Feature Articles

Campus Computing News

Dr. Leatherbury is on vacation this month. In his place, Dianna Mullet fills you in on news with a UNIX slant.

Virus Alert!

If you are becoming increasingly alarmed about the threat of computer viruses, this article is for you.

Doing it in the Open

Kevin and Dianna Mullet, the Computing Center's power couple for the new millenium, have joined the Open Source movement and want you to come along. Read this article and find out why.

10 Things You Need to Know Before You Call Yourself a Web Designer

Sharon Marek and Kenn Moffitt, Web Developers in UNT Central Web Support, clue you in on the intricacies of Web design.

UNT Links

Once in awhile we like to highlight UNT Web sites that are of general interest to the campus community but may have escaped your detection. Click on the title and find out what you've been missing.
RSS Matters

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

Summer Update

Summer has arrived. Isn't it great to have a long summer so we can work hard indoors? Yes, we have been working hard to keep ourselves and you busy. At the Research and Statistical Support office, we are busy introducing new support services and upgrading the current services. So, mind the debris and constructions ahead:

1. New Statistical Applications on UNIX

Thanks to our new Research UNIX Specialist, Duane Gustavus, we have significantly revitalized our UNIX research server, sol, for faculty and researchers. New applications have been installed and old ones upgraded. Among them was the latest version of S-Plus on UNIX. As you may be aware, this software was first originated in the UNIX environment. So, S-Plus 5.1 for UNIX is ahead of its desktop counterpart (S-Plus 4.5 for Windows). In the coming issues of Benchmarks Online, we will give more details about this state-of-the-art statistical package on UNIX. Our current flagships, SAS and SPSS, are all upgraded to the latest versions, v7 and v6.12 respectively on UNIX. We are in the process of evaluating the performance of these two packages. That being said, current versions are still operational.

To run SPSS or SAS on UNIX, consult the following table:

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<th>X-windows mode</th>
<th>Text mode</th>
<th>Batch mode</th>
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<td>SPSS for UNIX</td>
<td>spss</td>
<td>spss +m</td>
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For more details on using statistical applications on UNIX, check with the RSS consultants via the numbers and addresses listed below.

<table>
<thead>
<tr>
<th>Karl Ho</th>
<th><a href="mailto:kho@unt.edu">kho@unt.edu</a></th>
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<tr>
<td>Rich Herrington</td>
<td><a href="mailto:richherr@unt.edu">richherr@unt.edu</a></td>
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<tr>
<td>Craig Henderson</td>
<td><a href="mailto:craigh@unt.edu">craigh@unt.edu</a></td>
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2. New Services, New Products

This summer we have embarked on a new project with our Data Entry department to renovate services on one of the major parts of the research process: data collection and entry. We are looking for new technology to help data entry service customers, in particular, faculty members and researchers,
with their survey instruments and to expedite data entry turn-around time. This technology features the use of a high speed scanner, sophisticated form-designing software and optical character recognition applications. For RSS customers, this will help in the very first stage of the research process in designing scannable forms or questionnaires. We have prioritized the selection criteria as follows:

- This new system should be geared toward accommodating different research designs from the researcher's standpoint and cover the widest variety of form designs. Hence, the system should not be limited by the mere use of traditional bubblesheet format but also exploit optical character recognition (OCR) technology for identifying handwritten data.

- It will also provide versatility in data entry, providing alternative entry methods such as Web forms, screen entry and hard-copy form entry.
- Enhanced accuracy and expeditious turn-around time

Currently, we are in the process of searching for state-of-the-art software and hardware. We hope that by fall 1999 we will have the new system fully tested and implemented for faculty research use. The RSS office aims to take advantage of the new system and expand our research design service. Should you have new survey projects that needs help in questionnaire design, feel free to drop by our office and get some samples.

Other new products

In addition to the current statistical applications, we plan to expand our support coverage to Mathematica and Matlab on UNIX in the near future. We anticipate that such an expansion will help provide more support to physical science researchers. The most currently installed versions of the RSS supported software are:

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<td>LISREL</td>
<td>8.3</td>
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<td>7.0</td>
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Well, hope your summer will not be as busy as ours. Have a good one, anyhow.

Karl
To Boldly Go...

One of the benefits of working in computer systems management is that you often get to stay up late hours when some process or another does not work correctly. At least now you can dial in from home, rather than having to go find a mainframe terminal (or worse, a card punch machine) as was necessary in the prehistoric days of computing. For me the task of dialing in is make a little bit less tedious because of the video input port built into my Macintosh.

Recently, while fixing a problem with Internet account generation, I happened to catch an episode of Star Trek, the Next Generation (the episode was "Lessons," originally airing 4/5/93; see http://www.startrekcontinuum.com/tng/q.asp?ssector=log.asp&ID=68596). The primary plot revolved around Captain Picard falling in love with a "Stellar Cartographer" (today, this would be someone who draws maps really well, but in the 24th century, it is someone who maps stars.) Any fan of the first Star Trek series knows that Captain Kirk seemed to fall in love every episode, but for his successor, Picard, such a circumstance is quite rare. What made this episode particularly interesting to me was that besides being such a stellar cartographer, Lieutenant Commander Daren is also an excellent pianist. It seems that in the 24th century, humans will still be playing the same pianos/violins/cellos/etc. that are in use today.

There is all kinds of opportunity here to launch into an essay on the lack of musical imagination shown by Star Trek writers and producers, and their ignorance of current musical technology and contemporary concert music. However, it was another small part of this episode that got my attention -- probably the worst pickup line of the 24th century. It seems that Daren, Data, and an unidentified cellist stage a performance of a Brahms Piano Trio. After the performance, Picard remarks to Daren something to the effect that in a particular measure of one of the movements she played a "diminished arpeggio" rather than minor and how particularly moving that was. To anyone who knows music, this line is particularly stupid and bothersome for a number of reasons.

Although it might be imagined that the music of Brahms will have reached the same status in the 24th century as the plays of Shakespeare have today, it still does not justify Picard's idiotic comment. First, to have noticed such a small change in such a large work, Picard would have to have a much more rigorous musical education than his self-taught Ressikan flute playing learned in a 25-minute virtual lifetime (the episode which introduced the Ressikan flute was "The Inner Light", originally airing 6/1/92; see: http://www.startrekcontinuum.com/TNG/log.asp?id=68556). Second, it's unlikely that such a change would have the emotional effect apparently felt by Picard. Third, who would have the audacity to change the music of Brahms? Making such a change in the music of one of the most meticulous composers of tonal music is akin to spouting the following line within a production of Hamlet: "To be or not to be. That is the question. Whether it is nobler in the mind to suffer the slings and arrows of outrageous fortune, or maybe I'll just go postal and take care of business once and for all!"

The future is closer than we think...
Although we know that Star Trek is really about the present and not the future, it does illustrate that the future is not always what we predict it will be. This irony hit home recently when I began to research the options I have for a high-bandwidth Internet connection to my house in Fort Worth. The high-speed choices these days for the average home Internet user are ISDN, ADSL, and Cable Modem.

For me, ISDN and ADSL are provided by Southwestern Bell (http://www.swbell.com). I inquired about ADSL service, which is dependent on your telephone outlet being close enough in wire length to the phone company's digital switch. You would think that living in a neighborhood that didn't exist 10 years ago would ensure the latest utility technology. Apparently, there is fiber-optic cable serving my neighborhood and I am close enough to the switch, but the fiber is so saturated with voice lines, that Southwestern Bell cannot provide my relatively new house, with the relatively newest technology. I suspect I may get a similar story if I attempt to sign up for ISDN service.

That leaves Cable Modem. This a frightening prospect for me. After all, the service will be provided by the same people that for a number of years could not go a day without an outage, and that were fined by the City of Fort Worth for their poor customer service. Nevertheless, I bit the bullet, found the Web site (http://charter.home.com) which only came on line recently, in spite of the fact that it's been several months since they made a mess poking holes in the neighborhood to pull fiber-optic cable. I found their Web page to contact them for more information. My initial attempt was met with a message that said their Web page could not accept my information. There's a confidence builder -- the people who I want to provide me with Internet service can't even keep their own Web site working. I did try again a couple of days ago and did manage to apparently provide them with information, including an e-mail address. Did I get an e-mail confirmation? Not yet.

**Getting there is harder than we thought...**

Technology waits. Or, we wait for technology. The Daguerrotype was invented in 1822, yet it was another century or more before photography became accessibly to the average consumer. High-speed networking has been around for a while, and hopefully, it won't be a century before Charter Cable responds to my inquiry. In the next year, we will see Cable companies and phone companies tripping over each other to establish market share in high speed networking. Neither, apparently, is ready. It's a high stakes contest, because whoever becomes established will end up providing an array of communication and media services. It is likely, that before long, phone, Internet, television, long distance, and a number of things we haven't thought of yet will be provided over one "wire." Whoever owns that wire can make a lot of money. However, if no one can provide adequate service, then I guess the future won't be as soon as we thought it might be. I guess we'll just have to wait and see.

*Comments, Questions? Send them to Philip Baczewski.*
List of the Month

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

Denton Online

Denton Online is advertised as "the complete online guide to our community." When you visit the Denton Online Web site (http://www.dentononline.com/), you'll be able to find a pediatrician or a new gift shop, or read articles written by local experts on health and fitness, home improvement, parenting, finances, and more. You can also volunteer to write articles if you think you have something to say to the community. Additionally, Denton Online provides information on such topics as:

- Current movie listings for area theaters
- TV listings with local channel guide and search capability
- Denton weather from the Denton Online weather station, located on the Square
- Searchable directory of area businesses
- Daily Horoscopes
- Message Boards
- Complete Events Calendar for Denton

When you visit Denton Online you have the option of registering. If you register at the site you will be able to:

- Post to Denton Online Message Boards
- Enter contests to win great prizes
- Join their (E-Mail) mailing list
This is an edited version of an article published in Benchmarks Online June, 1998. It compliments the article "10 Things You Need to Know Before You Call Yourself a Web Designer" in this issue. Mark didn’t have a chance to write an article this month due to his participation in the WebCT ’99 Conference at The University of British Columbia in Vancouver, B.C., Canada. He and Sharon Marek, Central Web Support Developer, gave a presentation on "FrontPage 98 Integration With WebCT." UNT is the first site to integrate FrontPage and WebCT. -- Ed.

By Mark Wilcox, Campus Web Administrator

Web Site Upkeep

I thought I would take this month to remind everybody that "doing" a Web site doesn’t stop with creation. No, Web sites are living, breathing environments that need periodic maintenance. Links to outside Web sites change or are removed, information (like area codes) on your pages change or needs to be updated and occasionally you need to restructure your site based upon user requests.

Verify Hyperlinks

If you are using Microsoft FrontPage, you can use the FrontPage Explorer, Verify Hyperlinks feature to automatically check your links for you. If that’s too time consuming or if you don’t have access to Microsoft FrontPage there are several free sites that provide checking for you. You can search for them yourself on the Web or go to the Central Web Support site and follow the HTML Resources link.

Check out either Dr. HTML or Net Mechanic for link and HTML verification. Please keep in mind that since these services are wanted by many and are free, they sometimes are blocked because there are too many people on the site.¹

Why didn’t I put anything on the UNT site for local use? Well basically these services provide a lot more expertise than I could hope to give you in any reasonable amount of time. I would love to have set something like this up, and perhaps at some point in the future we will. Unfortunately, even a Webmaster’s time is finite and the things to do aren’t.

Periodically Re-evaluate and Update Your Site

It’s also good to have a periodic review of how your site looks. Perhaps when you first started out you were excited by how easily you could add colors, images and animations to your site. But perhaps you did such a good job with the wild color scheme, nobody can read it.² Ask your co-worker’s, friends or my office for friendly advice on how to improve your site’s look and feel. We are not out to be Web cops and won’t suggest you never touch another Web page again (your friends might suggest something like that, but WE won’t!). We just want to make the UNT Web site the best university site on the Web.

Also if you have had staff rollover or contact information change in the past 6 months, please keep that updated. Not only for the "world" to know, but for my office’s help. We get many
questions asked of us. Some of them, we can answer, many we cannot. We try to forward these questions to the relevant department. If we cannot find an E-Mail address or if the message bounces it’s a question likely to go unanswered or answered incorrectly because we will try to pass it on to the office most likely to know.

So please put a contact E-Mail address on your pages. Also if you do get mail from an outsider asking for help, please respond. Even if you don’t know how to help them, either forward them to me (at www@unt.edu) or tell the person you don’t know. You will be surprised at how effective just replying to E-Mail can be in keeping our clients (whether students, faculty or potential students) happy can be. There is a company in New England that eclipsed $1 million in sales last year just over the Internet. This company does not make computer software or have a flashy Web page with the latest buzzword compliant gizmos. They make customized barbecue smokers. When asked for the secret of their success? They replied "We answer our E-Mail."

**Don't Forget . . .**

Don't forget that UNT publishing guidelines are on-line. And that we have a series of images for you to use on your page.

Until next time.

Mark

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1 More sites like these are mentioned in the "Free Web Help" article published last month.-- Ed.

2 See "Seven Deadly Sins of Web Design" for other things that can make your site less than ideal. -- Ed
**Short Courses**

By Claudia Lynch, Benchmarks Editor

Summer Short Courses started June 15. There is still time up to sign up for classes in SAS, S-Plus, Creating a Homepage with Netscape, Creating a Homepage with FrontPage, and WebCT Basics. These classes are all free for UNT students, faculty, and staff members. Follow this link for course descriptions and registration.

**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.

**Center for Distributed Learning**

The Center for Distributed Learning offers courses especially for Faculty Members. Topics include Windows 95, PowerPoint, Video Conferencing, and a series of classes concerning putting course materials on the World Wide Web using WebCT®.

The center 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. Each meeting is followed, for those interested in using WebCT®, by a one hour orientation for beginners in ISB 203. More information on these activities can be found at the Center for Distributed Learning Web site.

***Distributed Learning Crash Course***

**Who Is It For?** Faculty members interested in integrating technology with their classes to distribute their course content at a distance.

**Course Overview:** Basic steps needed to publish your syllabus, notes, PowerPoint presentations, and assignments on the Web, to communicate electronically with your classes, and teach using videoconferencing.

**When Is It Offered?** August 16-19, 1999
Check out http://www.unt.edu/cdl/dlcourses.htm for a detailed course schedule, course descriptions, and online registration. If you need additional information about the classes, contact Kim Crawford at 940-565-2708.

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 98 and information architecture in the past. For more information visit the Multimedia Development Lab's home page at http://www.library.unt.edu/mmdl.

Technical Training

Technical Training for campus network managers is available through the Campus-Wide Networks division of the Computing Center. Some of the seminars, such as one on disaster recovery/business continuity planning techniques, may be of interest to others on campus as well.

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 (Microsoft Office 97 and Windows 95) on the following topics:

- GroupWise 5.2 -- Handout for Win95/NT
- FAQ for GroupWise 5.2
- Info on GroupWise for Win3.1
- Computers - Back to the Basics
- Introduction to Windows 95
- Introduction to Word 97
- Advanced Word 97 - MailMerge It Together
- Introduction to Excel 97
- Introduction to PowerPoint 97
- Introduction to Remedy (THE Call-Tracking Program)
- Using Netscape Communicator and the UNT Home Page
Maurice Leatherbury reported that the DCSMT is still revising computer support position descriptions. They are also still working on the Microsoft Campus Agreement and are close to a resolution. The lowest vendor’s bid is in at just under $100,000. This vendor has proposed handling the distribution of software for home use, to faculty and staff, including the MS Operating System software. UNT is also considering having the CDs sold through the University Bookstore at a price of between $6.00 and $8.00 per CD.

Year 2000 conversion

Coy Hoggard reported that Year 2000 conversion efforts are progressing well. The testing of the centrally supported core of administrative applications is essentially finished except for some final testing that is in process by end-users. On the Voice Response Systems, since two-thirds of those units will not be fully functional after Year 2000, replacement equipment has been purchased. The new equipment should arrive in June, which will allow enough time to install and test it. The vendor, Brite Voice Systems, has been purchased by InnerVoice, which is a somewhat unsettling situation; but it is hoped that this will not present any problems.

General Access Labs

Jenny Jopling distributed copies of a request to standardize software on machines in General Access Labs. Beginning in Summer I, 1999, there will be a standard set of software installed...
on machines in the General Access Labs. All machines will be sound-enabled with sound jacks installed on the fronts of all machines; students can then bring their own headphones.

Wil Clark announced that the General Access Lab Managers meetings are held the second Friday of every month, at 10:00 a.m., in ISB 202.

**Communications Program Group**

Robert Pierce reported for the Communications Program Group that their committee has looked at bandwidth capacity concerns. They also looked at firewalls, and formed an advisory group to advise the Data Communications division on policies regarding firewalls. The group is also monitoring the schedule for the infrastructure upgrade.

**Administrative Program Group**

Joneel Harris reported that the Administrative Program Group has met to view a presentation by a group called Mobius on data storage and report distribution software. The software is of interest to administrative users on campus. It is a rather expensive project and further exploration and a cost benefit analysis is planned for the Fall. Another software package the APG has been looking at is Microsoft Net Meeting, which is an inexpensive method of contacting remote sites, and may be useful when the Southern Dallas and the University Center in Dallas are in operation.

Joneel also announced that they did not receive the grant they applied for to help fund the development of Web-based administrative applications. The feedback they’ll receive on their proposal will help to write a better grant proposal next year. The Web registration pilot project has gone well. Joneel stated that she will be taking a leave of absence this summer and Coy Hoggard will chair the Administrative Program Group in her absence.

**Assessment of Vulnerability**

Coy Hoggard added that the Department of Information Resources has asked UNT to do an assessment of its vulnerability to problems outside of its control, such as utilities, telephone, etc. Coy asked Ginny Anderson to speak on that issue. Ginny reported that her committee did a business impact analysis assessment, in which they identified several areas of vulnerability, such as utilities, central computing, etc. Fortunately, the time frame of the impact analysis is one in which there is little activity on campus, that being the first two weeks of January. By the end of the summer, it is hoped that all of the business continuation plans will be in place, as well as a plan for the cross-over team that will be in place on January 1st testing everything.

**Research Program Group**

Mark Rorvig reported for the Research Program Group that the application to NSF for an Internet 2 grant was declined. Also, the Research Program Group is in the process of electing a new chair.

**Standards & Cooperation Program Group**

Elizabeth Hinkle-Turner reported for the Standards & Cooperation Program Group that the committee is continuing to work on a recommended processes report and hope to be able to present it to the IRC within the next couple of months.
Distributed Learning Team

Patrick Pluscht reported for Distributed Learning Team that Central Web Support has recently upgraded the WebCT software which provides the Web-based course development platform. There are currently over 200 courses that are using WebCT on campus, involving well over 4300 students. The Center for Distributed Learning is currently offering a crash course in distributed learning techniques.

Telecommunications Infrastructure Grant

Maurice Leatherbury announced that UNT has been granted the Telecommunications Infrastructure Grant in the amount of $1,459,093. Funds will be available by July 1st, following some paperwork to set up the account.

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. An exception to that schedule occurred in March of 1999 when it met on the second Tuesday to accommodate the Spring Break schedule.

All meetings of the IRC, its program groups, and other committees, are open to all faculty, staff, and students.
Transitions

The following are new employees:

- Scott Bryant, Helpdesk Consultant (part-time).
- John Arns, Helpdesk Consultant (part-time).
- Joline Mills, Helpdesk Consultant (part-time).
- Corey Davidson, Clerical Assistant (part-time).
- Dhanyu Amrasinghe, Report Distribution Assistant (part-time).
- Amy Moreland, ACS Lab monitor (part-time).
- Srinivas Vemula, I/O Consultant (part-time).

The following people no longer work in the Computing Center:

- Randy Milholland, Documentation Services Assistant (part-time).
- Marlyn Banks, Data Entry Operator III.
- Michael Bradshaw, ACS Lab monitor (part-time).
- Kevin Joiner, Helpdesk Consultant (part-time).
- Kevin Lamonte, Helpdesk Consultant (part-time).
- Katherine McGraw, ACS Lab monitor (part-time).
- Neda Salahi, Campus Information Operator (part-time).
- Charina Tolentin, ACS Lab monitor (part-time).
- Travis Woodruff, ACS Lab monitor (part-time).

Other Changes

- As of May 21 the University Information Call Center (Campus Information Operators) began reporting to Leslie Bowden, the Telecommunications Manager, instead of Sandy Burke, HelpDesk Manager.

- Kory Booth, formerly a part-time employee in Mainframe Technical Support is now a full-time Computer Equipment Operator.

Awards, Recognition
• **Coy Hoggard**, Senior Director of Administrative Computing, was recognized as an outstanding employee at the Chancellor's Sack Lunch May 11.

**Publications, Presentations**

• **Mark Wilcox**, Campus Web Administrator, and **Sharon Marek**, Central Web Support Developer, gave a presentation on "FrontPage 98 Integration With WebCT" at the WebCT '99 Conference last week. The conference was at The University of British Columbia in Vancouver, B.C., Canada. UNT is the first site to integrate FrontPage and WebCT.
Campus Computing News

By Dianna Mullet, Lead UNIX Systems Administrator

Dr. Leatherbury took some time off this month. -- Ed.

UNT Joins USENIX

The Computing Center has renewed UNT's University-wide annual memberships to USENIX and SAGE. For those who are not familiar with USENIX, it's a technical interest group that focuses on practical problem-solving, fostering innovation and research that works, rapidly communicating the results of both research and innovation, and providing a neutral forum for exercising critical thought and airing of technical issues.

SAGE (System Administrators Guild) is a Special Technical Group (STG) of USENIX. SAGE was organized to advance the status of computer system administration as a profession, to establish standards of professional excellence, develop guidelines for improving the technical and managerial capabilities of members of the profession, and to promote activities that advance the community of system administrators.

SAGE sponsors a local Dallas/Fort Worth chapter, DFWSAGE. DFWSAGE is co-sponsored by the University of Texas at Dallas and includes a UNT staff member (yours truly) on its executive board. As a local chapter of USENIX/SAGE, DFWSAGE was created to foster the collaboration of knowledge and experience of network and system administration in the North Texas area.

DFW SAGE has a new special interest "birds-of-a-feather" (BOF) group for women who hold positions as system administrators in the Dallas/Fort Worth area. The group provides a forum where women can openly discuss issues that are unique to women with careers in system administration. DFWSAGE sponsors a mailing list for the BOF, dfwsage-bof-woman@utdallas.edu. To subscribe to the list, send a message to majordomo@utdallas.edu with "subscribe dfwsage-bof-woman" in the message body. Please pass this information on to your female system administrator friends!

For more information on the USENIX and SAGE member benefits that are extended to the UNT community, see http://www.usenix.org/ (I am the point of contact for benefits that require a "designated member" - send E-mail to dianna@unt.edu). For information on the DFWSAGE technical group and how to join, visit http://www.utdallas.edu/orgs/dfwsage/.
Virus Alert!

By Wil Clark, ACS General Access Lab Manager and Campus Virus Guru

Big news or slow news day?

The last several months have been wrought with virus threat headlines. Since Melissa received so much media attention, news agencies' appetite for major computer virus news stories has caused a certain hysteria amongst computer users. Don't get me wrong, computer viruses do pose a very real threat. But reason and sensibility should prevail. If you adopt a sensible procedure to protect yourself you can grin at the late breaking virus news instead of panic.

First, be suspicious of every file sent to you via electronic means. Simply scan it before you open it. Even if you add up the fraction of a second it takes to scan each and every file you receive from others it will not be greater than the time it will take to recover from a virus infection.

Second, scanning for viruses with a scanner that is over a month old is useless. New viruses are discovered weekly. Update your virus definitions as often as the publisher makes update available.

Finally, learn and understand your Virus scanning software. The more you know about it the easier it is to use. Understanding how it works also gives you peace of mind that you are doing all you can to protect yourself from infection.

But what about the new virus that has no detection or disinfection solution? Well, to get a bleeding edge infection you must be doing some bleeding edge (and careless) information gathering. Again, reason should prevail. If you receive unsolicited electronic information from an unknown source, do not open it. Good judgement works best here. If you are downloading research or product information from a recognized authority you will likely be okay. If someone you have never chatted with on-line tells you they have a "kewl" new program to look at, think again.

Happy virus scanning.
Doing it in the Open

By Kevin and Dianna Mullet, Data Communication Security Analyst and Lead UNIX Systems Administrator, respectively <TheMullets@UNT.edu>

The greatest common denominator for nations has become their attachment to the Internet. The success of the Internet is due to it's openness — use of open protocols by open source in open systems. As the open source model pushes out the monolithic commercial model, the essentials of the open source movement bear examination.

What's open source?

A now-famous discussion on open source is Eric Raymond's paper, "The Cathedral and The Bazaar" [1]. In that paper, which played a pivotal role in convincing Netscape to open the source to Navigator and start the Mozilla project, Raymond defines two models of software development: the cathedral and the bazaar.

In the cathedral, software is written by a small band of high-priests who use proprietary tools and methods to come up with still more proprietary tools and methods. Maintenance of the privacy of intellectual property is the highest goal, and the users are only given access to that which this high priesthood deems necessary. Software is more often than not, a black box implementing the latest marketing goal. The single greatest flaw of the cathedral is it's software development through inbreeding tendencies. By restricting the development team to employees of one or two companies, the cultural flaws of those companies are genetically inherited in any software they give birth to.

In the bazaar, collaboration on software takes the form of a marketplace of ideas in which peer review and the users determine inclusion or exclusion of code from the final product. In the cathedral, the administrative structure of the company who owns the product determines the shape of the final product. The cathedral is like a FORTRAN program – the bazaar is like a neural network.

The political equivalent of the bazaar is the United States. The real reason why the US is so economically and politically powerful is not in the size of the population, or in the amount of natural resources, but in the diversity of the population. So it is with the bazaar. In Linux, for example, by delegating components of Linux development to highly-motivated members of the net brain trust, the work not only got better faster than in the cathedral model, but the diversity of the collaborators yielded a degree of peer review that ironed out problems much more efficiently than when relying on internal “black box” support and damage control mechanisms.

The positive effect of the open source movement on the software industry cannot be understated. The open source movement is analogous to the Gutenberg printing press. After the advent of this movement, anyone connected to the net has access to the same quantity and quality of software as anyone else, including service providers, throughout the world.

A more specific definition of open source can be found at the Open Source
Doing it in the Open

Initiative site, http://www.opensource.org. The major tenets of their open source definition include things like free distribution; a requirement that source code as well as binary end-user code must be included in the distribution; that modifications and derived works are permissible under the terms of the original license; that the integrity of the original author(s) code may be preserved only if provision is made for building on that code by some means, such as patches or successive version numbers; no persons or groups, such as users of or even originators of competing software, may be distributed against in the code; and a prohibition on discrimination against other fields of endeavors, so open source software created by a Greenpeace initiative can be fairly used (within the idea of open source, at least) to advance the cause of clear-cut deforestation or robotic whaling and seal hunting.

Contrary to popular belief, although a vast amount of open source software originates in the UNIX world, the PC and mainframe cultures have definitely played a significant role in shaping the movement.

Before the Microsoft Winsock API was developed, back when DOS was more prevalent than MS-Windows, FTP Software Inc. open-sourced the packet driver API, spawning the creation of many multiplexing protocol drivers for PC network interface cards. Before the packet driver spec, a PC could usually only do one protocol stack at a time, so if you wanted to telnet to a host while using a Novell file server you were frequently just out of luck.

The history of both UNIX and VM [2] is replete with instances of bazaar/cathedral cross-pollination. On the VM side, things like CMS PIPELINES, VMNET and the Webshare Web Server were all developed in academia and snarfed up into various commercial cathedrals. Neither UNIX, nor the Internet itself, would exist in its current form and quality if it weren't for the Berkeley additions to the open sourced UNIX code that added high-quality Internet networking to the operating system's core components and tools. Indeed, practically all IP networking stacks are based on the early Berkeley System Distribution code.

Big Deal!

More than just a different kind if licensing agreement, the open source idea represents a way of delivering high quality, security, support and interoperability to anyone who needs software, as long as they're on the net. How often is open source software uniformly better than its closed-source counterpart? That depends a lot on your application.

If you're looking for core Internet software like a Web or DNS server, or an operating system, chances are you can find software that is every bit as good as 95% of the closed-source alternatives, and occasionally better than all the alternatives. If you're looking for a replacement for your standard office automation or groupware product, it might be a little harder to fit the bill. Here are some open source successes:

- The original open source products were operating systems, and a variety of open-source operating systems are available for downloading, the two most popular of which are Linux (http://www.linux.org) and FreeBSD (http://www.freebsd.org). In recently submitted court documents, Microsoft claimed that in certain markets, Linux is outselling
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Windows98. This statistic is fluff and meant to confuse, but the fact that Microsoft is targeting Linux as their primary competitor, and the existence and content of the Halloween documents, in which Microsoft acknowledges the threat of open source and outlines a strategy for derailing it shows that open source is a force to be reckoned with.

- As of this writing, more Web sites use the open source Apache product than any other Web server [3]. Apache has just over 56% of the server market, followed by Microsoft IIS at 22.33% and Netscape Enterprise at 5.65%. Apache is a typical open-source product. The name was arrived at because it was originally a highly patched version of another open source Web server from the National Center for Supercomputing Applications, NCSA. The folks who assembled all these patches to present a “patchy” Web server, eventually replaced all the NCSA code, surpassing the quality of the NCSA server, which was one of the first commonly-popular Web servers run throughout the Internet.

- Sendmail, another open source product, is by any definition as important to the overall Internet E-Mail infrastructure as Cisco routers are to the routing infrastructure. It's only on rare occasion that sites use anything BUT Sendmail as a Mail Transport Agent -- a kind of E-Mail equivalent of a railway switching station. Its legendary flexibility wouldn't have been possible without following the classic “writing software to scratch a particular itch” model of open source. Eric Allman, its author, wrote Sendmail's precursor, Delivermail, as an E-Mail transport mechanism between three somewhat disparate networks at UC Berkeley. Feature after feature followed, and we have the Sendmail we have today.

- Perl is another example of an early open-source ugly duckling that grew into a swan. Larry Wall wrote perl to amalgamate the features he had and liked in such UNIX standard utilities as sed, awk and grep, and those he wanted and didn't have, which were forcing him to write compiled programs in C when a simple scripting language would be preferable. Today, next to C, perl is probably the most popular programming language on the planet.

What do I get out of it?

- Quality. Open source software is, in most cases, of very high quality. The open source community is very picky -- software that is not well-written or deviates from open standards will be rejected. In many cases, open source software is developed as a long term project by a University to meet the needs of their own community and then released to the public after it is a determined success.

- A cheaper product. It's free, and you can attain it immediately -- making it unnecessary to go through a purchase cycle that occasionally lasts longer than the lifetime of the product you've ordered, forcing you to start from scratch and re-order because the item you originally ordered doesn't exist anymore.

- Better security. This might sound odd, because not a week goes by that you don't hear from CERT or BUGTRAQ about a security exploit in an open-source product, but a primary difference here is that when flaws are
found in commercial products, the response is spin and damage control. When flaws are found in open source, they are frequently reported along with a fix, or the fix is supplied in very short order (sometimes only hours later) by one of the programmers responsible for writing the product.

- **Better hardware.** What money you don't spend on software licenses can be redirected at upgrading hardware.

Last but not least, you promote and empower the single greatest nation in the world -- the one without borders -- the Internet. Each time you put open source and open standards to work, you promote the movement. If you go one step beyond that and ask for support, report a bug, make a suggestion or contribute an improvement, you've joined the great inner circle of the net brain trust and have put another nail in the coffin of the prosaic legacy model of software licensing and system design.

**How do I do it?**

- Give open-source solutions an even chance with commercial ones. You'll often find that the open source solution meets your requirements, is more widely used, and is more readily supported than the commercial alternatives. Support for open source software is free and includes mailing lists, Usenet groups, FAQs, and often the archives of lists and newsgroups.

- Learn UNIX. Right now, UNIX is where it's at in the open source movement. Learn it if only to have a good point of reference against which to compare all the other systems you know.

- Become agNOStic. Let go of your operating system bigotries. Look at all the ways that, using open systems, all the Macs, PCs, Mainframes, UNIX boxes and just about anything else can work collaboratively and stop wasting time with religious wars over platforms.

- Read newsgroups and mailing list archives related to your field. Also give special attention to ones related to standards and source distribution and discussion.

*The box* is a shrink-wrapped model of commerce that no longer fits the bill.

Think outside the box.

**Footnotes**


[2] Probably the best non-UNIX treatment of the phenomenon that the best software on the net has been done in people's spare time, at least until recently, is in Melinda Varian's seminal paper, “VM and the VM Community: Past, Present, and Future”, found in various formats on her home page at [http://pucc.princeton.edu/~melinda/](http://pucc.princeton.edu/~melinda/)

10 Things You Need to Know Before You Call Yourself a Web Designer*

By Sharon Marek and Kenn Moffitt, Web Developers UNT Central Web Support

HTML

HTML (HyperText Markup Language) is not a programming language. It's not even a scripting language. It is a markup language, and there is no substitute for understanding how it works. There are many Web editing programs on the market now that insulate designers from HTML -- and that's not always bad. Never hand coding a nested table again is a wonderful thing. But even the best Web editing programs have minor problems implementing HTML.

You don't need to hand code your entire Web site. You don't even need to know how to hand code your entire Web site (though I'd still recommend it). You do need to know how to find the problems in the code, and how to fix those problems. There are many HTML books and several Web sites, like http://werbach.com/barebones/, to help you learn. Once you know the code, you'll be amazed at how many problems - impossible to fix in the editor - can be fixed easily with a minor adjustment of the HTML.

Graphic design

Graphic design can make or break a Web site. In fact, the Web as we know it didn't really gain popularity until the Mosaic browser introduced image elements to the Web. But there are a few things that you should know about the use of images. Most important, you should know when to create a GIF or a JPEG and the difference between the two.

A GIF (Graphic Image Format) file contains a palette of 256 unique colors. As a rule, the smaller the number of colors in the image, the smaller the download. A GIF can also contain one color that can be rendered transparent in the browser. The downside of using a GIF is that you are limited to 256 colors. Once you subtract the colors that your browser and the Windows system need, you only have 216 colors of the palette that can display accurately on a 256 color monitor. Luckily, there is a 216 color Web safe palette that you can use to create your images. The Web safe palette is offered at Lynda.com

A JPEG (Joint Photographic Experts Group) file is not limited to the 256 color palette. JPEG is a true color image format and can contain up to 16,777,216 colors. A larger number of colors indicates a larger file, but some image editors can compress JPEG images by accurately recording the brightness of each pixel but averaging out the hues, which our eyes distinguish less accurately. Always save the original version of the image in a lossless format such as a BMP, TIF, or PICT, because a JPEG is an interpretation of the image and not a actual recording of the literal composition of the image. If you save an edited JPEG as a JPEG, you are really creating a copy of a copy, and the image will degrade in...
10 Things You Need to Know Before You Call Yourself a Web Designer

Content Design

The individual(s) that design a Web site are often not creating the content for that site. But designers are still responsible for the organization and layout of the content. Ensure that the content is Web appropriate -- if you are handed the equivalent of a 20 page paper, you may want to break it up into smaller pieces with direct access to each piece, while also providing a link to a printable version that contains all 20 pages.

Use a consistent layout for the content -- change font, color and style only when necessary. (Few things scream "novice" louder than a dozen fonts with two dozen colors on a single page.) Organize the content by subject, by author, or whatever organizational scheme suits the material. Do not spend all of your time on the graphics and navigation! Make the graphics appropriate to the content, and organize the navigation around the content.

Navigation Design

The best way to design the navigation of a Web site is very low tech -- make a flow chart on a piece of paper. Create (if you haven't already) categories, and subcategories, and assign your content to the appropriate spots. Once you have it all mapped out, ask a lot of end-user questions to see how well your navigation design flows.

Questions to ask include: 'How do I get from the middle of the Blue Widgets to the Red Widgets?' 'How many 'clicks' are there between the home page and the information I want?' 'Can I get to the home page from anywhere in the site?' (Remember that visitors to your site won't always come in the front door. Search engines, for example, are notorious for depositing visitors in the 2nd or 3rd level of a site. Make it easy for them to find your home page.)

Apply your navigation consistently. Choose the best spot on the page (the left margin? repeated at the top and bottom of the page?) and then get together with the graphic designer(s) to ensure that the navigation looks and feels like the rest of the site.

Cross-browser Compatibility

Web pages can display differently in different browsers (like Netscape and Microsoft) and in browser versions (Netscape 3.0 and Netscape 4.0). As mentioned above, an understanding of HTML is vital. Different browsers and browser versions offer different challenges when designing a Web page. For example, if you were to add a <bgsound> tag to a Web page to play a background sound, the tag would be ignored completely by Netscape browsers. If you were to add the <layer> tag to create divisions in a Web page, only Netscape 4.0 or above would recognize the tag. All of the other browsers would ignore the tag and display the contents in a jumbled mess.

With the popularity of Web editing programs such as Microsoft FrontPage or Macromedia Dreamweaver, an understanding of HTML is more important than quality.
ever. These editors make it easy to design a Web page. If you don't understand the HTML these editors are writing, you can easily create a page that cannot be viewed by all browsers across the Web. You can actually create pages that crash the browsers of users that are not using the targeted Web browser. Testing your pages on multiple browsers on multiple machines is the best way to to avoid these problems.

**Color on the Web**

Probably the most common novice Web design mistakes involve color. You can use so much of it -- in so many places -- that you end up with garish, distracting, hard-to-read pages. For great color on the Web information, visit the [Color Test Results](http://www.unt.edu/benchmarks/archives/1999/june99/design.htm) page, a survey designed to measure the readability of various text/background color combinations. (Black text on a white background was rated the best, red text on a green background was rated the worst.)

It's often difficult to know what colors will look good with other colors, particularly when considering the disparity from browser to browser and platform to platform. [Visibone](http://www.unt.edu/benchmarks/archives/1999/june99/design.htm) presents the Web-safe palette (arranged symmetrically by hue), and allows fast and easy viewing of user defined color combinations.

**Publishing Mechanisms**

Creating and producing the Web content is not the end of Web site creation. A Web designer must understand the mechanisms of transferring the content to the Web server. (A Web server is the computer that serves the Web pages to the Internet.) The Web server will be hosted by an Internet Service Provider (ISP), which can be inside or outside the company generating the content. The ISP will decide the mechanism or protocol used to transfer your Web pages to the server. Most ISP's offer the File Transfer Protocol (FTP).

FTP is simply a way to transfer your files from a local computer to the host computer. The ISP will provide you with the location (name) of the server and your password and user ID. You can use a program like Fetch or WS_FTP to connect to the FTP server and transfer your files. When transferring the files, you will need to choose whether you are going to upload binary (image) or text (html) files. If you upload image files as text, or vice-versa, problems can occur. Most FTP programs can automatically detect the type of files being uploaded.

Microsoft FrontPage allows file transfer to a Web server using its own protocol. In order to use the FrontPage Explorer and its transfer mechanisms the FrontPage extensions must first be installed by the ISP on the Web server. Again, you as a designer don't have the choice. The service provider has either installed the FrontPage server extensions or has not. But when creating a Web page with FrontPage, there are several easily added components that require the FrontPage Server Extensions. Components such as the counter, themes and navigation, search capabilities, and forms need the server extensions to run correctly. Always ask if the extensions are supported before you use these FrontPage components in a site.
**Division of Labor**

There are lots of titles for Web professionals, and you need to be able to match the title with the responsibilities. This is a new field, and the lines between job descriptions are blurred. A few individuals can do it all, and many perform a combination of these functions.

Generally, Web jobs break out into 5 categories:

- **Webmaster**: implies administration of a Web server (and often the machine the server runs on).
- **Web Developer**: indicates some level of programming - database designers, Java or CGI programmers, etc.
- **Web Designer**: creates the overall look and feel of a Web site -- coordinates and participates in the design of site navigation, graphics and content.
- **Content Creator**: generates the content of a Web site -- be it advertising copy, marketing materials, news items, or scholarly articles.
- **Site Maintenance**: the unsung Web workers -- updating links, E-mail addresses, and making small changes in content and navigation.

For another view on the division of labor, see Dan Shafer's column at [http://www.builder.com](http://www.builder.com)

**Java Is Not JavaScript**

In the classes that we teach, there is usually someone who asks why we don't cover Java or JavaScript. Java and JavaScript can be used by experienced Web developers to add special effects and functionality to a page. But more important to the novice designer, Java and JavaScript are not the same thing at all. If you want to use the new technologies, you must learn about them first.

Java is a object oriented programming language based loosely on C. Java programs can run in the browser but can also run as stand alone programs (if compiled to do so). Java was touted as the next step in Web page development. Client-side Java has yet to live up to the hype, as its slow on the client-side and not totally reliable in all browsers and versions. Developers can use server-side Java programs that are quicker and more robust.

JavaScript is a scripting language that extends Web page functionality. JavaScript has no relation to Java. Using JavaScript, you can dynamically change DOM (Document Object Model) properties. JavaScript be used to create Dynamic HTML that allows the page to change based on events without the page having to download again.

The point is that new technologies have to be researched and understood completely before they are implemented in a mixed Web audience. If you can control the browser and system that your users will access the Web site with, then the risks of using these technologies can be greatly reduced.

**Maintenance**
Many Web designers create a page or a series of pages for a Web site and consider the job complete, but the creation of a site's contents is just the beginning of the life of that Web site. There will be minor corrections and new information to deal with on a daily basis for busy Web sites. In short, the Web site that you create will have to be maintained, and site maintenance is not usually part of the designer's job. You must be aware of the skill level of the people who will maintain the site. The designer should ensure the appropriate level of complexity for quick and easy maintenance, and be prepared to train the clients in the technologies necessary to maintain the site. [See this month's "WWW@UNT.EDU" column for more information on site maintenance.]

* Skills in Web design and research are starting to pay off big, even for people just entering college. According to PCWorld, "universities and private organizations are awarding scholarships to students with skills in Web research and design."
UNT Links

Compiled by Claudia Lynch, Benchmarks Online Editor

Once in awhile we like to highlight UNT Web sites that are of general interest to the campus community but may have escaped your detection. Listed below are some sites/pages that you may have missed.

- **UNT News and Events** -- This is the UNT News Service page. Things posted here are frequently associated with sources of funding, big expenditures, large gifts etc. Also covered are events that will be of interest beyond the Denton campus. For example, the item "UNT offers online access to rare graduate degree" highlights the fact that UNT's School of Merchandising and Hospitality Management is offering one of the nation's first online master's degree programs in merchandising.

- **Printing Services and Copy Centers** -- Everything you need to know about the services available from these departments can be found from this page. Did you know that you can send things to be copied via GroupWise, the Internet, etc.? They also accept material on 3 1/2" disks and zip disks.

- **Student Health Center** -- All kinds of important information is available at this site geared especially to students. There is even an online form for prescription refills.

- **Events Calendar** -- Dates for major Metroplex and university-wide events are listed here. The purpose of this site is to aid you in planning an event so that it won't be conflicting with other events on campus or the Metroplex. Metroplex events will include miscellaneous events in Denton, Bass Performance Hall in Fort Worth, Meyerson Center in Dallas, Texas Motor Speedway and Majestic Theatre in Dallas.

- **Calendar** -- This is the calendar of events for the rest of us. Things like workshops, courses, conferences etc. are posted here. Some of the things listed here may also appear in the Events Calendar above (like various athletic events), but not most.

- **Employment Bulletin** -- Human Resources keeps this page up-to-date with the latest staff vacancies. There are currently quite a few computer-related positions:
  - PROGRAMMER ANALYST III (Computing Center)
  - PROGRAMMER ANALYST III (Computing Center)
  - PROGRAMMER ANALYST II (Academic Affairs)
  - COMPUTER SUPPORT SPECIALIST IV (College of Arts and Sciences)
  - UNIX SYSTEM ADMINISTRATOR (Computer Science)
- PROGRAMMER II (Computing Center)
- PROGRAMMER I (Computing Center)

- **Campus Chat Food Court** -- Hungry? This could be the site for you. Hours of operation and daily specials are listed on the menu page.

- **University of North Texas Press** -- According to their Web page, the UNT Press has over 140 titles currently in print, with special emphasis in the areas of Texana, folklore, and multiculturalism. Various series are also published, including the Vassar Miller Prize in Poetry, and Publications of the Texas Folklore Society.

- **Mail Services** -- All sorts of information is available at this site for both intra- and inter-campus mail.

- **Employees Retirement System of Texas** -- Not exactly a UNT link but one that is definitely worth bookmarking if you are in ERS and/or use insurance supplied by UNT.