



## はじめに

データベース情報サーバ (WAIS : Wide Area Information Servers) はインターネットに接続されている各種のデータベースの利用を可能にしてくれる便利な探索ツールである。今回はノースカロライナ大学チャペルヒル校にあるインターネット・サーバを紹介しながら WAIS を説明しよう。

## インターネット・サービス・メディエーター

ノースカロライナ大学チャペルヒル校にあるインターネット・サーバでは、だれにでも無料でサーバ上にアカウントを作成してくれて、すべてのユーザは世界中のインターネット図書館および WAIS にアクセスできる。ノースカロライナ大学チャペルヒル校にあるインターネット・サーバの IP address は `bbs.oit.unc.edu` で、ログイン名は `launch` と入力する。

```
%telnet bbs.oit.unc.edu
Trying...
Connected to lambada.oit.unc.edu.
Escape character is '^]'.

ULTRIX V 4.2 A (Rev. 47) (lambada)

    * * * ATTENTION laUNCHpad USERS * * *
    Type 'launch' at the login prompt.
login : launch
Last login : Mon Mar 15 02:26:20 from CAMV 0.ast.cam.ac
ULTRIX V 4.2 A (Rev. 47) System # 2 : Mon Sep 28 13:37:25 EDT 1992
UWS V 4.2 A (Rev. 420)

Welcome to laUNCHpad, the Internet Service Mediator
    laUNCHpad 2.0 running on launchpad.unc.edu,
at the University of North Carolina at Chapel Hill
    Courtesy of the Office of Information Technology
```

SUPPORT LETTERS—we need'em more than ever if we want to continue especially from UNC students, faculty and staff (we need you others too). Please send to Paul Jones, CB 3460, UNC, Chapel Hill, NC 27599-3460

You can set up an account for yourself by typing in your first and last name at the prompt. If the system prompts you for a password, it means that we already have a user with that name. Keep trying names until you find one that no one else is using. We offer a wide variety of services, and have help facilities to explain them. If you have any trouble, don't hesitate to let us know—send mail to "help."

コメントは help@launchpad.unc.edu へ出すことができる。

Please do not send mail to root or postmaster. If you have any questions or comments, send them to help@launchpad.unc.edu.

NEW ITEM>>>>>>> The laUNCHpad has always considered itself a UNC community service and taken a liberal definition of "community." The University's Mission Statement in the 1992-94 Undergraduate. This system keeps track of users by their first and last names.

はじめてこのシステムにアクセスする場合は、次の質問がアカウントの登録になる。

Your name ? yoshiyasu takefuji <-----自分の名前を登録する。

Password ? <-----パスワードを登録する。

登録を終了すると、次の画面が出てくる。

```

Main Menu
1. Network News
2. Electronic mail
3. On-line Information Systems (LIBTEL)
4. Topical document search (WAIS)
5. Download files
6. Find user
7. User Options
(? or h)elp, (q)uit.
```

==> 4

ここで WAIS を選択すると次の出力が画面に表示される。

SWAIS	Source Selection	Sources : 377
Server	Source	Cost 001:
[ archie.au]	aarnet-resource-guide	Free 002:
[ munin.ub 2.lu.se]	academicemailconf	Free 003:
[wraith.cs.uow.edu.au]	acronyms	Free 004:
[ archive.orst.edu]	aeronautics	Free 005:
[ bloat.media.mit.edu]	Aesop-Fables	Free 006:
[ ftp.cs.colorado.edu]	aftp-cs-colorado-edu	Free 007:
[nostromo.oes.orst.ed]	agricultural-market-news	Free 008:
[ archive.orst.edu]	alt.drugs	Free 009:
[ wais.oit.unc.edu]	alt.gopher	Free 010:
[sun-wais.oit.unc.edu]	alt.sys.sun	Free 011:
[ wais.oit.unc.edu]	alt.wais	Free 012:

[ alfred.ccs.carleton.]	amiga-slip	Free 013:
[ munin.ub 2.lu.se]	amigafishcontents	Free 014:
[ quake.think.com]	Applications-Navigator	Free 015:
[ 132.183.190.21]	Arabidopsis-BioSci	Free 016:
[weeds.mgh.harvard.ed]	ArabidopsisthalianaGenome	Free 017:
[ ftp.tex.ac.uk]	archaeologicalcomputing	Free 018:
[ archive.orst.edu]	archie-orst.edu	FreeKeywords:

<space> selects, w for keywords, arrows move, <return> searches, q quits, or ?

ここで WAIS のニュースグループ 11 を選択すると、次の画面が出てくる。

SWAIS		Search Results		Items: 40	
#	Score	Source		Title	Lines
001:	[1000]	( altwais)	brewster@T	Re : WAIS-discussion digest # 5	740
002:	[ 750]	( altwais)	bremner@cs	Re : Re : Indexing compressed t	1025
003:	[ 750]	( altwais)	salvendy@e	Re : HCI International '93 Ann	476
004:	[ 500]	( altwais)	mycroft@ha	Re : Re : Single source, multip	42
005:	[ 500]	( altwais)	oracle@odi	Re : Windows client using 3 c 50	30
006:	[ 500]	( altwais)	fullton@rh	Re : Re : Windows client using	51
007:	[ 500]	( altwais)	eengelke@s	Re : Re : Windows client using	28
008:	[ 500]	( altwais)	lwv 26@cas.	Re : Re : Things you'd like to	24
009:	[ 500]	( altwais)	brewster@q	Re : Re : Wais and AIX	74
010:	[ 500]	( altwais)	toddg@hpfc	Re : Re : motif version of xwai	30
011:	[ 500]	( altwais)	brewster@q	Re : Re : proposed extension to	74
012:	[ 500]	( altwais)	brewster@T	Re : WAIS-discussion digest # 5	153
013:	[ 500]	( altwais)	brewster@T	Re : WAIS-discussion digest # 5	412
014:	[ 500]	( altwais)	ephraim@th	Re : Re : Trouble with WAISSERV	135
015:	[ 500]	( altwais)	jik@athena	Re : Re : Trouble with WAISSERV	41
016:	[ 500]	( altwais)	larry@gato	Re : Re : Summary : Internet sof	22
017:	[ 500]	( altwais)	brewster@T	Re : WAIS-discussion digest # 6	834
018:	[ 500]	( altwais)	brewster@T	Re : WAIS-discussion digest # 6	313

<space> selects, arrows move, w for keywords, s for sources, ? for help

ここで、1 の内容を見てみると、

SWAIS	Document Display	Page : 1
Newsgroups : alt.wais,list.wais-discussion		
Path : samba ! concert ! rock ! stanford.edu ! ames ! sun-barr ! cs.utexas.edu ! zaphod.mps.ohio-state.edu ! sol.ctr.columbia.edu ! ira.uka.de ! news.belvue.de ! news.uni-stuttgart.de ! news-mail-gateway		
From : brewster@Think.COM (Brewster Kahle)		
Subject : WAIS-discussion digest # 60 : Overview of WAIS sources		
Message-ID : <9301092255.AA 13440@quake.think.com>		
Sender : brewster@quake.think.com		
Organization : Comp.Center (RUS) U of Stuttgart, FRG		
Date : Sat, 9 Jan 1993 22:55:24 GMT		
Lines : 824		
Forum On Wide Area Information Servers and Electronic Publishing Brewster Kahle		

Contents :

Re : Directory of sources (Chris Christoff )

[These directories of WAIS sources are extremely useful, thank you to Chris and to Paolo (for the biology listing in issue 59). -brewster]

Date : Mon, 30 Nov 92 12:27:24 +1000

From : Chris Christoff <chris@bu.oz.au>

Subject : Re : Directory of sources

This may be of interest to you all. It is a "cross-posting" from wais-talk at the request of Brewster Kahle.

I have released a new version of the WAIS source description document, valid for WAIS sources in the Directory-of-Servers prior to Nov 23 1992.

You can ftp the document from kirk.bu.oz.au (131.244.1.1), directory pub/BondUni/doc/wais.

This directory has the WAIS source description document. The document is in 2 parts, one a list of WAIS sources and their descriptions grouped into categories (the src-list) and the other the sources and descriptions listed in alphabetical order (the annex).

There is a compressed postscript (.ps.Z) and a text version (.txt).

The postscript version had to be compressed as I am running out of disk space in this ftp archive.

～たいへん長いので途中省略～

quit して Main Menu に戻ってから、世界中のインターネット図書館を見よう。

#### Main Menu

1. Network News
2. Electronic mail
3. On-line Information Systems (LIBTEL)
4. Topical document search (WAIS)
5. Download files
6. Find user
7. User Options

ここで、世界中のインターネット図書館を選択するため 3 を入力する。

3

#### Internet Accessible Libraries and Information Systems

(NA) North American Region (MISC) Miscellaneous Services  
(EUR) European Region (BBS) Other Bulletin Boards  
(ANZ) Pacifica Region (NOT) Notes on Libtel (Please Read)  
(ASA) Asian Region (CTP) Contemporary Poetry  
(ME) Middle-Eastern Region (EXIT) Go Back to the BBS

To return to this screen during search press 'ctrl G'

Where would you like to go ? **NA**

ここで北米領域を選択するために NA と入力した。

North American Region Libraries and Information Systems		
(AL) Alabama	(ME) Maine	(OH) Ohio
(AK) Alaska	(MB) Manitoba	(OK) Oklahoma
(AB) Alberta	(MD) Maryland	(ON) Ontario
(AZ) Arizona	(MA) Massachusetts	(OR) Oregon
(AR) Arkansas	(MI) Michigan	(PA) Pennsylvania
(BC) British Columbia	(MN) Minnesota	(PE) Prince Edward I.
(CA) California	(MS) Mississippi	(QB) Quebec
(CO) Colorado	(MO) Missouri	(RI) Rhode Island
(CT) Connecticut	(MT) Montana	(SA) Saskatchewan
(DE) Delaware	(MX) MEXICO	(SC) South Carolina
(DC) Washington DC	(NE) Nebraska	(SD) South Dakota
(FL) Florida	(NV) Nevada	(TN) Tennessee
(GA) Georgia	(NB) New Brunswick	(TX) Texas
(HI) Hawaii	(NF) Newfoundland	(UT) Utah
(ID) Idaho	(NH) New Hampshire	(VT) Vermont
(IL) Illinois	(NJ) New Jersey	(VA) Virginia
(IN) Indiana	(NM) New Mexico	(WA) Washington
(IA) Iowa	(NY) New York	(WV) West Virginia
(KS) Kansas	(NC) North Carolina	(WI) Wisconsin
(KY) Kentucky	(ND) North Dakota	(WY) Wyoming
(LA) Louisiana	(NS) Nova Scotia	

ここで、たとえば OH と入力すると、オハイオ州の図書システムが表示され、自分がアクセスしたいシステムを選択できる。システムへのアクセスを中断したい場合は、control-] を押す。

WAIS を自分のシステムに移植したい場合は、WAIS のニュースグループの情報を読んで ftp-site の IP address を知るか、archie データベースを使って WAIS プログラムソースを探し出せばよい。

### TOPICAL NEWS (Digital Virtual Library (バーチャル図書館))

今年2月15日に Willem Scholten 氏より comp. internet. library のニュースグループに JANUS プロジェクトの情報が入ってきた。

要約すると、コロンビア大学法学図書館とスーパーコンピュータ・メーカの Thinking Machines Co. は5年プロジェクトの JANUS データベースシステムを開発中であり、1996年に完成の予定である。開発中のバーチャル図書館は大量のイメージデータやテキストデータが扱える。さらにグラフィックデータ、音声データ、ビデオデータなどの情報も扱えアクセスできる。JANUS プロジェクトのデータベースシステムは1台の CM-2 マシン (32,000個のプロセッサ) に256メガバイトのメインメモリと20ギガバイトのハードディスク上で開発されている。

このデータベースシステムは、インターネットを介して米国内および外国にもサービスを供給しようとしている。詳細は下記へ連絡してください。

Willem Scholten                      Mail :            willem@lawmail.law.columbia.edu  
Columbia Univ Law Schoo            FedEx mail : willem@sparc-1.law.columbia.edu

Computer Center  
435 West 116 th Street  
Room 7 W 1  
New York, NY 10027  
ph : 1 212 854 7938

Fax : 1 212 854 7946

=====  
From : willem@sparc-1.law.columbia.edu (System Admin)  
Subject : Digital and Virtual library  
Date : Mon, 15 Feb 1993 16 : 17 : 14 GMT

The following is the official announcement and project description of  
the digital library system under development at Columbia University Law School.  
All inquiries should be directed via e-mail to :

—Willem.

----- project description -----

### Project JANUS

#### Large-scale Imaging and Text-Retrieval Project

#### Introduction

JANUS is a five-year project of Columbia Law Library to develop an electronic, or 'virtual', library that combines digital conversion and storage of document text and graphics, massively parallel super-computing, and advanced user-friendly search and retrieval software. When completed in 1996, JANUS will be a 'library of the future' and provide unprecedented electronic access nationwide to large-scale databases comprised of full text, graphics, images, data, sound and video materials.

JANUS is a joint venture of Thinking Machines Corporation (TMC) of Cambridge MA, the world's largest manufacturer of highly parallel supercomputers, and Columbia Law Library, the nation's third largest collection of legal materials. JANUS uses the world's leading parallel supercomputer, The Connection Machine System (CM-2) \*, on loan from TMC and installed at the Law School Library. Columbia and TMC are jointly developing retrieval software for use on large scale databases.

#### A 'Virtual' Library

Advances in optical scanning allow Project JANUS to convert and store in digital form an exact copy of a document page by page. Project JANUS is developing software that correctly interprets text that may have been corrupted during the optical character recognition process. By 1996, Columbia Law Library expects to convert about 10,000 to 12,000 volumes a year to electronic storage and expects a continued increase to its collection of new documents available only in electronic form.

JANUS' optical scanning process also converts and stores an exact copy of the document into a file that can be searched and manipulated by software developed by Project JANUS. JANUS' unique and powerful ability to search for and retrieve specific information from large scale text, graphics, image, sound and video databases best demonstrates the 'library of the future.' From any computer terminal connected to the JANUS system, a user seeking specific information on a subject can type in a word, phrase or sentence in ordinary English and receive in seconds specific references listed in order of relevance. The user has access to the exact copy of complete text at the position most relevant to the query and to relevant images and sounds. The user can save retrieved items or sections of items as needed. The user can continue searching for additional references by using new words or phrases or by highlighting words, phrases or sections of text already retrieved and again receive in seconds more references listed in orders of relevance.

#### JANUS' Database Software

Project JANUS accomplishes free-text searches by using a non Boolean natural language algorithm that incorporates frequency based indexing, relational value weighting, and relevance feedback from the individual user.

Using the immense 'number-crunching' power of parallel computing and building on TMC's work with the Wide Area Information Server (WAIS), JANUS's unique retrieval system, WAISSeeker, allows users to search the full text of documents for arbitrary combinations of words and, unlike keyword systems, does not require users to have prior knowledge of the discipline they are searching.

JANUS is also developing a Graphical User Interface (GUI) to make all processes easy to use. In addition to being clearly instructed during the feedback and the information retrieval phases of the process, system users will also be able to incorporate retrieved products into their word processing work products.

JANUS' development of WAISSeeker will provide a storage, search and retrieval system of unprecedented power, flexibility and accuracy. Both researchers and the general user will have easy access to large scale databases of complete text, images and sounds and will retrieve items most relevant to individual user queries.

#### Interconnection, Standards and Copyright Considerations

JANUS will first serve scholars on Columbia's campus. Because JANUS uses the Z 39.50 standard as its communication protocol in its WAIS interface, it will be accessible when operational from any remote computer using a WAIS server and, via Internet, can serve users nationally and internationally. Development of a large bandwidth network channel, such as proposed in development of a National Research and Education Network, would allow a large number of users to browse and work in the Columbia Law Library from any NREN connection in the nation.

JANUS's database control system is designed to provide a datafile tagging and logging structure to protect copyrights and intellectual property. Columbia Law School is collaborating with Simon and Shuster to set standards for copyright protections applicable to wide-scale electronic retrieval and dissemination of information.

#### Project JANUS 1991-1996: "The Library of the Future"

Project JANUS is nearing completion of Phase One by developing and testing its natural language algorithm and extensively testing the system's ability to retrieve corrupted text. Phase Two will see a limited use production system available to researchers at the Columbia Law Library and via the Internet. JANUS will acquire large-scale databases and develop procedures for supporting multiple users concurrently using WAISSeeker.

In its final phase, JANUS will become a full production system with staffing for the Law School 'virtual' library in place. JANUS will have established relations with publishers to allow for use of copyrighted materials directly in electronic form and will have developed programs to track and verify use of licensed materials electronically.

- Connection Machine, CM-2 and Thinking Machines are trademarks of Thinking Machines Corporation. The CM-2 is equipped with 32,000 processors and has 256 megabytes of main memory and 20 gigabytes (billions of bytes) of hard disk storage.

(たけふじ よしやす 慶應義塾大学 環境情報学部)

