enabling the Unix CD-ROM software distribution revolution to happen.

"Makedisc" runs on all Sun workstations and on most other major Unix platforms including Hewlett Packard HP/UX(TM), 88open(TM), Apollo Domain(TM), DEC Ultrix(TM), NeXT(TM) and IBM RS/6000(TM). The list price is $6995.

Remarkably, replacing just one 400 QIC tape distribution with CD-ROMs pays for the Makedisc software, software support and the complete manufacturing and mastering costs for the 400 CD-ROMs!!!

Young Minds, Inc. was formed two years ago specifically to meet the needs of the Unix CD-ROM market, producing the first Unix ISO 9660 CD-ROM with the introduction of the Free Software Foundations GNU and MIT's X Window source code on disc. Today, products include CD Write Once devices for Sun workstations and full text indexing and retrieval software for OPENLOOK, Motif and SunView. Future products being developed include Multiplatform MultiMedia(TM) CD-ROM authoring software for Hypermedia application. End users will be able to gain access to text, graphics, audio and full motion video from a CD-ROM with software only.

For further information contact:
Young Minds, Incorporated
Tom Stapleton
Phone:714-335-1350
Fax:714-798-0488
E-mail:*yngmnds!stapltn@ucr-math.ucr.edu*

SUG Technical Conference SPARC: Hardware and Software

ATLANTA HILTON & TOWERS

JUNE 17-19, 1991

TUTORIALS:

Tutorials run all day June 17 $195.00 per person in addition to conference fees (box lunch included) (These tutorials each last the full day)

T1 - *Writing Distributed Applications using the ONC Platform* Instructor: John Corbin, University of Texas-El Paso and Sun Microsystems

T2 - *Basic X Concepts* Instructor: Berry Kercheval, Intelligent Decisions

T3 - *Introduction to the Domain Name System* Instructor: Bill LeFebvre, Northwestern University

T4 - *Mixed-OS Administration; or, VMS+UNIX=Oil+Water?* Instructor: Ruth Milner, NRAO/VLA

TECHNICAL SESSIONS:

Tuesday & Wednesday,
June 18 & 19

Sessions will consist of Keynotes, Panel Discussions and three tracks of papers representing:

- SPARC compatibles and peripherals
- Technical papers
- Sun engineers and developers

Please call +415/336-4341 for additional conference information.

CD-ROM SW Distribution, *continued from page 1*

Companies such as SCO, Interactive, NeXT, Apollo, Silicon Graphics, Data General, Motorola, AT&T and others have ISO 9660 CD-ROM drivers available and are formulating their own CD-ROM strategies. To date, Sun Microsystems is by far the most aggressive pursuer of CD-ROM; almost every SPARCstation network has access to at least one SunCD drive.

Why The Shift To CD-ROMS?

The potential savings are huge. The break-even point for replicating 60 MB quarter-inch cartridge (QIC) tapes versus CD-ROM is just 50 copies. At 1000 disc copies, media reproduction savings for CD-ROM compared to QIC tapes can exceed $20,000.

Cost Of CD-ROM Reproduction

The cost of disc reproduction is currently $1.30 to $2 with mastering charges ranging between $800 and $2100. Prices depend upon turn around time and quantity of discs replicated along with other variables. The mastering facilities usually include two color art on the CD and a plastic jewel box at no extra charge. (Mastering is the creation of a metal mold that is used in replicating discs.)

Aside from being inexpensive, the media is reliable, durable, high capacity (680MB), light and randomly accessible. Meanwhile, CD-ROM mastering and replication costs are becoming lower due to the excess capacity that exists in the CD Audio plants where the CD-ROMs are pressed.

The ROCK RIDGE Interchange Protocols

In March 1991, 16 companies announced support for the ROCK RIDGE Interchange Protocols, a framework for adding POSIX support to the international CD-ROM standard ISO 9660. Without breaking the standard in any way, Rock Ridge allows Unix applications and other operating systems' applications to run directly off the disc without the need for modification of any files.

The National Institute of Standards and Technology (NIST) is currently reviewing the extensions for inclusion in a Federal Information Processing Standard (FIPS). Simultaneously, the major workstation companies are adding these extensions to their CD-ROM drivers, in effect creating a defacto open standard. The ISO 9660 advantage is that software publishers can deliver multiple binaries of their software on a single CD-ROM in a format that most every computer in the market has a capacity to read.

Simply, CD-ROM is a software marketer's dream. How else could a digital, multimedia, software demo be possible that includes hypertext, documentation, full motion video and software binaries for multiple computer platforms on a $2 disc?

Software marketers should appreciate the fact that CD-ROMs 680 MB capacity allows them to put multiple applications on one disc. With license management packages available from 3rd parties along with data encryption schemes, a publisher can maintain complete control over the use of software or information on his CD-ROM.

How Simple Is It To Create A CD-ROM?

A software vendor simply chooses the data set he wants on a disc and arranges it into a directory structure. NFS- exported file systems may be included. Files that must be changed during execution or installation of your software should be copied off the CD-ROM to a hard disk before use. Each file's new location and all references to it should be identified using a reliable absolute address or specified relative to its location on the CD-ROM. After giving special attention to assigning reasonable ownership and permissions for the files to be distributed you are ready for formatting the finalized directory structure as an ISO 9660 image.

Simple as preparing a CD-ROM is, the ISV generally needs a high level of quality control over this important process. In-house CD-ROM preparation with Young Minds CD-ROM publishing software "Makedisc", achieves this objective. The advantages of in-house quality control along with the speed and convenience in

Continued on page 4

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***Who's who,**continued from page 1*

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Jody Winston
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John Hart
Bobbi Mooney
Bob Leader
Calvin Campbell
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George W. Jolly
Jim Carson
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Dave Shehorn
Bill Dittman
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Curtis Owens
Bob Keathley
Richard Hunter
Ken Skinner
Pat Shuff
Nell Owens
Gary Crouse
Sally Boyd
Louis Smith
Stan Hanks
Dinah Anderson
Gil Hilman
Pradip Jain
Michael Zeitlin
Lyle Meir
Richard Deering
Roman Rammler
Jim Spitzer
George Slater
Alfred D. Johnson
Stephen P. Gregas, Jr.
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Robert Rundle
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Anthony Baldassarre
Don Larson
John Brophy
Amir Ilbeig
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Michael E. Payne
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Russell Gray
N. Rao Linga
Wayne Smith
Jim Pentico
Dick Hatten
Jenny Sheffield
David Rosen
Carl Rose
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Russell Cooper
Lynne Alexander
Craig Fox
Bob Marcum
Jan Gerday
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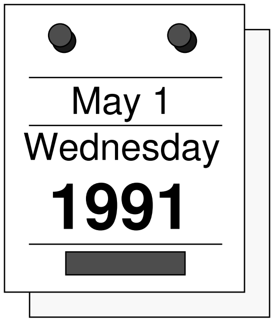
Chuck Bentley
Sam Caronna
Mike Dunn



Calendar of Events

May

14 HUGS Monthly Meeting
21 Hounix Monthly Meeting

June

11 HUGS Monthly Meeting
10-14 USENIX - Nashville
17-19 SUG Conference (Atlanta)

May Meeting

Join us on May 14 at Birraporetti's located at 1997 West Gray in River Oaks Center (near the intersection of Shepherd and West Gray.) Dinner is at 6:00. The program will be Dinah McNutt speaking on *The Automounter.*

Availability of papers from Pat's April talk:

The papers Pat mentioned in his talk (see minutes for more information) are now available via anonymous ftp from titan in the directory ~ftp/public/hugs/sun.[1-7].Z. Thank-you Mike Pearlman and Rice University for making these available.

HUGS is distributed courtesy of Craig Fox and Sandefer Oil & Gas, Inc. The current HUGS is also available via anonymous ftp on titan.rice.edu as public/pugs.ps courtesy of Mike Pearlman and Rice University.

HUGS

The Newsletter of the Houston Users' Group for Suns

Volume 3 No. 4

May 1991

A User-Community Publication

CD-ROM Technology

Tom Stapleton

Young Minds, Inc.

CD-ROM is causing a revolution in software distribution for the UNIX workstation market. The current leading media, magnetic tape, is being discarded by companies such as Sun Microsystems, Hewlett Packard, Intergraph, DEC, IBM, etc. in favor of CD-ROMs.

To encourage their customer base to acquire CD-ROM drives, a variety of programs have been instituted, which include bundling drives with most server models and developer systems or offering a drive free with a software support contract. Other programs provide incentives to purchase a drive by simply lowering prices for CD-ROM based software distributions.

Note that one CD-ROM drive on an NFS network will give everyone access to the CD-ROMS.

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In This Issue

- SUG CD-ROM Project
- CD-ROM Technology
- HUGS Who's Who List
- What is SUG?
- SUG June Conference

Are You on the HUGS Who's Who List?

The following lists detail HUGS members. Anyone on the current mailing list who is not also on the "paid" list will not receive any more newsletters starting in July, 1991. Send your $10 dues to the treasurer, Lynne VanArsdale. Make checks payable to HUGS or Houston Users' Group for Suns. The address to send dues to is:
6528 Sewanee,
Houston, Texas 77005.

All members are encouraged to fill out and return the member information form included on the last page of this newsletter.

Note: Your name should appear on all three of the following lists!

Paid HUGS Members

Bill Baker
Bob Baker
Dan Blair
John Brophy
Stan Bujnowski
A C Conrad
Dan Davison
Craig Fox
Charles Hunt
Steve Krueger
Earl Manning
Dinah McNutt
Steve Nuchia
Nell Owens
Nenita T. Penalba-Hunt
Tom Skerl
Russell Thorstenberg
Eric Townsend
Lynne VanArsdale
Asher Winata
Jody Winston

People who have returned member information form:

Stan Bujnowski
Bill Baker
Russell Thorstenberg
Asher Winata
Nenita T. Panalba-Hunt
Charles Jerry Hunt
Jody Winston
Bobbi Mooney
Dan Davison, PhD
Cassidy Coffari
Lynne VanArsdale
Michael Pearlman
Dinah McNutt

People who are currently on mailing list:

Stan Bujnowski
Bill Baker
Russell Thorstenberg
Asher Winata
Noel Mason
Shari Bosco
Patricia Smith
Matt Emerson
Nikki Dorman
John Van Bockel

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