Benchmarks Online

Volume 4 - Number 2 * February 2001

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Due to recent changes required after the upgrade to new DS3 lines at UNT, previous DNS (Domain Name Server) entries are no longer valid. Read all about it!

Can you Excel?

We frequently get requests from people for Microsoft Excel training. Unfortunately, at this time, Academic Computing Services is unable to offer instructor-led training on this topic. We can, however, provide you with some training alternatives.

Faculty Evaluation Processing Tips

Some helpful tips are provided to help you prepare your department's evaluations for processing by Data Entry.

Lab-of-the-Month

Which lab do you think is featured this month?

Free Software on Campus: Something for Nothing?

This is the text of a paper being presented at EduTex in San Antonio on February 23.

Today's Cartoon

Click on the title above for an information age

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laugh.

Don't forget to check out our monthly columns. This month's topics:

- **RSS Matters** -- "Bits and Tips, plus more free stuff" The title says it all . . .
- **SAS Corner** -- "Graph-N-Go" How to get the most out of SAS/GRAPH Version 8.
- **The Network Connection** -- "Napster, the RIAA, Microsoft, and the new Intellectual Kingdom" Those wacky kids at the RIAA are in the news again. Dr. Baczewski's has his own ideas about this matter.
- **List of the Month** -- MedicAlert® and the Alzheimer's Association's Safe Return Program. We don't normally like to promote fee-based services in the "List of the Month" space, however this month's lists provide such valuable services that their fees seem negligible compared to their potential for saving lives -- maybe even yours or your loved ones.
- **WWW@UNT.EDU** -- "Need Statistics for Your Website?" This month brings a new Campus Web Administrator, new Web servers, software and support of a new Web publishing protocol.
- **Short Courses** -- Spring Academic Computing Services (ACS) short courses and other learning opportunities are covered here.
- **IRC News** -- Minutes of the Information Resources Council are printed here when they are available.
- **Staff Activities** -- New employees, employees that have resigned, and other staff changes are included in this article.

Research and Statistical Support
University of North Texas

RSS Matters

Bits and Tips, plus more free stuff

By Dr.Karl Ho, Research and Statistical Support Services Manager

Beginning 2001, I determined to focus a bit more on introducing or evangelizing SAS in the SAS Corner. That new column serves as a kiosk in delivering the latest news and features of the SAS system. But I think our editor will not mind I cross the RSS matters column and my new one every once in a while.

Okay, here goes:

Reminder: for those who are not aware of the student versions of the statistical applications, check out the UNT Bookstore. Both SAS and S-Plus are $25 for the full package. Remember to bring your Student ID and fill out the form for purchasing the software.

Again, SAS stuff. SAS has published free tutorials on the Web (yes, finally). These free on-line tutorials give excellent information on using SAS products:

http://www.sas.com/service/edu/courses/tutorials.html

Titles include:

- Getting Started with SAS Software
- Getting Started with SAS/ASSIST Software
- Getting Started with Enterprise Guide
- Getting Started with SAS/EIS Software
- Getting Started with SAS/GIS Software
- Getting Started with Enterpise Miner
- Getting Started with SAS/Warehouse Administrator

For the SAS fans, SAS Institute biweekly sends out technology reports via E-mail on the most update developments to the system, To subscribe to SAS Technology Report, visit the site at:

http://www.sas.com/subscriptions/enewsletter.html

I have selected a sample of great articles from the report. In future *Benchmarks Online* issues I will keep you updated on these resources.

- Accurately Calculating Age with Only One Line of Code http://www.sas.com/service/techtips/quicktips/calcage.html
- Converting Mainframe data to PC: Reading EBCDIC Files on ASCII Systems http://ftp.sas.com/techsup/download/technote/ts642.html
- How ODS Can Make Your Job Easier: http://www.sas.com/service/techtips/bitsandbytes/output.html

By the way, don't forget the RSS **short courses**. Check the schedule and register. All courses are free, but packed with new information on research and updates of statistical applications!

Research and Statistical Support
University of North Texas

This is a new Benchmarks Online monthly feature. -- Ed.

SAS Corner

By Dr.Karl Ho, Research and Statistical Support Services Manager

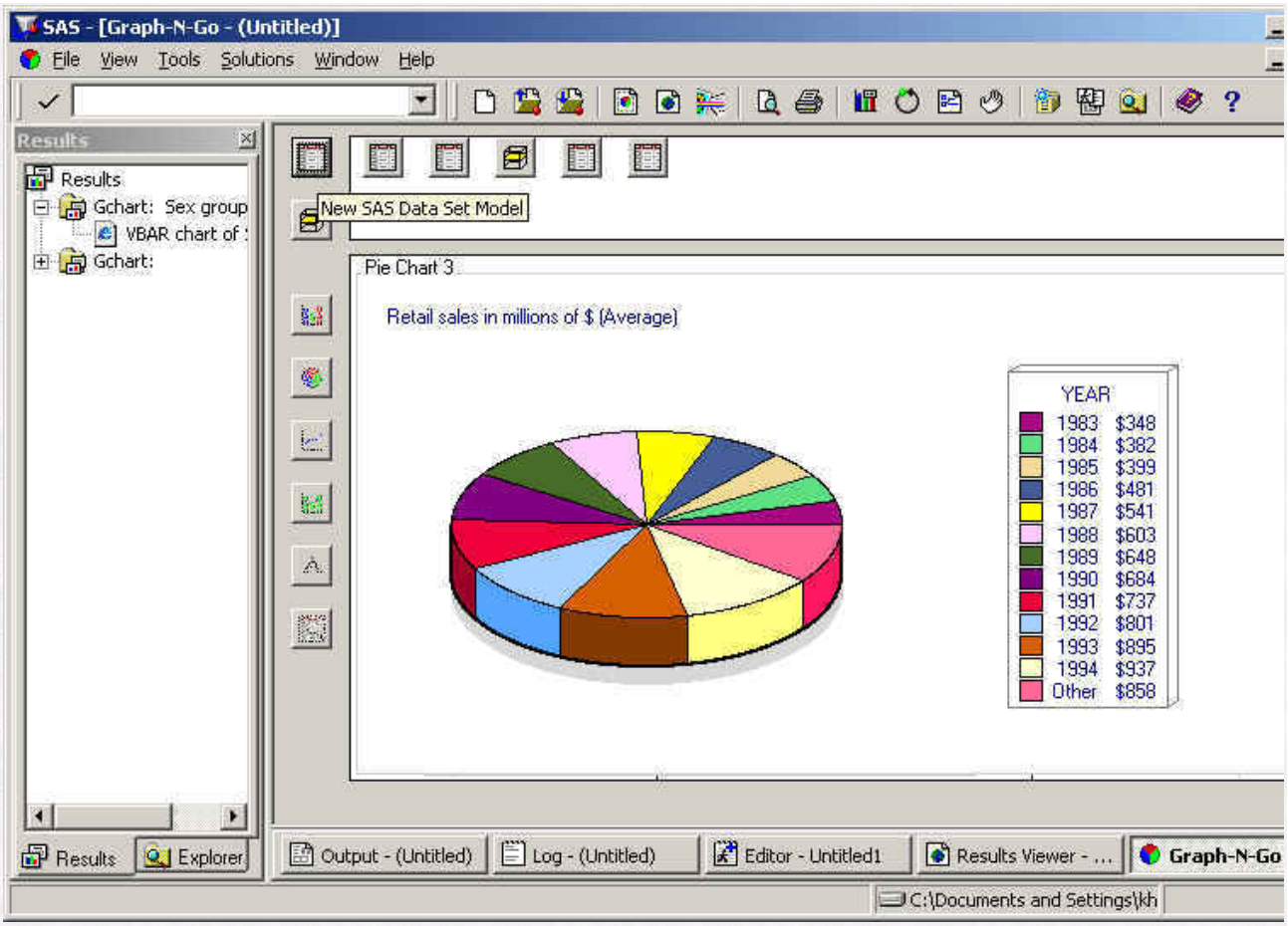
Graph-N-Go

I used to be under the impression that SAS excels in a lot of areas but is only "okay" in graphics. You can generate all kinds of charts but if you want something that sparks a "wow" among the audience, SAS may not be your top choice. There are tons of packages out there that generate all sorts of animations and 3-D charts.

Not until recently when I re-discovered some of the features in SAS did I realize the problem of SAS is not its lack of cool graphics but its size: the program stores so many features under one roof that no one will walk another mile to dig up the treasure..

Graph-N-Go is one of the new components added to Version 8 that brings SAS/GRAPH procedures to the GUI forefront. With Output Delivery System (ODS), Graph-N-Go can easily convert charts (just drag and drop) into Web-ready documents within a few minutes.

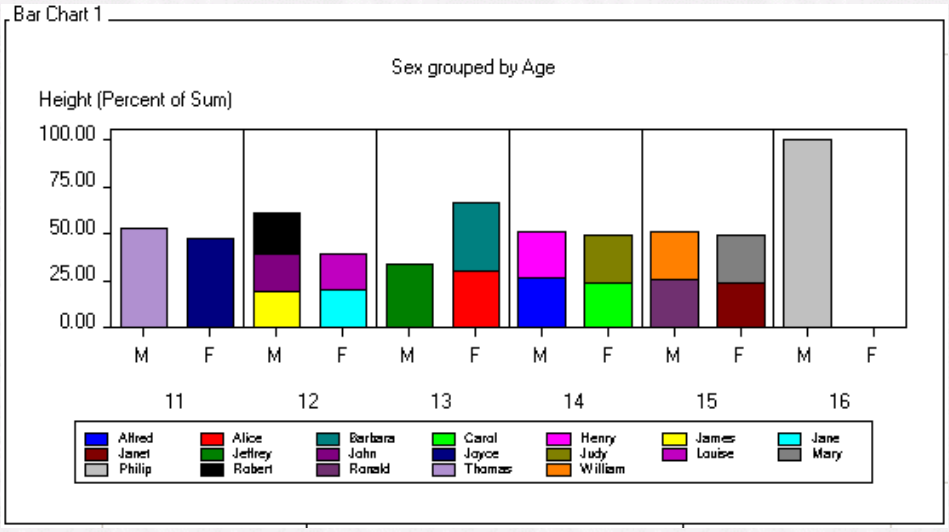
The program is extremely easy to learn and use. Everything is just point-and-click. To invoke the module, go Solutions--> Reporting --> Graph-N-Go. To start analyzing data graphically, first open an existing data set by clicking the New Data Set Model icon:



I opened a generic sample data set, SASHELP.CLASS in the SASHELP library. Then, "Graph-N-Go." It also supports the Multidimensional Database (e.g. SASHELP.PRDMDDB) that allows queries via the charts.

One of the neat things in Graph-N-Go is that graphics can be exported into multiple formats: GIF, JPEG, BMP,...etc. But I am really impressed by its capability of exporting files to the Web. You can easily generate interactive reports to your Web site. The following were generated in just a couple of minutes:

Examples:



Put it directly to a Web page:

Graph-N-Go Static Output

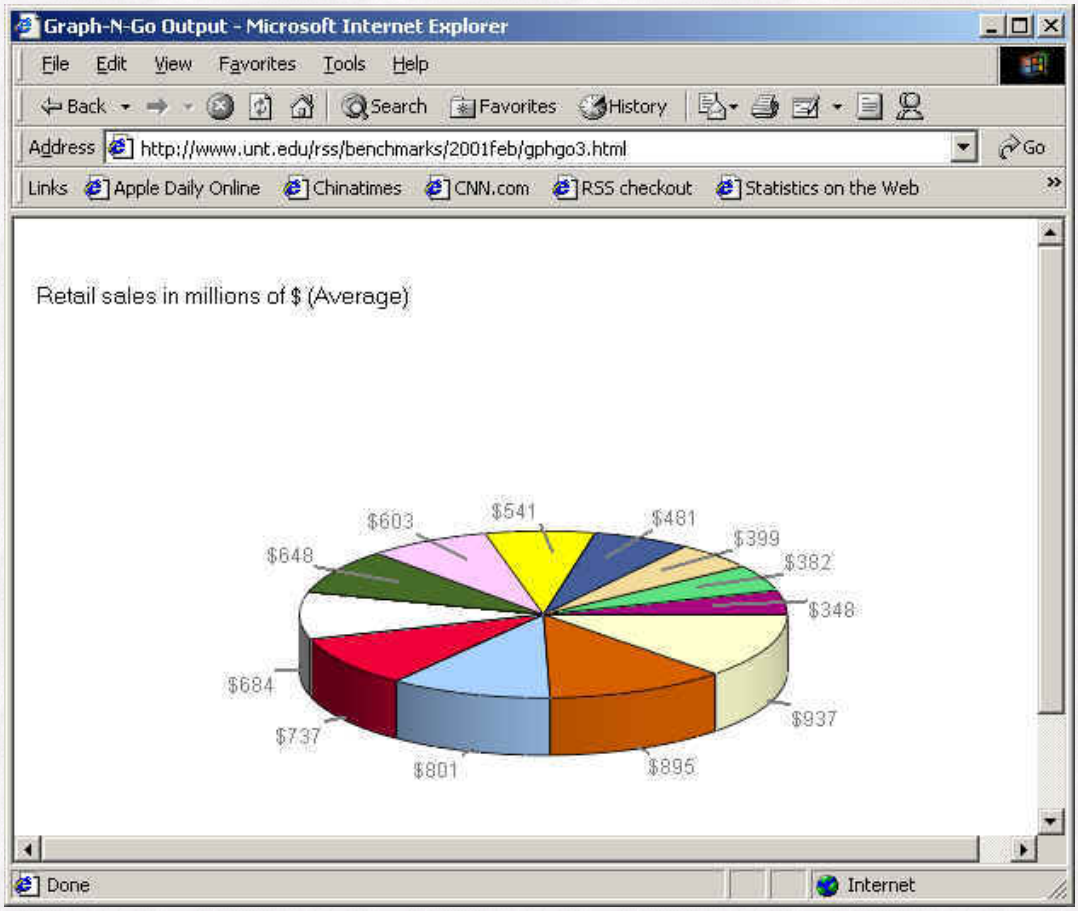
Or make the interactive version using Java applets:

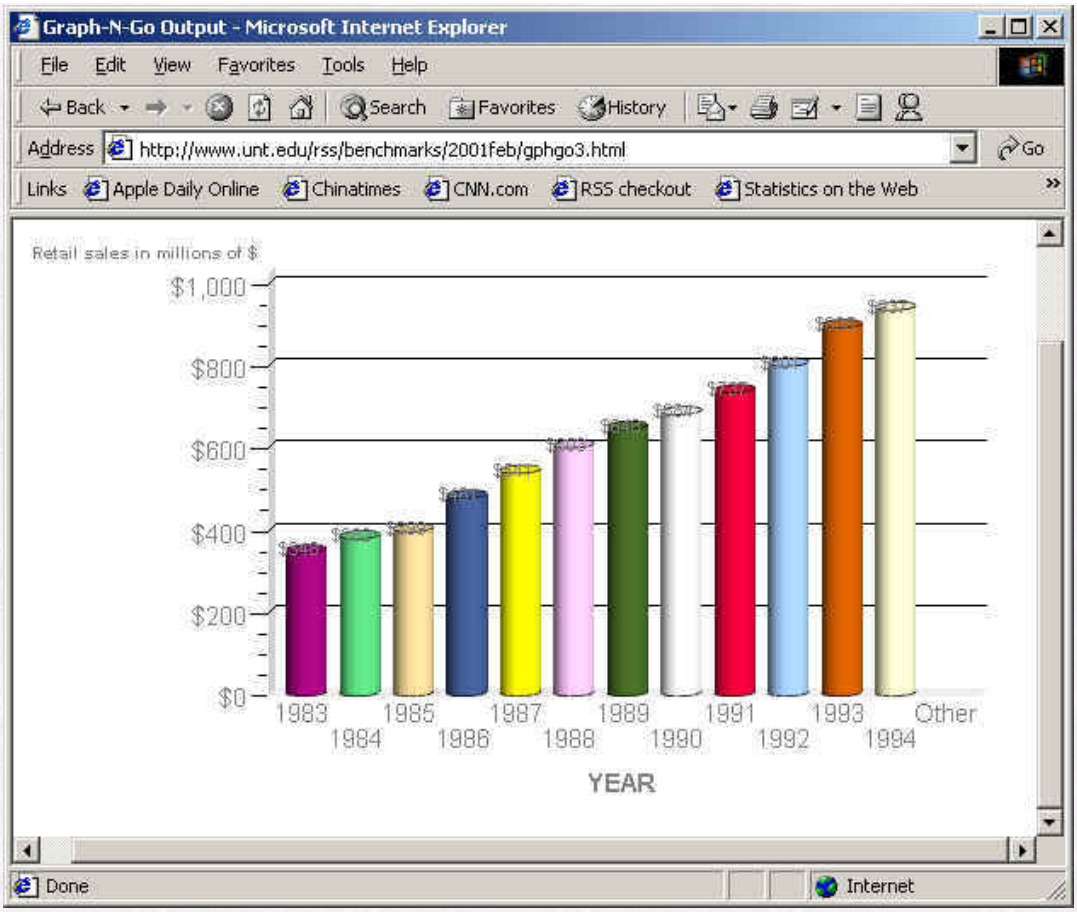
Graph-N-Go Interactive Output (point your cursor to the bars and get instant data)

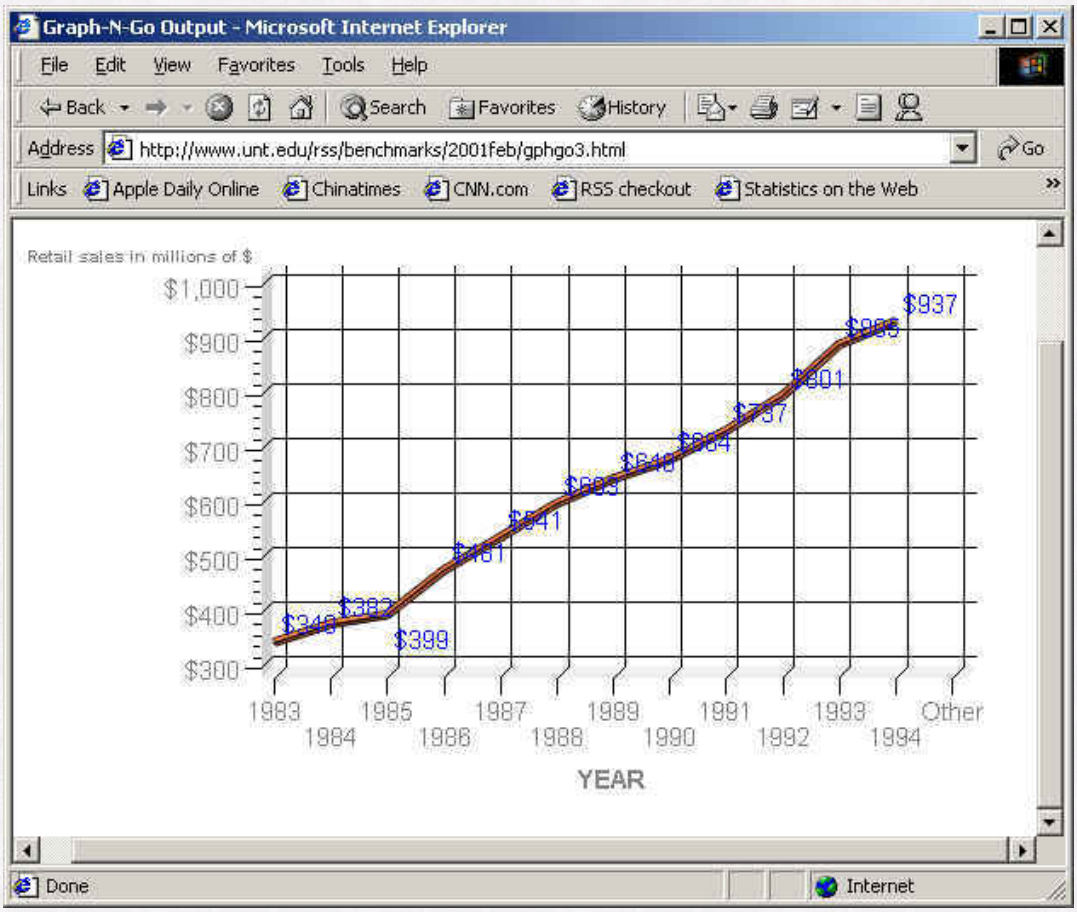
Outputting to Interactive ActiveX Control is also available (for Internet Explorer only). This option allows more interactive control such as changing a pie chart into a bar chart, setting colors, and displaying data in a pop-up box:

Graph-N-Go ActiveX Output [You will need to use MS Explorer to see this link.]

In this version, you can use the same object to perform interactive analysis such as smoothing the plot, drawing a regression line and even interpolating the data in a scatterplot:







On top of that, Graph-N-Go can save the source codes for later replication or generating routine reports.

For more details, SAS has published a few guides in using Graph-N-Go. Check the following site to download the PDF files for tutorials:

http://www.sas.com/service/news/feature/20nov00/graphngo.html

Again, if you are interested in more details of SAS' graphical capability, sign up the ACS short courses for free. Check the schedule of my three-part SAS series. Enjoy your pie chart.

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Network Connection

By Dr. Philip Baczewski, Associate Director of Academic Computing

Napster, the RIAA, Microsoft, and the new Intellectual Kingdom

Those wacky kids at the RIAA are in the news again. When we last visited this story, they were busily roughing up Napster in the Internet playground and threatening to take all their Internet lunch money.

They've now convinced a three-judge panel from the 9th Circuit Court of Appeals that the lunch money was theirs all along.

Actually, the 9th Circuit Court of Appeals upheld the District Court's injunction enjoining Napster "from engaging in, or facilitating others in copying, downloading, uploading, transmitting, or distributing plaintiffs' copyrighted musical compositions and sound recordings, protected by either federal or state law, without express permission of the rights owner." They did so, however, with the provision that the injunction be modified to apply when Napster "(1) receives reasonable knowledge of specific infringing files with copyrighted musical compositions and sound recordings; (2) knows or should know that such files are available on the Napster system; and (3) fails to act to prevent viral distribution of the works."

Napster is dead, long live Napster

The upshot is that while Napster is not dead, its unbridled freedom to operate their version of software and attract those Internet investment dollars is severely diminished. It is, of course, the dollars that are at stake here. Napster's ability to attract them via investment (since they don't actually sell a product) and the RIAA's ability to guard the dollars reaped by their member businesses, whose vested interest lay in restricting distribution of their product to the media outlets that they control and profit from. In other words, the bottom line is the bottom line.

The Napster.com people did make themselves an obvious target of the RIAA (like waving the bag of lunch money under the bully's nose), since their server tracked who was using their software and even what files were available. Napster-like peer-to-peer file sharing software is now abundantly available, and you don't need Napster to share "copyrighted musical compositions and sound recordings . . . without express permission of the rights owner." Making copyrighted information available using such software can easily exceed the "fair use" clause of copyright law, but it is much harder to go after millions of individual Internet users than the high-profile Napster.com.

The Battle is Joined

This is just the beginning of an ongoing struggle in the battle for "intellectual property." In case you don't know, intellectual property is creative works, ideas, inventions, symbols, etc. created by an individual for which they are, theoretically, entitled to reap a fair profit. Intellectual property is protected by copyright, trademark, and patent law in the U.S. and

around the world, although there is a wide variation of law in this regard in different countries. There has always been ownership contention over intellectual property in the form of copyright infringement lawsuits. Much of the civil lawsuit activity has involved the source form of works, however, and not the distributed version. For example, two song writers may claim authorship of the same melody, and it has been left to the civil courts to decide actual ownership. There previously has not been too much question about the ownership of distribution versions of intellectual property. Copying of distribution material has generally been treated as a criminal matter, a point which you can test by selling knock-off videos or CDs on a street corner (although I don't recommend this test).

Technology has freed intellectual property from its distribution media. The digital existence of an item makes its distribution a trivial and wide-reaching process. Thanks to information technology, a CD track in its source form is not only available from the handful of record stores in a particular area, but to millions upon millions of networked computers throughout the world. As is normally the case, it will take a while for law to catch up to technology, and the intervening battles will ultimately determine who has access to and profits from intellectual property. Audio recordings are just the beginning. As storage and bandwidth technologies improve, digital video is hard on the heals of the issues in regard to audio. And these media are just the tip of the iceberg. Software algorithms, books, e-mail happy faces, "look and feel," and a long list of items which may yield profit for those who may monopolize them are already the prize of ongoing skirmishes.

Into the Fray

The rhetoric in this battle is disturbing. In her reaction to the Napster ruling, RIAA spokesperson Hillary Rosen stated, "We feel that Napster's business model is morally and legally wrong and we're very glad that the 9th Circuit Court agreed with us 100 percent." In reading the opinion, I failed to notice any reference to morality. One can only speculate on the new morality that must be sweeping a recording industry which promotes "artists" who seem to spend as much time in criminal court as they do in the recording studio.

The latest volley in the intellectual property war was prominently lobbed by Microsoft's "Windows operating-system chief," Jim Allchin. He is quoted as saying, "Open source is an intellectual-property destroyer. I can't imagine something that could be worse than this for the software business and the intellectual-property business." He further stated "I'm an American, I believe in the American Way. I worry if the government encourages open source, and I don't think we've done enough education of policy makers to understand the threat."

The core philosophy of the open source movement is that software belongs to all. You may use it, contribute to it, but not exclusively profit from it as long as it remains open source. If the "American Way," to which Allchin refers, is to guaranty profits to those big enough to monopolize the most intellectual property, then you can understand why open source would be an upsetting concept to companies like Microsoft.

The new Kingdom

So welcome to the new economic world of intellectual property. The few largest entities such as Lord Disney and Count Viacom rule their international kingdoms with the support of lesser nobles such as Duke Bill-who-would-be-king of Microsoft. Oh there are the lesser intellectual property holders such Baron Rupert and the Earl of Turner, and a whole hierarchy extending below them. There is even an intellectual property middle class -- the ones who hold a patent or have written a book and receive that infrequent and dwindling, but

aptly named royalty. The rest of us? That's right, we're just virtual serfs.

NOTE: the term "virtual serf" is hereby claimed as intellectual property by Philip Baczewski. The rest of you are on your own.

Read "Free Software on Campus: Something for Nothing" in this issue for more about this topic. Previous Benchmarks Online articles on this topic include: "Doing it in the Open," and "The UNIX Question."

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List of the Month

Each month we highlight one Internet, USENET Special Interest Group (SIG), or similar mailing list or Website.

*We don't normally like to promote fee-based services in the "List of the Month" space, however this month's lists provide such valuable services that their fees seem negligible compared to their potential for saving lives -- maybe even yours or your loved ones. -- Ed.**

Mission: To protect and save lives by providing identification and information in emergencies.

According to information on their Website, the MedicAlert Foundation is "a leading international emergency medical information and identification service, and one of the world's largest non-profit organizations." It represents over 4 million members worldwide, and has has helped protect and save lives for nearly 45 years. You will need to join MedicAlert® in order to benefit in the MedicAlert® service, which are outlined below [they are running a "winter special" on their memberships right now].

Benefits (according to MedicAlert®)

- **Instant ID:** Your Membership number, shown on both your emblem and card, enables you to be identified by emergency professionals anywhere in the world, with a simple phone call.
- **Protection:** The MedicAlert® service is a lifeline. We build partnerships with emergency professionals who search for our famous emblem in emergencies, read it and call our 24-hour Emergency Response Center. Peace of Mind: MedicAlert Foundation will call family contacts so you won't be alone in a medical emergency.
- **Privacy:** All medical and personal information is kept confidential and never given or sold to other companies or organizations.

Things to Remember about MedicAlert®

- Make sure to keep your records with them updated. They should be notified of changes of medications, insurance, added conditions, etc. so that you can get the very best care possible during an emergency.
- If you already **have** a MedicAlert® bracelet, it's most likely time to renew your file!

Safe Return Program

Help for Alzheimer's Patients

Although not affiliated with MedicAlert®, the Alzheimer's Association's Safe Return Program provides similar services specifically for Alzheimer's patients. According to their Website, "it is the only nationwide program that assists in the identification and safe, timely return of individuals with Alzheimer's disease and related dementias who wander and become lost.

This program includes:

- Identification products, including wallet cards, jewelry, and clothing labels
- National photo/information database
- A 24-hour toll-free emergency crisis line
- Alzheimer's Association local chapter support
- Wandering behavior education and training for caregivers and families.

Links for this month's "List of the Month":

MedicAlert: http://www.medicalert.org

MedicAlert outside the U.S.: http://www.medicalert.org/intl.html

Alzheimer's Association:
http://www.alz.org/caregiver/programs/safereturn.htm

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* Thanks to Randy Cassingham at *This is True* for highlighting these services first.

WWW@UNT.EDU

Need Statistics for Your Website?

By Shane Jester, Campus Web Administrator

Are you tired of having limited Web publishing options for your Website. We've been making some changes in Central Web Support and you now have several options for Web publishing at your disposal.

We've recently migrated all of our Web servers to a Linux server farm which resides behind a load balancing Web director. Not only does this result in better performance from our Web servers, it has also allowed us to make some changes in our authentication protocols. You may already be aware of this fact, but all of the centrally supported Web servers are now using the WebDAV protocol for publishing Web content. WebDAV stands for "Web-based Distributed Authoring and Versioning" and is essentially a use of HTTP protocols for editing and managing content from remote servers. The concept is similar to FTP, however, since it uses HTTP protocols we can do things to make the transactions more secure such as using SSH encryption. Additionally, you can use any application that is WebDAV compliant in conjunction with FrontPage, which is an improvement over our previous publishing options. In the past we had offered either FTP or FrontPage, but were unable to deliver both at the same time.

The WebDAV protocol is quickly gaining acceptance and is currently supported in several commercial and publicly licensed software packages. Just a few of these application include the latest versions of Adobe Go Live, Macromedia DreamWeaver, Microsoft FrontPage, Microsoft Web Folders, Macintosh Goliath, and Cadaver for UNIX. To learn more about the WebDAV protocol and applications that support it please visit http://www.Webdav.org

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Short Courses

By Claudia Lynch, *Benchmarks Online* Editor

ACS Short Courses are now going strong. Classes are being offered in FrontPage 2000, SPSS. SAS. S-Plus, Survey Research technologies, and LaTeX. Please consult the Short Courses page for the list of courses and registration information.

Customized Short Courses

Faculty members can request customized short courses from ACS, geared to their class needs. Other groups can request special courses also. Contact ACS for more information (ISB 119, 565-4068, lynch@unt.edu).

Especially for Faculty and Staff Members

In addition to the ACS Short Courses, which are available to students, faculty and staff, staff and faculty members can take courses offered through the Human Resources Department, the Center for Distributed Learning, and the UNT Libraries' Multimedia Development Lab.

Andrew McGregor, Messaging Support Specialist (amcgregor@unt.edu) 940-369-7688 is currently offering monthly **Basic GroupWise** (BGW) and **Document Management** (DM) Classes. You can Sign up on-line, or you can send an mail to Lauren Sutherland in Human Resources to sign up. Just remember to include your name and the class you would like to attend. All classes are from 10:00 to 12:00 in ESSC room 152. Following is the list of classes:

Class	Date
DM	Tuesday, February 27
BGW	Tuesday, March 13
DM	Tuesday, March 27
BGW	Wednesday, April 11
DM	Monday, April 23
BGW	Tuesday, May 1
DM	Tuesday. May 22
BGW	Friday, June 15
DM	Tuesday, June 26
BGW	Tuesday, July 24
DM	Wednesday, July 25
BGW	Friday, August 17
DM	Tuesday, August 14

Center for Distributed Learning

The Center for Distributed Learning offers courses especially for Faculty Members. A list of topics and further information can be found at http://www.unt.edu/cdl/training_events/index.htm The center also offers a "Brown Bag" series which meets for lunch the first Thursday of each month at Noon in ISB 204. The purpose of this group is to bring faculty members together to share their experiences with distributed learning. One demonstration will be made at each meeting by a faculty member with experience in distributed learning. More information on these activities can be found at the Center for Distributed Learning Web site.

UNT Libraries'

The UNT Libraries' Multimedia Development Lab has also offered free training to all University of North Texas faculty and staff in the basics of FrontPage and information architecture in the past. For more information see http://www.library.unt.edu/media/services.htm#Distributed.

Technical Training

Technical Training for campus network managers is available, from time to time, through the Campus-Wide Networks division of the Computing Center. Check the CWN site to see if and when they are offering any training.

UNT Mini-Courses

These are a variety of courses offered, for a fee, to UNT faculty, staff and students as well as the general public. For additional information surf over to http://www.unt.edu/ccecm/cont_ed/Minicourse/Courses/UNT_Minicourse_Page.htm .

Alternate Forms of Training

The Training Web site has all sorts of information about alternate forms of training. Training tapes, Computer Based Training (CBT) and Web-based training are some of the alternatives offered.There are also handouts for computer training on the following topics:

- GroupWise 5.2 Handout for Win95/NT
- FAQ for GroupWise 5.2
- Computers - Back to the Basics
- Introduction to Windows 95 /98/NT
- Introduction to Word 97
- Advanced Word 97 - MailMerge It Together
- Introduction to PowerPoint 97 (Creating a Slide Show)
- Introduction to Remedy (THE Call-Tracking Program)
-

AND, the award winning Introduction to Excel 97

StudyWeb

Adobe Acrobat Reader Format only for the following:

- Introduction to Microsoft Word 2000
- Introduction to Microsoft Excel 2000
- Creating a Slide Show with PowerPoint 2000
- Using Netscape Communicator & the UNT Home Page

Use the Internet to search for answers to Microsoft Office problems. See http://www.zdnet.com/zdhelp/filters/office/ December 1999's "List of the Month" offers links to free Microsoft Word and Excel information also.

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IRC News

Minutes provided by Sue Ellen Richey, Recording Secretary

IRC Regular and Ex-officio Voting Members: *Judith Adkison, College of Education; Ginny Anderson, Fiscal Affairs; Donna Asher, Administrative Affairs; Craig Berry, School of Visual Arts; Sue Byron, Faculty Senate; Bobby Carter, UNT Health Science Center; Jim Curry, Academic Administration; VACANT, Student Association, Don Grose, Libraries; Jenny Jopling, Instruction Program Group; Joneel Harris, Administrative Program Group; Elizabeth Hinkle-Turner, Standards and Cooperation Program Group; Abraham John, Student Affairs; VACANT,Graduate Student Council; VACANT, University Planning Council; Ramu Muthiah, School of Community Services, GALMAC; Jon Nelson, College of Music; Robert Nimocks, Director, Information Technology,UNTHSC; Patrick Pluscht, Distributed Learning Team; Mark Rorvig, Research Program Group (Acting Chair); Paul Schlieve, Communications Program Group; Kathleen Swigger, College of Arts and Sciences; Philip Turner, School of Library and Information Science and University Planning Council (Chair, IRC);; Virginia Wheeless, Chancellor; John Windsor, College of Business.* ***IRC Ex-officio Nonvoting Members:*** *VACANT, Telecommunications; Bill Buntain, Computing Center Networking; Jim Curry, Microcomputer Maintenance Shop; Richard Harris, Computing Center; Coy Hoggard, Computing Center; Joel Lanpher, UNT Health Science Center; Maurice Leatherbury, Computing Center; Sue Ellen Richey, Computing Center (Recording Secretary). [As of 10/2000]*

No new IRC minutes were available at publication time. To see past IRC minutes, consult our back issues.

IRC Meeting Schedule

The IRC generally meets on the third Tuesday of each month, from 2-4 p.m., in the Administration Building Board Room. From time to time there are planned exceptions to this schedule. All meetings of the IRC, its program groups, and other committees, are open to all faculty, staff, and students.

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Staff Activities

Transitions

The following are new employees:

- **Marcus Carlisle**, returning I/O Consultant (part-time).
- **Daniel Lobert**, I/O Consultant (part-time).
- **Stephen Parmer**, I/O Consultant (part-time).
- **Matinka Dobreva**, ACS General Access Lab monitor (part-time).

The following people no longer work in the Computing Center:

- **Mark Wilcox**, Campus Web Administrator.
- **Gary Lakhmanchuk**, I/O Consultants(part-time).
- **Wai Yi Li (Winnie)**, I/O Consultant (part-time).
- **Mary Katherine Wright**, ACS General Access Lab monitor (part-time).

Changes

The following people have changed the status of their employment within the Computing Center:

- **Shane Jester**, formerly a Web Developer in Central Web Support, is now the Campus Web Administrator.
- **Derily Boutwell**, formerly a Data Entry Operator, is now a Production Control Scheduler on the Production Control team.
- **Susan Bryant**, formerly a Data Entry Operator, is now an Administrative Assistant on the Planning and Administration team.

Awards, Recognition

- **Dr. Elizabeth Hinkle-Turner**, Student Computing Services Manager, has been elected Secretary of the Society for Electroacoustic Music in the United States (SEAMUS).She is just completing a four-year term as Treasurer of the organization.
- **Bill Buntain**, Director of Networking and Communications Services, was recently honored for his 15 years of continuous service to the University.
- **Robert Jones**, Programmer/Analyst on the Student Records Data Systems Team, was recognized as a Soaring Eagle in the February 2001 issue of the *Human Resources Newsletter*. On a really cold, icy day, he stayed and

helped "a co-worker and then a stranger clear their windshields of ice," without gloves on!

Campus Computing News

By Pat Evans, Assistant Manager of the Computing Center HelpDesk

Remote Access Configuration Alert

Due to recent changes required after the upgrade to new DS3 lines at UNT, previous DNS (Domain Name Server) entries are no longer valid.

Problem

After connection to UNT Dial-Ups have been established, unable to browse the Internet. Common error messages are: "Unable to locate server" or "DNS entry not found".

Cause

UNT uses dynamic IP addressing and requires TCP/IP to use Server assigned name server addresses. Using Specified name server addresses does not allow for dynamic addressing and will result in the above Problem.

Customer's Affected

If you had previously installed Remote Access using the UNT Internet Services CD previously distributed by the Helpdesk and sold through the UNT Bookstore, settings used at the time the CD was created are no longer valid.

Solution

For PC's and Mac's (OS 8.6 and higher), dynamic addressing needs to be supplied by server. Included below are steps for users to take to correct this configuration issue.

- **For PC users (Windows 95/98/WinMe):**

  For Network components:

  Go to **My Computer**
  Go to **Control Panel**
  Go to **Network**
  Click **TCP/IP**, if there are multiple click **TCP/IP->Dial Up Adapter**

  There are three things to check:

  1. Under the **IP Address** tab >>> Obtain IP address Automatically
  2. Under the **WINS Configuration** tab >>> Disable WINS Resolution

3. Under the **DNS Configuration** tab >>> Disable DNS

If you change anything, after OK'ing out of the windows it will ask you to reboot. Do so.

For Dial-Up components:

Go to **Dial-up networking** (*Start, Programs, Accessories, Dial up - or Start, Programs, Accessories, Communications, Dial up*)
Right click on the connection to UNT (UNT PPP or Denton General or whatever you may have named the connection when it was created)
Click **Properties**

Check the following:

Go to **Server Type**s, then **TCP/IP Settings**: Selections should be "**Server assigned IP address**" and "**Server assigned name server addresses**". The bottom 2 boxes (**IP header**... and **Default gateway**...) should also be checked.

After doing this you must restart the computer.

- **For Mac (OS8.6 and higher) users:**

  TCP/IP settings:

  Once you have opened TCP/IP settings (located in Control Panel), configure TCP/IP similarly to:

  Connect via: PPP
  Configure: Using PPP Server
  IP Address:, Subnet Mask:, Router Address: will be supplied by server
  Name Server address and **Search Domain** boxes should remain blank.

  After making changes, close window and save changes.

- **For Mac (OS7.1-OS8.5) users:**

  TCP/IP (MacTCP) settings:

  Once you have opened TCP/IP settings (located in Control Panel), configure TCP/IP similarly to:

  Name Server addr.: 129.120.215.254, 129.120.215.253
  Search Domain: unt.edu

  After making changes, close window and save changes.

Still can't Get it to work?

If you have done all this and it still doesn't work then give us a call at (940) 565-

2324 and we will work on it with you.

We wrote about "Internet Bandwidth Issues on Campus" in this space last December, and mentioned that we had DS3 circuits on order. A new 45 Mbs DS3 connection went into production on 01/30/01.

Can you Excel?

By Claudia Lynch, *Benchmarks Online* Editor

We frequently get requests from people for Microsoft Excel training. Unfortunately, at this time, Academic Computing Services is unable to offer instructor-led training on this topic. There is, however, CBT available through the Library (see http://www.unt.edu/helpdesk/CBT_Training_on_web.htm). Also, through the Microsoft Office site license agreement, we have something that is called "Office, Step by Step." This is a tutorial that can be purchased for a minimal feel from the UNT Bookstore for use at home. If you would like to use it here on campus, you can ask your Network Manager to install the tutorial on your computer and in the General Access Lab of your choice (if it is not already available there). There are also minicourses offered on this topic from time to time (for a fee). See: http://www.unt.edu/ccecm/cont_ed/Minicourse/Courses/UNT_Computers.htm

Last, but not least, there is Sandy Burke's award-winning Excel97 tutorial, available at http://www.unt.edu/training/Excel97/index.htm It was recently selected as a featured site in Lightspan's StudyWeb® (http://www.studyweb.com/) as one of the best educational resources on the Web. According to their promotional material, "StudyWeb® is one of the Internet's premier sites for educational resources for students and teachers." Since 1996, their "expert reviewers have scoured the Internet to select only the finest sites to be included in StudyWeb's listing of educational links. Each site in StudyWeb® includes a detailed review describing its editorial and visual merits."

StudyWeb

Sandy has is also prepared a Microsoft Excel 2000 tutorial, but it is only in PDF format and must be downloaded for use. To access this, see http://www.unt.edu/training/trainTin.htm and scroll to the bottom of the page. You can then choose the tutorial for download. Happy Excelling!

Faculty Evaluation Processing Tips

By Joann Luksich, Data Entry Coordinator

Here are some helpful tips on preparing your department's evaluations for processing by Data Entry.

1. Complete a Faculty Evaluation form. Be sure to include a contact person and phone number as well as the correct semester and year at the top of the form.
2. Indicate columns for Instructor number, Course number, and Section number. If unsure, contact us and we will provide this information.
3. Indicate whether you wish for the professor's names to be included on the report, or whether you wish for codes only to appear on the reports.
4. Important: If you are requesting the Instructor's names to be included, please provide us with a list of professors and codes assigned to them.
5. Check all reports needed. If none are checked, we will provide your department with reports produced in previous semesters.
6. Indicate number of copies needed.
7. If your department needs response data on disk, please indicate so in Special Instructions on form, and provide us with a disk upon delivery.
8. **MOST IMPORTANTLY** - Each group of scantrons must be separated (paper clips, rubber bands, envelopes, etc.) at each point the instructor OR course OR section changes. Also, please be sure that scantrons are all face up, with the "cut" corner aligned.
9. The **FIRST SCANTRON** of each group must have the Instructor number, Course number and Section number written and bubbled in the Identification Code field. The following scantrons of that group do not necessarily need to be coded.

Evaluations are processed by Data Entry in the order they are received. Please feel free to contact us at 565-3887 or 565-2213 if we can help in any way. Thank you.

Lab-of-the-Month: The College of Business Administration General Access Lab

By Dr. Elizabeth Hinkle-Turner, Student Computing Services Manager

With over 5000 students in the College of Business Administration (COBA), one can well imagine how busy the general access lab (located in rooms 333, 334, and 335 of the Business Administration Building) gets to be especially as the midterm approaches! Fortunately, this lab is well-equipped and generously staffed in order to provide efficient and effective customer service. The COBA general access lab is open to all students but like labs in many of the other specialized colleges, it provides particular emphasis on tools for the business major.

The COBA labs are always busy with activity

The COBA general access lab features 91 Pentium II 400 computers with 17-inch monitors and Zip drives as well as 3 dedicated lab printers. In addition to the standard computing tools found in all the general access labs (Microsoft Office, internet browsing etc.), the COBA lab machines also feature software for business education including the titles, *Adventures in Business Statistics* and *Adventures in Operations Management*; *MicroFocus: NetExpress 3.0* for COBOL programmers; and *Oracle 8i* and its components. The accounting program *MiniTab 13* is available as well as the statistics packages *SAS 8.0* and *SPSS 10*. As tax time quickly approaches, check out the lab's copies of *Turbo Tax 2000* too!

Many students are hard at work in the COBA general access lab

The COBA lab is open Monday - Thursday from 8:00 a.m. to midnight, Fridays and Saturdays from 8:00 a.m. to 8:00 p.m., and on Sundays from noon to midnight. The staff is well-trained and ready to help with computing questions and needs. During holiday times COBA lab hours may vary but a quick look to their Website at www.coba.unt.edu/cobacc/computerlabs.htm should give you all the additional scheduling and information you need.

Free Software on Campus: Something for Nothing?

This is the text of a paper being presented at EduTex in San Antonio on February 23. -- Ed.

By Duane Gustavus, UNIX Research Analyst

Introduction

One of the most interesting features in the world of information processing technology during the closing years of the last century has been the meteoric rise of "free" software. The ethos motivating this movement has been the belief that information technology has become so vital to the success of individuals in contemporary society, it should be considered a public resource with an international constituency. Organizations such as the Free Software Foundation and the University of California at Berkeley provided initial implementations and the required legal apparatus to guarantee that the work of individuals contributing to this project would remain free to the public. The explosion of Internet subscription in the last few years added the communication mechanisms necessary for programmers the world over to combine their efforts and share their work.

One of the most widely reported products of this activity has been the GNU/Linux computing environment. Using an operating system implementation by Linus Torvalds (and friends) and applications/utilities from the GNU community, this computing environment now claims over ten million users[1] and has been adopted as a native computing environment on commercial hardware vendors from palm-tops to supercomputers[2]. While Linux has become the poster child of the free software community, it is far from the only, or even first, evidence of this philosophy. This discussion will often use Linux as an example of features that are common to several other free software environments as well.

Free Software: What is it and why should I care?

Much energy has been expended (largely dissipated as heat) on the definition of *free* software. Rather than attempt to constrain the discussion or argue semantics, let's visit some of the objectives toward which the various definitions attempt to direct our focus.

The most obvious context assumed when you hear the phrase "free software" is obtainable for no money. This is often referred to as the "free as in free beer" connotation. In point of fact, most free software is available for download over the Internet if you have a fast data link (or a great deal of patience) and the technical expertise to install it. Free software is also available in commercial distributions you can purchase (free?) as a convenience, so cost must not be the only issue. For example, you may have a friend who bought a commercial distribution of software which they are *free* to share with you. This second

context of free, known as the "free as in free speech" connotation, is the definition at the very heart of the free software movement.

The Free Software Foundation has been the most notable exponent of the "free as in free speech" focus, and have eloquently expressed this philosophy[3], backing up philosophy with impressive productivity. The Free Software Foundation defines four kinds of freedoms for the users of software:

1. The freedom to run the program for any purpose.
2. The freedom to study how the program works and to adapt it to your needs (access to the source code is a precondition for this).
3. The freedom to redistribute copies so you can help your neighbors.
4. The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (access to the source code is a precondition for this).

In keeping with Richard Stallman's philosophy of *idealistic pragmatism*, the Free Software Foundation protects these freedoms with a *copyleft*. In Stallman's own words "To copyleft a program, first we copyright it; then we add distribution terms, which are a legal instrument that gives everyone the rights to use, modify, and redistribute the program's code or any program derived from it but only if the distribution terms are unchanged. Thus, the code and the freedoms become legally inseparable."

Software protected by copyleft is not the only kind of free software. The Berkeley Software Distribution license and "public domain" software include the freedom to change the distribution terms of modified software so that it is stripped of one or more of the freedoms protected by the copyleft. This freedom to give up your rights is idealism certainly, but perhaps without pragmatism. The term "open source" is gaining popularity, especially among vendors of proprietary software. This term is sometimes used as a synonym for free software, but can also harbor "freedoms" such as unilateral revocation of one or more of the four freedoms cited above. It is often a useful litmus test to determine why the software is not copylefted if it is free. Many commercial vendors are courting the goodwill (and free software and expertise) of the free software community in hopes of gaining commercial advantages for their proprietary software.

The argument that you as an educator should be aware of this free software movement is therefore twofold. The University of North Texas, my current employer, spends about $100,000 dollars annually on a site license for Microsoft software (for faculty and staff - this is not direct assistance to students). There is no reason to single out Microsoft, of course, since another $100,000 or so is spent on Adobe software products, $19,000 on SAS, and you can doubtless add to this list from your own institutional budgets. This is not a diatribe about the evils of commercial software, as many of these products provide valuable, and in some instances, unique functionality. There is, however, a noticeable distinction between the involved exercise of justifying purchases of hardware (obtaining multiple quotes, qualifying vendors, support for historically under-utilized businesses) to guarantee that the state gets the

lowest bid from approved vendors, and software purchases where the state subsidizes virtual monopolies without noticeable concern for the best value for its money. Surely free (as in beer) software should merit some attention in this context alone.

The more important and far-reaching context, from an admittedly personal point of view, is the accessibility of information technology to students (and, heaven forbid, even interested faculty and staff). Exposure to the Internet and acquisition of "computer skills" is being given high priority in the curriculum of secondary education, but higher education should not be satisfied with "vocational training". The dissemination of knowledge in this critical technology must not be sacrificed to the amassing of profits through intellectual property laws. Imagine a campaign to increase literacy where the language was "owned" by some business that charged for the (non-exclusive and legally constrained) right to use; a right which the business could unilaterally renegotiate or revoke. Free software is a cultural feature of our place and time which demands representation in any curriculum striving to produce citizens capable of making informed decisions. The freedom to share your ideas, your tools and even your source code with others of similar interests around the world is one of the fundamental rights from which a global society might spring.

Free Software: Where does it come from?

One measure of the extent to which the "business" model of interaction has permeated our society is the puzzlement many feel when offered something for free. If software production is an expensive activity requiring considerable time from highly skilled individuals, why would someone give it away? The history of the manipulation, storage and promulgation of information (the raison d'etre of software) is one of a struggle between opposing priorities. On one hand, the sharing of information can provide a kind of cross-fertilization which leads to the discovery of new information; in some instances, this discovery of new information can lead to a re-evaluation of existing information - a change in the status quo. Some human endeavors, notably the sciences, tend to place a high priority on discovering new ideas in order to verify or refine existing ones; other activity has a vested interest in preserving the status quo. The human condition seems drawn schizophrenically in both directions.

Not surprisingly, the sciences provided the field for some of the earliest free software. One of the great boons to science provided by computers is the ability to model processes which are difficult or impossible to observe physically. Since the crucible of science is disputation, your conclusions must be reproducible by any of your colleagues inclined to investigate your proposition. The idea of developing and sharing programs which all interested parties could use as a standard for testing conclusions was therefore obvious. Trading software was one way to let others reproduce your results. In addition, to be credited for your contribution to the body of scientific knowledge, you must be free and able to publish. Software intended to aid in the publication of technical information was developed in the late 1970's by Donald Knuth and was made available for free to address this issue. This type-setting system named TEX was provided with it's own fonts and font management software which, after decades of refinement, can still process today its original documentation to publication quality standards (how's that for backwards compatibility). Literally thousands

of individuals have contributed to the functionality, adding macro sets like LaTeX and even GUI front-ends like LYX[4] (with which this document was produced). TeX (augmented by customized macros) is the preferred format for documents submitted to technical journals like the American Mathematical Society, and one of the formats employed by publishers like O'Reilly and Associates.

The GNU project[5] was begun in 1984 to provide an entire computer operating system which was free software. The Free Software Foundation is a tax-exempt charity that raises funds for work on the GNU project. The reason that you often see GNU/Linux as the operating system name is that only the kernel is Linux; most of the actual applications, utilities and even the compilers used to build the kernel are provided by GNU project. When you observe confrontations between commercial vendors and the GNU project about the "correct" definition of free software, it might be useful to remember that the GNU project has been at this for over a decade-and-a-half, long before it became savvy marketing to appear "open".

The Berkeley distribution of UNIX (generally referred to as BSD for Berkeley Software Distribution) is available in several free and commercial versions. The first release of the FreeBSD distribution was December 1993, and it has since earned an enviable reputation for stability and performance as a network server. Currently, the most popular version of this environment is FreeBSD, but NetBSD has been a leader in the area of hardware portability (the ability to run on the cpu architecture of many different vendors), while OpenBSD has long been considered one of the most secure network platforms available. The selection of the same BSD 4.4 code base for the new Apple operating environment (OSX) is at least a "left-handed" compliment to the inherent value and stability of this free software.

Distributions: Freedom of Choice

Many folks new to the free software community are somewhat abashed at the proliferation of dozens of different Linux distributions (there are also several different BSD distributions). If you are more accustomed to a computing environment where one corporate entity enforces uniformity by making all the decisions about how the environment works, you may be led to conclude (and even encouraged by commercial vendors to believe) the free software movement is "out of control". Consider for a moment the form that control often takes: these decisions about the computing environment become product differentiation features and intellectual property that are the subject of legal controversy costing millions of dollars (costs born by the consumer). All this to ensure that one product does not infringe on even the "look and feel" of another (and coincidentally will not inter-operate usefully), and that nobody can innovate on the product except the copyright holder.

Now let's look at the out of control world of free software. First, most of the different distributions of Linux will inter-operate (ie you can move software from one to the other without difficulty assuming the distributions support the same cpu architecture - most free software is designed to run on multiple hardware architectures). As a matter of fact, many BSD systems will also execute Linux programs and considerable effort is expended in standardizing languages and data formats to promote interoperability. Unlike proprietary

software, free software can be distributed in source code format. These distributions generally employ an autoconf utility which can determine the distribution and compile the code correctly for many different target environments. The areas of incompatibility come from running versions of software which are too widely separated in release dates (ie features in newer versions will not be in older versions). As an example, gcc (the compiler base at the core of most free software) has been designed for maximum portability and runs on practically all modern processors (there's even a version that runs in the Microsoft environment).

If the distributions inter-operate, what is the area of "product differentiation"? Different distributions generally target different audiences. Some versions are optimized as personal workstations where others play to the network server crowd. All Linux distributions use the same core components, but one distribution may have a GUI installer application intended to aid comparative novices, where another is oriented toward batch installations of groups of systems where user interaction needs to be minimized. Some distributions are intended as minimal installations of a secondary OS in a dual boot setup, assuming you will only want to dabble with free software rather than use it as your primary operating system. Other distributions are designed to facilitate the implementation of clusters of compute servers or optimize the system to serve as a network appliance, or run one of the "tiny" variants suitable for embedded products. Regardless of the orientation of the distribution, nobody thinks there is any reason to limit them (why would you only want one breakfast cereal to choose from?). If you build a custom distribution of Linux to suite your particular set of requirements, maybe other folks would prefer to use it rather than re-invent the wheel. You could make your distribution available on the net for free (speech and beer), or get venture capital and try to sell it for profit. In short, people innovate with free software because they can, and this situation should be viewed as normal rather than the artificially constrained legal morass of proprietary software.

Applications: What can I do with Free Software?

A common retort to inquiries about free software is that "there are no applications." Often, this can be restated more accurately as "there is no support for the commercial application I am accustomed to using." There are very few application areas where there is no free software counterpart. The most commonly used commercial applications, of course, are the ones most encumbered with legal constraints designed to make it difficult to move to another product. This generally means that you must be prepared to learn a new program which performs the same task in order to move to free software. So when you're tempted to ask "Why don't they do this like <commercial product of choice> does?", please remember the reason is the business practices of your commercial vendor (which is probably part of the reason you are having this struggle in the first place).

The most prevalent application area among computer users of my acquaintance is web surfing. As an aside, let me point out that the World Wide Web, initial web browsers, even the Internet, were not productions of commercial software vendors, but began life as free software. When Ebusiness discusses all the innovation involved with putting their services on the web, remember that was only possible because the underlying technology was made available to them for

free, and therefore, they should not be allowed to copyright the whole enchilada when they only sprinkled a few onions on top. The most common web server on the Internet[6] (apache[7]) is free software. The Mosaic and Mozilla offerings for web browsers (beer) are common browsers, but there are several interesting efforts to produce smaller browsers which can run in more resource constrained environments.

After web surfing the most common application seems to be a communication client. Be it email, irc or some form of online chat, people seem to find the peer-to-peer communication provided by network-connected computers extremely valuable. There are many email clients available as free software, and sendmail (a program for actually transferring email from one machine to another across the Internet) is still the most common free mail transfer agent among several available. The number of chat-class clients depends on how recently you checked the net (ie new ones seem to pop-up almost daily).

Technical documentation was one of the early applications for UNIX. TEX is easily as powerful a document preparation system as any commercial product. There are special macros for composing TEX documents and GUI front-ends to smooth the learning curve. If your writing needs are not so extensive, you might prefer the word processor component of one of the "office" suites like Gnome Office[8]. In general, these suites contain a group of applications considered useful for a business, and contain the usual fare like spreadsheets, contact managers and personal information managers, in addition to basic word processing.

If you edit documents which are not intended for printing (such as editing source code for computer languages), you will probably find that word processors are a pain because they have a tendency to embed lots of "invisible" tokens in the text. A text editor assumes, for the most part, that you will enter what you want in the file. Editors are the main application computer programmers spend most of their time using, so there are a plethora of choices in the free software community because UNIX has been a major software development platform since its inception. Some editors are very small, simple and easy to learn/use while others are incredibly elaborate. Your choice depends only on your preferences, and the amount of time you want to spend examining all the choices. The default UNIX text editor is named vi, but one of the many variations of emacs is commonly found on most programmers machines.

There are several free image processing applications for Linux, but the most commonly mentioned these days is the GIMP (Gnu Image Manipulation Program[9]). The GIMP is useful for photo retouching, image composition and construction. It has many user-contributed plug-ins, and is often the source of the many decorations found on free software web sites.

A software component not generally thought of as an application, is the window manager. This is the software that determines how the graphic user interface appears and works. This is the product "look and feel" that is the subject of so much legal wrangling between commercial software vendors. Because free software has been freed of these constraints, a system is not required to look any particular way. You may change it's appearance as often as you like, and there are web sites dedicated to window manager themes.[10] The degree of possible customization is phenomenal, and the activity is one many in the free software

community seem to find engaging. The basis of all this work is the X Windows environment which was first provided to the community by MIT as a student project. In past years it has been taken up by the XFree86 project and is the most common GUI environment on free software systems. As a measure of the power of free software, the X Windows System is now the default windowing environment on even commercial UNIX systems, and there are commercial X servers for Microsoft Windows.

Support: Freedom to Learn

To this point, my message has been primarily evangelical: to convince you the free software concept is an important one; the ethos laudable. Perhaps you have been in the computer support role as many years as I, and have come across software that you wouldn't deploy "even if they gave it to me!" It is simply a fact that deploying any new software incurs an increased support burden; from the support perspective, there is no such thing as free (beer) software. From another perspective, however, free (speech) software returns some time by relieving you of all the legal obligations which are part of your contract with proprietary software vendors. There are no license managers or anniversary dates or audit trails to manage in order to keep you from being sued. There are no students frustrated to find that they cannot use this application at home on their own computers without paying for a copy. There are no budget proposals to justify the expenditure. You can sleep nights (or days) knowing that nobody will expect you to be able to document where every application is installed or verify that older versions have been uninstalled.

There is another side to this free software business that can cause support headaches. The very fact that it is free (beer) means that individual users are more likely to be installing software on their own systems. If you currently enjoy absolute control over what software is installed on the systems you support, this may seem a chilling prospect. In point of fact, most commercial systems will let users install free (beer) software offered under various guises as browser plugins or MIME documents. These programs do indeed cause support headaches, and the problems are sometimes severe enough to require measures which "protect" users from receiving software of this type. These same measures (email filtering, disk write permissions, etc) can be employed on UNIX-like free software systems as well if your situation requires.

For many of the computer support folks where I work, the support issue is often boiled down to "yet another computer environment to support." I suspect there is also an element of "yet another computer environment for me to learn before I can support it." Indeed, it would be a mistake, in my opinion, to deploy any software without obtaining (either learning or hiring) a level of competence with it appropriate to your responsibilities. The question becomes one of the return offered for the energy expended. There can be no avoidance of the fact that deploying new software will cost you time and effort. I will argue that the time and effort is, on the whole, unavoidable and required when you upgrade commercial software as well. I believe the process of learning is enhanced, however, when all information on the topic is free and open for examination. The Internet is full of web sites, news groups, email lists and tutorials on free software, and Linux has an entire section in most technical bookstores these days. It has never been easier to learn about free software.

Let's assume you decide you want to learn about free software, but are under the impression that it is more difficult to manage, or more insecure or more unreliable than commercial software. Any of these propositions can be true or false depending on the context. As a matter of fact, these issues are interdependent to some extent - a difficult to manage system may become unreliable or insecure due to poor management. In the same vein, a system which achieves ease of management by ignoring security issues will be both insecure and thereby unreliable when networked with other systems where security becomes vital. Network connectivity raises the support burden of any computing environment; the more capable the system (in terms of network functionality), the greater the support requirement. Often missing from discussions of this topic is the observation that "dumbing down" more capable network environments is often more successful than trying to improve functionality where the underlying technology never assumed more than one user co-located with the hardware.

If your use of computers has been restricted primarily to Microsoft or Apple (that is, most folks), the first feature of UNIX-like environments that may seem new to you is the requirement to identify yourself (in other words, to login). Not only do you have a user name, you also have a password that is private information. I don't hear the "this password business is silly nonsense; I have nothing to hide!" argument as frequently these days as in the past. Folks are beginning to understand that you have individual responsibilities under the law, and any computer environment that doesn't recognize the inherent individuality of human society is an unfortunate over-simplification of reality. Most computer break-ins these days involve people wanting to escape their own responsibilities by assuming your identity. Consider other pieces of private information in your life - your bank account number, credit card number, social security number. If you are going to be held individually responsible for activity done with your computer, as you are for debts incurred by the use of your credit card, it would be nice for your computer environment to take some pains to identify you rather than assume that anyone typing on its keyboard must be you. Imagine using your ATM card without having to enter your PIN!

When each user is a different individual to a computer system, there is a level of account management overhead that is a support cost not paid by the "any color as long as it's black" approach. As a compensation, user management systems have been around for a long time, and there are many tools which make the job easier. Especially useful these days is now the ability to do individual user accounting, and the possibility of disambiguating who did what when. On the desktop systems I maintain, there are usually fewer than three or four accounts which change rarely, so this is not a big burden. On lab systems where several hundred students need access, and the user base changes significantly every few months, more complex systems based on centralized account management must be employed. Most contemporary commercial operating systems offer the potential for differentiating users by roles (admin, power-user, user etc). This functionality is inherent in the design of UNIX-like free software systems.

Now let's address head-on the question ``Does free software require more support effort than commercial software?" My response is, absolutely not for comparable levels of security and services offered. At UNT there are fourteen General Access computer labs open from eight to twenty-four hours per day Monday through Thursday, and for shorter periods Friday through Sunday. These labs are primarily Microsoft oriented with a smattering of Macs. None of

these machines are remotely accessible (ie you cannot access them from home); none provide "server" class functionality (they are generally powered down when the lab closes). There are two Linux machines in one of these labs. These machines have been configured to offer no remote access or server capability (although these features are normally the kind of functionality that draws people to Linux) and have required no maintenance since their installation several months ago even though they run 24/7 on the network; it is undeniably true, of course, that they have fewer users during the course of the day than the Microsoft systems.

There have been "break-ins" to some Linux systems on campus, just as there have been on Microsoft systems. The Linux systems that have been compromised were being managed by faculty or staff untrained in system management and without any assistance from the computer support organizations on campus. There have also been compromises to commercial systems that do have professional support, so it seems unreasonable to label Linux systems as insecure by default.

Experiences with Free Software

This section is an amalgamation of experiences from the past few years using free software on the UNT campus. Two application contexts which seem to make up most of the "institutional", as opposed to individual, systems here are lab machines and network services.

The Computer Science department at UNT has a programming lab for CS majors which has been running free software for about three years now. The GNU compilers support the C++ programming classes using emacs as a development environment and DDD as a symbolic debugger. Accounts are managed centrally via NIS, and login directories mounted automatically from a centralized file server. This allows any CS student to login to any available lab machine to access their personalized environment. Because all the computer system hardware is identical (or functionally so), the installation and maintenance tasks are highly automated. The installation time per workstation is under an hour and several can be installed in parallel lowering the per-seat installation time even more. This lab is open to students approximately 76 hours per week (systems are left running 24 hours per day, seven days per week), and average uptime for nodes is calculated in excess of 99% for the hours the lab is open. In addition, maintenance updates are made through an automated system that allows all lab computers to be updated in parallel from a remote host without reinstallation.

As lab machines, these systems are not available for remote access (ie after lab hours). In order to address this need, a different group of Linux systems has been made available as remote access nodes which students cannot access physically, but can login to remotely. The students must use a version of ssh (secure shell client) to login to the nodes, but they have the same facility for file serving and account maintenance as when using the programming lab systems. In addition, these systems run restricted web servers so students can practice web software programming. Most of the College of Arts and Sciences lab systems running Microsoft provide secure shell clients which can also access these systems.

Another project[11] involves the attempt to make Linux systems available to

students who are not pursuing computer science degrees. This project has provided a similar environment to all members of the UNT community who use general access labs. In order to get an account on one of the "Linux Lab" machines, the student must print out an account form (available over the web), sign it, and turn it in to the computing center. This system features an automated install (actually, there are a couple of questions to be answered at the beginning of the installation) which builds a generic lab system. All existing accounts are then immediately available on that system without any further management by lab personnel. While this system has been built to "lower the bar" for lab managers in terms of the installation of Linux, in the nine months since announced, only one lab has been willing to install two systems. Also of note is that only three dozen or so accounts have been requested (although this is partially due to the scarcity of machines). Your analysis may conclude this project is a failure, but I will respond that billions of dollars of marketing cannot be easily or quickly counterpoised. As of this writing, two more labs have requested installations, so we hope to gain momentum to add to (not replace) the computing options available to UNT students.

On the network server front, UNT has many free software systems which provide yeoman's service. The UNT web services group[12] employs apache web servers on Linux machines; the College of Arts and Sciences web server[13] is also apache, but hosted on a FreeBSD system. The student email system named EagleMail is based on cyrus imap software[14] using IMP[15] as a web frontend. EagleMail uses ldap for authentication, and the ldap services are provided by OpenLDAP[16] running on Linux systems. While the official email system for campus faculty and staff is Novell Groupwise, email is scanned for virus problems before being delivered to Groupwise by software running on a Linux system. Web servers (apache on Linux) are employed by the Research and Statistical Support group for documentation and tutorials, and other apache servers are used for classroom instruction in the School of Library Sciences and the College of Education. The university student union building has several Linux systems modified to run only a web browser, with important UNT sites bookmarked.

This overview of free software being employed at UNT does not begin to be comprehensive, simply because you don't need to ask anyone for money to bring up free software on your system. There is no official support policy at UNT for free software, so users have formed an ad hoc Linux Users Group[17] with a mail list to communicate with other users on campus. We have experimented with offering short training courses during the summer, and the student ACM chapter[18] has a "Linux Install Party" each semester and sells Linux CDs to help raise money. Academic Computing Services makes a mirror site available to campus network addresses that contains Linux software and tracks the required patches to keep an installation current. Grass roots support is in the best tradition of free software.

Quotes

The following quotes are offered in the hope they will be useful in charting the dimensions of some of the issues discussed in this paper:

- Microsoft's Windows operating-system chief, Jim Allchin: "Open source

is an intellectual-property destroyer," Allchin said. "I can't imagine something that could be worse than this for the software business and the intellectual-property business."

- Patricia Schroeder, president of the Association of American Publishers: "We have a very serious issue with librarians." Concerning libraries loaning out books: "Technology people never gave their stuff away."

- One major issue is that UCITA (the Uniform Computer Information Transactions Act) would allow software distributors to reveal the terms of their license agreements after a sale. Requiring disclosures similar to those for used cars or other hard goods "would create tangible harm through increased costs, litigation and a likely decrease in competition and product choice," wrote the Commerce Coalition, whose members include AOL, Microsoft and Intel.

- The United Nations Universal Declaration on Human Rights, Article 19: "Everyone has the right to freedom of opinion and expression; this right includes the freedom to hold opinions without interference and to seek, receive and impart information and ideas through any means regardless of frontiers."

- Speaking on behalf of the nation's librarians, Miriam Nisbet of the American Library Association stated, "the lower court's decision seriously harms the public's ability to make legitimate, fair use of digital works. As the founders of our country and Constitution recognized, free speech and fair use are critical components of a democracy."

- "Over the next 50 years," the journalist Simson Garfinkel writes in Database Nation, "we will see new kinds of threats to privacy that don't find their roots in totalitarianism, but in capitalism, the free market, advanced technology, and the unbridled exchange of electronic information."

- Polls suggest that the public is gravely concerned: a 1999 Wall Street Journal-NBC survey, for instance, indicated that privacy is the issue that concerns Americans most about the twenty-first century, ahead of overpopulation, racial tensions, and global warming.

- Scott McNealy, the chief executive officer of Sun Microsystems, was asked whether privacy safeguards had been built into a new computer-networking system that Sun had just released. McNealy responded that consumer-privacy issues were nothing but a "red herring," and went on to make a remark that still resonates. "You have zero privacy anyway," he snapped. "Get over it."

Footnotes

[1] http://yahoo.cnet.com/news/0-1003-200-1546430.html shows sales of over one million copies in 1999 alone.

[2]

Linux is the fastest-growing operating system program for running server computers, according to research firm IDC, accounting for 27 percent of unit shipments of server operating systems in 2000. Microsoft's Windows was the most popular on that basis, with 41 percent.

[3] http://www.gnu.org/philosophy/free-sw.html

[4] http://www.lyx.org

[5] http://www.gnu.org

[6] http://www.netcraft.com

[7] http://www.apache.org

[8] http://www.gnome.org/gnome-office/

[9] http://www.gimp.org

[10] http://www.themes.org for one.

[11] http://linuxlab.unt.edu

[12] http://www.unt.edu

[13] http://www.cas.unt.edu

[14] http://asg.web.cmu.edu/cyrus/

[15] http://www.horde.org

[16] http://www.openldap.org

[17] http://www.lug.unt.edu

[18] http://www.cs.unt.edu/~acm/linuxcds.html

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Staff Activities

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Today's Cartoon

"Last night Marty and I got more intimate than we've ever been...we revealed our internet passwords to each other!"

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