Benchmarks Online

Volume 5 - Number 4 * April 2002

Feature Articles

Campus Computing News

This month, Dr. Maurice Leatherbury, Senior Director of Academic Computing, talks about Internet Bandwidth - Again! If you want to know why "the Internet is slow" sometimes here at UNT and what the future looks like in this regard, this article is for you.

EduTex 2002 Proceedings Available

At last, the proceedings of the 2002 EduTex Conference are available!

Do you have something to tell *Everyone*?

We are entering the "crazy time" of the semester and no doubt, GroupWise E-mail spam and complaints about it will become more of a problem. Read this article and find out why you should refrain from sending everyone a message about lost keys, found jewelry, and houses for rent.

Today's Cartoon

Click on the title above for an information age laugh.

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

About Benchmarks *Online*

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- **RSS Matters** -- "Controlling the False Discovery Rate in Multiple Hypothesis Testing" Dr. Rich Herrington is back, just in time to demonstrate multiple contrast adjustment using the False Detection Rate method (FDR)! There is an GNU S announcement on this page also.

- **SAS Corner** -- "Reading Web Survey Data" If you are a SAS user and interested in a DYI Web survey, this article will be handy for you.

- **The Network Connection** -- "The New 'World Book'" What could it be?

- **Link of the Month** -- "Earth Day 2002" - Real People Making a Real Difference - at UNT!

- **WWW@UNT.EDU** -- "Dealing With Empty Variable Names In ColdFusion" Shannon Peevey gives you another dose of ColdFusion with this article.

- **Short Courses** -- The Academic Computing Services (ACS) short courses over for the spring. Other training is still available, however. Check out this article for more information.

- **IRC News** -- Minutes of the Information Resources Council are printed here when they are available. The March minutes are contained in this issue.

- **Staff Activities** -- New employees, people who are no longer employed at the Computing Center, awards and recognitions and other items of interest featured here.

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RSS Matters

Controlling the False Discovery Rate in Multiple Hypothesis Testing

The previous article in this series can be found in the December, 2001 issue of Benchmarks Online: Dealing with Outliers in Bivariate Data: Robust Correlation - Ed.

By Dr. Rich Herrington, Research and Statistical Support Consultant

This month we demonstrate multiple contrast adjustment using the False Detection Rate method (FDR). 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 creates a vector of four numbers, displays the results, then sorts and displays the results. To view any text output, scroll to the bottom of the browser window. To view any graphical output, 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.

```
x<-c(.020,
.012, .048, .001,)
y<-sort(x)
x
y
```

Run Program

Introduction

False Discovery Rate (Benjamini & Hochberg, 1995) is a relatively new statistical procedure that controls the number of mistakes make when performing multiple hypothesis tests. False Discovery Rate (FDR) accomplishes this task by allowing one to control beforehand, the average fraction of false rejections made out of the total number of rejections performed. Furthermore, the FDR procedure is a simple procedure that can be adapted to work with correlated data sets.

It is common in statistical modeling to test whether data is consistent with the predictions of a particular statistical model. In this approach, one tests for overall differences between data and the model. For example, it is common in the social sciences to use mean difference testing (i.e. t-tests and ANOVA modeling) to search for statistically significant differences between group means, beyond those that were tested by a prior hypothesis (post-hoc comparisons (unplanned) as opposed to planned comparisons). In the case of a multi-way ANOVA (e.g. 3 way ANOVA), an "omnibus F-test" is performed. This overall statistical test ascertains whether there are statistically significant pairwise differences between means existing in the data set. In other words, the F-test informs researchers that at least one mean difference exists, but does not provide the information necessary to discern where these differences lie.

Multiple Hypothesis Testing

In accordance with usual ANOVA modeling practice, follow up "post-hoc" tests are performed to delineate which of the pairwise means contributed to the overall significant F-test. With a single t-test, if the mean difference is larger than twice the standard error of measurement, significance is declared. This approach allows one to declare significance erroneously with probability of about 0.05. That is, the usual "nominal" alpha level such as .05 or .01 is used for each test, as though no other comparisons were being made on the data. However, the making of such errors increases rapidly with the number of tests performed, so an adjustment is necessary to be applicable for multiple testing. This nominal alpha level is often referred to as the Type I error rate per comparison, or the PC error rate. In practice however, comparisons are usually tested in sets of comparisons based on the same set of data. This introduces the possibility of making at least one Type I error in the entire set or family of comparisons. This probability of making one or more Type I error errors in the set of comparison tests is know as the familywise error rate or FW error rate. For K independent tests, the FW error rate may be calculated:

$$\alpha_{FW}=1-(1-\alpha_{PC})^K$$

When testing a family of K dependent comparisons with a constant per-comparison error rate α_{PC}, the relation between the FW error rate and the PC error rate is more difficult to specify. Nonetheless, it is true that when we have any K tests using a constant PC for each test, the following relationship must hold:

$$\alpha_{FW} \leq K \cdot \alpha_{PC}$$

An investigator might employ a different PC level for each set of K tests. In this way, more power can be ensured for some sets of tests, presumably more important questions. This is done by making the designated alpha level larger for the more important tests than would be otherwise indicated. The familywise error rate must always be less than or equal to the sum of the error rates over the individual tests. If one wants to make the FW rate no larger than some value, say α_{FW}^*, then we can do so by setting the PC rate for each test at:

$$\alpha_{PC}=(\alpha_{FW}^*)/K$$

so that:

$$\alpha_{FW} \leq \alpha_{FW}^*$$

This approach is sometimes called the Bonferroni test, and can be applied to both independent and dependent tests. The Bonferroni method just outlined can be applied to

post hoc comparisons, although it becomes much too conservative to be practically applicable when many comparisons are made. Alternatively, multiple testing without adjustment allows too many false discoveries in return for more correct detections. While the Bonferroni method tightly controls the propensity for making false discoveries, it also misses many real detections. Testing without adjustment, and the Bonferroni approach represent two opposite extremes in multiple contrast adjustment. The False Detection Rate Method (FDR) represents an intermediate solution between these two extremes, when a large number of tests is conducted.

The False Detection Rate Method (FDR)

Benjamini & Hochberg (1995) suggested the FDR method as an improvement on existing multiple contrast adjustment approaches. FDR has higher power than Bonferroni, and it controls errors better than testing without adjustment, by controlling a different measure of error than Bonferroni and other post-hoc comparison techniques. Bonferroni seeks to control the chance of even a single false discovery among all tests performed. The FDR method controls the proportion of errors among those tests whose null hypothesis were rejected. Thus, FDR attains higher power by controlling the most relevant errors.

The FDR procedure is as follows. First select an alpha between zero and one, $0 \le \alpha \le 1$. Let $P_1, \ldots P_N$ denote the p-values from the N tests, listed from smallest to largest. Let:

$$d = \max\left\{ j : \quad P_j < \frac{j \cdot \alpha}{C_N \cdot N} \right\}$$

where C_N is a constant defined below. Reject all hypothesis whose p-values are less than or equal to P_d. When the p-values are based on statistically independent tests, we take $C_{N=1}$. When the tests are dependent, we take:

$$C_N = \sum_{i=1}^{N} \frac{1}{i}$$

Benjamini & Hochberg (1995) show that the proportion of errors among the rejected tests are no larger than α. That is, $FDR \le \alpha$. As an algorithm, the procedure can be described as (for 10 tests and critical alpha=.05) :

1) Create the vector A by sorting the observed pvalues.
2) Create the vector B by computing $j \cdot \frac{\alpha}{10}$ for j=1,.....10 and α=.05 (in the case of independent tests).
3) Subtract vector A from vector B; call this vector C.
4) Find the largest index, d, (from 1 to 10) for which the corresponding number in vector C is negative.
5) Reject all null hypothesis whose p-value are less than or equal to P_d (d indexes vector A). The null hypothesis for the other tests are not rejected.

An Example Using GNU S ("R")

```
pvalue<-c(.021,
.001, .017, .041, .005, .036, .042, .023, .070, .10)
sorted.pvalue<-sort(pvalue)
sorted.pvalue
j.alpha<-(1:10)*(.05/10)
j.alpha
diff<-sorted.pvalue-j.alpha
diff
neg.diff<-diff[diff<0]
pos.diff<-neg.diff[length(neg.diff)]
index<-diff==pos.diff
index
p.cutoff<-sorted.pvalue[index]
p.cutoff
p.sig<-pvalue[pvalue<=p.cutoff]
p.sig

### A test case comparing the FDR script ### against the "multtest"
#   library. "BH" is the FDR for independent p-values

library(multtest)
procs<-c("Bonferroni","Holm","Hochberg","SidakSS","SidakSD","BH","BY")
rawp<-c(.049, .049, .049)
res2<-mt.rawp2adjp(rawp,procs)
res2
```

Run Program

Results and Conclusion

The resulting vector, "p.sig" is the final vector containing all of the rejections from the null hypothesis - 5 rejections out of 10 statistical tests; "p.cutoff" is the new alpha criterion used to assess significance - 0.023. These statistical detections or discoveries contain at most 5% errors or false rejections. The FDR method increases the power to detect differences while maintaining control of a meaningful measure of error rate. The Bonferroni approach would have the alpha criterion at .005 (.05/10), whereby only 2 of the tests would have been deemed statistically significant. The FDR method is a relatively simple method for multiple contrast adjustment that keeps type II error low (high power), while maintaining control over the number of decision errors for the rejected tests (less than 5% for an alpha criterion of .05).

The results below compare the FDR script in this article against the R library, "multtest", for three p-values: .049, .049, and .049. The results for both are equivalent.

```
> pvalue<-c(.049, .049, .049)
> sorted.pvalue<-sort(pvalue)
> j.alpha<-(1:3)*(.05/3)
> diff<-sorted.pvalue-j.alpha
> neg.diff<-diff[diff<0]
> pos.diff<-neg.diff[length(neg.diff)]
> index<-diff==pos.diff
> p.cutoff<-sorted.pvalue[index]
> p.cutoff
[1] 0.049
> p.sig<-pvalue[pvalue<=p.cutoff]
> p.sig
[1] 0.049 0.049 0.049
```

```
> ### Comparing to "multtest" library
>
> library(multtest)
> procs<-c("Bonferroni","Holm","Hochberg","SidakSS","SidakSD","BH","BY")
> rawp<-c(.049, .049, .049)
> res2<-mt.rawp2adjp(rawp,procs)
> res2
$adjp
      rawp Bonferroni  Holm Hochberg   SidakSS   SidakSD    BH    BY
[1,] 0.049      0.147 0.147    0.049 0.1399146 0.1399146 0.049 0.049
[2,] 0.049      0.147 0.147    0.049 0.1399146 0.1399146 0.049 0.049
[3,] 0.049      0.147 0.147    0.049 0.1399146 0.1399146 0.049 0.049
```

References

Benjamini, Y., Hochberg, Y. (1995). J.R. Stat. Soc. B, Vol 57, page 289.

Benjamini, Y., Yekutieli (1999). J. Stat. Plan. Infer., Vol 82, page 171.

Announcement

GNU S ("R") on SOL

R version 1.4.1 (2002-01-30) is now installed on SOL, UNT's research UNIX computer. To invoke R within your session, type:

~ % /usr/local/R/bin/R

To quit out of an R session, type:

> q( )

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University of North Texas

SAS Corner

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

Reading Web survey data (*)

If you are a SAS user and interested in a DYI web survey, this article will be handy for you. I provide a sample program that reads in web survey data in one shot. For more details about creating a web survey using FrontPage, consult my ACS Short Course notes at New Technologies for Survey Research I and **II**.

When FrontPage collects the data from the instrument, it will generates a text data file either delimited by tabs or commas. The tab-delimited file will look like the following:

```
"gender" "age" "class" "trans_d" "trans_b" "trans_t" "dessert" "name" "Date" "Time" "Remote Name"
 "2" "3" "5" "" "" "1" "4" "Mary Poe" "16 Nov 1999" "12:25:50" "rss0p133.acs.unt.edu"
 "1" "3" "6" "1" "" "1" "2" "Karl Ho" "16 Nov 1999" "12:26:46" "rss0p133.acs.unt.edu"
 "1" "5" "6" "1" "" "" "5" "Steven Hawkins" "16 Nov 1999" "12:27:31" "rss0p133.acs.unt.edu"
 "2" "6" "6" "" "" "1" "1" "Marilyn Monroe" "16 Nov 1999" "12:27:56" "rss0p133.acs.unt.edu"
 "1" "6" "6" "1" "1" "1" "2" "George Bush" "16 Nov 1999" "12:28:30" "rss0p133.acs.unt.edu"
 "2" "3" "4" "" "1" "" "2" "Jane Doe" "16 Nov 1999" "12:29:06" "rss0p133.acs.unt.edu"
 "1" "5" "1" "1" "1" "1" "4" "Henry Ford" "16 Nov 1999" "12:29:24" "rss0p133.acs.unt.edu"
 "2" "4" "5" "1" "" "" "3" "Helen Hunt" "16 Nov 1999" "12:29:43" "rss0p133.acs.unt.edu"
 "1" "2" "2" "1" "" "1" "5" "Peter Smith" "16 Nov 1999" "12:30:25" "rss0p133.acs.unt.edu"
 "2" "6" "6" "" "" "1" "4" "" "16 Nov 1999" "12:31:07" "rss0p133.acs.unt.edu"
```

This data set is generated from a sample web survey asking the preference for dessert and transportation mode. I intentionally leave some entries to be blank and have text variables with embedded space.

FrontPage automatically wraps around values with double quotes. If you read in the data using the Text Import Wizard in SAS, the program will strip the double-quotes but meanwhile treat all values as string variables. One get- around is to pre-process the data by using a text editor to remove all the double quotes. That will be a simple but quite an "ad hoc" process. Another problem is the embedded spaces and delimiters. Usually, text data from web survey are separated or delimited by a delimiter that serves as a mark for reading the next variable. Space and comma are common delimiters. However, space is a bad delimiter for survey data, especially if you have a text variable like name. Even if you separate last name and first name, you will have the redundant delimiter problem reading names like Van Exel or Sue Ellen that carry an embedded space. Comma is not better when you have a comment field. Users will add comma in their long comments, which will trick the program into believing that the comma in the comment is a delimiter. With these two problems in mind (double-quotes and redundant delimiters), I design a SAS program that provides a better way to read data from FrontPage-based web surveys.

1. The omnipresent quotation marks

Well, this is relatively easy. SAS Data step has an option under INFILE statement that takes care of that. The DSD option will strips off the quotation marks that surround values in the data. An extra bonus is it will treat two consecutive quotation marks (i.e. " or "") as missing value. Nevertheless, the DSD option assumes the delimiter to be a comma. As mentioned above, we don't really like comma as delimiters. Well, at least it solves half of our problem. We will fix this using another option that follows right away.

2. Delimiters, delimiters, delimiters.....

I select tab as the delimiter for survey data instead of space and comma. The tab character is an ASCII character even though we don't see it as a visible text on screen. Its beauty is no respondents can enter a tab as in neither the name field or the comment field. So, the data stream for each case will only contain the machine-generated tab characters and we won't have the redundant delimiter problem. To specify reading tab-delimited data in SAS, we use the DLM='09'x option in the INFILE statement. (**)

Okay, here is the program:

```
FILENAME MYFILE 'C:\temp\dessertdata.txt';
 DATA A;
INFILE MYFILE DLM='09'x DSD FIRSTOBS=2;
INPUT gender age class trans_d trans_b trans_t dessert name $
 Date :date11. Time :time10. Remote :$char24.;
RUN;
```

This program, simple enough, is to read in a web survey text data file "dessertdata.txt" under the TEMP directory on C drive. The DLM and DSD options are used in the INFILE statement. Note that I start reading the data at the second row, because the first row will be the variable names.

3. Informats

Hold up one second, we are not done yet. The program is using the list input method to read in the delimited file. For this mode of input

method, however, informats could not be used. How do we specify width and formats for time, date and long-string comment variables like we usually do using formatted input? We can add this feature by using a colon (:) as the format modifier. The format modifier instructs the program to read up to the maximum number of bytes specified in the informat (24 columns for $char24), or when it reaches a delimiter, which is another tab. The following is what the data look like when I read them into SAS:

VIEWTABLE: work._last_

	age	class	trans_d	trans_b	trans_t	dessert	name	Date	Time	Remote
1	3	5	.	.	1	4	Mary Poe	14564	44750	rss0p133.acs.unt.edu
2	3	6	1	.	1	2	Karl Ho	14564	44806	rss0p133.acs.unt.edu
3	5	6	1	.	.	5	Steven H	14564	44851	rss0p133.acs.unt.edu
4	6	6	.	.	1	1	Marilyn	14564	44876	rss0p133.acs.unt.edu
5	6	6	1	1	1	2	George B	14564	44910	rss0p133.acs.unt.edu
6	3	4	.	1	.	2	Jane Doe	14564	44946	rss0p133.acs.unt.edu
7	5	1	1	1	1	4	Henry Fo	14564	44964	rss0p133.acs.unt.edu
8	4	5	1	.	.	3	Helen Hu	14564	44983	rss0p133.acs.unt.edu
9	2	2	1	.	1	5	Peter Sm	14564	45025	rss0p133.acs.unt.edu
10	6	6	.	.	1	4		14564	45067	rss0p133.acs.unt.edu

The date and time variables are in SAS date and time values. We will change the variables using date7. and time8. formats and make them look like:

VIEWTABLE: work._last_

	age	class	trans_d	trans_b	trans_t	dessert	name	Date	Time	Remote
1	3	5	.	.	1	4	Mary Poe	16NOV99	12:25:50	rss0p133.acs.unt.edu
2	3	6	1	.	1	2	Karl Ho	16NOV99	12:26:46	rss0p133.acs.unt.edu
3	5	6	1	.	.	5	Steven H	16NOV99	12:27:31	rss0p133.acs.unt.edu
4	6	6	.	.	1	1	Marilyn	16NOV99	12:27:56	rss0p133.acs.unt.edu
5	6	6	1	1	1	2	George B	16NOV99	12:28:30	rss0p133.acs.unt.edu
6	3	4	.	1	.	2	Jane Doe	16NOV99	12:29:06	rss0p133.acs.unt.edu
7	5	1	1	1	1	4	Henry Fo	16NOV99	12:29:24	rss0p133.acs.unt.edu
8	4	5	1	.	.	3	Helen Hu	16NOV99	12:29:43	rss0p133.acs.unt.edu
9	2	2	1	.	1	5	Peter Sm	16NOV99	12:30:25	rss0p133.acs.unt.edu
10	6	6	.	.	1	4		16NOV99	12:31:07	rss0p133.acs.unt.edu

¡@

Check out the blanks and the missing values. They are all clean, which is what data scrubbers like me are happy to see.

¡@

(*) Adapted from SAS Technical note TS-673 "Reading Delimited Text Files into SAS"
(**) For mainframe users using EBCDIC data, the representation is '05'x.

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Network Connection

By Dr. Philip Baczewski, Associate Director of Academic Computing

The New "World Book"

The other day, my six-year-old son asked one of those questions that all parents must be prepared to answer: "Dad, why is Alaska attached to Canada?" I responded with the first answer that came into my head which was "that's the way we bought it." I went on to explain, straining to invoke dusty memories of American History classes past, that at one time Alaska was a territory separate from the United States and Canada and that a man named Seward arranged to buy the territory for the U.S. and that eventually it became the state of Alaska. Any smug feeling I might of had from my fast and semi-factual answer was quickly extinguished by his next question: "Dad, why is Hawaii in the middle of an ocean?" I could only respond that it was formed by volcanoes there and that it became a state after it was a territory of the United States, but that I did not know the details of how that all happened. However, the next words out of my mouth were, "we'll find out about it by looking it up on the Internet."

The Encyclopedia Age

Immediately after my stock answer as to where we'd find information, it occurred to me that similar questions I posed in my youth were invariably met with a response of "go look it up in the encyclopedia." As was common in many households of the pre-Internet era, we had a special bookcase filled with thick blue leather-bound volumes in which the sum total of all human knowledge was purported to be contained (or at least as much knowledge as would fit in 20 volumes). In fact, we had two sets: the child-accessible series literally entitled "The Book of Knowledge" which had great features like an entry on dogs which included pictures of all breeds known to exist in 1963; in contrast to that was the "Encyclopedia Americana" (no Britannica for this American family) which had fewer pictures but more detail on a greater variety of arcane subjects like the Aurora Borealis (Volume 1).

Buying a set of encyclopedias was one of those things you did to support your children's education in that pre-Internet dark age. This was especially emphasized by encyclopedia salesmen. The odd thing was, it was true. History reports, science projects, and many other homework assignments were started by a trip to those thick blue books. Of course, you had the choice of various sets of encyclopedias at your local library, but the immediacy of your own set of volumes helped to answer those random questions that came up and, more importantly, came to the rescue when that homework assignment was put off until the very last minute. And yes, once you finished reading about Hawaii, you'd invariably start flipping through the rest of the volume and increase your knowledge of the Hallelujah Chorus, Harpoons, and Horses.

The Information Age

The "information age" in which we find ourselves has caused a cultural shift which has obliterated the encyclopedia as we knew it from our collective conscious. Why buy a set of paper books which will be obsolete before the ink dries on your check, when an electronic source can be updated continually with minimal expense? Somewhere I have a CD-ROM

with the "World Book" encyclopedia on it. It's a couple of years old, however, so it's easier to just look something up on the Internet. Even the concept of the encyclopedia as a unit of measure is no longer useful. In the olden days of computing (1988 or so), we used to measure the capacity of magnetic tapes in terms of the number of encyclopedia volumes it could hold. Today, that set of encyclopedias is just a spec on your 80 Gigabyte hard drive.

Today's Internet is not entirely synonymous with the concept of an encyclopedia. An encyclopedia is organized alphabetically by topic for quick and direct access to the information you need. Usually to find information on the Internet you start with a search engine like Google (http://www.google.com/) and have to use just the right key words to return the result you intended. Often, however, in the process of narrowing your search you find additional information that is equally helpful or interesting. When you had an encyclopedia in front of you, you invariably read other articles in the same volume thereby increasing your overall knowledge of the universe (well at least I did, but I also never stopped with the word I was looking up in the dictionary either, a malady which must have lead to my acquisition of a "terminal" degree). On the Internet, however, hyperlinks often lead to information related to your intended topic which can result in a much broader scope of information and understanding.

A Variety of Viewpoints

When you read an encyclopedia, you knew that the entry had been written by an expert. On the Internet, some information may be written by experts, but much is probably written by folks like you who have a particular interest in a particular topic and have decided to share the research they have done. With an encyclopedia, you would just trust that everything was accurate and true (experts are never wrong), however, with the Internet you may get a variety of information from a variety of viewpoints and have to use your brain to evaluate the reliability of the source or the validity of the viewpoint (for example, did the U.S. step in to protect the Hawaiian people from being controlled by European empires or did American plantation owners invite American intervention to safeguard and strengthen their economic interests thereby leading to the political downfall of the Hawaiian monarchy and the loss of independence for the native Hawaiians?).

The Internet has one advantage over an encyclopedia. Often experts do provide direct information and materials which are accessible only for the cost of your computer or connect time. That information is frequently updated and in many cases has quite a bit of high-quality detail. NASA's web page (http://www.nasa.gov/), for example, provides links to the output of many research programs relating to space flight, astronomy, and astrophysics. There's also quite a bit of information to support science education for schools and individuals. NASA, like many other organizations, has a vested interest in raising people's awareness and understanding of space science. Whether you think it's so that they hope enough people will continue to support their government funding or that they support science education to promote the advancement of technology and human exploration, the bottom line is that you are getting quality information straight from the authoritative source. That's the beauty of the Internet. It is in many people's best interest to provide quality information without the filter of a publishing process which is out of their control.

The Bottom Line

So, the best thing you can do for your children's education is to get a computer and an Internet connection. Sure, you can use the Internet computer at the local library, but you'll be glad you have your own Internet connection when that important question comes up or when junior has waited until the last minute to do their homework. Since I'm an Internet expert,

you can trust me on that one.

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Link of the Month

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

Earth Day 2002:

"Real People Making a Real Difference"

Surf over to http://www.cas.unt.edu/earthday/ and check out the schedule of events planned for this year's Earth Day Celebration.* Presented by the College of Arts and Sciences, in conjunction with the Institute of Applied Sciences, the annual Earth Day Celebration will occur on Friday, April 19, 2002 from 1:00-7:00 p.m. in and around the EESAT building.

In addition to the traditional free food and music, there will be exhibitors and presentations throughout the day promoting environmental responsibility. For example, you can see:

- **Exhibitors**

  Texas Parks and Wildlife - hunting and the effect of hunters on habitats
  City of Denton - Parks and Rec. Denton County Water Council
  Urban Planner - NCTCOG
  Keep Texas Beautiful
  Greenbuilt Inc.
  The Kneaded Touch
  City of Denton - Quality Assurance Officer
  Earth Watch
  Peace Corps
  Student for Ethical Treatment of Animals
  Elm Fork Chapter of Texas Master Naturalist
  Lewisville Lake Environmental Learning Area
  City of Denton Recycling
  The Resources Conservation Committee
  Plato's Closet

- **Alternative Fuel Vehicles**

  UNT Mean Green Environmental Machine
  Compressed Air Vehicle - Armando Regusci
  Denton Municipal Electric Truck
  CoolN2Car
  Compressed air bicycle
  Winston School Solar Car
  E-bikes from Eckert Hyundai
  DFW GEM Car
  Electric Ranger
  City of Denton Electric cars

Sky Theater@UNT

For more detailed information, see the Website or call (940) 369-8936.

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* Earth Day 2002 officially occurs on Monday, April 22, the 32nd annual observance, according to the Wilderness Society. Other Earth Day Websites include Earth Day Network, Earth Day 2002 - EnviroLink Resource Guide, and International Earth Day.

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Dealing With Empty Variable Names In ColdFusion

By Shannon Eric Peevey, UNT Central Web Support

This is the long awaited ColdFusion article that has kept many of you on your seats for the past few months, as I was either too busy to write this article, or had more important information to get to you as time drifted by. Therefore, to recap the subjects that we have written about in the past, we have covered the topic of how to get started using ColdFusion here at the University of North Texas, Creating your first application using ColdFusion, and Connecting to a database using ColdFusion. We, therefore, have a good basic foundation on which to draw from to continue in our path down web application creation lane. Now it is time to look at an oft overlooked, and very under-documented occurrence of an empty parameter. How do you deal with an empty or non-existent variable that is passed to the evaluating .cfm page?It's easy!!

In this article, we are going to show you how to deal with offending empty variables, and bring about smooth, elegant applications using ColdFusion.

To Begin…

To start, we must have our beginning html page, named testParam.html, that will hold two forms named: *name* and *phone*.

```
<HTML>
<HEAD>
        <TITLE>Welcome to the Test</TITLE>
</HEAD>
<BODY>
<P><FONT SIZE=4 STYLE="font-size: 16pt">
        <B>Welcome to the ColdFusion Test Application:</B></FONT></P>
<FORM ACTION="testParam2.cfm" METHOD="post">
        <P><FONT SIZE=3><B> Please enter your name here:
                <INPUT TYPE=TEXT NAME="name" SIZE=25></B></FONT>
</P>
        <P><FONT SIZE=3><B> Please enter your telephone here:
                <INPUT TYPE=TEXT NAME="phone" SIZE=25></B></FONT>
</P>
        <DIV ALIGN=LEFT>
                <P><FONT SIZE=3><B> <INPUT TYPE=BUTTON
 NAME="submit"
 VALUE="Submit"></B></FONT></P>
```

```
            </DIV>
    </FORM>
    </BODY>
    </HTML>
```

Many of you will recognize this from the first application article in this series. This is a simple form that accepts input into two text boxes, and sends that input to a file named testParam2.cfm. In testParam2.cfm, we are going to use the existing code that we created in the first app article, which looks like this.

```
    <HTML>
    <HEAD>
    <TITLE>This page interprets the data from test.cfm </TITLE>
    </HEAD>
    <BODY>
    <CFOUTPUT>
            <H2># Form.name #</H2>
            <H2># Form.phone #</H2>
    </CFOUTPUT>
    </BODY>
    </HTML>
```

This page outputs the data held in the variables form.name and form.phone to the browser. This is a nice simple script to get started with, but what happens if we add a checkbox to the first page and try to interpret the data on the next page? Well… Let's try it. Add this code beneath your text boxes on testParam.html.

```
<p> <FONT SIZE=3><B> Wasn't this the greatest page? (Check if you like the page) <input type="checkbox" name="likePage" value="1">
```

This html adds a checkbox to the bottom of our page which asks the user to tell us if they liked the page or not… As you know, if they mark the checkbox, then the page will send forward a variable that can be accessed with #form.likePage# from the testParam2.cfm page. Like this:

```
    <HTML>
    <HEAD>
    <TITLE>This page interprets the data from test.cfm </TITLE>
    </HEAD>
    <BODY>
    <CFOUTPUT>
            <H2>#Form.name#</H2>
            <H2>#Form.phone#</H2>
            <H2>#Form.likePage#</H2>
    </CFOUTPUT>\
    </BODY>
    </HTML>
```

If the checkbox is marked, you will get a returned value of 1, because that is the value that we have set the checkbox equal to if checked. But… What if it's not checked? Will the testParam.html page send forward a variable value of 0? Of course not. HTML is not intelligent, and will only send forward the variables that hold values. We will then get an error when the user clicks on the submit button at the bottom of the page.

How do we deal with this?

The trick to handling this tricky situation is to introduce the <CFPARAM> tag. The <CFPARAM> tag is ColdFusion's handy way of "test(ing) for a parameter's existence and optionally provide a default if it is not found"[1]The way to use the <CFPARAM> tag is to place it at the top of your page, before the <HTML> tag, and create a default for the parameter that you are looking for. Here is the syntax diagram for a <CFPARAM> statement:

```
<CFPARAM NAME="Form.check_name" default="">
```

Therefore, our <CFPARAM> tag will look like this:

```
<CFPARAM NAME="Form.likePage" default="0">
```

The reason that I am setting a default of zero, is because it is logical to test for 0, no, the user doesn't like the page, or 1, yes, the user did like the page. (In the world of Boolean datatypes, 1 equals true, and 0 equals false.) Therefore, if the user does not like our wonderful page, they will click submit, sending forward a value for the Form.name and Form.phone variables, and nothing at all for our Form.likePage variable. Our testParam2.cfm page receives this data, and is sent to the ColdFusion server for parsing, where the first statement of the page checks for a non-existing value for Form.likePage, and then, because the value doesn't exist, creates a value for Form.likePage="0". The rest of the page parses, and the values are then output to the browser. Here is the final code:

```
<CFPARAM NAME="Form.likePage" default="0">
<HTML>
<HEAD>
<TITLE>This page interprets the data from test.cfm </TITLE>
</HEAD>
<BODY>
<CFOUTPUT>
        <H2>#Form.name#</H2>
        <H2>#Form.phone#</H2>
        <H2>#Form.likePage#</H2>
</CFOUTPUT>
</BODY>
</HTML>
```

It's that easy!

That is the quick and easy answer to a troubling, and oft ignored question of non-existing parameters, which would have stopped our ColdFusion application dead in it's tracks. With the use of the <CFPARAM> tags, we can check for any number of non-existing parameters from the sending page, and then test that value for flow-of-control purposes. That being the case, please wait with baited breathe until the next installment which will begin our journey down the first true programming concept of ColdFusion. Control Structures! Until then… Live long and prosper!

Shannon Peevey – Central Web Support

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[1] *CFML Language Reference*, Allaire Corporation.

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Short Courses

By Claudia Lynch, *Benchmarks Online* Editor

The Short Courses are basically over for this semester. Please consult the Short Courses page to see what a likely schedule would be for this summer. Please note also the other training opportunities listed below.

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. Additionally, the Center for Continuing Education and Conference Management has a new program for interdepartmental training in business computer literacy. These classes are offered for a fee but discounts are given to those associated with UNT, and Inter-departmental Orders are accepted.

GroupWise Training

If would like to have a Basic GroupWise seminar for your area, please contact Jason Gutierrez, Campus Wide Networks, jasong@unt.edu . Seminar Topics: Basic GroupWise, HTML Messages, FAQ. The last class for this semester is **April 25, 2002 10 a.m. - 11:50 a.m.**

All seminars are in ESSC Room 152. For signup information, go to http://www.unt.edu/hr/training/treg.htm or E-mail Bhavna Vaswani at bvaswani@unt.edu

ProDirections Instructor-led Training

UNT has formed a partnership with ProDirections to offer instructor-led computer training on Microsoft Word, Excel, PowerPoint, and Access. Classes are $135.00 per person, book included.

Upcoming workshops:

Advanced Access
Tuesday, April 23, 2002
1:00-5:00 p.m.

Basic/Intermediate Word
Thursday, May 2, 2002

1:00-5:00 p.m.

Basic/Intermediate PowerPoint
Thursday, May 9, 2002
9:00 a.m.-1:00 p.m. (lunch provided)

To register, send E-mail to Bhavna Vaswani at bvaswani@unt.edu or call Human Resources at x4246. Payments can be made by either a check request or with a Purchasing Card and should go directly to ProDirections. Cancellations must be done 2 days prior to the workshop date to receive a refund.

For a description of each class please go to http://www.prodirections.com/ and click on "Corporate Workshops"

Center for Distributed Learning

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

UNT Libraries'

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

Technical Training

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

UNT Mini-Courses

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

Alternate Forms of Training

Many of the General Access Labs around campus have tutorials installed on their computers. For example, the College of Education recently acquired some Macromedia Tutorials for Dreamweaver 4.0, Flash 5.0 and Fireworks 4.0.

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. Of particular interest are courses available via SmartForce (formerly CBT Systems). See http://www.unt.edu/smartforce/ for more information.

There are also handouts for computer training on the following topics:

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

Adobe Acrobat Reader Format only for the following:

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

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

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IRC News

Minutes provided by Sue Ellen Richey, Recording Secretary

IRC Regular and Ex-officio Voting Members: *Judith Adkison, College of Education; Ginny Anderson, Fiscal Affairs; Donna Asher, Administrative Affairs; Craig Berry, School of Visual Arts; Cengiz Capan, College of Business, GALC; Bobby Carter, UNT Health Science Center; Christy Crutsinger, Faculty Senate; Jim Curry, Academic Administration; VACANT, Student Association; Duncan Engler, University Planning Council; Don Grose, Libraries; Jenny Jopling, Instruction Program Group; Joneel Harris, EIS Project Group; Elizabeth Hinkle-Turner, Standards and Cooperation Program Group; Abraham John, Student Affairs; Christine Mitchamore, Graduate Student Council; Ramu Muthiah, School of Community Services; Jon Nelson, College of Music; Robert Nimocks, Director, Information Technology, UNTHSC; Patrick Pluscht, Distributed Learning Team; Mark Rorvig, Research Program Group (Acting Chair); Paul Schlieve, Communications Program Group; Kathleen Swigger, College of Arts and Sciences; Philip Turner, School of Library and Information Science and University Planning Council (Chair, IRC); Virginia Wheeless, Chancellor for Planning.* ***IRC Ex-officio Nonvoting Members:*** *VACANT, Telecommunications; Charles Andrews, GALMAC; Bill Buntain, Computing Center Networking; Jim Curry, Microcomputer Maintenance Shop; Richard Harris, Computing Center and University Planning Council; Coy Hoggard, Computing Center/Administrative; VACANT, UNT Health Science Center; Maurice Leatherbury, Computing Center/Academic; Sue Ellen Richey, Computing Center (Recording Secretary). [As of 9/2001]*

March 26, 2002

VOTING MEMBERS PRESENT: PHILIP TURNER, Chair, DON GROSE, ELIZABETH HINKLE-TURNER, DUNCAN ENGLER, CRISTINE MITCHAMORE, LOU ANN BRADLEY, JON NELSON, CHRISTY CRUTSINGER, JIM CURRY, PAUL HONS (for JUDITH ADKISON), ARMIN MIKLER, TOM JACOBS, SEAN HIATT, RAMU MUTHIAH, WIL CLARK (for JOHN PRICE), DONNA ASHER

NON-VOTING MEMBERS PRESENT: PATRICK PLUSCHT, MAURICE LEATHERBURY, KENN MOFFITT, CHARLES ANDREWS, BILL BUNTAIN, SUE ELLEN RICHEY (Recording Secretary)

MEMBERS ABSENT: COY HOGGARD, RICHARD HARRIS, VIRGINIA WHEELESS, JENNY JOPLING, JONEEL HARRIS, DOUG MAINS, ROBERT NIMOCKS, BOBBY CARTER, CRAIG BERRY, ABRAHAM JOHN, GINNY ANDERSON, CENGIZ CAPAN

GUESTS: JENNIFER LAFLEUR, STEVE TAYLOR

Minutes Approved

The minutes of the February 19, 2002 meeting were approved with one correction on page two, last paragraph, as follows:

> "Ken Moffitt, the new Chair of the Standards & Policy Planning Group, reported that they are working on a new Web and Accessibility Policy."

DCSMT

Maurice Leatherbury reported for DCSMT that the committee that has been looking into

Office XP issues has come to the conclusion that it works with no problems with all of the known applications on campus; therefore, departments are free to make their own decision about when to roll the software product out.

Communication Program Group

Lou Ann Bradley reported for the Communication Program Group and distributed copies of the revised policy for the Addition of Devices to UNT-NET, which had a first reading at the February IRC meeting. Christy Crutsinger seconded the presentation of this new policy. Bill Buntain explained during discussion that the policy covers both communication devices as well as devices which provide communications services (such as servers). In a vote of the Council members present, the policy was approved.

EIS Planning Group

Maurice Leatherbury stated that members of the EIS Planning Group are in California visiting corporate headquarters of Oracle and PeopleSoft, having just returned from a corporate visit to SCT in Pennsylvania. The group has also completed site visits to the University of Houston and UT HSC at San Antonio.

Research Planning Group

Armin Mikler reported for the Research Planning Group that the committee met last month and selected him as Chair. The group will meet again today to develop a new goal statement for the committee.

Student Computing Planning Group

Elizabeth Hinkle-Turner reported for the Student Computing Planning Group that their next meeting will be on April 1st to plan a presentation to students at Freshman Orientation regarding computing services available on campus.

Distributed Learning Team

Patrick Pluscht reported that the Distributed Learning Team has not met since the last IRC meeting but will meet this Thursday to consider the WebCT Privacy Policy. The Teaching With Technology Grants are being reviewed and hopefully the awards can be announced in mid April. The Texas Distance Learning Association will be holding its meeting on April 2-4 at the Westin-Beechwood Hotel. There is still time to register, but Patrick also asked for volunteers to staff meeting rooms and help in other ways. If anyone know of someone who would be interested in volunteering have them contact Brenda Ritz at Center for Distributed Learning. He stated that there will be 107 break-out sessions, including some “how to” seminars and the Governor of South Dakota will be the key-note speaker.

UNT North Campus

Duncan Engler asked if the IRC will be dealing with the facilitation of the new UNT north campus. Don Grose commented that he believes that all of the Planning Groups will be involved as the project proceeds. Bill Buntain added that the Computing Center is already working with Verizon, the City of Denton, and Co-Serve to get fiber between the main campus and the new north campus building. He stated that the building structure is optimal for communications so they don’t anticipate any problems and are trying to get all of the

wiring completed before anyone moves out there.

Downloading of Copyrighted Files

Maurice Leatherbury reported that he has been receiving notices from the motion picture industry regarding the downloading of copyrighted files through the web, by students. Several students have been disciplined through the Dean of Students Office, and Maurice said he sent out a blanket email to all students warning about such activities.

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. This fiscal year, the December meeting was changed to December 11th, the April meeting was cancelled, and the May meeting to May 7th. All meetings of the IRC, its program groups, and other committees, are open to all faculty, staff, and students.

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Transitions

The following are new employees:

- **Brian Richman**, Programmer, Voice and Web Strategic Applications Team, MTS;
- **Steve Salsman**, Telecommunications Specialist, Telecommunications, NCS.
- **Howard Draper**, Microcomputer Consultant, Helpdesk (part-time).
- **Luke Quattrochi**, returning Microcomputer Consultant, Helpdesk (part-time).

The following people no longer work in the Computing Center:

- **Shawna Williams,** I/O Operator, Print Services, Production Services, MTS (part-time)
- **Mario Cauley**, Programmer III, Voice and Web Strategic Applications, MTS.
- **Scott Blackwell**, Microcomputer Consultant, Helpdesk (part-time).

Changes

- **Computing Center Physical Address**: change zip code from 76203-5398 to 76201
- **Michelle Hooper**, Programmer on Student Record Systems team, is now **Michelle Elliott**.

Awards, Recognition, Presentations, Professional Activities

The *Human Resources Newsletter* (April, 2002) recognized these Computing Center employees as Soaring Eagles: They will receive awards at the President's Staff Sack lunch on May 21.

- **Richard Sanzone**, Helpdesk Consultant, was recognized for helping the network manager move several monitors. "He willingly pitched in, worked hard, and did so with a smile!"
- **Bob Saringer**, CATV/Communications Technician, soars for, "pulling off a staff development program for the Division of Student Development" on short notice. Also recognized for helping on this project were Diana Forson, Housing; Chuck Fuller, Business Services and Susan Pierce,

Classroom Support Services.

- **Dr. Karl Ho**, Research and Statistical Support Services Manager, attended the International Studies Association Annual Convention in New Orleans, LA (March 24-27). He presented a paper titled "Is Democracy Square? Modeling Effects of Democracy on Political Repressions in the Post-war Years" with John King of American University.

  Dr. Ho was also a discussant at a conference hosted by Professor Alex Tan of the UNT Political Science department Saturday, April 13. The conference titled "UNT Conference on Parties and Elections in New Democracies April 13, 2002," is documented at: http://www.psci.unt.edu/Tan/partiesconference.html The paper he discussed is titled: "Splitting and Making Parties: Analysis of Party Reconfiguration in Taiwan".

- **Dr. Elizabeth Hinkle-Turner**, Student Computing Services Manager, participated in the annual conference of the Society for Electroacoustic Music in the United States (SEAMUS) held this year at the University of Iowa in Iowa City. Hinkle-Turner is the secretary of SEAMUS. She was also selected to the board of the Canadian Electroacoustic Community.

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Campus Computing News

By Dr. Maurice Leatherbury, Senior Director of Academic Computing

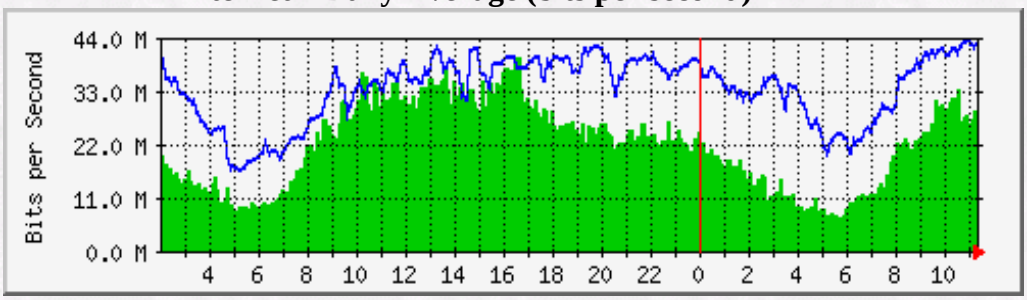
Internet Bandwidth (Again!)

Many readers of *Benchmarks Online* vividly remember the slowness of UNT's Internet connections about two years ago. At that time, the University had about 9 Mbps (million bits per second) of bandwidth capacity to Internet 1 (the "commodity" Internet over which most of our traffic flows.) That capacity was full from very early in the morning until late at night, effectively slowing our Internet access to a crawl. To alleviate the constriction in Internet data carrying capacity, we installed a 45 Mbps connection to Internet 1 early in 2001, followed shortly by an Internet 2 connection of another 45 Mbps. Internet 2 only connects institutions of higher education in the U.S. (with some exceptions, but that's the primary participants in I2,) so most Internet data communications goes through I1 because that's where most of the Web sites to which we connect are located (sites such as the State of Texas one, K-12 schools, and commercial firms like Microsoft and Apple Computer.)

Running Out of Internet Bandwidth

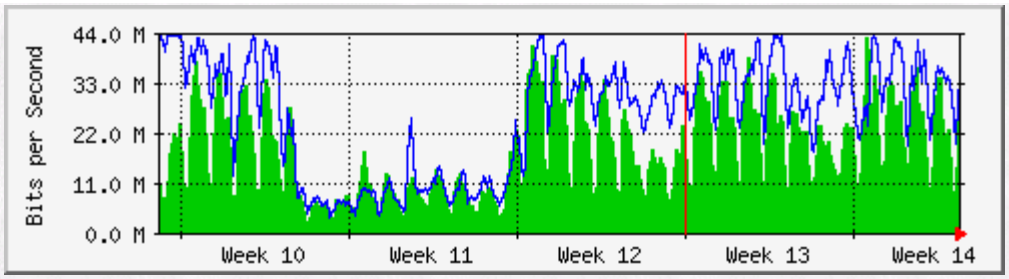
It's clear that we're nearing the point at which we'll have to expand our Internet 1 capacity again - this chart shows the traffic for today (April 11, 2002):

Internet 1 Daily Average (bits per second)



The green area represents incoming traffic (i.e., bits flowing from off campus to UNT's local area network.) The blue line show outgoing traffic. The chart graphically shows that we're nearing our 45 Mbps capacity several times during the day (and night.) The next chart demonstrates that today isn't an isolated instance of bandwidth congestion, because it shows a month's worth of traffic, and except for the weekends, our traffic peaks at our maximum capacity at some time each day.

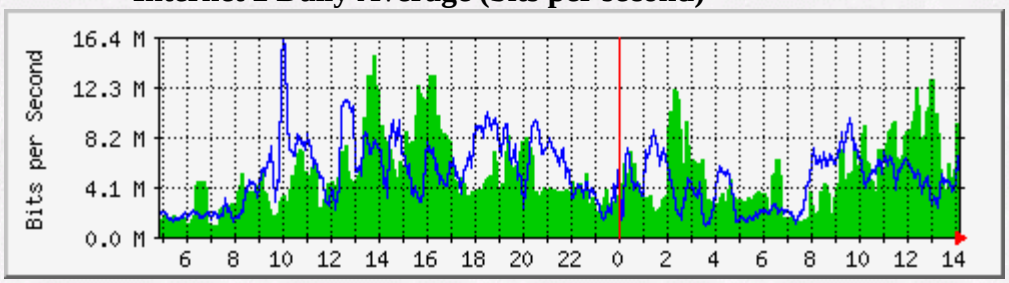
Internet 1 Monthly Average (bits per second)



Internet2 and Bandwidth Utilization

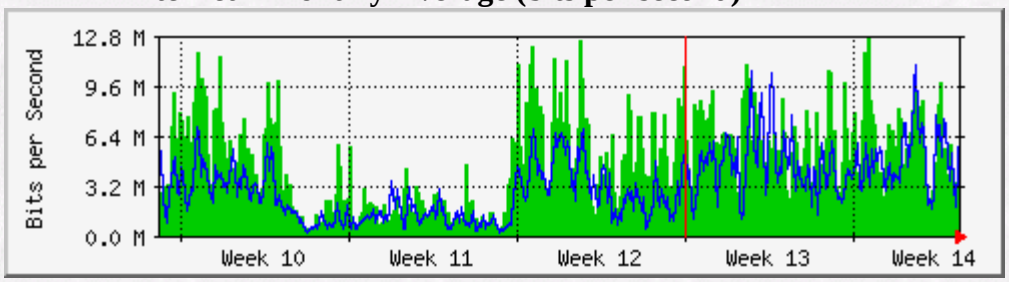
Earlier, I said that Internet2 only connects institutions of higher education in the U.S., so is of limited help in solve our Internet 1 bandwidth problem. But that new research network does contribute significantly to our overall Internet bandwidth capacity, thus reducing our commodity Internet traffic somewhat. Here's a graph of today's Internet2 bandwidth utilization:

Internet 2 Daily Average (bits per second)



The monthly graph looks very similar to the Internet 1 monthly graph, although on a different scale:

Internet 2 Monthly Average (bits per second)



In fact, calculating the total average bandwidth used over a month's period, we discover that Internet 1's average utilization was 18.2 Mbps inbound and 26.5 Mbps outbound while Internet2's average was 4.7316 Mbps inbound and 4.777 Mbps outbound. That means that Internet2 contributes 20% of our inbound Internet capacity and 15.3% of our outbound capacity utilization, not insignificant figures.

Future Bandwidth Plans

Because the campus is so heavily dependent upon Internet access, and our students, faculty, staff, alumni, general public, etc. need fast, reliable data communications to and from campus to perform their work and some leisure activities, the Computing Center is taking steps to expand our Internet 1 bandwidth.* We're exploring ways of funding the rather significant cost increase that will be required to expand our capacity to the next level, 155 Mbps. That

expansion will cost about $200,000 per year more than we're current paying for our 45 Mbps connection. We're also talking to our local Internet2 partners, SMU, TCU, UTD, and UTA, about sharing an Internet 1 connection in order to reduce the per-institution costs.

We're near the end of our busiest semester as far as Internet bandwidth requirements go. The summer terms see a drastic drop-off in Internet utilization because fewer students are on campus, in the dorms, in the general access labs, etc. However, the Fall semester will undoubtedly bring an upsurge in bandwidth needs as even more students come to UNT. We in the Computing Center realize the importance of the Internet to much that we do and are doing everything we know how to be ready for the increasing demands on Internet bandwidth.

---

* For a "back to the basics" look at this issue, see Dr. Philip Baczewski's January 2002 *Network Connection* article "Back to the Basics: Bandwidth." For a discussion of bandwidth on the home front, see his *Network Connection* article "The Need for Speed," published last year.

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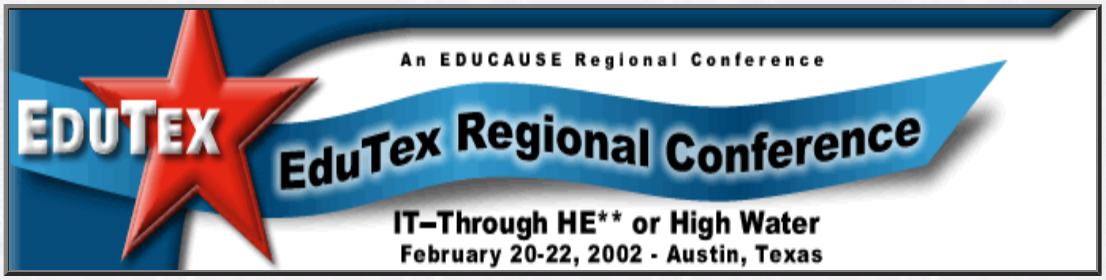

EduTex 2002 Proceedings Available

By Claudia Lynch, *Benchmarks Online* Editor

At last, the proceedings of the 2002 EduTex Conference are available. Not every session has its information online at this time, but there should be more added as time goes by. To review the offerings, visit the Proceedings page. Following are some titles that are currently available:

- CRM in Higher Ed: Helping Build Lifelong Relationships
- WebCT and the Academic Enterprise System: Making the Grade in Higher Education
- The Answer is Still Technology: What is the Question?
- Designing and Building Enterprise-Quality IT Systems with Open Source and Inexpensive Tools
- EduPop: Engineering the Internet for Multimedia
- I Read the News Today: An XML-Based News-Syndication Service for Campus
- Wireless LANs: A New Computing Experience
- Managing an ERP Systems Project: One University's Success Story
- Effective Use of Streaming Media for E-Learning and Its Impact on IT Planning and Operations
- The Ever-Changing Courseware Landscape: Migration Strategies and Lessons Learned
- Building an Effective Faculty Development Program Using Technology Institutes
- Eliminating the Barriers to Pervasive Computing

For additional information on all EDUCAUSE conferences, see http://www.educause.edu/conference/conf.html

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Do you have something tell *Everyone*?

By Claudia Lynch, *Benchmarks Online* Editor

We are entering the "crazy time" of the semester and no doubt, GroupWise E-mail spam and complaints about it will become more of a problem. Once again, this month, a message was sent out reminding GroupWise users that ***violations of the guidelines listed below will be handled by the Vice Presidents and/or Deans of the respective departments.****This is an edited version of an article that has appeared in numerous past issues of Benchmarks Online. -- Ed.*

How many times have you gotten GroupWise messages announcing that someone has something to sell or someone's lights are on or some other topic that doesn't seem to warrant a campus-wide heads up? About twice a year the following "Large Group E-mail Guidelines" policy is sent to to all GroupWise users. Please be aware that "bulk mail" sent through GroupWise is to be **for UNT business only**. (We have a The bulk E-mail service for official communications between UNT and students.)

If you have something to sell or want to hire someone for odd jobs or the like, UNT has Newsgroups for that purpose. Some of the UNT newsgroups are unt.forsale, unt.job.offered, unt.job.wanted, unt.general, and unt.networking.

Please review the following policy as set out by the Vice Presidents and Provost in 1997.

Large Group E-mail Guidelines- 2/17/97:

The Provost and all Vice Presidents recommend the following guidelines for using large E-mail groups:

1. Departments and individuals should be judicious in sending E-mail to all faculty and staff. Many recipients may consider the message to be annoying "junk mail," especially if "everyone" messages continue to proliferate at the current rate. As a general guideline, the message should be of sufficient general value that it would justify being sent as a memorandum if E-mail were not available. In other words, is the message important enough to justify sending to virtually every University employee? Campus-wide discussions should use Usenet news groups, not E-mail.
2. All large group mailings should use appropriate mail groups. A public group will be maintained in the GroupWise (GW) address directory that will include all UNT faculty and staff in the GW directory, as well as more limited groups such as department heads and account holders. Offices or individuals that make frequent or regular large group mailings, that are not official notifications to all faculty and staff, are encouraged to maintain their own groups. Messages to these groups should have an introduction indicating willingness to remove an individual from the group if requested by return E-mail.
3. Anyone sending mail to large groups should use the GroupWise send options to conserve system resources. In the "Mail To" screen, select "send" and then "send options." For the current mail message, these

options will override the typical preferences. Generally, the following send options should be selected:

- no status information
- low priority
- expiration date set to delete unopened messages in two work days
- do not notify recipients unless it is an urgent official message
- no return notification
- no reply requested

Also, from the main GW screen, select "file" and "preferences" to confirm that the "advanced" send option is set to "insert in out box." Then, if a mistake is made, the out box message may be used to "delete" the message from all "in boxes," correct it, and resend. Take care to delete from in boxes, not the out box.

Managing GroupWise "Everyone Mail"

If you are overwhelmed with the quantity of messages that you receive from "UNT GW Directory List *** " ["Everyone Mail"], you have at least two options for handling those messages.

1. Automatically file the incoming mail in a folder. This allows you to browse the messages at your convenience without cluttering up your main mailbox folder.

2. Alternatively, you can create a rule which automatically deletes incoming mail from that group.

For detailed instructions on setting the GroupWise rules for both of these options, browse http://www.unt.edu/cwn/rules/index.html. Note that these procedures **do not** prevent you from receiving "official" messages like emergency weather warnings, road closures or other important notices.

For detailed information on other GroupWise features, browse the online manual at http://www.unt.edu/cwn/gw/manuals/index.html

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