Use of World Wide Web and NCSA Mosaic at Langley

CSTC Workshop, H. J. Reid Conference Center, 06/16/94

Michael Nelson, Information Systems Division

http://blearg.larc.nasa.gov/~mln/cstc/
Use of World Wide Web and NCSA Mosaic at Langley

- A Brief History of WWW at Langley Research Center
- The Impact of WWW at Langley
- Various Projects That Have Used WWW Successfully
  - Technology Opportunities Showcase
  - Langley Distributed Active Archive Center – EOSDIS
  - Langley Technical Report Server
  - Langley High Performance Computing and Communications K–12 Program
  - COSMIC Replacement
- The Future of WWW at Langley
- What’s Next?
A Brief History of World Wide Web (WWW) at Langley

Langley’s Leadership Role

- The initial set of pages were quickly followed by a number of other contributors.
- The Langley Home Page is almost a year old.
- The Langley Home Page was the first NASA center home page.
- Why is the “75 Years” logo used?
  - To remind ourselves and others that leading the way is nothing new for Langley.
  - And while the technology may be new, the innovative spirit is not.

NASA’s Leadership Role

- Archie Warnock and Jim Gass of GSFC lead NASA Home Page effort, with input from all of the centers.
- Communication through the NASA USENET newsgroup, nasa.infosystems.www.
- The first version of the NASA Home Page became public on September 8, 1993.
- NASA continues to lead federal agencies in deployment and use of WWW.
- The NASA Web is a model for grass-roots involvement and inter-agency collaboration.
Characteristics of the Langley Web

Architecture of the Langley Web

- Canonical list — 'one stop shopping'
- Logically central, physically distributed
- Langley home page is largely a collection of pointers to other WWW servers at Langley and beyond
- Macs, PCs, and UNIX workstations have HTTP servers

The Langley Web Benefits From a Large Number of Contributors

- Over 20 public HTTP servers (plus several others in testing or private)
- Everyone is responsible for maintaining the information they know the most about
- It encourages experimentation
- Everyone is involved with the new information distribution methodology: Its not just "send me an e-mail", its now also "send me the URL"
Impact of World Wide Web at Langley

No Longer the "Best Kept Secret in the Government"

- Statistics not kept until August 27, 1993
- Number of Langley home pages served: 0096410
- At one point, the Langley home page was the "18th Most Linked to Home Page" (source: a Univ. of Washington Web Crawler)
- 797000+ HTTP connections with main Langley WWW server
- Accesses to the main Langley WWW server (www.larc.nasa.gov)
  - 1700+ Langley Computers
  - 5100+ NASA Computers
  - 62000+ Computers World-Wide
- www.larc.nasa.gov is currently a non-dedicated, SPARCstation IPX, 64 Mbytes memory, 1.5 Gbytes disk

What is the Impact on the WWW Users?

- Move from zero-sum to non-sum information distribution model
- Perhaps most importantly, connecting:
  - People with technologies
  - People with people
Some Langley Projects that have employed WWW

These Projects Have Increased Awareness and/or Usage with WWW

- Technology Opportunities Showcase (TOPS)
- Langley EOSDIS Distributed Active Archive Center
- Langley Technical Report Server (LTRS)
- High Performance Computing and Communications K-12 Program
- COSMIC Replacement

Important Notes About the Above Projects

- Each represent "firsts" in their respective areas
- The projects are accessible through a common interface

A Number of Branches, Divisions, Groups, Teams, and Initiatives Use WWW

- Check the Langley home page for a complete and current list!
Technology Opportunities Showcase

A Diverse and Dynamic Team Assembled to Construct the TOPS Database

- Number of TOPS home page visitors since 6/01/94: 0000457
- TOPS builds upon other on-line databases, such as the X.500 phone book information, the Langley Technical Report Server, and existing Langley organization home pages.
- Team members: Kennie Jones (ISD), Jim Fenbert (ASAD), Kathy Stacy (ISD), Gretchen Gottlich (PRMO), Kurt Severance (ISD), Michael Nelson (ISD), Rick Hoff (STID), Dan Axelrad (STID co–op), Chris Matthews (CSC), David Bianco (CSC), Tricia Smith (ISD)
- Others latered contributed tours, reports and other information
- Features: all data sheets; keyword searching; photographs; “clickable” TOPS floor plan; automated metrics; and on-line requests for more information forms
- POC: Kennie Jones, K.H.JONES@LaRC.NASA.GOV, 864–6720
- http://www.larc.nasa.gov/tops/tops.html
Langley Distributed Active Archive Center (DAAC)

A Component of the Earth Observing System Data Information System (EOSDIS)

- The Langley DAAC uses a home page to:
  - Increase awareness of the Langley DAAC
  - Provide various documentation sets
  - Provide user services information
  - Launch the innovative Langley DAAC Data Ordering System X Window System/Motif client
- Some projects currently served with DAAC: ERBE, SAGE, FIRE, SRB, ISCCP
- DAAC use of WWW has enabled several hundred more data set transfers
- POC: Roy Dunkum, R.C.DUNKUM@LaRC.NASA.GOV, 864–6589
- http://eosdis.larc.nasa.gov/
The Langley Technical Report Server (LTRS)

*LTRS is an Experimental Report Distribution Project*

- Distributes "unclassified, unlimited" technical reports and papers
- Began January 1993 as an Anonymous FTP server only – (WAIS searching adding shortly thereafter)
- In the first 6 months (1/93 – 7/93), 2400+ reports distributed (pre-WWW)
- WWW enabled integrated searching and retrieving in October 1993
- As of 6/94, 10000+ reports distributed
- WWW provides a more intuitive and friendly interface to LTRS
- LTRS concept is being replicated across NASA via the NASA Technical Report Server (NTRS)
- RPPB (former – Technical Editing Br.) provides formal publications; others are contributed by the authors
- LTRS team members: Michael Nelson (ISD), Gretchen Gottlich (PRMO), David Bianco (CSC)
- POC: Michael Nelson, M.L.NELSON@LaRC.NASA.GOV, 864–8511
- http://techreports.larc.nasa.gov/lttrs/lttrs.html
The Langley High Performance Computing and Communications K–12 Program

The Langley HPCCP K–12 Program is Active!

- Five area high schools are currently class C registered networks on the internet (e.g., patriot.denbigh.nn.k12.va.us is a valid Internet address)
- Three new schools are scheduled to be online this fall
- Each school currently receives its network connection from Langley over standard phone lines, and has a collection of donated Sun UNIX workstations and Apple Macintoshes
- The teachers are learning about computation, and integrating it into the curriculum
- All volunteer effort: Gary Warren (FMAD), Leon Clancy (ICASE), Kelvin Edwareds (AS&M), plus others

The Langley HPCCP K–12 Program Has Received Broad National Recognition

- The Langley K–12 program is a fixture on educational WWW pages
- The Langley host machine for K–12 has registered over 20000 individual file accesses
- POC: Gary Warren, G.P.WARREN@LaRC.NASA.GOV, 864–2162
- http://k12mac.larc.nasa.gov/hpcck12home.html
A Langley COSMIC Replacement is Planned

The WWW is a Natural Medium for Langley Computer Program Distribution

- A prototype is planned for this summer
- All non-sensitive, classified, or controlled programs would be available for free and open distribution
- Inspired by Oak Ridge National Lab's Netlib, which processed over 1.8 million requests in 1993
- Implemented by a TAG-lead N-team
- Will build upon work already done with the Langley Technical Report Server
- Sample codes are sought
- POC: Dan Sydow, P.D.SYDOW@LaRC.NASA.GOV, 864–3180
The Future of WWW and Mosaic at Langley?

Complete the Langley Web

- Currently, only a portion of Langley's activities are represented
- Everyone should be able to maintain at least minimal information about their organization or project
- Automated inclusion of on-line organization trees, functional statements, etc.

Further in the Future...

- A wider choice of WWW clients, both commercial and freeware
  - Mosaic has been licensed to several companies for commercial development
  - NCSA Mosaic will continue to develop and remain freely available
- Tighter integration of all WWW documents
- Better searching tools
- Better authoring and data management tools
- Sophisticated "Knowledge Robots" that search, retrieve, and filter various information sources according to personal preferences
Concluding Remarks

The World Wide Web and NCSA Mosaic Have Changed the How Langley Does Business

- Langley and NASA lead in the adoption of WWW technology to accomplish our Mission
- Several projects and programs have already enjoyed tremendous success using WWW
- WWW is now an integral tool for technology transfer both out of and into Langley
- Langley is no longer a "secret"; and less and less means Air Force or CIA
- Langley must continue to increase the number of its WWW providers and users

Being on the WWW is Simple, Effective, and Fun!

- Some instructions are available from the Langley home page
- Find a branch, project or other home page that you like and adapt it
- Come to the Internet Fair, June 28, H. J. Reid Conference Center, Langley Research Center, 8am – 3pm for more information
- And the next presentation will explain how to get started if you can’t wait!