A Status Report on Networked Information Retrieval: Tools and Groups

Produced as a collaborative effort by the Joint IETF/RARE/CNI
Networked Information Retrieval - Working Group (NIR-WG)

Status of this Memo

This memo provides information for the Internet community. This memo does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

Abstract

The purpose of this report is to increase the awareness of Networked Information Retrieval by bringing together in one place information about the various networked information retrieval tools, their developers, interested organisations, and other activities that relate to the production, dissemination, and support of NIR tools. NIR Tools covered include Archie, WAIS, gopher and World Wide Web.

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1. Introduction

As the network has grown, along with it there has been an increase in the number of software tools and applications to navigate the network and make use of the many, varied resources which are part of the network. Within the past two and a half years we have seen a widespread adoption of tools such as the archie servers, the Wide Area Information Servers (WAIS), the Internet gopher, and the Worldwide Web (WWW). In addition to the acceptance of these tools there are also diverse efforts to enhance and customise these tools to meet the needs of particular network communities.

There are many organisations and associations that are focusing on the proliferating resources and tools for networked information retrieval (NIR). The Networked Information Retrieval Group is a cooperative effort of three major players in the field of NIR: The Internet Engineering Task Force (IETF), the Association of European Research Networks (RARE) and the Coalition for Networked Information (CNI), specifically tasked to collect and disseminate information about the tools and to discuss and encourage cooperative development of current and future tools.

The purpose of this report is to increase the awareness of NIR by bringing together in one place information about the various networked information retrieval tools, their developers, interested organisations, and other activities that relate to the production, dissemination, and support of NIR tools. The intention is to make this a "living document". It will be held on-line so that each section may be updated separately as appropriate. In addition, it is intended that the full document will be updated once a year so that it provides a "snapshot" report on activities in this area.

Whilst the NIR tools in this report are being used on a wide variety of information sources including files and databases there remains much that is currently not accessible by these means. On the other hand, the majority of the NIR Tools described here are freely available to the networked Research and Education community. Tools for accessing specialised datasets are often only available at a cost.

It should be noted that in many ways networked information retrieval is in its infancy compared with traditional information retrieval systems. Thesaurus construction, boolean searching and classification control are issues which are under discussion for the popular NIR Tools but as yet are not in widespread use. However it should be said that, with the vast amount of effort that is currently going into the NIR field, rapid progress is being made. Much work is currently being done on expanding some of the NIR tools to include

handling of multimedia information services. Progress has also been made in the discussions on classifying and cataloguing electronic information resources.

2. How the information was collected

The information contained in this report was collected over the network from the contacts for each NIR Tool or Group using two templates:

- the NIR Tool Template, included in Appendix A;
- the NIR Group Template, included in Appendix B.

The contents of these templates were discussed by the NIR WG in Boston (July, 1992) and subsequently on the email list. (See the Section on the NIR-WG for details of how to join this mailing list.) The initial draft report was discussed at the NIR Working Group in Washington (November, 1992) and updated and added to at subsequent WG meetings. Before the final submission as an RFC the individual templates were reviewed by independent reviewers from around the world. Their efforts are acknowledged in Section 9.

The NIR Tool template was used to collect the information necessary to identify and track the development of networked information retrieval tools. This template asked for information such as how and where to get the software for each NIR Tool, documentation, demonstration sites, etc. The main part of the template has been completed by the main individual responsible for the tool. Sections of the template (e.g., on clients) may have required completion by others.

The NIR Group template requested information on the aim and purpose of the group, the current tasks being undertaken, mailing lists, document archives, etc.

3. What is covered?

In the current report you will find information on the following NIR tools:

Alex
archie
gopher
Hytelnet
Netfind
Prospero
Veronica
WAIS (including freeWAIS)

WHOIS
World Wide Web (including MOSAIC)
X.500 White Pages

Appendix D covers "Forthcoming Attractions":
   Hyper-G
   Soft Pages
   WHOIS++

and the following NIR Groups:

CNI	Coalition for Networked Information (CNI) Architectures and Standards Directories and Resource Information Services TopNode for Networked Information Resources, Services and Tools
CNIDR	Clearinghouse for Networked Information Discovery and Retrieval
IETF	Integrated Directory Services (IDS) Integration of Internet Information Resources (IIIR) Networked Information Retrieval (NIR) joint IETF/RARE WG Network Information Services Infrastructure (NISI) OSI-Directory Service (OSI-DS) Uniform Resource Identifiers (URI) Whois and Network Information Lookup Service (WNILS)
IRTF	Internet Research Task Force Research Group on Resource Discovery and Directory Service (IRTF-RD)
NISO	Z39.50 Implementors Group
RARE	Information Services and User Support Working Group (ISUS)
USMARC/OCLC	USMARC Advisory Group; OCLC Internet Resources Cataloging Experiment (USMARC/OCLC)

Appendix C contains a list of the relevant email lists and Appendix D contains information on "Coming Attractions" which are NIR tools not yet in widespread use.

4. Updating Information

Updates on and additions to the information contained in this report are welcome. CNIDR have agreed to host the report and to accept updates to individual templates from the template maintainers. Send updates using the appropriate template (from Appendix A or Appendix B of this report) to:

nir-updates@cnidr.org

The current templates and this report may be retrieved from the UK Mailbase Server:

Via anonymous ftp (use your email address as the password):

URL: ftp://mailbase.ac.uk/pub/lists/nir/files/tool.template
URL: ftp://mailbase.ac.uk/pub/lists/nir/files/group.template
URL: ftp://mailbase.ac.uk/pub/lists/nir/files/nir.status.report

or via gopher or World Wide Web to mailbase.ac.uk

or via email:

Mail to: mailbase@mailbase.ac.uk

Text of the message:

send nir tool.template
send nir group.template
send nir nir.status.report

5. Overview of the types of NIR Tools

The following is an overview of major networked information retrieval (NIR) tools available on the Internet. There are many excellent books which discuss the Internet and NIR Tools in detail. Such books include "The Whole Internet User's Guide and Catalog" by Ed Krol and published by O'Reilly and Associates, Inc and "The Internet Guide for New Users" by Daniel Dearn and published by Meckler.

The number of these NIR tools is large and growing quickly. Certain techniques reappear regularly and seemingly different tools may perform similar tasks, allowing a simple classification of projects encompassing most of the existing tools and services.

The classification presented here is only one possible ordering. The goal is to define in broad outlines what can be done with particular tools, realizing that users will always find novel unanticipated ways of applying them.

Interactive Information Delivery Services (Gopher, World Wide Web)

Basic Internet services such as electronic mail and anonymous FTP can be used to share information across the Internet, but neither allows simple browsing and neither is particularly easy for the newcomer to learn to use. Gopher and the World Wide Web (W3) are two recent developments that attempt to make it easier to distribute information over the Internet. Both allow the user to browse information across the network without the necessity of logging in or knowing in advance where to look for information.

The Gopher project was first developed at the University of Minnesota to provide a simple campus-wide on-line information system. Gopher represents information as a simple hierarchy of menus and files. It has limited capability to recognize different types of files, allowing, for example, the display of selected types of image files. Gateways to other services are provided (usually in a manner that is transparent to the user). The underlying Gopher protocol is simple, and has facilitated the creation of freely available clients for use on a variety of hardware platforms and operating systems. The more recent Gopher+ protocol adds the ability to provide documents in alternate forms (PDF, PostScript, RTF, Word). These features and the ease of installing and administering gopher servers has led to an explosive growth of gopher sites since its initial deployment. As of November 1993, there were over 2200 known servers.

World Wide Web relies on hypertext; formatted documents are displayed, and hypertext links within the document can be selected to travel from the current document to another. W3 allows a user to annotate documents (using hypertext links), provides gateways to other services, and has multimedia support (for example, on appropriate hardware platforms it can intermix text and images in a displayed document). There is a range of free W3 clients, supporting many environments. World Wide Web was originally developed at CERN for the High Energy Physics Community.

Gopher and WWW share a maintenance problem in that there is no automated way to update links to other documents when those documents are moved or removed.

Directory Services (WHOIS, X.500)

Directory Service tools are intended to provide a lookup service for locating information about users (often referred to as White Pages), or services and service providers (Yellow Pages). For example, a White Pages service might be used to locate an electronic mail address, given a name and organization, while a Yellow Pages service could be used to locate an online library catalog or file archive site.

One of the first directory services deployed on the Internet was WHOIS, a simple White Pages service created to track key network contacts for the early DARPA-sponsored incarnation of the Internet. A number of sites currently operate WHOIS servers, based on a range of extensions and enhancements to the original model. WHOIS enjoys the advantages of simplicity and the presence of WHOIS client software on a preponderance of Internet-connected hosts. Work is underway on a more powerful protocol, known as WHOIS++, which is backwards-compatible with WHOIS.

The X.500 Directory Service is a much more ambitious Directory project that has been under development for a number of years under the aegis of ISO/OSI. Implementations, concerned primarily with White pages services, are available in the public domain and from commercial sources. There are LDAP based X.500 clients available for most major platforms, as well as a LDAP based gopher gateway to X.500.

Despite years of effort, there is still no single White Pages Directory Service for the entire Internet; Yellow Pages services remain even less well developed and deployed. The cost of setting up the service is one obstacle; maintaining the required databases is even more daunting.

Indexing Services (archie, Veronica, online library catalogs)

There are several Internet-based projects that build indexed catalogs of information to facilitate searching and retrieval. The first such services provided network access to library card catalogs, with more recent projects indexing network-based information.

archie:

The archie service began as a simple project to catalog the contents of hundreds of ftp-accessible online file archives. The archie service gathers location information, name, and other details describing such files and creates an index database.

Users can contact an archie server and search this database for files they require.

The archie service is accessible through a range of access methods, including telnet, stand-alone client programs running on a user's own machine, gopher, WWW, or via electronic mail. The initial implementation of archie tracks over 2,100,000 filenames on over 1,200 sites around the world (as of November 1993). There are about 30 (geographically distributed) archie servers. Both commercial and freely available versions of the archie client software are available.

Work continues on extending the archie service to provide additional types of information. The latest version is being used to provide a prototype Yellow Pages service and directories of online library catalogs and electronic mailing lists.

Veronica:

Veronica arose as an attempt to do for the world of Gopher what archie did for the world of ftp. A central server periodically scans the complete menu hierarchies of Gopher servers appearing on an ever-expanding list (over 2000 sites as of November 1993). The resulting index is provided by a veronica server and can be accessed by any gopher client.

Online library catalogs:

A large number of libraries make their computerized library catalogs available over the Internet. Most are available through telnet sessions in which the user connects to a specific address and logs in using a specific login name. Some are also available through other tools, such as Gopher.

Text-based Indexing Services (WAIS)

WAIS:

Wide Area Information Servers (WAIS) is a system for indexing and serving information in a network-based environment. It is distinct from indexing tools such as archie and veronica in that it is used to index text-based target documents on a server, as well as descriptions of the contents of a server.

A WAIS server allows the administrator to set up an index of the documents (or resources) to be published. The user employs a WAIS client to attach to a particular WAIS server, and specifies a search pattern which is matched against the server's index. In

early WAIS clients, searches are specified as simple natural-language queries; common ("stop") words are removed, and Boolean "ORs" are implicitly added between the remaining list of words. Matching documents are rank-ordered according to a simple statistical weighting scheme which attempts to indicate likely relevance. The user may choose to view selected documents, or further refine the search. The results of one search may be used to successively refine future searches ("relevance feedback"). Gopher clients can also access WAIS servers via a transparent gateway.

Both freely available and commercial versions of WAIS servers and clients are available. Current work is attempting to add Boolean expressions and proximity and field specifications to queries.

There are currently (as of November 1993) some 500 registered WAIS databases with an estimated 2000 additional databases that are not yet registered. There are approximately another 100 commercial WAIS databases.

6. NIR Tools

This section contains detailed information about the various NIR Tools. It is ordered alphabetically.

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ALEX

Date template updated or checked: 19th March, 1994
By: Name: Vincent Cate
Email address: vac@cs.cmu.edu

NIR Tool Name: Alex

Brief Description of Tool:

OVERVIEW:

The Alex filesystem provides users and applications transparent read access to files in anonymous FTP sites on the Internet. Today there are thousands of anonymous FTP sites with a total of a few millions of files and roughly a terabyte of data. The standard approach to accessing these files involves logging in to the remote machine. This means that an application can not access remote files like local files. This also means that users do not

have any of their aliases or local tools available. Users who want to use an application on a remote file first have to manually make a local copy of the file. There is no mechanism for automatically updating this local copy when the remote file changes. The users must keep track of where they get their files from and check to see if there are updates, and then fetch these. In this approach many different users at the same site may have made copies of the same remote file each using up disk space for the same data.

Alex addresses the problems with the existing approach while remaining within the existing FTP protocol so that the large collection of currently available files can be used. To get reasonable performance long term file caching is used. Thus consistency is an issue. Traditional solutions to the cache consistency problem do not work in the Internet FTP domain: callbacks are not an option as the FTP protocol has no provisions for this and polling over the Internet is slow. Therefore, Alex relaxes file cache consistency semantics, on a per file basis, and uses special caching algorithms that take into account the properties of the files and of the network to allow a simple stateless filesystem to scale to the size of the Internet.

USER'S VIEW:

To a user or application, Alex is just a normal filesystem. Any command that works on local files will work on Alex files. Since Alex is a real filesystem, nothing needs to be recompiled and no libraries are changed. Thus, users can apply all of their existing skills and tools for using files.

The user sees a filesystem with a hierarchical name space. At the top level (/alex) there are top-level Internet domains like "edu", "com", "uk", and "jp". Each component of the hostname becomes a directory name. Then the remote path is added at the end. If the user does a "ls /alex/edu/berkeley" he sees some machine names such as "ucbvax" and "sprite" and some directories on berkeley.edu. From the "ls" it is not clear what is where. The user may or may not be aware of host boundaries.

INFORMATION PROVIDER'S VIEW:

Alex is implemented as a user level NFS server. NFS was chosen because it makes it easy to add Alex to a wide range of machines. Most machines can simply use the mount command.

The model of usage is that there is one Alex server running at each institution (though this is not required in any way). Users mount the local server which caches files for users at that site.

Any information put into any anonymous FTP site becomes available via Alex.

Primary Contact(s):

Name: Vincent Cate

Email address: vac@cs.cmu.edu

Postal Address: School of Computer Science
5000 Forbes Ave.
Pittsburgh PA, 15213

Telephone: +1-412-268-3077

Fax: +1-412-681-1998

Help Line:

At this time Alex is a one person project (Vince).

Related Working Groups:

Maybe the FTP working group.

Sponsoring Organization / Funding source:

Defense Advanced Research Projects Agency, Information Science and Technology Office, under the title "Research on Parallel Computing," ARPA Order No. 7330. Work furnished in connection with this research is provided under prime contract MDA972-90-C-0035 issued by DARPA/CMO to Carnegie Mellon University. Vincent Cate is supported by an "Intel foundation graduate fellowship".

Mailing Lists:

Address:	alex-servers@cs.cmu.edu
Administration:	alex-servers-request@cs.cmu.edu
Description:	alex-servers is for people setting up an Alex fileserver.
Archive:	alex.sp.cs.cmu.edu (128.2.209.13)

News groups:

None.

Protocols:

What is supported: Any machine that can NFS mount a fileserver.

What it runs over: Unix machine and FTP

Other NIR tools this interworks with:

Uses FTP sites.

WAIS can be used to index files in Alex
(this was done for ftpable-readmes and cs-techreports WAIS servers)

New versions of archie can output Alex paths.

Future plans: Graduate from CMU.

Servers:

Date completed or updated:	19 March 1994
By: Name:	Vincent Cate
Platform:	UNIX
Primary Contact:	
Name:	Vincent Cate

```
  Email address:                vac@cs.cmu.edu
  Telephone:                    +1-412-268-3077

  Server software available from:  alex.sp.cs.cmu.edu

  Location of more information:
   No other place to go to.

  Latest version number:
   New versions all the time.

  Brief Scope and Characteristics:
   This software is known to still contain bugs.

  Approximate number of such servers in use:
   200.

  General comments:
   You can use lpr, make, grep, more, etc. on files around the world.

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 Clients:

  You just do an NFS mount of the server.  No client software
  is needed.

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 Demonstration sites:

  Site name:   alex.sp.cs.cmu.edu

  Access details - do the following as root:
   mkdir /alex
   mount -o timeo=30,retrans=300,soft,intr alex.sp.cs.cmu.edu:/ /alex

  Example use:
   ln -s /alex/edu/cs/cmu/sp/alex/links alexlinks
   cd alexlinks
   ls
   cd cs-tr
   cd ls
   cd purdue
   ls
   lpr TR758.PS
```

If you like Alex and want to use it regularly please find, or set up, an Alex fileserver at/near your site.

Documentation:

ftp://alex.sp.cs.cmu.edu/www/alex.html
ftp://alex.sp.cs.cmu.edu/doc/intro.ps
ftp://alex.sp.cs.cmu.edu/doc/NIR.Tool
ftp://alex.sp.cs.cmu.edu/doc/alex.post

Bibliography:


```
@InProceedings{cate:alex,
author =      "Vincent Cate",
title =       "Alex - a Global Filesystem",
booktitle =   "Proceedings of the Usenix File Systems Workshop",
year =        1992,
pages =       "1--11",
month =       may,
place =       "Ann Arbor, MI",
keyword =     "distributed file system, wide-area file system"
```

Other Information:

FTP to alex.sp.cs.cmu.edu and "cd to doc". Get the "README" or anything else there. A current version of this document may be there and called "NIR.Tool". In Alex this file is named "/alex/edu/cmu/cs/sp/alex/doc/NIR.Tool".

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ARCHIE

Date template updated or checked: 1 March, 1994
By: Name: Peter Deutsch
Email address: peterd@bunyip.com

NIR Tool Name: archie

Brief Description of Tool:

The archie system is a tool for gathering, indexing and serving information from around the Internet. The current version serves a collection of filenames found at anonymous FTP sites, as well as a smaller collection of text descriptions for software, data and other information found at anonymous FTP archives. Additional databases are under development.

User's View:

Users run a client program to connect to an archie server and issue search commands to find information in an archie database. In the case of an anonymous FTP filename, this information can then be used to fetch the file directly from the archive site using the `ftp' command. To the user, archie could be seen as a `secondary source' of information which, because of the high cost of locating and serving, would not otherwise be available.

The user searches the archie databases through either a telnet session to a machine running an archie server, or by using a stand-alone client program (which uses the Prospero protocol for sending and receiving requests). There is also an email interface which allows users to send and receive search requests via electronic mail.

Freely available archie clients exist for most operating systems and can be fetched using anonymous FTP from most of the current archie servers. There are also gateways to the archie system from many other NIR tools, including Gopher, WAIS and WWW. An X.500 interface to archie is currently under development.

Information Provider's View:

There are two types of information providers who would be interested in archie. Primary information providers are interested in having a summary of the information provided by their service tracked by an archie server. Secondary service

providers, or those sites wishing to provide a "value-added" service for the Internet can elect to run an archie server at their site to provide a useful service to users, to raise the profile of their institution on the Internet, or to provide market differentiation (for commercial service providers).

The archie system is of particular utility serving information where there are many sites to be searched and/or where the cost of searching each site is high.

For example, there are currently over 1,200 anonymous FTP sites on the Internet, and the number continues to grow. Searching for a specific filename at a single site may involve scanning hundreds, or even thousands of filenames. Thus, most operators of anonymous FTP archives welcome the fact that archie indexes and serves the names of all files available from each site tracked.

Information Types Supported:

The archie system allows the gathering and serving of arbitrary information types, although the current system serves only freeform text and a dedicated text format for filename listings. Internally, the archie system now supports a WAIS search engine and frontends for Gopher, WWW and WHOIS++ for accessing archie information through Gopher clients is now being tested. Additional collections of information to be served by the archie software will be announced.

Primary Contact(s):

Name:	Archie Group, Bunyip Information Systems Inc.
Email address:	info@bunyip.com
Postal Address:	Bunyip Information Systems Inc., 310 St-Catherine St. West, suite 202, Montreal, QC CANADA H2X 2A1
Telephone:	+1-514-875-8611
Fax:	+1-514-875-8134

Help Line: for archie server system and telnet client

Name: Archie Group, Bunyip Information Systems Inc.

Email address: info@bunyip.com

Telephone: +1-514-875-8611

Level of support offered:
- o commercial support for server (primarily for systems maintainers)
- o voluntary helpdesk support for freeware clients
- o volunteer helpdesk support for Internet information gathering tools in general

Hours available:
- server system:
  - email: 24 hour support
  - phone support: 9-5 EST
- helpdesk consultation: as time permits

Related Working Groups:

IETF, IIIR, WNILS, URI.

Sponsoring Organisation / Funding source:

Bunyip Information Systems Inc.

Funded by licensing of archie software and development contracts from sponsors. Additional information services based upon this software are now being tested.

Mailing Lists:

Address: archie-people@bunyip.com

Administration: archie-people-request@bunyip.com

Description:

This mailing list is for people interested in the archie project and its future developments. Announcements of upgrades, new services, etc. are made to this list.

Archive: none

Address: archie-maint@bunyip.com

Administration: archie-maint-request@bunyip.com

Description:

This mailing list is for people who operate and maintain archie servers. Announcements of bug fixes, new releases and discussion of new features are carried out on this list.

Archive:
"archives.cc.mcgill.ca:/pub/mailing-lists/archie-maint"

Address: iafa@bunyip.com

Administration: iafa-request@bunyip.com

Description:

This mailing list is for people who are involved in the Internet Anonymous FTP Archives Working Group of the IETF. This group was involved in standardizing the encoding of information at anonymous FTP archives and thus is of interest to operators and users of the archie system. It came to completion in November, 1992 and produced two documents which have been presented to the IETF as informational RFCs.

Archive: "archives.cc.mcgill.ca:/pub/mailing-lists/iafa"

News groups:

Name: comp.archives.admin

Description:

This newsgroup is for operators and maintainers of Internet archives. Announcements and discussions of issues related to archie are presented here, as well as discussions of more general issues relating to archiving and Internet services.

Archive: not known

Name: alt.internet.services

Description:

This newsgroup is for people interested in Internet-related services, with a focus at the user level. Announcements and discussions of issues related to archie are presented here, as well as discussions of more general issues relating to Internet services.

Archive: not known

Protocols:

What is supported:

The current archie system clients use the Prospero protocol for communication with the search engine on the archie server. Freely available clients are available which include source to perform this communication for those wishing to implement additional clients.

The archie server is capable of building arbitrary databases, using arbitrary search and access engines and the current release ships with the public domain implementation of WAIS. We expect future archie servers to serve information using this protocol. The current server system assumes the TCP/IP protocol suite is available, and in particular the ftp protocol for data gathering.

The archie system can be accessed through systems operating the Gopher, WAIS and WWW (HDDL) protocols. A gateway from the X.500 system is under development.

What it runs over:

The Prospero protocol implementation runs over its own implementation of a reliable datagram protocol based upon UDP. Data gathering runs over the TCP/IP protocol suite.

Other NIR tools this interworks with:

Prospero, Gopher, WAIS, WWW.

Future plans:

The archie system became a commercial product in October, 1992, marketed by Bunyip Information Systems Inc. The company plans to market additional data gathering modules to allow the server code to build additional types of databases. Work is also underway to integrate extensions to WHOIS to allow the building and maintaining of White Pages (names) directories. The company is also working on other Internet information tools that will work with the archie system.

Servers:

Date completed or updated: 1 November, 1993
By: Name: Peter Deutsch
Email address: peterd@bunyip.com

Platform: Sun SPARC running SunOS 4.1 or later.
IBM RS6000 running AIX version 3.2 or later.
for additional UNIX platforms, contact
Bunyip Information Systems details.

Primary Contact:
Name: Alan Emtage
Email address: bajan@bunyip.com
Telephone: +1-514-398-8611

Server software available from:
Bunyip Information Systems Inc.
email: info@bunyip.com

Location of more information:

Additional information on the archie product line is available from the anonymous ftp archives on the various archie server sites. Try "archie.ans.net", "archie.sura.net", "archie.au", etc.

Latest version number: archie 3.1

Brief Scope and Characteristics:

This is the commercial inmplementation of the archie system, replacing a version done as a Masters project at McGill University during the period 1990-1992. It comes with an archie telnet client that offers a number of minor improvements over earlier versions. Additional releases, with a number of additional improvements, are planned in the coming months.

Approximate number of such servers in use:
Currently about 27 (not all are publicly available)

General comments:

Most users access archie through a freeware or public domain client program. These are available from most archie servers via anonymous FTP. Check out the archie directory on any of the publicly available archie servers or the banner message when logging into any of the archie telnet clients for more details.

Clients:

Date completed or updated:	1 November, 1993
By: Name:	Peter Deutsch
Email address:	peterd@bunyip.com
Platform:	command line shell, written in C. Works with both UNIX and MSDOS/OS2 shells.
Primary Contact:	
Name:	Brendan Kehoe
Email address:	brendan@cygnus.com
Telephone:	not known
Client software available from:	most archie server hosts and major Internet archives. Look for filename "c-archie-1.3.2.tar.Z".
Location of more information:	Packaged with software.
Latest version number:	1.3.2

Brief Scope and Characteristics:

This program provides a simple command line interface to the archie server system, using the Prospero protocol. Written in C, it has been ported to MSDOS and OS2.

General comments:

This program should not be confused with the archie system telnet interface, which is a program that runs on the archie server itself.

Future plans: Not known

Date completed or updated: 1 November, 1993
By: Name: Peter Deutsch
Email address: peterd@bunyip.com

Platform: command line shell, written in Perl. Works with both UNIX and MSDOS/OS2 shells.

Primary Contact:
Name: Khun Yee Fung
Email address: clipper@csd.uwo.ca
Telephone: not known

Client software available from: most archie server hosts and major Internet archives. Look for filename "perl-archie-3.8.tar.Z".

Location of more information: Packaged with software.

Latest version number: 3.8

Brief Scope and Characteristics:

This program provides a simple command line interface to the archie server system, using the Prospero protocol. Written in Perl.

General comments:

This program should not be confused with the archie system telnet interface, which is a program that runs on the archie server itself.

Future plans: Not known

Date completed or updated: 1 November, 1993
By: Name: Peter Deutsch
Email address: peterd@bunyip.com

Platform: archie client program for VMS systems.

Primary Contact:
Name: Brendan Kehoe
Email address: brendan@cygnus.com
Telephone: not known

Client software available from: most archie server hosts and major Internet archives. Look for filename "archie-vms.com".

Location of more information: Packaged with software.

Latest version number: not known.

Brief Scope and Characteristics:

This program provides a simple command line interface to the archie server system for users of VMS.

General comments:

This program should not be confused with the archie system telnet interface, which is a program that runs on the archie server itself.

Future plans: Not known

Date completed or updated: 1 November, 1993
By: Name: Peter Deutsch
Email address: peterd@bunyip.com

Platform: Xwindows client (X11R4)

Primary Contact:
Name: George Ferguson
Email address: ferguson@cs.rochester.edu
Telephone: not known

Client software available from: cs.rochester.edu, most archie server hosts and major Internet archives.

Look for file "xarchie-1.3.tar.Z".

Location of more information: Packaged with software.

Latest version number: xarchie-1.3

Brief Scope and Characteristics:

This program provides an Xwindows client that allows users to search the archie anonymous FTP database. Also included is the capability of fetching files (using ftp).

General comments: none.

Future plans: Not known

Date completed or updated: 1 November, 1993
By: Name: Peter Deutsch
Email address: peterd@bunyip.com

Platform: NeXTStep client.

Primary Contact:
Name: Scott Stark
Email address: me@superc.che.udel.edu
Telephone: not known

Client software available from: most archie server hosts and major Internet archives. Look for file "NeXTArchie.tar.Z".

Location of more information: Packaged with software.

Latest version number:

Brief Scope and Characteristics:

This program provides a NeXTStep client that allows users to search the archie anonymous FTP database. Also included is the capability of fetching files (using ftp).

General comments: none.

Future plans: Not known

Demonstration sites:

Site name: any one of:

archie.rutgers.edu	128.6.18.15	(Rutgers University)
archie.unl.edu	129.93.1.14	(University of Nebraska in Lincoln)
archie.sura.net	128.167.254.179	(SURAnet archie server)
archie.ans.net	147.225.1.2	(ANS archie server)
archie.au	139.130.4.6	(Australian server)
archie.funet.fi	128.214.6.100	(European server in Finland)
archie.doc.ic.ac.uk	146.169.11.3	(UK/England server)
archie.cs.huji.ac.il	132.65.6.15	(Israel server)
archie.wide.ad.jp	133.4.3.6	(Japanese server)

Client software should be supported at all of these sites. Additional sites are available. Use the "sites" command in the archie telnet interface at any of the above sites for a more complete lists.

Access details:

- telnet to any of the above sites
- login as user `archie' (no password is required)
- type `help' at the prompt to get started.

Note: Some people forget and use ftp in place of telnet. This will not work. The hint that this is being done is that they claim that a password is needed, not that the site can't be found.

Documentation:

Document Title:	What is archie
Location details:	anonymous FTP from archie.ans.net
Site:	archie.ans.net
Full file name:	"pub/archie/doc/whatis.archie"
Description:	Brief overview of the archie system.

Document Title:	archie man pages
Location details:	anonymous FTP from archie.ans.net
Site:	archie.ans.net
Full file name:	"pub/archie/doc/archie.man.*"
Description:	Manual pages for the archie system telnet interface in various formats (raw ASCII, nroff, compressed, etc.). This document also explains the various search options and other features, so is of use to users of the other archie client programs.

```
 Document Title:         What's New in 3.0
 Location details:       anonymous FTP from archie.ans.net
 Site:                   archie.ans.net
 Full file name:         "pub/archie/doc/whats.new"
 Description:            Description of the changes to archie for the
                         first commercial release

----------------------------------------------------------------------

Bibliography:            none

----------------------------------------------------------------------

Other Information:       none


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```

GOPHER

Date template updated or checked: 14 March 1994
By: Name: Mark P. McCahill
    Email address: mpm@boombox.micro.umn.edu

NIR Tool Name: Internet Gopher

Brief Description of Tool:

The Internet Gopher protocol is a client/distributed-server document search and retrieval protocol originally developed at the University of Minnesota. Gopher was originally created as a fast, simple, distributed, campus-wide information search and retrieval system; ease of use and implementation has made Gopher increasingly popular on the Internet. Since its original release, many folks on the Internet have contributed to its growth, submitting patches, servers, clients, and linking their local servers into the worldwide network of Gopher servers. Gateways exist to seamlessly access a variety of non-Gopher services such as ftp, WAIS, USENET news, Archie, Z39.50 (1992 rev), X.500 directories, Sybase and Oracle SQL servers, etc. In addition, an "archie for gopherspace" called Veronica (very easy rodent-oriented net-wide index to computerized archives) has been developed at the University of Nevada. Veronica makes it easy to search for items in gopherspace by title.

The gopher protocol is often described as "fiercely simple"; it is connectionless (stateless), and uses TCP reliable streams. A client connects to a server using TCP, and sends a one-line text "selector string". The server responds by returning the item (a file, a directory listing, or a link to some other service) corresponding to the selector string and immediately closing the connection. Items in directory listings are returned as a series of lines terminated by carriage-return line-feed. Each item (line) is defined by a one-character tag to specify the item type, a display string or item-name that the client should display to the user, and a number of tab delimited fields to specify the selector string, host domain name and port number. Because of its simple and connectionless nature, gopher servers make very minimal demands on their host machines and gopher clients are extremely easy to implement.

The users view the Gopher world as a series of networked hierarchical directories much like a familiar filesystem. However, the links define a graph rather than a simple rooted tree. Links in the Gopher graph may define services other than simple files or directories; these include cso (qi) servers, telnet sessions, links to other

gopher servers, and links to gateway servers.

The information provider's simplest view is that files and directories below a certain root directory on their machine are all visible and available for retrieval by gopher clients. More features like long names, item types, links, and gateway services are available to the more sophisticated information provider.

Servers and clients run on most popular hardware, including Macs, UNIX boxes, PC-DOS boxes. The Internet Gopher name is copyright (c) 1991-1992 by the University of Minnesota. The Internet Gopher protocol is described in an informational RFC (1436) available at better RFC archives everywhere. Extensions to the base gopher protocol allow for associating meta-information with gopher items, alternate views of documents (i.e., text, postscript, rtf, etc.) and electronic forms. Collectively, these extensions are referred to as Gopher+. Gopher+ is upward compatible with the orginal gopher protocol. The gopher software may be retrieved from numerous Gopher or FTP archive sites, including the University of Minnesota Gopher server, the Info-Mac Archive Gopher server, and by anonymous FTP from boombox.micro.umn.edu and sumex-aim.stanford.edu. As of December 1993, about 1/3 of the approximately 4800 Gopher servers on the internet support Gopher+.

Primary Contact(s):

Name:	The Internet Gopher Development Team
Email address:	gopher@boombox.micro.umn.edu
Postal Address:	Microcomputer & Workstation Networks Center 152 Shepherd Labs 100 Union Street SE. University of Minnesota Minneapolis, MN 55455
Telephone:	+1-612-625-1300
Fax:	+1-612-625-6817

Help Line:

Name:	Microcomputer HelpLine; ask for The Internet Gopher Development Team

Email address: gopher@boombox.micro.umn.edu

Telephone: USA: 612 MA MICRO (+1-612-626-4276)
Helpline is for general support at the U of M.

Level of support offered: all users

Hours available: Phone Helpline 9-4 weekdays.

Related Working Groups:

Sponsoring Organisation / Funding source:

The University of Minnesota, Twin Cities.

Mailing Lists:

Address: gopher-news@boombox.micro.umn.edu

Administration: gopher-news-request@boombox.micro.umn.edu

Description: News and views of all things gopher. Tends to be a high volume mailing list and technically oriented.

Archive: Via Gopher: University of Minnesota Gopher Information About Gopher

Address: gopher-announce@boombox.micro.umn.edu

Administration: gopher-announce-request@boombox.micro.umn.edu

Description: A low-volume mailing list of announcements of new software and servers.

News groups:

Name: comp.infosystems.gopher

Description: Discussion of all things gopher.

Archive:	Available via gopher client; connect to the gopher server at gopher.tc.umn.edu port 70, look in the "Information About Gopher" section.

Protocols:

What is supported:	Internet Gopher
What it runs over:	Anything you can run TCP/IP over.
Other NIR tools this interworks with:	Z39.50 WAIS variant via WAIS gateway FTP via FTP gateway archie/Prospero via an archie gateway veronica (an archie for gopherspace) NNTP via NNTP gateway Finger (subset of gopher) X.500 via X.500 gateway Z39.50 1992 revision variant via Z39.50 gateway Oracle and Sybase SQL servers via SQL gateway CSO (Ph/Qi) online phone books
Future plans:	New user interace metaphor on PowerPC and Pentium-based clients.

Servers:

Date completed or updated:	14 March, 1994
By: Name:	Mark McCahill
Email address:	mpm@boombox.micro.umn.edu
Platform:	UNIX.

Primary Contact:

Name:	The Internet Gopher Development Team
Email address:	gopher@micro.umn.edu
Telephone:	+1-612-625-1300

Server software available from:

Via Gopher:	U of M Gopher Information About Gopher Gopher Software Distribution
Via FTP:	boombox.micro.umn.edu

/pub/gopher/

Location of more information:
As above.

Latest version number: (things change fast;
please check software distribution)

Brief Scope and Characteristics:
Server, index server for WAIS based indices and for NeXT
native indexing, tools, gateway code. Supports Gopher+.

Approximate number of such servers in use:
Over 3000.

General comments:
The defacto standard workhorse Gopher server.
Paul Lindner is the architect and keeper of this server.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Macintosh.

Primary Contact:
Name: The Internet Gopher Development Team
Email address: gopher@micro.umn.edu
Telephone: +1-612-625-1300

Server software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
Macintosh Gopher Server and tools,
supports Gopher+.

Approximate number of such servers in use:
Current estimates between 300 and 400.

General comments:
Runs on any Macintosh with 1MB memory or more.
Requires MacTCP. Can be configured to use Apple Computer's AppleSearch full-text search software as a Gopher-accessible search engine.

Date completed or updated:	14 March, 1994
By: Name:	Mark McCahill
Email address:	mpm@boombox.micro.umn.edu
Platform:	PC-DOS.
Primary Contact:	
Name:	The Internet Gopher Development Team
Email address:	gopher@micro.umn.edu
Telephone:	+1-612-625-1300
Additional contacts:	
Name:	Dennis Sherman
Email address:	Dennis_Sherman@unc.edu
Name:	Foteos Macrides
Email address:	macrides@sci.wfeb.edu
Server software available from:	
Via Gopher:	U of M Gopher Information About Gopher Gopher Software Distribution
Via FTP:	boombox.micro.umn.edu /pub/gopher/

Location of more information:
As above.

Latest version number: 0.91b

Brief Scope and Characteristics:
Basic Gopher server for PC-DOS boxes.

Approximate number of such servers in use:
Current estimates between 25 and 75.

General comments:
Written by Chris McNeil <cmcneil@mta.ca>, based on Phil Karns net package. The U of M Gopher team forwards difficult problems to Chris.

Date completed or updated:	14 March, 1994
By: Name:	Mark McCahill
Email address:	mpm@boombox.micro.umn.edu
Platform:	VMS
Primary Contact:	
Name:	J. Lance Wilkinson
Email address:	jlw@psulias.psu.edu
Telephone:	+1-814-865-1818
Server software available from:	
Via Gopher:	U of M Gopher Information About Gopher Gopher Software Distribution
Via FTP:	boombox.micro.umn.edu /pub/gopher/VMS/

Location of more information:
As above.

Latest version number: 1.2 VMS-0

Brief Scope and Characteristics:
Basic VMS Server, shares some code with UNIX server.

Approximate number of such servers in use:
35-40 servers in use.

General comments:
The VMS server was written and is maintained by J. Lance Wilkinson, Foteos Macrides, Bruce Tanner and others on the VMSGopher-L@trln.lib.unc.edu mailing list.

Date completed or updated:	14 March, 1994
By: Name:	Mark McCahill
Email address:	mpm@boombox.micro.umn.edu
Platform:	VM/CMS

Primary Contact:
Name: Rick Troth
Email address: TROTH@RICEVM1.RICE.EDU
Telephone:

Server software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu:/pub/gopher/
Brazos.IS.Rice.EDU:/pub/vmcms/

Location of more information:
As above.

Latest version number: 2.4

Brief Scope and Characteristics:
Gopher server for IBM VM/CMS installations.

Approximate number of such servers in use:
Unknown.

General comments:
This server was written and is maintained by Rick Troth.
This server is commonly referred to as the Rice VM/CMS server.
There is also another VM/CMS server: the Vienna VM/CMS server.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: VM/CMS.

Primary Contact:
Name: Gerhard Gonter
Email address: Gerhard.Gonter@WU-Wien.ac.at
Telephone:

Server software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu:/pub/gopher/

Location of more information:
As above.

Latest version number: 2.00.00

Brief Scope and Characteristics:
Gopher server for IBM VM/CMS installations.

Approximate number of such servers in use:
Unknown.

General comments:
This server was written and is maintained by Gerhard Gonter.
This server is commonly referred to as the Vienna VM/CMS server.
There is also another VM/CMS server: the Rice VM/CMS server.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: MVS

Primary Contact:
Name: Steve Bacher
Email address: seb@draper.com
Telephone:

Server software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu:/pub/gopher/

Location of more information:
As above.

Latest version number: 2.1

Brief Scope and Characteristics:
Gopher server for IBM MVS installations.

Approximate number of such servers in use:
Unknown.

General comments:
This server was written and is maintained by Steve Bacher.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Unix veronica server

Primary Contact:
Name: Steve Foster
Email address: gophadm@futique.scs.unr.edu
Telephone:

Server software available from:
Via FTP: veronica.scs.unr.edu:/veronica

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
veronica server software

Approximate number of such servers in use:
Unknown.

General comments:
Written and maintained by Steve Foster at the
University of Nevada.

Future plans: Additional support for searching on Gopher+ attributes

---

Clients:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Macintosh

Primary Contact
Name: The Internet Gopher Development Team
Email address: gopher@micro.umn.edu
Telephone: +1-612-625-1300

Client software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
One of the many Macintosh Gopher clients. Requires MacTCP.

General comments:
Macintosh TurboGopher is as of this writing, the fastest
Gopher client available for the Mac. Written by the
Minnesota Gopher Development Team. Supports Gopher+.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Macintosh

Primary Contact:
Name: Don Gilbert, Biology, Indiana
University - Bloomington
Email address: Software@Bio.Indiana.Edu
Telephone:

Client software available from:
Via Gopher: Indiana University Gopher Server
IUBio Software+Data/GopherApp,
Mac Gopher client
Via FTP: ftp.bio.indiana.edu:/util/gopher/
gopherapp/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
One of the many Macintosh Gopher clients. Requires MacTCP.

General comments:
Written and maintained by Don Gilbert. Supports Gopher+.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Macintosh

Primary Contact:
Name: "Jonzy"
Email address: JONZY@CC.UTAH.EDU
Telephone:

Client software available from:
Via Gopher: gopher.cc.utah.edu in Testing directory

Via FTP: ftp.cc.utah.edu:/pub/gopher/Macintosh/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
One of the many Macintosh Gopher clients. Requires MacTCP.
Has a browser style interface.
Uses customized Telnet application.

General comments:
Written and maintained by "Jonzy".

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: UNIX (curses/EMACS based client)

Primary Contact:
Name: The Internet Gopher Development Team

```
  Email address:                gopher@micro.umn.edu
  Telephone:                    +1-612-625-1300

  Client software available from:
  Via Gopher:                   U of M Gopher
                                Information About Gopher
                                Gopher Software Distribution
  Via FTP:                      boombox.micro.umn.edu
                                /pub/gopher/

  Location of more information:
   As above.

  Latest version number:        (please check software distribution)

  Brief Scope and Characteristics:
   The UNIX curses-based client.

  General comments:
   Written and maintained by Paul Lindner.  Supports Gopher+.

                        --------------------

  Date completed or updated:    14 March, 1994
  By: Name:                     Mark McCahill
      Email address:            mpm@boombox.micro.umn.edu

  Platform:                     UNIX (simple client does not use CURSES)

  Primary Contact:
  Name:                         Sean Fuller
  Email address:                fuller@aedc-vax.af.mil
  Telephone:

  Client software available from:
  Via Gopher:                   U of M Gopher
                                Information About Gopher
                                Gopher Software Distribution
  Via FTP:                      boombox.micro.umn.edu
                                /pub/gopher/

  Location of more information:
   As above.

  Latest version number:        0.3

  Brief Scope and Characteristics:
   sgopher is a simple gopher client for inetd/batch/online; it does not
```

require much of the terminal other than it be 80X24 characters. It can be run stand alone or it can be launched from inetd. It doesn't use termcap or curses. Sgopher outputs the \r\n pair at the end of line and requires a <return> after each command to support more terminal types.

General comments:
Runs on VMS, IRIX, Ultrix, AIX, Solaris 2.x, Solaris 1.x

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Xgopher: UNIX XWindows based client

Primary Contact:
Name: Allan Tuchman
Email address: tuchman@ux1.cso.uiuc.edu
Telephone:

Client software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
Makes use of the X interface.

General comments:
Written and maintained by Allan Tuchman.

Future plans: Gopher+ support planned for the future.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill

```
      Email address:            mpm@boombox.micro.umn.edu

  Platform:                     Xgopher: UNIX XWindows based client

  Primary Contact:
  Name:                         Andrew Scherpbier
  Email address:                xvgopher@gopher.sdsu.edu
                                turtle@sciences.sdsu.edu
  Telephone:

  Client software available from:
  Via Gopher:                   U of M Gopher
                                Information About Gopher
                                Gopher Software Distribution
  Via FTP:                      boombox.micro.umn.edu
                                /pub/gopher/

  Location of more information:
   As above.

  Latest version number:        (please check software distribution)

  Brief Scope and Characteristics:
   Makes use of the X interface... displays a way cool chewing gopher
   icon while information is being downloaded.

  General comments:
   XView based gopher client.

  Future plans:  Gopher+ support.

                        -------------------

  Date completed or updated:    14 March, 1994
  By: Name:                     Mark McCahill
      Email address:            mpm@boombox.micro.umn.edu

  Platform:                     NeXT: NeXTstep client

  Primary Contact:
  Name:                         The Internet Gopher Development Team
  Email address:                gopher@micro.umn.edu
  Telephone:                    +1-612-625-1300

  Client software available from:
  Via Gopher:                   U of M Gopher
                                Information About Gopher
                                Gopher Software Distribution
```

Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
Makes full use of the NeXT interface.

General comments:
Initial version written by Max Tardiveau.
Now maintained by Paul Lindner.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: DOS TurboVision w/Clarkson packet drivers

Primary Contact:
Name: The Internet Gopher Development Team
Email address: gopher@micro.umn.edu
Telephone: +1-612-625-1300

Client software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
Character-based graphics and windows under DOS. Uses either Clarkson Packet drivers (CRWYN packet drivers) and a built-in TCP/IP protocol stack or Ftp, Inc.'s protocol stack (PC/TCP).

General comments:
Gopher+ support.

Date completed or updated:	14 March, 1994
By: Name:	Mark McCahill
Email address:	mpm@boombox.micro.umn.edu
Platform:	VMS.

Primary Contact:

Name:	Mark Van Overbeke
Email address:	mark@ummvxm.mrs.umn.edu
Telephone:	

Client software available from:

Via Gopher:	U of M Gopher Information About Gopher Gopher Software Distribution
Via FTP:	boombox.micro.umn.edu /pub/gopher/

Location of more information:
As above.

Latest version number: 0.6

Brief Scope and Characteristics:

General comments:
The VMS client was written and is maintained by Mark Van Overbeke.

Future plans:

Date completed or updated:	14 March, 1994
By: Name:	Mark McCahill
Email address:	mpm@boombox.micro.umn.edu
Platform:	VMS.

Primary Contact:

Name:	The Internet Gopher Development Team
Email address:	gopher@micro.umn.edu
Telephone:	+1-612-625-1300

Client software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: 1.12

Brief Scope and Characteristics:
Identical to Unix gopher1.12. Works on a VMS 5.5-2 system running MultiNet 3.1B. UCX and Wollongong are also supported.

General comments:
A port of the University of Minnesota Unix client to VMS.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: VM/CMS.

Primary Contact:
Name: Rick Troth
Email address: TROTH@RICEVM1.RICE.EDU
Telephone:

Client software available from:

Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:

Gopher client for IBM VM/CMS installations.

General comments:
This client was written and is maintained by Rick Troth.
This client is commonly referred to as the Rice VM/CMS client.
There is also another VM/CMS client: the Vienna VM/CMS client.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: VM/CMS.

Primary Contact:
Name: Gerhard Gonter
Email address: Gerhard.Gonter@WU-Wien.ac.at
Telephone:

Client software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
Gopher client for IBM VM/CMS installations.

General comments:
This client was written and is maintained by Gerhard Gonter.
This client is commonly referred to as the Vienna VM/CMS client.
There is also another VM/CMS client: the Rice VM/CMS client.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill

```
     Email address:            mpm@boombox.micro.umn.edu

  Platform:                    DOS with PC/TCP.

  Primary Contact:
  Name:                        Steven E. Newton
  Email address:               snewton@oac.hsc.uth.tmc.edu
  Telephone:

  Client software available from:
  Via FTP:                     oac.hsc.uth.tmc.edu:/public/dos/misc/

  Location of more information:
   As above.

  Latest version number:       (please check software distribution)

  Brief Scope and Characteristics:
   Gopher client for DOS with PC/TCP

  General comments:
   Written and maintained by Steven E. Newton

  Future plans:

                        -------------------

  Date completed or updated:   14 March, 1994
  By: Name:                    Mark McCahill
      Email address:           mpm@boombox.micro.umn.edu

  Platform:                    DOS with PC-NFS.

  Primary Contact:
  Name:                        Stan Barber
  Email address:               sob@TMC.EDU
  Telephone:

  Client software available from:
   Via FTP:                    bcm.tmc.edu:/nfs/gopher.exe

  Location of more information:
   As above.

  Latest version number:       (please check software distribution)

  Brief Scope and Characteristics:
   Gopher client for DOS with PC-NFS
```

General comments:
Written and maintained by Stan Barber

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: DOS Novell LWP Gopher Client

Primary Contact:
Name: Jeremy T. James
Email address: blackp@med.umich.edu
Telephone:

Client software available from:
Via FTP: lennon.itn.med.umich.edu:pub/gopher

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
DOS Novell LWP Gopher Client

General comments:
Written and maintained by Jeremy T. James.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Windows 3.1 with Winsock or PC/NFS.

Primary Contact:
Name: Martyn Hampson
Email address: m.hampson@ic.ac.uk
Telephone:

Client software available from:

Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: lister.cc.ic.ac.uk
/pub/wingopher

Location of more information:
As above.

Latest version number: (please check software distribution)

Brief Scope and Characteristics:
Gopher client for Windows; uses either Winsock DLL or PC/NFS network interface.

General comments:
Written and maintained by Martyn Hampson. Gopher+ support.

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Windows with Winsock and ToolBook.

Primary Contact:
Name: Kevin Gamiel
Email address: kgamiel@kudzu.cnidr.org
Telephone:

Client software available from:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: sunsite.unc.edu
/pub/micro/pc-stuff/ms-windows/winsock/gophbook.zip

Location of more information:
As above.

Latest version number: 1.0

Brief Scope and Characteristics:
Gopher client for Windows; uses Asymetrix's ToolBook to paint the screen and speaks to the network via a Winsock DLL.

General comments:
 Written and maintained by Kevin Gamiel

Future plans:

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Air Gopher commercial client for windows

Primary Contact:
Name: David Pool, Spry Software, Inc.
Email address: dave@spry.com
Telephone: +1-206-447-0300

Client software available from:

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General Comments:

Future plans:
 Gopher+ support planned.

Date completed or updated: 14 March, 1994
By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: Win Gopher

Primary Contact:
Name: Bill Easton, Notis, Inc.
Telephone: +1-708-866-0159

Client software available from:

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General Comments:
Requires Winsock. Supports gopher.

Future plans:
Gopher+ support planned.

Date completed or updated: 14 March, 1994

By: Name: Mark McCahill
Email address: mpm@boombox.micro.umn.edu

Platform: GINA

Primary Contact:
Name: Mark Resmer, California Technology Project
Email address: resmer@eis.calstale.edu

Client software available from:

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General Comments:
Macintosh and windows clients include netnews, email.

Future plans:

Demonstration sites:

List of sites which are willing to act as demonstration sites for this application.

site name	ip address	login as	serving area
consultant.micro.umn.edu	134.84.132.4	gopher	North America
gopher.uiuc.edu	128.174.33.160	gopher	North America
panda.uiowa.edu	128.255.40.201	panda	North America
info.anu.edu.au	150.203.84.20	info	Australia

gopher.chalmers.se	129.16.221.40	gopher	Sweden
tolten.puc.cl	146.155.1.16	gopher	South America

Documentation:

Title: (1) Gopher Protocol and
(2) Gopher+ Proposed Extensions
Location details:
Via Gopher: U of M Gopher
Information About Gopher
Gopher Software Distribution
Via FTP: boombox.micro.umn.edu
/pub/gopher/

Title: RFC 1436 The Internet Gopher Protocol
(a distributed document search and retrieval
protocol)
Via FTP: nic.ddn.mil
/rfc/rfc1436.txt

Bibliography:

The Whole Internet, Ed Kroll, O'Reilly, 1992

The Internet Gopher, "ConneXions", July 1992, Interop.

Exploring Internet GopherSpace "The Internet Society News", v1n2 1992

The Internet Gopher Protocol, Proceedings of the Twenty-Third IETF, CNRI, Section 5.3

Internet Gopher, Proceedings of Canadian Networking '92

The Internet Gopher, INTERNET: Getting Started, SRI International, Section 10.5.5

Tools help Internet users discover on-line treasures, Computerworld, July 20, 1992

TCP/IP Network Administration, O'Reilly.

Balakrishan, B. (Oct 1992) "SPIGopher: Making SPIRES databases accessible through the Gopher protocol". SPIRES Fall '92 Workshop, Chapel Hill, North Carolina.

Other Information:

=-=

HYTELNET

Date template updated or checked: 28 February, 1994
By: Name: Peter Scott
Email address: aa375@freenet.carleton.ca

NIR Tool Name: HYTELNET

Brief Description of Tool:

HYTELNET is a terminate-and-stay-resident hypertext browser, which gives a user full instructions for logging into telnet-accessible sites on the Internet i.e., library catalogs, campus-wide information systems, bulletin boards, directory services, gophers, etc. The browser does not make remote connections. A Unix/VMS version, which does make remote connections, has been written by Earl Fogel, Computing Services, University of Saskatchewan. Macintosh and Amiga versions are also available (see ftp site information below).

Primary Contact(s):

Name: Peter Scott

Email address: aa375@freenet.carleton.ca

Postal Address: 324 8th Street East
Saskatoon, Sask, Canada S7H 0P5

Telephone: +1-306-966-5920

Fax: +1-306-966-6040

Help Line:

Name: Peter Scott

Email address: aa375@freenet.carleton.ca

Telephone: +1-306-966-5920

Level of support offered:
o volunteer

Hours available: 8:00 a.m - 3:30 p.m CST

Related Working Groups:

None

Sponsoring Organisation / Funding source:

None

Mailing Lists: HYTELNET Updates Distribution

Address: hytel-l@kentvm.kent.edu

Administration: By listowner Peter Scott
aa375@freenet.carleton.ca

Description:

To inform members of new versions of the software, and to keep users informed of new/changed/defunct Telnet-accessible sites
To subscribe send e-mail message to listserv@kentvm.kent.edu with no subject, and sub hytel-l firstname lastname as the body of the message.

Archive: None

News groups: bit.listserv.hytel-l

Protocols:

What is supported:

What it runs over:

Other NIR tools this interworks with:

Future plans: Possible translation into gopher format

Servers:

None.

Clients:

Date completed or updated: 21 December, 1993
By: Name: Peter Scott
Email address: aa375@freenet.carleton.ca

Platform: DOS

Primary Contact
Name: Peter Scott
Email address: aa375@freenet.carleton.ca
Telephone: +1-306-966-5920

Client software available from:

ftp.usask.ca in
pub/hytelnet/pc as hytelnXX.zip, where XX = latest version number.
pub/hytelnet/{amiga,unix,vms,mac}/* for respective versions

Location of more information: finger scottp@jester.usask.ca

Latest version number: 6.6 (Issued October 23, 1993)

Brief Scope and Characteristics:

General comments:

Future plans:
To contine to produce updated versions in current form.

Demonstration sites:

The Unix/VMS version can be accessed via telnet to access.usask.ca
(login: hytelnet)

Documentation: None

Bibliography:

HYTELNET as software for accessing the Internet: a personal
perspective on the development of HYTELNET.
Electronic Networking, Vol. 2, No. 1 Spring 1992 pp 38-44

Hypertext...Information at your fingertips.
In: Designing Information: new roles for librarians.
Graduate School of Library and Information Science, University of
Illinois at Urbana-Champaign, 1993

Other Information:

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NETFIND

Date template updated or checked: 1 March, 1994
By: Name: Mike Schwartz
    Email address: schwartz@cs.colorado.edu

NIR Tool Name: Netfind

Brief Description of Tool:

Given the name of a person on the Internet and a rough description of where the person works, Netfind attempts to locate information about the person. People can be specified by first, last, or login name. Their place of work can be described by name and/or the city/state/country.

Netfind provides textual information about people, when it is able to locate such information. It is not a directory in the usual sense of the word. Rather, it searches for people using a number of Internet services and heuristics about how to locate user information. Because of the techniques it uses, Netfind can locate information about more people than any other Internet user directory - over 5 million people in over 9,000 domains worldwide when last measured.

You can use the University of Colorado Netfind server by telnet to bruno.cs.colorado.edu: login as "netfind" (with no password). Help screens providing more detailed instructions and technical information are available there. There is currently no way for non-Internet users to access Netfind (e.g., using an email interface).

Primary Contact(s):

Name:	Mike Schwartz
Email address:	netfind-dvl@cs.colorado.edu
Postal Address:	Department of Computer Science University of Colorado Boulder, CO 80309-0430
Telephone:	Declined. (Note: Netfind is currently a volunteer service. We do not have staff resources to support telephone inquiries.)

Fax: Declined.

Help Line:

There are an increasing number of Netfind servers being set up at various Network Information Centers (including the U.S. Internic). However, since Netfind is provided as a volunteer service at this time, there is no help line.

Related Working Groups:

Gopher, NIR, IIIR, IRTF-RD.

Sponsoring Organisation / Funding source:

None. Netfind was originally a research prototype. It is offered as-is, on an unsupported basis. From time to time the original developers make improvements, but it is not currently funded.

Mailing Lists:

Address: netfind-users@cs.colorado.edu

Administration: netfind-users-request@cs.colorado.edu

Description: mailing list for user changes and updates.

Archive: None.

Address: netfind-servers@cs.colorado.edu

Administration: netfind-servers-request@cs.colorado.edu

Description: mailing list for sites running Netfind servers.

Archive: None.

News groups:

None.

Protocols:

What is supported:	NVT ASCII. At present no formal protocol is used. We are currently implementing a client/ server protocol, which will allow better clients and more efficient servers.
What it runs over:	TCP/IP.

Other NIR tools this interworks with:
Finger, Gopher, PH, SMTP, USENET news, UUCP maps, Various NIC databases, Various service logs, WAIS, WHOIS, X.500, DNS

Future plans:

Many. Telnet to the server and see the "Future Directions" menu under the "Frequently Asked Questions" help menu.

In addition to the above list, we are currently exploring possibilities to integrate the Netfind seed database gathering mechanisms into the Fremont framework, to make the process more scalable, and to support other types of information (e.g., to help with mapping the Internet).

Servers:

Date completed or updated:	October 12, 1993
By: Name:	Mike Schwartz
Email address:	schwartz@cs.colorado.edu
Platform:	SunOS 4.1 or more recent. Uncertain whether Netfind will run on Solaris.

Primary Contact:

Name:	Mike Schwartz
Email address:	schwartz@cs.colorado.edu
Telephone:	(not supplied)

Server software available from: ftp.cs.colorado.edu, in the

directory pub/cs/distribs/netfind.

Location of more information: in above directory.

Latest version number: 4.4.

Brief Scope and Characteristics:

This version of Netfind incorporates the ability for sites to register a set of URLs in their DNS server, pointing Netfind to a variety of different sources for information. Netfind can now tap information from X.500, WHOIS, and PH, in addition to the previous sources it used (finger, etc.). For more information see ftp://ftp.cs.colorado.edu/pub/cs/distribs/netfind/Netfind.WP.URLs

Approximate number of such servers in use:

17 public servers; hundreds or thousands of private stand-alone clients.

Clients:
The Netfind client is available in the same release as the server. See above.

Demonstration sites:
Site name: bruno.cs.colorado.edu
The current list is:
archie.au (AARNet, Melbourne, Australia)
bruno.cs.colorado.edu (University of Colorado, Boulder)
dino.conicit.ve (Nat. Council for Techn. & Scien. Research, Venezuela)
ds.internic.net (InterNIC Directory and DB Services, S. Plainfield, NJ)
eis.calstate.edu (California State University, Fullerton, CA)
lincoln.technet.sg (Technet Unit, Singapore)
malloco.ing.puc.cl (Catholic University of Chile, Santiago)
monolith.cc.ic.ac.uk (Imperial College, London, England)
mudhoney.micro.umn.edu (University of Minnesota, Minneapolis)
netfind.anu.edu.au (Australian National University, Canberra)
netfind.ee.mcgill.ca (McGill University, Montreal, Quebec, Canada)
netfind.if.usp.br (University of Sao Paulo, Sao Paulo, Brazil)
netfind.oc.com (OpenConnect Systems, Dallas, Texas)
netfind.vslib.cz (Liberec University of Technology, Czech Republic)
nic.nm.kr (Korea Network Information Center, Taejon, Korea)

nic.uakom.sk (Academy of Sciences, Banska Bystrica, Slovakia)
redmont.cis.uab.edu (University of Alabama at Birmingham)

Documentation:

There are three primary sets of information available about Netfind. The first is a set of help information, available in the FTP distribution as well as from the help screens available from any Netfind server. This information includes a fairly complete set of Frequently Asked Questions, as well as user help information and pointers to other related information. The second is a pre-publication version of a technical paper about Netfind, available in

ftp://ftp.cs.colorado.edu/pub/cs/techreports/schwartz/PostScript/
Netfind.Gathering.ps.Z (compressed PostScript)

or

ftp://ftp.cs.colorado.edu/pub/cs/techreports/schwartz/ASCII/
Netfind.Gathering.txt.Z (compressed ASCII).

An earlier paper is also available in

ftp://ftp.cs.colorado.edu/pub/cs/techreports/schwartz/PostScript/
White.Pages.ps.Z
or

ftp://ftp.cs.colorado.edu/pub/cs/techreports/schwartz/ASCII/
White.Pages.txt.Z,

containing some of the original ideas in Netfind and measurements of the system. The Netfind.Gathering paper contains an up-to-date description of the data gathering and integration algorithms.

The third source of information focuses particularly on the URL-based remote site customization mechanism, and is available in ftp://ftp.cs.colorado.edu/pub/cs/distribs/netfind/Netfind.WP.URLs

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Bibliography:

Netfind is one prototype developed by the Networked Resource Discovery Project, at the University of Colorado - Boulder. A bibliography and set of project papers is available by anonymous FTP from

ftp.cs.colorado.edu, in pub/cs/techreports/schwartz. This directory contains a file called "README" that contains a project overview and bibliography. The files in this directory are also available via an electronic mail interface. For more information, send a mail message to infosrv@ftp.cs.colorado.edu, containing the message body (not subject line) "send HELP" (without quotes).

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PROSPERO

Date template updated or checked: 1 March, 1994
By: Name: Steven Augart
    Email address: info-prospero@isi.edu

NIR Tool Name: Prospero

Brief Description of Tool:

The Prospero directory service supports a user centered view of files scattered across the Internet. It can be used to organize references to files as if they were on your local system, without the need to physically move them.

Prospero provides access to existing directories and indices that can be used to find files of interest that are available from Internet archive sites. Among the indices available is the archie database and a gateway to all Gopher menus, files, and searches. We hope to have WAIS indices and World Wide Web documents online in the near future.

Prospero also provides a mechanism to make directories and indices available to end-users and applications in a format that allows information from different sources to be integrated into a coherent whole.

Prospero does not interpret the data that it organizes. It does provide mechanisms to retrieve the data, but the display and use of the data is up to the user's application. Prospero is intended to serve as infrastructure that integrates information from a variety of sources and supports a variety of user applications.

Prospero allows fine grained authorization of requests to all objects, including directories and indices. Prospero supports the authentication of clients through four mechanisms: (a) simple client assertion of the user's identity; (b) a trusted port mechanism similar to that used by the Berkeley UNIX R commands; (c) a simple cleartext passwording mechanism; (d) Kerberos (version 5). The maintainer of an ACL chooses which of these mechanisms he or she wishes to accept as proof of the client's identity.

Primary Contact(s):

Name: Info Prospero (preferred contact address)

Email address: info-prospero@isi.edu

Name: Clifford Neuman

Email address: bcn@isi.edu

Postal Address: U.S.C. Information Sciences Institute
4676 Admiralty Way
Marina del Rey, CA 90292-6695
U.S.A.

Telephone: +1-310-822-1511

Name: Steven Augart

Email address: swa@isi.edu

Postal Address: U.S.C. Information Sciences Institute
4676 Admiralty Way
Marina del Rey, CA 90292-6695
U.S.A.

Telephone: +1-310-822-1511

Help Line:

Name: Info Prospero

Email address: info-prospero@isi.edu

Related Working Groups:

IETF IAFA WG
IETF IIIR WG
IETF URI WG
IETF NIR WG
IRTF Resource Discovery WG

Sponsoring Organisation / Funding source:

Information Sciences Institute, University of Southern California

The design and implementation was supported in part by the National Science Foundation (Grant No. CCR-8619663), the Washington Technology Center, Digital Equipment Corporation, and the Advanced Research Projects Agency under NASA Cooperative Agreement NCC-2-539.

Mailing Lists:

Address:	info-prospero@ISI.EDU
Administration:	info-prospero-request@ISI.EDU
Description:	This mailing list is really two one-way mailing lists. Send mail to INFO-PROSPERO to obtain information about Prospero, papers, or the release. Mail to INFO-PROSPERO will not be passed on to subscribers. INFO-PROSPERO is also the list to which we will send status updates and information on how to obtain new releases.
Archive:	Via anonymous FTP to PROSPERO.ISI.EDU as /pub/prospero/mail/info-prospero.arc

Via Prospero in the "#/INET/EDU/ISI/GUEST/prototype" virtual system as /sites/isi.edu/pub/prospero/mail/info-prospero.arc

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Address:	prospero@ISI.EDU
Administration:	prospero-request@ISI.EDU
Description:	This mailing list is for general discussion of Prospero, for announcements of new sites that have come on board, and for announcements of directories that people have created to organize the information already accessible.
Archive:	Via anonymous FTP to PROSPERO.ISI.EDU as /pub/prospero/mail/prospero.arc

Via Prospero in the "#/INET/EDU/ISI/GUEST/prototype" virtual system as /sites/isi.edu/pub/prospero/mail/prospero.arc.

News groups:

NONE

Protocols:

What is supported:
Prospero directory service requests are formatted according to the Prospero protocol.

Prospero does not have its own file retrieval protocol. Files may be automatically retrieved using FTP, NFS, AFS, and GOPHER. Loginable services may also be accessed via TELNET.

What it runs over:
Directory service requests are layered on top of UDP, with our own (included) reliable message delivery layer.

Other NIR tools this interworks with:
Archie, Gopher, Wais, WWW

Future plans:

Servers:

Date completed or updated: 1 November, 1993

Platform: UNIX

Primary Contact:
Name: Clifford Neuman and Steven Augart
Email address: info-prospero@isi.edu
Telephone: +1-310-822-1511

Server software available from:

Via anonymous FTP: PROSPERO.ISI.EDU, /pub/prospero/prospero.tar.Z

Via Prospero: /releases/prospero/prospero.tar.Z, in the
"#/INET/EDU/ISI/GUEST/prototype" virtual system.

Note that the name prospero.tar.Z refers to the most stable release (currently Beta version 5.1). If you want the latest version of the server (which includes the Gopher gateway), you should retrieve it by version number; the name for the latest version is prospero-alpha.5.2.tar.Z

Location of more information:
Contained within the release.

Latest version number:
Alpha Version 5.3

Brief Scope and Characteristics:

The server allows the maintainer to make directory information available about selected portions of the server's filesystem, such as anonymously FTPable files. The server also is used to publish information from other databases, such as Archie. The server also allows users and maintainers to store their own customized organizing views of the namespace. Release Alpha.5.2 of the server includes a gateway feature which treats all Gopher servers as a Prospero database.

Approximate number of such servers in use:

50

General comments:

Future plans:

We have a prototype NFS server that makes Prospero queries, but it is not yet ready to release. We plan to develop a gateway similar to the existing Gopher gateway feature for World Wide Web. There is also active work being done on exporting WAIS indices through Prospero in a way similar to the way the archie database is exported.

Clients:

Date completed or updated: 1st November, 1993

Platform: UNIX

Primary Contact
Name: Clifford Neuman and Steven Augart
Email address: info-prospero@isi.edu
Telephone: +1-310-822-1511

Client software available from:
Via anonymous FTP: PROSPERO.ISI.EDU, /pub/prospero/prospero.tar.Z

Via Prospero: /releases/prospero/prospero.tar.Z, in the "#/INET/EDU/ISI/swa" virtual system.

Note that the name prospero.tar.Z refers to the most stable release (currently Beta version 5.1). If you want the latest version of the clients (which includes the Prospero menu browser), you should retrieve it by version number; the name for the latest version is prospero-alpha.5.2.tar.Z

Latest Version number:
Alpha Version 5.2

Brief Scope and Characteristics:

We provide two client interfaces. The older one is a command-line client, which can be configured to use the same syntax to navigate through the Prospero namespace that a user uses to navigate through the UNIX filesystem. ("cd", "ls", etc.) The newer one is a menu-based file and directory browser similar to the UNIX Gopher client.

General comments:

Archie clients also make queries in the Prospero namespace, so all Archie clients are Prospero clients too. They are better described in the Archie report.

Future plans:

We are working on enhancing the menu browser client to allow users to remotely customize and update virtual systems. We plan to develop a Prospero hypertext browser.

Demonstration sites:

A guest virtual system is available on PROSPERO.ISI.EDU. However, to use it, you must compile the Prospero command-line client on your own machine. Instructions for using it come with the Prospero distribution.

Documentation:

All of these papers are available via anonymous FTP from PROSPERO.ISI.EDU. They may additionally be obtained through Prospero itself by preceding the 'Full file name:' given below with '/sites/isi.edu' and looking in the '#/INET/EDU/ISI/GUEST/prototype' virtual system.

Document Title: The Prospero Protocol, version 5
Location details:
    Site: PROSPERO.ISI.EDU
    Full file name: /pub/prospero/doc/prospero-protocol.PS.Z

Document Title: Prospero User's Manual
Location details:
    Site: PROSPERO.ISI.EDU
    Full file name: /pub/prospero/doc/prospero-user-manual.PS.Z

Document Title: Prospero Library Manual
Location details:
    Site: PROSPERO.ISI.EDU
    Full file name: /pub/prospero/doc/prospero-library-manual.PS.Z

Document Title: Prospero Menu-based Browser API Manual
Location details:
    Site: PROSPERO.ISI.EDU
    Full file name: /pub/prospero/doc/prospero-menu-api.PS.Z
Document Title: Description of Prospero Documents and Papers
Location details:
    Site: PROSPERO.ISI.EDU
    Full file name: /pub/prospero/papers/README-prospero-documents

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Bibliography:

A bibliography listing all publicly available Prospero documents and papers is available via anonymous FTP from PROSPERO.ISI.EDU as /pub/prospero/README-prospero-documents The following papers are also available via anonymous FTP from PROSPERO.ISI.EDU:

Prospero:/papers/subjects/operating-systems/prospero/prospero-bii.ps.Z
Anonymous FTP: /pub/papers/prospero/prospero-bii.ps.Z
(POSTSCRIPT)
   @INPROCEEDINGS{prosperobii,

```
    AUTHOR      = "Neuman, B. Clifford and Augart, Steven Seger",
    TITLE       = "Prospero: A Base for Building Information
                   Infrastructure",
    BOOKTITLE   = "Proceedings of INET'93",
    YEAR        = 1993,
    MONTH       = "August"}
```

For the readers of this report, this is the first paper you probably want to read about Prospero. This paper describes how Prospero can be used to integrate internet information services, including Gopher, WAIS, Archie, and World Wide Web. The paper was presented at INET'93 in August.

Prospero:/papers/subjects/operating-systems/prospero/prospero-oir.ps.Z
Anonymous FTP: /pub/prospero/papers/prospero-oir.ps.Z
(POSTSCRIPT)

```
@ARTICLE{oir,
AUTHOR      = "Neuman, B. Clifford",
TITLE       = "Prospero: A Tool for Organizing {I}nternet Resources",
JOURNAL     = "Electronic Networking: Research, Applications and
               Policy",
MONTH       = "Spring",
YEAR        = 1992,
VOLUME      = 2,
NUMBER      = 1}
```

This is the first paper we give to more general computer science audiences to read. It's also a good first paper to look at. It gives a good overview of Prospero and what it does. It also describes a bit about the Virtual System model, of which Prospero is a prototype implementation. Describes what Prospero does, not how it does it.

Anonymous FTP: /pub/prospero/papers/prospero-gfsvsm.ps.Z
(POSTSCRIPT)

```
   @INPROCEEDINGS{gfsvsm,
   AUTHOR      = "Neuman, B. Clifford",
   TITLE       = "The {P}rospero {F}ile {S}ystem: A Global File System
                  based on the {V}irtual {S}ystem {M}odel",
   BOOKTITLE   = "Proceedings of the Workshop on File Systems",
   YEAR        = 1992,
   MONTH       = "May"}
```

This is a good third paper to read about Prospero. This one is targeted more toward system implementors. It provides more implementation details than the paper on organizing Internet resources, but less of the vision of how Prospero can be used together with other systems.

```
Prospero:
 /papers/subjects/operating-systems/prospero/prospero-smlic.ps.Z
 Anonymous FTP: /pub/papers/prospero/prospero-smlic.ps.Z
 (POSTSCRIPT)
   @INPROCEEDINGS{prosperosmlic,
   AUTHOR      = "Neuman, B. Clifford and Augart, Steven Seger and
                  Upasani, Shantaprasad",
   TITLE       = "Using Prospero to Support Integrated
                  Location-Independent Computing",
   BOOKTITLE   = "Proceedings of the Usenix Symposium on Mobile and
                  Location-Independent Computing",
   YEAR        = 1993,
   MONTH       = "August"}
```

This paper describes how the Prospero Directory Service can be used to solve the server selection problem and the user location problem. The paper was presented in August at the Usenix Symposium on Mobile and Location-Independent Computing.

```
Anonymous FTP: /pub/prospero/papers/UW-CS-89-01-07.PS.Z
(POSTSCRIPT)
   @TECHREPORT{vsmldos,
   AUTHOR      = "Neuman, B. Clifford",
   TITLE       = "The {V}irtual {S}ystem {M}odel for Large Distributed
                  Operating Systems",
   INSTITUTION = "Department of Computer Science, University of
                  Washington",
   YEAR        = 1989,
   MONTH       = "April",
   NUMBER      = "89-01-07"}
```

This describes the initial vision for the Virtual System Model, the model on which Prospero is based. Much of the material in this paper appears in greater detail in other papers.

```
Anonymous FTP: /pub/prospero/papers/UW-CSE-90-05-01.PS.Z
(POSTSCRIPT)
   @TECHREPORT{vsmtp,
   AUTHOR      = "Neuman, B. Clifford",
   TITLE       = "The {V}irtual {S}ystem {M}odel: A Scalable Approach
                  to Organizing Large Systems (A Thesis Proposal)",
   INSTITUTION = "Department of Computer Science and Engineering,
                  University of Washington",
   YEAR        = 1990,
   MONTH       = "May",
   NUMBER      = "90-05-01"}
```

for a long time this was the best description of Prospero, but

all the information in this document appears in more recent papers and the dissertation itself.

Anonymous FTP: /pub/prospero/papers/prospero-closure.ps.Z
(POSTSCRIPT)

```
   @ARTICLE{nfclosure,
   AUTHOR      = "Neuman, B. Clifford",
   TITLE       = "The Need for Closure in Large Distributed Systems",
   JOURNAL     = "Operating Systems Review",
   MONTH       = "October",
   YEAR        = 1989,
   VOLUME      = 23,
   NUMBER      = 4,
   PAGES       = "28--30"}
```

This paper describes the reasons that operating systems need to support closure, that is they need to make it clear which name space is to be used when resolving names. While closure is one of the important features of Prospero, the concept should be applied in other operating systems too.

Prospero:
/papers/subjects/operating-systems/prospero/prospero-neuman-thesis.ps.Z
Anonymous FTP: /pub/prospero/papers/prospero-neuman-thesis.ps.Z
(POSTSCRIPT)

```
   @PHDTHESIS{phdneuman,
   AUTHOR      = "Neuman, B. Clifford",
   TITLE       = "The {V}irtual {S}ystem {M}odel: A Scalable Approach
                  to Organizing Large Systems",
   SCHOOL      = "University of Washington",
   MONTH       = "June",
   YEAR        = 1992,
   NOTE        = "Department of Computer Science and Engineering
                  Technical Report 92-06-04"}
```

This is Clifford Neuman's Ph.D. Dissertation. It is currently the definitive work on Prospero and the Virtual System Model. Includes an obsolete version of the Prospero User's Manual and of the Prospero Protocol Specification.

Other Information:

We provide three documented library interfaces to Prospero in order to make client writing easy.

The PFS and PCOMPAT libraries are documented in the library reference manual. The PFS library allows one to directly make Prospero requests and parse the results and to manipulate Prospero objects as abstractions. The PCOMPAT library is an interface to the PFS library which uses the same interface as the UNIX filesystem; one can link many existing programs with the PCOMPAT library in order to get it to resolve names in the Prospero namespace. It is not as portable as the PFS library and does not provide as much functionality.

The third library interface is the menu-browser API library. It is documented in the menu-based browser API manual and is used by our menu-based browser.

=-=

VERONICA

Date template updated or checked: 28 February, 1994
By: Name: Steven Foster
Email address: foster@veronica.scs.unr.edu

NIR Tool Name: veronica

Brief Description of Tool:

veronica: Very Easy Rodent-Oriented Net-wide Index to Computerized Archives.

veronica is the comprehensive title-index of the world's gopher servers. Because of veronica, the Gopher web is a search-and-retrieval system as well as a browsing system. veronica is popular because the ubiquitous Gopher client can both access the search server, and provide immediate access to the discovered resources. Taking advantage of Gopher's linked menus, and of the policy of open access at most gopher sites, veronica finds and indexes almost all items on publicly-accessible gopher servers.

As of February, 1994, veronica holds indexes to more than 3200 gopher servers on approximately 2500 internet hosts. In February 1994 the public-access veronica sites served an estimated 1,200,000 queries. Most queries are resolved in less than twenty seconds. Eight server sites offer searches to the internet community, and several other institutions run servers for internal access.

veronica is easily accessed via any Gopher client. It offers various types of searches, ranging from single-keyword searches to boolean queries of indefinite complexity.

A veronica search originates with a user's request for a search, submitted from a gopher client. The searches may include boolean operators (AND, OR, NOT, and parentheses) and several options to control the number of items returned, and to restrict the search to certain gopher types. The result of a veronica search is a set of gopher-type data items, which is returned to the gopher client as a gopher menu. Each item on this menu contains the user's desired keyword or keywords in the item title.

The user can access any of the gopher items by selecting from the returned menu. Items on this menu may be drawn from many gopher servers. Because veronica is accessed through gopher clients, it provides immediate access to all types of data supported by the

gopher protocol and the client implementation.

The veronica service comprises two functions:

1) Harvesting menu data from gopher servers, and preparing it for use;
2) Offering searches of that database to gopher clients.

These two functions are not necessarily provided by the same host computer. Currently collection and preparation of data are done at University of Nevada, and datasets are distributed to the other veronica servers.

The veronica service infrastructure has been fairly stable since July, 1993, with eight server sites offering searches for the internet community (March 1994). These servers are supported by the participating institutions: NYSERNET, PSI, SERRA, CNIDR, University of Koeln, SUNET, University of Bergen and the University of Nevada System Computing Services. Several additional servers offer searches with access limited to internal users; in this class are servers at MSU, SUNET, and the Australian University system.

An auxiliary tool to build a locally held menu of Public available has been created. Called "maltshop", it has been distributed since January, 1994. It appears that maltshop is rapidly being accepted, but its long-term effect on loading of the servers may be problematic.

Primary Contact(s):

Name:	veronica development team
Email address:	veronica@veronica.scs.unr.edu
Postal Address:	VERONICA development team SCS Computer Center Building mailstop 270 University of Nevada, Reno Reno, NV 89557-0023
Telephone:	+1-702-784-4292 or +1-702-784-6557
Fax:	+1-702-784-1108

Name:	Fred Barrie
Email address:	barrie@cs.unr.edu
Postal Address:	SCS Computer Center Building mailstop 270 University of Nevada, Reno Reno, NV 89557-0023

Telephone:	+1-702-784-4292 or +1-702-784-6557
Fax:	+1-702-784-1108
Name:	Steven Foster
Email address:	foster@nevada.edu
Postal Address:	SCS Computer Center Building mailstop 270 University of Nevada, Reno Reno, NV 89557-0023
Telephone:	+1-702-784-4292 or +1-702-784-6557
Fax:	+1-702-784-1108

Help Line:

Name:	veronica development team
Email address:	veronica@veronica.scs.unr.edu
Telephone:	no telephone support available
Level of support offered:	all users
Hours available:	irregular response latencies to email queries, based on schedule of developers.

Related Working Groups: GOPHER, FACETS

Sponsoring Organisation / Funding source:

University and Community College System of Nevada Computer Services, and University of Nevada, Reno. Additional support has been provided by CNIDR, Pandora Systems, Inc., and Pacific Bell Co. Server hosts have been provided by the sites listed above in the Description section.

Mailing Lists:

Address:	gopher-news@boombox.micro.umn.edu
Address:	veronica-news@veronica.scs.unr.edu

News groups:

Name: veronica discussion happens on comp.infosystems.gopher

Protocols:

What is supported: Gopher protocol, Gopher+ protocol

What it runs over: TCP

Other NIR tools this interworks with: Gopher, WAIS, ftp

Future plans: Implement extensions with Gopher+.
Support for URN/URL standards.
Per-site updates of indexes.
Subject-area-specific indexes.
Indexes for USENET news and LISTSERV articles.
Automated server load-levelling.

Servers:

Date completed or updated: February 28, 1994
By: Name: Steven Foster
Email address: foster@nevada.edu

Platform: UNIX

Primary Contact:
Name: veronica development team
Email address: veronica@veronica.scs.unr.edu
Telephone: +1-702-784-4292 or +1-702-784-6557

Server software available from:

Via ftp: veronica.scs.unr.edu
veronica-code/
veronica-data/
veronica-data.tar.Z

Location of more information:
Via Gopher: veronica.scs.unr.edu
veronica/

```
                                    veronica-faq
                                    how-to-compose-veronica-queries


       Via Gopher:             gopher.cnidr.org
                                  veronica
                                    veronica-faq
                                    how-to-compose-veronica-queries

       Via ftp:                veronica.scs.unr.edu
                                 veronica-code/
                                 veronica-docs/

  Latest version number:       0.6.5
  Next planned version:        0.7b   (March 1994)
```

Brief Scope and Characteristics:

Two modules: a data-collection module and a data-server module.

1. Data-collector runs on any Unix computer that does TCP and compiles perl. This has not been distributed yet. Data collection, data preparation, and indexing are being done at veronica.scs.unr.edu. The harvester "walks" all advertised gopher servers, and any newly-discovered servers. Almost all redundant links are removed, leaving the (hopefully) canonical reference for each item. Indexes are built at Nevada, and the indexed dataset is distributed to server sites.

2. Server module.
   Servers run on unix computers and answer to gopher-type-7 requests. Boolean keyword logic is implemented. See file "how-to-compose-veronica-queries". Several options allow retrieval of items with specified gopher-types, retrieval of a file of links containing the search results, and override for the default limit on number of results returned, which is 200 items.

   Server software runs on most flavors of unix, requires dbm and perl, and requires about 1.4 GB of data on disk, with considerable /tmp space available.

   Server software is available to any site which wants to run a server. Server sites are encouraged to offer the service to the net at large.

Approximate number of such servers in use: twelve.

Auxiliary tool: Maltshop v. 0.2d
Maltshop builds a menu of Public Gopher Servers for the local gopher menu.

Maltshop software available from:

Via ftp:	veronica.scs.unr.edu veronica-code/ menu-builder-0.2d
Via Gopher:	veronica.scs.unr.edu, port 70 11/Search ALL of Gopherspace 12/Script to automate your local Veronica menu

General comments:

Basic veronica service has been fairly stable since July 1993. Indexing is quite efficient, and most queries are resolved in ten seconds or quicker. More than 1,000,000 queries were resolved in February, 1994.

Though veronica is well-accepted at this level of service, we are undertaking significant upgrade efforts during Winter 93-94.

Clients:

Date completed or updated:	October 19, 1993
By: Name:	Steven Foster
Email address:	foster@nevada.edu
Platform:	veronica is accessed through any of the gopher clients.
Primary Contact:	As for gopher clients.
Client software available from:	As for gopher clients.
Location of more information:	
Via Gopher:	gopher.tc.umn.edu, port 70 1/Information About Gopher
Future plans:	veronica will interoperate with Gopher+

clients, allowing queries to be composed by ASK blocks.

Demonstration sites:

Site name:	UCCSN veronica server
Access details:	gopher to veronica.scs.unr.edu, port 70. Open "veronica" folder; choose one of the search types available.
Site name:	University of Minnesota Gopher server
Access details:	gopher to gopher.tc.umn.edu, port 70. Other Gopher and Information Servers Search Gopherspace with veronica. choose one of the search types available.
Site name:	NYSERNET veronica server
Access details:	gopher to nysernet.org, port 70. Open "Search the Internet" folder; choose one of veronica searches.
Site name:	SERRA veronica server
Access details:	gopher to gopher.unipi.it, port 70. Open "University of Pisa - Services" folder; choose the veronica search.

Documentation:

Document Title:	veronica FAQ: Common Questions and answers about veronica, a title search and retrieval system for use with the internet gopher.
Location details:	
Via Gopher:	
Site:	veronica.scs.unr.edu, port 70. veronica veronica FAQ Full file name: veronica-faq
Site:	gopher.micro.umn.edu, port 70. Other Gopher and Information services Search Gopherspace with veronica veronica FAQ Full file name: veronica-faq

```
        Site:           gopher.cnidr.org, port 70.
                          veronica
                            veronica FAQ
                        Full file name: veronica-faq

        Via anonymous ftp:
        Site:           veronica.scs.unr.edu
                        veronica-docs/veronica-faq

  Document Title:       How to Compose veronica Search Queries.

  Location details:
        Via Gopher:
        Site:           veronica.scs.unr.edu, port 70.
                          veronica
                             How to Compose veronica Search Queries.
                        Full file name:  how-to-query-veronica

        Site:           gopher.cnidr.org, port 70.
                          veronica
                             How to Compose veronica Search Queries.
                        Full file name:  how-to-query-veronica

        Via anonymous ftp:
        Site:           veronica.scs.unr.edu
                        veronica-docs/how-to-query-veronica


  Document Title:       About veronica.

  Location details:
        Via Gopher:
        Site:           veronica.scs.unr.edu, port 70.
                          veronica
                            About veronica
                        Full file name: veronica-about

        Site:           gopher.micro.umn.edu, port 70.
                          Other Gopher and Information services
                            Search Gopherspace with veronica
                              About veronica
                        Full file name: veronica-about

        Site:           gopher.cnidr.org, port 70.
                          veronica
                            About veronica
                        Full file name: veronica-about
```

Bibliography: none

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WAIS (WAIS, Inc.)

Date template updated or checked: 1 March 1994
By: Name: Nathaniel Lee
    Email address: than@wais.com

freeWAIS (CNIDR)

Date template updated or checked: 1 March 1994
By: Name: Jane Smith and Jim Fullton
    Email address: Jane.Smith@CNIDR.org and Jim.Fullton@CNIDR.org

---

NIR Tool Name: WAIS

Brief Description of Tool:

WAIS - The Wide Area Information Servers system - is an electronic publishing software set which allows you to search out and retrieve multimedia information from databases anywhere in the world. WAIS databases may be accessed by WAIS, gopher, and WWW clients (such as Mosaic), and via online services such as Delphi and America OnLine. WAIS software includes user interfaces for most platforms, and server software that provides automatic indexing of databases.

WAIS was developed by Thinking Machines Corporation of Cambridge, Massachusetts in collaboration with Apple Computer, Inc., Dow Jones & Company, and KPMG Peat Marwick. With over 100 databases and 5,000 users worldwide, WAIS is rapidly becoming a standard for information distribution within the Internet environment.

WAIS is a client-server application. Most of the clients remain freely available with a few exceptions. WAIS, Inc. develops and sells commercial versions of WAIS and the Clearinghouse for Networked Information Discovery and Retrieval (CNIDR) develops freeWAIS, a version free for distribution and use. A few freely distributable versions remain available from Thinking Machines, Inc. and other organizations.

What does WAIS do?

WAIS allows multimedia information to be stored anywhere on any platform. Using your interface of choice, WAIS enables you to find personal, corporate and public information. The information is accessible regardless of format: text, formatted documents, pictures, spreadsheets, graphics, sound, or video.

WAIS recognizes natural language queries. The search and retrieval of relevant information is made using your native language. To date, we have used English, French, Italian, and Latin! The most relevant documents, regardless of size, can be sent back to the server in their entirety to further refine your search (telling the server, "Find me more like this document.") Proven searches can be automatically repeated, monitoring and alerting you to new information as it becomes available.

How does WAIS work?

WAIS uses a single computer-to-computer protocol (NISO Z39.50-1988). Each WAIS server reads your question and based on its words, searches the full text of the database for the most relevant documents, and ranks them using automatic word weighting. Servers need not fully understand your query; the retrieval process is based on a search method called relevance feedback.

Primary Contact(s) (WAIS, Inc.):

Name:	Than Lee
Email address:	info@wais.com
Postal Address:	1040 Noel Drive, Suite 102, Menlo Park CA 94025 (USA)
Telephone:	+1-415-617-0444
Fax:	+1-415-327-6513

Primary Contact(s) (CNIDR):

Name:	George Brett
Email address:	George.Brett@CNIDR.org
Postal Address:	3021 Cornwallis Rd., Research Triangle Park NC 27709 (USA)
Telephone:	+1-919-248-1499
Fax:	+1-919-248-1101

Help Line (WAIS, Inc.):

Name:

Email address: support@wais.com

Telephone:

Level of support offered: commercial customers only

Hours available: anytime

Help Line (CNIDR):

Name: Kevin Gamiel

Email address: Kevin.Gamiel@CNIDR.org

Telephone: +1-919-248-1499

Level of support offered: developers only

Hours available: 9-5 EST

Related Working Groups (WAIS, Inc.):

Z39.50 protocol group

Related Working Groups (CNIDR):

NISO: Z39.50 Implementor's Group (ZIG)
IETF: IIIR (Integrating Internet Information Resources) Working Group
URI (Uniform Resource Identifiers) Working Group

Sponsoring Organisation / Funding source (WAIS, Inc.):

WAIS, Inc.

Sponsoring Organisation / Funding source (CNIDR):

National Science Foundation Cooperative Agreement MCNC University of North Carolina at Chapel Hill Other U.S. Government agencies

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Mailing Lists (WAIS, Inc. and CNIDR):

Address:	wais-discussion@wais.com
Administration:	wais-discussion-request@wais.com
Description:	Moderated, digested biweekly posting about WAIS and Electronic publishing subjects. Please submit interesting material.
Archive:	/pub/mail-archives/wais-discussion/issue-*@wais.com and wais-discussion-archive WAIS server

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Mailing Lists (WAIS, Inc. and CNIDR):

Address:	wais-talk@wais.com
Administration:	wais-talk-request@wais.com
Description:	Implementors forum on WAIS/freeWAIS. This is for talking about nitty gritty details of protocols and implementations.
Archive:	/pub/mail-archives/wais-talk@wais.com

News groups (WAIS, Inc. and CNIDR):

Name:	comp.infosystems.wais
Description:	Variable quality information on WAIS/freeWAIS.
Archive:	wais-talk-archive WAIS server

Protocols (WAIS, Inc. and CNIDR):

What is supported: z39.50-1988

What it runs over:
The freeware runs over tcp/ip. Production versions have worked over x.25 and modems as well.

Other NIR tools this interworks with:
Gopher and WWW have been used as front ends to WAIS.

Future plans:
freeWAIS: Z39.50-1992 compliance, search engine independence

Servers (WAIS, Inc.): Connection Machine WAIS server

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: Brewster@wais.com

Platform: Connection Machine Model 2

Primary Contact:
Name: Ottavia Bassetti
Email address: ottavia@wais.com
Telephone: +1-617-234-1000

Server software available from: Thinking Machines Corp.
245 First Street
Cambridge, MA 02145 Location of more information:

Latest version number:

Brief Scope and Characteristics:
Software that runs on CM2 Connection Machines to make them into WAIS servers.

Approximate number of such servers in use:
10

General comments: Requires CM2 super computer.

Servers (CNIDR): freeware for most UNIX platforms

```
  Date completed or updated:    13th December, 1993
  By: Name:                     Jane Smith
      Email address:            Jane.Smith@CNIDR.org

  Platform:                     Most Unix variations

  Primary Contact:
  Name:                         George Brett
  Email address:                George.Brett@CNIDR.org
  Telephone:                    +1-919-248-1499

  Server software available from:
        ftp://pub/NIDR.tools/freewais @ftp.cnidr.org
        gopher://gopher.cnidr.org
        http://cnidr.org

  Location of more information: info@CNIDR.org

  Latest version number:        freeWAIS 0.202

  Brief Scope and Characteristics:
   server and client code for freeWAIS.

  Approximate number of such servers in use:
   Unknown. ~568 databases are registered and freely accessible.

  General comments:
   Source code freely available for use and modification.  Internet
   community contributes to the software development, CNIDR incorporates
   these developments into the freeWAIS releases.

 ---------------------------------------------------------------------

 Clients (CNIDR):               many varied for most platforms

  Date completed or updated:    13th December, 1993
  By: Name:                     Jane Smith
      Email address:            Jane.Smith@CNIDR.org

  Platform:                     varied

  Primary Contact:
  Name:                         Kevin Gamiel
  Email address:                Kevin.Gamiel@CNIDR.org
  Telephone:                    +1-919-248-1499

  Client software available from:
        URL:ftp://pub/NIDR.tools/freewais @ftp.cnidr.org
```

Location of more information:
phone or e-mail CNIDR

Latest version number: N/A

Brief Scope and Characteristics:
Many clients of varying capability available for most popular computing platforms

General comments:
Clients developed and updated regularly; check mailing lists or ftp sites for latest information

Future plans:
New clients when freeWAIS 1.0 (Z39.50-1992 version) is released

---

Clients:

Date completed or updated:	13th December, 1993
By: Name:	Brewster Kahle
Email address:	brewster@wais.com
Platform:	NeXT
Primary Contact:	
Name:	Paul Burchard
Email address:	burchard@math.utah.edu
Telephone:	

Client software available from:
/pub/freeware/next@wais.com via anonymous FTP

Location of more information:

Latest version number:	WAIStation-NeXT-1.9.6
Brief Scope and Characteristics:	
General comments:	NeXT client and server
Future plans:	

Date completed or updated:	13th December, 1993
By: Name:	Brewster Kahle

```
      Email address:            brewster@wais.com

  Platform:                     EIWAIS 1.55

  Primary Contact:
  Name:                         Kevin Gourley
  Email address:                pc-shareware@einet.net
  Telephone:

  Client software available from:
         /pub/freeware/windows@wais.com via anonymous FTP
         /einet/pc@ftp.einet.net via anonymous FTP

  Location of more information:

  Latest version number:        Version 1.55

  Brief Scope and Characteristics:
         WAIS client for Windows and Windows Sockets

  General comments:  Windows WAIS Client for Windows Sockets
                     - supporting multiple source queries
                     - advanced program/viewer launching
                     - embedded (any file size) text viewer
                     - auto-keyword highlighting
                     - graphics viewers included
                     - auto-browse mode for redirected source queries
                     - auto-parsing of WAIS catalogs returned by servers
                     - runs on wide range of winsock TCP/IP stacks

  Future plans:

                       --------------------------

  Date completed or updated:    13th December, 1993
  By: Name:                     Brewster Kahle
      Email address:            Brewster@wais.com

  Platform:                     telnet access (vt100)

  Primary Contact:
  Name:                         John Curran
  Email address:                jcurran@nnsc.nsf.net
  Telephone:

  Client software available from:
       /pub/freeware/unix-src/wais-8-b5.1-swais-patches @wais.com
```

Location of more information:
telnet to quake.think.com log in as wais.

Latest version number:

Brief Scope and Characteristics:

General comments:

Future plans:

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: brewster@wais.com

Platform: MacWAIS 1.28

Primary Contact:
Name: John Hardin
Email address: mac-shareware@einet.net
Telephone:

Client software available from:
/pub/freeware/mac@wais.com via anonymous FTP

Location of more information:

Latest version number: 1.28

Brief Scope and Characteristics:

General comments:

Future plans:

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: Brewster@wais.com

Platform: Mac Hypercard

Primary Contact:
Name: Francois Schiettecatte
Email address: francois@wais.com

Telephone:

Client software available from:
/pub/freeware/mac/HyperWais* @wais.com

Location of more information: contact author

Latest version number: 1.9

Brief Scope and Characteristics:
HyperWais is a hypercard implementation of a WAIS client.
Its main characteristic is that it allows the user to remodel
the interface completely to their liking.

General comments:	Requires approximately 1.7Mb to run (including Hypercard). Requires system 7.0 or greater. Requires Hypercard 2.1 Requires Mac TCP
Future plans:	None at present

Date completed or updated:	13th December, 1993
By: Name:	Brewster Kahle
Email address:	Brewster@wais.com
Platform:	VMS

Primary Contact:
Name: Jim Fullton
Email address: Jim.Fullton@cnidr.org
Telephone:

Client software available from:

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General comments:

Future plans:

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: Brewster@wais.com

Platform: DOS

Primary Contact:
Name: Jim Fullton
Email address: Jim.Fullton@cnidr.org
Telephone:

Client software available from: /pub/freeware/dos/pc.wais @wais.com

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General comments:

Future plans:

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: Brewster@wais.com

Platform: DOS
(Clarkson packet driver and Erick Englke's WATT/TCP)

Primary Contact:
Name: Faeiz Hindi
Email address: hindi@eniac.seas.upenn.edu
Telephone:

Client software available from:
/pub/tcpip/pcwais.zip@hilbert.wharton.upenn.edu

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General comments:

Future plans:

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: Brewster@wais.com

Platform: AVS

Primary Contact:
Name: Steve Thorpe
Email address: thorpe@ncsc.org
Telephone:

Client software available from:
avs_modules/data_input/awais/* @avs.ncsc.org

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General comments:

Future plans:

Date completed or updated: 13th December, 1993
By: Name: Brewster Kahle
Email address: Brewster@wais.com

Platform: RS6000

Primary Contact:
Name: Dennis Shiao
Email address: shiao@ans.net
Telephone:

Client software available from:
/pub/freeware/rs6000/wais-8-b3-dist.tar.Z@wais.com

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General comments: client and server

"The details are correct, but I must point out that this version of WAIS is most outdated. I'd suggest replacing it with AIX ports of the wais-8-b5 or freeWAIS packages, if anyone's done those (I haven't) .."
-Dennis.

Future plans:

Demonstration sites:

List of sites which are willing to act as demonstration sites for this application.

Site name:	quake.think.com
Access details:	telnet quake.think.com login as wais.
Site name:	cnidr.org
Access details:	telnet cnidr.org login as demo select #2 (Demos of NIDR software) select #2 (WAIS)

(this is the worst of all possible interfaces since it is just a dumb terminal interface)

Documentation:

o current overview

- "WAIS Server, WAIS Workstation, and WAIS Forwarder for UNIX Technical Description", Release 1.1, December, 1993.

Available via anonymous ftp:
/pub/wais-inc-doc/msWord/Tech-description -1.1.sit.hqx @ftp.wais.com

- "Interfaces for Distributed Systems of Information Servers", Brewster Kahle, Harry Morris, Jonathan Goldman (Thinking Machines Corporation), Thomas Erickson (Apple Computer), John Curran (NSF Network Service Center), March, 1992. (formally named "Interfaces for Wide Area Information Servers")

Available via anonymous ftp:
/pub/wais-inc-doc/txt/Interfaces.txt@ftp.wais.com
or WAIS server wais-discussion-archives.src

o instructions to information providers

See the documentation in the release:
/pub/freeware/unix-src/wais-8-b5.1.tar.z@wais.com
or the wais-docs.src WAIS server.

o user manuals

The Mac interface WAIStation has a user manual. The unix commands have man pages.

o training materials
- tutorials
- canned demos

- Macintosh demostration screen-movie: Steve Cisler of Apple put together a short screen-recorder movie for seeing some of what WAIStation does.
Available via anonymous FTP:
/pub/wais-doc/WAIStation-Canned-Demo.sit.hqx@wais.com
- sample session (screen dumps)
- "WAIStation, A User Interface for WAIS", February 1991, Thinking Machines technical report TMC-203.
User interface documentation with screen shots.

- videos

Available in special circumstances. Contact info@wais.com.

Bibliography:

- "WAIS Bibliography", WAIS Inc, (last update) September 1993.

Available via anonymous ftp:
/pub/wais-inc-doc/txt/WAIS-bibliography.txt @wais.com or WAIS server wais-discussion-archive.src

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Other Information:

Check for current information about freeWAIS on CNIDR's gopher and WWW servers: gopher.cnidr.org and www.cnidr.org

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WHOIS

Date template updated or checked: 17 March, 1994
By: Name: Joan Gargano
    Email address: jcgargano@ucdavis.edu

NIR Tool Name: Whois

Brief Description of Tool:

As currently defined, NICNAME/WHOIS services is a TCP transaction based query/response server, running on a few specific central machines, that provides netwide directory service to internet users. Since the WHOIS service was defined in 1985, it has evolved into a distributed service.

The InterNIC Registration Services is located at Network Solutions, Inc., Herndon, VA, and is funded by a cooperative agreement from the National Science Foundations to provide assistance in registering networks, domains, asn's, and other entities to the Internet community via telephone, electronic mail, and U.S. postal mail.

Databases and information servers of interest to network users are provided, including the WHOIS registry of domains, networks, asn's and their associated poc's. Gopher and Wais interfaces are also available for retrieving information and accessing whois. Online documents maintained at registration services include registration related rfc's, registration templates, and various netinfo files. Many of the online files are available through our automatic mail service, MAILSERV@RS.INTERNIC.NET. Whois queries can also be directed to rs.internic.net. From a host, use the TELNET program to connect to host RS.INTERNIC.NET. When greeted by the Registration host, type "WHOIS" and press RETURN.

MAILSERV@RS.INTERNIC.NET is an automated service provided by InterNIC Registration Services. It allows access to documents and information via ordinary electronic mail. This is especially useful for users who do not have access to the NIC via a direct Internet link, such as users of BITNET, CSNET and UUCP sites.

To use the mail service, send a mail message to MAILSERV@RS.INTERNIC.NET. In the SUBJECT field, request the type of service you wish followed by any needed arguments. The message body is normally ignored. Large files will be broken into smaller separate messages. The information you request will be sent back to you as soon as possible.

WHOIS xxx Returns information about xxx from the WHOIS service. Use "WHOIS HELP" for information on how to use WHOIS.

The MILNET Network Information Center, maintains the central NICNAME database and server, providing online look-up of individuals, network organizations, MILNET nodes, and other information of interest to those involved in management of the Internet. Whois queries can be sent to nic.ddn.mil.

Primary Contact(s): Network Solutions, Inc.

Name: Hostmaster

Email address: hostmaster@rs.internic.net

Postal Address: Network Solutions
AttN: InterNIC Registration Services
505 Huntmar Park Drive
Herndon, VA 22070

Telephone: +1-703-742-4777

Help Line:
(for major center as well as each client)

Name: Hostmaster
Help information available via gopher,
gopher.internic.net

Email address: hostmaster@rs.internic.net

Telephone: +1-703-742-4777

Level of support offered:
- o funded
- o all users

Hours available: 24 hours/day, 7 days per week.

Related Working Groups:

Whois and Network Information Lookup Service (WNILS)

Sponsoring Organisation / Funding source:

National Science Foundations

Mailing Lists:

Address:	ietf-wnils@ucdavis.edu
Administration:	ietf-wnils-request
Description:	This mailing list is used by the IETF Whois and Network Information Lookup Service (WNILS) working group which is defining enhancements to whois.
Archive:	ftp.ucdavis.edu:/archive/wnils-archive

News groups: None.

Protocols:

What is supported:	TCP/whois
What it runs over:	TCP/IP networks
Other NIR tools this interworks with:	
Future plans:	Enhancements through Whois++ Enhancements through Referral Whois.

Servers:

Date completed or updated:	4 March, 1994
By: Name:	Joan Gargano
Platform:	Unix
Primary Contact:	Network Solutions, Inc.

```
 Name:                          Hostmaster
 Email address:                 hostmaster@rs.internic.net
 Telephone:                     +1-703-742-4777
```

Clients:

Clients are available from the source listed for server software. VMS clients are available from TVG/Multinet Most TCP/IP networking packages for personal computers include a whois client.

Demonstration sites:

```
 Site name:                  rs.internic.net
   Access details:           Using a whois client,
                                    whois -h rs.internic.net "name"
                             where "name" is the name of a person.
```

Documentation:

```
 Document Title:       RFC 954
 Location details:
      Site:            nic.ddn.mil:/rfc
      Full file name:  rfc954.txt

 Document Title:       Specifications for WHOIS Services
 Location details:
      Site:            ftp.ucdavis.edu
      Full file name:  /archive/ietf-wnils/Discussion.Paper
```

Bibliography:

RFC 954

Internet Drafts:
draft-ietf-wnils-whois-01.txt
draft-ietf-wnils-whois-02.txt
draft-ietf-wnils-whois-lookup-00.txt
draft-huitema-solo-00.txt

Please check the 1id-abstracts.txt listing contained in the internet-drafts Shadow Directories on nic.ddn.mil, nnsc.nsf.net, nic.nordu.net, ftp.isi.edu, or munnari.oz.au to learn the current status of any Internet Draft.

Other Information:

Evaluation:

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World-Wide Web

Date template updated or checked: 28th January, 1994
By: Name: Tim Berners-Lee
Email address: timbl@info.cern.ch

NIR Tool Name: World-Wide Web

Brief Description of Tool:

The WWW project merges the techniques of networked information and hypertext to make an easy but powerful global information system. W3 uses the concept of a seamless information space (the "web"), in which all objects including those accessed by earlier protocols (wais, gopher, ftp, etc.) exist.

The project allows information sharing within internationally dispersed teams, and the dissemination of information by support groups. Originally aimed at the High Energy Physics community, it has spread to other areas and attracted much interest in user support, resource discovery and collaborative work areas. It is currently the most advanced information system deployed on the Internet.

READER VIEW

The WWW world consists of documents, and links. Indexes are special documents which, rather than being read, may be searched. The result of such a search is another ("virtual") document containing links to the documents found. A simple protocol (" HTTP ") is used to allow a browser program to request a keyword search by a remote information server.

The web contains documents in many formats. Those documents which are hypertext, (real or virtual) contain links to other documents, or places within documents. All documents, whether real, virtual or indexes, look similar to the reader and are contained within the same addressing scheme.

To follow a link, a reader clicks with a mouse (or types in a number if he or she has no mouse). To search and index, a reader gives keywords (or other search criteria). These are the only operations necessary to access the entire world of data.

INFORMATION PROVIDER VIEW

The WWW browsers can access many existing data systems via existing protocols (FTP, NNTP) or via HTTP and a gateway. In this way, the critical mass of data is quickly exceeded, and the increasing use of the system by readers and information suppliers encourage each other.

Providing information is as simple as running the W3 server and pointing it at an existing directory structure. The server automatically generates the hypertext view of your files to guide the user around.

To personalize it, you can write a few SGML hypertext files to give an even more friendly view. Also, any file available by anonymous FTP, or any internet newsgroup can be immediately linked into the web. The very small start-up effort is designed to allow small contributions. At the other end of the scale, large information providers may provide an HTTP server with full text or keyword indexing. This may allow access to a large existing database without changing the way that database is managed. Such gateways have already been made into Oracle(tm), WAIS, and Digital's VMS/Help systems, to name but a few.

The WWW model gets over the frustrating incompatibilities of data format between suppliers and reader by allowing negotiation of format between a smart browser and a smart server. This should provide a basis for extension into multimedia, and allow those who share application standards to make full use of them across the web.

This summary does not describe the many exciting possibilities opened up by the WWW project, such as efficient document caching. The reduction of redundant out-of-date copies, and the use of knowledge daemons. There is more information in the online project documentation, including some background on hypertext and many technical notes.

GETTING STARTED

You can bootstrap yourself into the web by telnetting to info.cern.ch (no user or password). You can try a full screen interface "Lynx" by telnetting to ukanaix.cc.ukans.edu, login in as "www". You can also find out more about WWW in this way. These are the least sophisticated browsers -- remember that the window-oriented ones are much smarter! It is much more efficient to install a browser on your own machine, and you have many more facilities.

If you have an X-windows based workstation, PC or Mac just FTP to FTP.NCSA.UIUC.EDU and get the binary of NCSA's "Mosaic" browser in directory /Web/Mosaic-binaries. Download it, uncompress it, set it executable, and run it. It will tell you all you need to know.

Mosaic is now available for PCs and Apple Macs.

If you have an MSDOS machine with Windows, you could try the "Cello" browser from FATTY.LAW.CORNELL.EDU in directory /pub/LII/Cello.

The line mode browser is currently available in source form by anonymous FTP from node info.cern.ch [currently 128.141.201.74] if you take both files

/pub/www/src/WWWLibrary_v.vv.tar.Z.
/pub/www/src/WWWLineMode_v.vv.tar.Z.

(v.vv is the version number - take the latest.)

Also available is a hypertext editor for the NeXT (in /pub/www/bin/next), the MidasWWW and ViolaWWW browsers for X11, an alpha-test Mac browser, and and a basic server (/pub/www/src/WWWDaemon_v.vv.tar.Z). Documentation, including the latest list of software available , is readable using www. A plain text version of the installation instructions is included in the tar file!

Printable (postscript) documentation and articles are in /pub/www/doc on info.cern.ch.

Primary Contact(s):

Name: Tim Berners-Lee
Email address: timbl@info.cern.ch
Postal Address: CERN, 1211 Geneva 23, Switzerland
Telephone: +41-22-767-3755
Fax: +41-22-767-7155

Name: Robert Cailliau
Email address: cailliau@cernnext.cern.ch
Postal Address: CERN, 1211 Geneva 23, Switzerland
Telephone: +41-22-767-5005
Fax: +41-22-767-7155

Help Line:
(for www technical or political issues, to report bugs, to register new servers, or new software)

Name:	www support
Email address:	www-request@info.cern.ch
Telephone:	none.
Telnet:	info.cern.ch for information.

Level of support offered:

o funded	for High-Energy Physics users
o volunteer	for others who have read the online information already.

While CERN collaborates with all NIR and W3 development anywhere, CERN cannot provide user support for non-HEP end users.

Related Working Groups: NIR, URI, IIIR

Sponsoring Organisations / Funding source: NO FUNDING SOURCE

Bodies providing development effort include
HEP labs (CERN, CH; SLAC, CA, USA; FNAL, IL, USA; NIKHEF, NL; etc.),
National Center for SuperComputer Applications (NCSA, IL, USA),
O'Reilly Associates, (ORA, CA, USA),
Clearinghouse for Networked Information Discovery and Retrieval (CNIDR, NC, USA),
BSD Inc (BSD, CA, USA) and many others too numerous to mention.

Other sources welcomed!

Newsgroup:

Name:	comp.infosystems.www
Description:	General technical discussion, announcements of new software, etc.

Please mail new server announcements to
www-request@info.cern.ch.

Mailing Lists:

1. Address: www-talk@info.cern.ch for CONTRIBUTIONS ONLY

   Administration: listserv@info.cern.ch (robot)
   www-talk-request@info.cern.ch (human)

   Description: Technical discussion, W3 related.
   Experts to experts. General questions to
   comp.infosystems.www, please.

   Archive: Not currently served, but kept.

   ---

2. Address: www-announce@info.cern.ch
   NOT FOR GENERAL USE - serious low-volume
   announcements only

   Administration: listserv@info.cern.ch (robot)
   www-announce-request@info.cern.ch (human)

   Description: Low volume summary announcemements
   of product releases, etc.

   Archive: Not currently public

Protocols:

What is supported: HTTP
FTP
anonymous FTP
Gopher
NNTP
WAIS (compile time option)
Local mounted file access
Telnet sessions
Rlogin sessions

What it runs over: TCP/IP
DECnet option.

Other NIR servers W3 clients interworks with:
Techinfo, Hyper-G and X.500 via gateways.
Built-in capability in clients for others above
Archie access via WWW "WARCHIE" archie server
with direct hypertext pointers to FTP sites.

Resource indexing: Many browsable and searchable indexes of available information, by subject (virtual libraries), and by position (geographical list of servers). Many of these point to any form of data, HTTP or other server. A list of such indexes is at
http://info.cern.ch/hypertext/DataSources/bySubject/Virtual_libraries/Overview.html

Future plans: Collaborative work features,
Hypertext editors for information organisation

HTTP Servers: CERN httpd

Platform: unix, VMS, VM/XA, VM/CMS

Primary Contact: www-request@info.cern.ch

Server software available from:
ftp://info.cern.ch/pub/www/src

Location of more information:

http://info.cern.ch/hypertext/WWW/Daemon/User/Guide.html

Latest version number: 2.14

Brief Scope and Characteristics:

* Fast stateless file server runs over TCP/IP.
* Suitable for rapid documentation navigation.
* Multimedia server allows multiple file formats to be used.
* File format selected for transmission based on client capabilities.
* Add special functions using scripts. Standard CGI interface.
* Logging

Approximate number of such servers in use: 600

General comments:

Some servers serve many databases.

Many tools available for serving different sorts of information

- Gnu info
- teX
- SGML
- man pages

etc., as hypertext.

Other servers:
For more information use WWW to access
http://info.cern.ch/hypertext/WWW/Daemon/Overview.html

Servers include:

NCSA server	Similar feature set to CERN's httpd, support from NCSA.
Plexus	Written in Perl -- many features. Unix.
MacHTTPD	Server for the Macintosh
REXX for VM	A server consisting of a small C program which passes control to a server written in REXX.

Mail Server:

Platform: unix

Primary Contact: www-request@info.cern.ch

Server software available from:

ftp://info.cern.ch/pub/www/src/WWWMailRobot_*.tar.Z

Location of more information:
http://info.cern.ch/hypertext/WWW/MailRobot/Overview.html

Latest version number: 1.0

Brief Scope and Characteristics:

Mailing list subscription/unsubscription handling (crude)
Return of documents given URL

Restricts length of data returned.
Allows access to ANY document by URL unless restrictions
are imposed (FTP, news, etc., included). Quite generic.

When hypertext messages are retrieved, the links are
numbered like [1] and a list of URLs of referenced documents
is appended to the document.

Send message containing HELP to listserv@info.cern.ch for
details.

Approximate number of such servers in use: 1 (-3?)

General comments

Extends potential readership of W3 information to anyone
with email, so an important step for universal readership.

NOTE: A full list of client software is kept in
http://info.cern.ch/hypertext/WWW/Clients.html
and is not repeated here, as the list is constantly
changing. Around 20 different clients. Telnet to info.cern.ch
to see the list. Only the Line Mode Browser, lynx and
Mosaic are covered here.

Client:	Line Mode Browser
Date completed or updated:	28th January, 1994
By: Name:	Tim Berners-Lee
Email address:	timbl@info.cern.ch
Platform:	Anything. Even a hard copy terminal. Written in portable C.
Primary Contact:	
Name:	Tim Berners-Lee
Email address:	timbl@info.cern.ch

Client software available from:
ftp://info.cern.ch/pub/www/src

Location of more information:
http://info.cern.ch./hypertext/WWW/LineMode/Browser.html
and linked documents

Latest version number: 2.14

Brief Scope and Characteristics:

The LineMode Browser is suitable for use on dumb terminals, requiring no control sequences except for carriage return and line feed. It is also of course useable from terminal emulators in workstation windows. It can also be used as a text formatter, as part of a mail server, and as a general information retrieval tool.

History list, Back/Next/Previous/Home navigation, ability to print or save documents (or pipe to shell commands on unix).

General comments:

Very stable product which has many uses apart from interactive use.
Generates C .h files from hypertext marked files, etc.
Source release requires W3 library product.
Public Domain.

Future plans:

Future enhancements to include tracing of many links.

Demonstration sites:

telnet info.cern.ch or telnet 128.141.201.74 (SWITZERLAND)
telnet vms.huji.ac.il or telnet 128.139.4.3 (www) (ISRAEL)

Client:	Lynx
Date completed or updated:	11 February 1994
By: Name:	Lou Montulli
Email address:	montulli@ukanaix.cc.ukans.edu
Platform:	Unix + VMS
Primary Contact(s):	
Name:	Lou Montulli, Michael Grobe

Email address:	montulli@ukanaix.cc.ukans.edu, grobe@ukanaix.cc.ukans.edu
Postal Address:	Computer Center, University of Kansas, Lawrence KS, 66045
Telephone:	+1-913-864-0436 (Lou) +1-913-864-0452 (Michael)
Fax:	+1-913-864-0485

Client software available from:
ftp2.cc.ukans.edu in directory /pub/lynx.

Location of more information: ftp2.cc.ukans.edu

Latest version number: 2.2

Brief Scope and Characteristics:

Lynx clients provide a user-friendly hypertext interface to all of the major internet protocols for character cell (vt100) terminal users on UNIX and VMS platforms. Lynx natively understands Gopher, HTTP, WAIS, FTP, NNTP (USENET NEWS) and CSO protocols and can transparently retrieve information using any of them. Lynx can also launch telnet and tn3270 sessions and has support to run executable programs on the local machine so that it can be used as a menuing system. Lynx is a part of the World Wide Web (WWW) project and has all of the features of a WWW client including HTML support and HTML+ forms support. Additional resource types such as Archie Techinfo, X.500, and Hytelnet may be also accessed through HTTP and Gopher gateway functions.

Future plans:

Development of a DOS (non windows) version.

Help Line:

Name:	Lou Montulli
Email address:	montulli@ukanaix.cc.ukans.edu
Telephone:	+1-913-864-0436
Level of support offered:	volunteer
Hours available:	11-5pm M-F CST

Demonstration sites:

Site name:	ukanaix.cc.ukans.edu
Access details:	telnet ukanaix.cc.ukanse.du login as "www"

Documentation:

- current overview
  http://www.cc.ukans.edu/about_lynx/about_lynx/about_lynx.html
- user manuals
  http://www.cc.ukans.edu/lynx_help/lynx_help_main.html
- miscellaneous documents
  tar file of all documentation:
  ftp://ftp2.cc.ukans.edu/pub/lynx/lynx_help_files.tar.Z

Sponsoring Organisation / Funding source:

Academic Computing Services
University of Kansas

Mailing Lists:

Address:	lynx-dev@ukanaix.cc.ukans.edu
Administration:	listserv@ukanaix.cc.ukans.edu

Client:	NCSA MOSAIC for X
Date completed or updated:	16th December, 1993
By: Name:	Marc Andreessen
Email address:	marca@ncsa.uiuc.edu
Platform:	X Window System (Unix) -- Sun, DEC, IBM, SGI, HP, others.
Primary Contact:	
Name:	Marc Andreessen
Email address:	marca@ncsa.uiuc.edu
Postal Address:	National Center for Supercomputing Applications 605 E. Springfield Champaign, IL 61820
Telephone:	+1-217-244-0765

Client software available from:
ftp.ncsa.uiuc.edu in /Web/Mosaic.

Location of more information:
ftp.ncsa.uiuc.edu in /Web/mosaic, and online, within Mosaic.
http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/help-about.html

- Frequently Asked Questions
  http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/mosaic-faq.html
- user manuals
  http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/mosaic-docs.html

Latest version number: 1.1

Brief Scope and Characteristics:

NCSA Mosaic for the X Window System is a client interface to a wide variety of networked information systems, including World Wide Web, Gopher, WAIS, FTP, Usenet News, Archie, Techinfo, X.500, Hytelnet, Telnet, NCSA Data Management Facility, CSO ph/qi and others. It offers a Motif-based point-and-click X interface with support for plaintext, formatted text, and embedded images; hyperlinks can also refer to images, video sequences, audio clips, PostScript files, etc.

Mosaic also offers substantial interaction and collaboration facilities, including global history tracking, text and voice annotations, group/community-wide annotations, and more.

General comments:

Sponsoring Organisation:
National Center for Supercomputing Applications

Future plans:

Enhancement of the NCSA Mosaic environment to support advanced networked information systems and collaboration capabilities; development of clients on other architectures; research and development into intelligent agent-style user assistance mechanisms and novel navigation and representation strategies for dense, dynamic distributed information spaces. (This is all dependent upon funding, of course.) Beta-test versions of Mac and Microsoft Windows 3.1 were released in the fall of 1993.

Demonstration sites:

See individual sections on clients.

Documentation:

All the W3 documentation available is in the web. Some is also dumped off into postscript. Here are the URLs of entry points into the web for the subjects requested:

** To retrieve any document by URL, use WWW (www <url> for example) or
** send mail containing the command "send " followed by the URL to
** listserv@info.cern.ch

- o current overview

  http://info.cern.ch./hypertext/WWW/TheProject.html

  see also

  http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/help-about.html

- o executive summary

  http://info.cern.ch./hypertext/WWW/Summary.html

- o instructions to information providers

  http://info.cern.ch./hypertext/WWW/Provider/Overview.html

- o Frequently Asked Questions

  http://info.cern.ch./hypertext/WWW/FAQ/List.html

- o user manuals
  See under individual products.

  ftp://info.cern.ch/pub/www/doc/*.txt

- o training materials

  Illustrated talk on WWW including transparencies: see
  ftp://info.cern.ch/hypertext/WWW/Talks/General/html

  see also

  http://www.ncsa.uiuc.edu/demoweb/demo.html

[General WWW bibliography]

Bibliography:

- o For latest list, see: http://info.cern.ch./hypertext/WWW/Bibliography.html

Bibliography for the World Wide Web

WORLD-WIDE WEB BIBLIOGRAPHY

This lists papers and articles about the W3 initiative and related matters which you may want to pick up for background reading or quote as references. You can of course also quote any page you read with W3 by its document address. The FTP server info.cern.ch has some of these in /pub/www/doc.

Other Information:

All WWW working notes and specs are on the web. If it is not there somewhere, it may not be anywhere.

Seek and ye shall find. And if ye don't, mail someone to fix it.

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X.500 White Pages

Date completed or updated: 10 March, 1994
By: Name: Chris Weider
Email address: clw@bunyip.com

NIR Tool Name: X.500

Brief Description of Tool:

X.500 is an international standard designed to provide a distributed global directory service. It is primarily used today to provide 'White Pages' services, although other types of services which have directory components (automated mail aliasing, for example) are beginning to be run over X.500. In addition to information about people and organizations, the Directory also contains a pilot K-12 Directory, pilot Information Resource information, and some other non-White Pages information. X.500 contains a number of security features, which are implemented on different paradigms in the various servers.

User's View:

Users (either human or electronic) run a client program to connect to a local X.500 server. Since X.500 is distributed, it appears that the entire global X.500 directory is available from the local server. From this server connection, the user can add, delete, or modify information held by the Directory, or issue powerful search commands to locate individuals or other information.

The first solid version of the X.500 protocol was released in 1988, and has been the subject of much research in the past 5 years. Consequently, there are a large number of clients, for almost every platform, and a healthy number of servers. There are mail interfaces to some parts of the X.500 directory, and there is a X.500 to Gopher gateway. An X.500 interface to archie is currently under development, as well as an X.500 to WWW interface.

Information Provider's View:

X.500 provides a set of mechanisms to allow distributed location of, maintenance of, and access to a large set of data. However, current servers force a hierarchical view on the location of the data, so it may not be suitable for all applications. Also, the X.500 directory is today unable to provide access to information at a rate which would allow 'real-time' applications (such as

keeping routing information in the directory).

Also, there is a great effort underway to reduce the startup costs of X.500 access by providing a lightweight X.500 access protocol for client-server applications. This work is detailed in RFC 1487:

"Lightweight Directory Access Protocol", by Yeong, Howes, and Kille. This protocol is expected to make the cost of entry for a service provider much less that it has been.

Information Types Supported:

X.500 allows information to be served in an attribute:value paradigm, with related attributes grouped into 'objects'. Each entry in the directory can be described by multiple objects. Attributes can have values which are text strings, dereferenceable file names, or text-encoded photographs, and experimentation is underway to keep digitally encoded sounds in the directory.

Primary Contact(s):

Name: The PARADISE Project

Email address: helpdesk@paradise.ulcc.ac.uk

Name: The White Pages Pilot Project

Email address: wpp-manager@psi.com

Help Line:

X.500 encompasses a great number of clients and as a distributed system does not have a central help line. Please see the Documentation section for pointers to servers, clients, and associated help lines.

Related Working Groups:

IETF's OSI-DS (OSI Directory Services)
IETF's IDS (Integrated Directory Services)

OSI Implementor's Workshop's DS-SIG (Directory Services-SIG)
RARE's WG-NAP (Network Application Support)

Sponsoring Organisation / Funding source:

Not Applicable

Mailing Lists:

Address:	osi-ds@cs.ucl.ac.uk
Administration:	osi-ds-request@cs.ucl.ac.uk
Description:	Mail list for OSI-DS working group.

Address:	ietf-ids@umich.edu
Administration:	ietf-ids@umich.edu
Description:	Mail list for IDS working group.
Archive:	Anonymous FTP, merit.edu in directory /pub/ietf-ids-archive.

Address:	dssig@ics.uci.edu
Administration:	dssig-request@ics.uci.edu
Description:	Mail list for OIW DS-SIG group

Address:	wg-nap@rare.nl
Administration:	mailserver@rare.nl
Description:	Mail list for RARE working group WG-NAP
Archive:	Anonymous FTP, ftp.rare.nl, directory /rare/working-groups/wg-nap/mail/current

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Protocols:

What is supported: X.500

What it runs over: Applications run on full ISO stack down to transport over TCP/IP + RFC1006, CONS, CLNS, or X.25(80)

Other NIR tools this interworks with: Gateways to Gopher and WWW.

Servers:

A full list of servers and clients is available in FYI 11, RFC 1292, "A guide to available X.500 Implementations". See the Documentation section for the location of this document. However, the most widely deployed server is listed here for convenience.

QUIPU

Date completed or updated:	21 October, 1993
By: Name:	Chris Weider
E-Mail:	clw@bunyip.com
Platform:	BSD 4.2, 4.3; AT&T System V; SunOS; AIX

Primary Contact:

Name:	Steve Kille
E-Mail:	S.Kille@isode.com
Telephone:	+44-81-332-9091
Fax:	+44-81-332-9019

Location of more information:
RFC 1292

Latest Version Number:	8.0 (public domain) IC R1 (ISODE consortium version)

Approximate number of such servers in use: 400

Demonstration sites:

Site name: paradise.ulcc.ac.uk

Access details: telnet to paradise.ulcc.ac.uk
login as dua

Documentation:

Document Title: FYI 11, RFC 1292, "Catalog of Available X.500 Implementations", R. Lang, R. Wright.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1292.txt

An update of this document is in preparation:
Document Title: "A Revised Catalog of Available X.500 Implementations", A. Getchell, S. Sataluri.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: draft-ietf-ids-catalog-00.txt

Document Title: FYI 13, RFC 1308, "Executive Introduction to directory services using the X.500 protocol", C. Weider, J. K. Reynolds
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1308.txt

Document Title: FYI 14, RFC 1309, "Technical Overview of Directory Services using the X.500 protocol", C. Weider, J. K. Reynolds, S. Heker.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1309.txt

Document Title: RFC 1430, "A Strategic Plan for Deploying an Internet X.500 Directory Service",
S. Kille, E. Huizer, V. Cerf, R. Hobby, S. Kent.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1430.txt

Document Title: FYI 21, RFC 1491, "A Survey of Advanced Usages of X.500", C. Weider, R. Wright.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1491.txt

Document Title: RFC 1487, "Lightweight Directory Access Protocol", W. Yeong, T. Howes, and S. Hardcastle-Kille

Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1487.txt

Document Title: RFC 1588, "WHITE PAGES MEETING REPORT",
J. Postel, C. Anderson
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1588.txt

These documents contain pointers to the rest of the literature.

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7. NIR Groups

This section contains information about the various groups working in the area of networked information retrieval. The groups are listed alphabetically within their overall groupings (CNI, IETF, RARE, etc.). See Section 3.

==========

CNI Groups

Date template updated or checked: 1st March, 1994
By: Name: Craig A. Summerhill
Email address: craig@cni.org

NIR Group Name: Coalition for Networked Information (CNI)

Sponsoring Organisation: Association of Research Libraries (ARL), CAUSE, and EDUCOM

Working subgroups:

Name of subgroup: Modernization of Scholarly Publishing
Transformation of Scholarly Communication
Directories and Information Resource Services
Architecture and Standards
Legislation, Codes, Policies and Practices
Access to Public Information
Teaching and Learning
Management and Professional and User Education

Mailinglist-Address: cni-announce@cni.org

Description of main group:

The Coalition for Networked Information was founded in March 1990 to help realize the promise of high performance networks and computers for the advancement of scholarship and the enrichment of intellectual productivity. The Coalition is a partnership of the Association of Research Libraries (ARL), CAUSE, and EDUCOM. ARL is dedicated to equitable access to, and effective use of, recorded knowlege in support of teaching, research, scholarship, and community service, and CAUSE and EDUCOM are dedicated to different aspects of the introduction, use, and management of information technology and related resources in research and education in general and higher education in particular. The Coalition pursues its mission with the

assistance of a task force that provides a common vehicle by which more than 190 institutions and organizations are exploring a shared vision of how information management must change in the 1990s to meet the social and economic opportunities and challenges of the 21st century. Members of the Coalition Task Force include, among others, higher education institutions, publishers, network service providers, computer hardware, software, and systems companies, library networks and organizations, and public and state libraries. A truly diverse collaboration of institutions and organizations.

Primary Contact(s):

Name: Paul Evan Peters

Email address: paul@cni.org

Postal Address: Coalition for Networked Information
21 Dupont Circle, N.W.
Washington, D.C. 20036
USA

Telephone: +1-202-296-5098

Fax: +1-202-872-0884

Name: Joan K. Lippincott

Email address: joan@cni.org

Postal Address: Coalition for Networked Information
21 Dupont Circle, N.W.
Washington, D.C. 20036
USA

Telephone: +1-202-296-5098

Fax: +1-202-872-0884

Name: Craig A. Summerhill

Email address: craig@cni.org

Postal Address: Coalition for Networked Information
21 Dupont Circle, N.W.
Washington, D.C. 20036
USA

Telephone: +1-202-296-5098

Fax: +1-202-872-0884

Mailing Lists:

Address: cni-announce@cni.org

Administration: listproc@cni.org
subscribe cni-announce <lastname> <firstname>

Description: CNI News and Announcements

Address: cni-architecture@cni.org

Administration: listproc@cni.org
subscribe cni-architecture <lastname> <firstname>

Description: CNI Architecture and Standards Working Group Forum

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Address: cni-bigideas@cni.org

Administration: listproc@cni.org
subscribe cni-bigideas <lastname> <firstname>

Description: CNI Big Ideas Project Forum

Address: cni-copyright@cni.org

Administration: listproc@cni.org
subscribe cni-copyright <lastname> <firstname>

Description: Copyright and Intellectual Property Forum

Address: cni-directories@cni.org

Administration: listproc@cni.org
subscribe cni-directories <lastname> <firstname>

Description: CNI Directories and Information Resource Services
Working Group Forum

Address: cni-legislation@cni.org

Administration: listproc@cni.org
subscribe cni-legislation <lastname> <firstname>

Description: CNI Legislation, Codes, Policies, and Practices
Working Group Forum

Address: cni-management@cni.org

Administration: listproc@cni.org
subscribe cni-management <lastname> <firstname>

Description: CNI Management & Professional & User Education
Working Group Forum

Address: cni-modernization@cni.org

Administration: listproc@cni.org
subscribe cni-modernization <lastname> <firstname>

Description: CNI Modernization of Scholarly Publication
Working Group Forum

Address: cni-pubinfo@cni.org

Administration: listproc@cni.org
subscribe cni-pubinfo <lastname> <firstname>

Description: CNI Access to Public Information Working Group
Forum

Address: cni-teaching@cni.org

Administration: listproc@cni.org
subscribe cni-teaching <lastname> <firstname>

Description: CNI Teaching and Learning Working Group Forum

Address: cni-transformation@cni.org

Administration: listproc@cni.org
subscribe cni-transformation <lastname> <firstname>

Description: CNI Transformation of Scholarly Communication Working Group Forum

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News groups: None

Document Archive:

URL:ftp://ftp.cni.org/CNI/*

Official Publications:

None. The Coalition relies on the publication programs of its parent organizations (ARL, CAUSE, and EDUCOM) to disseminate printed information on the Coalition's projects and programs. Information on the Coalition's program is also disseminated via electronic mailing lists on the network.

Bibliography: None

Other Information:

URL:gopher://gopher.cni.org 70/CNI Working Group Forums/*

BRS/SEARCH full-text information retrieval system:	telnet a.cni.org login: brsuser

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Date template updated or checked: 1st March, 1994
By: Name: Craig A. Summerhill
Email address: craig@cni.org

NIR Group Name: Architecture and Standards Working Group

Sponsoring Organisation: Coalition for Networked Information (CNI)

Working subgroups
Name of subgroup: Z39.50 Interoperability Testbed
Mailinglist-Address:

Description of main group:

Program priorities are 1) to facilitate a consistent and complete mechanism for linking bibliographic, abstracting, and indexing files to files of their associated source materials; 2) a single standard for the transmission of bitmapped image files; 3) protocols for handling networked requests for delivery of source materials; 4) mechanisms for interorganizational authentication, accounting, and billing; and 5) to integrate lessons drawn from the experience of pilot projects that exercise networked printing utilities and 6) to provide an "interoperability workshop" to specify, implement, and test advanced functions of Z39.50 to accelerate the pace and to ensure the quality of standardization efforts in this area.

Primary Contact(s):

Name: Clifford Lynch

Email address: calur@uccmvsa.bitnet

Postal Address: Office of the President
University of California
300 Lakeside Dr., 8th Floor
Oakland, CA 94612-3350
USA

Telephone: +1-415-987-0522

Fax: +1-415-839-3573

Mailing Lists:

Address: cni-architecture@cni.org

Administration: listproc@cni.org
SUB cni-architecture Lastname Firstname

Archive:

URL:ftp://ftp.cni.org/CNI/forums/cni-architecture/*
URL:gopher//gopher.cni.org 70/CNI Working Group Forums/
cni-architecture/*

News groups: None

Document Archive: None

Official Publications: None

Bibliography: None

Other Information: None

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Date template updated or checked: 1st March, 1994
By: Name: Craig A. Summerhill
Email address: craig@cni.org

NIR Group Name: Directories and Information Resource Services Working Group

Sponsoring Organisation: Coalition for Networked Information (CNI)

Working subgroups:
Name of subgroup: TopNode Management Team

Mailinglist-Address: cni-directories@cni.org

Description of main group:

This group recognizes the need for open systems, standards, and therefore, interoperable products and services based upon a distributed architecture of servers that draw upon a common or at least comparable set of data elements. It is creating a (printed and networked) directory of directories and resource information services that provide qualitative (consumer) as well as descriptive information. The group supports the Library of Congress effort to enhance the MARC formats to account for the cataloging requirements of networked resources and services, and the National Science Foundation effort to procure a new NSFNet Network Information Center.

Primary Contact(s):

Name: George Brett

Email address: George.Brett@cnidr.org

Postal Address:

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Center for Communications at MCNC
PO Box 12889, 3021 Cornwallis Road
Research Triangle Park, NC 27709-2889
USA

Telephone: +1-919-248-1499

Fax: +1-919-248-1101

Name:	Peggy Seiden
Email address:	pseiden@skidmore.edu
Postal Address:	Scribner Library Skidmore College North Broadway Saratoga Springs, NY 12866
Telephone:	+1-518-584-5000 ext. 2126
Fax:	

Mailing Lists:

Address:	cni-directories@cni.org
Administration:	listproc@cni.org SUB cni-directories Lastname Firstname
Archive:	

URL:ftp://ftp.cni.org/CNI/forums/cni-directories/*
URL:gopher//gopher.cni.org 70/Coalition Working Groups /
    WG E-mail Forums/CNI-directories/*

News groups: None

Document Archive:

Location details

Site:	ftp.cni.org
Directory:	/CNI/forums/cni-directories/*

Official Publications: None

Bibliography: None

Other Information: None

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Date template updated or checked: 1st March, 1994
By: Name: Craig A. Summerhill
Email address: craig@cni.org

NIR Group Name: TopNode for Networked Information Resources, Services, and Tools

Sponsoring Organisation: Coalition for Networked Information (CNI) Directories and Information Resource Services Working Group

Working subgroups:
Name of subgroup:
Mailinglist-Address:

Description of main group:

(from ARL Newsletter #164 -- September 9, 1992)

The Coalition's TopNode Project is creating a directory of directories, catalogs and aids of networked information resources, services and tools. The project is intended to facilitate the network navigational duties, responsibilities and tasks of staff in libraries, computer centers, networking offices and other similar operations. The primary product of the TopNode project will be a set of records describing these networked information resources, records that can be loaded into a wide range of database management systems.

Based on their response to a Call for Statements of Interest and Experience, Indiana University and Merit Network, Inc. were chosen to lead the development effort on the Coalition TopNode project. Pete Percival, Manager, Academic Information Environment at Indiana University and Craig Summerhill, Coalition Systems Coordinator, have completed the design for the database structure which is being built on the Coalition's Internet fileserver using BRS/SEARCH. Based on earlier work of the leaders of the Directories and Resource Information Services Working Group, George Brett II of the University of North Carolina General Administration and Peggy Seiden of Skidmore College Library, Percival and Summerhill have developed a data structure that they believe to be both flexible and responsive to the needs of the many interested parties who have been consulted.

Under the direction of Gary Charbonneau of the Indiana University Libraries, records are being created and prepared for loading. A

thesaurus of added descriptor terms is being maintained. As of mid-August 1992, close to 200 records had been verified and had received descriptive cataloging.

When the database is complete, libraries will be alerted and encouraged to mount the TopNode records into their online catalogs. Records will be available from the Coalition. In addition, MERIT will use the TopNode database in an experiment to test the viability of the X.500 directory format standard for providing yellow pages-type services (e.g., with subject access). After its initial release, the database will be maintained by Indiana University libraries on the Coalition server; BRS has assisted in the development of procedures for online data entry.

Primary Contact(s):

Name: Pete Percival

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Postal Address: Indiana State University

Telephone: +1-812-855-9146

Fax: +1-812-855-0299

Name: Craig Summerhill

Email address: craig@cni.org

Postal Address: Coalition for Networked Information
21 Dupont Cricle, N.W.
Washington, D.C. 20036
USA

Telephone: +1-202-296-5098

Fax: +1-202-872-0884

Name: Gary Charbonneau

Email address: charbonn@indiana.edu

Postal Address: Indiana University

Telephone:

Fax:

Mailing Lists: None

News groups: None

Document Archive:

Location details
Site: ftp.cni.org
Directory: /CNI/projects/topnode/*

Official Publications:

Status Report - TopNode Directory of Directories. Pete Percival.
Presented at Coalition's 1992 Fall Task Force meeting, Landsdowne VA

site: gopher.cni.org/ Coalition FTP archives / Coalition Projects /
TopNode / *

Bibliography: None

Other Information:

The Coalition has an alpha implementation of Topnode setup using the BRS/SEARCH full text information retrieval software. This database was created during the data element definition portion of the project, so the data may not be of production-level service quality.

URL:telnet://brsuser

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CNIDR

Date template updated or checked: 1st March, 1994
By: Name: Jane Smith
Email address: Jane.Smith@cnidr.org

NIR Group Name: Clearinghouse for Networked Information Discovery and Retrieval

Sponsoring Organisation: National Science Foundation, Center for Communications at MCNC

Working subgroups:
Name of subgroup:
Mailinglist-Address:

Description of main group:

Several user-friendly client-server software tools have been developed recently for locating and retrieving information published on computer platforms reachable over wide-area data communications networks like the Internet. Among them, freeWAIS (freely available wide-area information system), the Internet Gopher, archie, and the WorldWide Web (WWW) have become popular. freeWAIS, archie, and Gopher indicate where information of interest is likely to reside and then assist the user in locating specific information. WWW permits a user to thread a path through the network by selecting tagged hypertext items.

While focused on the evolution of wide-area information retrieval systems, the Clearinghouse for Networked Information Discovery and Retrieval (CNIDR) works closely with developers of other tools toward providing compatibility, consistency, and, to the extent possible, convergence of the tools.

Specific activities are to provide a central focus and forum for networked information discovery and retrieval (NIDR) tools and to minimize the divergence of individual implementations by providing a repository for the collection, evaluation, and distribution of protocol-compliant releases and enhanced versions.

CNIDR participates in standards and policy associations such as the Internet Engineering Task Force and the Coalition for Networked Information, with the goal of increasing consensus among developers and exploring appropriate uses of networked

information. CNIDR also actively promotes the use of networked information discovery and retrieval tools at many national and international conferences to inform and educate implementors and end users.

Primary Contact(s):

Name: George Brett

Email address: George.Brett@cnidr.org

Postal Address:

Clearinghouse for Networked Information Discovery and Retrieval (CNIDR)
Center for Communications at MCNC
PO Box 12889, 3021 Cornwallis Road
Research Triangle Park, NC 27709-2889 USA

Telephone: +1-919-248-1886

Fax: +1-919-248-1101

Name: Jane Smith

Email address: Jane.Smith@cnidr.org

Postal Address:

Clearinghouse for Networked Information Discovery and Retrieval (CNIDR)
Center for Communications at MCNC
PO Box 12889, 3021 Cornwallis Road
Research Triangle Park, NC 27709-2889 USA

Telephone: +1-919-248-9213

Fax: +1-919-248-1101

Name: Jim Fullton

Email address: Jim.Fullton@cnidr.org

Postal Address:

Clearinghouse for Networked Information Discovery and Retrieval (CNIDR)
Center for Communications at MCNC
PO Box 12889, 3021 Cornwallis Road
Research Triangle Park, NC 27709-2889 USA

Telephone: +1-919-248-9247

Fax: +1-919-248-1101

Mailing Lists:

Address: info@cnidr.org

Administration: none.

Description: e-mail sent to this address will receive an automated response containing more information about current CNIDR activities.

Archive: none

Mailing Lists: zip@cnidr.org

Address: zip@cnidr.org

Administration: zip-request@cnidr.org
sub zip Lastname Firstname

Description: Technical discussion of Z39.50-92 application development. Subscribers receive brief overview of project and information on how to access archives.

Archive:

ftp://ftp.cnidr.org/NIDR.tools/zip
gopher://gopher.cnidr.org/NIDR Tools/Discussion/Online Discussion

---

News groups: None

Document Archive:	ftp.cnidr.org
Official Publications:	None
Bibliography:	None
Other Information:	info@cnidr.org

IETF Groups

The Internet Engineering Task Force (IETF) is the protocol engineering, development and standardisation arm of the Internet. It has grown to be a large open international community of network designers, operators, vendors and researchers concerned with the evolution of the Internet protocol architecture and the smooth operation of the Internet.

IETF Information including RFCs and Internet Drafts is available by anonymous FTP from several sites.

East Coast (US) Address: ds.internic.net

West Coast (US) Address: ftp.isi.edu

Europe Address: nic.nordu.net

Pacific Rim Address: munnari.oz.au

(The Internet-Drafts on this machine are stored in Unix compressed form (.Z).)

In addition the information is available via gopher from cnri.reston.va.us under the menu item "Internet Society".

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IDS

Date template updated or checked: 21 October, 1993
By: Name: Chris Weider
Email address: clw@bunyip.com

NIR Group Name: Integrated Directory Services (IDS)

Sponsoring Organisation: Internet Engineering Task Force (IETF)

Working subgroups: NONE

Description of main group:

The Integrated Directory Services Working Group (IDS) is chartered to facilitate the integration and interoperability of current and future directory services into a unified directory service. This work will unite directory services based on a heterogeneous set of directory services protocols (X.500, WHOIS++, etc.). In addition to specifying technical requirements for the integration, the IDS group will also contribute to the administrative and maintenance issues of directory service offerings by publishing guidelines on directory data integrity, maintenance, security, and privacy and legal issues for users and administrators of directories.

Membership is open, and is not limited to IETF attendees. A full charter for this group is available for anonymous FTP from ds.internic.net as ids-charter.txt in directory ietf/ids.

Primary Contact(s):

Name:	Chris Weider, Chair
Email address:	clw@bunyip.com
Postal Address:	2001 South Huron Parkway 12 Ann Arbor Michigan 48104, USA
Telephone:	+1-313-971-2223
Fax:	+1-313-971-2223

Mailing Lists:

Address:	ietf-ids@umich.edu
Administration:	ietf-ids-request@umich.edu
Archive:	Anonymous FTP to merit.edu, directory /pub/ietf-ids/archive.

Document Archive:

Location details:
Site: ds.internic.net or any Internet Draft Server (see sub-section entitled IETF groups)
Directory: internet-drafts. All IDS document file names start with either draft-ietf-disi or draft-ietf-ids.

Official Publications: None.

Bibliography:

Document Title: FYI 11, RFC 1292, "Catalog of Available X.500 Implementations", R. Lang, R. Wright.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1292.txt

An update of this document is in preparation:
Document Title: "A Revised Catalog of Available X.500 Implementations", A. Getchell, S. Sataluri.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: draft-ietf-ids-catalog-00.txt

Document Title: FYI 21, RFC 1491, "A Survey of Advanced Usages of X.500", C. Weider, R. Wright.
Location details: Available for anonymous FTP from
Site: ds.internic.net
Full file name: RFC-1491.txt

Marine, A, X.500 Pilot Projects, June 1993. Available as
draft-ietf-ids-pilots-00.txt from any Internet Draft server.

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IIIR

Date template updated or checked: 14 March, 1994
By: Name: Chris Weider
Email address: clw@bunyip.com

NIR Group Name: Integration of Internet Information Resources (IIIR)

Sponsoring Organisation: Internet Engineering Task Forces (IETF)

Working subgroups: None

Description of main group:

The IIIR group was chartered in September 1992 to facilitate interoperability between and integration of the various Internet information services (Archie, Gopher, WAIS, etc.), just as the IETF was founded to facilitate the integration of various LANs running different protocols. It will develop, specify, and align protocols to integrate the services into a single "virtually unified information service" (VUIS).

Also, where necessary for interoperability, IIIR will create technical documentation for protocols used for information services in the internet.

Membership is open, and is not limited to IETF attendees. A full charter for this group is available via anonymous FTP from ds.internic.net as ietf/iiir/iiir-charter.txt

---

Primary Contact(s):

Name:	Chris Weider, Chair
Email address:	clw@bunyip.com
Postal Address:	2001 South Huron Parkway 12 Ann Arbor Michigan 48104 USA
Telephone:	+1-313-971-2223

Fax: +1-313-971-2223

Address: iiir@merit.edu

Administration: iiir-request@merit.edu

Archive: Anonymous FTP, iiir/archive

Document Archive:

Location details:
Site: ds.internic.net or any Internet Draft Server (see sub-section entitled IETF groups).
Directory: internet-drafts
All IIIR document file names start with the string 'draft-ietf-iiir-'

Official Publications: None.

Bibliography:

Weider, Chris, and Peter Deutsch, 'A vision of an integrated Internet information service', Internet Draft, March 1993. Available as draft-ietf-iiir-vision-00.txt from any Internet Draft server.

Weider, Chris, 'Resource Transponders', Internet Draft, March 1993. Available as draft-ietf-iiir-transponder-00.txt from any Internet Draft server.

Ankelesaria, et al, 'The Internet Gopher Protocol', RFC 1436, March 1993. Available from any RFC repository.

Berners-Lee, Tim. 'Hypertext Markup Language (HTML)', Internet Draft, March 1993. Available as draft-ietf-iiir-html-00.ps from any Internet Draft server.

Other Information:

This is a new area, one with lots of interesting open problems and the potential to help shape the future of information services on the Internet. Even if you can't make the IETF meetings, you are strongly encouraged to join the group and contribute.

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NIR

Date template updated or checked: 1st March, 1994
By: Name: Jill Foster
Email address: Jill.Foster@newcastle.ac.uk

NIR Group Name: Networked Information Retrieval Working Group (NIR-WG)

Sponsoring Organisation: Internet Engineering Task Force (IETF) and RARE (Association of European Research Networks)

Working subgroups: None

Description of main group:

There are many organizations and associations that have begun to focus on the proliferating resources and tools for networked information retrieval (NIR). The Networked Information Retrieval Group will be a cooperative effort of three major players in the field of NIR: IETF, RARE, and the Coalition for Networked Information (CNI) specifically tasked to collect and disseminate information about the tools and to discuss and encourage cooperative development of current and future tools such as the archie servers, the Wide Area Information Servers (WAIS), the Internet Gopher, and the WorldWide Web (WWW).

The NIR Working Group intends to increase the useful base of information about networked information retrieval (NIR) tools, their developers, interested organizations, and other activities that relate to the production, dissemination, and support of NIR tools.

Membership is open and is not limited to attendees of the quarterly IETF meetings; the mailing list is open to all. The NIR-WG charter is available via anonymous ftp from the various IETF repositories as nir-charter.txt.

Goals:

To disseminate information about NIR tools and those groups working on them. The information in the NIR Status report will be updated and new entries added as appropriate once per year. This report will be submitted as an RFC.

Current work includes discussing the criteria for evaluating the major NIR tools available.

Primary Contact(s):

Name:	Jill Foster
Email address:	Jill.Foster@newcastle.ac.uk
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Telephone:	+44-91-222-8250
Fax:	+44-91-222-8765

Name:	Kevin Gamiel
Email address:	kevin.gamiel@cnidr.org

Postal Address:

Clearinghouse for Networked Information Discovery and Retrieval
Center for Communications - MCNC
PO Box 12889 3021 Cornwallis Road
Research Triangle Park, NC 27709-2889
U.S.A.

Telephone:	+1-919-248-1886
Fax:	+1-919-248-1101

Mailing Lists:

Address:	nir@mailbase.ac.uk
Administration:	Auto subscriptions to: mailbase@mailbase.ac.uk "subscribe nir firstname lastname" Human admin to: nir-request@mailbase.ac.uk

Description:

```
  Archive:              ftp://mailbase.ac.uk/pub/lists/nir/files/*
                        or via gopher to mailbase.ac.uk

 ----------------------------------------------------------------------

 News groups:           None

 ----------------------------------------------------------------------

 Document Archive:

  Location details
       Site: mailbase.ac.uk
       Directory: /pub/lists/nir/files

  or from any Internet Draft Server (see sub-section entitled IETF
  groups)

 ----------------------------------------------------------------------

 Bibliography:

 ----------------------------------------------------------------------

 Other Information:

  This Working Group was formed jointly in the User Services and
  Applications Areas of the Internet Engineering Task Force.

  The RARE (Reseaux Associes pour la Recherche Europeenne) ISUS WG
  (Information Services and User Support Working Group) is
  represented by NIR-WG co-chair Jill Foster.  NIR-WG information
  is also posted to the mailing list for the ISUS WG at
  "wg-isus@rare.nl".

  More information about CNI (Coalition for Networked Information) may
  be obtained via anonymous ftp files from ftp.cni.org.

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```

NISI

Date template updated or checked: 1st March, 1994
By: Name: April Marine
Email address: april@atlas.arc.nasa.gov

NIR Group name: Network Information Services Infrastructure (NISI) Working Group

Sponsoring Organisation: IETF

Description of main group:

The NISI Working Group will explore the requirements for common, shared Internet-wide network information services. The goal is to develop an understanding for what is required to implement an information services "infrastructure" for the Internet. Membership is open. Charter is online in the various IETF repositories as nisi-charter.txt.

Primary Contact(s):

Name:	April Marine
Email address:	april@atlas.arc.nasa.gov
Postal Address:	Network Applications and Information Center NASA Ames Research Center M/S 204-14 Moffett Field, CA 94035-1000 USA
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Mailing Lists:

Address:	nisi@merit.edu
Administration:	nisi-request@merit.edu

Official Publications: Internet-Drafts and FYI RFCs

Bibliography:

RFC 1302: Building a Network Information Services Infrastructure

RFC 1355: Privacy and Accuracy Issues in Network
Information Centre Databases

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OSI-DS

Date template updated or checked: 24 February, 1994
By: Name: Chris Weider
Email address: clw@bunyip.com

NIR Group Name: OSI Directory Services (OSI-DS)

Sponsoring Organisation: Internet Engineering Task Forces (IETF)

Working subgroups: NONE

Description of main group:

The OSI-DS group's mission is to enable building a global Directory Service based on X.500 and to facilitate its deployment on the Internet. The primary focus is on developing agreements and technical specifications needed to make this happen. The WG will not be directly concerned with piloting and service activities, but will liaise with such activities.

Membership is open, and is not limited to IETF attendees. A full charter for this group is available for anonymous FTP from ds.internic.net as ietf/osids/osids-charter.txt

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Primary Contact(s):

Name:	Steve Kille, Chair
Email address:	kille@isode.com
Postal Address:	ISODE Consortium P.O. Box 505 SW11 1DX London England
Telephone:	+44-71-223-4062

Mailing Lists:

Address:	ietf-osi-ds@cs.ucl.ac.uk

Administration: ietf-osi-ds-request@cs.ucl.ac.uk

Archive: Anonymous FTP, bells.cs.ucl.ac.uk

Document Archive:

Location details:
Site: bells.cs.ucl.ac.uk
Directory:/osi-ds

Site: ds.internic.net
Directory: /ietf/osids

Official Publications: None.

Bibliography:

The COSINE and Internet X.500 Schema, P. Barker, S. Kille, RFC-1274.

Replication and Distributed Operations Extensions to Provide an Internet Directory Usign X.500, S. Hardcastle-Kille, RFC-1276

Requirements to provide an Internet Directory using X.500. S. Hardcastle-Kille, RFC-1275

A Strategic Plan for Deploying an Internet X.500 Directory Service, S. Hardcastle-Kille et al, RFC-1340

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URI

Date template updated or checked: 14 March, 1994
By: Name: Chris Weider
    Email address: clw@bunyip.com

NIR Group Name: Uniform Resource Identifiers (uri)

Sponsoring Organisation: Internet Engineering Task Forces (IETF)

Working subgroups: NONE

Description of main group:

The Uniform Resource Identifiers Archives Working Group is chartered to define a set of standards for the encoding of system independent Resource Location and Identification information for the use of Internet information services. There are three classes of information being standardized in this group:

1) Uniform Resource Locators (URLs), which specify a standardized method for encoding location and access information to resources across multiple information systems,

2) Uniform Resource Names (URNs), which specify a standardized method for encoding a unique resource identifier for a given content, and

3) Uniform Resource Citations (URCs), which specify a standardized method for encoding information about a given instantiation of a content.

The URLs allow an information service to give a user access and location information for a resource. The URN allows an information service to determine if the contents of two information resources are the same or not. The URC allows an information service to select which of a number of different encodings of a resource are appropriate for a given user's retrieval capabilities, and may contain such things as file size and compression techniques.

Membership is open, and is not limited to IETF attendees. A full charter for this group is available for anonymous FTP from ds.internic.net as /ietf/uri/uri-charter.txt

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Primary Contact(s):

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Mailing Lists:

Address: uri@bunyip.com

Administration: uri-request@bunyip.com

Archive: archives.cc.mcgill.ca:~/pub/uri-archive

Document Archive:

Location details:
Site: ds.internic.net
Directory: internet-drafts. All documents will start with the string draft-ietf-uri.

Official Publications: None

Bibliography:

Berners-Lee, Tim, 'Uniform Resource Locators', Internet Draft, March 1993.
Available as draft-ietf-uri-url-00.ps from any Internet Draft server.

Weider, Chris and Peter Deutsch, 'Uniform Resource Names', Internet Draft, May 1993. Available as draft-ietf-uri-resource-names-00.txt from any Internet Draft server.

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WNILS

Date template updated or checked: 28 February, 1994
By: Name: Joan Gargano
Email address: jcgargano@ucdavis.edu

NIR Group Name: Whois and Network Information Lookup Service (WNILS)

Sponsoring Organisation: Internet Engineering Task Force (IETF)

Working subgroups:
Name of subgroup:
Mailinglist-Address: ietf-wnils@ucdavis.edu

Description of main group:

This description is the current WNILS-WG charter.

The Network Information Center (NIC) maintains the central NICNAME database and server, defined in RFC 954, providing online look-up of individuals, network organizations, key nodes, and other information of interest to those who use the Internet. Other distributed directory information servers and information retrieval tools have been developed and it is anticipated more will be created. Many sites now maintain local directory servers with information about individuals, departments and services at that specific site. Typically these directory servers are network accessible. Because these servers are local, there are now wide variations in the type of data stored, access methods, search schemes, and user interfaces. The purpose of the Whois and Network Information Lookup Service (WNILS) working group is to expand and define the standard for WHOIS services, to resolve issues associated with the variations in access and to promote a consistent and predictable service across the network.

Goals and Milestones:

Done Review and approve the charter making any changes deemed necessary. Examine the particular functional needs for expanded whois directory service. Begin work on a framework for recommendations. Assign writing assignments for first draft of document.

12/1/93 Submit the Whois and Network Information Lookup Service Recommendations document to the IESG as an Internet Draft.

12/1/93 Submit the WHOIS++ protocol document to the IESG as an Internet Draft.

12/1/93 Submit the "Architecture of the Whois++ Index Service" document to the IESG as a revised Internet Draft.

12/1/93 Freeze all work on the Internet Drafts for 6 months for software development.

Membership is open to attendees of the quarterly IETF meetings; the mailing list is open to all. The WNILS-WG charter can be obtained via anonymous ftp from the Document Archive sites listed in the Networked Information Retrieval Working Group (WNILS-WG) template.

Primary Contact(s):

Name: Joan Gargano

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Information Technology
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U.S.A

Telephone: +1-916-752-2591

Fax: +1-916-752-9158

Mailing Lists:

Address: ietf-wnils@ucdavis.edu

Administration: ietf-wnils-request@ucdavis.edu

Description:

Archive: ftp://ftp.ucdavis.edu:/pub/archive

News groups: None.

Document Archive:

Location details: Gopher: gopher.ucdavis.edu 70
                      ftp://ftp.ucdavis.edu/archive/wnils-archive

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Other Information:

This Working Group formed jointly in the User Services and Applications Areas of the Internet Engineering Task Force.

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IRTF-RD

Date template updated or checked: 1st March, 1994
By: Name: Mike Schwartz
Email address: schwartz@cs.colorado.edu

NIR Group Name: Internet Research Task Force Research Group on Resource Discovery and Directory Service (IRTF-RD)

Sponsoring Organisation: Internet Society

Working subgroups: None

Description of main group:

The IRTF-RD group is focused on problems of scale that will arise in resource discovery systems in the next 3-5 years. We divide these scaling problems into three dimensions: volume of information, size of the user base, and information diversity.

Our goal is to explore techniques for dealing with these problems through a set of interrelated prototypes demonstrating advances in each of these dimensions. Briefly, our current approaches are:

- deal with information diversity through a coordinated set of techniques to gather, transform, and manage entropy of data
- deal with user scale through large scale replication
- deal with information volume using a combination of views, space efficient indexing, and customization w.r.t. vocabulary, search methods, and personal user history

We expect these approaches to evolve significantly over time.

Membership of this group is closed. We will consider new members, with two constraints. First, the group must be kept small and focused to make substantive progress - at most 4 or 5 members seems appropriate at this time. Second, prospective members must be active resource discovery researchers, who will bring clear strengths to the group. Prospective members should send a vitae and a one page position paper describing what they propose to do to advance the group's efforts, addressed to the group chair.

The group currently consists of:

Mic Bowman (Transarc, Inc.)
Peter Danzig (University of Southern California)
Udi Manber (University of Arizona)
Mike Schwartz (University of Colorado - Boulder; chair)

Primary Contact(s):

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Telephone:	+1-303-492-3902
Fax:	Declined.

Mailing Lists:

The IRTF-RD group has no formal mailing list or archive.

News groups:

The IRTF-RD group has no news groups.

Document Archive:

The IRTF-RD group has no document archive, although our paper(s) and prototype(s) are available from the members' FTP archives (see below).

Official Publications:

Occasional updates in the Internet Monthly Report.

Bibliography:

C. Mic Bowman, Peter B. Danzig and Michael F. Schwartz.
Research Problems for Scalable Internet Resource Discovery.
Technical Report CU-CS-643-93, Department of Computer Science,

University of Colorado, Boulder, March 1993. To appear, Proceedings of INET '93. Available by anonymous FTP from ftp.cs.colorado.edu in the file pub/cs/techreports/schwartz/PostScript/RD.ResearchProblems.ps.Z (compressed PostScript) or in the file pub/cs/techreports/schwartz/ASCII/RD.ResearchProblems.txt.Z (compressed ASCII).

C. Mic Bowman, Peter B. Danzig, Udi Manber and Michael F. Schwartz. Scalable Internet Resource Discovery: Research Problems and Approaches. Technical Report CU- CS-679-93,

Department of Computer Science, University of Colorado, Boulder, October 1993. To appear, Communications of the ACM, 1994. A pre-publication version of this paper is available by anonymous FTP and e-mail from ftp.cs.colorado.edu in the file pub/cs/techreports/schwartz/PostScript/RD.ResearchProblems.Jour.ps.Z (compressed PostScript) or in the file pub/cs/techreports/schwartz/ASCII/RD.ResearchProblems.Jour.txt.Z (compressed ASCII).

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Z39.50 Implementors Group

Date template updated or checked: 28 February 1994
By: Name: Mark Needleman
Email address: mhn@stubbs.ucop.edu

NIR Group name: Z39.50 Implementors Group

Description of main group:

The Z39.50 Implementors group (ZIG) is a volunteer organization consisting of representatives of most of the organizations in the United States and Canada that are actively engaged in implementing the Z39.50 protocol. This includes the United States Library of Congress, The National Library of Canada, the major bibliographic utilities, many library automation vendors, and other information service providers. The group is a volunteer effort whose meetings are open at no charge to all. The group meets about 3 times a year and conducts its activities extensively on its mailing list which is also open to any interested party.

The group was originally formed to deal with interoperability issues among the Z39.50 implementations that were beginning to emerge in 1989 and 1990 but the group has since expanded its role and has now become the primary forum in which new features and versions of the Z39.50 are developed.

Primary Contact(s): Z39.50 Implementors Group

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Fax: +1-904-392-9185

Z39.50 Maintenance Agency

Name:	Ray Denenberg
Email address:	RAY@RDEN.loc.gov
Postal address:	Library of Congress Network Development and MARC Standards Office Collections Services Washington, DC 20540
Telephone:	+1-202-707-5795

Mailing Lists:

Name:	Z39.50 Implementors Group (ZIG)
Address:	Z3950IW@nervm.nerdc.ufl.edu
Administration/Subscriptions:	listserv@nervm.nerdc.ufl.edu (archives of the mailing list are also available at this address.)
Archive:	gopher://sally.fcla.ufl.edu ftp://sally.fcla.ufl.edu gopher://marvel.loc.gov/11/services/z3950

Documentation and References for the Z39.50 Protocol

American National Standard Information Retrieval Application Service Definition and Protocol Specification for Open Systems Interconnection Version 2, National Information Standards Organization, July 1992

Mark Hinnebusch "A Primer on Z39.50 Parts 1-8", Academic and Library Computing Volume 9, Numbers 2-9, February-October 1992, Meckler Corporation, Westport CN. (ISSN 1055-4769)

Mark Hinnebusch "The Z39.50 Explain Service", Campus Wide Information Systems, Volume 10, Number 1, January/February 1993, Meckler Corporation, Westport, CT. (ISSN 1065-0741)

Michael Buckland and Clifford Lynch. "THE LINKED SYSTEMS PROTOCOL AND THE FUTURE OF BIBLIOGRAPHIC NETWORKS AND SYSTEMS,"

Information Technology and Libraries 6:2 (June 1987), pp. 83-88.

Michael Buckland and Clifford Lynch. "NATIONAL AND INTERNATIONAL IMPLICATIONS OF THE LINKED SYSTEMS PROTOCOL FOR ONLINE BIBLIOGRAPHICAL SYSTEMS," Cataloging and Classification Quarterly 8:3/4 (Spring 1988), pp. 15-33.

Clifford Lynch. "INTERSYSTEM LINKING AND DISTRIBUTED DATABASE TECHNOLOGY: A COMPARISON OF TWO APPROACHES TO THE CONSTRUCTION OF NETWORK-BASED INFORMATION UTILITIES," Proceedings of the Fourth Integrated Online Library Systems Meeting, New York, New York, May 10-11, 1989. (Medford, NJ: Learned Information, Inc., 1989), pp. 107-112.

Clifford A. Lynch "LIBRARY AUTOMATION AND THE NATIONAL RESEARCH NETWORK," EDUCOM Review (Fall 1989), pp. 21-28.

Clifford A. Lynch. "ACCESS TECHNOLOGY FOR NETWORK INFORMATION RESOURCES," CAUSE/EFFECT (Summer 1990), pp. 15-20.

Clifford A. Lynch; Cecilia M. Preston. "INTERNET ACCESS TO INFORMATION RESOURCES," Annual Review of Information Science and Technology (ARIST) Volume 25. (Westport, CT: Greenwood Press, 1990), pp. 264-312.

Clifford A. Lynch. "THE CLIENT-SERVER MODEL IN INFORMATION RETRIEVAL," Interfaces for Information Retrieval and Online Systems: The State of the Art Martin Dillon, ed. (Westport, CT: Greenwood Press, 1991); pp. 301-318.

Clifford A. Lynch. "INFORMATION RETRIEVAL AS A NETWORK APPLICATION," Library Hi Tech 8:4, Issue 32 (1990), pp. 59-74.

Clifford A. Lynch. "THE Z39.50 INFORMATION RETRIEVAL PROTOCOL: AN OVERVIEW AND STATUS REPORT," Computer Communications Review 21:1 (Sigcomm) (January 1991), pp. 58-70.

Clifford A. Lynch. THE Z39.50 PROTOCOL: QUESTIONS AND ANSWERS. Produced as a pamphlet by Data Research Associates (1991).

Dennis Lynch "Z39.50 Extended Services" Campus Wide Information Systems Volume 10, Number 3 May/June 1993, Meckler Corporation, Westport, CT (ISSN 1065 0741)

Mark H Needleman. "The Z39.50 Protocol: An Implementor's Perspective", Resource Sharing and Information Networks Volume 8 Number 1, 1992, The Haworth Press Inc, Binghamton, NY (ISSN 0737-7797)

Kunze, John A. "Nonbibliographic Applications of Z39.50." The Public-Access Computer Systems Review 3, no. 5 (1992): 4-30. (Refereed Article.) To retrieve this article, send the following e-mail message to LISTSERV@UHUPVM1 or LISTSERV@UHUPVM1.UH.EDU: GET KUNZE PRV3N5 F=MAIL.

Other Information:

Brief Description of the Z39.50 Protocol

Z39.50 is a US ANSI standard protocol for information retrieval. It uses a client server model that allows clients (or origins in Z39.50 terminology) to search servers (targets in Z39.50 usage) and retrieve records from remote databases. The type and format of the data retrieved is not constrained by the protocol but is agreed to by the origin and the target. There is a mechanism that allows popular record syntax's to be registered and then referred to by well known identifiers. Z39.50 is an OSI application layer protocol; that is, it is designed to make use of the OSI presentation layer protocol. It may be used with or without the presentation protocol, and below that, it is irrelevant (to the Z39.50 protocol) what protocols are used. Most implementations of Z39.50 currently run directly over TCP/IP.

User's View:

Users (either human or electronic) run client software to connect with servers to retrieve information using the Z39.50 protocol. Many clients already exist at least in prototype version today and more are being written. Most of the major library automation vendors have announced that they will be supporting Z39.50 in either client or server mode or both. Many of the major information vendors either currently have or are working on implementations of Z39.50 for their systems. There are also a couple of Z39.50 implementations that are expected to be put in the public domain at some point. The recently announced FREEWAIS software incorporates Z39.50 Version 2 into it (the older version used a variant of the 1988 version 1 protocol). The Library of Congress acts as the maintenance agency for Z39.50 and can be contacted for a list of registered Implementors.

Z39.50 provides a protocol mechanism for accessing remote information sources. It defines the model for the interaction between two sides, a client and a server. It makes no assumptions or presumptions about how the data is actually organized in the server, nor about how the data is presented to the end user by the client.

The model postulates one or more databases on the remote system that can be searched using attributes from defined search attribute sets, creating a result set. Records can be retrieved from the result set using agreed upon record formats.

Information types supported:

The Z39.50 protocol was designed as a general purpose search and retrieval mechanism that could be used with a wide variety of data types. The MARC format (a format used for cataloging library material among other things) and a search attribute set suitable for bibliographic and similar types of data are registered within the current version of the standard. It is assumed that, as the protocol begins to be used by other communities and for other types of data, other attribute sets and record syntaxes will be developed. This process has already begun and a generic record syntax and attribute set are already under development, as well as some others, specifically those supporting chemical structures, general science and technology, and business information. The design philosophy behind Z39.50 is that it will be used with other standards such as Postscript, SGML, ODIF (and others), to communicate a wide variety of data types, including full text, images, and many others.

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RARE Groups

RARE (Reseaux Associes pour la Recherche Europeenne) is the Association of European Networking Organizations and their users. RARE's aim is to overcome national boundaries in research networking by creating a harmonized computer communications infrastructure for the European research community. At this point in time RARE has over 40 members, most of which are national networking organizations providing networking services to their national research and education community.

RARE's technical programme is carried out by volunteers working in a number of Working Groups.

For further information on RARE contact:

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C=nl; ADMD=400net; PRMD=surf; O=rare; S=raresec;

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RARE ISUS

Date template updated or checked: 28th February, 1994
By: Name: Jill Foster
Email address: Jill.Foster@newcastle.ac.uk

NIR Group Name: RARE Information Services and User Support Working Group

Sponsoring Organisation:
RARE (Reseaux Associes pour la Recherche Europeenne)

Working subgroups (of relevance to nir):

Name of subgroup: MMIS Task Force
Mailinglist-Address: mmis@mailbase.ac.uk

Name of subgroup: NIR Task Force
Mailinglist-Address: nir@mailbase.ac.uk

Name of subgroup: UNITE Task Force
Mailinglist-Address: unite@mailbase.ac.uk

Description of main group:

The Information Services and User Support (ISUS) Working Group has been established by the RARE Technical Committee as one of the major working groups in the RARE Technical Programme. ISUS is concerned with all aspects of networked information services, group communications and network user support. It is open to all those involved in working in these areas and should include:

Network User Support Staff: National and European Support Staff
(whether RARE, RIPE, EARN, Eunet etc.)
Site Computing Centre Support Staff
Special subject related User Support Staff

Library Staff
Networked Information Providers
Networked Information Service Providers
Application Developers

The ISUS WG mailing list will act both as a forum for discussion amongst experts in this field and as a means for disseminating information to the wider community.

The ISUS Working Group is chartered to have a very broad area of interest which is broken down into several sub-areas:

Network User Support
Asynchronous Group Communication
Networked Information Retrieval and Services
Liaison

Current tasks being worked on in the area of NIR include:

- Coordination of NIR services in Europe

- Collection of information related to NIR tools and groups. This is a joint effort with the IETF and CNI.

- Network Interface to everything (UNITE). This group is starting to look at the user requirements for a single interface to the network (network information services, email, bulletin boards, etc.). (unite@mailbase.ac.uk)

- Multimedia Information Services task force (MMIS). This group is a joint task force of the RARE ISUS Working Group and RARE Interactive Multimedia Working Group (mmis@mailbase.ac.uk).

charter: anonymous ftp from mailbase.ac.uk
file: /pub/lists/wg-isus/files/isus.charter

Primary Contact(s):

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Telephone: +44-91-222-8250

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Mailing Lists:

Address: wg-isus@rare.nl

Administration: Auto subscriptions to: mailserver@rare.nl
"subscribe wg-isus <firstname> <lastname>"

Human admin to: wg-isus-request@rare.nl

Description: General purpose mailing list for whole ISUS WG.

Archive: Not yet available

News groups: None

Document Archive:

Location details
Site: raredoc.rare.nl
Directory: /rare/working-groups

Location details
Site: mailbase.ac.uk
Directory: /pub/lists/wg-isus/files
/pub/lists/nir/files

Official Publications: RARE Technical Reports

Bibliography:

RARE Technical Report 1: User Support and Information Services in the RARE Community - a Status Report. Jill Foster

RARE Technical Report 5: A Survey of Distributed Multimedia - Research, Standards and Products. Chris Adie

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Other Information:

This group was formed in May 1992 and takes over and expands on the work of the former RARE WG3 USIS Subgroup. The group conducts most

of its business by email, but meets twice a year before the European Networking Conferences.

The EARNinfo group has recently joined forces with RARE ISUS WG, they will be working together in the areas of documentation and network training.

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USMARC/OCLC

Date template updated or checked: 10 March 1994
By: Name: Rebecca Guenther
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Working Group or Organisation: USMARC/OCLC

Name of group: USMARC Advisory Group; OCLC Internet Resources Cataloging Experiment

Sponsoring Organisations: OCLC, Library of Congress, USMARC Advisory Group

Working subgroups: None

Description of main group:

OCLC and the Library of Congress have formed a working group to consider how libraries can create cataloging records for online information resources. The group initiated a cataloging experiment designed to test and verify the applicability of the cataloging rules and the USMARC format for computer files. Guidelines have been written for cataloging Internet resources and were considered by the American Library Association committee responsible for maintaining the Anglo- American Cataloging Rules. Changes to the USMARC format were initiated to accommodate a subset of these materials (electronic data resources, such as software, electronic text, bibliographic and nonbibliographic databases). USMARC format changes which were approved included an identification of type of file and a field for location and access of the resource (very much like a URL).

The group is continuing its work by looking at how online systems and services can be accommodated in USMARC. This work will be done within the USMARC Advisory Group of the American Library Association, which considers changes to the USMARC formats. Data elements will be defined with mapping to MARC fields; in some cases new fields will be proposed. This will be accomplished in conjunction with efforts by other working groups (e.g., Government Information Locator Service, or GILS).

A proposal was presented and approved in February 1994 to the USMARC Advisory Group to add data elements to the Electronic Location and Access Field (USMARC field 856). Included among these was a subfield for URL (Uniform Resource Locator). It is intended to be used instead of or in addition to other data identifying location of and access to

a networked information resource.

Membership is closed at this point.

Primary Contact(s): Rebecca Guenther rgue@seq1.loc.gov

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Telephone: +1-614-764-6079

Fax: +1-614-764-2344

Mailing Lists: None.

News groups: None.

Document Archive:

Archives under USMARC listserv.

Documents available:

94-2.doc (Proposal 94-2: Addition of Subfields $g and $3 to Field 856 Electronic Location and Access) in the USMARC Holdings/Bibliographic Formats: Document)
94-2.cov (Cover sheet with status information)
94-3.doc (Proposal 94-3: Addition of Subfield $u (Uniform Resource Locator) to Field 856 in the USMARC Holdings/Bibliographic Formats: Document)
94-3.cov (Cover sheet with status information)
93-4.doc (Proposal 93-4: Changes to the USMARC Bibliographic Format (Computer Files) to Accommodate Online Information Resources: Document)
93-4.cov (Proposal 93-4: Cover sheet with status information)
dp69.doc (Discussion Paper No. 69: Accommodating Online Systems and Services within USMARC: Document)
dp69.cov (Discussion Paper No. 69: Cover sheet with status information)

Location details

Telnet to: marvel.loc.gov
Login: marvel

Select: Services to Libraries and Publishers
Select: USMARC Standards
Select: USMARC Listserv
See list of documents

-or-

Site: listserv@sun7.loc.gov

Send email message with

get usmarc 93-4.doc
get usmarc 93-4.cov
get usmarc dp69.doc
get usmarc dp69.cov
etc.

Official Publications:

"Assessing Information on the Internet: Toward Providing Library Services for Computer-Mediated Communication". Dublin, OH: OCLC Online Computer Library Center, 1993. Available in print form from OCLC, Inc. for $20 or electronically from:

ftp.rsch.oclc.org
/pub/internet_resources_project/report
Filenames: *.*

Bibliography:

Proposal 94-2: Addition of Subfields $g and $3 to Field 856 Electronic Location and Access) in the USMARC Holdings/Bibliographic Formats)

Proposal 94-3: Addition of Subfield $u (Uniform Resource Locator) to Field 856 in the USMARC Holdings/Bibliographic Formats

Discussion Paper No. 69: Accommodating Online Systems and Services in USMARC (Washington: Library of Congress, Network Development and MARC Standards Office, Apr. 1993).

Proposal 93-4: Changes to the USMARC Bibligraphic Format (Computer Files) to Accommodate Online Information Resources (Washington: Library of Congress, Network Development and MARC

Standards Office, Nov. 1992 (rev. Mar. 1993).

Other Information: None.

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8. Security Considerations

Security issues are not discussed in this memo.

9. Acknowledgements

The report was very much a collaborative effort of the members of the NIR WG and in particular Peter Deutsch (who contributed the mailing list section and the basis for Section 5), April Marine, Rick Rodgers, Lars-Gunnar Olsson, Farhad Anklesaria, Marsha Perrott, Kevin Gamiel, George Brett, Barbara Thomas and all those who helped review the document. Special thanks are due to all those contributors who took the time to submit and update descriptions of their NIR tools and groups; their names are included in the templates in Sections 6 and 7.

Before final submission of the report as an RFC, independent reviewers from around the world took two or three templates each and checked them out for accuracy and currency as best they could. They liaised with the original template authors over the changes they made. The volunteers were: Larry Masinter, Marilyn Martin, Sinha Velu, Ton Verschuren, Shirley Browne, Alfred Vella, Bert Stals, Yannis Corovesis, Gerard Egan, Robert Janz and Andy Linton. They provided some very valuable input.

10. Author's Address

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APPENDIX A

NIR TOOL Template (last updated 22.12.93)

Purpose and scope:

This template is to be used to collect the information necessary to identify and track the development of networked information retrieval tools. It is intended that the main part of this will be completed by the main individual responsible for the tool. Sections of the template may require completion by others.

The NIR tools included are defined by enumeration. The IETF/RARE/CNI NIR-WG welcome suggestions for others to be included.

NIR Tools:

Alex
archie
gopher
Hytelnet
Netfind
Prospero
Veronica
WAIS (including freeWAIS)
WHOIS
World Wide Web (including Mosaic)
X.500 White Pages

New entries: Please complete this template and return it to Jill.Foster@newcastle.ac.uk (NIR-WG co-chair). Receipt of your message will be acknowledged.

Please imbed descriptive text by at least one more column than the heading for that item:

For example:

Brief description of tool:

This is the best application ever seen. It makes finding information very easy. This is the decription imbedded one more column.

Updates: updates to existing information on NIR Tools may be sent by the appropriate contact person at any time to:

nir-updates@cnidr.org

The full report will be updated annually and will form the basis of a "snapshot" report on the activities in the area of networked information retrieval (NIR).

----------x---- cut here ----x----------

Date template updated or checked: (e.g., 02 November, 1992)
By: Name:
Email address:

NIR Tool Name:

Brief Description of Tool:
Note: This should be a maximum of 100 line description which should cover the following:
- overview of use, purpose, scope and characteristics
- user's view
- information provider's view
- information types supported (e.g., text, sound, etc.)

Primary Contact(s):
[Please duplicate this section for each separate contact]

Name:
[May be the name of a role e.g., nirtool-support or of an individual]

Email address:

Postal Address:

Telephone:

Fax:

Help Line:
[for major center as well as each client if available]

Name:
[May be the name of a role e.g., nirtool-support or of an

individual]

Email address:

Telephone:

Level of support offered: [delete as appropriate]
- o volunteer
- o funded
- o for experts only
- o all users

Hours available:

Related Working Groups:
[Name only]

Sponsoring Organisation / Funding source:
[Name only]

Mailing Lists:
[Duplicate this section for each list]

Address: [Email Address to send contributions]

Administration: [<listname>-request etc.]

Description:
[This is optional - if the group has only one mailing list]

Archive: [Location of message archive for this list]

News groups:
[Duplicate this section for each news group]

Name:

Description:
[This is optional - if the group has only one news group]

```
 Archive:  [Location of message archive for this news group]

-------------------------------------------------------------------------

Protocols:

 What is supported:   [e.g., Z39.50]

 What it runs over:

 Other NIR tools this interworks with:

 Future plans:

-------------------------------------------------------------------------

Servers:

 [Duplicate the following for each platform
 e.g., Unix, VMS, VM/CMS,....]

 [The main contact for this NIR tool should complete at least
 "platform" and "contact" for each server known to them.]

 Date completed or updated:
 By: Name:
     Email address: [If different from that of the Primary
                     contact listed below]

 Platform:

 Primary Contact:
 Name:
 Email address:
 Telephone:

 Server software available from:

 Location of more information:
      [Such as installation instructions
       copyright statements,
       warnings & bug reports etc.

       Eventually this will be the Unique Resource
       Identifiers of the documents]


 Latest version number:
```

```
  Brief Scope and Characteristics:

  Approximate number of such servers in use:

  General comments:

 ---------------------------------------------------------------------

 Clients:
  [Duplicate the following for each platform
  e.g., MS-DOS PC, MAC, vt100,...]

  [The main contact for this NIR tool should complete
  "platform" and "contact" for each server known to them.]

  Date completed or updated:
  By: Name:
      Email address: [If different from that of the Primary
                      contact listed below]

  Platform:
  Primary Contact:
  Name:
  Email address:
  Telephone:

  Client software available from:

  Location of more information:
       [Such as installation instructions
        copyright statements,
        warnings & bug reports etc.

        Eventually this will be the Unique Resource
        Identifiers of the documents]

  Latest version number:

  Brief Scope and Characteristics:

  General comments:

  Future plans:
       Items included here could include
       - optional items to come.
       - plans for moving to international standards
       - plans for interoperating with other NIR tools
       - other functionality to be supported
```

Demonstration sites:

List of sites which are willing to act as demonstration sites for this application.
[Duplicate for each site]

- Site name:
- Access details:
  [e.g.,
  telnet archie.sura.net
  login as archie]

Documentation:

The following is a list of suggested items to be found in a document archive. Note that the location pointers below could be replaced in the future by the "Uniform Resource Name".

- current overview
- instructions to information providers
- Frequently Asked Questions
- user manuals
- training materials
  - tutorials
  - canned demos
  - sample session (screen dumps)
  - videos
  - etc.
- miscellaneous documents

[Duplicate the following for each existing document as necessary]

Document Title:
Location details:

- Site:
- Full file name:

Bibliography:
[A list of a maximum of 10 key papers, books etc. on this NIR tool. Optionally a pointer to a fuller bibliography could be given.]

Other Information:

[Feel free to add other information that you feel is relevant.
This will be considered for inclusion in the report.]

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APPENDIX B

NIR Group Template (last updated 22.12.93)

Purpose and scope:

This template is to be used to collect the information necessary to identify and track major groups that are working to promote or develop networked information retrieval. It is intended that this will be completed by the group representative.

The groups included are defined by enumeration. The IETF/RARE/CNI NIR-WG welcome suggestions for other groups to be included.

Groups:

CNI	Coalition for Networked Information (CNI) Architectures and Standards Directories and Resource Information Services TopNode for Networked Information Resources, Services, and Tools
CNIDR	Clearing House for Networked Information Discovery and Retrieval
IETF	Integrated Directory Services (IDS) Integration of Internet Information Resources (IIIR) Networked Information Retrieval (NIR) joint IETF/RARE WG Network Information Services Infrastructure (NISI) OSI-Directory Service (OSI-DS) Uniform Resource Identifiers (URI) Whois and Network Information Lookup Service (WNILS)
IRTF	Internet Research Task Force Research Group on Resource Discovery and Directory Service (IRTF-RD)
NISO	Z39.50 Implementors Group
RARE	Information Services and User Support Working Group (ISUS)
USMARC/OCLC	USMARC Advisory Group; OCLC Internet Resources Cataloging Experiment (USMARC/OCLC)

New Entries: Please complete this template for your group or organisation and return it to Jill.Foster@newcastle.ac.uk (NIR-WG co-chair). Receipt of your message will be acknowledged.

Please imbed descriptive text by at least one more column than the heading for that item:

For example:

Description of main group:

 This is the most active NIR group. This is the decription imbedded one more column.

Updates: updates to existing information on NIR Groups may be sent by the appropriate contact person at any time to:

      nir-updates@cnidr.org

The full report will be updated annually and will form the basis of a "snapshot" report on the activities in the area of networked information retrieval (NIR).

----------x---- cut here ----x----------

 Date template updated or checked: (e.g., 02 November, 1992)
 By: Name:
     Email address:

NIR Group Name:

Sponsoring Organisation:

Working subgroups:
   Name of subgroup:
   Mailinglist-Address:

Description of main group:

     [Description of the scope and purpose of the group and the current tasks being worked on. (Recommended maximum of 100 lines.) Please indicate whether membership is open or closed. Include a pointer to an on-line charter if appropriate]

Primary Contact(s):

 [Please duplicate this section for each separate contact]

```
  Name:
  [May be the name of a role e.g., group-secretariat or of an
  individual]

  Email address:

  Postal Address:

  Telephone:

  Fax:

 ---------------------------------------------------------------------

 Mailing Lists:
  [Duplicate this section for each list]

  Address:          [Email Address to send contributions]

  Administration:   [<listname>-request etc.]

  Description:
  [This is optional - if the group has only one mailing list]

  Archive:  [Location of message archive for this list]

 ---------------------------------------------------------------------

 News groups:
  [Duplicate this section for each news group]

  Name:

  Description:
  [This is optional - if the group has only one news group]

  Archive:  [Location of message archive for this news group]

 ---------------------------------------------------------------------

 Document Archive:
  [Duplicate if necessary]

  Location details:
       Site:
       Directory:

 ---------------------------------------------------------------------
```

Official Publications:
[for example: Journal, Newsletter, Report Series]

Bibliography:
[A list of a maximum of 10 key papers, books etc. produced by this group on their NIR work].

Other Information:

[Feel free to add other information that you feel is relevant.

This will be considered for inclusion in the report.]

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APPENDIX C

```
 /* A summary of email lists and newsgroups dealing with    */
 /* various issues in resource discovery and networked      */
 /* information retrieval.                                  */

---------------------------------------------------------------------

Created-By:             Peter Deutsch
Email Address:          peterd@bunyip.com
Last Updated:           16 December 1993
Comments:               Please send comments, corrections and
                        additions to the author at the above address.

---------------------------------------------------------------------

/* The following mailing lists are in IAFA format. NIR Groups and   */
/* Tool developers are encouraged to make such descriptions         */
/* available for their lists.                                       */

---------------------------------------------------------------------

Mailinglist-Name:       Alex

Address:                alex-users@cs.cmu.edu

Administration:         alex-users-request@cs.cmu.edu

Address:                alex-servers@cs.cmu.edu

Administration:         alex-servers-request@cs.cmu.edu

Description:            alex-servers is for people setting up an Alex
                        fileserver.  alex-users is for people who just
                        want to use Alex.

Archive:                alex.sp.cs.cmu.edu (128.2.209.13)

---------------------------------------------------------------------

Mailinglist-Name:       Archie

Address:                archie-maint@bunyip.com

Administration:         archie-maint-request@bunyip.com

Description:            This mailing list is for people who operate and
```

maintain archie servers. Announcements of bug fixes, new releases and discussion of new features are carried out on this list.

Archive: archives.cc.mcgill.ca:/pub/mailing-lists/archie-maint

---

Mailinglist-Name: The archie People Mailing List

Address: archie-people@bunyip.com

Administration: archie-people-request@bunyip.com

Description: This mailing list is for people interested in the archie project and its future developments. Announcements of upgrades, new services, etc. are made to this list.

Archive: None

Mailinglist-Name Gopher

Address: gopher-news@boombox.micro.umn.edu

Administration: gopher-news-request@boombox.micro.umn.edu

Description: News and views of all things gopher.

Archive: Via gopher: University of Minnesota Gopher
Information About Gopher

Mailinglist-Name: HYTELNET Updates Distribution

Address: hytel-l@kentvm.kent.edu

Administration: By listowner Peter Scott
aa375@freenet.carleton.ca

Description: To inform members of new version of the software, and to keep users informed of new/changed/defunct Telnet-accessible sites. To subscribe send email message to listserv@kentvm.kent.edu with no subject, and

	sub hytel-l firstname lastname as the body of the message.
Archive:	None.

Mailinglist-Name:	Netfind
Address:	netfind-users@cs.colorado.edu
Administration:	netfind-users-request@cs.colorado.edu
Description:	Mailing list for user changes and updates.
Archive:	None.

Address:	netfind-servers@cs.colorado.edu
Administration:	schwartz@cs.colorado.edu
Description:	Mailing list for sites running Netfind servers.
Archive:	None.

Mailinglist-Name:	Prospero
Address:	info-prospero@isi.edu
Administration:	info-prospero-request@isi.edu
Description:	This mailing list is really two one-way mailing lists. Send mail to INFO-PROSPERO to obtain information about Prospero, papers or the release. Mail to INFO-PROSPERO will not be passed on to subscribers. INFO-PROSPERO is also the list to which we will send status updates and information on how to obtain new releases.
Archive:	Via anonymous FTP to PROSPERO.ISI.EDU as /pub/prospero/mail/info-prospero.arc

Via prospero in the "#/INET/EDU/ISI/GUEST/prototype"
virtual system as
/sites/isi.edu/pub/prospero/mail/info-prospero.arc.

Address: prospero@isi.edu

Administration: prospero-request@isi.edu

Description: This mailing list is for general discussion of Prospero, for announcements of new sites that have come on board, and for announcments of directories that people have created to organize the information already accessible.

Archive: Via anonymous FTP to PROSPERO.ISI.EDU as /pub/prospero/mail/prospero.arc

Via Prospero in the "#/INET/EDU/ISI/GUEST/prototype"
virtual system as
/sites/isi.edu/pub/prospero/mail/prospero.arc.

Mailinglist-Name: Veronica

Address: veronica-news@veronica.scs.unr.edu

Mailinglist-Name: WAIS

Address: wais-discussion@wais.com

Administration: wais-discussion-request@wais.com

Description: Moderated, digested biweekly posting about WAIS and Electronic publishing subjects. Please submit interesting materials.

Archive:
/pub/wais/mail-archives/wais-discussion/issue-*@wais.com
and wais-discussion-archive WAIS server

Address: wais-talk@wais.com

Administration: wais-talk-request@wais.com

Description: Implementors forum on WAIS. This is for talking about nitty gritty details of protocols and implementations.

Archive: /pub/wais/mail-archives/wais-talk@wais.com

Mailinglist-Name: freeWAIS

Address: freeWAIS@cnidr.org

Administration: not applicable

Description: Mailing list for reporting bugs in freeWAIS.

Archive: None.

Mailinglist-Name: WWW

Address: www-talk@info.cern.ch for CONTRIBUTIONS ONLY

Administration: listserv@info.cern.ch (robot)
www-talk-request@info.cern.ch (human)

Description: Technical discussions, W3 related. Experts to experts. General questions to comp.infosystems.www please.

Archive: Not currently served, but kept.

Address: www-announce@info.cern.ch
NOT FOR GENERAL USE - serious low-volume announcements only

Administration: listserv@info.cern.ch (robot)
www-announce-request@info.cern.ch (human)

Description: Low volume summary announcements of product releases, etc.

Archive: Not currently public.

Mailinglist-Name: X.500

Address: dssig@ics.uci.edu

Administration: dssig-request@ics.uci.edu

Description: Mail list for OIW DS-SIG group.

Mailinglist-Name: CNI Groups

All of the CNI lists are managed with the Unix-Listprocessor software.

To join any of them mail to:
listproc@cni.org

sub cni-<groupname> Firstname Lastname

All CNI list archives are available as:
URL:ftp://ftp.cni.org/CNI/forums/cni-<groupname>
URL:gopher//gopher.cni.org 70/CNI Working Group Forums/
cni-<groupname>

Mailinglist-Name: CNI News and Announcements

Address: cni-announce@cni.org

Mailinglist-Name: Architecture and Standards Working Group

Address: cni-architecture@cni.org

Mailinglist-Name: Copyright and Intellectual Property
Forum

Address: cni-copyright@cni.org

Mailinglist-Name: Directories and Information Resource Services Working Group

Address: cni-directories@cni.org

Mailinglist-Name: CNI Legislation, Codes, Policies and Practices Working Group Forum

Address: cni-legislation@cni.org

Mailinglist-Name: CNI Management & Professional & User Education Working Group Forum

Address: cni-management@cni.org

Mailinglist-Name: CNI Modernization of Scholarly Publication Working Group Forum

Address: cni-modernization@cni.org

Mailinglist-Name: CNI Access to Public Information Working Group Forum

Address: cni-pubinfo@cni.org

Mailinglist-Name: CNI Teaching and Learning Working Group Forum

Address: cni-teaching@cni.org

Mailinglist-Name: CNI Transformation of Scholarly Communication Working Group Forum

Address: cni-transformation@cni.org

Mailinglist-Name: TopNode for Networked Information Resources, Services and Tools

Address: cnidir@cni.org
cni-directories@cni.org

Administration: listserv@cni.org
SUB cni-directories Lastname Firstname

Archive: ftp.cni.org:/CNI/forums/cni-directories/*

Mailinglist-Name: CNIDR

Address: info@cnidr.org

Administration: none

Description: Email sent to this address will receive an automatic response containing more information about current CNIDR activities.

Archive: none

Mailinglist-Name: zip@cnidr.org

Address: zip@cnidr.org

Administration: zip-request@cnidr.org
sub zip Lastname Firstname

Description: Technical discussion of Z39.50-92 application development. Subscribers receive brief overview of project and information on how to access archives.

Archive:
ftp://ftp.cnidr.org/NIDR.tools/zip
gopher://gopher.cnidr.org/NIDR Tools/Discussion/Online Discussion

---

Mailinglist-Name: IDS: Internet Engineering Task Force (IETF) WG

	on Integrated Directory Services
Address:	ietf-ids@merit.edu
Administration:	ietf-ids-request@merit.edu
Archive:	Anonymous FTP to merit.edu, ids/archive

Mailinglist-Name:	IIIR: Internet Engineering Task Force (IETF) WG on Integration of Internet Information Resources
Address:	iiir@merit.edu
Administration:	iiir-request@merit.edu
Archive:	Anonymous FTP, iiir/archive

Mailinglist-Name:	NIR: Internet Engineering Task Force (IETF) WG on Network Information Retrieval
Address:	nir@mailbase.ac.uk
Administration:	Auto subscriptions to: mailbase@mailbase.ac.uk "subscribe nir firstname lastname" Human admin to: nir-request@mailbase.ac.uk
Description:	This mailing list is intended to act as a clearing-house for discussions of Networked Information Retrieval and the active research projects in this field (eg WAIS, WWW, Gopher).
Keywords:	IETF, URIs, UDIs, URLs, UDLs, resource discovery, Internet, Gopher, WAIS, WWW, X.500, archie
Archive:	ftp://mailbase.ac.uk/pub/lists/files/nir/* or via gopher to mailbase.ac.uk

---

Mailinglist-Name:	NISI: Internet Engineering Task Force (IETF) WG on Network Information Services Infrastructure
Address:	nisi@merit.edu

Administration:	nisi-request@merit.edu

Mailinglist-Name:	OSI-DS: Internet Engineering Task Force (IETF) WG on OSI Directory Services
Address:	ietf-osi-ds@cs.ucl.ac.uk
Administration:	ietf-osi-ds-request@cs.ucl.ac.uk
Archive:	Anonymous FTP, bells.cs.ucl.ac.uk

Mailinglist-Name:	URI: Internet Engineering Task Force (IETF) WG on Uniform Resource Identifiers
Address:	uri@bunyip.com
Administration:	uri-request@bunyip.com
Archive:	archives.cc.mcgill.ca:~/pub/uri-archive

Mailinglist-Name:	WNILS: Internet Engineering Task Force (IETF) Whois and Network Information Lookup Service
Address:	ietf-wnils@ucdavis.edu
Administration:	ietf-wnils-request@ucdavis.edu subscribe ietf-wnils Firstname Lastname
Description:	This mailing list is used by the IETF Whois and Network Information Lookup Service (WNILS) working group which is defining enhancements to whois.
Archive:	ucdavis.edu:/pub/archive

Mailinglist-Name:	Z39.50 Implementors Group (ZIG)
Address:	Z3940IW@nervm.nerdc.ufl.edu (Internet) Z3950IW@NERVM (Bitnet)

Administration/ Subscriptions:	listserv@nervm.nerdc.ufl.edu (Internet) LISTSERV@NERVM (Bitnet)
Archive:	Anonymous FTP and/or Gopher: sally.fcla.ufl.edu

Mailinglist-Name:	RARE Information Services and User Support WG
Address:	wg-isus@rare.nl
Administration:	Auto subscriptions to: mailserver@rare.nl "subscribe wg-isus <firstname> <lastname> Human admin to: wg-isus-request@rare.nl
Description:	General purpose mailing list for whole ISUS WG.
Document Archive:	Site: raredoc.rare.nl Directory: /rare

Mailinglist-Name:	MMIS: RARE Multimedia Information Services Task Force
Address:	mmis@mailbase.ac.uk
Administration:	Autosubscriptions to: mailbase@mailbase.ac.uk "subscribe mmis firstname lastname Human admin to: mmis-request@mailbase.ac.uk
Archive:	ftp://mailbase.ac.uk/pub/lists/files/mmis/* or via gopher to mailbase.ac.uk

---

Mailinglist-Name:	UNITE: RARE Task Force on "User Network Interface To Everything"
Address:	unite@mailbase.ac.uk
Administration:	Autosubscriptions to: mailbase@mailbase.ac.uk "subscribe unite firstname lastname Human admin to: unite-request@mailbase.ac.uk
Archive:	ftp://mailbase.ac.uk/pub/lists/files/unite/* or via gopher to mailbase.ac.uk

---

Mailinglist-Name: Hyper-G

Address: uniinfo@mlist.tu-graz.ac.at

Mailinglist-Name: Soft Pages

Address: spp@aic.co.jp

Administration: spp-request@aic.co.jp

Description: Technical discussion related to representation of network information in the directory and its usage is carried out in this group.

Archive: Not (yet) available via anonymous FTP.

Mailinglist-Name: WHOIS++

Address: ietf-wnils@ucdavis.edu

Administration: ietf-wnils-request@ucdavis.edu

Archive: pub/archive/wnils@ucdavis.edu

Mailinglist-Name: IAFA: Internet Engineering Task Force (IETF) Internet Anonymous FTP Archive working group

Address: iafa@bunyip.com

Administration: iafa-request@bunyip.com

Description: This mailing list is for people who are involved in the Internet Anonymous FTP Archives Working Group of the IETF. This group was involved in standardizing the encoding of information at anonymous FTP archives and thus is of interest to operators and users of the archie system. It came to completion in November, 1992 and produced two documents which have been presented to the IETF as informational

```
                        RFCs.

 Archive:               archives.cc.mcgill.ca:/pub/mailing-lists/iafa

 ---------------------------------------------------------------------

 /* The following Usenet newsgroups discuss various issues in */
 /* resource discovery or specific NIR projects.              */

 Newsgroup-Name:        comp.archives.admin

 Mailinglist-Gate:      <unknown>

 Description:           This group discusses problems in administering
                        Internet archives. It has also been used as an
                        informal source of announcements for project
                        releases, a place for new-comers to ask
                        questions, etc.

 Keywords:              anonymous FTP, archives, Internet, archie

 Archive:               <unknown>

 ---------------------------------------------------------------------

 Newsgroup-Name:        comp.infosystems.wais

 Mailinglist-Gate:      <unknown>

 Description:           This group was created to host discussions
                        about the Wide Area Information Server
                        Also included are information and help with the
                        public domain release available from Thinking
                        Machine Corp. and setting up your own WAIS
                        server.

 Keywords:              WAIS, resource discovery, indexing, Internet

 Archive:               <unknown>

 ---------------------------------------------------------------------

 Newsgroup-Name:        alt.wais

 Mailinglist-Gate:      <unknown>

 Description:           This alt. group was created to host discussions
                        about the Wide Area Information Service. It has
```

	been superceeded by the group "comp.infosystems.wais" and its use is discouraged.
Keywords:	WAIS, resource discovery, indexing, Internet
Archive:	<unknown>

Newsgroup-Name:	comp.infosystems.www
Mailinglist-Gate:	<unknown>
Description:	This group was created to host discussions about the World Wide Web distributed hypertext information services project based at CERN in Switzerland, including discussion of the many public domain implementations of WWW clients and servers available.
Keywords:	World Wide Web, campus-wide information systems, resource discovery, indexing, Internet
Archive:	<unknown>

Newsgroup-Name:	alt.gopher
Mailinglist-Gate:	<unknown>
Description:	This group was created to host discussions about the Gopher distributed information project, based at University of Minnesota, including discussion of the many public domain implementations of Gopher clients and servers available. It has been superceeded by the group "comp.infosystems.gopher" and its use is discouraged.
Keywords:	Gopher, campus-wide information systems, resource discovery, indexing, Internet
Archive:	<unknown>

Newsgroup-Name: alt.internet.services

Description: This newsgroup is for people interested in Internet-related services, with a focus at the user level. Announcements and discussions of issues related to archie are presented here, as well as discussions of more general issues relating to Internet services.

Archive: not known

Newsgroup-Name: bit.listserv.hytel-l

=-=

APPENDIX D

COMING ATTRACTIONS

This section will be used to keep a note of NIR Tools which are considered by the NIR Group to be sufficiently well developed to include here, but that are not yet in widespread use.

Items currently included here are:

- Hyper-G
- Soft Pages
- Whois++

=-=

HYPER-G

Date template updated or checked: 19th October, 1993
By: Name: Frank Kappe
    Email address:fkappe@iicm.tu-graz.ac.at

NIR Tool Name: Hyper-G

Brief Description of Tool:

Hyper-G is the name of an ambitious hypermedia project currently being developed as a joint effort by a number of institutes of the IIG (Institutes for Information-Processing Graz) and the Computing and Information Services Center of the Graz University of Technology and the Austrian Computer Society.

Hyper-G is designed as a general-purpose, large-scale, multi-user, distributed hypermedia information system. As such, it combines concepts of hypermedia, information retrieval systems, documentation systems with aspects of communication and collaboration, and computer supported teaching and learning. It also provides seamless integration of other systems (e.g., World-Wide Web, Gopher, WAIS) that also operate under the client/server paradigm and allows remote logins to interactive services.

In addition to hypertext links, Hyper-G allows navigation through hierarchies, queries (including full text), guided tours, and is multilingual.

Hyper-G is currently operated at some 10 locations throughout the world, including a University Information System at the Graz Technical University. Clients and the server are available without fee for educational institutions, and are distributed as binaries for a number of platforms.

Primary Contact(s):

Name: Frank Kappe

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Postal Address: Schieszstattg. 4a, A-8010 Graz, AUSTRIA

Telephone: +43-316-832551-22

Fax: +43-316-824394

Help Line:
Sorry no help line

Related Working Groups:

Sponsoring Organisation / Funding source:

Austrian Ministry of Science
European Space Agency

Mailing Lists:
uniinfo@mlist.tu-graz.ac.at

News groups:
None

Protocols:

What is supported: RPC

What it runs over: TCP/IP

Other NIR tools this interworks with: gopher, WAIS, World Wide Web

Future plans: Too numerous to mention.

Servers:

Date completed or updated: 12th October, 1993
By: Name: Gerald Pani
Email address: gpani@iicm.tu-graz.ac.at

Platform: UNIX

Primary Contact:
Name: Gerald Pani
Email address: gpani@iicm.tu-graz.ac.at
Telephone: +43-316-832551-34

Server software available from: anon-ftp from iicm.tu-graz.ac.at, in directory pub/Hyper-G/Server

Location of more information: see README in above directory

Latest version number:

Brief Scope and Characteristics:

Approximate number of such servers in use: 13

General comments:

Currently available as binary distribution for SUN, DEC, HP, and SGI workstations.

Clients:

UNIX curses client (a.k.a. VT100 Client)

Date completed or updated: 19th October, 1993

By: Name: Frank Kappe
Email address: fkappe@iicm.tu-graz.ac.at

Platform: UNIX

Primary Contact:
Name: Frank Kappe
Email address: fkappe@iicm.tu-graz.ac.at
Telephone: +43-316-832551-22

Client software available from:

anonymous ftp: iicm.tu-graz.ac.at:/pub/Hyper-G/UnixClient

Location of more information:

Latest version number: 1.41

Brief Scope and Characteristics:

Fairly sophisticated terminal viewer with ~50 commands, multi-language user interface, history, authoring capabilities (text documents and links) and the ability to speak to gopher, World-Wide-Web, WAIS and to start telnet sessions.

General comments:

Future plans:

The terminal viewer will probably remain rather stable in the future. Our main effort now goes into the development of clients for X-Windows and MS-Windows.

MS-Windows Client

Date completed or updated: 10th October, 1993
By: Name: Thomas Dietinger
Email address:

Platform: UNIX

Primary Contact:
Name: Thomas Dietinger, Frank Kappe
Email address: tdieting@iicm.tu-graz.ac.at
Telephone: +43-316-832551-22

Client software available from:

anonymous ftp: iicm.tu-graz.ac.at:/pub/Hyper-G/pc-client

Location of more information:

Latest version number: 1.37

Brief Scope and Characteristics:

Preliminary version of a Hyper-G client for MS-Windows 3.1 and Windows NT. Currently mostly identical to the UNIX curses client. An exception is its ability to elegantly import and export RTF text files to/from Hyper-G, and its multimedia capabilities.

General comments:

Future plans:

Will become more fancy (menus, icons, buttons...) in the near future.

Demonstration sites:

List of sites which are willing to act as demonstration sites for this application.

Site name: hyperg.tu-graz.ac.at
Access details: 'rlogin hyperg.tu-graz.ac.at' or
'telnet hyperg.tu-graz.ac.at', login 'info'

(rlogin has the advantage that the terminal size of xterms is handled correctly (can even be changed in the middle of a session)

Note: The same information is available through Gopher and WWW gateways.
Gopher: host gopher.tu-graz.ac.at, port 70
WWW: URL=http://www.tu-graz.ac.at:80/ROOT

Documentation:

Document Title: Most of the documentation is available on-line in the Graz server. The server distribution include man-pages

of the additional authoring tools and utilities that are supplied with the server. The ideas behind Hyper-G are described in a number of research papers (see Bibliography).

Location details:

Site: iicm.tu-graz.ac.at
Full file name: look in directory /pub/Hyper-G/doc

Bibliography:

Kappe F.: Aspects of a Modern Multi-Media Information System. IIG Report 308, IIG, Graz University of Technology, Austria, June 1991. Available by anonymous ftp from iicm.tu-graz.ac.at:/pub/Hyper-G/doc/report308.ps.Z

Kappe F., Maurer H., Sherbakov N.: Hyper-G - A Universal Hypermedia System. Journal of Educational Multimedia and Hypermedia, Vol. 2, No. 1, pp. 39-66 (1993). Also available by anonymous ftp from iicm.tu-graz.ac.at:/pub/Hyper-G/doc/report333.txt.Z

Kappe F., Pani G., Schnabel F.: The Architecture of a Massively Distributed Hypermedia System. Internet Research: Electronic Networking Applications and Policy, Vol. 3, No. 1, pp. 10-24; Meckler (Spring 1993)

Kappe F., Maurer H.: Hyper-G: A Large Universal Hypermedia System and Some Spin-Offs; ACM Computer Graphics, experimental special online issue; available by anonymous ftp from siggraph.org in directory publications/May_93_online/Kappe.Maurer (May 1993)

Kappe F.: Hyper-G: A Distributed Hypermedia System; Proc. INET '93, San Francisco, California, pp. DCC-1 - DCC-9 (Aug. 1993).

Other Information:

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SOFT PAGES

Date template updated or checked: 4th November, 1993
By: Name: Glenn Mansfield
Email address: glenn@aic.co.jp

NIR Tool Name: SoftPages

Brief Description of Tool:

A tool to aid users in the efficient retrieval of documents, s/w, and the like from servers (anonymous FTP, FTAM, ..) connected to the network. In principle, it uses the X.500 Directory framework to store information about the network. This includes the network configuration, the properties of the links that connect the network elements, location of servers and their contents. When a user looks for a particular document or s/w the above information is used to search for the object starting from the server that is "nearest" (cheapest) to the user.

The X.500 directory services is used in several stages
- get list of file-servers
- get path to file servers
- get attributes for computing cost of paths
- search for file that is being sought

However, under present circumstances, due to lack of deployment of network information in the directory, when information is unavailable from X.500, alternate sources/methods are used. [Static-lists of file-servers, or lists of file servers from other clients (e.g., archie); Paths and/or costs are obtained from static lists or derived by other direct means (e.g., ping, traceroute); file information is sought from other servers (e.g., archie).]

User's View:

A "single window" view of the public archives connected to the network. It locates the server that contains the sought object and is near(/cheap/fast) server.

Query of files based on incomplete name is supported. The system also supports queries based on keywords.

Information Provider's View:

The information about the server contents have to be updated

at a single place- namely, the local Directory Service Agent.
The Directory Service Agent makes the information globally accessible.
It is not necessary to carry out periodic updates on one or more information servers.

- information types supported (e.g., text, sound, etc.)

Since the system supports query on name and keywords (not on contents) all kinds of information may be supported.

Primary Contact(s):

Name: Manager, SoftPages Project
Email address: spp-manager@aic.co.jp
Postal Address: AIC Sytsems Lab.
Minami Yoshinari 6-6-3
Aoba-ku, Sendai-shi 989-32, Japan

Telephone: +81-22-279-3310
Fax: +81-22-279-3640

Help Line:
Name: SoftPages Project Support Group
Email address: spp-support@aic.co.jp
Telephone: +81-22-279-3310

Level of support offered:
o volunteer
o all users yes

Hours available: Regular working hours

Related Working Groups:
The SoftPages Project Working Group

Sponsoring Organisation / Funding source:
The project is supported by:
AIC Systems Lab., Sendai, Japan
Tohoku University, Sendai, Japan

The WIDE Project, Japan

Mailing Lists:

Address:	spp@aic.co.jp
Administration:	spp-request@aic.co.jp
Description:	Technical discussion related to representation of network information in the directory and its usage is carried out in this group.
Archive:	Not (yet) available via anonymous FTP.

News groups:
None

Protocols:

What is supported:	X.500 DAP
What it runs over:	LDAP over IP

Other NIR tools this interworks with:

Future plans:

Servers:

Date completed or updated:	4th November, 1993
By: Name:	Glenn Mansfield
Email address:	glenn@aic.co.jp
Platform:	Unix

Primary Contact:

Name:	Manager, SoftPages Project
Email address:	spp-manager@aic.co.jp
Telephone:	+81-22-279-3310

Server software available from:
Any standard X.500 package will do.
We are using the QUIPU package that is included

in the ISODE system

Location of more information:

Latest version number:

Brief Scope and Characteristics:

Approximate number of such servers in use:

General comments:
some new oids need to be assigned for
SoftPages related objects.

Clients:

Date completed or updated:	4th November, 1993
By: Name:	Glenn Mansfield
Email address:	glenn@aic.co.jp
Platform:	Unix.
Primary Contact:	
Name:	Manager, SoftPages Project
Email address:	spp-manager@aic.co.jp
Telephone:	+81-22-279-3310

Client software available from:
will be announced on the mailing list in the
near future

Location of more information:

Latest version number:

Brief Scope and Characteristics:

General comments:
The Prototype is under development and testing.
It is not (yet) available for public use.

Future plans:

Demonstration sites:

Documentation:

Document Title: README
Location details:
Site: ftp.tohoku.ac.jp
Full file name:pub/spp/README

Bibliography:

"The Soft Pages Project", Th. Johannsen, G.Mansfield,
OSI-DS-39, February 1993.
Location details:
Site: cs.ucl.ac.uk
Full file name:osi-ds/osi-ds-39-00.{txt, ps}

Other Information:

"Optimized Document Retrieval - Soft Pages Project", Th. Johannsen,
G.Mansfield, S.Noguchi, Booklet of Abstracts,
The Network Services Conference '92, Pisa, November 1992.

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WHOIS++

Date template updated or checked: 21 October, 1993
By: Name: Chris Weider
    Email address: clw@bunyip.com

NIR Tool Name: whois++ and the whois++ index service

Brief Description of Tool:

whois++ and the whois++ index service are extensions of the WHOIS protocol. They are designed to a) subsume in a standardized fashion the many enhancements which have been added to individual WHOIS servers; b) extend the flexibility of WHOIS by enriching the query syntax, and c) provide a distributed indexing system to tie the various whois++ servers into a distributed information lookup service.

The protocols describe two logically distinct types of servers that an information provider can set up. The first type is the base-level whois++ server. This contains primary information, such as entries for individual people or entries describing resources available locally. For example, if one wished to provide a campus directory through whois++, one would set up a base-level whois++ server that contained entries for each student. In addition, this base-level server must be able to generate 'forward knowledge' for the information it contains. The second type of server collects the 'forward knowledge' generated by a number of base-level servers, and can take a query sent to it and determine which of the base-level servers it indexes might contain information relevant for the query. A single physical server may contain both primary information and 'forward knowledge' for a number of other servers, and an index server can also index 'forward knowledge' for a number of other index servers, allowing a hierarchical mesh of index servers to be built. For more details on the information provider's point of view, see the 'Documentation' section of this template.

The basic information model is centered on the concept of 'templates'. A template is a collection of attribute:value pairs, where the allowable attributes are specified by the template type. The whois++ templates are based on the templates defined by the IAFA working group of the IETF. The values associated with given attributes are not necessarily limited to text, they can be digitized sound clips, etc.

Depending on the client she uses, the user will see a connection to the local whois++ base-level server. The user can ask the server for a list of templates supported by that server, and can then call up a

blank version of the template so that she can fill in values for the attributes she knows. Once she has filled in the template as much as she wants, she issues a query to the server to find all the entries which have these attribute:value pairs. If she is not satisfied with the responses, she can then start traversing the index service to locate a server which can adequately answer her query. In addition, if a user makes frequent use of the index service, she can set 'bookmarks' which can be used later to directly contact servers she's found useful in the past, without having to traverse the index service again.

Primary Contact(s):

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Name: Peter Deutsch

Email address: peterd@bunyip.com

Postal Address: Bunyip Information Systems, Inc.
266 Blvd. Neptune
Dorval QUEBEC H9S 2L4
CANADA

Telephone: +1-514-875-8611

Help Line:
Not yet deployed.

Related Working Groups:

Whois Network Information Lookup Service (WNILS) Working Group of the Internet Engineering Task Forces (IETF)

Sponsoring Organisation / Funding source:
None

Mailing Lists:

Address: ietf-wnils@ucdavis.edu

Administration: ietf-wnils-request@ucdavis.edu

Archive: pub/archive/wnils@ucdavis.edu

News groups:

NONE

Protocols:

What is supported: WHOIS, whois++

What it runs over: TCP/IP

Other NIR tools this interworks with: None yet.

Future plans: Providing resource location services and URN/URL mappings for GOPHER, ARCHIE, WAIS, and WWW.

Servers:

Only beta versions available at this time (21 October, 1993). Please contact clw@bunyip.com (Chris Weider) for more information.

Clients:

Only beta versions available at this time (21 October, 1993). Please contact clw@bunyip.com (Chris Weider) for more information.

Demonstration sites:

NONE at this time (21 October, 1993)

Documentation:

Document Title: Architecture of the Whois++ Index Service
Location details:
Site: gopher.ucdavis.edu
Full file name: /pub/IETF/WNILS/Architecture.Index.Service

Document Title: Architecture of the WHOIS++ Service
Location details:
Site: gopher.ucdavis.edu
Full file name: /pub/IETF/WNILS/Architecture.Overview

Document Title: Specifications for WHOIS Services
Location details:
Site: gopher.ucdavis.edu
Full file name: /pub/IETF/WNILS/Discussion.Paper

Bibliography:

See the documentation section of this template.

Other Information:

As this is a coming attraction, we encourage people to get in on the ground floor. The authors of this protocol see it as potentially being a key player in any integrated Internet information architecture, and we can always use more volunteers who want to beta-test code for us.

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