

Cattell, R. L. : How much is enough?  
SLAC 500-10-10 19/10/10 10/10/10

SLAC ARCHIVES COLL CC-072  
SERIES 1 SUBSERIES 2  
BOX 1 FOLDER 17

# Networking With China<sup>\*</sup>

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## Abstract

This paper presents the history and current status of computer networking between IHEP in Beijing, China and the rest of the world, starting with no links at the beginning of 1987 thru X.25 public networks and dial up links, to the installing, in March 1993, of one of the first dedicated 64 kbps satellite computer links between China and the outside world. In May 1994, IHEP became the first Chinese institution to have a fully operational world-wide Internet connection. Experience with this dedicated link between SLAC and IHEP will be presented together with future plans to add a land line between KEK and IHEP and to extend the links within China.

*Contributed to the Conference on Computing in High Energy Physics  
San Francisco, CA, April 21-27, 1994*

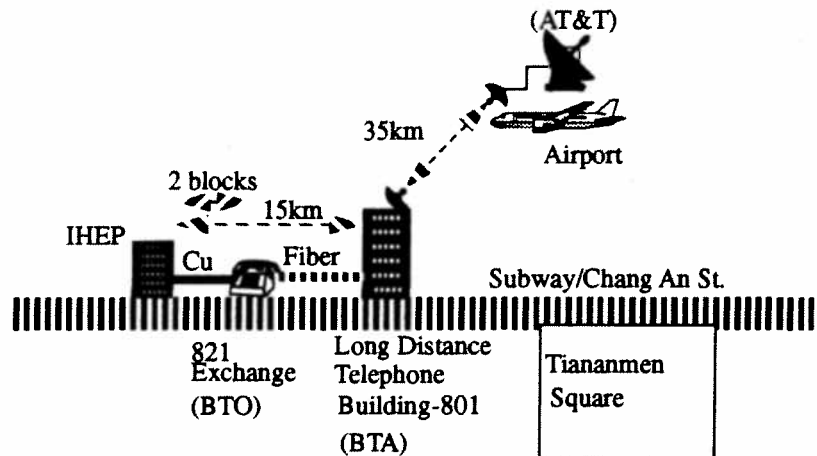
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<sup>\*</sup> Work supported by Department of Energy contract DE-AC03-76SF00515.

Energy Physics, Nuclear Physics, and Basic Energy Science communities, and the National Science Foundation (NSF) expressed interest. Various options were investigated including services via KEK, Cable & Wireless and AT&T SkyNet.

Approval for installation of a dedicated 64 kbps link, to be funded in the US by the DOE, SLAC, and the Super Conducting Collider, with SLAC taking the lead, was received from DOE in late 1991. Based on costs and schedules proposed, an AT&T SkyNet satellite link was chosen (Figure 1, Path 3). The contract with AT&T was signed in January 1992. The US cost was about \$5,500 installation and \$5,000/month. IHEP pays a similar amount in Chinese currency for the Beijing end of the link.

Figure 2: Link from IHEP to Beijing Airport



Considerable problems were encountered getting the link from the Beijing airport to IHEP between January 1992 and March 1993. The paths involved in this link are shown in Figure 2. The original plan was to use 64 kbps microwave modems between IHEP and the local 821 phone exchange. However, these were not able to deliver satisfactory service. Instead it was decided to try existing copper links. Then there were problems interfacing between the copper and optical fibers running from the local phone exchange to the satellite earth station located at the Beijing airport. Early in 1993 the Beijing telephone companies succeeded in getting acceptable error rates, and the link was handed over to IHEP on March 1st 1993 at 15:19 PST. Seconds later a monitor program showed node 44.393 (the SLAC DECrouter) adjacent to IHEP.

The file copy rate was measured at ~42 kbps (VAXstation 2000-VAX 780) which was 10 times better than before; the echo time was better than 1 second; and the error rate was  $\sim 2.3E-7$ . The daily utilization is seen in Figure 3. It has peaked at nearly 100% of capacity over a 24 hour period during a conference held at IHEP. Typically about 40 MBytes/day (see Figure 3) are transferred. Typical hourly peaks are 6 MBytes/hour. There are about 1 to 2 unscheduled outages of several hours/month in addition to some scheduled outages twice per year when the sun is directly in line with the satellite. AT&T switched to a new satellite in Jan 1994, and the connection from IHEP to the local 821 exchange was changed to DDN (Digital Data Network) in March 1994 in order to increase reliability of the link.

Congressman George Brown in December 1993 also increased interest in the link at higher US government levels. A meeting was held in January 1994, with attendees from universities and computing institutes in Beijing, to discuss and come up with a recommendation for domain naming in China. It was decided that IHEP nodes will appear as `node.ihep.ac.cn`. IHEP has been assigned two class C Internet address blocks by the Internet's regional registrar (APNIC). Agreement was obtained to allow the Internet to carry Chinese traffic contingent on some conditions being met. One major condition was to make a wide-area electronic mail announcement that the Internet will be carrying Chinese IP traffic. This announcement was made to ESnet sites on April 18, 1994 and stated that ESnet would begin to carry Chinese IP traffic on April 25, 1994. Opening of the link to full Internet connectivity happened on May 17, 1994 when a connection was established via ESnet from SLAC to FIX-West, which is the West Coast interconnection point for all of the major TCP/IP networks. IHEP thus became the first Chinese institution to have a fully operational world-wide networking connection.

Currently the cost of the US end of the link is about \$50,000/year. This is borne by SLAC and the DOE High-Energy and Nuclear Physics Office. This will be transferred to ESnet. Plans to increase the speed of the link to 128 kbps are currently deferred until the traffic warrants it. This is expected to happen shortly after the link is opened up to the Internet.

There is also a need for a link to China from KEK in Japan to support many Chinese collaborators in TRISTAN experiments at KEK and for KEK-IHEP collaborations in R&D in constructing accelerators. There already exists a KEK-ESnet (US) 192 kbps terrestrial link, so work is in progress between KEK and IHEP to create a new IHEP-ESnet path via a 64 kbps terrestrial link from KEK to IHEP. This would replace the existing IHEP-SLAC satellite link. An optical cable between Japan and China was completed in December 1993 from Miyazaki in Japan to Shanghai in China. Domestic optical links within China, including a link from Shanghai to Beijing, were scheduled to be completed in the same time frame but are being delayed. A proposal was made to put in a temporary satellite link between KEK and IHEP until the land line cable is completed. This has been done, and the cut-over from the SLAC-IHEP to the KEK-IHEP link awaits a convenient time for the BES experiment at IHEP. On completion of the link, multi-protocol routers will be located at IHEP and KEK, and the link will be configured to carry both DECnet and IP traffic.

China is a huge country with enormous potential and ambitious plans to open up electronic communications. The HEP community should be proud to have pioneered one of the first direct electronic links from the outside world into China, helping to open it up to the global internet community.

## Acknowledgments

We would like to acknowledge the help we have received in writing this paper from Ray Cowan, Bill Dunwoodie, Mike Sullenberger, and Teresa Downey of SLAC, Xin Hao and Yang Dajian of IHEP, Jim Leighton, Tony Hain, Joe Burrechia, and Rebecca Bostwick of ESnet, Mike Kelsey of Caltech, Joe Izen of UT Dallas, and Julie Hennessey-Niland and Robert Luke of AT&T.

This work was supported in part by Department of Energy contract DE-AC03-76SF00515. This report is SLAC-PUB-6478.



Cottrell, R. Les. Moving to Unix.  
[1992]

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This is a subject which I intended to raise at the 2/9 meeting which was unfortunately cancelled. It's probably just as well since it is an area which we need to think seriously about and not try to solve within a single meeting.

I am extremely concerned (and perhaps confused) over the lack of a plan and the absence of a concerted effort to move WWW production service to Unix. I am either missing some critical point or fail to understand the relationships between the constituent parts.

The server software for Unix (i.e., NCSA) is well supported, supports most (if not all) of the features that newer browsers expect (e.g., HTTP 1.0, forms, etc.) and is apparently robust enough to handle very heavy traffic. (The last observation is derived from the speculation that NCSA servers run their code and I would expect the number of "What's New" queries to rival any number of queries we may see). Access authorization and security features are also incorporated.

So why are we continuing to place so much emphasis on the VM server? I cannot believe that Spires support is justification for leaving all WWW services presently on VM there. It is certainly not justification for having the primary SLAC entry point (i.e., home page) on the VM server. (CERN continues to support a VM server, BUT ONLY for XFIND service, everything else is on Unix boxes). Telling users to "turn on HTTP 0.9 option" or attempting to "kluge" the VM server code are fundamentally a waste of time (and that of our users) when such work-arounds would not be necessary with a production Unix server. At a time when my management (Cottrell) has told me to move other network services to Unix (Listserv and Netnews), why not WWW? He is unwilling to allow me to spend any substantial time on the VM server. Why would we Probtrak problems with the VM server that do not exist with a Unix server and which I have neither the time, inclination, possible expertise, or management support to deal with?

As of 2/8, there were 73(!) HTML files on WWW 192! Joan continues to develop more and new pages (always on VM). When and how will these pages get migrated to Unix? It would be a huge effort now and for each new page or function developed for VM, the task becomes even larger!

I have also heard that migration to Unix cannot/should not occur until expertise with a Unix file management system (e.g., CVS) has been attained. Why is this an obstacle only to WWW? I don't believe other Unix development has been hampered for similar reasons.

Please spend a few minutes looking at

<<http://jupiter.slac.stanford.edu:8080/slac.html>>

This server is running the NCSA 1.1 code. This server has a local copy of the front page (slac.html), but accesses all the other HTML files on WWW 192 via NFS. Performance does not seem to be compromised. Most links work and those that don't are easily explained. (For example, Spires searches on secondary pages - not the front page - fail due to abbreviated HREFs. Therefore, the name credits at the bottom of secondary pages fail). Even in its present state, I would far rather point a user to this page (especially a QSpire user looking at the SLAC front page) than tell them to "turn on HTTP 0.9" or the like. (Try this server with the Mac and/or Lynx browsers).

My recommendations amidst all this are as follows (in order of execution):

- 1) Undertake an effort to insure that all links on the Unix test server (port 8080) work. This can be done by modifying the HTML files (on VM) which will not impact their functionality or use by the VM server.
- 2) All new page development be done on Unix.
- 3) When 1) is completed, migrate the HTML files to Unix.
- 4) Insure that the only links to the VM server are those utilizing Spires or to servers peculiar to VM (e.g., VM HELP).
- 5) Point some reasonable subset of our QSpire users to the test server.
- 6) If 5) is successful and after any necessary "fine tuning", make the Unix server production and point all users to it.
- 7) Spires services on the VM server be migrated as their development allows.

SLAC ARCHIVES COLL 10007  
SERIES 1 SUBSERIES 2  
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## Welcome

First I would like to thank you for this opportunity to address you, to welcome you to SLAC and to tell you a little bit about how and why High Energy Physics is interested in, has pioneered and has invested effort into the Web.

First let me welcome all of you to the SLAC Auditorium.

Nineteen years ago, this auditorium was the meeting place of the "Homebrew Computer Club".

That "*extraordinary gathering of engineering expertise and revolutionary spirit from which would spring dozens of computer companies*"<sup>1</sup> had much to do with the eclipse of glass house mainframes and today's democratization of computing and information.

The good news is that there is now far more information available to the general public, the bad news is that no person can possibly discover and digest it all. This is a challenge that the Web has picked up the gauntlet for and is attempting to address.

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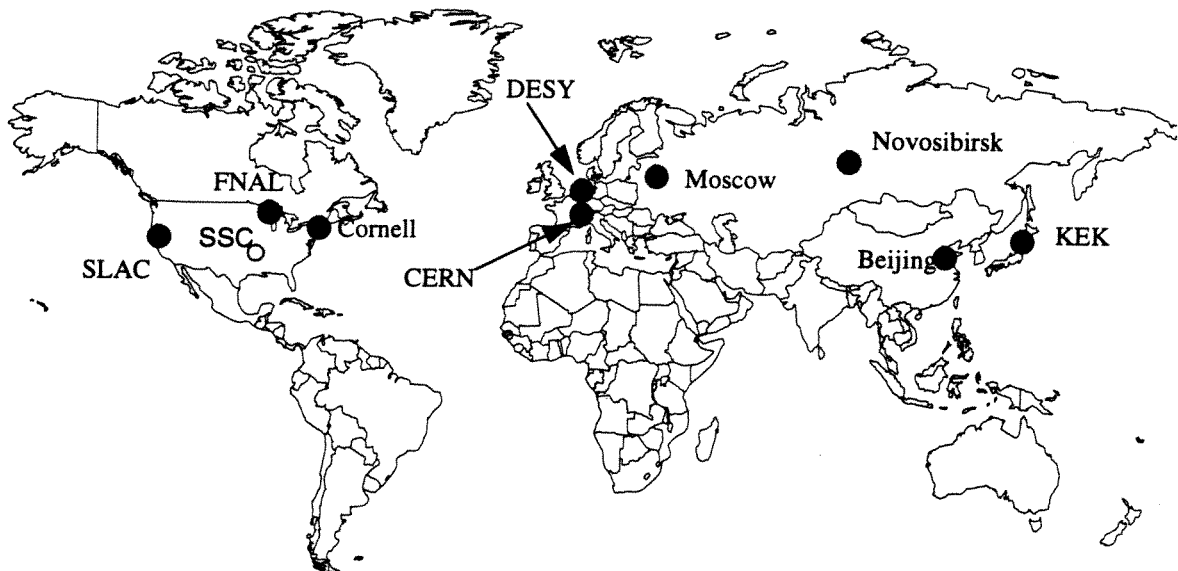
1. From "Fire in the Valley" by Paul Freiberger and Michael Swaine

## A Brief Introduction to SLAC:

- SLAC is a National Laboratory that is part of Stanford University and is funded by the DoE.
- Since its formation in 1962, SLAC's mission has been to pursue basic research into the fundamental properties of matter, i.e. what everything is made of and how it holds together (or the meaning of "Life, the Universe and Everything")
- In the pursuit of this mission SLAC has earned 2 Nobel prizes, one for the discovery of quarks, and the other for the discovery of charmed particles.
- More recently, in February of this year, SLAC was chosen to be the site for the BFactory a \$200M multi-year Presidential Initiative to understand why the universe as we know it is not made up of equal parts of matter and anti-matter.

## **Next a Little Bit about High Energy Physics (HEP)**

- One of the ironies of nature is that in order to explore the tiniest details of matter we have to build very large pieces of apparatus such as the 2 mile SLAC linear accelerator. These large pieces of apparatus are needed to enable us to pin-point huge amounts energy to penetrate into the heart of matter such as neutrons or protons and discover what lies therein.
- Unfortunately, this need for large and hence costly pieces of apparatus, in turn means that we can afford a very limited number of them which today are located at a few sites around the world.



- The limited number of facilities for HEP, in turn, has led to HEP experiments being composed of large numbers of collaborating physicists. For example a modern day HEP experiment depends on the successful collaboration of many hundreds of physicists and their support staffs from dozens of institutions worldwide..
- For example the B Factory collaboration is already composed of over 350 collaborators from 90 institutes in 40 countries.

## **So what do you care, and what's it got to do with why you are here today, namely the Web.**

Successful scientific collaboration has at its heart the need to quickly, easily and accurately share information among the collaborators.

This need<sup>1</sup> has driven HEP to develop and employ tools to facilitate distributed collaborations.

This included the successful formation starting at SLAC and LBL in the early 80's of HEPnet, a WAN connecting HEP institutes around the world together.

A development that initially took advantage of HEPnet, was the creation of HEP databases in particular at SLAC providing world wide access to preprints, publications, meetings notifications, directories of people, etc.

The need to access this database worldwide was a major driving force behind the tool nearest and dearest to this meeting today, that is the Web, started in 1989 by Tim Berners-Lee at the HEP CERN Lab in Geneva Switzerland.

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1. "Necessity is the mother of invention", anonymous Latin saying.



## **The Web and HEP**

The Web was quickly recognized as being a powerful tool to enable true open, distributed collaborations, and speed the dissemination of information. Therefore it was soon utilized and extended in the HEP community. It provides:

- Ubiquitous, access to from all important platform to all kinds of information<sup>1</sup>
- Ease of use (GUIs) with no need to arrange for an account
- The ability to easily add and own information locally<sup>2</sup>

Some HEP uses of the Web include:

- SLAC provides a bibliography of over 280,000 HEP publications and preprints gathered from around the world, which users can search through and then click on an interesting item and display the full text with embedded figures, and hypertext linkable citations.
- In order to improve access to these papers, SLAC developed the Midas Web browser, which you may hear more about from its author Tony Johnson later this afternoon.
- HEP software is catalogued and indexed for review at SLAC
- Collaborations such as the SLAC Large Detector (SLD) use the Web to post and update shift schedules, provide access to transparencies, directories of data repositories, documentation etc.

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1. "I don't want to know how information got somewhere -I just want to look at it." Charles Geschke, president of Adobe Systems.

2. "Think globally, act locally"

■  
**S I G w e b   M e e t i n g   a t   S L A C ,   4 - 1 9 - 9 4**  
**U s e   o f   t h e   W e b   i n   H i g h   E n e r g y   P h y s i c s ■**

- On a more somber note, the recently cancelled Superconducting Super Collider put together a Web application to provide access to job information world wide for the 2000+ laid off employees.
- Other applications provide daily summaries of the performance of networks or detectors with hypertext links to further information on items that are exceptional or require further investigation.

## Summary

We have come a long way since 1975, the Homebrew Computer Club, the Intel 8080 and the early personal computers such as the Altair. With the emergence of tools such as the Web, we are beginning to get closer to Douglas Adam's view of a "Hitchhikers Guide to the Galaxy".

The Web has now become an integral tool for HEP. It is a major improvement over earlier mechanisms. It has dramatically improved the ability to support international collaborations in an open shared scientific environment. Its use continues to expand daily, both in volume, and addressing new needs.

There are, of course, many challenges that we face, including security, privacy, property ownership, appropriate use, availability, quality of service, keeping the interface intuitive and simple while continually expanding the capabilities, and better ways to deal with the masses of information that is increasingly available.

I wish you and all our colleagues worldwide well in these endeavors, and look forward to the fruits of these labors.

Finally, once again thank you for this opportunity to address you, and to welcome you to SLAC.

1996

SAC/ADMIN COI  
SERIAL \_\_\_\_\_  
BOX \_\_\_\_\_ FOLDER \_\_\_\_\_

ate: Thu, 14 Aug 1997 20:47:00 -0700 (PDT)  
From: Tom Glanzman <dragon@SLAC.Stanford.EDU>  
To: Les Cottrell <cottrell@SLAC.Stanford.EDU>  
Cc: Jean Deken <jmdeken@SLAC.Stanford.EDU>  
Subject: Re: Personal home directory files.

It is a little difficult to know what you mean by a "web page". BABAR uses the web to access files. These files may be .html, .pdf, .ps or .txt in the usual way. There are a growing number of .gif and .jpg files. We also use the web to browse code files (.cc, .f, .F, .h, .c, .hh, .d, .ddl, etc.). We use the web to browse our CVS code repository (.v files). The entire BABAR code base is visible via the web (although I'm not sure I'd like that fact to be widely advertised). There are literally thousands of files accessible in this manner and it would be a challenge to count them! Given the tools available with AFS, it would also be a chore to calculate the amount of disk space so visible, but it is a lot.

- Tom

-----  
Tom Glanzman | dragon@SLAC.Stanford.edu  
Stanford Linear Accelerator Center | http://www.slac.stanford.edu/~dragon  
M/S 95, P.O. Box 4349 | (650) 926-3160 (office)  
Stanford, California 94309 USA | (650) 926-2657 (FAX)  
| <^^^>

>>> NOTE new area code <<<

Date: Mon, 09 Sep 1996 18:16:01 -0800  
From: "P.A. Moore" <xanadu@SLAC.Stanford.EDU>  
To: jmdeken@SLAC.Stanford.EDU  
Subject: First Web Server in US

Jean- lots of us saw the article, including Burt, so I asked Les Cottrell to do some research. Here is his response.  
PA Moore

From: cottrell@SLAC.Stanford.EDU  
>Date: Mon, 09 Sep 1996 17:16:08 -0700  
>Subject: First Web Server in US  
>X-Sender: cottrell@popserv.slac.stanford.edu  
>To: brichter@SLAC.Stanford.EDU  
>Cc: hennis@SLAC.Stanford.EDU, bebo@SLAC.Stanford.EDU,  
> winters@SLAC.Stanford.EDU, xanadu@SLAC.Stanford.EDU,  
> pfkeb@SLAC.Stanford.EDU, tony\_johnson@SLAC.Stanford.EDU,  
> leith@SLAC.Stanford.EDU, cottrell@SLAC.Stanford.EDU  
>MIME-version: 1.0  
>  
>Thanks for the copy of the FermiNews for August 16, 1996. Looking at  
>the headline and quickly browsing the article it leaves one with the  
>feeling that FNAL was the pioneer site in the US. On more careful reading,  
>they never make such a statement, the closest they get is to say  
>  
>Title:  
>  
>"High Energy Physics  
>  
>Birthplace of the Web"  
>  
>  
>...in 1992 ...  
>"He [Time Berners-Lee] and I [Jonathan Streets of FNAL] wrote the server  
>on FNALV that served the documents. Now anybody could come in and get them.  
>That was the first time anybody could use the same interface  
>to read documents pertaining to both data-taking and analyses"  
>  
>I have talked to several people about this including Terry Hung, Kathryn  
>Henniss, Bebo White (via Kathryn), and Joan Winters.  
>  
>The SLAC Web server was running on SLACVM (put up by Terry Hung) in November  
>1992. Tim Berners-Lee announced the Web server at info.cern.ch to the  
>www-internet mailing list on Nov 12. In that announcement he said it "has been  
>running for some time". The CERN Newsletter announced the Web to the world  
>in Dec 1991.  
>  
>The official Web history at <http://www.w3.org/pub/WWW/History.html>  
>says that SLAC was the first US server in March 1991. It also says for June  
>1992 that FNAL joined with a Web server. Paul Kunz who might be able to  
>spread more light is away at the moment, as is Tony Johnson.  
>  
>Bottom line, is that it is generally accepted that SLAC was the first Web  
>server  
>in the US, and FNAL do not deny this, though the article might lead one to  
>think otherwise.  
>  
>Les Cottrell

>Mail Stop 97, Stanford Linear Accelerator Center, POB 4349, Stanford CA 94309  
>Phone: (415)926-2523, FAX: (415)926-3329  
>WWW: <http://www.slac.stanford.edu/~cottrell/>  
>

P.A. Moore, EdD  
Assistant to the Director  
Stanford Linear Accelerator Center  
Box 4349 MS 80  
Stanford CA 94309  
phone 415-926-2605  
fax 415-926-2525

09/02/1997

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SLAC ARCHIVES COLL 00-012  
SERIES 1 SUBSERIES 2  
BOX 1 FOLDER 21



# Who is Les Cottrell?

*Last Update: March 3, 1997*

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## Who am I?

Dr. Roger Leslie Anderton Cottrell



**At work ...**

<b><u>Stanford Linear Accelerator Center</u></b>			
<b>Shipping</b>	<b><u>Building 50 Room 326</u></b>		<b>Mail Stop 97</b>
	<b><u>2575 Sand Hill Road</u></b>		<b>Postal P.O. Box 4349</b>
	<b><u>Menlo Park, 94025-7015</u></b>		<b>Palo Alto, CA 94309-4349</b>
<b>Voice &amp; VoiceMail</b>	415-926-2523		<b>FAX</b> 415-926-3329

Email: [cottrell@slac.stanford.edu](mailto:cottrell@slac.stanford.edu)

PGP public key: <ftp://ftp.slac.stanford.edu/pgp/cottrell/cottrell.publickey>

I left the University of Manchester, England in 1967 with a Ph.D. in Nuclear Physics to pursue fame and fortune on the Left Coast of the U.S.A. I joined SLAC as a research physicist in High Energy Physics, focusing on real-time data acquisition and analysis in the Nobel prize winning group that discovered the quark. In 1973/3, I spent a year's leave of absence as a visiting scientist at CERN in Geneva, Switzerland, and in 1979/80 at the IBM U.K. Laboratories at Hursley, England, where I obtained United States Patent 4,688,181 for a dynamic graphical cursor. I am currently the Assistant Director of the SLAC Computing Services group. I am also a member of the Energy Sciences Network Site Coordinating Committee (ESCC) and the chairman of the ESnet Network Monitoring Task Force. I was a leader of the effort that, in 1994, resulted in the first Internet connection to mainland China.

## Professional Interests

Networking and distributed computing technology are my main activities. I am also very interested in the Web and contributed a chapter to the book HTML and CGI Unleashed published by Sams/Macmillan as well as an article to the May 1996 edition of Web Techniques magazine.

## Other Interests

I've got other interests beyond computers. I run, mainly at weekends, Hash when possible, and commute to work come rain or shine on a bicycle. I enjoy mountain climbing especially on snow and ice, and hiking in the Sierra back-country. I collect stamps, and am also interested in genealogy and tracing the family history (currently I would be interested in hearing information on Anderton's from Lancashire, England, and Emmerson's in Northumberland also in England.)



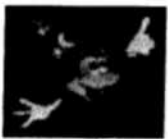
## Publications

- Recent Publications and Public Talks

- Distributed Computing Environment Monitoring and User Expectations Les Cottrell & Connie Logg, talk given at Computing in High Energy Physics '95 (CHEP95) Conference, Rio De Janiero, Sep 1995
- Network Monitoring Les Cottrell & Connie Logg, 1995 DOE Telecommunications Conference, Portland Oregon, July 1995
- Writing CGI Scripts in REXX Presented at the 6th International REXX Symposium, SLAC May 1994.
- Adventures in the Evolution of a High-Bandwidth Network for Central Servers (Karl L. Swartz, Les Cottrell, Marty Dart) Presented at the 8th Usenix Large Installation System Administration (LISA VIII) Conference, San Diego, 1994 (version from proceedings is [here](#)), and also published as SLAC-PUB-6567.
- Use of the Web in High Energy Physics R. L. A. Cottrell, presentation to the Special Interest Group on Web meeting at SLAC, April 1994.
- Adventure in Network Performance Analysis (Connie Logg and Les Cottrell) talk at the 1994 IEEE Network Operations and Management Symposium, Kissimmee, Florida, February 1994.
- Network Performance Monitoring and Analysis at SLAC (Connie Logg and Les Cottrell) talk at the 1994 Dept. of Energy Telecommunications Conference, Baltimore, August 1994.
- Networking With China, R. L. A. Cottrell, Charles Granieri (SLAC), Lan Fan, Rongsheng Xu (IHEP, Beijing), Yukio Karita (KEK). Presented at 11th International Conference on Computing in High Energy Physics (CHEP 94), San Francisco, U.S.A, April 1994.
- Network Management, Status and Directions. R.L.A. Cottrell, T.C. Streater (SLAC), SLAC-PUB-5913, Aug 1992. 4pp. Presented at 10th International Conference on Computing in High Energy Physics (CHEP 92), Annecy, France, 21-25 Sept 1992.

- Publications 1965-1991.

- SLAC Publications.



## BookMarks

- Stanford University and SLAC
- Les Cottrell's BookMarks

You are visitor number **000979** since Oct. 26th, 1995.

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[ Feedback ]  
Les Cottrell



Hung, Terry. Correspondence with Tim Brown - the  
9/1991 - 12/1991 re setting up web server

SLAC ARCHIVES COLL 00-012  
SERIES 1 SUBSERIES 3  
BOX 1 FOLDER 22

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=====

1. 9/26/91 Re: WWW server at SLAC
2. 10/15/91 WWW server at SLAC: Waterloo C
3. 10/16/91 Re: WWW server at SLAC: Waterloo C
4. 10/30/91 Telnet access to W3 information server
5. 11/01/91 Re: HTDaemon on slacvm (exact date unknown)
6. 11/08/91 WWW-WAIS Gateway
7. 11/12/91 references in the web to paper documents.
8. 12/12/91 WWW
9. 12/13/91 WWW to SPIRES on SLACVM - Experimental

=====

==

- ++ 1. 9/29/1991 From Tim Berners-Lee to Terry Hung.  
Discuss technical issue.

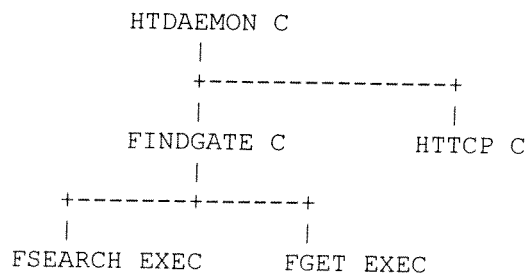
Return-Path: <timbl@nxoc01.CERN.CH>  
Date: Thu, 26 Sep 91 12:52:28 GMT+0100  
From: timbl@nxoc01.CERN.CH (Tim Berners-Lee)  
Subject: Re: WWW server at SLAC  
To: terryh@UNIXHUB.slac.stanford.edu (Terry Hung)  
X-Envelope-To: terryh@UNIXHUB.SLAC.STANFORD.EDU

Terry,

-The VM code uses the same HTDaemon.c main program as the normal daemon.

I'll mail you a the latest copy of that.

-There is then a module called FINDGate.c which interfaces to the REXX execs.



-The REXX execs are very specific to the CERN FIND system of Bernd Pollermann.

He wrote them. You are welcome to them if you like. If you have a CERNVM account then

GIME SERVUS03 191

-I've mailed you FINDGate.c (the latest copy) separately.

-When compiling things under VM, I use an exec (CC2 EXEC also on SERVUS03 191)

which defines symbols such as SHORT\_NAMES, VM and DEBUG.

-Short names is because externals can only be 8 characters,  
-VM is to select the include files  
  etc for CERNVM in tcp.h and anywhere else that machine-specific code  
  is  
  needed,  
-and DEBUG includes code to print a trace, which in practice we always  
  do.  
-[The trace is turned on only with a -v option at run time.]  
  
-Other useful execs which you may want to look at or copy are SETUP  
EXEC on TIM  
  191 which gets the TCP disks  
-you will probably want a totally different set on your systems  
-I have no idea how similar SLACVM and CERNVM are and know  
  very little about either  
-and also DLOAD EXEC on SERVUS03 which created the module. <-  
  
-The module HTTCP.c is in the regular distribution as well as on  
SERVUS03 191.

The line mode browser will compile for VM so long as you define the  
symbols to  
  select the correct behaviour.  
-I think I loaded it with WLOAD EXEC on TIM 191.  
-As I never found a way to clear the screen from C, it is not so slick  
to use  
  as one has to alternately press RETURN for more and the fuinction key  
for  
  "MORE..." on VM.

-If you can't log onto CERNVM and pick the stuff off, let me know and  
we'll  
  find some other way. I hope this helps. Keep up the good work, let me  
know of  
  any snags.

Tim

=====  
==

++ 2. 10/15/1991   From Tim Berners-Lee to Terry Hung  
                  Discuss compilation problems.

Return-Path: <[timbl@nxoc01.CERN.CH](mailto:timbl@nxoc01.CERN.CH)>  
Date: Tue, 15 Oct 91 11:10:27 GMT+0100  
From: [timbl@nxoc01.CERN.CH](mailto:timbl@nxoc01.CERN.CH) (Tim Berners-Lee)  
Subject: WWW server at SLAC: Waterloo C  
To: [terryh@UNIXHUB.slac.stanford.edu](mailto:terryh@UNIXHUB.slac.stanford.edu)  
X-Envelope-To: [terryh@UNIXHUB.SLAC.STANFORD.EDU](mailto:terryh@UNIXHUB.SLAC.STANFORD.EDU)

Terry,

-It is only since CC and the latest IBM TCP/IP have been available  
  that porting anything to the IBM has been feasible without a lot of  
  hassle.  
-The networking people here are all switching.

- IBM have solved, for example by providing "manifest.h", the problems of making  
unix-like programs compile and load.
- They have to define macros for <-  
example to convert long names (gethostbyname, gethostbyaddr) into  
short distinct names. This was a lot of work, but it all works now.
- If it is possible for you to either compile in the CERNVM environment  
and then take the module, or to pick up the CERN-like environment at  
SLAC, then I think it would save you a lot of trouble.
- I'm afraid I don't know how much of the improvements came with CC and  
how many with TCP/IP.
- Looking at your error messages, it seems that you have include files  
which are not suitable for your compiler -- like they are CC-oriented  
include files, and CW doesn't accept #pragma. This would be  
something to complain to your system people about.
- Once CW has missed an include file, then any error messages  
afterwards probably simply stem from missing definitions which should  
have been found in that include file.
- Don't worry about "SHORT\_NAMES changed" error: tcp.h redefines  
SHORT\_NAMES in the case of VM as "" when you have probably  
predefined it as "1". The difference doesn't matter, so long as it is  
defined.
- Does the TCP/IP software you have on VM match that on CERNVM? You  
<-  
could check by running our daemon with -v option (Its HTDAEMON MODULE  
on SERVUS02 191) and seeing whether it communicates with the TCP  
machine at all.
- It will need a disk linked with a valid "TCPIP DATA"  
file or somesuch, in order to read which machine it should talk to  
for TCP/IP.
- If the TCP/IP implementations come from the same place, then you can  
always compile things here and ship them across. (not much fun!). If  
they aren't, perhaps you should find a networking guru who has used  
your TCP/IP and ask him what he thinks of it.
- (By the way, our TCP/IP seems to be on disk CPMNT 582 nowadays)
- If you find some include files, and have only a few problems left  
with the rest, then mail me with those. I can also talk to our  
experts here like George Smyris.

Tim

=====

++ 3. 10/16/1991 From Tim Berners-Lee to Terry Hung  
Discuss compilation problems.

Return-Path: <timbl@nxoc01.CERN.CH>

Date: Wed, 16 Oct 91 16:08:38 GMT+0100

From: timbl@nxoc01.CERN.CH (Tim Berners-Lee)  
Subject: Re: WWW server at SLAC: Waterloo C  
To: terryh@UNIXHUB.slac.stanford.edu  
X-Envelope-To: terryh@UNIXHUB.SLAC.STANFORD.EDU

-index() is not ANSI, its unix, I used it by mistake, should be  
strchr(). Fixed in latest version.

-LogFile was my name, logfile is used in some WAIS code I link with  
sometimes, so I shall switch to logfile throughout.

> ERROR EDC0111 HTTP C A1:194 Identifier sin\_port must  
> be a member of the struct or union

-HTTP.c compiles on NeXT, sun-4, apollo-m68k, vax-ultrix, etc in the  
current version.

-It may be that you have a version which is slightly  
older, but things like sockaddr\_in should be defined OK by the tcp.h  
file which caters for virtually everything.

-I suggest you stick with  
your fix until you get a more recent version, and if you still have a  
problem, we'll look at it.

-When you say it didn't compile under unix, which unix?

> DMSLIO201W The following names are undefined:  
> EBCDICTO ASCIIIOE

-These are the addresses of two arrays which coinvert characters from  
ebcdic to ASCII and back.

-They may be CERN special, but they work on  
MVS at DESY too.

> WRITE INET@ADD GTHSTBYN SOCKET BIND LISTEN READ  
> SELECT ACCEPT GETPEERN INET@NTA SOCK@CLO GETHNAME

-This is the entire TCP/IP "socket" library! Sounds as though you need  
another disk or a another GLOBAL TXTLIB item and it will fix the lot.

> INDEX

-Use strchr() instead as above. I thought I had fixed that. It is  
fixed in the latest HTTP.h.

=====  
++ 4. 10/30/1991 From Tim Berners-Lee to WWW-interest

Return-Path: <timbl@nxoc01.CERN.CH>  
Date: Wed, 30 Oct 91 15:33:16 GMT+0100  
From: timbl@nxoc01.CERN.CH (Tim Berners-Lee)  
Subject: Telnet access to W3 information server  
To: www-interest@cernvax.CERN.CH  
X-Envelope-To: terryh@UNIXHUB.SLAC.STANFORD.EDU

TELNET ACCESS to W3



You can now telnet to our information server.

Telnet to: info.cern.ch  
User name: www  
(no password)

You will be presented with the home page which is used at CERN on the central machines. From there, you can follow links whatever documents and indexes we know about at CERN or elsewhere in the world of online information. You will be using the line mode browser, which assumes nothing about your terminal capabilities.

This trial service is provided for those who want to try out the software, or who need information and are away from home. If you use this service frequently, it is much more efficient and faster for you to install the browser locally.

You can of course get help, including installation instructions, by following the "Help" link from the home page.

Tim Berners-Lee	<u>timbl@info.cern.ch</u>
World Wide Web project	(NeXTMail is ok)
CERN	Tel: +41(22)767 3755
1211 Geneva 23, Switzerland	Fax: +41(22)767 7155

=====  
==

++ 5. 11/01/1991 Cut and past Tim Berners-Lee's letter to Terry Hung  
Getting close to resolution.

Return-Path: <TERRYH@SLACVM.slac.stanford.edu>  
Date: Fri, 01 Nov 1991 14:27 -0800 (PST)  
From: TERRYH@SLACVM.slac.stanford.edu  
Subject: www  
To: TERRYH@UNIXHUB.slac.stanford.edu  
X-Envelope-To: TERRYH@UNIXHUB.SLAC.STANFORD.EDU

-----  
From: timbl@nxoc01.CERN.CH (Tim Berners-Lee)  
Subject: Re: HTDaemon on slacvm  
To: terryh@UNIXHUB.SLAC.STANFORD.EDU (Terry Hung)  
Message-id: <9111011322.AA10441@ nxoc01.cern.ch >  
X-Envelope-to: terryh@GREENJAY.SLAC.Stanford.EDU

-Well done! Now you have got over those problems, the rest should be easier (and more rewarding!)

-FGET and FSEARCH are both exec files which return data as lines on the CMS "stack".

-It is very important that under all circumstances they exit with a return code equal to the number of lines on the stack, ie

exit queued()

- If there is an error they can either put an error message on the stack, or they can if desperate return something negative or zero, in which case the C code will generate an error message.
- (In the very latest version of FINDGATE C which you don't have probably but is on SERVUS02 191 on CERNVM the C code also traps very large return codes which normally are runtime crashes in the exec file.)
- You may want to modify FINDGATE C to make your own version.
- If you are happier programming in REXX than C, I would pass the whole document address, search or not, across to an EXEC file.
- Otherwise, you could just hack the FGET and FSEARCH from SERVUS02 191 to produce in the short run a test file.
- Run the daemon with the command

```
HYTDAEMON -v -a *:8000
```

The -v asked for debug information, the -a \*:8000 tells it to listen on port 8000.

Tim

=====

++ 6. 11/8/1991 From Tim Berners-Lee to WWW-WAIS

Return-Path: <[timbl@nxoc01.CERN.CH](mailto:timbl@nxoc01.CERN.CH)>  
 Date: Fri, 8 Nov 91 11:17:05 GMT+0100  
 From: [timbl@nxoc01.CERN.CH](mailto:timbl@nxoc01.CERN.CH) (Tim Berners-Lee)  
 Subject: WWW-WAIS Gateway  
 To: [www-interest@nxoc01.CERN.CH](mailto:www-interest@nxoc01.CERN.CH)  
 X-Envelope-To: [terryh@UNIXHUB.SLAC.STANFORD.EDU](mailto:terryh@UNIXHUB.SLAC.STANFORD.EDU)

(Now its been running for some time, I guess I should announce it!)

### World-Wide Web <-> WAIS Gateway Running

A gateway running on [info.cern.ch](http://info.cern.ch) provides access by any WWW browser to the world of information provided by "WAIS" servers. WAIS servers are full-text search servers using software from Thinking Machines Corporation. There's more information about WAIS and the gateway in the web.

[By the way, if you have an old WWW default page which may not have links to everything of interest, you can pick up by ftp (or link to) a new one from [file://info.cern.ch/pub/default.html](http://file://info.cern.ch/pub/default.html)]

### HYPertext GUIDE

You can find WAIS indexes by browsing a hypertext guide to WAIS (linked from our default page), and/or doing an index search on the WAIS index of indexes.

The guide starts at  
<http://info.cern.ch/hypertext/Products/WAIS/Sources/Overview.html>

Here is an sample of what there is:

Biochemistry	The EC enzyme database of Amos Bairoch , REBASE restriction enzymes , the annotation of the GenBank(R) DNA sequence database (Bacterial Division), the Peter Karp's CompoundKB database of 981 metabolic intermediate compounds , periodical references to journals in the area of molecular biology , BIOSCI mailing lists and newsgroup archives
Geography	Asia Pacific region: Curriculum Resources & Course outlines; India: Miscellaneous information
Humanities	Discussion, Poetry
Meteorology	The weather (around MIT)
Music	MIDI interfacing , Song lyrics ,
Religion	The Bible (King James version) , The Holy Qur'an

#### Computing & Networking:

AARNet	Australian Academic and Research Network Resources Guide
Fidonet	List of nodes
Usenet	FAQ, cookbook, science
Internet	RFCs, resource guide, etc etc (etc etc)

#### By Organisation

E.F.F.	Electronic Frontier Foundation: Documents, discussion
N.S.F.	National Science Foundation: bulletins
M.I.T.	Algorithms book: Bugs , excercises , suggestions for the book, 'Introduction to Algorithms' by Tom Cormen,

Charles Leiserson, and Ron Rivest, all members of  
Theory of Computation Group, Laboratory for Computer  
Science. Weather .

University of North Carolina      Phone book

University of North Texas          Documents

Univ. Oslo                          Publications bibliography

Mail me with any problems/questions/suggestions.

Tim Berners-Lee	<a href="mailto:timbl@info.cern.ch">timbl@info.cern.ch</a>
World Wide Web project	(NeXTMail is ok)
CERN	Tel: +41(22)767 3755
1211 Geneva 23, Switzerland	Fax: +41(22)767 7155

□

=====  
++ 7. 11/12/1991 From Tim Berners-Lee to WWW-interest

Return-Path: <[emv@crane.aa.ox.com](mailto:emv@crane.aa.ox.com)>  
Date: Tue, 12 Nov 91 23:14:28 -0500  
From: Edward Vielmetti <[emv@ox.com](mailto:emv@ox.com)>  
Subject: references in the web to paper documents.  
To: [www-interest@nxoc01.CERN.CH](mailto:www-interest@nxoc01.CERN.CH)  
X-Envelope-To: [terryh@UNIXHUB.SLAC.STANFORD.EDU](mailto:terryh@UNIXHUB.SLAC.STANFORD.EDU)  
X-Mts: smtp

-I will be using the format

<a href=isbn:0-13-484080-1> Carl Malamud's "Stacks" </a>

to handle references to books. The hope (such as it is) is that  
a browser will be able to take the isbn magic cookie and feed it  
into a library on-line catalog and get a meaningful result back.

-If there has been an SGML coding proposed or in use for MARC format  
records that would be the appropriate way to return the results.  
I don't have MARC details on-line, but that's OK since most library  
on-line catalogs don't yet give you access to raw cards.

-Until there's an isbn-to-www gateway they're still quite useful  
as absolute reference markers, easy to get the full cataloging  
information that way.

-Similar treatment is expected for issn (serials) numbers. In some

distant far-off future electronic serials and electronic documents will get card catalog entries for them if they're suitably permanent and distinctive to warrant them. Until then there are plenty of books out there that I'd like to have pointers to.

-Bonus points if you can deliver fully formed hypertext to the desktop based on the isbn number :-)

--Ed

=====  
++ 8. 12/12/1991 From Paul Kunz to Chuck Boeheim of SCS

Return-Path: <[pfkeb@kaon.slac.stanford.edu](mailto:pfkeb@kaon.slac.stanford.edu)>  
Date: Thu, 12 Dec 91 18:16:52 PST  
From: [pfkeb@kaon.slac.stanford.edu](mailto:pfkeb@kaon.slac.stanford.edu) (Paul Kunz)  
Subject: WWW  
To: [BOEHEIM@slacvm.slac.stanford.edu](mailto:BOEHEIM@slacvm.slac.stanford.edu), [addis@slacvm.slac.stanford.edu](mailto:addis@slacvm.slac.stanford.edu)  
Cc: [terryh@unixhub.slac.stanford.edu](mailto:terryh@unixhub.slac.stanford.edu)  
X-Envelope-To: [terryh@UNIXHUB.SLAC.STANFORD.EDU](mailto:terryh@UNIXHUB.SLAC.STANFORD.EDU)

VMid 'SPICELL' is running the WWW daemon. The PROFILE EXEC on SPICELL 191 has been setup correctly, I think. All the source for WWW is on SPICELL 192. I have not put the INSTALL EXEC on its 192 disk.

So I think you can put SPICELL in the autolog list of service VMs and we should be in business, at least for Tim Berners-Lee demos in San Antonio.

Louise, its up to you now to find someone to work on it for further enhancements, etc. I'll get back to my normal work.

see: intro of spires

type www

-----on VM

```
| gime spicell 192
| gime bebo 191

| SLAC SPIRES[3]
| now type 3
|
| Search[1]
| now type 1
|
| k find author hung
| get results back
```

=====  
++ 9. 12/13/1991 From Tim Berners-Lee to WWW-interest  
Announcement of SLAC's WWW server.

Return-Path: <[timbl@nxoc01.cern.ch](mailto:timbl@nxoc01.cern.ch)>

Date: Fri, 13 Dec 91 17:55:53 GMT+0100  
From: [timbl@nxoc01.cern.ch](mailto:timbl@nxoc01.cern.ch) (Tim Berners-Lee)  
Subject: WWW to SPIRES on SLACVM - Experimental  
To: [www-interest@cernvax.cern.ch](mailto:www-interest@cernvax.cern.ch), [www-talk@cernvax.cern.ch](mailto:www-talk@cernvax.cern.ch)  
Cc: [pfkeb@kaon.slac.stanford.edu](mailto:pfkeb@kaon.slac.stanford.edu) (Paul Kunz)  
X-Envelope-To: [terryh@UNIXHUB.SLAC.STANFORD.EDU](mailto:terryh@UNIXHUB.SLAC.STANFORD.EDU)

There is an experimental W3 server for the SPIRES High energy Physics preprint database, thanks to Terry Hung, Paul Kunz and Louise Addis of SLAC. It's only just been put up, so don't expect perfection. With the w3 line mode browser, follow a link to it from our home page, then type for example

K FIND AUTHOR KUNZ

the "FIND" is necessary at the moment, though it may change later.

- Tim

Paul Kunz wrote a few days ago:-

"The SLAC Library maintainer of SPIRES databases, Louise Addis, is absolutely delighted. She will ask for a permanent VM service machine and finish off the polishing. Things are really moving now."

"By the way, we certainly have the impression that accessing SPIRES from www on a UNIX machine is faster than using a terminal logged into SLACVM. Even a real 3278 terminal is not as fast. Actually, accessing CERNVM FIND via www seems faster than logging into cernvm and doing the same command as well."

1000 - 1000  
1000 - 1000

SLAC ARCHIVES

SLAC ARCHIVES COLL AC-012  
SERIES 1 SUBSERIES 4  
BOX 1 FOLDER 23

<Title>The SLAC WWWizards</Title>

<h1>The SLAC WWWizards</h1>

<address><a HREF="slacinst.html">SLAC</a> 27 Jun 1994 </address>  
Support for the  
<a HREF="slac.html">WorldWideWeb service at SLAC</a>  
is currently being provided by the WWWizards  
who are:

<ul>  
<li><a HREF="binlist?find+name+addis">  
Louise Addis</a>  
<li><a HREF="binlist?find+name+cottrell">  
Les Cottrell</a>  
<li><a HREF="binlist?find+name+crane,george">  
George Crane</a>  
<li><a HREF="binlist?find+name+a.s.johnson">  
Tony Johnson</a>  
<li><a HREF="http://www.slac.stanford.edu/~bebo/bebo.html">  
Bebo White</a>  
<li><a HREF="binlist?find+name+winters,joan">  
Joan Winters</a>  
</ul>

Feel free to contact one of the above with any problems, suggestions  
<i>etc</i>.

<p>

See also the

<a HREF="news:comp.infosystems.www">comp.infosystems.www</a>  
newsgroup for a general discussion of WorldWideWeb usage issues.

<p>

The WWW was originally installed at SLAC by

<a HREF="binlist?find+name+kunz,paul">

Paul Kunz</a> and

<a HREF="binlist?find+name+hung,terry">

Terry Hung</a>.

<p>

<hr>

This page was originally compiled by Tony Johnson.

<address>

<a HREF="binlist?find+name+johnson,anthony+and+nickname+tony">TonyJ</a>,&br/><a HREF="binlist?find+name+winters,joan">Winters</a>

</address>

```
<!-- 18 Aug 92 by TonyJ      Created. Updated a couple of times subsequently
<!-- 30 Sep 93 by Winters    Added Cottrell as per agreement, metalanguage -->
<!--  2 Oct 93 by Winters    Remove links to Slac.WWW.General & ...Bugs, add c
<!-- 23 Oct 93 by Winters    Add sig blank before date; add TonyJ ack; start d
<!-- 19 Nov 93 by Winters    Finish " " delim; make SLACVM links relative; del
<!-- 27 Jun 94 by Bebo      Changed my entry -->
```



Yours Truly  
W. H. P. L.

2011-2012

SLAC ARCHIVES COLL 00-272  
SERIES 1 SUBSERIES 4  
BOX 1 FOLDER 24

# ***World-Wide Web***

**Tony Johnson**

**Stanford Linear Accelerator Center**

**9<sup>th</sup> September 1993**

**Let's Share What We Know**



**World Wide Web**





# What is the World-Wide Web?

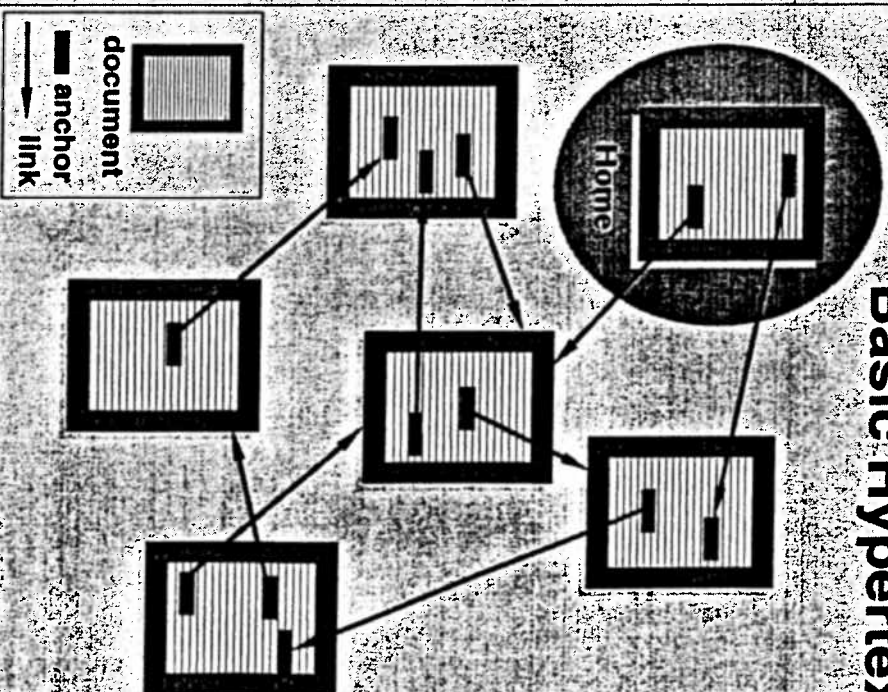
*W3 is many things...*

- ✓ A concept:
  - Universal Readership
  - Hypertext view of ALL information
  - Text searches
  - Client-Server distributed model
- ✓ A set of protocols
  - URL - Uniform Resource Locator
  - W3 Address syntax
  - HTTP - Hypertext Transfer Protocol
    - W3 clients also handle FTP, NNTP, WATT, Gopher, etc.
  - HTML - HyperText Markup Language
- ✓ A body of available software
  - Clients, Servers, Gateways, Tools
- ✓ A web of information



World Wide Web<sup>®</sup>

## Basic Hypertext



WorldWideWeb © CERN

Basic Hypertext 1 92.05.07



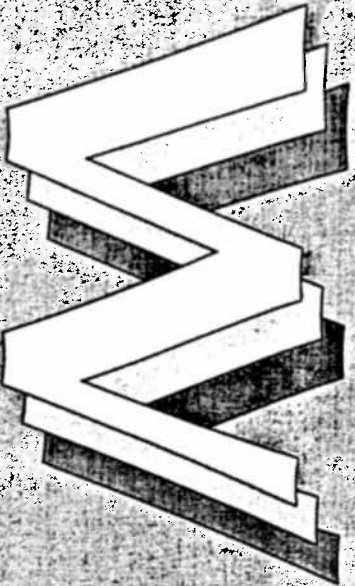
# ***World-Wide Web***

**Tony Johnson**

Stanford Linear Accelerator Center

9<sup>th</sup> September 1993

***Let's Share What We Know***

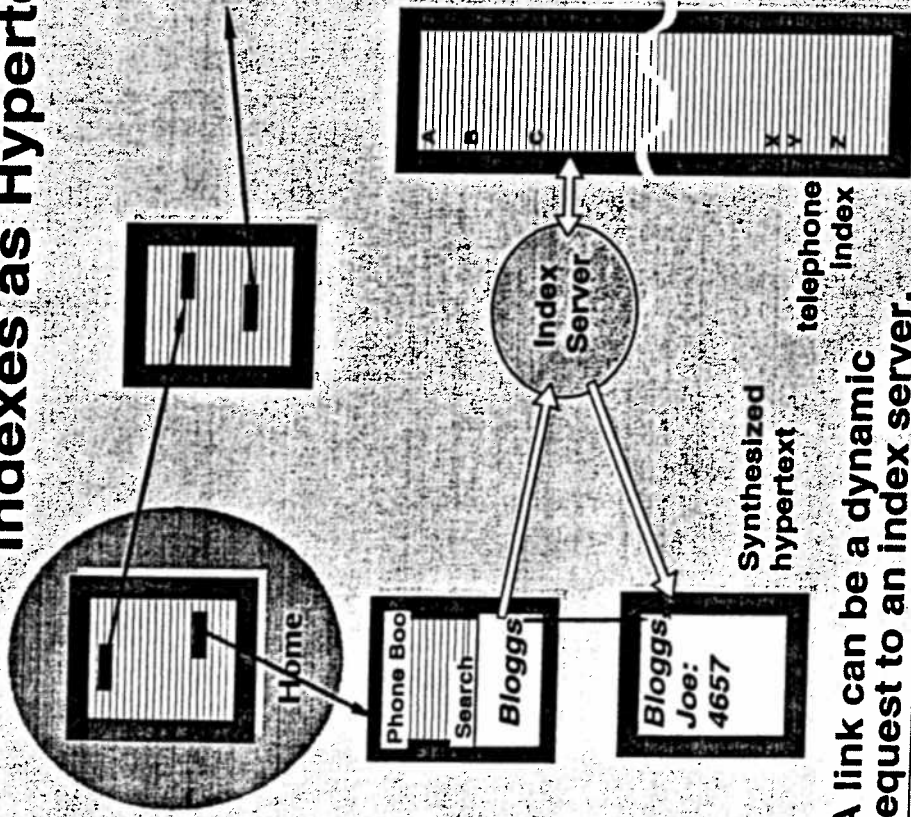


**World Wide Web**

## ***Outline of Presentation***

- ✓ Introduction to the World-Wide Web
  - What is the World-Wide Web?
  - An introduction to HyperText
  - Relationship between WWW, Gopher, WAIS etc.
  - A (lightning) tour of the web.
- ✓ World-Wide Web browsers
  - An overview of some World-Wide Web browsers for Unix
  - Installation instructions
  - Guide to some related software
- ✓ How to make your information available via the Web
  - Introduction to HTML, HTTP and URL's
  - Setting up an HTTP server
  - Interfacing to existing databases
- ✓ The Future of the Web
  - HTML+ and interactive forms
  - HTTP2 and format negotiation

# Indexes as Hypertext

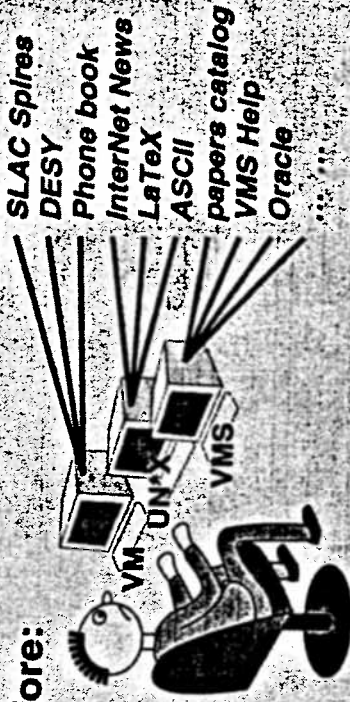


A link can be a dynamic request to an index server.

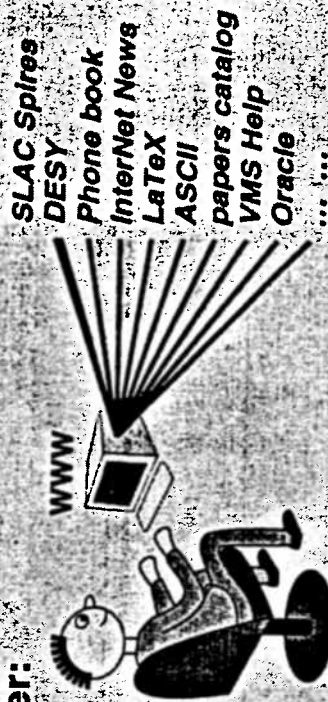


# Easy for users ...

Before:

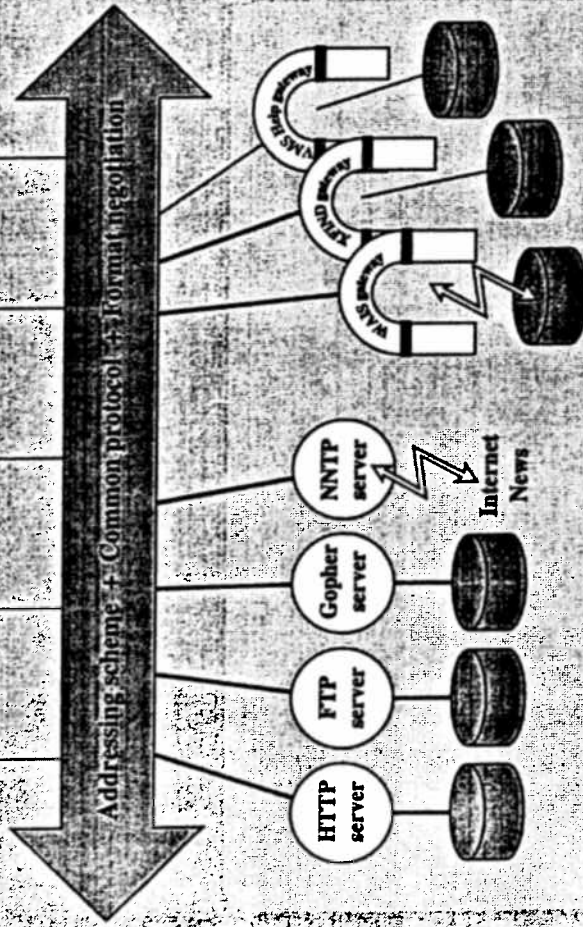
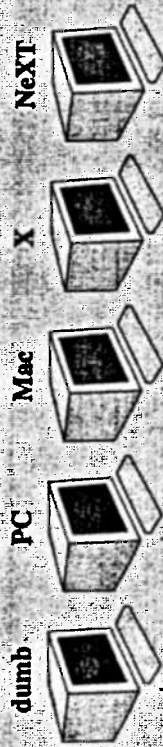


After:





## Browsers



## Servers/Gateways

## A Tour of the Web

- ✓ Ideally this would be an interactive demonstration, but....
- ✓ Instead will give you a feel for what is available here **plus**
- ✓ Enough information to go back and organize your own personal interactive tour of the web....

File Postscript Navigate Customize Documents Manuals Help

Title: Welcome to the Midas WWW browser

Document: <http://alexa.sles.stanford.edu:80/midas20/welcome.html>

## Welcome

Welcome to the Midas World Wide Web HyperText browser. Choose one of the following topics.

### General Information

- Academic Information
- Index of academic information
- HELP information
- High Energy Physics information

### Help

- Overview of help on the Midas WWW browser
- World Wide Web
- About the World Wide Web project
- If you don't like this home page, make your own!

### New features for Release 2

- Postscript support
  - Midas WWW now supports viewing of postscript files using Ghostscript.
  - Postscript files, including multi-page documents, are displayed directly in the Midas WWW browser window.
- Gopher & FTP access
  - Direct access to gopher servers and FTP servers.
- Inlined Images
  - Mosaic style inlined images, plus Tony Sanders' hypermedia astronaut demo and bookmark demo.

Progress Box

Keyword: \_\_\_\_\_

Go Back Previous Next Save... Clone Close Window

10

File Postscript Navigate Customize Documents Manuals Help

Title: The World-Wide Web Virtual Library: Subject Catalogue

Document: <http://info.sles.stanford.edu/WWWLIB/subjectCatalogue.html>

## WWW Virtual Library

This is the subject catalogue. See also arrangement by service type. Mail [www-request@info.sles.stanford.edu](mailto:www-request@info.sles.stanford.edu) to add pointers to this list.

- Aeronautics
  - Mailing list archive index. See also NASA LeRO
- Agriculture
  - Separate list, see also Alimnasec mail servers.
- Astronomy and Astrophysics
  - Abstract Indexes at NASA, Astrophysics work at FNAL, Princeton's Sloane Digital Sky Survey, the STELAR project, Space Telescope Electronic Information System, the Southampton University Astronomy Group. See also: space.
- Bio Sciences
  - Separate list.
- Computing
  - Separate list.
- Earth Science
  - US Geological Survey.
- Education
  - See the Education Policy Analysis Archives (EPAA), an analysis of education policy at all levels. See also ANU educational materials.
- Engineering
  - Separate list.
- Environnement
  - HOLIT (Israel Ecological & Environmental Information System), ANU biodiversity services, FireNet, Hurricane and other disasters preparation
- Finance
  - Financial Executive Journal

Keyword: \_\_\_\_\_

Go Back Previous Next Save... Clone Close Window

10



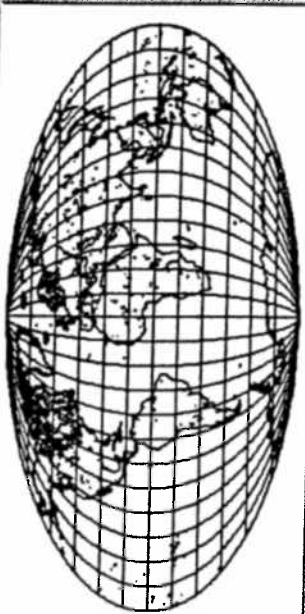
File
Postscript
Navigate
Customize
Documents
Manuals
Help

Map Viewer: world 0.00N 0.00E (1.0X)

Title: Map Viewer: world 0.00N 0.00E (1.0X)
Document: http://pubweb.parc.gov:80/map

### Map Viewer: world 0.00N 0.00E (1.0X)

Please see About the Map Viewer, or Details. This user interface is an experiment.



deg: Height = 180 deg (12420.00 miles). Coordinates and options can be typed in as search keywords (e.g. "lon=-100", see details) or selected below. For best results use X Mosaic browser and resize to maximum height.
Width = 360

**Preset Coordinates:**

- Globe, USA, Alaska, Hawaii, San Francisco, United Kingdom

**Options:**

- Reset Options
- Zoom In: (+2X), (+8X); Zoom Out: (-2X), (-8X)
- Move: East, NE, North, NW, West, SW, South, SE
- Display: color; Projection: elliptical, rectangular, sinusoidal

Keyword:
Go Back
Previous
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Save...
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Close Window



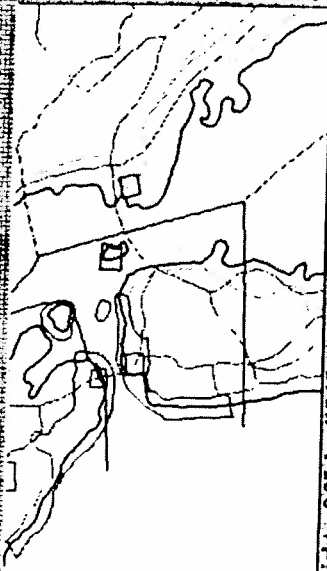
File
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Navigate
Customize
Documents
Manuals
Help

Map Viewer: usa 37.77N 122.42W (720.0X)

Title: Map Viewer: usa 37.77N 122.42W (720.0X)
Document: http://pubweb.parc.gov:80/map/usa/feature.html?view=015-9

### Map Viewer: usa 37.77N 122.42W (720.0X)

Please see About the Map Viewer, or Details. This user interface is an experiment.



deg: Height = 0.25 deg (17.25 miles). Coordinates and options can be typed in as search keywords (e.g. "lon=-100", see details) or selected below. For best results use X Mosaic browser and resize to maximum height.
Width = 0.60

**Preset Coordinates:**

- Globe, USA, Alaska, Hawaii, San Francisco, United Kingdom

**Options:**

- Reset Options
- Zoom In: (+2X), (+8X); Zoom Out: (-2X), (-8X)
- Move: East, NE, North, NW, West, SW, South, SE
- Display: monochrome; Projection: elliptical, rectangular, sinusoidal

Keyword:
Go Back
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Save...
Clone
Close Window

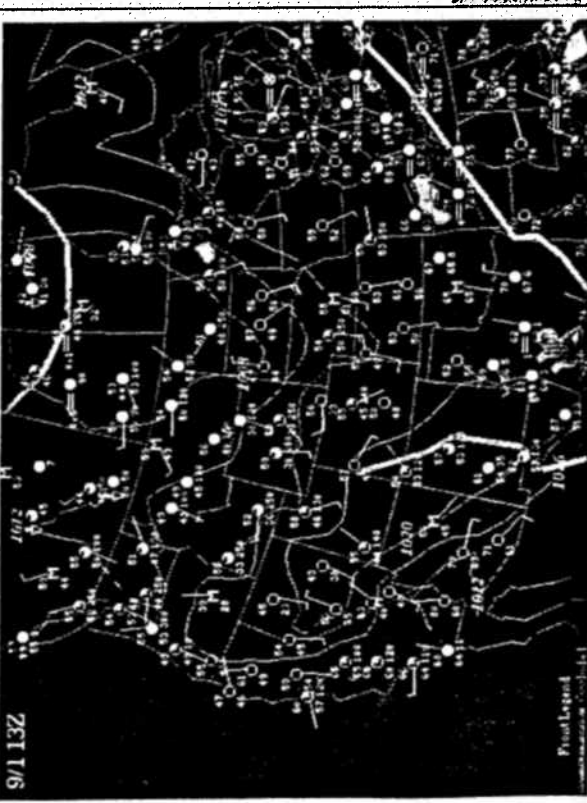


File Postscript Navigate Customize Documents Manuals Help

Title: Weather Map  
Document: <http://www.mit.edu:8001/usg.html>

## Current US Weather

This is a map of current weather conditions across the United States. To get a forecast for a specific location, click on that location.



9/1 13Z

Frontal Weather

Keyword:

Go Back Previous Next Save... Clone Close Window

13

File Postscript Navigate Customize Documents Manuals Help

Title: Nearest Weather Station is BVI  
Document: <http://www.mit.edu:8001/usgwp700,343>

## Weather Conditions at 2 PM EDT on 4 SEP 93 for Baltimore, MD

Temp (F)	Humidity (%)	Wind (mph)	Pressure (in)	Weather
83	62%	WNW at 13	29.86	Overcast

BALTIMORE ANNAPOLIS AND VICINITY FORECAST  
NATIONAL WEATHER SERVICE BALTIMORE MD  
1030 AM EDT SAT SEP 4 1993

THIS AFTERNOON: MOSTLY CLOUDY WITH SCATTERED SHOWERS AND POSSIBLY A THUNDERSTORM. HIGHS IN THE MID 80S. WINDS... WEST AROUND 10 MPH. NIGHT: BECOMING FAIR. LOWS IN THE MID AND UPPER 60S. NORTHWEST W 5 TO 10 MPH.

SUNDAY: MOSTLY SUNNY AND PLEASANT. HIGHS IN THE MID 80S. NORTHEAST WINDS AROUND 10 MPH. OUTLOOK FOR LABOR DAY: MOSTLY SUNNY AND CONTINUED PLEASANT. HIGHS IN THE LOW TO MID 80S.

EWS

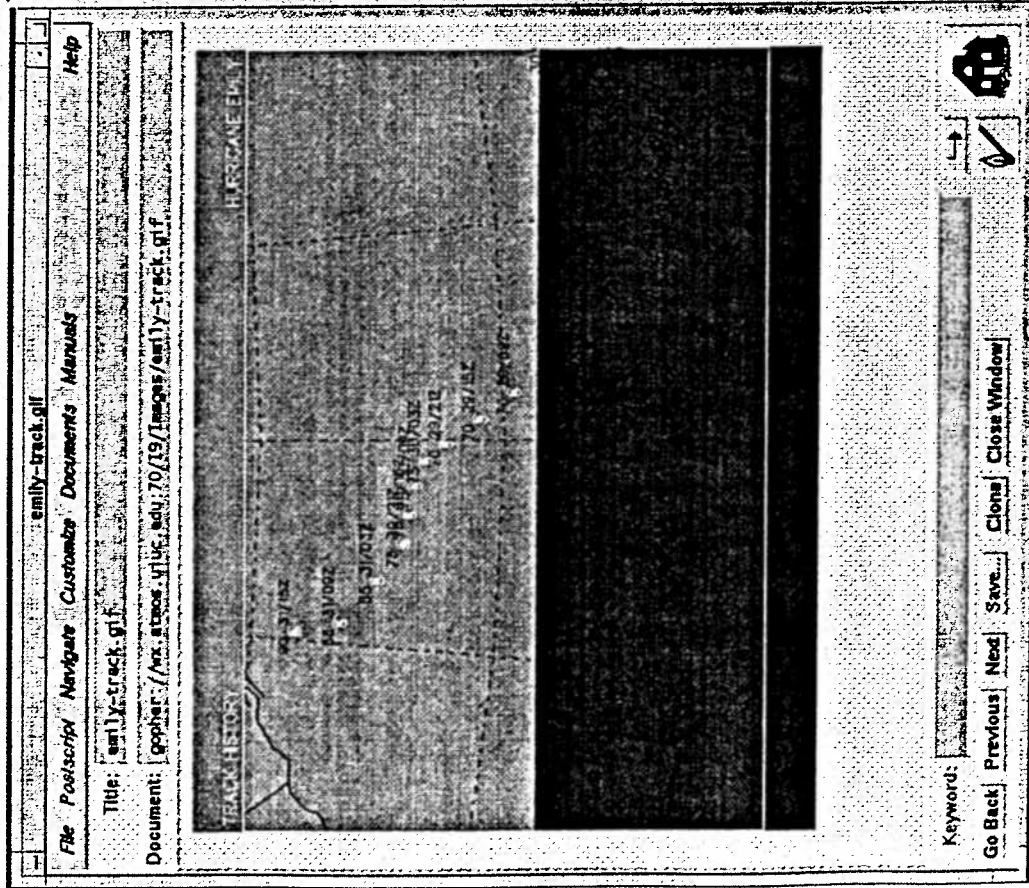
EXTENDED FORECAST:  
LABOR DAY: MOSTLY SUNNY. HIGHS 80 TO 85. LOWS IN THE 60S EXCEPT 55 TO 60 EXTREME WEST.  
TUESDAY AND WEDNESDAY: PARTLY SUNNY WITH HIGHS EACH DAY 75 WEST TO THE LOWER 80S EAST. LOWS EACH NIGHT MID 50S WEST TO THE MID 60S EAST.

SMZ

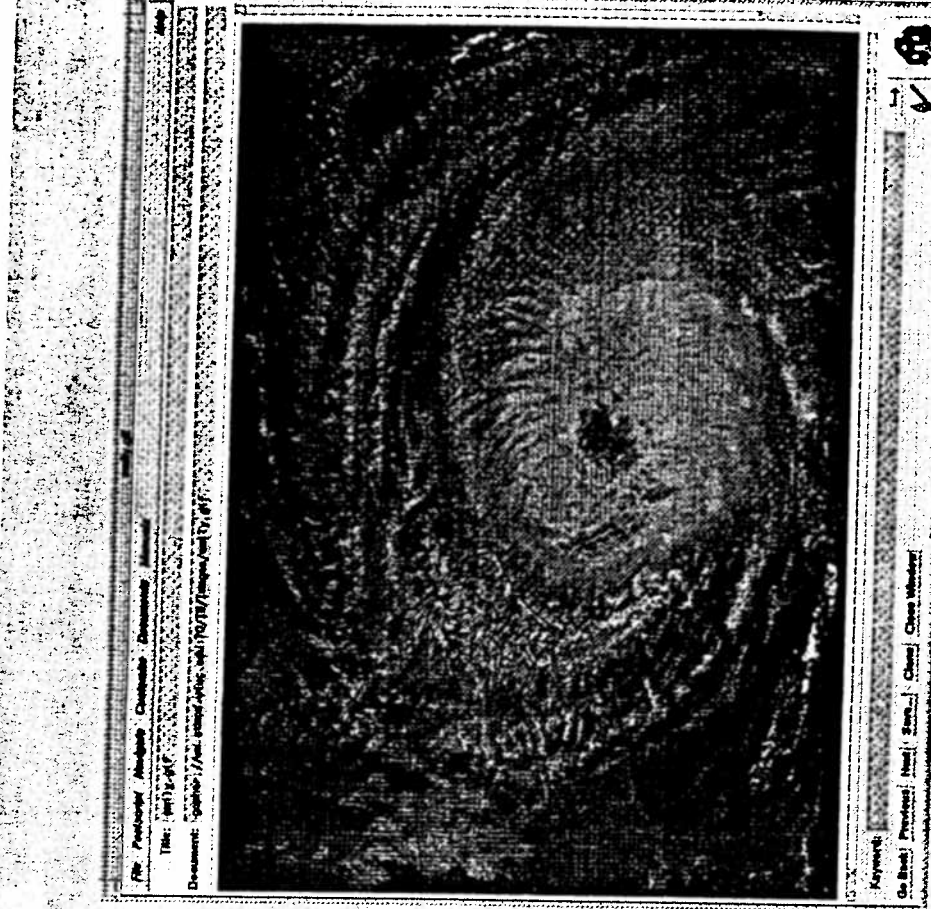
Keyword:

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*Handwritten signature*




*Handwritten signature*








File Postscript Navigate Customize Documents Manuals Help

Title: HotList

Document: http://hotlist

**HotList**

Click on the  icon to remove an item from the list, or here for more help.

-  Comp.Infosystems.WWW
-  The World Wide Web project
-  Vatican Exhibit -- Rome Reborn
-  What's New With NCSA Mosaic
-  Honolulu Community College Dinosaur Exhibit
-  EXPO Ticket Office
-  World-Wide Web: An Illustrated Seminar

Keyword:

Go Back Previous Next Save... Clone Close Window

File Postscript Navigate Customize Documents Manuals Help

Title: EXPO Ticket Office

Document: http://sunsite.unc.edu/expo/ticket\_office.html

**EXPO**  
WWW exhibits on organization

**Welcome to the EXPO**

**EXPO Ticket Office**

You are at the EXPO Ticket Office and about to enter the Worlds most exciting electronic exposition. EXPO is a world wide exhibition that with the aid of many people makes interesting exhibitions available to the general public. Tickets to the EXPO terrain are free. Currently all exhibitions on EXPO are built out of bytes donated by the Library of Congress. The EXPO organization created out of these bytes very interesting pavilions which can be reached from the nearby bus station. Please pick up a free ticket and take the EXPO Shuttle Bus to one of the exhibits. The current count of visitors arrived at the ticket office, including you is 0001220

**EXPO exhibit info**

There is a beautiful wooden EXPO Terrain Map that provides you with all the necessary information that you need before you start touring around the EXPO. There are four EXPO pavilions on the terrain. All have inlined images, so you will need a program that supports them. Without the images the EXPO is less fun. NCSA Mosaic is the recommended viewer for this exhibit; you can pull copies of it from NCSA's anonymous FTP server.

● Vatican Exhibit

**ROME REBORN: THE VATICAN LIBRARY AND RENAISSANCE CULTURE** presents some 200 of the Vatican Library's most precious manuscripts, books, and maps--many of which played a key role in the humanist renaissance of the classical heritage of Greece and Rome. The exhibition

Keyword:

Go Back Previous Next Save... Clone Close Window

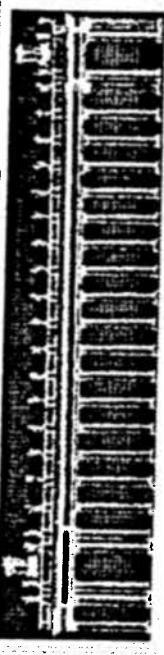


## The City Reborn

### How the City Came Back to Life

Rome now is one of the grandest cities in the world. Millions of pilgrims and tourists come every year to admire, and be awed by, its treasures of architecture, art, and history. But it was not always this way. By the fourteenth century, the great ancient city had dwindled to a miserable village. Perhaps 20,000 people clung to the ruins despite the ravages of disease and robber barons. Popes and cardinals had fled to Avignon in southern France. Rome was dwarfed in wealth and power by the great commercial cities and territorial states farther north, from Florence to Venice. In the Renaissance, however, the popes returned to the See of Saint Peter. Popes and cardinals straightened streets, raised bridges across the Tiber, provided hospitals, fountains, and new churches for the public and splendid palaces and gardens for themselves. They drew on all the riches of Renaissance art and architecture to adorn the urban fabric, which they saw as a tangible proof of the power and glory of the church. And they attracted pilgrims from all of Christian Europe, whose alms and living expenses made the city rich once more. The papal curia—the central administration of the church—became one of the most efficient governments in Europe. Michelangelo and Raphael, Castiglione and Cellini, Giuliano da Sangallo and Domenico Fontana lived and worked in Rome. Architecture, painting, music, and literature flourished. Papal efforts to make Rome the center of a normal Renaissance state, one which could wield military as well as spiritual power, eventually failed, but Rome remained a center of creativity in art and thought until deep into the seventeenth century.

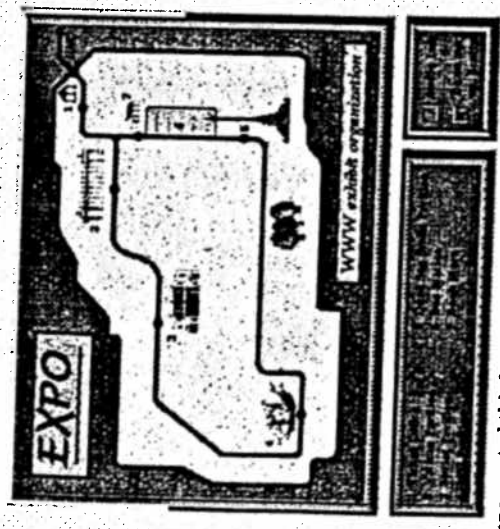
Please feel free to enter the Exhibit by going to the Main Hall.



Keyword:



## EXPO terrain map



Someone created this beautiful wooden map of the EXPO terrain. It shows all the exhibits and how they are situated. The map appears to be made of sandalwood (if your browser supports it, you should be able to smell it) and uses inlaid redwood for its letters and for the road. The structures on the map are painted by the world's finest artist. EXPO is proud to have replicas of some of the world's most distinguished architectural buildings.

Although the map appears to be made as a good old dutch map, it is in fact a full electronic (hint: still dutch) version that gives you all the info you want by clicking at

Keyword:




File Postscript Navigate Customize Documents Manuals Help

Title: Vatican Exhibit Main Hall

Document: <http://sunsite.unc.edu/expo/vatican/exhibit/exhibit/main/hall.html>

## Vatican Exhibit Main Hall



Welcome to the Library of Congress Vatican Exhibit. You are in the Main Hall.

From here you can go to several rooms,

- Vatican Library
- Archaeology
- Humanism
- Mathematics
- Music
- Medicine and Biology
- Nature Described
- Orient to Rome
- Rome to China

If you know what object you are looking for you can use either the Object Index which is indexed by catalog number or the Overview of Object and Topics which follows the outline of the exhibit.

More information can be found in

- "About the exhibition"
- Introduction
- History of the library

Keyword: \_\_\_\_\_


Go Back Previous Next Save... Clone Close Window

File Postscript Navigate Customize Documents Manuals Help

Title: Greek Mathematics and Its Modern Heirs

Document: <http://sunsite.unc.edu/expo/vatican/exhibit/exhibit/g-mathematics/Greek.html>

## Euclid, Optics




In Latin, 1468

Euclid's "Optics" is the earliest surviving work on geometrical optics, and is generally found in Greek manuscripts along with elementary works on spherical astronomy. There were a number of medieval Latin translations, which became of new importance in the fifteenth century for the theory of linear perspective. This technique is beautifully illustrated here in the miniature of a street scene in this elegant manuscript from the library of the Duke of Urbino. It may once have been in the possession of Piero della Francesca, who wrote one of the principal treatises on perspective in painting.

Urb. lat. 1329 fol. I recto mar/h04 NS.19

- Archimedes, Works



In Latin, Translated by William of Moerbeke, ca. 1270

William of Moerbeke was the most prolific medieval translator of philosophical, medical, and scientific texts from Greek into Latin. This is the holograph of his translation of the greatest Greek mathematician, Archimedes, with the commentaries of Eutocius. The translations were made in 1269 at the papal court in Viterbo from two of the best Greek manuscripts of Archimedes, both of which have since disappeared. Shown here is a part of Eutocius's commentary on Archimedes' "On the Sphere and the Cylinder" in which he reviews solutions to the classical problem of the duplication of the cube, i.e. how to construct a cube twice the volume of a given cube.

Keyword: \_\_\_\_\_

Go Back Previous Next Save... Clone Close Window





## Tour of the web... continued

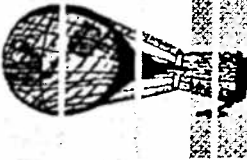





- ✓ In addition to purely academic information, commercial information providers becoming increasingly interested in the web.
- ✓ Recent example is the Global Network Navigator from O'Reilly & Associates, Inc.
- ✓ This service consists of:
  - A regular news service
  - On-line magazine
  - The Whole Internet Interactive Catalog
  - An interactive and expanded version of the *The Whole Internet Users' Guide and Catalog*.
  - A global marketplace
  - Information about products and services.
- ✓ Free subscription available by sending e-mail to:
  - [info@gnn.com](mailto:info@gnn.com)

GNN Home Page

File Postscript Navigate Customize Documents Manuals Help

## Global Net Navigator (GNN) Home Page

Hello, GNN is a production of O'Reilly & Associates, Inc. and an application of the World Wide Web.  
 Welcome New Navigators! If you are a new subscriber, please take a minute to learn more about using GNN.

The Global Network News

GNN Magazine (Issue #1)

The Whole Internet Catalog

GNN Marketplace

Navigator's Forum

Keyword:

Go Back Previous Next Save... Clone

The Global Network News

File Postscript Navigate Customize Documents Manuals Help

## GNN News

About GNN News

### Daily Features

The latest weather, sports scores, "This Day in History," and more.

### What's New?

What's hot in the news this week.

### Subjects

Current and past GNN News stories, grouped by subject.

- Current Affairs
- The Internet
- Government
- Libraries and References
- Science and Technology
- Arts and Recreation

Keyword:

Go Back Previous Next Save... Clone Close Window



## Tour of the Web... continued

- ✓ WWW makes it easy to interface to existing databases
- No need to convert existing data or retrain maintainers or existing users.
- ✓ WWW can provide a very low overhead GUI interface to existing databases
- Users need not even be aware of how or where the information is stored.
- ✓ Interactive capabilities and network access open up new possibilities.

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SLAC SPIRES
File Postscript Navigate Customize Documents Manuals Help

Title: SLAC SPIRES
Document: http://slac.stanford.edu/FIND/hep

### SLAC SPIRES: HEP Preprint database search

Send corrections to: LIBRARY@SLAC.STANFORD.EDU. Use QSPIRES search language (see examples below). Note that there is no possibility for iterative search (yet) in WWW. Therefore, when needed, combine several criteria in a single request.

Examples:

```

who indexes
find author per1, m $title tau $date before 1980 (using brief
find bulletin-bd hepth and date-added 12/92
find cn prefix mark-iii and date after march 1991 (using full
browse coden physics letters
find c phlt, 70b, 487
find s abe $date 1988 (using wwwcite [shows citations!])
browse affiliation caltech
find af cal tech and date 1992 (result
browse topic higgs
find topic higgs boson or title higgs $date 6-92 (using allkeys
browse last ppf
find ppf 9234 (seq rs brief

To learn more on authors, institutions, or acronyms, try WHOIS, WHEREIS, or
WHATIS:

whois ginsparg
whereis cern
whatls slc

```

Keyword:

Go Back | Previous | Next | Save... | Close | Close Window

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File Postscript Navigate Customize Documents Manuals Help

Title: `f.in ds aft today-88bnthepph (seq bull in ABSTRACTS`

Document: `http://slacvm.slac.stanford.edu/FIND/ABSTRACTS?find=aft+today-88bnthepph+`

HEP-PH 9308349  
 $\text{Exact } \beta\alpha$  Calculation of  $\beta\alpha$  rightarrow  $s + \gamma$  By K. Adel and York-Peng Yao, 12 pages (plain T postscript figures available upon request. UN-TH-93-20, IP-ASTP-29-)

Show\_Abstract or Show\_Paper or Show\_Tex\_Source

HEP-PH 9308350  
 Hadronic Molecules and Scattering Amplitudes from the Nonrelativ Quark Model (Contribution to HADRON93), by T. Barnes, 7 pages, LATEX epsfig, wrapfig, four postscript figures available from the author, TARNES@UIVX.BITNET, ORNL-CCIP-93-08 / RAL-93-062

Show\_Abstract or Show\_Paper or Show\_Tex\_Source

HEP-PH 9308351  
 INTRODUCTION TO CHIRAL PERTURBATION THEORY, A. Pich, 46 pages, 4 (appended at the end), CERN-TH.6978/93

Show\_Abstract or Show\_Paper or Show\_Tex\_Source

HEP-PH 9308352  
 Can  $S_{\mu\nu} \rightarrow S_{\mu\nu}$  Conversion in Nuclei be a Good Probe for Lepton-Nu Violating Higgs Couplings?, Daniel Ng and John Ng, 11 pages (revtex PP-93-72)

Show\_Abstract or Show\_Paper or Show\_Tex\_Source

Keyword:

Go Back Previous Next Save... Clone Close Window

File Postscript Navigate Customize Documents Manuals Help

Title: `Untitled (http://libnest.slac.stanford.edu:5080/hep-ph/9308/9308349.ps.Z)`

Document: `http://libnest.slac.stanford.edu:5080/hep-ph/9308/9308349.ps.Z`

This is a multipage Postscript document, select page:

- Page 1
- Page 2
- Page 3
- Page 4
- Page 5
- Page 6
- Page 7
- Page 8
- Page 9
- Page 10
- Page 11
- Page 12
- Page 13
- Page 14
- Page 15
- Page 16

Note

Once in the document you can use the Next and Previous buttons to go to adjacent pages, and the Go Back button to return to this index.

Keyword:

Go Back Previous Next Save... Clone Close Window

Title: Untitled (http://libnest.slc.stanford.edu:5080/hep-ph/9308349.ps.Z)

Document: http://libnest.slc.stanford.edu:5080/hep-ph/9308349.ps.Z

Makawa matrix elements. Then the exact  $a_s$  results are (in the  $\overline{MS}$  scheme to be defined)

$$\begin{aligned} \frac{\pi}{4a_s} C_{0,a}^{(1)} = & -\frac{4}{(s-1)^4} - \frac{5293}{576} \frac{1}{(s-1)^3} - \frac{21089}{3456} \frac{1}{(s-1)^2} - \frac{1817}{1728} \frac{1}{(s-1)} + \frac{247}{10968} \\ & + \log\left(\frac{m_s^2}{\mu^2}\right) \left[ \frac{7}{16} \frac{1}{(s-1)^2} - \frac{52}{32} \frac{(s-1)^2}{(s-1)^2} - \frac{7}{48} \frac{(s-1)}{(s-1)} - \frac{35}{288} \right] \\ & + \log\left(\frac{m_s^2}{\mu^2}\right) \log s \left[ \frac{7}{16} \frac{1}{(s-1)^4} + \frac{8}{8} \frac{(s-1)^4}{(s-1)^4} + \frac{7}{16} \frac{(s-1)^2}{(s-1)^2} \right] \\ & + \log s \left[ \frac{4}{(s-1)^4} + \frac{5509}{576} \frac{1}{(s-1)^3} + \frac{2893}{432} \frac{(s-1)^2}{(s-1)^2} + \frac{163}{192} \frac{1}{(s-1)} - \frac{11}{48} \frac{1}{(s-1)} - \frac{35}{288} \right] \\ & + \log^2 s \left[ \frac{7}{16} \frac{1}{(s-1)^4} + \frac{8}{8} \frac{(s-1)^4}{(s-1)^4} + \frac{7}{16} \frac{(s-1)^2}{(s-1)^2} \right] \\ & + Sp\left(1 - \frac{1}{s}\right) \left[ \frac{13}{8} \frac{1}{(s-1)^4} + \frac{187}{48} \frac{(s-1)^2}{(s-1)^2} + \frac{137}{48} \frac{1}{(s-1)} + \frac{1}{2} \frac{1}{(s-1)} - \frac{1}{12} \right] \\ & + \left( \frac{91}{2892} + \frac{1}{54} \log\left(\frac{m_s^2}{\mu^2}\right) \right), \end{aligned}$$

$$\begin{aligned} \frac{\pi}{4a_s} C_{0,a}^{(1)} = & -\frac{4}{(s-1)^4} - \frac{335}{18} \frac{1}{(s-1)^3} - \frac{11859}{432} \frac{1}{(s-1)^2} - \frac{6947}{432} \frac{1}{(s-1)} - \frac{47}{648} \\ & + \log\left(\frac{m_s^2}{\mu^2}\right) \left[ -\frac{1}{(s-1)^4} - \frac{3}{(s-1)^3} - \frac{31}{12} \frac{(s-1)^2}{(s-1)^2} + \frac{17}{36} \right] \\ & + \log\left(\frac{m_s^2}{\mu^2}\right) \log s \left[ \frac{1}{(s-1)^4} - \frac{1}{7} \frac{(s-1)^2}{(s-1)^2} - \frac{1}{4} \frac{1}{(s-1)} - \frac{1}{4} \frac{1}{(s-1)} \right] \end{aligned}$$

Keyword:

Go Back Previous Next Save... Clone Close Window

# Tour of the Web... continued

- ✓ Unfortunately we are running out of time for this part of the presentation....
- ✓ We have viewed only a microscopic part of the web.
- ✓ Many other parts of the web are less "spectacular" but with extremely useful information
- ✓ No time to demonstrate...



# WWW Access to Newsgroups (NNTP)

News group comp.infosystems.www, Articles 140-149

File Postscript Navigate Customize Documents Manuals Help

Title: [NewsGroup comp.infosystems.www, Articles 140-149]

Document: [comp.infosystems.www]

(Earlier articles...)

## Articles in comp.infosystems.www

"Re: special chars.." - Marc VanHeiningen  
 "Re: Same source for Hypertext and Hardcopy" - "Philip C. Murray"  
 "tkWWW problem with ncsa\_httpd" - LTJG Paul Everitt  
 "Re: Latex to HTML: Where to get ????" - Rich Brandwein  
 "Re: special chars.." - Scott Schwartz  
 "Re: special chars.." - Bennet Yee  
 "Re: special chars.." - William C. Fennel  
 "Re: tkWWW problem with ncsa\_httpd" - Marc Andreessen  
 "new www server up at Yale University (www.yale.edu) for CS/Math/Phys"  
 "Re: Cello: Alpha Winsock released" - Thomas R. Bruce  
 "Re: Same source for Hypertext and Hardcopy" - HALLAM-BAKER Phillip  
 "Re: HTML and SGML" - Lloyd Harding  
 "Re: special chars.." - Larry Wall  
 "How to specify a periodic query in html?" - Jerry Whelan  
 "Servers - your feedback and your experiences desired..." - J.M. Ivie  
 "Cello Winsock Alpha r2 available" - Thomas R. Bruce  
 "Re: texinfo->html (faq, I'm sure)" - Bob Olson  
 "newbie question" - Ladden Guy  
 "Re: special chars.." - Tony Sanders

Keyword: [ ]

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# ...Gopher....

Information About Gopher

File Postscript Navigate Customize Documents Manuals Help

This: [Information About Gopher]

Document: [gopher://gopher35.umn.edu:70/11/Information] or [204aboutgopher]

## Information About Gopher

Select one of:

- ☐ About Gopher
- ☒ Search Gopher News
- ☐ Gopher News Archive
- ☐ comp.infosystems.gopher (USENET newsgroup)
- ☐ Gopher Software Distribution
- ☐ Gopher Protocol Information
- ☐ University of Minnesota Gopher software licensing policy
- ☐ Frequently Asked Questions about Gopher
- ☐ Gopher's example server
- ☐ How to get your information into Gopher
- ☐ New Stuff in Gopher
- ☐ Reporting Problems or Feedback
- ☐ big Ann Arbor gopher conference picture.gif

Keyword: [ ]

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....FTP....

Info.cern.ch/pub/www
File Postscript Navigate Customize Documents Manuals Help

Title: Info.cern.ch/pub/www
Document: ftp://info.cern.ch:21/pub/www/pub/www

See login messages

- ☐ .www\_browsable
- ☐ Copyright.txt
- ☐ README.XMOSAIC
- ☐ README.txt

WWWLineModeDefaults.tar.Z

- ⇒ bin
- ⇒ default.html
- ⇒ dev
- ⇒ doc
- ⇒ src

Keyword:
Go Back Previous Next Save... Clone Close Window

www

...MultiMedia...Movies+Sound

NCSA Digital Gallery CD-ROM- Science Theater
File Postscript Navigate Customize Documents Manuals Help

Title: NCSA Digital Gallery CD-ROM- Science Theater
Document: http://www.ncsa.uiuc.edu/CDG/ta/gallery/CDG-ScienceTheater.html

### NCSA Digital Gallery CD-ROM

#### Science Theater Animations and Images

The following mpeg movies and gif files represent a selection of images and animation files which were submitted from researchers around the world for inclusion on the Digital Gallery CD-ROM. Quicktime movies of each of these animations or image sequences are shown in the Science Theater, one of the rooms in the Digital Gallery. These mpeg movies were created from the original HDF datafiles.

Earth Sciences

- Hurricane Bob
- Thermal Convection
- Fluid Dynamics
- 3D Disruption Jet
- 3D Jet Slice
- Splash

Medical Sciences

MPEG Play

Keyword:
Go Back Previous Next Save... Clone Close Window



## ...Navigation aids...

File Postscript Navigate Customize Documents Manuals Help

Title: History

Document: History

Documents visited this session

→ Welcome to the Midas WWW browser

→ The World-Wide Web Virtual Library: Subject Catalogue

→ Xerox PARC PubWeb Server

→ Map Viewer: world 0.00N 0.00E (1.0X)

→ Map Viewer: world 37.77N 122.42W (90.0X)

→ Map Viewer: world 37.77N 122.42W (720.0X)

→ Map Viewer: usa 37.77N 122.42W (720.0X)

→ Map Viewer: usa 37.77N 122.42W (720.0X)

→ Global Network Academy Meta-Library

→ The World-Wide Web Virtual Library: Literature and Art

→ mrcnext.csu.uiuc.edu/gutenberg/usaonly

→ Gutenberg Master Index

→ Untitled (ftp://mrcnext.csu.uiuc.edu/gutenberg/text91/alice29.txt)

→ Untitled (ftp://mrcnext.csu.uiuc.edu/gutenberg/text92/avon10.txt)

→ Untitled (ftp://mrcnext.csu.uiuc.edu/gutenberg/text92/caroll10.txt)

→ Vatican Exhibit Rome Reborn

→ Vatican Exhibit Main Hall

→ The Vatican Library

→ Mathematics

→ Greek Mathematics and its Modern Heirs

→ Untitled

Keyword:

Go Back Previous Next Save... Clone Close Window

→ ✓

## WWW Browsers

Software you need to access the Web

### ✓ Graphical User Interfaces

- NCSA Mosaic (for X/Unix, Windows, Mac)
- Cello for Windows (from Cornell Law School)
- MidasWWW, tkWWW, Viola (for X/Unix)
- Next Browser/Editor
- Samba (Mac browser from CERN)

### ✓ Line Mode Browsers

- CERN Line Mode browser
- "Lynx" - full screen browser,
- Others (NJIT, perlWWW, VMS-SMG browser, W3-mode)

✓ Only have time to cover these Unix browsers today

# NCSA Mosaic for X

## X-Windows/Motif browser for Unix

- ✓ **Authors** - Marc Andreessen, Eric Bina, NCSA
- ✓ **Requirements** - Unix workstation with X/Motif
- ✓ **Availability** - anonymous FTP from <ftp.ncsa.uiuc.edu> in directory [/Mosaic](#)
- Source Code
- Precompiled binaries for rs6000, SGI, Sun, Ultrix, Alpha OSF
- ✓ **Features**
  - Popular, well supported
  - X/Motif interface
  - Support for personal and group annotations
  - Supports Postscript, GIF, JPEG, TIFF, audio, etc by forking off external process.
  - Support for inlined images.
  - In document search capability.
  - Save/mail/print documents in various formats (including Postscript).
  - Extensive interactive help

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# NCSA Mosaic for X

File

Navigate

Options

Annotate

Documents

Manuals

Help

NCSA Mosaic: Document View

Document Title: NCSA Mosaic Home Page

Document URL: <http://www.ncsa.uiuc.edu/500/Software/Mosaic/NCSAMosaic.c>

## NCSA Mosaic Home Page

Welcome to NCSA's Mosaic, a networked information browser and World Wide Web client. Each highlighted phrase (in color and/or underlined) is a hyperlink to another document. *Single click* on any highlighted phrases to follow the link.

If you haven't used NCSA Mosaic before, you may wish to explore the Mosaic demo document as well as some of the information resources available through the menu bar at the top of this window. You can also find out [What's New with Mosaic](#) and the World Wide Web.

NCSA Mosaic has online hypermedia documentation; also see [Frequently Asked Questions](#) and the new online tutorial.

### Current Version Is 1.2i

Please note that the current released version of NCSA Mosaic is version 1.2. If you are running an earlier version, please upgrade. (The Mosaic distribution directory is [here](#).)

### Comments or Problems

If you have problems or comments concerning NCSA Mosaic, please first read the documentation and the FAQ list. If those resources don't answer your question or resolve your complaint, send your comments to [mosaic-x@ncsa.uiuc.edu](mailto:mosaic-x@ncsa.uiuc.edu).

Please also send a note if you find NCSA Mosaic useful or particularly interesting --- we want to hear from you!

Search Keyword:

Back Forward Home Reload Open Save As Close New Window Close Window

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# MidasWWW

## X-Windows/Motif browser for Unix/VMS

- ✓ Author - Tony Johnson, Stanford Linear Accelerator Center
- ✓ Requirements - Unix/VMS Workstation, X/Motif
- ✓ Availability - anonymous FTP from [freehep.scri.fsu.edu](http://freehep.scri.fsu.edu) in directory [/freehep/networking](http://freehep/networking) email [news/midaswww](mailto:news/midaswww)
- Source Code
- Precompiled binaries for rs6000, SGI, Sun4, HP, Ultrix, VMS (multinet and UCX)
- ✓ Features
  - X/Motif interface
  - Integrated viewing of Postscript, GIF, JPEG, TIFF etc. documents
  - Supports viewing of MPEG, audio through external viewer
  - Progress box shows document transfer status and allows document fetch to be cancelled
  - Support for inlined images
  - Extensive interactive help facility
  - Web navigation aids

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# MidasWWW

Welcome to the Midas WWW browser

File Postscript Navigate Customize Documents Manuals Help

Title: Welcome to the Midas WWW browser

Document: <http://scri.fsu.edu/midas/20/welcome.htm>

## Welcome

Welcome to the Midas World Wide Web HyperText browser. Choose one of the following topics:

- General Information**
  - Academic Information
  - Index of academic information
- HEP Information**
  - High Energy Physics information
- Help**
  - Overview of help on the Midas WWW browser
  - World Wide Web
  - About the World Wide Web project
  - If you don't like this home page, make your own!
- New features for Release 2**
  - Postscript support
    - MidasWWW now supports viewing of postscript files using Ghostscript. Postscript files, including multi-page documents, are displayed directly in the Midas WWW browser window.
  - Gopher & FTP access
    - Direct access to gopher servers and FTP servers.
  - Inlined Images
    - Mosaic style inlined images, plus Tony Sanders' hypermedia astronaut demo and bookmark demo.
- Progress Box**

Keyword:

Go Back Previous Next Save... Clone Close Window

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# Lynx

## Full Screen Browser for Unix/VMS

- ✓ Author - Lou Montulli, University of Kansas
- ✓ Demo Site - Login as www to ukanalx.cc.ukans.edu
- ✓ Requirements - vt100 compatible terminal
- ✓ Availability - anonymous FTP from ftp2.cc.ukans.edu in directory /pub/lynx
- Source Code
- Precompiled binaries for rs6000, sun3, sun4, NeXT, VMS (multinet)
- ✓ Features
  - Full screen capabilities provided through curses
  - Ability to view Postscript, GIF, JPEG, TIFF, audio etc. through forked process
  - In document search capability
  - Extensive interactive help
  - History list, personal hotlist, etc.

# Lynx

DECterm 2

File Edit Commands Options Print Help

The World-Wide Web Virtual Library: Subject Catal (pt of 4)

WWW VIRTUAL LIBRARY

This is the subject catalogue. See also arrangement by service type. Mail [www-request@info.cern.ch](mailto:www-request@info.cern.ch) to add pointers to this list.

Aeronautics

Mailing list archive index . See also NASA LaRC

Agriculture

Separate list, see also Almanac mail servers.

Astronomy and Astrophysics

Abstract Indexes at NASA, Astrophysics work at [FWAL](#), [Wavelength](#), Sloane Digital Sky Survey, the STELAR project, Space Telescope Electronic Information System. See also: space.

Bio Sciences

Separate list.

Computing

Separate list.

Earth Science

US Geological Survey.

Education

See the Education Policy Analysis Archives

-- press space for next page --

## How to install a WWW client under Unix

✓ If a precompiled version of the browser is available for the machine you want to use:

- ftp to the site listed for the browser, log in as anonymous
- cd to the directory listed
- Issue the command binary
- get the executable for your operating system
- exit ftp
- uncompress the file
- run it!

Browser	ftp site	directory
Mosaic	ftp.ncsa.uiuc.edu	/Mosaic/xmosaic-binaries
MidasWWW	freehep.scri.lsu.edu	/freehep/networking_email_news/midaswww/binaries
Lynx	ftp2.cc.ukans.edu	/pub/lynx

## How to install a WWW client continued

- ✓
- If you have a UNIX machine for which there are not pre-compiled binaries available, or if you work for a company which restricts access to internet through a "firewall", you will have to do some more work.
  - All of the browsers mentioned here are available in source code form, (.tar.Z files).
  - The source code can be found in the directories listed with the browser.
  - Documentation on how to build the browser is included with the source code.



## Related Software

### to make your Browser more powerful

- ✓ Having obtained a browser (see previous slides) you should be able to immediately run it and access the majority of information available on the web.
- ✓ A few additional programs must be installed on your system in order to view Postscript, JPEG images, movies etc.
- ✓ Useful programs

Program	Used By	Function	Available From
xv	Mosaic, Lynx	Viewer for GIF, JPEG, TIFF etc.	export.lcs.mit.edu /contrib
ghostscript	All	Postscript interpreter	ftp.cs.wisc.edu /pub/ghost
ghostview	Mosaic, Lynx	Driver for ghostscript	ftp.cs.wisc.edu /pub/ghost
mpeg_play	All	MPEG movie viewer	toe.berkeley.edu /pub/multimedia/mpeg
pbrmplus	MidasWWW	Image format translator	export.lcs.mit.edu /contrib

## HTML

### How to make your information available on the Web

- ✓ If you have information available via
  - anonymous FTP
  - Gopher
  - WAIS
  - Telnet

it is already on the web

- ✓ To take full advantage of World-Wide Web clients, use the HyperText Markup Language (HTML).

- HTML is a simple markup language used to format documents on the web, and used to create the links between documents.

- HTML can easily be created using a standard text editor (e.g. EMACS etc.).

- It is not necessary to set up a WWW (HTTP) server to use HTML. You can create HTML files for your own use as files in your normal unix file system, or make them available to others on the net using a Gopher server or anonymous FTP.

## A Trivial HTML Document

```
<title>Document title</title>
```

```
<h1>Main heading</h1>
```

Text is free form by default, browsers will wrap the text automatically so that it will fit on the viewer's screen.

```
<p>New paragraph with more text.
```

```
<pre>
```

literal 80-column text

line breaks are significant

```
</pre>
```

```
<h2>Second level heading</h2>
```

```
<ol>
```

```
<li>First element of list, menu etc.
```

```
<li>Second element
```

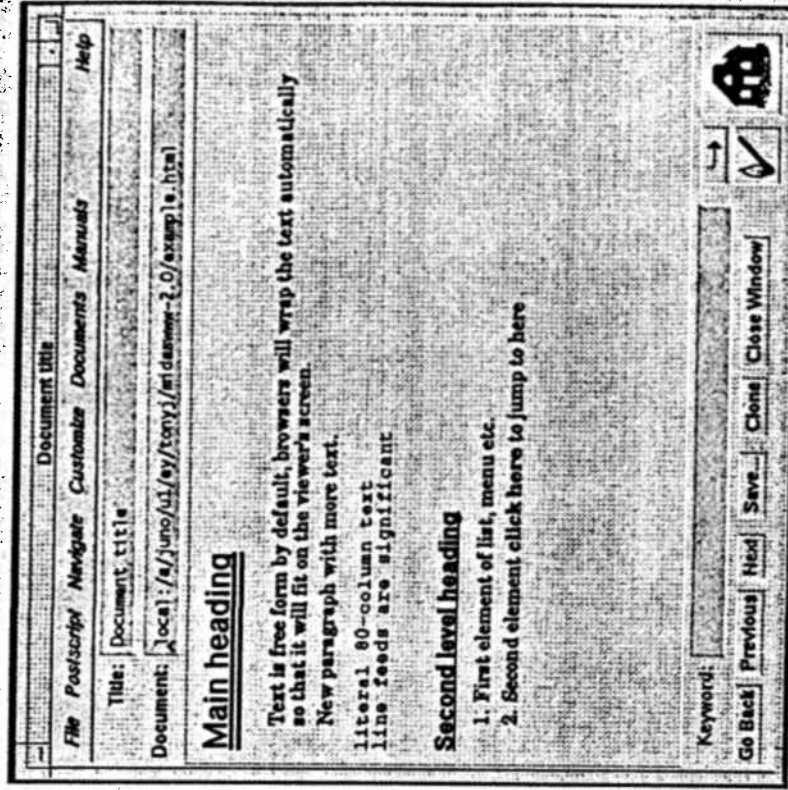
```
</ul>
```

```
<a href="#banana">click here</a> to jump to
```

```
<a name="banana">here</a>
```

## Output from Example

(See previous page)



Type in your street address:

Type in your phone number:

Which toppings would you like?

- ☐ Pepperoni.
- ☐ Sausage.
- ☐ Anchovies.

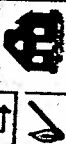
To order your pizza, press this button: **Order Pizza**

Things you may want to note:

- By default, checkboxes are off.
- When the query is packaged up, off checkboxes are ignored completely and on checkboxes are given the values specified by the VALUE attribut

Keyword:

Go Back Previous Next Save... Clone Close Window



- <http://www.ncsa.uiuc.edu/demosweb/ftml-primer.html>
- <http://www.ncsa.uiuc.edu/demosweb/uri-primer.html>

Some documentation is available via anonymous FTP, try:

- <ftp://info.cern.ch/pub/www/doc>
- <ftp://ftp.ncsa.uiuc.edu/pub/mosaic/mosaic-papers>

Or try the WWW Newgroups and Mailing Lists

- Newgroup: [comp.infosystems.www](http://comp.infosystems.www)

- Mailing Lists:

- [www-announce](http://www-announce) - Announcements about software releases etc.
- [www-talk](http://www-talk) - Fairly technical list aimed at implementors and determined users....be prepared to get lots of mail if you subscribe to this list.

To subscribe to either of these lists send e-mail to [listserv@info.cern.ch](mailto:listserv@info.cern.ch) with the line "add [www-announce](http://www-announce)" or "add [www-talk](http://www-talk)" in the body of the mail.



✓ Mac, TPD

- All servers are available as source code. Full instructions for compiling the servers are included with the source code.
- Servers can be run either from 'inetd' or from the bootstrap command file (/etc/rc). The latter is recommended for all but occasionally used servers.
- Full instructions for installing servers are available:
  - <http://info.cern.ch/hypertext/WWW/Daemon/User/Installation.html>

✓ Unix, VMS, VMS/CMS

✓ Available from

- ftp from [info.cern.ch/pub/www/src/WWWDaemon\\_2.07.tar.Z](http://info.cern.ch/pub/www/src/WWWDaemon_2.07.tar.Z)

✓ Features

- Installation under inetd or run stand-alone
- Can be run stand-alone by normal user
- Automatically generates hypertext view of directory trees
- Uses README files to document directory listings
- RULES file for mapping file names and controlling access

## A Trivial HTML Document

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<title>Document title</title>  
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Text is free form by default, browsers will wrap the text automatically so that it will fit on the viewer's screen.

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```
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```

literal 80-column text  
line breaks are significant  
</pre>

```
<h2>Second level heading</h2>
```

```
<ol>
```

```
<li>First element of list, menu etc.
```

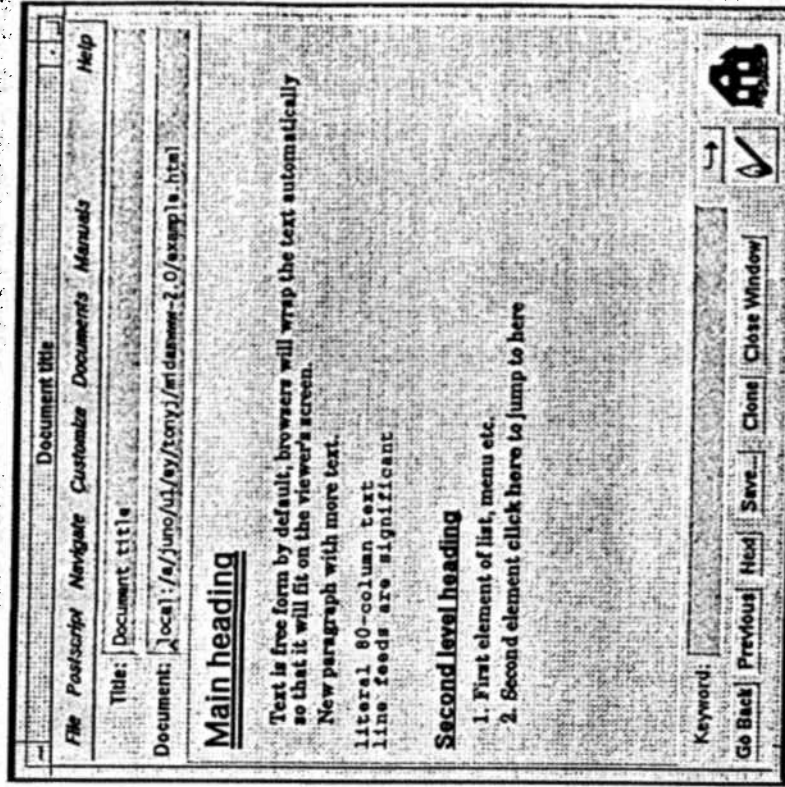
```
<li>Second element
```

```
</ul>
```

```
<a href="#banana">click here</a> to jump to  
<a name="banana">here</a>
```

## Output from Example

(See previous page)



# Acknowledgments

✓ There would be no talk to give today without the pioneering work of Tim Berners Lee and others who started the WWW project at CERN.  
A number of the slides used in this presentation were created by the WWWizards at CERN also.

✓ The web is such an interesting place today because of all the effort people all over the world are putting into writing software, but more importantly making information available on the web. Fortunately there are *far* too many to mention.







2000-2001  
2000-2001

1000-1000

SLAC ARCHIVES COLL 10-012  
SERIES 1 SUBSERIES 4  
BOX 1 FOLDER 25

File Postscript Navigate Customize Documents Manuals

Help

Title: FreeHEP

Document: <http://slacvm.slac.stanford.edu/FIND/fhmain.html>



FreeHEP

#### Access to Software useful in High Energy Physics

FreeHEP is a collection of software and information about software which is useful in high energy physics and related fields. FreeHEP consists of:

- A compilation of available software
  - ◆ by Subject Area
  - ◆ by Title
  - ◆ by Data base search
  - ◆ by time of acquisition (or update): last week, last two weeks, last month
  - ◆ by name (type name as keyword now).
- Tutorials on topics of common interest
- [hepnet.freehep](mailto:hepnet.freehep) discussion group.

This collection is maintained by the FreeHEP subject area editors and is also accessible by anonymous ftp from machine [freehep.sori.fsu.edu](ftp://freehep.sori.fsu.edu). Contributions or comments are welcome.

#### Further reading

- [How to contribute to FreeHEP](#)
- [More information about FreeHEP](#)

TonyJ

Keyword:

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Title: Untitled (http://slacvm.slac.stanford.edu/FIND/fhmore.html)

Document: http://slacvm.slac.stanford.edu/FIND/fhmore.html

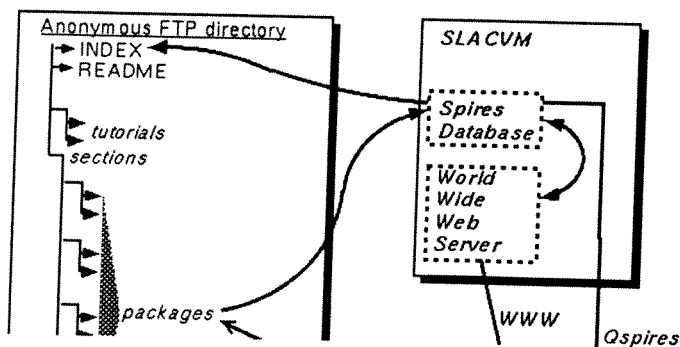
## FreeHEP: Access to Software Useful in High Energy Physics

During the 1980s, High Energy Physics (HEP) went through a transition where individual researchers came to rely extensively on community wide software tools in addition to software developed for an individual experiment or research projects. A second transition is occurring today where researchers are making increasing use of software developed outside of high energy physics including CAD/CAM systems, visualization software, symbolic mathematics packages, data bases, software engineering packages, software for coarse or fine grained parallelism, C++ class libraries and many others. As a result, high energy physics reached a situation where there was no adequate mechanism for keeping track of important software developments around the world in the many relevant fields or even within HEP itself. In order to provide this mechanism, the FreeHEP organization was proposed to provide the following services:

1. A global compilation of software useful in HEP both from within HEP, from other fields and commercial software.
2. Tutorials on common subjects and reviews on the subject areas covered.
3. Ftp access to information about software packages, documentation or the software itself, tutorials, reviews and other information.
4. Provide a service to authors of software who need a convenient point of distribution for their software packages.
5. A mechanism for users to communicate with authors of the software or with other users.

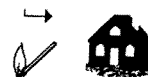
Since the FreeHEP compilation is meant to be as inclusive as possible, FreeHEP accepts all software which might be of use in High Energy Physics. For the same reason, we do not have requirements on methods of distribution, installation, documentation, languages, support for particular machines, etc. These considerations are left entirely to the authors.

In our current arrangement, the FreeHEP collection, reviews, etc. are kept in a simple easily updated form on the ftp machine freehep.scri.fsu.edu. The software compilation is then absorbed into a server for CERN's "WorldWide Web"(WWW) and is thus made available as global hypertext. The collection is also imported into the SLAC SPIRES system which then provides data base operations also via hypertext. Communication of information about freehep is done through the NNTP news group hepnet.freehep.



Keyword: |

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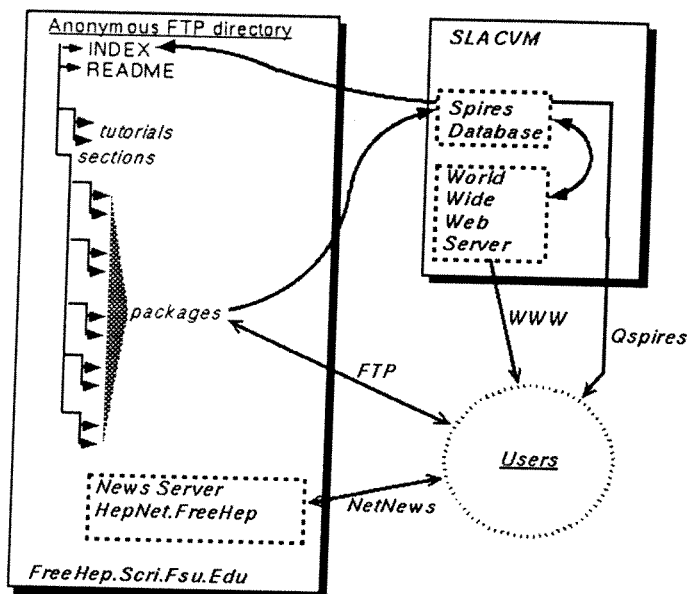
File Postscript Navigate Customize Documents Manuals

Help

Title: [Untitled (http://slacvm.slac.stanford.edu/FIND/fhmore.html)]

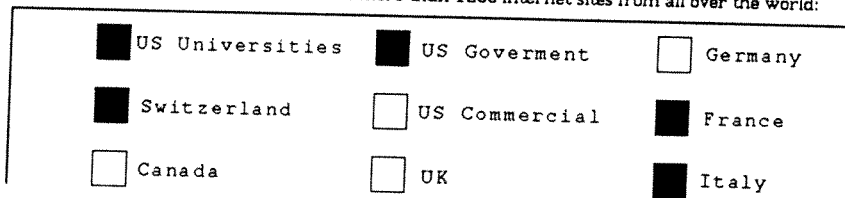
Document: [http://slacvm.slac.stanford.edu/FIND/fhmore.html]

In our current arrangement, the FreeHEP collection, reviews, etc. are kept in a simple easily updated form on the ftp machine [freehep.scri.fsu.edu](http://freehep.scri.fsu.edu). The software compilation is then absorbed into a server for CERN's "WorldWide Web"(WWW) and is thus made available as global hypertext. The collection is also imported into the SLAC SPIRES system which then provides data base operations also via hypertext. Communication of information about freehep is done through the NNTP news group [hepnet.freehep](http://hepnet.freehep).



#### FreeHEP-WWW configuration

Since its inception in June, 1992, use of the FreeHEP compilation has steadily grown. As of August, 1993, more than 12,000 files have been fetched from more than 1200 internet sites from all over the world:



Keyword: [

Go Back Previous Next Save... Search... Clone Close Window

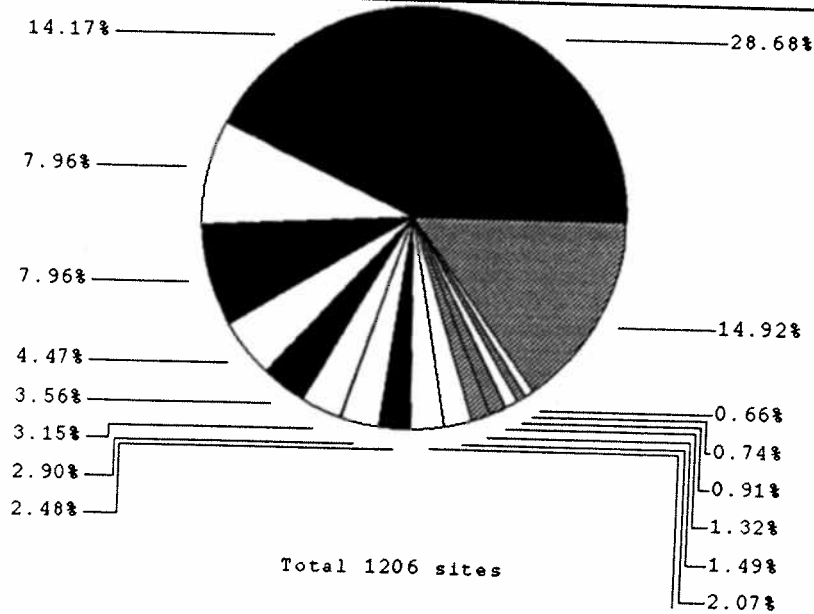
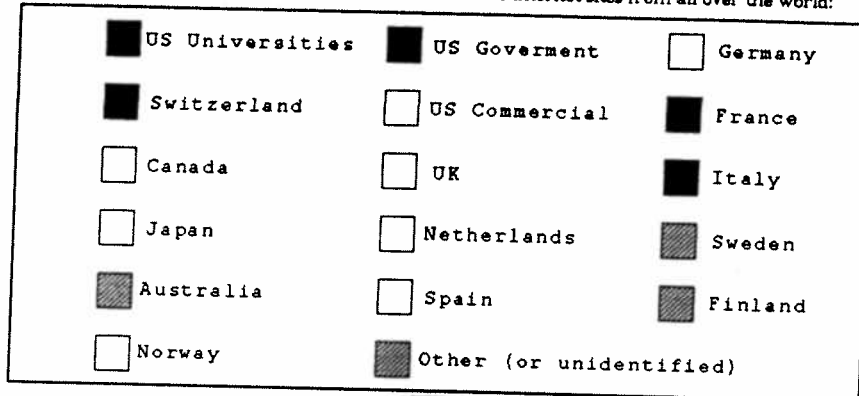




Title: [Untitled (http://slacvm.slac.stanford.edu/FIND/fhmore.html)]

Document: [http://slacvm.slac.stanford.edu/FIND/fhmore.html]

than 12,000 files have been fetched from more than 1200 internet sites from all over the world:



Keyword: [ ]

Go Back Previous Next Save... Search... Clone Close Window

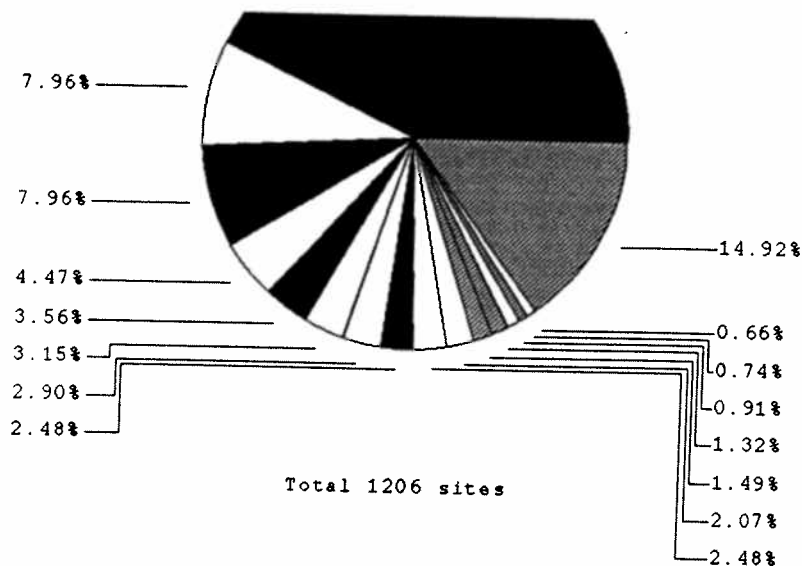


[File](#) [Postscript](#) [Navigate](#) [Customize](#) [Documents](#) [Manuals](#)

[Help](#)

Title: Untitled (<http://slacvm.slac.stanford.edu/FIND/fhmore.html>)

Document: <http://slacvm.slac.stanford.edu/FIND/fhmore.html>



[The number of sites using FreeHEP continues to grow. In the last week, the total number of sites has increased to 1311. S.Y. 8/22/93]

This list only includes direct access by ftp. There may be many more people who primarily use our www interface (written by Tony Johnson).

The FreeHEP compilation is kept up by **subject area editors** who have volunteered their time and expertise to do this.

Since the start of FreeHEP, we have expanded the subject areas covered including new initiatives in C++ by Leif Lonnblad (Lund/DESY) and in **Lattice Field Theory** by Marcus Speh (DESY). Leif Lonnblad is also organizing the CLHEP HEP C++ class library project which is distributed from the freehep ftp machine.

FreeHEP was first proposed in the 1991 HEPLIB meeting at the SSC Lab as an extension of an earlier compilation by Andrea Palounek and Saul Youssef. The initial organization of FreeHEP was done by Andrea Palounek, Tony Johnson and Saul Youssef. Comments, suggestions and especially contributions are always welcome and can be directed to any of the editors or to the **hepnet.freehep** news group.

More documentation on FreeHEP can be found in the **freehep\_documents** directory.

[Home Page](#)

Keyword: |

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Title: **List of FreeHEP packages**

Document: <http://slacvm.slac.stanford.edu/FIND/FREEHEP/NAME~/INDEX>

## List of FreeHEP packages

### ACE\_WRAPPERS

Adaptive Communication Environment C++ Wrapper Library

### ADAMO

The ADAMO Programming System

### ALJABR

Symbolic Math Package

### ALOG

ALOG Logging Utility for Parallel Programs

### ANALG

Explicit formulae of angular momentum coupling coefficients.

### APE III

Visualization Package

### APE-100

APE: SIMD parallel computer for Lattice Gauge theory

### APESE

A Language for SIMD parallel computers

### APESE / TAO

A Language for SIMD parallel computers

### ARIADNE

Ariadne version 4 - A program for simulation of QCD cascades implementing the colour dipole model.

### ASA

Adaptive Simulated Annealing

### ASPIRIN

Translation from VAX fortran to Fortran 77

### ASYMGRAD

MINUIT routine for spectra deconvolution

### ATAVACHRON

The Atavachron for Preprints

### AUTOCAD

Computer Aided Design system

### AVS

Advanced Visualization System

### AXIOM

Scientific Computation System/Symbolic Math

### BABAMC

Bhabha generator

### BAMJET

quark and diquark jet fragmentation

### BHLUMI

Keyword:

[Go Back](#) [Previous](#) [Next](#) [Save...](#) [Search...](#) [Clone](#) [Close Window](#)

