African studies computer resources that are readily available in the United States with linkages to Africa are described, highlighting those most directly corresponding to African content. Africanists can use the following four fundamental computer systems: (1) Internet/Bitnet; (2) Fidonet; (3) Usenet; and (4) dial-up bulletin board services. The history and features of each of these systems are described, with information for potential users, including the electronic mail capabilities that are currently available. Distribution lists and African-related discussion groups are presented. For Africanists seeking direct contacts in Africa, at least 25 African countries offer network connections. The four computer networks and their facilities should be readily available for Africanists, who are finding proficiency in computer technology a requirement for research and teaching. A table lists networking organizations and African Studies Centers. (SLD)
AFRICAN STUDIES COMPUTER RESOURCES

Patricia S. Kuntz
(Curriculum & Instruction)
University of Wisconsin - Madison

UW African Studies BBS (608) 262-9689 8, N, 1 2400 - kuntz
Bitnet - kuntz@wiscmacc
Internet - kuntz@mac.wisc.edu
Fidonet - kuntz@p3.f25.n121.z1.fidonet.org

This paper will focus on African studies computer resources readily available in the U.S. with linkages to Africa. Since the actual number of resources change daily, this article will highlight the ones most directly corresponding to African content. Africanists can utilize four fundamental computer systems: Internet/Bitnet, Fidonet, Usenet, and dial-up bulletin board services (BBS). Knowledge of these systems is critical for research, teaching, administration, and extension. On these four networks, a variety of features are available: E-mail, Distribution Lists, File Transfer Protocol (FTP), Gophers, and Telnet. Arthur McGee provides updated information concerning services on these networks. For a complete list of files, contact:

Internet: [amcgee@netcom.com]
[amcgee@eis.calstate.edu]
BDPA BAC: [1-707-552-3314] to [Arthur McGee]
Data Bits Online: [1-213-295-6094] to [Arthur McGee]
Compuserve: [723-77, 1351]
Voice: [1-310-320-BYTE]

BLACKBBS.MSG = BBS List
AFRIMAIL.MSG = Internet/Bitnet Mailing Lists
AFRINNEWS.MSG = Usenet Newsgroups
AFRISITE.MSG = Online Information Sites

I. INTERNET/BITNET

The most common network systems throughout the world are Internet or Bitnet and the various compatible networks.

-INTERNET was developed originally as a military technology requiring a mainframe computer system but has been adapted to civilian and educational use. Internet is an international network, comprising over 400 individual networks. Current numbers put the Internet at over 500,000 hosts and one million users. Nearly all American universities subscribe to the Internet network. Users on the Internet can access File Transfer Protocol (FTP) and Telnet, described below. Most Internet sites also have access to Usenet newsgroups.

-BITNET (Because It's Time NETWORK) was designed by IBM for their mainframe computers and utilizes the same basic technology as Internet. Bitnet and Internet are mutually compatible. Bitnet connects over three thousand hosts in over 32 countries. In Canada, the identical Bitnet network is known as Netnorth, and in Europe it
is known as Earn.

Bitnet's main feature is the automatic mailing program called Listserv. Listserv file servers maintain archives of primarily low ascii documents and runs Listserv discussion groups, also known as lists. Bitnet does not support FTP or Telnet, in contrast to Internet.

A. Electronic Mail

One of the most important feature provided by the Internet/Bitnet networks is electronic mail (E-mail). E-mail is a computerized system for sending both public and private messages. African scholars can be contacted through the Association of African Studies Programs (AASP), the African Studies Association (ASA), the American Association for the Advancement of Science/African Academy of Science (AAAS), and twelve research universities. The universities are currently funded by the U.S. Department of Education under the Higher Education Act - Title VI to promote African language and area studies and to disseminate information about Africa. Each Title VI university provides resource consultants at three levels:

- Africana Bibliographyer (Bib) - answers specific research questions applicable to indepth studies
- Language Coordinator (LC) - provides language-related questions concerning textbooks, grammars, dictionaries, places of study
- Outreach Director (OD) - addresses basic questions for K-16 students and teachers or general inquiries

Table 1 indicates the above institutions' capabilities.

Commercial companies can also provide E-mail connections, in addition to a wide variety of other services such as on-line news, weather reports, and so forth. The largest commercial company is CompuServe. CompuServe Africa is a feature recently developed by CompuServe. This service seeks to meet the growing African demand for network connections especially from southern Africa. They currently served African countries include "Bophuthatswana," Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, Zimbabwe. Another commercial service for African news is NewsNet. This company has the following products among others:

- AFRICA NEWS
- ANGOLA PEACE MONITOR
- ASP DIPLOMAT
- MID EAST MARKETS
- SOUTH AFRICAN FOCUS
- SOUTHSCAN -- SOUTHERN AFRICA

B. Distribution Lists

Another Internet/Bitnet feature is the option of creating distribution lists. These lists consist of frequently used addresses which form an identifiable interest group.

Public Distribution Lists

One type of distribution list can be developed and maintained as a private list; however, subscribers have access to the list. Michigan State University, African Studies Center distributes their bi-weekly newsletter electronically. <21248jf@msu.edu>
### Table 1

Networking Capabilities Organizations and African Studies Centers

<table>
<thead>
<tr>
<th>Internet/ditnet Director/Center</th>
<th>Bib</th>
<th>LC</th>
<th>OD</th>
<th>Listserv</th>
<th>Gopher</th>
<th>Fidonet</th>
<th>BBS</th>
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<td>-</td>
<td>-</td>
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<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>Yes</td>
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<td>No</td>
</tr>
<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>Yes</td>
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<td>No</td>
</tr>
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<td>No</td>
</tr>
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<td>?</td>
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<td>No</td>
<td>No</td>
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<td>No</td>
</tr>
<tr>
<td>FL</td>
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<td>Yes</td>
<td>No</td>
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<td>No</td>
</tr>
<tr>
<td>IL</td>
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<td>Yes</td>
<td>Yes</td>
<td>?</td>
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<td>No</td>
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</tr>
<tr>
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<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>OSU</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>SU</td>
<td>Yes</td>
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<td>No</td>
<td>Yes</td>
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<td>No</td>
</tr>
<tr>
<td>WI</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1:121/25.3</td>
<td>1:109/151.42</td>
</tr>
<tr>
<td>Yale</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Contact Information*:

- **AAAS**: afraaas@gwuvm.gwu.edu
- **AASP**: tah@psuvm.psu.edu
- **ASA**: africa@emoryu.cc.emory.edu
- **BU**: leonard@stat.berkeley.edu
- **UCLA**: keller@polisci.ssncnet.ucla.edu
- **CU**: africa@nervm.bitnet
- **IL**: dcrummey@uxl.csso.uiuc.edu
- **IN**: richard.roberts@forsythe.stanford.edu
- **MSU**: africa@msu.edu
- **OSU**: mwowe@magnus.acs.ohio-state.edu
- **SU**: richard.roberts@forsythe.stanford.edu
- **WI**: afrst@macc.wisc.edu
- **Yale**: african@forsythe.stanford.edu
Users of these public list must request a subscription. For the subscription, they receive all the messages automatically to their address. Their replies, unless specified to another user, are distributed to all the members. Unlike other services, these public distribution lists do not provide archives of messages or automatic updates of lists. Rather, a systems operator must retain messages manually and update the list.

The following list is an inventory of several public distribution lists which carry African-related discussions using Internet/Bitnet network technology.

```
aajn@cctc.bitnet  Burkina Faso
afrignews@athena.mit.edu  African News service
algeria-net-request@monte.svec.uh.edu  Algeria
algnews@gwuvm.bitnet  Algeria News List-French
amazight-net@engcd.bu.edu  Berber
arabic-l@byu.edu  AATA service
ASA-NET@sfu.ca  African Students' Association
camnet@icnucetvm.cnuce.cnrt.it  Cameroon
CAMEROON-1 unpublished
egypt-net-request@das.harvard.edu  Egypt
ETHIOPIA  tesh@cleo.eng.sun.com
eritrea-net-request@eritrea.ci.net  Ethiopia
euro-naija-request@lists.funet.fi
geez-cev@eritrea.ci.net  Nigerians in Europe
kenya-net-request@ftp.com (for Kenyans only)
kci-net-request@cmll.eds.umn.edu  Kenyan/East African Tech
magheb-group@bailey.pcpac.washington.edu  North Africa
mes@athena.mit.edu  Middle East Students
msa-request@eleceng.queensu.ca
naijanet@athena.mit.edu  Muslim Student Assn.
okyeame-request@athena.mit.edu (for Ghanaians only)
saf@athena.mit.edu  African students
sierranet@athena.mit.edu  Somalia News Update
SNU  antbh@strix.udac.uu.se
swahili-l@macc.wisc.edu  Writers of Swahili
tunisnet@psuvm.bitnet  Tunisia
usasa-l@afrxml.mcws.fidonet.org  US-South African
ZIMNET  dsaburi@athena.mit.edu (For Zimbabweans only)
```

C. Listserv

The Listserv system is a feature which some universities provide for automating the distribution lists. This service customarily requires a minimum of 100 users before a computer center will accept responsibility for posting new users, archiving messages, and maintaining the variation commands for the users. Over 3000 lists exist worldwide in this automated, public format. Some examples of lists and their contents available through Listserv are:

```
AFRICA-L  listserv@vtvml.bitnet  African-related news
AFRICA-N  listserv@utoronto.ca  African News & Information
AFRICANA  listserv@wmvml.bitnet  (Info Technology and Africa)
ALGNEWS  listserv@gwuvm.gwu.edu  Algeria News List(French)
ASA-L  listserv@tamvml.bitnet  (African Students Assc.)
CAMNET  listserv@icnucetvm.cnuce.cnrt.it  Cameroon Technology
MA-SL  listserv@psuvm.psu.edu  Muslim Student Association
MUSLIMS  listserv@asuvm.inrs.asu.edu  Islamic Information & News
```
D. FTP (File Transfer Protocol)

The Internet provides free access for file upload and download. Anonymous FTP allows one to log into another mainframe machine and transfer files immediately. Through Internet, hundreds of thousands of files and programs reside on FTP file servers.

FTP sessions normally are restricted to after business hours at the transfer site. This practice reduces the cost and increases the speed of transfer.

One very valuable document available through the FTP network is on-line library catalog listings. Arthur St. George at the University of New Mexico, has been up-dating this list of library addresses for over five years. <stgeorge@unmb.bitnet> To use these library catalogs, however, one must have access to Telnet service.

E. Telnet

Telnet is not a network, as its name implies, but actually a service which allows remote access to computers. At some universities all personal computers (via ethernet) have access to telnet connection while at other universities only the campus mainframe has this service.

Gopher/CWIS/WAIS

Telnet provides connections to campus wide information services (CWIS) also known as "gopher," or wide area information service (WAIS). In addition to providing E-mail addresses, course lists, weekly announcements, and faculty addresses; this connection accesses computerized library catalog systems around the world.

The University of Pennsylvania has created an African Studies bulletin board via "gopher" <gopher.upenn.edu>, <FTP.upenn.edu>, <telnet.penninfo.upenn.edu> 

To access the African Studies database follow the directions below:

"PennInfo"
"Interdisciplinary Studies"
"African Studies"

II. Fidonet

Fidonet is an international, decentralized, cooperative, voluntary system in which participants serve one another by relaying messages through a routing system. It is a network of computer bulletin board systems connected by a common mail transfer protocol (known as FTSC-0001). There are some 11,000 Fidonet networks worldwide.

A list of all Fidonet bulletin board systems (BBSs) (known as the "modelist") is updated weekly from a central point (node 1:1/0) and is distributed throughout the network. Like Internet/Bitnet, messages include private and public conversations, but are known on this network as "echo messages". Since this network has no central
computers, Fidonet is organized in a branching system with six
geographically designated zones:
1 = USA/Canada/Mexico - North America
2 = Europe
3 = Australia, New Zealand (Oceana)
4 = Latin America
5 = Africa
6 = Asia
Fidonet nodes may be established by individuals using only
personal computers, international speed-modems, and free software.
There are no overhead costs. Consequently, this process permits
access to developing areas by users of the international hosts.
Gateways or links have reduced the cost of transmission.

Echomail is a specific forum, conference group or newsgroup.
Echomail is public, appearing on all systems that are carrying that
conference, group, and can usually be read by all users that are
participating in that conference group. These conference groups
require no subscription or fees. Currently, there are four
Echomail conferences of interest to Africanists:
- Africa Link
- Peace Corps
- South Africa
- Southern Africa Drought

III. Usenet News
Usenet (User’s Network) is a third worldwide network that
provides one main service -- news. This electronic collection of
newsgroups distributes over 300 different online topics. Usenet
connects over 10,000 hosts and 300,000 users. Unlike Bitnet and
Internet, Usenet is not an academic network. Nevertheless, Usenet
is available at most universities having Internet (Telnet) capabilities.
Usenet newsgroups are largely unavailable to Bitnet sites.
While most of Usenet’s sites are commercial, advertising is
strictly forbidden on the Usenet network. Although some 300
newsgroups are available, not all sites carry all newsgroups.

Usenet is similar to a bulletin board system which uses direct
telephone links. The user connects to read a variety of message
areas. No files are associated with this service, and messages are
automatically deleted on a regular basis; consequently, it provides
not archiving characteristics of the Bitnet listserv.

African-related Usenet Message Areas:
- soc.culture.maghreb
- soc.culture.arabic
- soc.culture.egyptian
- soc.religion.islam
- talk.politics.mideast
- soc.culture.southafrica
- soc.culture.african
- rec.music.afro-latin
- rec.travel

IV. Bulletin Board System
The bulletin board system (BBS) connects personal computers
directly through a telephone connection. Each board consists of
people interested in sending and receiving messages and files
dealing with a specific topic. BBS software allows for greater
variation in format depending on the system operator and proposed
Because the BBSs are telephone dependent, most users are local. Since these boards cost the user a telephone call, unlike the academic networks (Internet/Bitnet), a long distance log-in can be expensive. The majority of users of BBSs do not have access to Internet or Bitnet.

Presently, few BBSs exist for strictly African-related content. Two sysos are members of the African Studies Association and have promoted the use of electronic communications in Africa and the Americas.

Fidonet connections 1:121/25.3 and 1:109/151.42
Internet connections @p3.f25.n121.zl.fidonet.org

Baobab (1989) Bob Barad (202) 296-9790 & N 1 1200/2400/9600/14,400 modem
Fidonet connections 1:109/151
Internet connections @f151.n109.zl.fidonet.org

Other possible BBSs are cited from Arthur McGee’s list:

<table>
<thead>
<tr>
<th>NAME</th>
<th>NUMBER</th>
<th>SPEED</th>
<th>NETWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afra-Span</td>
<td>(404)270-5522</td>
<td>9600</td>
<td></td>
</tr>
<tr>
<td>AfraLink</td>
<td>(404)577-2195</td>
<td>2400</td>
<td>101:19/2(A)</td>
</tr>
<tr>
<td>African Civilization</td>
<td>(510)623-8744</td>
<td>2400</td>
<td></td>
</tr>
<tr>
<td>AfroConnections</td>
<td>(613)237-9531</td>
<td>2400</td>
<td>1:163/511(F), 1:163/508.11(F)</td>
</tr>
<tr>
<td>Ashanti Connection</td>
<td>(718)1634-4175</td>
<td>14400</td>
<td>1718000(V)</td>
</tr>
<tr>
<td>Benin</td>
<td>(212)281-9478</td>
<td>14400</td>
<td>101:13/108(A)</td>
</tr>
<tr>
<td>Imhotep</td>
<td>(718)1297-4829</td>
<td>2400</td>
<td></td>
</tr>
<tr>
<td>Karibu</td>
<td>(416)531-2188</td>
<td>2400</td>
<td>511/003(GT)</td>
</tr>
</tbody>
</table>

**African Linkages**

For Africanists seeking direct contacts in Africa, at least 25 African countries offer network connections. Larry Landweber at Wisconsin provides a bi-annual update of the five network options for each African country. This information is available through the Internet Society and following FTP site.

<FTP.cs.wisc.edu /connectivity_table/version_9.text>

For those francophone countries having UUCP (U/u) service, further information can be obtained by contacting the director of ORSTOM Paul Renaud. <renaud@ostom.fr> In addition to Landweber’s list, Karanja Gakio has assembled a list of specific addresses and networks in Africa. <gakio@FTP.com> The Internet Society is a repository for African contacts. <isoc@isoc.org> or on "gopher"
Conclusion

The four computer networks briefly described above and the variety of services which they provide are fundamental tools for Africanists. As such, these networks should be readily available and used by administrators, faculty, students, librarians, and outreach personnel in connecting with others interested in Africa. Proficiency in computer technology, including the manipulation computer networks has become a requirement for Africanists in research, teaching, administration, and extension.

11 September 1993

Notes

1. Ken Onwere maintains the AfroNet <system@afrex.news.fidonet.org> or <postmaster@afronet.san-diego.ca.us>.


3. NewsNet: For the Business Information Edge
   Contact: Kelly Bahel, NewsNet, Account Rep., 945 Haverford Road, Bryn Mawr, PA 19010 (215) 527-8030 (800) 952-0122

4. Sysop is Julie Sisskind % Sandra Barnes, Anthropology. sisskind@mail.sas.upenn.edu