

Z39.50 and related protocols for search and retrieval

Overview

WAIS, Z39.50, ISO 2395 protocols for search and retrieval

- **Client/server protocols for the application layer in networks.**
- **Support the construction of distributed, networked information retrieval applications.**
- **Allow users to search simultaneously**
 - » 1 or multiple databases (full-text)
 - » on 1 or multiple Internet sites

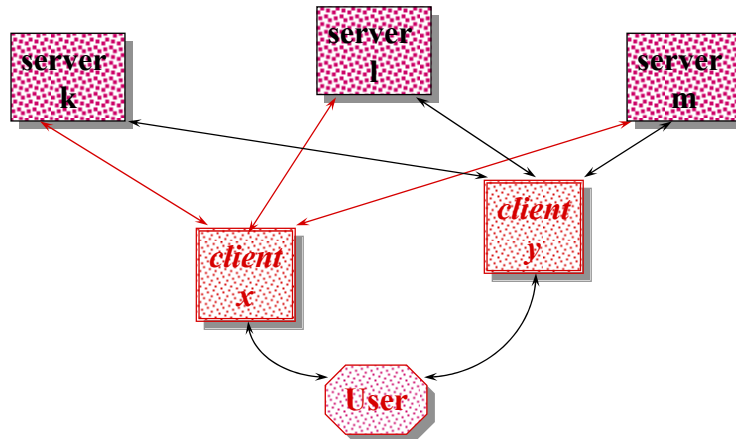
WAIS, Z39.50, ISO 2395: the differences

- **Z39.50 = US NISO standard**
- **ISO 2395 = by the International Standards Organization (ISO)**
- **WAIS = protocol used in the WAIS software, developed in the USA; a superset of Z39.50,**

WAIS, Z39.50, ISO 2395: applications

- **Library catalogues**
- **Bibliographic databases**
- **Texts of books**
- **Texts of poems**
- **Texts of journals**
- **Archives of Usenet newsgroups**
- **README files of computer programs available through anonymous ftp**
- **Non-text databases**

WAIS, Z39.50, ISO 2395: scheme



!! Task - Assignment !!

Have a look at animated schemes that explain Z39.50:

1. [the basics](#)
2. [pc to Z-server through the Internet](#)
3. [Z39.50 through the WWW](#)



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!! Task - Assignment !!

Read the journal article:

Needleman, Mark

[Z39.50 – a review, analysis and some thoughts on the future.](#)

Library Hi Tech, Vol. 18, No. 2, 2000, pp. 158-165.



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!! Task - Assignment !!

Read

Z39.50 [online]

Available from:

<http://en.wikipedia.org/wiki/Z39.50>

[cited May 2006]



!! Question !!

In which ways are retrieval systems like WAIS more advanced than more classical online access database systems?



Comparison with more classical database host systems

	<i>WAIS</i>	More classical host systems
•Client-server architecture	•Yes	»No or yes
•Geographically distributed databases and server computers	•Yes	»Only through gateways
•Searching mechanism	•Ranking	»Boolean

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WAIS

WAIS = Wide Area Information Server : description

WAIS is the name

- **of software**
- or
- **of a computer system with this software implemented.**

WAIS uses the client and server software architecture: principles

- **WAIS uses TCP/IP to connect client applications to information servers.**
- **Client applications are able to retrieve text or multimedia documents stored on the servers:**
 - » Client applications request documents using keywords.
 - » Servers search a full text index for the documents and return a list of documents containing the keyword.
 - » The client may then request the server to send a copy of any of the documents found.

WAIS question-based searches

- **WAIS is question based, i.e., the search process is initiated by a natural language question rather than by commands and keywords.**
- **WAIS searches are fast and the results can be scanned on-line or mailed to your network address.**
- **There is a limit to the number of “hits” that WAIS reports, but each is assigned a relevancy score that can be useful in choosing which sources to examine.**

WAIS server software availability

WAIS server software for computers linked appropriately to the network is available in the public domain for many operating systems.

WAIS client software availability

WAIS client software for computers linked appropriately to the network is available in the public domain for

- » UNIX-related systems: dumb terminal UNIX, X Windows, Motif, Sunview, NextStep, ...
- » Macintosh
- » DOS without Windows
- » Windows (various “WinWAIS” programs)
- » IBM systems: VMS, RS/6000
- » ...

WAIS client software for UNIX: help screen

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SWAIS                               Source Selection Help

j, down arrow, ^N                   Move Down one source
k, up arrow, ^P                       Move Up one source
J, ^V, ^D                             Move Down one screen
K, <esc> v, ^U                         Move Up one screen
###                                   Position to source number ##
/sss                                   Search for source sss
<space>, <period>                     Select current source
=                                       Deselect all sources
v, <comma>                             View current source info
<ret>                                  Perform search
s                                       Select new sources (refresh sources list)
w                                       Select new keywords
X, -                                   Remove current source permanently
o                                       Set and show swais options
h, ?                                   Show this help display
H                                       Display program history
q                                       Leave this program

```

WAIS: some text databases made available

- **Journalism Periodicals Index**
- **bit.listserv.cdromlan archives**
- **The Gutenberg Project archives**
- **Educational Resources Information Center Digests**
- **Journals of the ACM**

WAIS: the directory of known WAIS servers

- **In order to find which sources/databases/servers are available through WAIS, you can search the “Directory of servers”.**
- **This is also a WAIS database, and can be searched like any other WAIS database.**
- **Each record/document provides a textual description of an available WAIS database.**

WAIS on 1 computer or on a LAN

**Although the name “Wide Area” implies the use of the large networks (such as the Internet) to connect clients to servers distributed around the network,
WAIS can be used**

» between a client and server on the same machine

or as

» a client and server on the same LAN

WAIS: problems with the first versions of the software

- **Database text contents is limited to 7-bit ASCII.**
- **Database documents lack structure.**
- **Retrieval is not precise.**
- **Retrieval lacks Boolean search capability.**
- **Retrieval lacks proximity searching.**
- **Natural language searching engine does not “know” English.**
- ...

WAIS: computer-network interest groups about WAIS

Computer-network based interest groups about WAIS exist

- » based on electronic mail
- » in Usenet News

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WAIS, Z39.50 and SR versus WWW/http

?? Question ??

**Z39.50 versus WWW/http:
list similarities and differences.**



WAIS, Z39.50 and ISO 2395 versus WWW/http

- They are all client-server network protocols in the Internet.
- They are developed to offer a seamless, unified view of decentralised information servers
- WAIS, Z39.50 and ISO 2395 focus on searching databases, while WWW/http focuses on browsing of linked information servers.
- WWW/http is in several ways simpler and thus more widespread than WAIS, Z39.50 and ISO 2395.

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