



[CITC Home](#)

[Help Desk](#)

[Training](#)

[About Us](#)

[Publications](#)

[Our Mission](#)

Volume 10 - Number 2 * February 2007

Columns

[NetworkConnection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[IRC News](#)

[RSS Matters](#)

[www@unt.edu](#)

[Short Courses](#)

[Staff Activities](#)



UNIVERSITY OF NORTH TEXAS
CELEBRATING DENTON'S
SESQUICENTENNIAL

Campus Computing News

[Central IT Service Outage Scheduled for Feb. 24, 2007](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon:
Teach & Meet *Live Online*](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

TODAY'S CARTOON

[Don't forget our monthly
Columns!](#)

 [About
Benchmarks](#)

 [Search
Archive](#)

 [Subscribe to
Benchmarks](#)

[Return to top](#)

UNIVERSITY OF NORTH TEXAS™

[Network Connection](#) | [Link of the Month](#) | [IRC News](#) | [RSS Matters](#) | [Helpdesk FYI](#) | [Short Courses](#) | [Staff Activities](#)

[Computing and Information Technology Center Home](#) | [Help Desk](#) | [Training](#) | [About Us](#) | [Publications](#) | [Our Mission](#)

Questions, comments and corrections for this site: lynch@unt.edu
Site was last updated or revised : June 15, 2007

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search **Benchmarks Online** - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[UNT home page](#) | [Search UNT](#) | [UNT news](#) | [UNT events](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks](#)

Campus Computing News

Central IT Service Outage Scheduled for Feb. 24, 2007

By [Dr. Philip Baczewski](#), Director of Academic Computing and User Services

A number of central Information Technology services will be unavailable for a time period from 7:00 p.m. February 24, 2007 until 7:00 a.m., February 25, 2007. The outage will be caused by major renovations to the electrical system supporting the machine room that hosts most of the central IT services. This work will result in a more stable and reliable electricity source, but will require some downtime in order to achieve that goal.

Starting at 7:00 p.m. or slightly sooner on February 24, the following services will be unavailable:

- my.unt.edu (EIS Portal)
- myls.unt.edu (EIS Portal)
- myfs.unt.edu (EIS Portal)
- webct.unt.edu (WebCT Vista)
- eaglemail.unt.edu (EagleMail web client and IMAP access)
- untss.unt.edu (UNT Student Storage)
- www.unt.edu (UNT top-level Web pages)
- remedy.unt.edu (Remedy call-tracking system)
- checkin.unt.edu (General Access Lab check-in system)
- neptune.acs.unt.edu (Legacy e-mail access server)
- terra.acs.unt.edu (Class web development server)
- people.unt.edu (Personal Web-page server)
- ACS High-performance compute clusters

Internet access to and from campus will be available, and plans are for mail routing and GroupWise E-mail to remain available during this outage. In order to minimize the impact, this work is being done during the time set aside for EIS maintenance and during our lowest typical usage time period during the week.

[Online](#)

All services will be restored once the electrical renovation is complete. This will occur starting at 7:00 a.m. on February 25, 2007 at the latest. If work is completed sooner, some systems will be available sooner. Because of their large number of components, [ACS HPC systems](#) will be shut down on Friday afternoon, February 23, and will have service restored on Monday, February 26. **CITC Helpdesk hours will be extended to 8:00 p.m. on Saturday and will start at 7:00 a.m. on Sunday in order to support any special communication or problem reporting needs resulting from this outage.**

Questions or comments about this down time can be directed to Dr. Philip Baczewski (baczewski@unt.edu), Director of Academic Computing and User Services, UNT CITC.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)
[Campus Computing News](#)
JAWS 8.0 Has Arrived!
[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)
[Getting WebCT Vista Help](#)
[Daylight Savings Time Issues and Concerns](#)
[EIS Campus Solutions 8.9 Upgrade Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network Connection](#)
[Link of the Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to Benchmarks](#)


JAWS 8.0 Has Arrived!

By [Dr. Elizabeth Hinkle-Turner](#), Student Computing Services Manager

JAWS 8.0 has arrived and all licensing and metering configurations have been tested and concluded. It is now ready for deployment across the UNT campuses. According to the [Freedom Scientific Website](#), this latest version of JAWS features:

- A more natural sounding "realspeak Solo" synthesized voice which makes listening to longer texts a much more pleasant experience,
- The remembering of the last twenty web searches which can be accessed via a dropdown list,
- Better support for Internet Explorer 7 and better support for dynamically-changing web pages.
- AOL Instant Messenger 6.0 support.

Other enhancements include better user-created controls and better reading of footnotes and endnotes. If you already have JAWS 7 installed on a workstation, upgrading to JAW 8 is as simple as putting the CD-ROM in the machine drive and running the installer (no need to remove JAWS 7 first). The application is automatically upgraded and the licensing is set up and taken care of too. If you have not previously installed JAWS on a machine and are starting from scratch, the instructions for installation can be found in [this previous Benchmarks Online article](#).

JAWS 8.0 CDs can be picked up at Elizabeth Hinkle-Turner's office located in ISB 129.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu>. You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Online](#)

[Return to top](#)

[Skip Navigation Links](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

Web Conferencing Tool on the Horizon: Teach & Meet Live Online

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks Online](#)

Web Conferencing Tool on the Horizon: Teach & Meet *Live* Online

By [Jane Himmel](#), Associate Director, Center for Distributed Learning

UNT has purchased a license for Horizon Wimba's Live Classroom, a web conferencing tool that enables users to meet online in a "virtual classroom" using voice video, text chat, whiteboard, polling and application sharing. Users need only a computer (PC or Mac), Internet access and a headset (or speakers and a microphone) to participate in a Live Classroom session. A set-up wizard helps users configure their system settings before joining a conference.

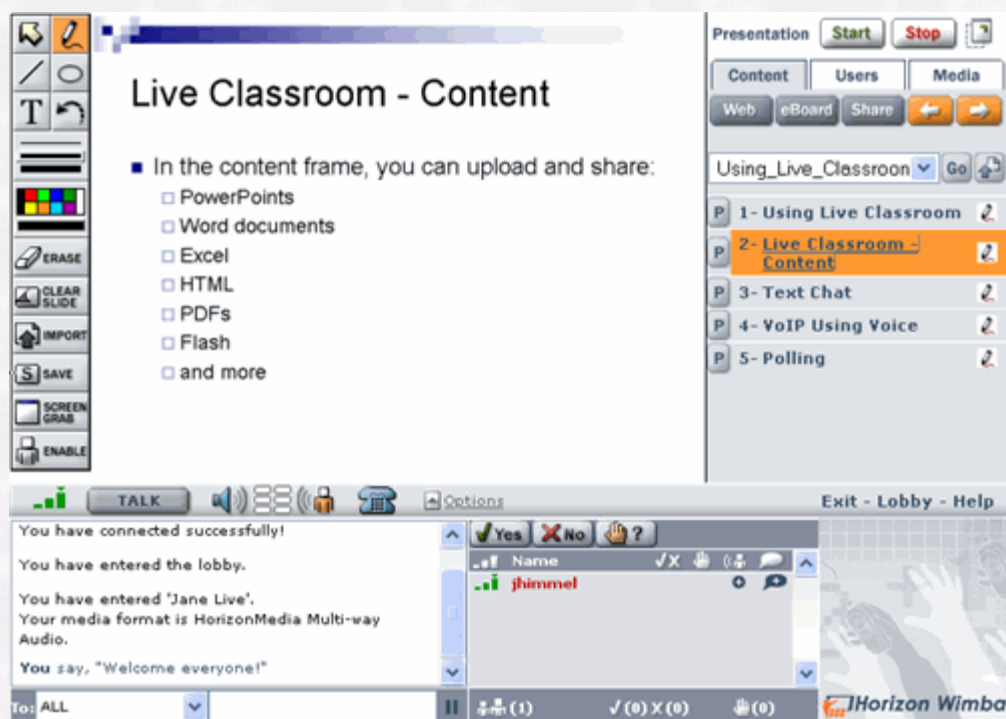


Figure 1. Screenshot of Live Classroom presentation window with PowerPoint file uploaded to the content area. This area can also be used with the whiteboard tools and application sharing.

Who Should Use Live Classroom?

While the software was designed with the online learning environment in mind, Live Classroom meets the needs of a variety of users. It provides faculty who teach online with a new way to promote interaction and collaboration in class. Instructors who teach face-to-face can extend class discussion beyond the physical classroom, host guest lecturers, and conduct office hours. University

staff may wish to use Live Classroom for meetings with participants at different geographic locations or when a physical meeting room is unavailable. Additionally, Live Classroom is currently the only software of its kind that is accessible to the hearing and visually impaired. (See [Accessibility of Live Classroom](#) at the product Web site: <http://www.horizonwimba.com/demos/archived.php?archiveid=181>.)

Overview of Features

- Multi-way audio allows presenters and participants to communicate by voice using VoIP (Voice over Internet Protocol). Users without microphones have the option to use a telephone dial-in number.
- Text chat provides an alternative for users who prefer to communicate by text.
- An electronic whiteboard enables participants to work out problems visually or hold brainstorming sessions in real time.
- A polling feature allows presenters to survey participants during the session and instantly display results on screen.
- A content sharing space allows presenters to display documents in a variety of formats including PowerPoint, Word, Excel, HTML, web pages, images, movie clips, PDF, and Flash.
- Application sharing enables presenters to demonstrate other software applications or Web sites. Presenters can also pass control to participants, encouraging practice and active participation.
- Archiving enables the presenter to save live sessions for later review.

When Will Live Classroom Be Available?

Instructors using WebCT Vista can access Live Classroom now within Vista courses. Staff and faculty who do not use WebCT Vista will access Live Classroom from a public login page on the Web following pilot testing later this spring.

Training

Horizon Wimba provides free demos and training on Live Classroom. To view a 3-minute demo or register for an upcoming live demo, please visit the Live Classroom product page at <http://www.horizonwimba.com/products/liveclassroom/>.

Faculty and staff interested in learning to use Live Classroom should register for Presenter Training 101 by visiting Horizon Wimba's Public Online Training page at: <http://www.horizonwimba.com/support/liveclassroom/training.php>.

For questions about Horizon Wimba's Live Classroom or to participate in the pilot, please email Jane Himmel. (jhimmel@unt.edu).

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Skip Navigation Links](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks Online](#)

Getting WebCT Vista Help

By [Rita Knoblock](#), Learning Management Support Specialist, Center for Distributed Learning

Do you occasionally experience problems with WebCT Vista? Do you feel like you need "technical support" but don't know where to turn? There is help!

Whether you have trouble logging in, cannot submit an assignment or quiz, or have encountered some other problem in WebCT Vista, the first step should be to contact the [CITC Helpdesk](#).

The CITC helpdesk can assist students in resolving many common issues right away. If a problem is in the course or is a system wide issue, the helpdesk documents the problem and forwards all of the required information to the proper group so that they can get the issue resolved as quickly as possible. You should be given a [Remedy](#) ticket number when you report a problem to the student Helpdesk.

If you are a faculty member helping a student, and have any questions concerning the Remedy ticket or the problem that the student reported, feel free to call the Faculty Helpdesk at 940-369-7394 or e-mail us at vistafac@unt.edu and we would be happy to look up the information for you.

The CITC Helpdesk offers phone, e-mail and walk-in support:

Phone: 940-565-2324

Email: vista@unt.edu

Walk-in: ISB 119

Also, be sure to check out the new and improved CITC Helpdesk Web site: <http://www.unt.edu/helpdesk/>

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)
[Campus Computing News](#)
[JAWS 8.0 Has Arrived!](#)
[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)
[Getting WebCT Vista Help](#)
[Daylight Savings Time Issues and Concerns](#)
[EIS Campus Solutions 8.9 Upgrade Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network Connection](#)
[Link of the Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to Benchmarks Online](#)

Daylight Savings Time Issues and Concerns

By [Claudia Lynch](#), Benchmarks Online Editor

Last month we published an [article](#) by Brian Richman, EIS Technical Services Team, titled "Daylight Savings Time Zone Changes." As Richman noted, beginning this year ". . . the daylight saving time (DST) start and end dates for the United States will change to comply with the [Energy Policy Act of 2005](#). This means that the dates when DST changes in the United States will start three weeks earlier (2:00 A.M. on the second Sunday in March [March 11]) and will end one week later (2:00 A.M. on the first Sunday in November [November 4])."

What does this mean for you?

Basically, what it means is that everyone who owns a computer and/or mobile devices such as BlackBerry, Treo, Windows Mobile etc. could have system clocks that are an hour off. Microsoft has set up a [Daylight Saving Time Help and Support Center](#) that explains the potential problems and offers solutions for Microsoft users. As noted on the site:

Unless certain updates are applied to your computer, it is possible that the time zone settings for your computer's system clock may be incorrect during this four week period. This depends on where you live and which time zone you have selected. To see the time zone settings on your computer, follow [these](#) directions.

When your time zone settings are incorrect your clock may be off by one hour, and certain applications running on your Windows based computer may not display the correct time. To address this, Microsoft is providing many free updates and tools that will update your system automatically.

While the change in daylight saving time applies to U.S. and Canada, the change may impact customers based outside North America. Companies or organizations with operations, customers or vendors based in North America may be affected. In addition customers who interact or integrate with systems that are based in North America or rely on date/time calculations may be impacted. Customers who live outside North America and yet are impacted should follow the guidance provided on this site to prepare for the adjusted daylight saving time.

Please note that Mexico will not be following the new DST 2007 rules with the U.S. and Canada. Accordingly such systems configured to use U.S. time zones (for example, Pacific Time) will need to change their system configurations to use the new Mexico time zones.

CITC and distributed support staff are working to make sure all campus workstations and servers have updated software, but of course they won't be coming to your homes and updating your computers or your mobile devices for you.

[Jason Myre](#), Email Systems Manager, provided this helpful information for updating the following mobile devices:

BlackBerry:

Blackberry device users should point the device's browser to the following link, and follow the prompts to install the DST update.

<http://www.blackberry.com/select/dst2007/>

Treo:

Make sure the Treo is configured to "Enable Local Network Time." This way, the wireless network will update the device's system time automatically.

Windows Mobile:

Instruction for device patch installation and appointment correction is detailed at

<http://www.microsoft.com/windowsmobile/daylightsaving/default.mspx>

Also, there is a potential problem for GroupWise users, since the earlier DST start date could cause appointments scheduled within the three weeks between the original date and the new date to be off by an hour. This also applies to appointments scheduled during the added week at the end of October. Contact your [Network Manager](#) if you think this might be a problem for you. They will be able to help you resolve the issue.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu>. You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Skip Navigation Links](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

EIS Campus Solutions 8.9 Upgrade Website

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks](#)

EIS Campus Solutions 8.9 Upgrade Website

By [Claudia Lynch](#), Benchmarks Online Editor

The [December 2006 issue](#) of *the Enterprise*, the quarterly web-based publication containing EIS-specific information, announced "Campus Solutions 8.9 is on its Way!" Not only is it on its way, it has a website: <http://eis.unt.edu/89upgrade> According to the website:

The University of North Texas System is upgrading from PeopleSoft's Learning Solutions 8.0 to Campus Solutions 8.9. The project is a collaborative effort between UNT and HSC information technology and functional teams to plan and execute the version upgrade. The project is primarily a technical upgrade being lead by the information technology team with significant functional team commitment and participation.

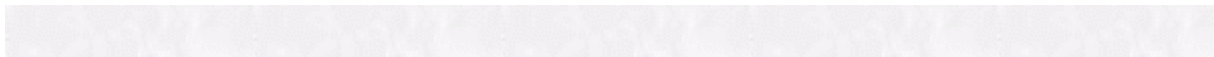
This upgrade gives UNTS new and enhanced functionality delivered in PeopleSoft's Campus Solutions version 8.9. The upgrade team consists of technical and functional representatives supporting student administration, human resource, payroll, budget, and contributor relations areas.

The Campus Solutions 8.9 upgrade is scheduled to go live in November 2007.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Online](#)



[Skip Navigation Links](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

Today's Cartoon

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

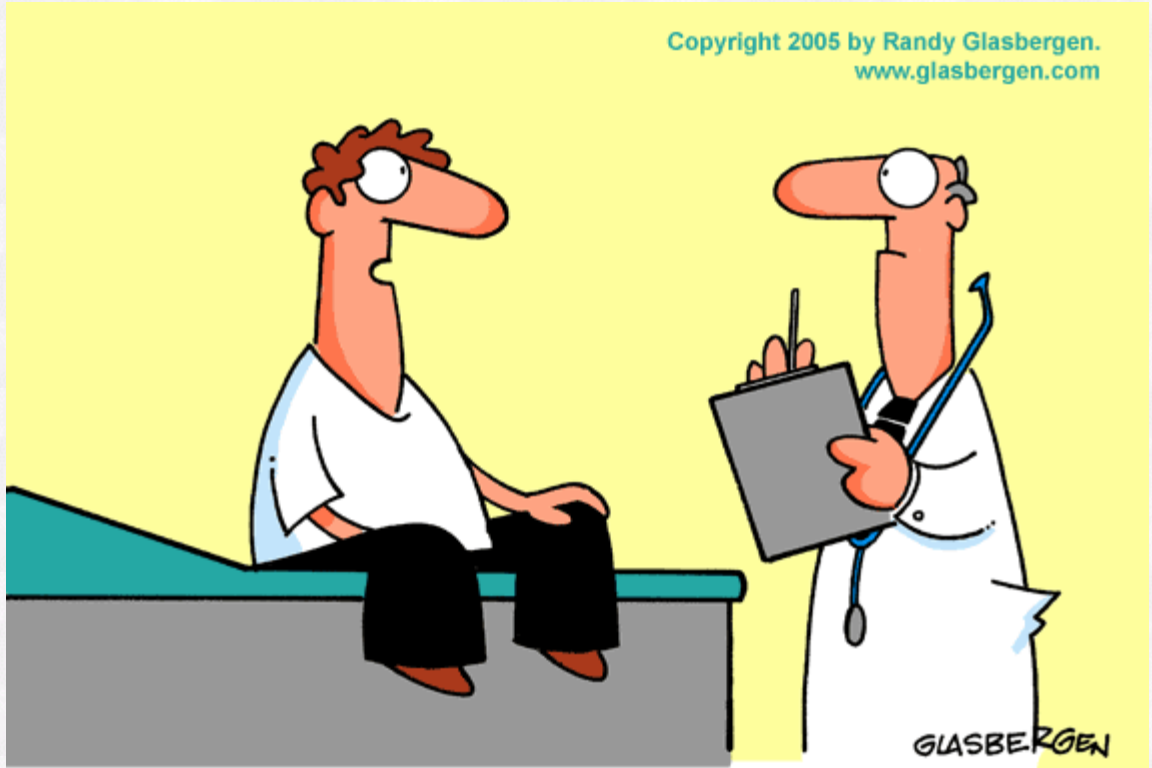
[Staff Activities](#)

[Subscribe to Benchmarks](#)

maincontent

Today's Cartoon

Copyright 2005 by Randy Glasbergen.
www.glasbergen.com



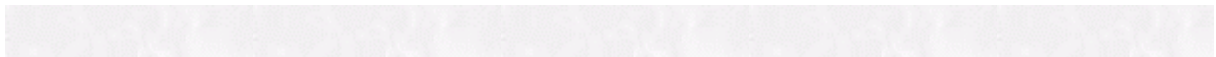
**“I already diagnosed myself on the Internet.
I’m only here for a second opinion.”**

From "Today's Cartoon by Randy Glasbergen", posted with special permission. For many more cartoons, please visit www.glasbergen.com.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Online](#)



[Page One](#)
[Campus Computing](#)
[JAWS 8.0 Has Arrived!](#)
[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)
[Getting WebCT Vista Help](#)
[Daylight Savings Time Issues and Concerns](#)
[EIS Campus Solutions 8.9 Upgrade Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network Connection](#)
[Link of the Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to Benchmarks Online](#)

Network Connection

By [Dr. Philip Baczewski](#), Director of Academic Computing and User Services

Effective E-mail

Call it a pet peeve, but the easiest way to get me to delete an e-mail message without reading it is to preface it with "best viewed as html." If you want me to view HTML, send me a URL. Otherwise, just type your message as e-mail text.

I don't know who had the bright idea of integrating html and e-mail, but it probably originated with those web browsers that had e-mail clients built in. Some may see an advantage to being able to format their mail using different fonts or colors or being able to include a picture. But it seems to me that it is not the best use of the e-mail medium.

E-mail is all about information, not about presentation. At least, that's my opinion based upon over 20 years of using and supporting e-mail. Insisting on imposing your presentation in e-mail is counterproductive.

Perhaps this is why many students think that "[e-mail is for old people](#)." According to a Chronicle of Higher Education [article](#), teenagers "like instant messaging or text messaging, for talking to friends and use e-mail to communicate with 'old people.'" I may qualify as an "old person," but I think that what young people really want is the immediacy of information. Couching that information in a graphical marketing shell is, then, an interference to communication rather than an enhancement of it.

Perhaps the other problem with effective e-mail communication is that we've lost some of the art of written communication. I've touched on this in a past [column](#) but it's been long enough that it's may be time to revisit this issue. Even recently, I've heard the lament that "you wouldn't get that [in this case a love poem] in an e-mail." I'm not sure that e-mail is the most appropriate medium for a love poem, but it certainly would transmit one. The question really is if anyone is still inclined to write love poems.

So, maybe it's time to reach even farther back into the archives and talk about e-mail [etiquette](#). Or just remember this simple e-mail rule: say what you mean completely and clearly using the gift of language that distinguishes us from those other animals roaming the planet. Your menu won't sound any tastier in HTML. Your event date will not be any more available in a fancy font. Your .pub file is not even readable by most of the world, so why do you think that was in any way communication?

Student's attitude toward e-mail is that it's more formal and less immediate than chat or text messaging. That's exactly how people used to think about paper memos versus e-mail when e-mail was a new technology to most. What hasn't changed is that what's important is the content and not the medium. HTML-formatted e-mail doesn't improve the information (the

old saying about lipstick on a pig comes to mind). So, write a good e-mail next time and make your words more important than your background color.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search **Benchmarks Online** - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

Link of the Month

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks Online](#)

Link of the Month

Each month we highlight an online mailing list or website. Frequently the link is associated with UNT.

[Skip to primary content](#)

eagle_img

[UNT Brand Logo](#)

addresspart

"Serving the University's most valuable resource. . .ITS PEOPLE!"

Human Resources launched a new webpage on February 16. According to an [article](#) that appeared in *InHouse* on February 14:

The new site will provide faculty and staff with quicker, easier access to information about how to use the Enterprise Information System as well as changes to EIS, easier access to HR forms employees need and quicker ways to access information about compensation, benefits and holiday schedules.

Faculty and staff members will notice right away that changes have been made to the site's look, organization and navigation options.

Check out the new Human Resources website here: <http://www.hr.unt.edu/main/>

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search **Benchmarks Online** - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Skip Navigation Links](#)

[Page One](#)

[Campus Computing](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

Helpdesk FYI

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks Online](#)

Helpdesk FYI

By [Richard Sanzone](#), CITC Helpdesk Manager

Remedy Web

The Remedy website can be accessed by directing your browser to <http://remedy.unt.edu/>. This site is also linked off the Helpdesk website at <http://www.unt.edu/helpdesk>

The Remedy website is where you can access the Remedy web clients, view Campus Wide Outage reports, view Remedy documentation, submit reports and requests using the premade "Perl" pages, and more.

The Remedy web clients can be accessed by clicking the "Remedy Web Consoles" link on the Remedy site navigation bar on the top portion of the site. The web clients require Java version 1.4.1_02 to login. If you attempt to login and get a browser error you should download Java 1.4.1_02 which is linked below the Web Console login form.

Click the "Campus Wide Outages" link on the site navigation bar to view all reported Campus Wide Outage reports. Currently active reports (open) and recently resolved cases are listed. These entries are updated in real-time as the tickets are edited and worked on by Support Staff, making this an excellent resource for checking the status of outages.

Another common use of the Remedy website is the "Perl" pages which walk you through entering a specific type of report. Click the "Helpdesk Central" link on the site navigation bar to access the available Perl pages. These Perl pages allow you to quickly and easily report a problem with Eaglemail, ResNet, MyUNT, request Data/Voice wiring, and more.

If you have any question regarding Remedy please contact the CITC Helpdesk at 940-565-2324 or email us at helpdesk@unt.edu

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu>. You can also search **Benchmarks Online** - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Skip Navigation Links](#)

[Page One](#)

[Campus
Computing
News](#)

[JAWS 8.0 Has
Arrived!](#)

[Web
Conferencing
Tool on the
Horizon: Teach
& Meet Live
Online](#)

[Getting WebCT
Vista Help](#)

[Daylight
Savings Time
Issues and
Concerns](#)

[EIS Campus
Solutions 8.9
Upgrade
Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network
Connection](#)

[Link of the
Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

IRC News

[Staff Activities](#)

[Subscribe to
Benchmarks](#)

IRC News



Minutes provided by Sue Ellen Richey,
Recording Secretary*

No minutes were available for publication this month.

* For a list of IRC Regular and Ex-officio Members click [here](#).

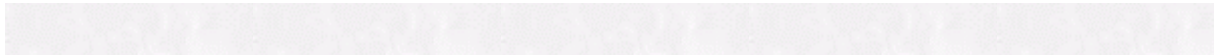
IRC Meeting Schedule

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. The schedule can be found [here](#). All meetings of the IRC, its program groups, and other committees, are open to all faculty, staff, and students.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search **Benchmarks Online** - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Online](#)



[Page One](#)
[Campus
Computing
News](#)
[JAWS 8.0 Has
Arrived!](#)
[Web
Conferencing
Tool on the
Horizon: Teach
& Meet Live
Online](#)
[Getting WebCT
Vista Help](#)
[Daylight
Savings Time
Issues and
Concerns](#)
[EIS Campus
Solutions 8.9
Upgrade
Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network
Connection](#)
[Link of the
Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to
Benchmarks
Online](#)

Research and Statistical Support University of North Texas

RSS Matters

This is a republication, with minor changes, of [September 2001's RSS Matters](#). You can link to the last RSS article here: [An Introduction to Robust Measures of Location using R - Ed.](#)

The Calculation of Statistical Power Using the Percentile Bootstrap and Robust Estimation

By [Dr. Rich Herrington](#), Research and Statistical Support Services Manager

In [August, 2001](#) we examined the percentile bootstrap, this article demonstrates the calculation of statistical power using the percentile bootstrap and robust estimation. The GNU S language, "R" is used to implement this procedure. R is a statistical programming environment that is a clone of the S and S-Plus language developed at Lucent Technologies. In the following document we illustrate the use of a GNU Web interface to the R engine on the "rss" server, <http://rss.acs.unt.edu/cgi-bin/R/Rprog>. This GNU Web interface is a derivative of the "Rcgi" Perl scripts available for download from the CRAN website, <http://www.cran.r-project.org> (the main "R" website). Scripts can be submitted interactively, edited, and be re-submitted with changed parameters by selecting the hypertext link buttons that appear below the figures. For example, clicking the "Run Program" button below samples 1000 random numbers from a normal distribution, then uses nonparametric density estimation to fit a density curve to the data. To view any text output, scroll to the bottom of the browser window. To view the density curve, select the "Display Graphic" link. The script can be edited and resubmitted by changing the script in the form window and then selecting "Run the R Program". Selecting the browser "back page" button will return the reader to this document.

The Importance of Power and Effect Size

The techniques of statistical power analysis, effect size estimation, and sample size estimation are important methods in statistics and research methodology (Cohen, 1988). Briefly, the power of a statistical test is the probability of rejecting the null hypothesis given that the alternate hypothesis is true; the effect size is the degree to which the null hypothesis is false in relation to the alternate hypothesis; type II error is the probability of failing to reject the null hypothesis when it needs to be rejected in favor of the alternate hypothesis; and type I error is the probability of incorrectly rejecting the null hypothesis. Proper sample size estimation allows one to achieve an acceptable level of power for a statistical test, thereby setting the type II error at a pre-specified level. Historically, for the social sciences, neglect of these topics have led to a long standing controversy surrounding the interpretation of statistical tests in the research community (Cohen, 1993). Following Jacob Cohen's (1965, 1962) initial work on the power of statistical tests in behavioral research, many researchers and authors have pointed out the importance of statistical power analysis. Textbooks and articles have appeared that provide tables of power and sample sizes (Cohen, 1988). Additionally, several computer programs which perform exact power analysis assuming normal theory have appeared (Bradley, Helmstreet, & Zeigenhagen, 1992; Faul & Erdfelder, 1992). Despite these recommendations, and availability of resources for power calculation, Cohen has argued that researchers continue to ignore power analysis (Cohen, 1994). Sedlmeier and Gigerenzer, G. (1989) reported a power review of the 1984 volume of the *Journal of Abnormal Psychology* showing that there was not any marked improvement in the power of statistical tests appearing in the literature. As recent as 1997, a methodological study has found that the power of statistical tests are not taken into account by researchers and that they continue to run a high risk of type II error (Clark-Carter, 1997). Cohen (1988) has suggested that the neglect of power analysis exemplifies the slow movement of methodological advance. Cohen has also suggested a lack of consciousness regarding effect size, coupled with an overriding concern with the accompanying "p" value (Cohen, 1992; 1994). Despite this unawareness on the part of editors and researchers, there has been a recent shift in the editorial practices of the American Psychological Association (APA, 1994). The manual notes that, "Neither of the two types of probability values reflects the importance or magnitude of an effect because both depend on sample size -- you are encouraged to provide effect-size information (APA, 1994, p.18)." Following these editorial changes, in 1996 APA established a task force that, among other goals, reexamined the role of statistical hypothesis testing in the methodological practices of Psychology (<http://www.apa.org/science/bsaweb-tfsi.html>). The Task Force on Statistical Inference (TFSI) met twice in two years after which a preliminary report was circulated that indicated its intention to examine issues beyond null hypothesis significance testing. After the second meeting, the task force recommended several possibilities for further action, one of which was to revise the statistical sections of the American Psychological Association Publication Manual (APA, 1994). A report was generated following those meetings (<http://www.loyola.edu/library/ref/articles/Wilkinson.pdf>). Neglect of power not only decreases the recognition of interesting effects (type II error), but it also has a negative effect on the ability of researchers to establish statistical consensus through replication. Ottenbacher (1996) points out that, "The apparently paradoxical conclusion is that the more often we are well guided by theory and prior observation, but conduct a low power study, the more we decrease the probability of replication... The responsible investigator must be concerned with statistical power. A concern with power, however, cannot end with its calculation. Because the ability to detect treatments must be optimized, the responsible scientist must also be concerned with factors that determine effect size". Most treatments of power analysis deal with the calculation of power for parametric statistics where normal theory assumptions are required (e.g. t-test, F-tests).

The calculation of power for robust statistics or nonstandard nonparametric statistics are not addressed at a practical level. For example, Cohen's book on power analysis (1988) concentrates mainly on ANOVA and regression models and some standard nonparametric tests such as the chi-square test. What is not addressed is how violations of normality assumptions affect power estimates. The bootstrap technique can be useful for exploring how statistical power is affected by non-normality.

Estimating Power with the Bootstrap

Beran (1986) provided mathematical and simulation results that show that a statistical test for a null hypothesis can be constructed by bootstrapping the null distribution for the test statistic. Beran also proved that the power of the test against an alternative can itself be estimated by simulation. The uniform consistency of these simulated power functions is the main result of Beran's mathematical proof. Additionally, Beran performed a limited numerical study of the univariate bootstrap t-test and the associated power function. The null hypothesis value of the mean difference was zero; the nominal test level α was .05; and the sample size was 20. The critical value of the bootstrap test was obtained from the simulated null distribution using 200 bootstrap samples. The power of the bootstrap t-test was approximated by Monte Carlo simulation using 1000 standard normal samples. Thus, the simulation used 200 bootstrap samples for the critical value loop and 1000 bootstrap samples for the outer loop. Even at sample size 20, Beran found that the power function of the bootstrap test is almost indistinguishable from that of the classical t-test. Yuan (2001) applied Beran's general theory of re-sampling to a covariance structure analysis framework. Yuan found that, with several data sets, robust estimators could be combined with the bootstrap to allow researchers to be in the position of finding an almost optimal procedure for evaluating covariance structure models (Yuan, 2001). Additionally, based on Beran's results, Yuan provided an algorithm for determining sample size for a given level of power. A great advantage of calculating the critical value from the simulated null sampling distribution is that the empirical estimate of the critical value is asymptotically consistent with the true population value, and no assumptions are made regarding the shape of the null sampling distribution. Consequently, each statistical test (i.e. mean difference test) that is performed on a simulated bootstrap sample, is compared to this critical value, and since the critical value was constructed from the observed data (under the assumption of the null hypothesis), and according to Beran (1986), is a consistent estimate of the population critical value, we can expect proper coverage of the mean difference statistic with the bootstrap confidence intervals, based on this critical value. This is essential for calculating power estimates of test statistics whose sampling distributions are unknown (under the null or the alternate hypothesis), because of violations of assumptions (i.e. normality) or mathematical intractability. Re-sampling under the null hypothesis seems to be the preferred approach in calculating probability values for an observed test statistic (Hall and Wilson, 1991, p. 757). Hall and Wilson give the following guidelines for bootstrap testing in univariate situations, "The first guideline says that care should be taken to ensure that even if the data might be drawn from a population that fails to satisfy H_0 , re-sampling should be done in a way that reflects H_0 " (Hall and Wilson, 1991). Bootstrapping under the null hypothesis, for a two group difference test of means, would involve mean centering each group around their respective group means, and sampling with replacement from the whole collection of mean centered scores to produce two new groups of scores (two bootstrap samples) which reflect group differences when the null hypothesis is true (Westfall and Young, 1993, p. 35-36). Furthermore, if one is bootstrapping measures of location other than the mean, one must be sure to create a bootstrap population where the observations are centered around that alternative measure of location (Westfall and Young, 1993, p. 143-144). For example, if one is using a median, or an M-estimate as a measure of location, then one would center

around that measure to insure that the null hypotheses are true in the bootstrap population.

The General Bootstrap Power Simulation Algorithm

Beran's (1986) simulation algorithm is presented as a sequence of steps (for a two-sided difference of location):

Step 1 - Generate the bootstrap null distribution using bootstrap re-sampling: A) Re-center the data vector x and the data vector y around their respective measures of location. B) Stack the data vectors x and y into a single vector, z . Vector z is now considered the in-hand, proxy population. C) Re-sample with replacement from vector z to produce a bootstrap sample for group x_1 with length of the original group x . Repeat this re-sampling to produce a group y_1 . D) Calculate a measure of location for both groups (e.g. mean, M-estimate, trimmed mean, or Windsorized mean). E) Subtract the two location measures. This difference is one bootstrap sample which comprises the empirical null sampling distribution. F) Repeat steps C-E a large number of times to generate the empirical null distribution (suggestions vary widely, 1000 seems to be a sufficient number of bootstrap samples; one might resample 10,000 bootstrap samples to be conservative). The empirical null distribution will be centered on zero.

Step 2. - Calculate the critical scores that correspond to the 2.5th and 97.5th critical alpha regions under the empirical null distribution: The critical scores are the scores that correspond to the 2.5th and 97.5th percentiles of the empirical null distribution. We can calculate the percentiles using the following approach: $\text{round}((.05/2) \times (\#\text{bootstrap samples}))$ for lower percentile; and $\text{round}((1-(.05/2)) \times (\#\text{bootstrap samples}))$. Next, locate the scores that correspond to those percentiles.

Step 3. - Generate the bootstrap alternative distribution: A) Re-sample with replacement from vector x with replacement to generate a bootstrap sample, x_1 , with length of original vector x . B) Re-sample with replacement from vector y with replacement to generate a bootstrap sample, y_1 , with length of original vector y . C) Calculate measures of location for both bootstrap samples x_1 and y_1 . D) Subtract the two measures of location. This is one bootstrap difference, and represents the difference between measures of location under the empirical alternate distribution. This empirical distribution is centered on the population difference under the alternate hypothesis.

Step 4. - Calculate the empirical power of the statistical test: A) Using the upper and lower critical scores for the empirical null hypothesis calculated in step 2., Calculate the number of difference scores in the empirical alternative sampling distribution that are as or more extreme than the critical scores under the null distribution. B) Take the count tallied in step A) and divide by the total number of bootstrap samples. This value is the empirical power for the statistical test that tests differences between groups using whatever location measure is under consideration.

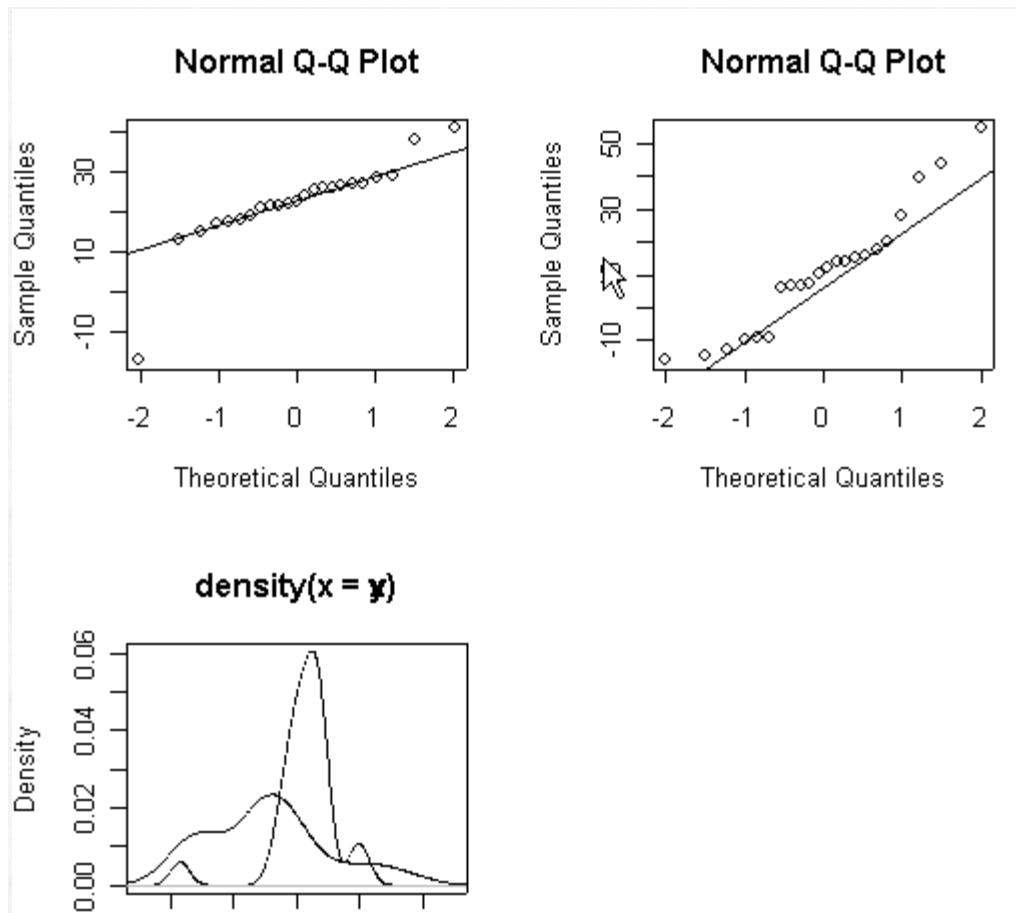
The Data Set

Doksum & Sievers (1976) report data on a study designed to assess the effects of ozone on weight gain in rats. The experimental group consisted of 22 seventy-day old rats kept in an ozone environment for 7 days (group y). The control group consisted of 23 rats of the same age (group x), and were kept in an ozone-free environment. Weight gain is measured in grams. The following R code produces quantile-quantile plots and non-parametric density plots of the two groups of data:



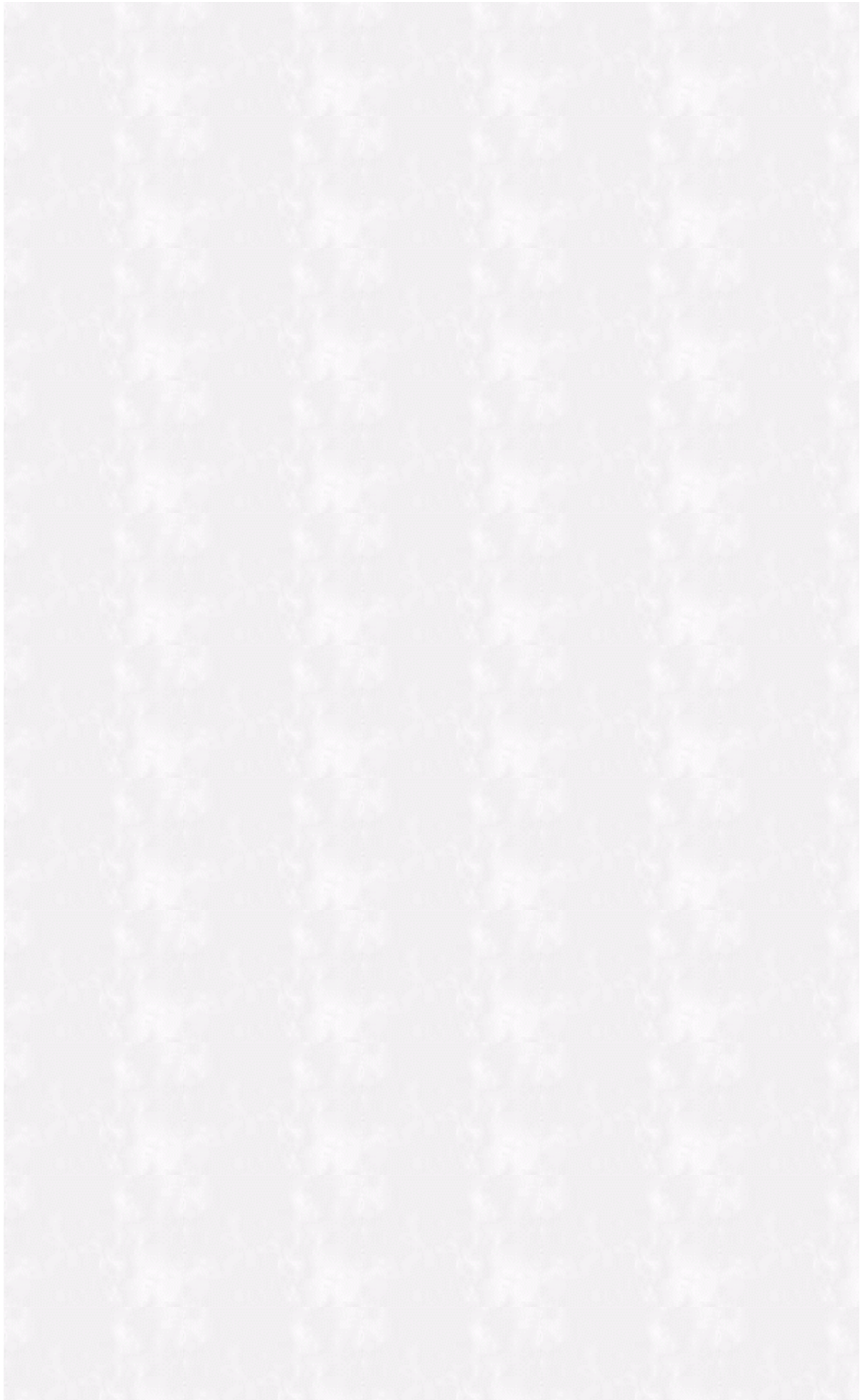
Results

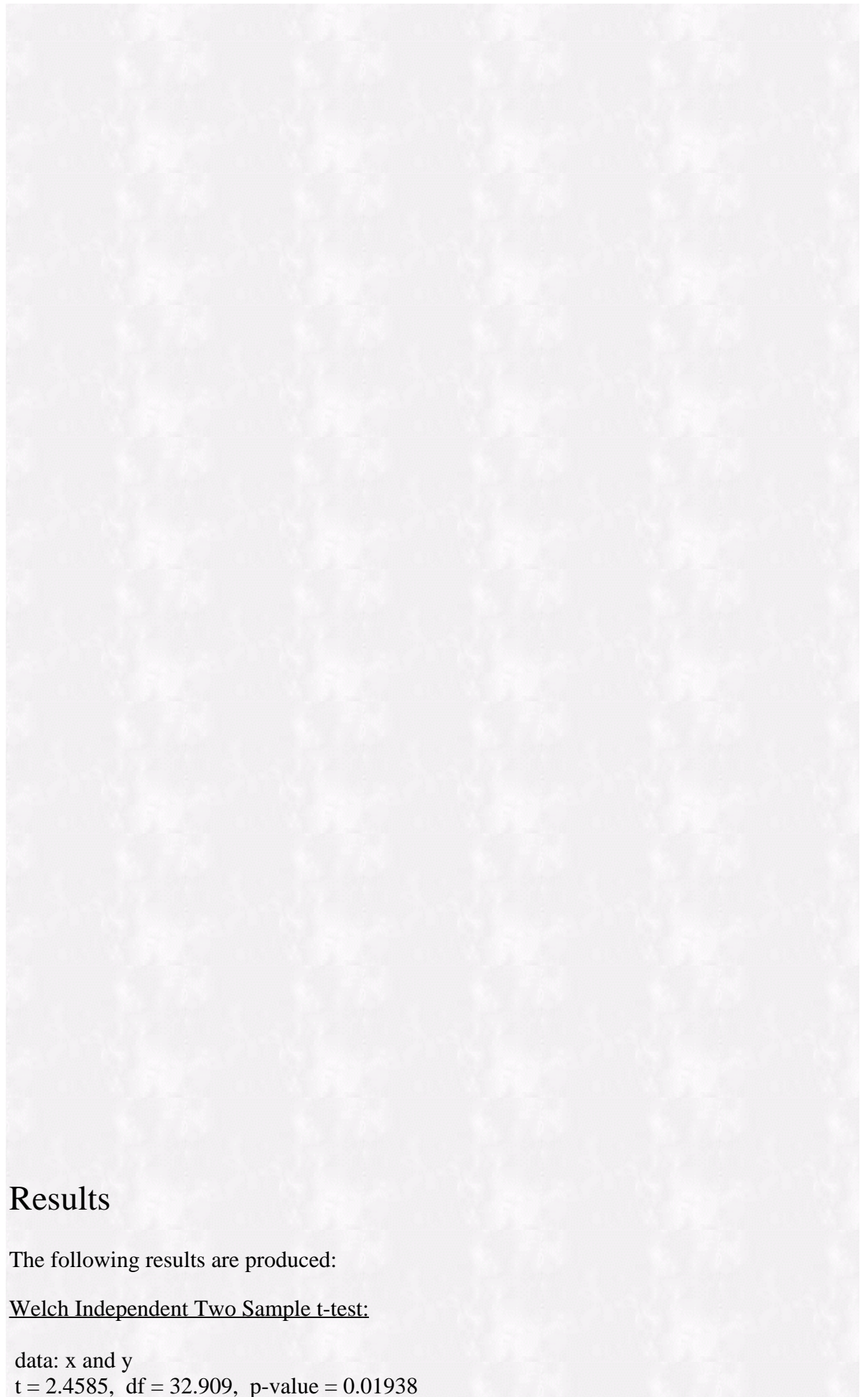
The following output is produced. Group x (control group) is in the upper left panel, and group y (experimental group) is in the upper right panel. Both groups show substantial deviations away from normality. Deviations away from the straight line indicate deviations away from normality. In the lower panel, non-parametric density estimates of both groups are plotted on the same graph. The more peaked, narrower density function is the control group, and the less peaked, more dispersed density function is experimental group.



Using GNU S ("R") to Calculate Statistical Power Using the Bootstrap and Robust Estimation

In this section, we use M-estimation as measures of location for the control and experimental group. Bootstrap p-values, confidence intervals and power for the difference between the M-estimates are calculated. Additionally, a classical t-test is calculated for comparison:





Results

The following results are produced:

Welch Independent Two Sample t-test:

data: x and y

$t = 2.4585$, $df = 32.909$, $p\text{-value} = 0.01938$

```

alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
(1.964178, 20.826336)
sample estimates:
mean of x      mean of y
22.40435      11.00909

```

Bootstrap statistics based on difference between M-estimates:

```

Bootstrap Empirical P-value
>

```

```

pvalue.empirical
[1] 0

```

```

Bootstrap Empirical Power
> power.twotail
[1] 0.9331104

```

```

Bootstrap Confidence Intervals
> h1.ci
$ci
[1] 4.117494  21.818252

```

The M-estimate confidence intervals are much narrower than the classical confidence intervals. With 399 bootstrap samples, not one bootstrap sample exceeded the observed difference, giving a p value less than $1/399 = .0025$. The non-parametric bootstrap power for the difference in M-estimates was .933.

Conclusions

The bootstrap and robust estimation provide a method for improving statistical power whenever the data can be described as having heavy-tailed distributions. Furthermore, an estimate of power based on the percentile bootstrap is non-parametric, and does not depend on normal theory assumptions. Bootstrap power estimation is a general methodology that can be used to calculate power for many different kinds of statistical estimators (e.g. mean, median, or M-estimates).

References

- American Psychological Association. (1994). *Publication manual of the American Psychological Association (4th ed.)*. Washington, DC: Author.
- Beran, R (1986). Simulated Power Functions. *The Annals of Statistics*, 14(1), 151-173.
- Bradley, D. R., R. L. Helmstreet, and S. T. Zeigenhagen. 1992. A simulation laboratory for statistics. *Behaviour Research Methods, Instruments, and Computers* 24: 190-204.
- Clark-Carter, D. (1997). The account taken of statistical power in research published in the British Journal of Psychology. *British Journal of Psychology*, 88, 71-83.
- Cohen, J. (1995). The earth is round ($p < .05$): Rejoinder. *American Psychologist*, 49(12), 1103.

- Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist*, 49(12), 997-1003.
- Cohen J. (1992) A power primer. *Psychological Bulletin*, 112, 155-159.
- Cohen, J. (1990). Things I have learned (So Far). *American Psychologist*, 45, 1304-1312.
- Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences, 2nd Edition*. Lawrence Erlbaum Associates, Inc., Hillsdale, New Jersey.
- Cohen, J. (1965). Some statistical issues in psychological research. In B. B. Wolman (Ed.), *Handbook of clinical psychology* (pp. 95-121). New York: McGraw-Hill.
- Cohen, J. (1962). The statistical power of abnormal-social psychological research: A review. *Journal of Abnormal and Social Psychology*, 65, 145-153.
- Doksum, K.A. & Sievers, G.L. (1976). Plotting with confidence: graphical comparisons of two populations. *Biometrika* 63, 421-434.
- Ottensbacher, K.J. (1996). The Power of Replications and Replications of Power. *The American Statistician*, 50(3), 271-275.
- Hall P, Wilson SR (1991). Two guidelines for bootstrap hypothesis testing. *Biometrics*, 47, 757-762.
- Sedlmeier, P. & Gigerenzer, G. (1989). Do studies of statistical power have an effect on the power of studies? *Psychological Bulletin*, 105, 309-316.
- Yuan, K. (2001). Bootstrap Approach to inference and power analysis based on three test statistics for covariance structure models. Under review.
- Westfall, P.H. (1993). *Re-sampling based multiple testing: examples & methods for p-Value adjustment*. Wiley, New York.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)
[Campus Computing News](#)
[JAWS 8.0 Has Arrived!](#)
[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)
[Getting WebCT Vista Help](#)
[Daylight Savings Time Issues and Concerns](#)
[EIS Campus Solutions 8.9 Upgrade Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network Connection](#)
[Link of the Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to Benchmarks Online](#)

WWW@UNT.EDU

ColdFusion7 Clustering Revisited

Note, last month's article, "Apache web farm configuration: Simpler than mod_macro?," originally appeared in the June 2006 [issue](#) of Benchmarks Online. - Ed.

By [Shannon Eric Peevey](#), formerly employed with UNT Central Web Support

Introduction

I am still trying to get our ColdFusion 7 cluster to work correctly. Up until now, the cluster has not really worked like a cluster, in that:

1. Configuration information is not shared between the clustered instances.
2. The Apache connector was only configuring itself with one of the servers, and was unaware of the other cluster members.
3. The ColdFusion packaged Verity license is only good for one ColdFusion instance.

Our Configuration:

Our current configuration consists of a load-balanced web farm, and a two-machine ColdFusion cluster. For example:

```
Apache2 - 192.168.1.30, 192.168.1.31, 192.168.1.32
Coldfusion7 - 192.168.1.40, 192.168.1.41
```

Configuration information is not shared between the clustered instances:

This was the first problem that we ran into. For some reason, configuration information for the ColdFusion instance is not shared between the nodes. For example, DSN "x" created on ColdFusion node1 was not replicated to Coldfusion node2, meaning that calls to node2 for DSN "x" would return a DSN not found error.

Since we are using a central storage area for our web roots, we were able to push our jrun4 directories into a central location:

```
user@mymachine:/remotestorage/jrun4$ ls /remotestorage/jrun4
cf_common_files lib cfinstancel cfinstance2
```

As you can see, we have moved our jrun4 installation directory onto our remotestorage:

```
user@mymachine:/remotestorage/jrun4$ ls cfinstancel
bin                hotfix             logs
pointbase          uninstall
C                  jre
Macromedia_ColdFusion_MX_7.0.2_InstallLog.log  PointBaseDebug.log  updater6-backup
cfmx_updater_installer_debug.txt  jre_installerbackup
Macromedia_ColdFusion_MX_7_InstallLog.log      Readme.htm          verity
connectors        lib
Macromedia_ColdFusion_MX_7_Updater_InstallLog.log  relnotes.htm
docs              license.txt
Macromedia_JRun_4_Updater_6_InstallLog.log        servers
user@mymachine:/remotestorage/jrun4$ ls cfinstance2
bin                docs               license.txt
Macromedia_JRun_4_Updater_6_InstallLog.log        servers
C              hotfix            logs
pointbase          uninstall
```



```
cfmx_updater_installer_debug.txt  jre      Macromedia_ColdFusion_MX_7_InstallLog.log
Readme.htm                       updater6-backup
connectors                        lib      Macromedia_ColdFusion_MX_7_Updater_InstallLog.log
relnotes.htm                     verity
```

As well as our junserver.store, so that it is accessible to all of the Apache2 machines:

```
user@mymachine:/remotestorage/jrun4$ ls lib/wsconfig/1/
ApacheBuildInstructions.txt  build_jrun20  junserver.store  junserver.store.bak
mod_jrun20.so
```

Next, we moved all files which are shared between the instances into the /remotestorage/jrun4/cf_common_files directory. These include:

```
.../myinstance/servers/cfusion/cfusion-ear/cfusion-war/WEB-INF/cfusion/cfx
```

```
.../myinstance/servers/cfusion/cfusion-ear/cfusion-war/WEB-INF/cfusion/CustomTags
```

Plus, the neo-* files and password.properties from:

```
.../myinstance/servers/cfusion/cfusion-ear/cfusion-war/WEB-INF/cfusion/lib/
```

```
user@mymachine:/remotestorage/jrun4$ ls cf_common_files/
cfx      CustomTags  lib
user@mymachine:/remotestorage/jrun4$ ls cf_common_files/lib
neo-archivedeploy.xml  neo-debug.bak      neo-event.xml      neo-mail.bak      neo-query.bak
neo-runtime.xml       neo-security.xml   password.properties
neo-clientstore.xml   neo-debug.xml      neo-graphing.xml   neo-mail.xml      neo-query.xml
neo-search.bak       neo-verity.xml
neo-comobjmap.xml     neo-document.bak  neo_jaas.policy    neo-metric.xml    neo-registry.xml
neo-search.xml       neo-watch.xml
neo-cron.xml          neo-document.xml   neo-logging.xml    neo-probe.xml     neo-runtime.bak
neo-security.bak     neo-xmlrpc.xml
```

These are then symlinked back into the cfinstance directory trees:

```
user@mymachine:/remotestorage/jrun4$ ls -l myinstance1/servers/cfusion/cfusion-ear/cfusion-
war/WEB-INF/cfusion/
lrwxrwxrwx 1 www-data www-data 38 2006-09-05 12:55 cfx ->
/remotestorage/jrun4/cf_common_files/cfx/
lrwxrwxrwx 1 www-data www-data 45 2006-09-05 12:54 CustomTags ->
/remotestorage/jrun4/cf_common_files/CustomTags/

user@mymachine:/remotestorage/jrun4$ ls -l myinstance1/servers/cfusion/cfusion-ear/cfusion-
war/WEB-INF/cfusion/lib | grep neo
lrwxrwxrwx 1 www-data www-data 59 2006-09-05 13:29 neo-archivedeploy.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-archivedeploy.xml
lrwxrwxrwx 1 www-data www-data 57 2006-09-05 13:29 neo-clientstore.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-clientstore.xml
lrwxrwxrwx 1 www-data www-data 55 2006-09-05 13:29 neo-comobjmap.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-comobjmap.xml
lrwxrwxrwx 1 www-data www-data 50 2006-09-05 13:29 neo-cron.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-cron.xml
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-debug.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-debug.bak
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-debug.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-debug.xml
lrwxrwxrwx 1 www-data www-data 54 2006-09-05 13:29 neo-document.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-document.bak
lrwxrwxrwx 1 www-data www-data 54 2006-09-05 13:29 neo-document.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-document.xml
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-event.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-event.xml
lrwxrwxrwx 1 www-data www-data 54 2006-09-05 13:29 neo-graphing.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-graphing.xml
lrwxrwxrwx 1 www-data www-data 53 2006-12-19 07:14 neo_jaas.policy ->
/remotestorage/jrun4/cf_common_files/lib/neo_jaas.policy
lrwxrwxrwx 1 www-data www-data 53 2006-09-05 13:29 neo-logging.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-logging.xml
lrwxrwxrwx 1 www-data www-data 50 2006-09-05 13:29 neo-mail.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-mail.bak
lrwxrwxrwx 1 www-data www-data 50 2006-09-05 13:29 neo-mail.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-mail.xml
lrwxrwxrwx 1 www-data www-data 52 2006-09-05 13:29 ncoldfusion 7 clustereo-metric.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-metric.xml
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-probe.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-probe.xml
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-query.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-query.bak
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-query.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-query.xml
lrwxrwxrwx 1 www-data www-data 54 2006-09-05 13:29 neo-registry.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-registry.xml
lrwxrwxrwx 1 www-data www-data 53 2006-09-05 13:29 neo-runtime.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-runtime.bak
```



```

lrwxrwxrwx 1 www-data www-data 53 2006-09-05 13:29 neo-runtime.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-runtime.xml
lrwxrwxrwx 1 www-data www-data 52 2006-09-05 13:29 neo-search.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-search.bak
lrwxrwxrwx 1 www-data www-data 52 2006-09-05 13:29 neo-search.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-search.xml
lrwxrwxrwx 1 www-data www-data 54 2006-09-05 13:29 neo-security.bak ->
/remotestorage/jrun4/cf_common_files/lib/neo-security.bak
lrwxrwxrwx 1 www-data www-data 54 2006-09-05 13:29 neo-security.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-security.xml
lrwxrwxrwx 1 www-data www-data 52 2006-09-05 13:29 neo-verity.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-verity.xml
lrwxrwxrwx 1 www-data www-data 51 2006-09-05 13:29 neo-watch.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-watch.xml
lrwxrwxrwx 1 www-data www-data 52 2006-09-05 13:29 neo-xmlrpc.xml ->
/remotestorage/jrun4/cf_common_files/lib/neo-xmlrpc.xml
user@myachine:/remotestorage/jrun4$ ls -l myinstance1/servers/cfusion/cfusion-ear/cfusion-
war/WEB-INF/cfusion/lib | grep pass
lrwxrwxrwx 1 www-data www-data 57 2006-09-05 13:29 password.properties ->
/remotestorage/jrun4/cf_common_files/lib/password.properties

```

Once the symlinks are in place, you can restart the ColdFusion server instances, and they will now share the configuration changes which take place in the ColdFusion administrator. To highlight a few files:

1. neo-query.xml – contains your DSNs.
2. password.properties – contains the ColdFusion administrator password

Any modified to the neo-* files will be automatically found by the ColdFusion instances and they will reload the appropriate service with a log entry like:

```

12/19 08:28:52 Information [scheduler-1] - neo-query.xml has been modified . Reloading the service
coldfusion.sql.Executive@13b3b7e

```

The Apache connector was only configuring itself with one of the servers, and was unaware of the other cluster members:

Due to the lack of documentation, I have fumbled with configuring the Apache2/ColdFusion connector, which is essentially the Apache module which tells Apache how to communicate with the coldfusion server. I was under the impression that you set one ipaddress:port in:

```
JRunConfig Bootstrap 192.168.1.40:51020
```

and that the ColdFusion server would then tell the Apache about all of the instances in the cluster, which would then populate the proxyservers array in the jrunserver.store file. But, alas, that was an incorrect assumption. Instead, we need to use the Bootstrap directive to tell Apache2 about all of the instances in the ColdFusion cluster with a semi-colon delimited list of ipaddresses and ports:

```
JRunConfig Bootstrap 192.168.1.40:51020;192.168.1.41:51020
```

And then, when Apache2 starts, it tries to connect to all of the listed instances of coldfusion, then generates the jrunserver.store with the ipaddress:port of each server which Apache2 was able to successfully contact.

The ColdFusion packaged Verity license is only good for one ColdFusion instance:

Through research, and discussion with our Adobe vendor, we were able to ascertain, that the Verity, (now called Autonomy), license which is bundled with ColdFusion 7 may only be contacted by a single ColdFusion instance. Therefore, you will need to purchase a license from Autonomy for their enterprise license to use Verity searches in a clustered environment. We would not realize the benefits of this license, so decided to move our search indexing into the database instead.

FAQ:

1. ColdFusion clusters must use J2EE sessions to replicate sessions between instances.

This is taken from the modify cluster page in the CF Administrator "Note: Use of J2EE Sessions is required for session replication or sticky sessions. All instances participating in the cluster must use J2EE sessions. Therefore, you will need to go to:

Server Settings ---> Memory Variables and check "Use J2EE session variables" for each cluster member."

2. ColdFusion must have the webroot mounted locally if it is running on a separate machine from the web server(s).

We have always used NFS to mount the web root locally to the ColdFusion instance. There have also been some mention of mirroring the web root to the ColdFusion machine, but that would only work if there was little development on a site, as there would be latency between files on the live site, and those on the ColdFusion server.

3. Here is an example Apache2/Jrun configuration which sets some variables specific to clustering.

```
# JRun Settings

<IfModule mod_jrun20.c>
  JRunConfig Verbose false

  JRunConfig Apialloc false
  JRunConfig Ssl false
  JRunConfig Ignoresuffixmap false
  JRunConfig Serverstore /remotestorage/jrun4/lib/wsconfig/1/jrunserver.store
  JRunConfig Bootstrap 192.168.1.40:51020;192.168.1.41:51020
  JRunConfig ProxyRetryInterval 45
  JRunConfig ConnectTimeout 45
  JRunConfig RecvTimeout 45
  JRunConfig SendTimeout 45
  #JRunConfig Errorurl
  AddHandler jrun-handler .cfm .cfml .cfc .jsp .jws

  AddType application/x-httpd-cfm .cfm .cfml .cfc
</IfModule>
```

These are somewhat documented here:

http://livedocs.macromedia.com/coldfusion/7/htmldocs/wwhelp/wwhimpl/common/html/wwhelp.htm?context=ColdFusion_Documentation&file=00001756.htm

4. Where can I view the value of the Proxy Port?

The Proxy Port, which is not the "Remote Port" mentioned in the ColdFusion Administrator, can only be viewed in the Jrun Administrator, which should running on your "master" Jrun4 server on port 8000. (ie <http://my.master.node:8000>)

5. My browser won't show the Jrun4 administrator... :(

Check that you don't have a firewall blocking the port. Also, make sure that the admin instance is running on the server.

6. I have forgotten my Jrun4 administrator password!

You can view your password in the:
/path/to/jrun4/servers/admin/SERVER-INF/jrun-users.xml
file. Look for a user with the jmcadmin element.

7. I have forgotten my ColdFusion Administrator password!

You can get around this in two ways:

1. Manually edit the password.properties file <http://kb.mediatemple.net/article.php?id=077>
2. Set <var name='admin.security.enabled'><boolean value='true'/></var> to "false" in the neo-security.xml file, restart coldfusion and visit the ColdFusion administrator to reset your admin password. (Don't forget to reset the admin.security.enabled value to "true" and restart ColdFusion, or else anybody would be able to access the administrator!!).
7. How are the JrunConfig Bootstrap and proxyserver array (in jrunserver.store) related?

As apache starts up, the jrun4 connector splits the array of proxy servers, and attempts to contact the coldfusion server instance on each ipaddress:port. (Remember the port is the Proxy Port). If the ColdFusion server instance does not respond, it is not added to the proxyserver array in the jrunserver.store.

7. I have setup my Bootstrap with all of the correct ipaddresses and ports, but I still only have one member in the proxyserver array in the jrunserver.store file...

Lower your firewall, and make sure that the firewall on either the client or server is not blocking communication. Also, startup try restarting your server instances to see if something has gone awry with them.

8. Will my ColdFusion instances automatically detect modifications to shared configuration files?

Any modified to the neo-* files will be automatically found by the ColdFusion instances and they will reload the appropriate service with a log entry like:

12/19 08:28:52 Information [scheduler-1] - neo-query.xml has been modified . Reloading the service [coldfusion.sql.Executive@13b3b7e](#)

11. How are changes made to the neo-* and password.properties files?

The neo-* and password.properties files are modified through the ColdFusion administrator. (They may be hand-edited as well, but not for the faint-at-heart).

Have you [registered](#) your website yet?

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)
[Campus Computing News](#)
[JAWS 8.0 Has Arrived!](#)
[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)
[Getting WebCT Vista Help](#)
[Daylight Savings Time Issues and Concerns](#)
[EIS Campus Solutions 8.9 Upgrade Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network Connection](#)
[Link of the Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to Benchmarks](#)

Short Courses

By [Claudia Lynch](#), *Benchmarks Online Editor*

Surf over to the [Short Courses](#) page to register for "Introduction to Stata," "Intermediate Stata," "New Technologies for Survey Research," "Applications in R and S-Plus: Latent Variable Modeling (Part I)," and/or "Applications in R and S-Plus: Latent Variable Modeling (Part II)."

Due to staff changes, courses offered in the past under the "Wide Area Network & Information Systems Courses" subheading such as "Getting Started with Dreamweaver" and "Moving from FrontPage to Dreamweaver" will not be taught – at this point – this spring. We hope to be able to offer courses like these soon. In the meantime, please consult the computer based training offerings that are available: http://www.unt.edu/cbt/cbt_contents.html

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, and the [Center for Distributed Learning](#). Additionally, the Center for Continuing Education and Conference Management offers a variety of [courses](#) to both UNT and the general community, usually for a small fee.

EIS Training

Questions or comments relating to EIS training should be sent to the EISTRN GroupWise account. Upcoming EIS training events may be found at the links below:

- [Learning to Use EIS](#)
- [EIS Timekeeper Training Schedule:](#)
- [EIS ePro Training Calendar](#)
- [Ongoing training is available on WebCT](#)

GroupWise Training

Information about GroupWise training can be found at the GroupWise Support [site](#). A list of GroupWise 7.0 "Tutorial Topics" can be found here: <http://ncs.unt.edu/gw/howto/index.htm> See "What's New in GroupWise 7" here: <http://ncs.unt.edu/gw/howto/info/whatsnew/index.htm> also.

GroupWise 7.0 Seminars

If you would like to have a Basic GroupWise seminar for your area, please contact Jason Gutierrez, Network Computing Services, jason.g@unt.edu.

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 [here](#).

The center also offers a "Brown Bag" series which meets for lunch the first Thursday of each month at Noon in Chilton 245. 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](#) Website.

Center for Teaching, Learning, and Assessment

The [Center for Teaching, Learning and Assessment](#) describes itself as offering "a range of services to faculty and Teaching Fellows and Assistants to facilitate teaching and the measurement of learning at the class, department, and college level."

Technical Training

Technical Training for campus network managers is available, from time to time, through the Network Computing Services (NCS) division of the Computing and Information Technology Center. Check the NCS [site](#) to see if and when they are offering any training.

UNT Mini-Courses

There 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/minicourses/>

Center for Media Production (CMP)

According to their [website](#):

CMP Certified Software Training

Affordable software training is available at the Center for Media

Production on the UNT-Denton campus. Upon completion, participants will receive a certificate as "CMP Certified" in that particular course. In addition, UNT students may record this activity on their Eagle Transcript (through the Student Activities office) and UNT Faculty and Staff can receive training credit on their HR training record.

All training classes provide 12 hours of instruction over 4 class meeting days and conclude with the certification exam. Training is hands-on, and class sizes are small.

E-mail inquiries to cmptraining@unt.edu

Recently, courses have been offered in Adobe Creative Suite (CS2) software, including InDesign and Illustrator (at both Introductory and Advanced levels). Dreamweaver introductory courses are also being offered.

Alternate Forms of Training

Many of the [General Access Labs](#) around campus have tutorials installed on their computers. The Library has a [Computer Training Resources](#) webpage with lots of resources listed. The [Training](#) website also has all sorts of information about alternate forms of training. Computer Based Training (CBT) is one of the alternatives offered.

For further information on CBT at UNT, see the CBT [website](#). Note, also, the articles in last months issue of *Benchmarks Online*, "[One CBT to Rule Them All: SkillSoft Acquires Thomson NETg](#)" and "[No-Hassle CBT: Library Online Tech Book Resources](#)".

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search **Benchmarks Online** - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/>. Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)
[Campus Computing News](#)
[JAWS 8.0 Has Arrived!](#)
[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)
[Getting WebCT Vista Help](#)
[Daylight Savings Time Issues and Concerns](#)
[EIS Campus Solutions 8.9 Upgrade Website](#)
[Today's Cartoon](#)
[RSS Matters](#)
[The Network Connection](#)
[Link of the Month](#)
[Helpdesk FYI](#)
[WWW@UNT.EDU](#)
[Short Courses](#)
[IRC News](#)
[Staff Activities](#)
[Subscribe to Benchmarks](#)

Staff Activities

Transitions

New Employees:

- **DaMiri Young**, Student Check-in Developer, Student Computing Services (part-time).

No longer working in the Computing and Information Technology Center:

- **Andrew Binovi**, Helpdesk Consultant (part-time).
- **Akhil Parekh**, EIS Tools & User Services Student Assistant (part-time).
- **Valori Berends**, Student Intern, Information Security (part-time).
- **Shannon Peevey**, Computer Systems Manager, Central Web Support.

Awards, Recognition, Publications, etc.

Soaring Eagles

The following people will be recognized at the President's Staff Lunch on March 1. Their names appeared in the February *Human Resources Newsletter*:

- **Jenny Brooks**, Programmer/Analyst, Student Services Data Systems.
- **Mahshid Grooms**, Team Leader, Student Services Data Systems.
- **Gini Kennedy**, Programmer Analyst, Student Records Data Systems.
- **Stormy Shippy**, Computer Support Specialist, Telecommunications.

Recognition

Dr. Chris Strauss, Computer Systems Manager, Call Tracking Administration, walked across the stage to receive his Ph.D. in Library and Information Sciences in December. More about his dissertation [here](#) (in Awards, Recognition, Publications, etc.).

Dr. Elizabeth Hinkle-Turner, Student Computing Services Manager, Academic Computing Services, received a glowing review of her book in The Society for Electro-Acoustic Music in the United States ([SEAMUS](#)) [January Newsletter](#).

Sound Foundations:

Elizabeth Hinkle-Turner's "Women Composers and Music

Technology in the United States”
www.ashgate.com

A book review by
Linda Dusman

Elizabeth Hinkle-Turner makes a truly extraordinary contribution to music history in her recent *Women Composers and Music Technology in the United States*. Published by Ashgate Press, this extensively researched book, with its comprehensive bibliography and discography, certainly will become the cornerstone for future research into the important contributions of women in the field of music technology. And while one would not call this book a “page turner” in the vernacular sense of the term, that is exactly what it is destined to become in the hands of any woman composer who has worked in music technology. At least that was my response, as I read and read, with a growing hunger for information I was not aware that I craved until I opened this history. It seemed that every paragraph connected more dots in the spotty chronology that was in my head-connections between important academic centers for research in music technology, important teachers, the music technology industry, developments on the East Coast, the Midwest, and the West Coast; and the women who have been there from the very beginning as researchers, students, teachers, and composers.

- snip -

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)

[Page One](#)

[Campus Computing News](#)

[JAWS 8.0 Has Arrived!](#)

[Web Conferencing Tool on the Horizon: Teach & Meet Live Online](#)

[Getting WebCT Vista Help](#)

[Daylight Savings Time Issues and Concerns](#)

[EIS Campus Solutions 8.9 Upgrade Website](#)

[Today's Cartoon](#)

[RSS Matters](#)

[The Network Connection](#)

[Link of the Month](#)

[Helpdesk FYI](#)

[WWW@UNT.EDU](#)

[Short Courses](#)

[IRC News](#)

[Staff Activities](#)

[Subscribe to Benchmarks](#)

Don't Forget Our Monthly Columns!

By [Claudia Lynch](#), *Benchmarks Online* Editor

In addition to our feature articles, *Benchmarks Online* publishes monthly columns that are focused on specific aspects of computing here at UNT (and beyond, in some cases). Check out what is waiting for you this month:

- [RSS Matters](#) - "RSS Matters" is the monthly column written by the Research and Statistical Support [Group](#) in Academic Computing Services. Their articles focus on topics of a statistical and/or research methods nature. **This month, Dr. Rich Herrington talks about "The Calculation of Statistical Power Using the Percentile Bootstrap and Robust Estimation."**
- [The Network Connection](#) - "The Network Connection" may well be the longest running column in computer publishing history. Certainly in University of North Texas computer [publishing history](#).

This month, Dr. Baczewski talks about "Effective E-mail." Read all about it!

- [Link of the Month](#) - As it says on the top of the "Link of the Month" page, "each month we highlight an Internet, USENET Special Interest Group (SIG), or similar mailing list(s) or Website(s)." Lately we have been confining ourselves to featuring UNT specific sites. **This month's focus is on the Human Resources brand new website. Click on the link above and check it out.**
- [Helpdesk FYI](#) - A new monthly feature from the CITC Helpdesk. Each month they will tackle a topic that has been of particular interest to callers/visitors to the Helpdesk. **This month Richard Sanzone tells you about "Remedy Web."**
- [WWW@UNT.EDU](#) - "WWW@UNT.EDU" is a monthly column written by the Central Web Support [Group](#) in Academic Computing Services. The topics usually focus, in some way, on World-Wide-Web-related issues. **This month Shannon Peevey gives us a farewell column about "ColdFusion7 Clustering Revisited." He resigned the first part of February to work in industry.**
- [Short Courses](#) - Every semester, Academic Computing Services (ACS) offers short courses on computer-related topics, many of them having to do with statistical research. This column keeps you up-to-date on what is being offered and when as well as other training opportunities. **Spring short Courses listed here along with other training opportunities.**

[Online](#)

Check it out!

- [IRC News](#) - As their Webpage [says](#), "the IRC is an advisory and oversight body created to foster communication and cooperation between and among UNT information resources providers and users." We publish the minutes of the IRC meetings each month, when they are available. **No minutes were available for publication this month.**
- [Staff Activities](#) - This column focuses on new employees, people who are no longer employed at the Computing and Information Technology Center, awards and recognitions and other items of interest featured here.

Please note that information published in *Benchmarks Online* is likely to degrade over time, especially links to various Websites. To make sure you have the most current information on a specific topic, it may be best to search the UNT Website - <http://www.unt.edu> . You can also search *Benchmarks Online* - <http://www.unt.edu/benchmarks/archives/back.htm> as well as consult the UNT Helpdesk - <http://www.unt.edu/helpdesk/> Questions and comments should be directed to benchmarks@unt.edu

[Return to top](#)