tutorial material on networking has been omitted here. If you want the full works, buy the book when it is published!

As always, I must thank the many contributors to this collection. It is usually invidious to name names, but special thanks must go to Don Hosek for his list of electronic publications; Peter Abbott, Adrian Clark and Brian Hamilton Kelly for their work on the Aston archive; Carl Witty for helping me with access to the FTP servers; Max Hailpern for the information on the LaTeX volunteer corps; James van Zandt for the list of Internet sites with TeX-related material, and all those who pointed me in the direction of material I had not come across before.

Channel 1 (Boston, USA)

A bulletin board with a TEX area since 1987. (+1 617 354 8873)

Source code for the `uudecode` program is known to reside on the SIMTEL-20 server in the following files. They may be ordered from TRICKLE in the manner detailed above.

```
<CPM.STARTER-KIT>UUDECODE.PAS
<MSDOS.STARTER>UUDECODE.BAS
<MSDOS.STARTER>UUDECODE.COM
<MSDOS.STARTER>UUDECODE.EXE
<MSDOS.STARTER>UUDECODE.C
<MSDOS.STARTER>UUENCODE.UUE
<MSDOS.STARTER>XXDECODE.TXT
<UNIX-C.MAIL>UUENCODE-UUDECODE.TAR-Z
```

`<MISC.VAXVMS>VMSDECOD.EXE` is an executable: the source is not available.

Users of commercial mailing and messaging systems will need access to the academic and research networks in order to use these servers. This is currently available through an organisation called DASnet. With a subscription to DASnet (and a small charge per 1,000 characters either direction) you can send and receive mail from your local commercial mailbox to and from the academic and research networks. The format of address depends a little on your host system, but for an example I quote a mail from their coordinator:

```
From:  IN%"AnnaB@11.DAS.NET"
To:  cbts8001@IRUCCVAX.UCC.IE
Subj:  DASnet
```

Peter,

How one addresses BITNET through the DASnet Service depends on the source system. From GeoMail, it's as follows:

To use DASnet(R) to send me electronic mail from GeoMail, send mail as follows:

```
To:  GEO4:DASNET
Subject:  user@site.bitnet!the subject
```

One could address to anyone on the Internet in the same way.

[DASnet are on +1 408 559 7434]

This document is an abbreviated version of a chapter on TEX servers in *The TEX Companion* by Adrian Clark (in perparation). All the data on servers is present, but a substantial amount of

VA 22090,
USA

Notes: The TEX community's thanks are due to Jon for his provision of this service.

`tex/listings@bytecosy.tower.bix.us` (BIX, the BYTE magazine Information Exchange)

Application has been made to BYTE magazine to start a TEX conference and listings area in their BIX online conferencing and filestore system. No start date has been set for this service yet.

Access by: Interactive login via an ordinary X.29 (packet-switched) call to [0]310690157800 or using a standard modem (8,n,1) to +1 617 861 9767 (BELL tones for 300 and 1200 baud, BELL or CCITT for 2400 and up). Press the Enter or Return key and at the login prompt type `bix` . When asked for your name, type `bix.flatfee` and you will automatically be taken through the new-user signup routine. Files can be downloaded through your modem or X.25 connection.

Commands:

`join tex` joins you to the `TeX` conference.

`topic listings` joins you to the `listings` area for TEX files.

`receive` *filename* starts downloading to your workstation the file you specify. Immediately after pressing the Return or Enter key for this command, you need to instruct your workstation to receive a file using the XMODEM protocol (by default—other protocols are available, such as KERMIT).

`option receive kermit` instructs BIX to use the KERMIT protocol when it sends you a file.

`quit` leaves the listings area.

`bye` signs you off back to your PAD or modem link.

Example:

```
join tex
topic listings
opt rec ymodem
receive dostex.arc
quit
bye
```

Notes: You can only use BIX for downloading files if you are equipped with a computer running terminal emulation software which includes file-download protocols such as KERMIT, XMODEM, YMODEM or similar.

`CIX` (Compulink Information eXchange)

Like BIX, but UK-based, and without network access (it reputedly has USENET mail, but no address is available). CIX has a substantial TEX conference, with many files for downloading by those with no network access (+44 1 399 5252).

Example:
/pdget <msdos.tex>pcwritex.arc (uue will order the given file from directory <msdos.tex> in UUencoded form.
/pddir <msdos.tex> will send the list of all files in the <msdos.tex> directory.

Notes: TRICKLE runs at the following other EARN nodes as well:

awiwuw11	*Wirtschaftsuniversität Wien*
banufs11	*Univ. Faculteiten Sint-Ignatius te Antwerpen*
db0fub011	*Freie Universität Berlin*
dktc11	*Copenhagen Technical College*
dtuzdv1	*Universität Tübingen*
eb0ub011	*Universidad de Barcelona*
imipoli	*Politecnico di Milano*
taunivm	*Tel Aviv University*

They are all peered, so you should use the one which is logically nearest to your node (measured in network hops).

jonradel@bogey.princeton.edu (Jon Radel's Repository)

Jon Radel offers a mail-order service for those users with no access to networking.

Access by: Post

Commands: I quote from his message in the TeXhax bulletin 1989 No. 13:

```
Date:  Tue, 7 Feb 89 03:41:23 EST
From:  jonradel@bogey.Princeton.EDU (Jon Radel)
Subject:  For those who don't have access to TeX for PCs on the net...
Keywords:  general, TeX, PCs
```

"Time to introduce myself again. As a service for people who do not have decent access to TEX to PC material on the net, I distribute much of that material on floppies for a handling charge. That includes the 75 font, 5 magstep collection for a couple of the more popular printers, two versions of TEX, and a variety of smaller items.

"For various reasons, I do all my dealings on this matter by 'snail' mail, so you have to send me a self-addressed envelope to get the list of material that I have. 45 cents postage inside the USA, 4 International Reply Coupons or US$1.60 for airmail elsewhere, half that for surface (and Canada/Mexico, where surface is air as far as the USPS is concerned)."

Example:
Jon Radel,
PO Box 2276,
Reston,

bbd:texmag.txt) and TEXHaX back issues (file bbd:texhax.txt)
score.stanford.edu (36.8.0.46) TEXHax, Atari, APL metafont (tenex)
sun.soe.clarkson.edu (128.153.12.3) Packet Driver, X11 fonts, TEX, PCIP, Free
titan.rice.edu (128.42.1.30) sun-spots, amiga ispell, pc-bibtex.tar
uicsrd.csrd.uiuc.edu (128.174.132.2) BibTeX, CommonTeX
venus.ycc.yale.edu (192.26.88.4) SBTeX
walther.cso.uiuc.edu (128.174.5.20) TEX, tib, ncar, dvi2ps, gif, texx2.7, amiga
wuarchive.wustl.edu (128.252.135.4) password: guest, mirrors simtel20 (lots), TEX, Mac, X, GNU, GIF, Tcp-Ip

bitftp@pucc.bitnet (Princeton University)

BITFTP is a mechanism for those without direct access to the Internet to request files by FTP from Internet servers (like archive-server@sun.soe.clarkson.edu)

Access by: Mail, RSCS FTP

Commands: The body of your mail message or file should contain the sequence of Internet FTP commands you would have used, one per line, just as if you had been doing a direct Internet FTP connection yourself.

LaTeX-help@sumex-aim.stanford.edu (LATEX helpdesk)

Your mail will be forwarded to a member of the volunteer corps in round-robin rotation.

fisica@39003.span (SPAN/DECNET archive)

There is a TEX archive on SPAN run by Max Calvani and Marisa Luvisetto. It is not a server, just an archive: details from ⟨fisica@astrpd.infn.it⟩ or by sending a SPAN mail message to the address on SPAN ⟨39003::fisica⟩

trickle@trearn.bitnet (The TRICKLE server at Ege University, İzmır)

TRICKLE is a cache mechanism for EARN to allow users on that network to request files from SIMTEL–20. TRICKLE runs at various sites on EARN (see below).

Access by: Mail, RSCS FTP, Interactive message

Commands:
/HELP sends you a help file.
/PDDIR *directoryname* lists the names of files in that directory.
/PDGET <*directory*>*filename* [(*tag*] sends the specified file. The tag can be (uue, (xxe, (ebc80 or (ebc32, to determine how you want the file returned and in what format.

number and ⟨**nnn**⟩ is the issue number.
Directory **pub/uktex** holds back issues of UKTEX in files **uktex.yy.nnn** where ⟨**yy**⟩ is the year number and ⟨**nnn**⟩ is the issue number.
Directory **pub/latex-style** holds master copies of the LATEX style files.

Notes: This server is also accessible by mail: place your sequence of FTP commands in a mail message to the address above, and make the first command **path** followed by your network address in a form in which an Internet machine will understand it. Internet sites are also FTP-accessible to BITNET nodes via the server at ⟨BITFTP@PUCC⟩ (see below).

archive-server@wsmr-simtel20.army.mil (The SIMTEL–20 server)

SIMTEL–20 is a large file server on the Internet and operates in the same way as shown above for the Clarkson server. The TEXware is mainly for PCs and is held in directory **/msdos.tex** Non-Internet users should use the TRICKLE or BITFTP servers detailed below to access these files.

The following Internet sites also have TEX-related material:

argon.rti.org (128.109.139.64) TEX Previewer for VMS
b.scs.uiuc.edu (128.174.90.2) LATEX
bobcat.csc.wsu.edu (134.121.1.1) Dean Guenther's IPA fonts, CG8600 driver and TEXT1 style file (documentation chargeable from Computing Service Center, Washington State University, Pullman WA 99164–1220)
cayuga.cs.rochester.edu (192.5.53.209) Xfig, LATEX styles, Jove, NL-KR mail list
crocus.waterloo.edu (129.97.128.6) STEVIE (vi-clone), TEX, more
cs.washington.edu (128.95.1.4) TEX, TEXhax, netinfo
ctrsci.utah.edu (128.110.192.4) TEX fonts, make
duke.cs.duke.edu (128.109.140.1) gnutex, others
freja.diku.dk (129.142.96.1) GNU, X11R3, TEX, nn newsreader, rfcs, misc
gatech.edu (128.61.1.1) GNU, rfc, TEX
gpu.utcs.toronto.edu (128.100.100.1) TEX, C++, Ksh, Unixgames, etc. (lots)
hemuli.atk.btt.fi (130.188.52.2) bsd progs for hp-ux, tex2ps
hydra.helsinki.fi (128.214.4.29) misc, TEX, X, comp.sources.misc, sun, uni
jpl-mil.jpl.nasa.gov (128.149.1.101) TEX, Mac, Gnu, Xv11R2, 3
june.cs.washington.edu (128.95.1.4) TEXhax, dviapollo, SmallTalk, web2c, gaat
labrea.stanford.edu (36.8.0.47) dvips, paranoia, TEX, lots, X
linc.cis.upenn.edu (128.91.2.8) psfig for ditroff, TEX
ncar.ucar.edu (128.117.64.4) maps, bsd, internet, Mac TEX, resolve
njitgw.njit.edu (128.235.1.2) Mac, Sun, TEX
purdue.edu (128.102.1) bibtex, dvi, ethics
research.att.com (192.20.225.1) TEX, gcc, ghostscript
science.utah.edu (128.110.192.2) TEX things, Hershey (tenex), TEXMag back issues (file

tape.

[archive-server@]sun.soe.clarkson.edu (Clarkson University)

This machine is one of the principal repositories of TEXware.

Access by: Internet FTP, Mail

Commands: These may vary depending on the implementation of Internet FTP. You should ask your System Administrator for details.
`ftp` starts an FTP session
`open` *machine.site.domain* opens an FTP call to a remote machine. Some implementations let you type the nodename directly after the `ftp` command. The next command may not be needed, depending on how the remote machine is set up.
`user anonymous guest`
`cd` *directoryname* connects you with the specified directory.
`ls` [*filespec*] lists the contents of the current directory.
`type` *filename* types out the specified file on your screen.
`tenex` switches to 8–bit byte-stream mode for getting binary files.
`get` *filename* retrieves the specified file into your local current directory.
`mget` *wildcard-filenames* retrieves multiple files matching the wildcards (* and ?).
`ascii` switches back to ASCII mode for text files.

Example: The commands typed by the user are underlined

```
$ ftp sun.soe.clarkson.edu
Connected to sun.soe.clarkson.edu
220 SUN.SOE.CLARKSON.EDU Server Process (52)-5 at Tue 2-Jan-90
331 ANONYMOUS user ok, sent real ident as password
230 User ANONYMOUS logged in at Tues 2-Jan-90 14:14-XXX, job 2
> cd /tex/binaries
> dir latex.*
(Listing appears on screen)
> tenex
200 Type L bytesize 8 ok.
> get latex.exe
(File is downloaded)
> quit
221 QUIT command received.  Goodbye.
$
```

Directory `pub/texmag` holds back issues of TEXMag in files `texmag.v.nn` where ⟨v⟩ is the volume number and ⟨nn⟩ is the issue number.
Directory `pub/texhax` holds back issues of TEXHaX in files `texhax.yy.nnn` where ⟨yy⟩ is the year

Notes: Users in the UK should express their return address in the form:
`user@UK.AC.site.machine` (Non-academic users replace the 'UK.AC' with 'UK.CO')
EARN/BITNET users must express their return address in the form:
`user%nodename.BITNET@EARN-RELAY` in order for JANET to be able to send replies out through the EARN gateway correctly.
Users on other networks (eg, .EDU, .COM etc) should express their return address in a similar form to the EARN/BITNET one: `user%machine.site.EDU@EARN-RELAY`, since the NSFNET-RELAY gateway is not available for UK-to-US traffic.
Note that the order of specifying domains **is** important to the EARN gateway. The syntax is similar for other networks accessed via the this gateway. Other users should try EARN in the first instance. If that fails, consult a local networking guru. If that fails, mail the archive maintainer, Peter Abbott ⟨abbottp@aston.ac.uk⟩, who should be able to put you in touch with someone who can help.

Using Coloured Book FTP (NIFTP): Use your local TRANSFER command (part of the Coloured Book suite of XXX implementations) with the userID 'public' and the password 'public'. Give the fully-qualified nodename, directory and filename as the remote filename, and whatever you want as your local filename (where to put it when it arrives). A file transfer gateway between JANET and EARN/BITNET will be introduced experimentally during 1990.

Return addresses: As a temporary facility (pending rewriting of the mailer to obviate the need for users to quote their own addresses) Brian {Hamilton Kelly} has provided a remote "identification" service at Aston. Send E-mail to ⟨rmcs_tex@kirk.aston.ac.uk⟩ with the subject consisting of the words 'Where Am I' (the case doesn't matter, and you can have as much or as little white space between the words [including none]), but there must not be any leading or trailing space, nor any question mark. You should receive a reply telling you the address to 'plug into' your E-mail request to TEXSERVER.

Examples of file specifications:
VAX/VMS directory and filename format is tree-structured: a valid fully-qualified name therefore looks like
`[TEX-ARCHIVE.directory.subdirectory]filename.type;version` eg
`[TEX-ARCHIVE.msdos.tex]sb08tex.arc;2`
A remote filename for FTP might look like
`UK.AC.ASTON.TEX::[TEX-ARCHIVE.digests.texhax89]tex89.114;1`

Aston also handles subscriptions for UKTEX, a weekly digest along the lines of TEXHaX. Requests to ⟨info-tex-request@aston.ac.uk⟩ and submissions to ⟨info-tex@aston.ac.uk⟩, please.
There is a ⟨tex-unmoderated@aston.ac.uk⟩ which can be used to get urgent help on matters which cannot wait the next issue of one of the moderated digests. Please do not misuse this service.

Post: You can send snailmail to Peter Abbott, Computing Service, Aston University, Aston Triangle, Birmingham B4 7ET, England, enclosing blank formatted media: floppy disks or magnetic

`listserv@ubvm.bitnet` (University of New York at Buffalo)

Files related to the Russian TEX project are listed in `RUSTEX-L FILELIST`

`listserv@uicvm.bitnet` (University of Illinois, Chicago)

This server runs the `tex-ed` mailing list, formed at the 10th TUG Conference, to handle educational matters relating to TEX. It is the source for Michael Doob's *Gentle Introduction to TEX*. It also hosts the distribution of TEXMag, an independently-published electronic magazine sporadically bi-monthly: subscribe `TEXMAG-L` (CDNnet users please send your request to the manually-operated address ⟨`list-request@ubc.csnet`⟩ and JANET users to ⟨`abbottp@aston.ac.uk`⟩

`texserver@tex.aston.ac.uk` (Aston University, Birmingham)

Access by: E-mail, Coloured Book FTP, Post

E-mail usage: All requests to the Aston mail-server should be preceded by a line starting with three dashes (‘`---`’). This will normally be the first line of the text body of your mail message. Only one command will be processed in each mail message. The next non-blank line following the three dashes should contain your return address from Aston (see below for examples). Your return address **must** be given in UK (JANET) format. The following line should then contain the command to the mail-server. An example request might therefore look like this:

```
---
cbts8001%iruccvax.bitnet@earn-relay
whereis tex.exe
```

Lines before the triple dash are ignored, as is all text after the first command.

Commands:

`HELP` sends you back a help file describing TEXSERVER. Help in languages other than English can be obtained by typing `HELP/`*language*, eg `HELP/FRANCAIS` (if there is no help for your requested language, you will be sent the English version).

`DIRECTORY` [*directory-specification*] sends you a list of the files in that directory. The directory specification must be in VAX/VMS syntax including the square brackets: see the help file for details. If no directory specification is supplied, you will be sent back a list of the files in the top-level directory of the archive, `[tex-archive]`

`WHEREIS` *filename* sends you a message containing the location in the archive of the requested file. If no filename is supplied, you will be sent a listing of all files in the archive whose names start with ‘00’ (two zeroes), conventionally used for descriptions.

`SEARCH` *filespec search-string* searches the specified file(s) for the given string and returns the fully-qualified file specification. The search is case-independent.

`FILES` followed by a list of the files to be returned, specified one per line on succeeding lines. Wildcards are not supported. Each requested file is normally returned in a separate mail message.

Notes: If you send your request by mail, the response comes back by mail. If you send it by interactive message or by RSCS FTP (the `TELL` or `SENDFILE` commands on IBM VM/CMS under RSCS; the `SEND/REM` or `SEND/FILE` commands on DEC VAX/VMS under JNET), the response comes back by file transfer. There are many other `LISTSERV`s around the world which may also have unreported TEX file collections. Known ones are listed below.

`LISTSERV` also handles EARN/BITNET mailing lists, including the TEXhax Bulletin. To subscribe to a mailing list, send an interactive message or a one-line E-mail to any `LISTSERV` saying:
`SUBSCRIBE` *LISTNAME your-real-name* eg
`SUB TEXHAX Mary Jones`
You will then start to receive the digest of mailings from other contributors, and you can send your own contributions to the address of the mailing list (*not* to `LISTSERV`), for example, the TEXhax Bulletin editorial address is `texhax@cs.washington.edu`.
It is important to understand that LISTSERV subscription requests (and un-subscription requests, which are done with the command `unsub` *listname*) must be sent to a `LISTSERV` and *not* to the address of the mailing list itself.
Intending subscribers on the DARPA Internet should send a message to the manually-operated address ⟨`texhax-request@cs.washington.edu`⟩ instead.

The Heidelberg server includes the Beebe driver collection and the LATEX style file collection. It also hosts the `tex-euro` list, for discussions of specifically European TEX problems.

`listserv@dearn` (Universität Bonn, Germany)

Holds subscriptions for lists `TEX_D-L` (German-language TEX discussion) and `TEX_D-PC` (German-language TEX-on-PCs discussion).

`listserv@hearn` (Katholiecke Universiteit Nijmegen)

`tex-nl filelist` contains a large quantity of Dutch TEX material and is reported to be starting an Atari ST archive soon.

`listserv@frulm11` (École Normale Supérieure, Paris)

Handles subscriptions to GUT, the French-language TEX discussion and communication channel for GUTenberg, the French TEX Users Group. Subscribe `GUT`

`listserv@tamvm1.bitnet` (TEXas A&M)

Contains a very large repository of TEX material.

`listserv@tcsvm.bitnet` (Tulane University)

Has back issues of TEXMag in files `TEXMAG VvNn` where ⟨`Vv`⟩ is the volume number and ⟨`Nn`⟩ is the issue number.

a single file for ease of transmission. This is called 'compression archiving', and is the most popular method of compacting files. The resulting single filename is easily recognisable by usually having a filetype or extension of `.arc`. A similar mechanism for UNIX is called TAR, and for Macintoshes it is called STUFFIT. To unpack the file once you have received it, you need the relevant de-archiving decompression program: there are several available under various names from most bulletin boards and servers. For MS-DOS PCs, the original archive/de-archive programs were ARC and ARCE from System Enhancement Asociates, but the current leader is a piece of shareware, PKPAK/PKUNPAK (replacing the older PKARC/PKXARC, and there is also a newer one called PKZIP/PKUNZIP). ARC also exists for VAX/VMS and for VM/CMS. If you are using UNIX, the TAR programs should already be on your system. The Mac program UNSTUFFIT is freely distributable and should be available from your dealer (the STUFFIT program to create archives is a commercial product, however).

Known TEX servers as at May 1990

You should be aware that there are many more servers handling a wide range of non-TEX software, both text and data; and that there are many other commands as well—only the most important are given here. As a general principle, sending the single word '`HELP`' (without quotes) to an address claiming to be a server is as good a way as any of testing its likely usefulness!

Please inform the author of any changes, additions, deletions and errors.

`listserv@dhdurz1.bitnet` (Heidelberg University Computer Centre)

Access by: E-mail, RSCS interactive message, RSCS FTP

Commands:

`HELP` sends you back a help file describing LISTSERV.

`SENDME` *filename filetype* [(*tag*] sends you the specified file. The file specs are all in IBM VM/CMS format, consisting of a filename and a filetype separated by a space, but LISTSERV will accept a filename and filetype separated by a dot instead of a space. `SEND` and `GET` are synonyms for `SENDME`. If you are ordering a non-printable (program or archive) file, you can follow the filetype with the optional tag '`(UUE`' in order to have the file sent in UUencoded form. Note there is no closing parenthesis on a LISTSERV `SENDME` tag.

`INDEX` sends back a list of files. More detailed lists are held in files with the filetype `FILELIST`.

Examples:

`sendme listserv filelist` will send you the list of `FILELIST` files on the server from which you can identify further lists.

`send drivers filelist` will send you the list of TEX print driver files which can be retrieved.

`get mtex arc (uue` would request a UUencoded copy of the `mtex` archive file.

`help` would request the help file from LISTSERV.

the gateway through which the file or mail passed. If an expected plain text file does not process correctly, this mistranlation is one of the first things to suspect.

If the file you are ordering is not a plain text file (for example, if it is a 'binary' file like an executable program, a wordprocessing file, a font file or a compressed archive of files), it cannot usually be sent in its raw state by E-mail, particularly between two machines of different makes, or between different networks.

(Remember also that an executable program for one operating system will not work on a different one: make sure you request such programs for the right operating system!)

Many servers are able to overcome the problem of sending binary files by E-mail or across network boundaries by encoding such files into a new file made up of printable characters only, which they of course can then send by E-mail. This is normally something you can specify when you order a file, but some servers do it automatically if you use E-mail to order the file. You can recognize a file coded like this because it contains only printable characters, and usually the lines are all the same length, and the first line of the file will say something like `begin` or `FfIiLlEeSsTtAaRrTt`. The most commonly-used method (for IBM and DEC mainframes, most minis, UNIX and PCs) is called UUencoding, and you will require the UUDECODE program already to be on your machine in order to decode such files if you order them.

The catch is, because this program is itself a binary executable file, you cannot receive it in UUencoded form by E-mail unless you already have a copy with which to UUdecode it! To overcome this chicken-and-egg situation, you must either request it in source code form and compile it yourself, or obtain an executable copy on disk or from some other source, such as dial-up download from a bulletin board system. This technique is known as 'bootstrapping' yourself (not to be confused with 'booting' your computer). Your computer centre or network operator should also be able to supply a copy of UUDECODE for your system. A known location for the source code is given at the end of this document. The UU programs are believed to be in the public domain.

Other coding systems in use are XXENCODE and XXDECODE (a more recent and robust version of UU); BIN2HEX, which converts the bytes of a binary file to pairs of hexadecimal characters (and HEX2BIN which converts them back again); and BOO and DEBOO (short for 'bootstrap') which is used extensively for distributing the Kermit communications program, and also for some software sourced from within the UK. Apple Macintoshes use a version of BINHEX, but differently implemented because of the Mac's twin-forked filing system: again, you need to get a copy of it from someone on disk before you can start.

All these encoding systems get over the problem of transferring binary files over E-mail, but they all suffer from the disadvantage that the encoding increases the file size, sometimes quite substantially. To partially overcome this, files, even text files, are sometimes compressed with a compression program before being encoded for transmission.

Collections of related files, especially for PCs, Macs and UNIX, are often also compressed into

Principles of network usage

If you have not used E-mail or other networking services before, you should ask your computer centre or network operator for documentation and training. Although most systems have software which is fairly simple to use, getting the best out of network access means being reasonably familiar with the commands and facilities your system provides. There is no point in having wonderful access to network software services if you spend most of your time trying to remember which menu option to pick or which function keys you press.

You can gain access to the servers by various methods, depending on what network you yourself are attached to, what networking facilities it provides, and what access services the server is set to accept. You should check with your local computer centre or network operator if you do not know what facilities are currently provided or how to use them.

As mentioned at the outset, the only facility common to all networks is E-mail, and this now functions with reasonable reliability across most networks. Other facilities available within some networks include file transfer (FTP, in several flavours—see below); interactive login (dialling into a remote computer); and interactive messaging (sending single commands in real time without logging in). Not all of these other facilities are available on all networks, and apart from E-mail, they will not work at all if the server is on another network using different software to your own.

Whichever method you choose, the principle remains the same: you send commands to the server address. For example, you might send the command to have a file transmitted back to you, followed by the name of the file you want. Provided you have typed the address and command(s) correctly, the result will be the arrival on your computer of the file you ordered.

Handling files you have retrieved

Files you order may arrive by E-mail or by file transfer, depending on the network you are connected to and how you ordered them. Generally speaking, a file is returned to you by the same mechanism by which you requested it, so if you used E-mail to ask for a file, you get it back by E-mail; if you used an FTP request, you get it back by FTP. **It is important to appreciate that E-mail in its current state is normally a printable-character-only medium and so can only be used for plain text files, or for other files which have been encoded into printable characters only (see below).**

Plain text files cause no problems in 99% of cases. However, in the case of files being transferred between two different networks where the 'gateway' machine (the computer performing the interconnection) has an unusual, specialist or ideosyncratic character-conversion table, a few characters get mistranslated. The most common mistranslation is to send you tildes (~) in place of caret marks (^), and ASCII decimal character codes 197 and 185 (box-drawing characters on the IBM PC) in place of open and close curly-braces. This can usually be fixed with a good text editor. If you have problems in receiving or deciphering files you have ordered, contact your computer centre or network operator, but be prepared to hold discussions with someone from

NETWORK SOURCES OF TEXWARE

How to get public domain and shareable software for the TEX typesetting system from the international computer network servers

Peter Flynn
Computer Centre, University College, Cork, Ireland
⟨cbts8001@iruccvax.ucc.ie⟩

Introduction

On the international computer networks there are various locations where generous individuals and institutions have placed freely accessible software, including a considerable amount for the TEX typesetting system. These computers (or rather, the programs which let you access the information) are known as 'servers', and anyone with access to electronic mail (E-mail) can request copies of files from these servers to be sent to them electronically.

A server consists of disk space on a computer connected to a network, governed by a program capable of receiving instructions from elsewhere on the network and responding to them. Some servers use programs specifically dedicated to the single task of running that particular server (eg LISTSERV); others use more general-purpose software (eg FTP). A computer offering a server service is called a 'host'.

Users of the network can thus send instructions to the host program via the network, and expect the host to act upon them. These instructions are called 'commands', and a command to a server is typically a means of telling the host to send you a copy of a specific file from the server disk. A server will respond by sending the file or (if the filename was wrongly given, for example) by returning a message explaining the error.

The TEX software available ranges from simple routines to perform individual formatting tasks, through a wide variety of macro packages for more complex requirements, right up to complete implementations of the whole TEX system. Also available are many font files and printer handlers (drivers), and an amount of unusual or experimental typographic facilities. Several people and organisations also operate a mail-order service for those users without network access.

Finally, please note that some software on the networks is in the public domain (it can be used by anyone without charge), but some is shareware (it can be tried out without charge, but must be registered and paid for if you continue to use it—usually only a small sum). Please do not continue to use shareware without paying your contribution: it is both dishonest and unfair.