GC27-3270-04
File No. S370-30

Systems

3270BBS Terminal User's Guide: Users and Moderators

3270BBS Version 4.2.6

m o s h i x

Edition Notice

Fifth Edition (September 2026)

This edition applies to Version 4.2.6 of 3270BBS and to all subsequent versions and modifications until otherwise indicated in new editions. Changes are made periodically to the information herein; before using this publication in connection with the operation of a bulletin board system, consult the release notices distributed by your system operator.

Information in this publication is subject to change. Any such change will be reported in a new edition or in a technical newsletter posted in the **3270BBS** conference of the system to which this publication applies.

Screens reproduced in this publication were captured from a running 3270BBS system with a Model 2, Model 3 or Model 4 display station; 3270BBS supports all three. The exact contents of your screens depend on the options your system operator has enabled, on your access level, and on the activity of the community.

Requests for copies of this publication should be made to your system operator. A form for readers' comments is provided at the back of this publication; it may also be posted as a topic in the **3270BBS** conference.

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3270BBS is the community name of the TSU program product. Other product and company names mentioned herein, including IBM, MVS, z/OS, ISPF, SDSF and TSO, are used for descriptive purposes only.

Preface

About This Publication

This publication is a guide for *users* and *moderators* of 3270BBS. It describes every function that is available to you at a display station. Functions reserved for the system operator (the administrator of the system) are mentioned only where they explain something you can see, and are not described in detail.

Who Should Read This Publication

Read this publication if you hold an account on a 3270BBS system. No previous experience of mainframe systems is assumed, although if you have used TSO, ISPF or SDSF you will recognise a good deal of what follows. Chapter 21 is addressed to conference moderators; the rest of the book applies to everyone.

How This Publication Is Organized

- **Chapters 1 through 4** introduce the system, describe how to log on, and explain the two menus, the function keys and virtual sessions.
- **Chapters 5 through 11** describe the community functions: conferences and topics, the content editor, mail, notes, `bbs://` links, the user rolodex, one-liners, the summon function and live chat.
- **Chapters 12 through 15** describe your profile and preferences, printing and held output, the system displays, and the TSO command line.
- **Chapters 16 and 17** describe the BASIC and Assembler environments, including the full-screen ISPF-style editor and the file browser that both of them use.
- **Chapters 18 through 20** describe the games, the marketplace and the doors to other systems.
- **Chapter 21** describes the additional functions available to conference moderators.
- **Appendixes A through D** summarise the function keys, the text colour tags and the messages you may see, and define the terms used in this book.

Conventions Used in This Publication

- Keys are shown as **`F3`**, **`ENTER`**, **`PA1`**, **`CLEAR`**. On most 3270 emulators the keys **`F13`** through **`F24`** are produced by holding **`Shift`** while pressing **`F1`** through **`F12`**.
- Things you type are shown in `THIS TYPEFACE`. Text that the system displays is shown the same way when it is quoted in a sentence.
- Screens captured from a running system are shown as numbered figures. Each caption states whether the screen was taken on a Model 2 (24 x 80), a Model 3 (32 x 80) or a Model 4 (43 x 80) display station, and names the file in which the capture is kept.
- The abbreviation **PF** and the letter **F** are used interchangeably for the program function keys, as they are on the screens themselves.

Related Publications

- *Timesharing BASIC/3270BBS Language Manual* — the complete description of the BASIC language, at `https://github.com/moshix/3270bbs/blob/main/basic_manual.md`, and summarised by the `HELP` command at the BASIC command line.
- *Timesharing Assembler Manual* — the complete description of the System/360 assembler subset, at `https://github.com/moshix/3270bbs/blob/main/assembler_manual.md`, and summarised by the `HELP` command at the assembler command line.
- The program itself, and the rest of its documentation, at `https://github.com/moshix/3270bbs`.
- *Configuring 3270BBS* — for system operators.

Contents

Edition Notice ..... **i**

About This Publication ..... **ii**
- Who Should Read This Publication ii
- How This Publication Is Organized ii
- Conventions Used in This Publication ii
- Related Publications iii

Introduction to 3270BBS **1-1**
- Display Station Requirements 1-1
- Ways to Reach the System 1-3
- The Parts of a Screen 1-4

Logging On and Logging Off **2-1**
- The Logon Screen 2-1
- Registering as a New User 2-2
- Recovering a Lost Password 2-3
- Logging Off 2-3

Using the Menus **3-1**
- The Main Menu 3-1
- The Extended Menu 3-3
- Shortcuts 3-5
- Typed Commands 3-6
- Function Keys That Work Almost Everywhere 3-7
- F2 — What's New 3-9
- F4 — Summoning Another User 3-10
- F6 — System Information 3-10
- F13 — Changing the Menu Colours 3-11

Virtual Sessions **4-1**
- Starting and Switching Sessions with F24 4-1
- The Virtual Sessions Screen 4-2
- Where F23 and F24 Are Accepted 4-5

Conferences, Topics and Posts **5-1**
- Listing the Conferences 5-1
- Subscriptions 5-3
- Listing the Topics in a Conference 5-3
- Sorting a List 5-5

Reading a Topic 5-6
Starting a Topic 5-9
Replying 5-9
Changing or Removing Your Own Post 5-9
Searching the Whole System 5-11

Writing: the Content Editor 6-1
The Changed Indicator 6-2
Editor Commands 6-2
Editor Function Keys 6-3
The Editing Keys in Practice 6-5
Colour Tags 6-9
Signatures 6-10
Drawing Boxes 6-11

Mail 7-1
The Inbox 7-1
Reading a Message 7-2
Writing a Message 7-4
Mail To and From the Internet 7-4

Notes 8-1
The Reserved Subjects 8-3
Reaching Your Notes by FTP 8-4

Linking to Content: bbs:// Links 9-1
The Form of a Link 9-1
The Link Clipboard 9-1
Copying, Pasting and Following 9-1
Following a Link From the Command Line 9-4

Finding and Reaching People 10-1
The User Rolodex 10-1
The Wall of One-Liners 10-2
Summoning 10-3
Being Fingered From Outside 10-3

Live Chat 11-1
Who Is Typing 11-3
The Room Topic 11-3

Points to Remember 11-3

Your Profile and Preferences 12-1

Account Information 12-2
Preferences 12-3
Function Keys on the Profile Screen 12-5
Changing Your Password 12-5
Setting Your Time Zone 12-6
Your About Me Page 12-6
Closing Your Account 12-7

Printing, Held Output and Mail Limits 13-1

What You Can Print 13-1
Where It Goes: the Print to Held Preference 13-1
The Held Output Queue 13-2
Reading a Held Job 13-4
Nothing Is Cleaned Up For You 13-4
Limits on Outgoing Mail 13-4

System Displays 14-1

SDSF: System Activity 14-1
DELTAMON: Performance Monitor 14-2
User Performance: Who Is Using the Machine 14-4
DBMON: the Database Transaction Monitor 14-4
The MVS Console 14-5
The Clock 14-7
Market Data 14-8
DSLIST: the Data Set List 14-9
Other Displays 14-10

The TSO Command Line 15-1

Examples 15-3

Programming in BASIC 16-1

Writing and Running a Program 16-1
Commands 16-4
Keys at the BASIC Command Line 16-5
Your Files 16-5
Worked Examples 16-6

The File Browser 16-9
The Full-Screen Editor 16-10
The Language 16-14
Limits 16-15

Programming in Assembler 17-1
Commands 17-2
Assembling and Running 17-4
Checking and Listing a Program 17-4
The Machine 17-6
Macros 17-6
Limits 17-7

Games 18-1
Balloon 18-1
Blackjack 18-2
Space Invaders 18-2
Flappy Bird 18-3
Wordle 18-4
Checkers 18-5

The Marketplace 19-1
Posting an Item 19-2

Doors to Other Systems 20-1
Coming Back: the PA3 Key 20-1

Guide for Moderators 21-1
The Moderator's Options 21-1
Managing Topics 21-1
Managing Posts 21-2
Conferences 21-2
Chat 21-2
Practice 21-3

Summary of Function Keys A-1
Everywhere A-1
The Menus A-1
Conferences, Topics and Posts A-2
The Content Editor A-3

The ISPF-Style Editor A-3
Mail, Notes and the Rest A-4
Games and Displays A-5

Summary of Colour Tags B-1

Messages C-1
Logging On C-1
Writing and Posting C-1
Links C-2
Printing and Mail C-2
Programming C-3
The Console C-4

Glossary D-1
A D-1
B D-1
C D-1
D D-2
E D-2
F D-2
H D-3
I D-3
J D-3
L D-3
M D-3
N D-4
O D-4
P D-4
R D-5
S D-5
T D-6
V D-6
W D-6

Figures

Figure 1-1. Supported display stations 1-2
Figure 1-2. The main menu on a Model 3 display station 1-3
Figure 2-1. The logon screen 2-1
Figure 2-2. Function keys on the logon screen 2-1
Figure 2-3. Registration fields 2-2
Figure 3-1. The main menu on a Model 2 display station 3-1
Figure 3-2. The main menu information panel 3-1
Figure 3-3. Main menu options 3-2
Figure 3-4. The main menu on a Model 4 display station 3-3
Figure 3-5. The extended menu 3-4
Figure 3-6. Extended menu options 3-5
Figure 3-7. The COMMANDS overlay, listing typed commands 3-6
Figure 3-8. Typed commands available from either menu 3-7
Figure 3-9. The main help panel 3-8
Figure 3-10. Universal function keys 3-9
Figure 3-11. The SUMMON USER overlay 3-10
Figure 3-12. The System Information overlay 3-11
Figure 4-1. Virtual session keys 4-1
Figure 4-2. The Virtual Session Status overlay 4-2
Figure 4-3. The Virtual Sessions screen 4-3
Figure 4-4. Fields on the Virtual Sessions screen 4-4
Figure 5-1. The Available Conferences screen 5-2
Figure 5-2. Function keys on the conference list 5-2
Figure 5-3. Conference Subscription Management 5-3
Figure 5-4. The topic list for one conference 5-4
Figure 5-5. Function keys on the topic list 5-5
Figure 5-6. Reading a topic 5-6
Figure 5-7. The topic view function key panel 5-7
Figure 5-8. Function keys while reading a topic 5-8
Figure 5-9. The F6=Edit marker, shown only on your own post 5-10
Figure 5-10. The Search and Data Set List menu 5-11
Figure 6-1. The content editor, opened to reply to a topic 6-1
Figure 6-2. Text typed into the editor, with colour tags. The red asterisk at the right of the Command line says the text has been changed 6-2
Figure 6-3. Content editor commands 6-3

Figure 6-4. The content editor function key panel 6-3
Figure 6-5. Content editor function keys 6-4
Figure 6-6. A line copied with F16 and pasted below with F18 6-6
Figure 6-7. A line boxed with F11 6-7
Figure 6-8. F2 has found two misspelled words 6-8
Figure 6-9. A signature appended with F21 6-9
Figure 6-10. Text colour tags 6-10
Figure 7-1. The mail inbox 7-1
Figure 7-2. Function keys on the mail list 7-2
Figure 7-3. Reading a message 7-2
Figure 7-4. The message view function key panel 7-3
Figure 7-5. Function keys while reading a message 7-3
Figure 7-6. Choosing the recipients of a message 7-4
Figure 7-7. How an arriving Internet message is reduced for the screen 7-6
Figure 8-1. The notes list 8-1
Figure 8-2. Function keys on the notes list 8-2
Figure 8-3. Reading a note 8-2
Figure 8-4. Function keys while reading a note 8-3
Figure 8-5. The notes help panel, listing the reserved subjects 8-4
Figure 8-6. Reserved note subjects 8-4
Figure 9-1. Where F22 works, and what it does there 9-3
Figure 9-2. A link copied from the topic list with F22 9-4
Figure 10-1. The user rolodex 10-1
Figure 10-2. Keys on the user rolodex 10-2
Figure 10-3. A user's About Me page, displayed with F5 10-2
Figure 10-4. The wall of one-liners 10-3
Figure 11-1. Local chat 11-1
Figure 11-2. The chat function key panel 11-2
Figure 11-3. Function keys in chat 11-2
Figure 12-1. The user profile screen 12-1
Figure 12-2. Account information on the profile screen 12-2
Figure 12-3. Preferences on the profile screen 12-3
Figure 12-4. The profile screen on a Model 4, showing statistics 12-4
Figure 12-5. Function keys on the profile screen 12-5

Figure 12-6. The change password screen 12-5
Figure 12-7. The time zone selection screen 12-6
Figure 12-8. The first account deletion warning 12-7
Figure 12-9. The final confirmation screen 12-8
Figure 12-10. What closing your account removes 12-9
Figure 13-1. What can be printed, and from where 13-1
Figure 13-2. The held output queue 13-2
Figure 13-3. Columns of the held output queue 13-3
Figure 13-4. Actions on the held output queue 13-3
Figure 13-5. Reading a job from held output 13-4
Figure 13-6. Limits on outgoing mail 13-5
Figure 14-1. The SDSF system activity display 14-1
Figure 14-2. Columns of the SDSF activity display 14-2
Figure 14-3. The DELTAMON performance monitor 14-3
Figure 14-4. Keys on the DELTAMON display 14-3
Figure 14-5. The per-user processor display 14-4
Figure 14-6. The database transaction monitor 14-5
Figure 14-7. The MVS operator console, after a D A,L command 14-6
Figure 14-8. Commands accepted by the MVS console 14-7
Figure 14-9. The wall clock 14-8
Figure 14-10. The Stock Quotron 14-9
Figure 14-11. Other displays 14-10
Figure 15-1. The TSO command line 15-1
Figure 15-2. The commands available on the TSO command line 15-2
Figure 15-3. Commands on the TSO command line 15-3
Figure 15-4. The WHO command 15-4
Figure 15-5. The TIME, UPTIME and CPU commands 15-5
Figure 15-6. The USER command 15-5
Figure 15-7. The CALC calculator 15-6
Figure 16-1. The BASIC command line 16-1
Figure 16-2. A program listed with the LIST command 16-2
Figure 16-3. The same program saved and run 16-3
Figure 16-4. Commands of the BASIC interpreter 16-4
Figure 16-5. Keys at the BASIC command line 16-5

Figure 16-6. What the first character of a file name means 16-5
Figure 16-7. Listing your files with FILES 16-6
Figure 16-8. LOAD, RUN and VARS 16-7
Figure 16-9. The CHECK command 16-7
Figure 16-10. VIEW of the listing produced by CHECK 16-8
Figure 16-11. EMAIL on a system with no outgoing mail configured 16-9
Figure 16-12. The file browser 16-9
Figure 16-13. The file browser 16-10
Figure 16-14. The ISPF-style editor 16-10
Figure 16-15. The editor function key and command panel 16-11
Figure 16-16. Function keys in the ISPF-style editor 16-12
Figure 16-17. Primary commands in the ISPF-style editor 16-13
Figure 16-18. Line commands in the ISPF-style editor 16-14
Figure 16-19. Limits of the BASIC interpreter 16-15
Figure 17-1. The assembler command line 17-1
Figure 17-2. Commands of the assembler 17-2
Figure 17-3. The community programs, listed with FILES /C 17-3
Figure 17-4. A community program loaded and listed 17-3
Figure 17-5. A program run, and the registers displayed afterwards 17-4
Figure 17-6. The CHECK command 17-5
Figure 17-7. EMAIL on a system with no outgoing mail configured 17-6
Figure 17-8. The simulated machine 17-6
Figure 17-9. Limits of the assembler 17-7
Figure 18-1. The Hot Air Balloon Challenge 18-1
Figure 18-2. Balloon controls 18-1
Figure 18-3. Blackjack 18-2
Figure 18-4. Space Invaders 18-3
Figure 18-5. Flappy Bird 18-3
Figure 18-6. Wordle, ready for the first guess 18-4
Figure 18-7. Wordle, after a guess has been entered 18-5
Figure 19-1. The marketplace 19-1
Figure 19-2. One marketplace item 19-2
Figure 19-3. The marketplace 19-2
Figure 20-1. The remote host selection screen 20-1

Figure 21-1. What a moderator has that a user does not 21-1
Figure 21-2. Actions on the topic management screen 21-2
Figure A-1. Keys that work on nearly every screen A-1
Figure A-2. Keys on the main and extended menus A-1
Figure A-3. Keys in the conferences A-2
Figure A-4. Keys in the content editor A-3
Figure A-5. Keys in the ISPF-style editor A-3
Figure A-6. Keys in mail, notes and the profile A-4
Figure A-7. Keys in the games and the system displays A-5
Figure B-1. Colour tags B-1
Figure C-1. Messages when logging on C-1
Figure C-2. Messages while writing C-1
Figure C-3. Messages about links C-2
Figure C-4. Messages about printing and mail C-2
Figure C-5. Messages from BASIC and the assembler C-3
Figure C-6. Messages from the console C-4

Chapter 1

Introduction to 3270BBS

3270BBS is a bulletin board system and productivity suite for 3270 display stations. It provides a set of related services that share one account and one screen:

- public discussion in **conferences**, which contain **topics**, which contain **posts**;
- private **mail** between users, and, where the operator has enabled it, mail to and from the Internet;
- personal **notes**, some of which have special meanings — your public profile, your signature and your finger reply;
- **live chat**, local, private and federated;
- a **marketplace** of items for sale and wanted;
- **programming** in Timesharing BASIC and in System/360 Assembler, with a full-screen ISPF-style editor;
- **games**, a wall clock, market data and other diversions;
- **doors** to other mainframe systems on the network;
- system displays modelled on SDSF, including **held output**, where your printed documents and program listings are kept;
- and, optionally, federated **newsgroups** and federated **real time chat**, where your operator has joined this board to others.

Display Station Requirements

3270BBS accepts three screen sizes, and no others. Every screen in the system is laid out for whichever of them your emulator reports when it connects.

Model	Size	Notes
`Model 2`	`24 x 80`	The standard screen. Every function of the system is available on it, and this publication describes it unless it says otherwise.
`Model 3`	`32 x 80`	Eight more lines. Lists and topics show more before you have to page, and the last five lines carry the terms, message and function key lines.
`Model 4`	`43 x 80`	Nineteen more lines. Lists show many more entries per page, topics show more text per page, and the profile screen shows a statistics section for which the smaller screens have no room.

Figure 1-1. Supported display stations

Set your emulator to **3279-2**, **3279-3** or **3279-4** — the colour models — before connecting; the monochrome 3278 models work, but colour is used throughout 3270BBS to carry meaning, so a monochrome session loses information. If your emulator offers a screen smaller than 24 x 80, the system refuses the connection with `WARNING! Your terminal size is too small!` followed by `Minimum terminal size required: 24x80`.

Figure 1-2 shows the main menu on a Model 3, and Figure 3-4 in Chapter 3 shows the same menu on a Model 4. Compare either with Figure 3-1, which is the Model 2 screen, to see how the system uses the extra lines.

```
                      3270BBS - a 3270 BBS
Option ===>

1  Conferences       Organized community discussions     User ID . : bcooper
2  My Subscriptions  Manage conference subscriptions     Time. . . : 10:45a
3  Search Content    Full text search                    Online .  : 1
4  Mail              Send and receive Mail               In chat . : 0 : 0
L  One Liners        Short messages to community         Unread Msg: No
R  Chat              Local real-time chat                Release . : 4.2.6
U  User Rolodex      Look up users                       Terminal. : 3-310
N  Notes             Personal notes
S  SDSF              System activity                        September   2026
0  Edit Profile      Update your account information     Su Mo Tu We Th Fr Sa
M  Extended Menu     More applications                          1  2  3  4  5
X  Logoff            Exit to TSO                          6  7  8  9 10 11 12
                                                         13 14 15 16 17 18 19
                                                         20 21 22 23 24 25 26
                                                         27 28 29 30
                                                            Day of year 253







                              Welcome to 3270BBS
F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 1-2. The main menu on a Model 3 display station (Model 3, 32 x 80; capture screens/92-main-menu-model3.txt)

Widely used emulators are x3270, c3270 and wc3270 on UNIX-like systems and Windows, and any other emulator that speaks the TN3270 protocol.

You need not install any of them. 3270BBS comes with **web3270**, its own browser-based 3270 emulator: a complete display station that runs in an ordinary web browser, with the full 3270 keyboard, colour, the function keys, and file transfer. Where your operator has started it, you reach it by opening the system's web address and choosing the 3270 terminal page; no emulator, no installation and no configuration are needed. Everything in this publication works the same way there as at a dedicated emulator; the only differences are the ones your browser imposes, such as which key your browser reserves for itself.

Ways to Reach the System

Ask your operator which of these are enabled on your system, and on which port numbers:

- **TN3270** — the ordinary connection, in the clear.
- **TN3270 with TLS** — the same, encrypted. Prefer it when it is offered.
- **web3270** — the 3270 display station that comes with 3270BBS and runs in a web browser. See "Display Station Requirements".
- **SSH** — a terminal session for clients that have no 3270 emulator.
- **FTP** — not a display session, but a way to move the text of your notes between the system and your own machine. See "Reaching Your Notes by FTP" in Chapter 8.
- **FINGER** — a way for people outside the system to read the finger note you have written. See Chapter 10.

The Parts of a Screen

Nearly every screen in 3270BBS is laid out in the same way, and once you have learned one screen you have learned most of them:

- a **title line** at the top, naming the screen;
- an **input line** — on the menus it is `Option ===>`, in the editors it is `Command ===>`, in lists it is a search field or a column of one-character selector fields;
- the **body** of the screen;
- a **message line** near the bottom, where errors and confirmations appear, often in reverse video;
- a **function key line** at the very bottom, listing the keys that this screen accepts.

Read the function key line first: it names what that screen does with the keys. It is not always complete, though — several screens accept keys their legend has no room for, such as **`F6`** and **`F22`** on the conference list, **`F1`** on the topic list and **`F20`** on the message and note viewers. Where this publication lists a key that your screen does not name, the key nevertheless works; where it lists none, none is accepted.

Note
Screens are 79 columns wide by design. The eightieth column is left empty so that no character is lost on display stations that treat it specially.

Chapter 2

Logging On and Logging Off

The Logon Screen

When you connect, the system displays the logon screen shown in Figure 2-1. The heading lines identify the host, your terminal address, the port and protocol you arrived on, the model of your display station, and the program level.

```
HOST:     MACPRO.LOCAL        DATE: September 10, 2026 TIME:  17:56:24 UTC
TERMINAL: ::1                 PORT: NoTLS - 23270/Mod2 BUILD: 4.2.6 00 00 00

                         Welcome to 3270BBS
                         a 3270BBS by moshix
            ________  _________  ____  ____ _____
           /__  /__ \/__   / __ \/ __ )/ __ ) ___/
            /_ <__/ /  / / / / / __  / __  \__ \
          ___/ / __/  / / /_/ / /_/ / /_/ /__/ /
         /____/____/ /_/\____/_____/_____/____/



                        User:
                        Password:

Use of this system is subject to the terms and conditions as posted
by the SysOp. Press F5 to register as a new user.


F1 Help  F2 About  F5 Register as new user  F9 Recover lost password
```

Figure 2-1. The logon screen (Model 2, 24 x 80; capture screens/01-logon.txt)

Type your user identifier in the `User:` field, press **TAB**, type your password in the `Password:` field — it is not displayed as you type it — and press **ENTER**.

Key	Function
F1	Display help.
F2	Display information about this system. Shown only when the operator has enabled logon statistics.
F5	Register as a new user.
F9	Recover a lost password.
ENTER	Log on with the identifier and password typed.

Figure 2-2. Function keys on the logon screen

If the identifier or the password is wrong, the system says `Invalid username or password. Please try again.` and does not say which of the two was wrong. Repeated failures from one address are rate-limited; if you are locked out, wait a few minutes and try again.

After a successful logon the system displays a brief `LOGON IN PROGRESS` notice, together with any broadcast message from the operator. Press **ENTER** to continue to the main menu. Any function key does the same, except **F23**, which is ignored here.

Registering as a New User

Press **F5** on the logon screen. The registration screen asks for the following. All fields are required; the screen says so in reverse video: `ALL FIELDS REQUIRE INPUT FOR ACCOUNT CREATION`.

Field	Rules
`Username`	Six or seven characters, letters and digits only, and it may not begin with a digit. The names `admin` and `noreply` are reserved. Choose carefully: you cannot change it afterwards.
`Password`	Six to twenty-two characters.
`Confirm`	Must match the password exactly.
`Email`	Must be a valid address. If your operator has enabled electronic mail and switched verification on, a four-digit code is mailed to this address and you must type it on the next screen. Many operators do not; see the note below the table.
`Home City`	Required for password recovery. This is the only secret question the system keeps; remember exactly what you typed.
`Country`	Your country.
`Units`	`metric` or `imperial`. Governs how temperatures and distances are shown.

Figure 2-3. Registration fields

Note
Electronic mail is an *optional* feature of 3270BBS. It works only where the operator of the board has obtained a SendGrid API key and enabled mail in the system configuration. Many operators run without one. Where mail is not enabled, registration simply completes without a verification code, and a lost password cannot be recovered by mail either — see "Recovering a Lost Password". Your electronic mail address is still recorded, and still has to be given correctly, because it is one of the two things a password recovery checks against.

F3 abandons the registration. When the fields are accepted, the system shows the time zone selection screen described in "Setting Your Time Zone" in Chapter 12; your account is created when you complete it. The first time you reach the main menu, a welcome panel invites you to read your mail, write a `PUBLIC` note and greet the community on the wall of one-liners. **F3** closes it and takes you straight to the wall of one-liners; any other key leaves it on the screen.

Recovering a Lost Password

Press **F9** on the logon screen. The `Password Reset` screen asks for your user identifier, the electronic mail address recorded in your profile, and your home city. If all three agree with the records — the city is compared forgivingly, so a small spelling difference is tolerated — a new temporary password is generated and displayed on the next screen. Log on with it and change it at once as described in "Changing Your Password".

Where the operator has enabled electronic mail, the reset may also be confirmed by a message sent to the address in your profile. Where mail is not enabled — it needs a SendGrid API key the operator must obtain and configure — nothing is sent, and the temporary password on the screen is the only copy you will get. Write it down before you press a key.

Whatever is wrong, the failure message is the same, so that no one can use this screen to discover which accounts exist. Administrative accounts cannot be recovered this way at all. If you have forgotten the electronic mail address or the city, only the operator can help you; there is no other way back into the account.

Logging Off

Select option `X` (Logoff) from the main menu. This does not disconnect you immediately: it places you on the TSO command line described in Chapter 15, where `READY` is displayed. Type `LOGOFF` to end the session, or `MENU` to return to the main menu.

If you simply close your emulator, the session is cleaned up by the system after a period of inactivity. **Logging off properly is preferred; it releases your slot at once and records the end of the session correctly.**

Note
If you sit at a menu without typing anything, the screen saver described in "Preferences" may start. Press any key to return.

Chapter 3

Using the Menus

Everything in 3270BBS is reached from one of two menus: the **main menu** and the **extended menu**. Both work the same way. Type a selection at the `Option ===>` prompt and press **ENTER**, or press one of the function keys named at the bottom of the screen.

The Main Menu

```
                       3270BBS - a 3270 BBS
 Option ===>

 1  Conferences       Organized community discussions     User ID . : bcooper
 2  My Subscriptions  Manage conference subscriptions     Time. . . : 9:57a
 3  Search Content    Full text search                    Online .  : 1
 4  Mail              Send and receive Mail               In chat . : 0 : 0
 L  One Liners        Short messages to community         Unread Msg: No
 R  Chat              Local real-time chat                Release . : 4.2.6
 U  User Rolodex      Look up users                       Terminal. : 2-310
 N  Notes             Personal notes
 S  SDSF              System activity                        September   2026
 0  Edit Profile      Update your account information     Su Mo Tu We Th Fr Sa
 M  Extended Menu     More applications                          1  2  3  4  5
 X  Logoff            Exit to TSO                          6  7  8  9 10 11 12
                                                          13 14 15 16 17 18 19
                                                          20 21 22 23 24 25 26
                                                          27 28 29 30
                                                             Day of year 253



                               Welcome to 3270BBS
 F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 3-1. The main menu on a Model 2 display station (Model 2, 24 x 80; capture screens/02-main-menu.txt)

The left of the screen lists the options. The right of the screen is an information panel and a calendar:

Field	Meaning
`User ID`	The account you are logged on to.
`Time`	The current time in your time zone.
`Online`	How many users are connected now.
`In chat`	Users in local chat, then users in federated chat.
`Unread Msg`	`Yes` in blinking red when mail is waiting for you, otherwise `No`.
`Release`	The level of the program.
`Terminal`	Your display station model and the character set in use, for example `2-310`.

Figure 3-2. The main menu information panel

Below the panel is a month calendar with today's date highlighted, and the day of the year. **F10** and **F11** step the calendar back and forward one month; they do not change anything else.

A white asterisk in the last column of the title line means that you have a `bbs://` link on the clipboard, ready to be pasted into a post or a message. See Chapter 9.

Option	Name	Function
1	Conferences	Organized community discussions. See Chapter 5.
2	My Subscriptions	Choose which conferences you follow. See Chapter 5.
3	Search Content	Full text search across topics and posts.
4	Mail	Send and receive mail. See Chapter 7.
L	One Liners	The wall of short messages to the whole community. See Chapter 10.
R	Chat	Local real-time chat. See Chapter 11.
U	User Rolodex	Look up users. See Chapter 10.
N	Notes	Your personal notes. See Chapter 8.
S	SDSF	System activity, and your held output. See Chapters 13 and 14.
0	Edit Profile	Your account information and preferences. See Chapter 12.
M	Extended Menu	More applications. See below.
X	Logoff	Exit to the TSO command line. See Chapter 15.
7, 8	Mod Topics, Mod Posts	Shown to moderators and administrators only. See Chapter 21.
6, D	Admin Users, DB Maint	Shown to administrators only; not described in this publication.

Figure 3-3. Main menu options

On a Model 4 display station the same menu has room for the calendar and the information panel to be shown in full, as Figure 3-4 shows.

```
                       3270BBS - a 3270 BBS
Option ===>

1  Conferences       Organized community discussions     User ID . : bcooper
2  My Subscriptions  Manage conference subscriptions     Time. . . : 10:15a
3  Search Content    Full text search                    Online .  : 1
4  Mail              Send and receive Mail               In chat . : 0 : 0
L  One Liners        Short messages to community         Unread Msg: No
R  Chat              Local real-time chat                Release . : 4.2.6
U  User Rolodex      Look up users                       Terminal. : 4-310
N  Notes             Personal notes
S  SDSF              System activity                        September   2026
0  Edit Profile      Update your account information     Su Mo Tu We Th Fr Sa
M  Extended Menu     More applications                          1  2  3  4  5
X  Logoff            Exit to TSO                          6  7  8  9 10 11 12
                                                         13 14 15 16 17 18 19
                                                         20 21 22 23 24 25 26
                                                         27 28 29 30
                                                            Day of year 253

                                 Welcome to 3270BBS
F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 3-4. The main menu on a Model 4 display station (Model 4, 43 x 80; capture screens/90-main-menu-model4.txt)

The Extended Menu

Select option `M` from the main menu. **`F3`** returns you to the main menu.

```
                       3270BBS - Extended Menu
Option ===>

1  Clock             Wall clock                          User ID . : bcooper
2  Balloon           Hot air balloon game                Time. . . : 10:07a
3  Blackjack         Play some blackjack                 Online .  : 1
4  Doors             Connect to other mainframes         In chat . : 0 : 0
5  Space Invaders    Famous 1970s game                   Unread Msg: No
6  Flappy Bird       Endless side-scroller
7  Marketplace       Buy and sell items
P  DELTAMON          Performance monitor
F  Forex             Real time forex exchange prices        September   2026
W  Wordle            Word guessing game                  Su Mo Tu We Th Fr Sa
Q  Stock Quotron     View financial markets data                1  2  3  4  5
O  MVS Console       Operator Console                     6  7  8  9 10 11 12
M  Screen Saver      Burn-in protector for CRT/OLED      13 14 15 16 17 18 19
I  Private Chat      Password-access live chat           20 21 22 23 24 25 26
R  Federated Chat    Worldwide 3270BBS chat              27 28 29 30
G  Newsgroups        Worldwide, federated newsgroups        Day of year 253
B  BASIC             Program in BASIC
A  Assembler         S/360 assembly learning environment

                              Welcome to 3270BBS
F2=WhatsNew F3=Main Menu F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 3-5. The extended menu (Model 2, 24 x 80; capture screens/07-extended-menu.txt)

Option	Name	Function
1	Clock	A wall clock in several styles. See Chapter 14.
2	Balloon	Hot air balloon game. See Chapter 18.
3	Blackjack	Card game. See Chapter 18.
4	Doors	Connect to other mainframes. See Chapter 20.
5	Space Invaders	Game. See Chapter 18.
6	Flappy Bird	Game. See Chapter 18.
7	Marketplace	Buy and sell items. See Chapter 19.
P	DELTAMON	Performance monitor. See Chapter 14.
F	Forex	Foreign exchange rates.
W	Wordle	Word guessing game. See Chapter 18.
Q	Stock Quotron	Financial market data. See Chapter 14.
O	MVS Console	Operator console display. See Chapter 14.
M	Screen Saver	Start the screen saver at once.
I	Private Chat	Password-protected chat room. See Chapter 11.
R	Federated Chat	Not available in this release: the option answers `Federated chat is disabled`. See Chapter 11.
G	Newsgroups	Not available in this release: the option answers `Newsgroups is disabled`.
B	BASIC	The BASIC programming environment. See Chapter 16.
A	Assembler	The System/360 assembler environment. See Chapter 17.

Figure 3-6. Extended menu options

Note
The letter `R` means *local chat* on the main menu and *federated chat* on the extended menu.

Shortcuts

You need not walk the menus one screen at a time:

- From the extended menu, = followed by a main menu option goes straight there. `=0` is Edit Profile, `=X` is Logoff.
- From the main menu, `M;` followed by an extended menu option goes straight there without displaying the extended menu. `M;7` is the marketplace, `M;B` is BASIC.

Typed Commands

Some functions have no line on the menu and are typed at the `Option ===>` prompt instead. Type `COMMANDS` to see the list that applies to your account, as in Figure 3-7.

```
                        3270BBS - a 3270 BBS
Option ===>

 Commands available to you - Main Menu

 TYPED COMMANDS                        NEWS     News headlines
 SD       SDSF system activity         DBMON    DB transaction monitor
 CLOCK    Wall clock                   DSLIST   Data set list utility
 BALLOON  Balloon game                 CLEAR    Clear the link clipboard
 CHECKERS Checkers game                COMMANDS Show this command list
 CONSOLE  MVS operator console

 F3=Close

                                                        13 14 15 16 17 18 19
                                                        20 21 22 23 24 25 26
                                                        27 28 29 30
                                                           Day of year 253



                               Welcome to 3270BBS
F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 3-7. The COMMANDS overlay, listing typed commands (Model 2, 24 x 80; capture screens/06-commands.txt)

Command	Function
`SD`	The SDSF system activity display.
`CLOCK`	The wall clock.
`BALLOON`	The balloon game.
`CHECKERS`	The checkers game. It has no menu option; this command is the only way in.
`CONSOLE`	The MVS operator console display.
`NEWS`	News headlines, when the operator has configured a news source.
`DBMON`	The database transaction monitor.
`DSLIST`	The data set list utility. See Chapter 14.
`CLEAR`	Empty the `bbs://` link clipboard. The system replies `Link clipboard cleared`.
`COMMANDS`	Display the list of typed commands.

Figure 3-8. Typed commands available from either menu

Administrators have further commands, which are listed for them in the same overlay and are not described here.

Function Keys That Work Almost Everywhere

Figure 3-9 shows the help panel displayed by **`F1`** on the main menu. It summarises the conventions that hold across the whole system.

```
                              MAIN HELP
Common Function Keys:                   Editor Function Keys:

 F1  = Display this help screen        F2  = Spell checker
 F3  = Exit/return to previous screen  F3  = Abandon edit session
 F4  = Reply                           F4  = Delete current line
 F5  = Create new                      F5  = Insert line below
 F7  = Scroll up                       F6  = Insert line above
 F8  = Scroll down                     F7  = Scroll up
 F9  = Delete an item                  F8  = Scroll down
 F20 = Print Topic/Message/Note        F9  = Go to bottom of text
 F22 = Copy/paste/follow a bbs:// link F10 = Center current line
 F23 = Virtual Sessions list           F11 = Make centered box
 F24 = Next virtual session            F12 = Save and exit
                                       F13 = Centered box until next empty row
                                       F14 = Go to first line of text
                                       F15 = Make left aligned box
                                       F22 = Paste a copied bbs:// link
                                       Save content with SAVE
                                       Exit editor unsaved with CANCEL
In Editor press F1 for detailed editor commands.
From the TSO command line, issue LOGOFF command to disconnect
In TSO, issue HELP to see useful commands in command line mode.
 F3=Return
```

Figure 3-9. The main help panel (Model 2, 24 x 80; capture screens/05-main-help.txt)

Key	Function
F1	Display help for the screen you are on. Help always returns you to where you were. Most screens have it; the extended menu does not.
F3	Leave the screen: cancel, or return to the previous screen. On the main menu it merely refreshes the screen.
F4	Reply, on screens where replying is meaningful. On the main menu it is Summon; the extended menu does not accept it.
F5	Create something new: a topic, a message, a note. On the main menu it displays the virtual session overlay.
F6	Change your own post. The key works from anywhere on the screen while the `F6=Edit` marker is shown, and the marker appears only on a post you wrote yourself, only for three hours after you wrote it, and only if you have not already changed it. See "Changing or Removing Your Own Post" later in this chapter.
F7, F8	Scroll up and down.
F9	Delete an item, on screens where deleting is meaningful.
F20	Print a topic, message or note. See Chapter 13.
F22	Copy, paste or follow a `bbs://` link. See Chapter 9.
F23	Display the Virtual Sessions screen: list your three sessions and go to one by number. See Chapter 4.
F24	Go to the next virtual session, starting it at the main menu if it is not in use yet. See Chapter 4.

Figure 3-10. Universal function keys

F2 — What's New

F2 on either menu reports what has happened in the conferences you subscribe to, and on the wall of one-liners, since your previous logon. If nothing has happened, the message line says `No new activity since your last logon` in reverse video.

F4 — Summoning Another User

A summon is a short, urgent page to somebody who is logged on now: the message appears on that user's screen wherever they happen to be. Press **F4** on the main menu to display the overlay shown in Figure 3-11.

```
                        3270BBS - a 3270 BBS
Option ===>

1  Conferences       Organized community discussions     User ID . : bcooper
2  My Subscriptions  Manage conference subscriptions     Time. . . : 10:25a
3  Search Content    Full text search                    Online .  : 1
4  M
L  O   SUMMON USER
R  C
U  U   Username:         (max 7 chars)
N  N
S  S   Message:                                                        6
0  E                                                                   Sa
M  E   Summon valid for 15 minutes                                      5
X  L   Enter=Send  F3=Cancel                                           12
                                                                       19
                                                       20 21 22 23 24 25 26
                                                       27 28 29 30
                                                          Day of year 253



                              Welcome to 3270BBS
F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 3-11. The SUMMON USER overlay (Model 2, 24 x 80; capture screens/08-summon.txt)

Type the user identifier — at most seven characters — and a message of up to seventy characters, then press **ENTER**. **F3** cancels. The summon is valid for fifteen minutes; if the user does not see it in that time it expires. Afterwards a `SUMMON STATUS` overlay tells you whether your summon was seen or expired unread.

Summon a user who is online. To reach somebody who is not, send mail (Chapter 7). The wall of one-liners is not the place for it: a one-liner is addressed to the whole community, not to one person.

F6 — System Information

F6 displays the `System Information` overlay shown in Figure 3-12, which describes the system you are connected to. Press **F6** again to close it.

```
                      3270BBS - a 3270 BBS
Option ===>

1  Conferences       Organized community discussions     User ID . : bcooper
2  My Subscriptions  Manage conference subscriptions     Time. . . : 9:57a
3  Search Content    Full text search                    Online .  : 1
4  Mail              Send and receive Mail               In chat . : 0 : 0
L  One Liners                                            sg: No
R  Chat          System Information                      . : 4.2.6
U  User Rolode                                           . : 2-310
N  Notes           Major Version . . :  4.2.6
S  SDSF            Minor Version . . :  4.2.6.1          mber   2026
0  Edit Profil     Uptime. . . . . . :  00h 08m           We Th Fr Sa
M  Extended Me     Architecture. . . :  ARM64              2  3  4  5
X  Logoff          Database. . . . . :  SQLite3            9 10 11 12
                   Build Date. . . . :  08 Sep 2026 06:32 UTC  16 17 18 19
                                                           23 24 25 26
                 Press any key to close                    30
                                                         f year 253


                              Welcome to 3270BBS
F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 3-12. The System Information overlay (Model 2, 24 x 80; capture screens/04-sysinfo.txt)

F13 — Changing the Menu Colours

F13 on the main menu cycles through the available colour schemes for the menu. The choice lasts for the rest of the session.

Chapter 4

Virtual Sessions

A display station shows one screen at a time, but 3270BBS gives you **three** independent sessions inside the one connection. You might read a long topic in the first, compose a reply to a message in the second, and leave a BASIC program listed in the third, moving between them without losing your place in any of them.

Key	Function
F24	Go to the next virtual session. If that slot is not in use yet, a new session is started in it at the main menu; otherwise the session is *restored* exactly as you left it: the screen, its data, the conference you had selected, and the last command you typed.
F23	Display the Virtual Sessions screen, which lists all three slots with their times and lets you go straight to any one of them by number. See "The Virtual Sessions Screen".
F5	On either menu, display the virtual session overlay, a short summary of what is in each slot. Press **F5** again to close it.

Figure 4-1. Virtual session keys

Starting and Switching Sessions with F24

F24 is the only key you need, both to start a new virtual session and to switch between them. After logon you are in session 1 and the other two slots are empty. Press **F24** and you are in session 2, which starts at the main menu because it did not exist yet. Press it again and session 3 starts the same way. From session 3 the next press wraps round to session 1, and from then on every press moves you to the next session and restores it as you left it.

F24 never discards anything. A session, once started, lasts until you log off.

```
                      3270BBS - a 3270 BBS
Option ===>

1  Conferences       Organized community discussions     User ID . : bcooper
2  My Subscriptions  Manage conference subscriptions     Time. . . : 9:57a
3  Search Content    Full text search                    Online .  : 1
4  Mail              Send and receive Mail               In chat . : 0 : 0
L  One Liners                                            sg: No
R  Chat          Virtual Session Status                  . : 4.2.6
U  User Rolode                                           . : 2-310
N  Notes           Session 1 . . . . :  Main Menu        Active
S  SDSF            Session 2 . . . . :  Not in use       Empty   mber   2026
0  Edit Profil     Session 3 . . . . :  Not in use       Empty    We Th Fr Sa
M  Extended Me                                             2  3  4  5
X  Logoff                                                  9 10 11 12
                                                        13 14 15 16 17 18 19
                                                        20 21 22 23 24 25 26
                                                        27 28 29 30
                                                           Day of year 253



                             Welcome to 3270BBS
F1=Help F2=WhatsNew F4=Summon F5=VirtualSess F6=SysInfo F10=Month- F11=Month+
```

Figure 4-2. The Virtual Session Status overlay (Model 2, 24 x 80; capture screens/03-virtual-sessions.txt)

The overlay on **F5**, shown in Figure 4-2, names the screen each session is sitting on, so you can see where you will land before you press the key.

The Virtual Sessions Screen

Press **F23** on any screen to display the Virtual Sessions screen shown in Figure 4-3. It is an ordinary full screen, not a window: it lists all three slots, tells you how long you have been logged on, and lets you go directly to any session by its number instead of stepping through them with **F24**.

```
VIRTUAL SESSIONS             BCOOPER                                10:28:19

 Logon time . . . . : 2026-09-12 09:41:07 UTC
 Logged on for  . . : 47m:12s
 System CPU . . . . :  3%

 SLOT  STATUS      SCREEN            STARTED            TIME IN SESSION
  1    Active      Topic             2026-09-12 09:41   28m:42s
  2    Background  Message Compose   2026-09-12 09:45   18m:30s
  3    Empty       Not in use        -                  -

 Session ===>

 Type 1-3 to switch, blank Enter returns to Topic









Enter=Switch/Return  F3=Return  F23=Refresh  F24=Next session
```

Figure 4-3. The Virtual Sessions screen (Model 2, 24 x 80; capture screens/03b-virtual-sessions-list.txt)

Field	Meaning
Logon time	When you logged on, in your own time zone.
Logged on for	How long ago that was.
System CPU	How busy the host computer is, as a whole-number percentage. It is the same figure as `CPU` on the first line of the SDSF activity display, and it covers the whole system, not just you.
SLOT	The session number, 1, 2 or 3. This is the number you type to go to that session.
STATUS	`Active` is the session you pressed **`F23`** in. `Background` is a session that has been started and is waiting for you. `Empty` is a slot not yet used.
SCREEN	The screen the session is sitting on, which is where you will land when you go to it. An empty slot shows `Not in use`.
STARTED	When the session was started, in your own time zone. Session 1 starts when you log on.
TIME IN SESSION	The total time you have spent in that session, counting only the time it was the active one. The active session's figure includes the time up to now.

Figure 4-4. Fields on the Virtual Sessions screen

Type a session number at `Session ===>` and press **`ENTER`**:

- `1`, `2` or `3` goes to that session, restoring it as you left it. If the slot is empty, a new session is started in it at the main menu, and the message line says `Virtual Session Nr. 3 started.` (with the number of the slot).
- The number of the session you are already in simply takes you back to it.
- Instead of typing a number, you may move the cursor onto a session's line in the table, anywhere on the line, and press **`ENTER`** with the field blank. That selects the session just as typing its number would. A number typed in the field takes precedence over the cursor position.
- Anything else is refused with a message, and the screen is shown again.

Press **ENTER** with the field blank, or press **F3**, to return to the screen you were on when you pressed **F23**. The line under `Session ===>` names that screen, in turquoise, for example `Type 1–3 to switch, blank Enter returns to Topic` in Figure 4-3. **F24** works here as it does everywhere else, and **F23** shows the screen again with the times brought up to date.

Where F23 and F24 Are Accepted

F23 and **F24** are accepted on nearly every screen in the system, including in the middle of the content editor and the games. Where a screen has unsaved work, the work is kept with the session and is still there when you switch back. There are two exceptions:

- On the `LOGON IN PROGRESS` notice after logon, **F23** is ignored. Every other key continues to the main menu as before.
- The ISPF-style editor (Chapter 16) ignores both **F23** and **F24**. Leave the editor first.

Note
Only one of your virtual sessions may be in chat at a time. If you are in chat in one session and try to enter chat in another, the system declines; leave chat in the first session with **F3** and try again.

Chapter 5

Conferences, Topics and Posts

Public discussion is arranged in three levels. A **conference** is a subject area, such as `General` or `Hardware`. A conference holds **topics**. A topic holds **posts**: the first post is written by the person who created the topic, and every reply is another post in the same topic.

Listing the Conferences

Select option `1` from the main menu.

A conference is a room in the building. Each one is devoted to a subject — the system itself, hardware, programming, whatever this community has made — and every topic must live in one of them. Conferences are how the discussion stays findable when there are thousands of posts: a reader who cares about terminals opens the hardware conference and sees only what belongs there. The list below is the whole public part of the system; anything you can read on this system is in one of these rooms, except your own mail and notes.

Some conferences are open to everybody. A conference may be restricted by the operator, or you may have been banned from one by its moderator, in which case it does not appear to you at all. There is no way to post outside a conference, and no way to create one unless you are a moderator or an administrator.

```
                        Available Conferences
  Total conferences: 3     Total topics: 5                  Page 1 of 1
S Conference Name        Topics Subscrd Latest Topic
****************************************** *Desc****************************
  3270BBS                2              Colour tags in posts - a cheat s...
  Hardware               2              Show us your 3179G
  General                1              Welcome to the General conference


F6 while on a conference row shows preview of topics
F3=Return  F5=Subscriptions  F7=Prev  F8=Next  F11=Point&Sort
```

Figure 5-1. The Available Conferences screen (Model 2, 24 x 80; capture screens/10-conferences.txt)

The columns are the conference name, the number of topics in it, whether you are subscribed to it, and the title of the most recent topic. To open a conference, type any character in the selector field (`S`) at the left of its line and press **`ENTER`**.

Key	Function
`F3`	Return to the main menu.
`F5`	Manage your subscriptions.
`F6`	With the cursor on a conference line, preview the topics in that conference without leaving the list.
`F7, F8`	Previous and next page.
`F10`	Conference administration. Moderators and administrators only; see Chapter 21.
`F11`	Sort. Put the cursor on a column heading first. See "Sorting a List".
`F22`	Copy a `bbs://` link to the conference under the cursor.

Figure 5-2. Function keys on the conference list

Subscriptions

Subscribing to a conference does not change what you may read; it decides what **F2** (What's New) reports to you at the menu. Select option 2 from the main menu, or press **F5** on the conference list.

```
                    Conference Subscription Management      Page 1 of 1
  Total conferences: 3
S Conference             Topics Subscribed  Latest Post
*****************************************************************************
  3270BBS                2      NO          Colour tags in posts - a cheat ...
  General                1      NO          Welcome to the General conference
  Hardware               2      NO          Show us your 3179G


S=subscribe, U=unsubscribe (then press ENTER)
ENTER=Process Actions  F3=Return
```

Figure 5-3. Conference Subscription Management (Model 2, 24 x 80; capture screens/38-subscriptions.txt)

Type S against a conference to subscribe or U to unsubscribe, and press **ENTER**. You may mark several lines before pressing **ENTER**. **F3** returns to the menu.

Listing the Topics in a Conference

A topic is one conversation: a question and its answers, an announcement and the remarks it draws, a review and the argument about it. It carries a title, an author, and the posts that make it up, and it stays in the conference indefinitely, so a topic written two years ago can still be found, read and replied to. Most of your time on this system will be spent on the two screens that follow: the list of topics, and the topic itself.

```
Conference: 3270BBS - Sorted by Topic Creation Date         Page 1
S Topic Title                               Author   Posts Views Likes Created
******************************************************************************
  Colour tags in posts - a cheat sheet      jbrooks  1     62    0     05Sep26
  How do virtual sessions work?             bcooper  1     73    0     02Sep26




















  Search:
 F3=Conferences  F5=Add Topic   F7=Up F8=Dn F10=SortActive F11=Sort  F22=Link
```

Figure 5-4. The topic list for one conference (Model 2, 24 x 80; capture screens/11-topics-list.txt)

The title line names the conference and the sort order in force. The columns are the topic title, the author, the number of posts, the number of times the topic has been viewed, the number of likes, and the date the topic was created. Topics that have received posts since your last logon are shown in pink and underscored, so that new activity is visible at a glance.

Type any character in the selector field of a topic and press **`ENTER`** to read it. To find a topic, type a word in the `Search:` field and press **`ENTER`**: titles are searched first, and if no title matches, the text of the posts is searched.

Key	Function
F1	Help.
F3	Return to the conference list, or to the main menu when the list is not filtered by conference.
F5	Add a topic. See "Starting a Topic".
F7, F8	Page up and down.
F10	Switch between ordering by creation date and ordering by latest activity. This choice is remembered for your next visit.
F11	Sort by the column the cursor is on. See below.
F22	Copy a bbs:// link to the topic the cursor is on. See Chapter 9.

Figure 5-5. Function keys on the topic list

Sorting a List

The conference list and the topic list are sorted by pointing at a column and pressing a key — there is no sort menu:

1. Move the cursor into the heading of the column you want to sort by, for example `Author` or `Views`.
2. Press **F11**. The list is sorted by that column, and the separator line under the heading shows `*Asc` or `*Desc` to say which way.
3. Press **F11** again on the same column to reverse the order.

Sorting always returns you to page 1. The **F10** choice on the topic list (creation date or latest activity) is kept in your profile and survives logoff; the **F11** point-and-sort choice lasts only while you are on the screen.

Reading a Topic

```
Topic: Colour tags in posts - a cheat sheet    Conference: 3270BBS
By:    jbrooks   on 5 Sep 2026     Replies: 0   Views: 55   Page 1 of 1
 ---+----1----+----2----+----3----+----4----+----5----+----6----+----7----+---
jbrooks wrote on 5 Sep 2026         First Post
Yellow is good for headings.
Turquoise reads well for links and quotes.
Plain text is green by default.









F2=Oldest F12=Newest F13=AboutUser F14=HalfUp F15=HalfDn F22=Cpy/Flw URL
F1=Help F3=Topics F4=Reply F5=I Like F7=Up  F8=Down F9=LastPost  F10=Save2Note
```

Figure 5-6. Reading a topic (Model 2, 24 x 80; capture screens/13-topic-view.txt)

The heading names the topic, the conference, the author, the date, the number of replies and the number of views. Each post is introduced by a line giving its author and date; the first and last posts of the topic are marked `First Post` and `Last Post` in reverse video. A ruler line shows the column positions.

Figure 5-7 shows the panel displayed by **`F1`**, which lists every key the topic view accepts.

```
Topic: Colour tags in posts - a cheat sheet    Conference: 3270BBS
By:    jbrooks                                                  1 of 1
 ---+----1----   Topic View - Function Keys                    +----7----+---
jbrooks wrote
Yellow is good     F2  = Show oldest first (this topic only)
Turquoise read     F3  = Return to topics list
Plain text is      F4  = Reply to topic
                   F5  = I like this topic
bcooper wrote      F6  = Edit your own post (within 3 hours)        F6=Edit
Agreed. I use      F7  = Scroll up (previous page)
                   F8  = Scroll down (next page)
                   F10 = Save topic to Notes
                   F12 = Show newest first (this topic only)
                   F13 = View PUBLIC note (cursor on user)
                   F14 = Half-scroll up
                   F15 = Half-scroll down
                   F20 = Send topic as PDF email
                   F22 = Copy/follow bbs:// link at cursor

                   F23 = Virtual Sessions list
                   F24 = Next Virtual Session

F2=Oldest F12=     Press ENTER to close this help              /Flw URL
F1=Help F3=Top                                                  F10=Save2Note
```

Figure 5-7. The topic view function key panel (Model 2, 24 x 80; capture screens/14-topic-view-help.txt)

Key	Function
F2	Show the oldest post first, in this topic only.
F3	Return to the topic list.
F4	Reply. The content editor opens; see Chapter 6.
F5	Record that you like what you are reading. The like is recorded against the first post shown on the page you are on — on page 1 that is the topic's opening post — and you may like each post once.
F7, F8	Scroll up and down.
F9	Jump to the last post; when you are at the end, the key is labelled F9=FirstPost and jumps back to the beginning.
F10	Save the page you are reading into your notes, under the subject Topic: and the topic title.
F11	Half-page scroll down, the same as **F15**.
F12	Show the newest post first, in this topic only.
F13	With the cursor on a user name, display that user's PUBLIC note.
F14, F15	Half-page scroll up and down.
F20	Print the topic: mail it to yourself as a PDF document, or place it in your held output. See Chapter 13.
F22	Follow the bbs:// link under the cursor; or, with the cursor on a post, copy a link to that post, and with the cursor on the heading line, a link to the topic. See Chapter 9.

Figure 5-8. Function keys while reading a topic

The order chosen with **F2** or **F12** applies to the topic you are reading. To change the order used when you first open any topic, set `Posts Sort Order` in your profile; see Chapter 12.

Starting a Topic

1. Press **F5** on the topic list.
2. Type the title of the topic and press **ENTER**. Choose the title with care: it is what everybody else sees in the list.
3. If you did not start from inside a conference, choose the conference the topic belongs in.
4. The content editor opens. Write the first post as described in Chapter 6 and type `SAVE`, or press **F12**, to create the topic.

An empty post is refused. To abandon the topic before it is created, type `CANCEL` or press **F3** and then **F9** to confirm.

Replying

Press **F4** while reading the topic. The editor opens with the heading `Reply to:` and the topic title. When you save, your post is added at the end of the topic and the display moves to the page that contains it. Replies are not quoted automatically; if you want to quote, copy the lines you need with the editor's copy and paste keys or type them yourself.

Changing or Removing Your Own Post

You may change a post you wrote yourself **once**, and only within **three hours** of writing it. While that is still possible, the marker `F6=Edit` blinks at the right hand end of the post's heading line, as in Figure 5-9. The marker is shown only to the author: other readers never see it. It disappears when the three hours are up, and it disappears as soon as you have made your one change.

```
Topic: Colour tags in posts - a cheat sheet    Conference: 3270BBS
By:    jbrooks   on 12 Sep 2026    Replies: 1   Views: 55   Page 1 of 1
 ---+----1----+----2----+----3----+----4----+----5----+----6----+----7----+---
jbrooks wrote on 12 Sep 2026         First Post
Yellow is good for headings.
Turquoise reads well for links and quotes.
Plain text is green by default.

bcooper wrote on 12 Sep 2026         Last Post                        F6=Edit
Agreed. I use pink only for warnings, never for body text.









F2=Oldest F12=Newest F13=AboutUser F14=HalfUp F15=HalfDn F22=Cpy/Flw URL
F1=Help F3=Topics F4=Reply F5=I Like F7=Up  F8=Down F9=LastPost  F10=Save2Note
```

Figure 5-9. The F6=Edit marker, shown only on your own post (Model 2, 24 x 80; capture screens/13b-post-edit.txt)

Press **F6**. The cursor may be anywhere on the screen: while the marker is shown, the key works from wherever you happen to be reading. If you have written more than one post in this topic that can still be changed, the **most recent** of them is taken — anywhere in the topic, not merely on the page you are looking at, and regardless of the order the posts are displayed in. The display moves to the page carrying that post when you have finished. To change an earlier post instead, put the cursor on it before pressing **F6**. The content editor opens with your text already in it. Correct what you need to correct and save in the usual way, with `SAVE` on the command line or **F12**; see Chapter 6. **F3** leaves the post as it was.

Two rules are applied when you save, and the editor tells you if either of them refuses your change:

- A post may not be emptied, and it may not lose more than half of its words: a post of forty words must keep at least twenty. If it would, the editor answers `Edited post cannot have less than half the words of your original post` and your text stays on the screen. The rule is there so that a post cannot be gutted after other people have replied to it, leaving their replies answering something that is no longer there.
- The three hour limit is checked again at the moment you save, not only when the marker is drawn. If the window closes while you are still in the editor, the change is refused and your text is left on the screen for you to copy elsewhere if you want it.

Once a post has been changed, its heading line reads `wrote and edited on` instead of `wrote on`, and every reader sees that, not only you. The post is then fixed: the marker is not offered again, even if the three hours have not yet run out.

There is no function for a user to *delete* a post, and none to change a post after the three hours or after the one permitted change. If something must be removed, or corrected later than that, ask a moderator of the conference; the functions they use are described in Chapter 21.

Searching the Whole System

Option `3` on the main menu offers a full text search across topics and posts, and the data set list utility described in Chapter 14.

```
                            Search and Data Set List

 Option ===>

   1  Search         Search for content throughout 3270BBS
   4  DSLIST         Process data sets from a catalog list









 F1=Help  F3=Main Menu
```

Figure 5-10. The Search and Data Set List menu (Model 2, 24 x 80; capture screens/37-search.txt)

Chapter 6

Writing: the Content Editor

One editor is used for every piece of prose you write in 3270BBS: topics, replies, mail, notes, marketplace descriptions and your public profile. This chapter describes it. The programming environments use a different, full-screen editor, which is described in Chapter 16.

```
Reply to: Colour tags in posts - a cheat she Pos 1     Lines in file: 1
Command:  _                   SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down
```

Figure 6-1. The content editor, opened to reply to a topic (Model 2, 24 x 80; capture screens/15-editor-reply.txt)

The heading names what you are writing, the position in the text, and the number of lines in it. Below the heading is the `Command:` field, and the rest of the screen is your text: one input field per line. Type into the lines, using **`TAB`** or the cursor keys to move between them.

```
Reply to: Colour tags in posts - a cheat she Pos 4     Lines in file: 3
Command:  _                    SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down       *
<<yellow>>Thanks for the cheat sheet.<</yellow>>
I use <<turquoise>>turquoise<</turquoise>> for quoted text and
leave everything else green. Tags on their own line work best.
```

Figure 6-2. Text typed into the editor, with colour tags. The red asterisk at the right of the Command line says the text has been changed (Model 2, 24 x 80; capture screens/17-editor-typing.txt)

The Changed Indicator

As soon as the editor has taken in a change — a character typed, a line inserted or deleted, a signature or a link pasted — a red asterisk appears at the right-hand end of the `Command:` line, in the last column of the second row of the screen. It is visible in Figure 6-2.

The asterisk means *this text differs from what was saved*. It stays until you leave the editor; there is nothing to switch it off. Treat it as a reminder rather than a warning:

- If the asterisk is there and you leave with `CANCEL` or **`F3`**, you are throwing work away. **`F3`** asks you to confirm; `CANCEL` does not.
- If you have typed a good deal and the asterisk is *not* there, the editor has not taken your typing in yet. Press **`ENTER`**: it commits what is on the screen to the text and the asterisk appears.

Editor Commands

Type these in the `Command:` field and press **`ENTER`**:

Command	Function
`SAVE`	Save the text and leave the editor. Trailing blank lines are removed. Equivalent to **`F12`**.
`CANCEL`	Leave without saving.
`FIND text`	Find the text. Quotation marks around the text are optional.
`RFIND`	Find the next occurrence. Equivalent to **`F19`**.

Figure 6-3. Content editor commands

Editor Function Keys

Press **`F1`** in the editor for the panel shown in Figure 6-4; press **`ENTER`** to close it.

```
Reply to: Colour tags in posts - a cheat she Pos 1     Lines in file: 1
Command:  _                    SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down
                  ┌──────────────────────────────────────┐
                  │ F1  = Show this help                 │
                  │ F2  = Spell checker                  │
                  │ F3  = Abandon edit session           │
                  │ F4  = Delete current line            │
                  │ F5  = Insert line below              │
                  │ F6  = Insert line above              │
                  │ F7  = Scroll up                      │
                  │ F8  = Scroll down                    │
                  │ F9  = Go to bottom of text           │
                  │ F10 = Center current line            │
                  │ F11 = Make centered box              │
                  │ F12 = Save and exit                  │
                  │ F13 = Centered box until next empty row │
                  │ F14 = Go to first line of text       │
                  │ F15 = Make left aligned box          │
                  │ F16 = Copy current line              │
                  │ F17 = Paste above cursor             │
                  │ F18 = Paste below cursor             │
                  │ F19 = ReFind (find next occurrence)  │
                  │ F21 = Insert SIGNATURE note          │
                  │ F22 = Paste copied bbs:// link       │
```

Figure 6-4. The content editor function key panel (Model 2, 24 x 80; capture screens/16-editor-help.txt)

Key	Function
F1	Display the key panel.
F2	Check the spelling. Words that are not in the dictionary are highlighted in yellow, and the message line reports how many were found.
F3	Abandon the edit. A confirmation panel is displayed; press **F9** to discard the text, or any other key to carry on editing.
F4	Delete the line the cursor is on.
F5	Insert a blank line below the cursor.
F6	Insert a blank line above the cursor.
F7, F8	Scroll up and down.
F9	Go to the bottom of the text.
F10	Centre the current line.
F11	Draw a centred box around the current line.
F12	Save and leave.
F13	Draw a centred box around the block of lines from the cursor to the next empty line.
F14	Go to the first line of the text.
F15	Draw a left-aligned box.
F16	Copy the current line.
F17	Paste the copied line above the cursor.
F18	Paste the copied line below the cursor.
F19	Find the next occurrence of the last FIND text.
F21	Insert your signature. See "Signatures".
F22	Paste the bbs:// link that is on the clipboard. See Chapter 9.

Figure 6-5. Content editor function keys

Warning

Only the keys listed above, **ENTER**, and the virtual session keys **F23** and **F24** are accepted by the editor. Pressing any other key discards whatever you have typed on the screen since the last **ENTER**. Press **ENTER** from time to time while writing a long post; it commits what is on the screen to the text buffer.

Lines do not wrap while you type: each screen line is one line of your text. Text that is pasted into the editor, however, is folded at the last blank before the right margin, so nothing is lost.

The Editing Keys in Practice

Every key below acts on **the line the cursor is on** when you press it. There is no marked block and no selection: move the cursor to the line, then press the key. Nothing is destroyed silently — the changed indicator (above) tells you the text has moved on from what was saved.

Making Room and Taking It Away: F5, F6 and F4

You have written this, and you want a sentence between the two lines:

```
Agreed – and one more rule:
keep the body of a post green.
```

Put the cursor anywhere on the first line and press **F5**. A blank line appears *below* it, the line below moves down, and you type into the gap. **F6** does the same thing *above* the cursor line — use it when you want a new first line without retyping the one that is there.

F4 is the opposite: it removes the line the cursor is on and closes the gap. There is no confirmation and no undo, so read the line before you press it. If the text is down to a single line, **F4** blanks that line instead of removing it, so the editor always has somewhere to type.

Repeating a Line: F16, F17 and F18

F16 copies the line the cursor is on into a one-line buffer and answers `Line copied`. The line itself is not disturbed. Move the cursor to where the copy belongs and press **F17** to put it *above* that line, or **F18** to put it *below*.

In Figure 6-6 the second line was copied with **F16** and pasted below itself with **F18**; the buffer still holds it, so it can be pasted again elsewhere.

```
Reply to: Colour tags in posts - a cheat she Pos 2     Lines in file: 3
Command:  _                    SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down       *
Agreed - and one more rule:
keep the body of a post green.
keep the body of a post green.
```

Figure 6-6. A line copied with F16 and pasted below with F18 (Model 2, 24 x 80; capture screens/20-editor-copy.txt)

The copy buffer holds one line and lasts as long as you are in the editor. It is not the `bbs://` link clipboard of Chapter 9, which is a different buffer with a different key (**`F22`**).

Headings and Boxes: F10, F11, F13 and F15

`F10` centres the line the cursor is on within the width of the text. Press it again after editing the line and it re-centres.

`F11` draws a box around that one line, centred on the screen. Figure 6-7 shows the result of putting the cursor on the first line of the reply and pressing **`F11`**: the line count in the heading has gone from 3 to 5, because the two rules are now lines of the text like any others.

```
Reply to: Colour tags in posts - a cheat she Pos 4     Lines in file: 5
Command:  _                   SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down       *
               +-----------------------------------------------+
               |  The colur tags are simpler than they look.  |
               +-----------------------------------------------+
Put each tag on a line of its own and the
editor will not break it accross a line end.
```

Figure 6-7. A line boxed with F11 (Model 2, 24 x 80; capture screens/19-editor-box.txt)

F13 boxes a whole block instead of one line: it takes the lines from the cursor down to the next empty line and draws one box round them all. Leave a blank line where you want the box to stop before you press it.

F15 draws the box against the left margin rather than centred, which suits a quotation or a code fragment better than a heading.

A box is ordinary text once drawn. You can type inside it, and you can delete a rule line with **F4** like any other line — the editor will not repair the box for you afterwards.

Checking the Spelling: F2

F2 checks every word on the screen against the system dictionary, turns the lines holding doubtful words yellow, and reports what it found on the heading line — `Found 2 misspelled words` in Figure 6-8, where *colur* and *accross* were caught.

```
Reply to: Colour tags in posts - a cheat she  Found 2 misspelled words
Command:  _                    SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down       *
The colur tags are simpler than they look.
Put each tag on a line of its own and the
editor will not break it accross a line end.
```

Figure 6-8. F2 has found two misspelled words (Model 2, 24 x 80; capture screens/18-editor-spell.txt)

The check tells you; it does not correct anything. Retype the word yourself; the highlighting clears as soon as you change the line. Words inside a `bbs://` link are skipped, so a link never paints a whole line yellow. If nothing is wrong the reply is `No spelling errors`.

Finding Something: FIND, RFIND and F19

In a long post, type `FIND green` on the `Command:` line and press **`ENTER`**: the editor moves to the first line holding that text. **`F19`** — or the command `RFIND` — moves to the next one, and again for the one after that. If you have not searched for anything yet, the reply is `No previous find`.

Signing Off: F21

`F21` appends your `SIGNATURE` note (Chapter 8) after the last line of the text, with a blank line in front of it, wherever the cursor happens to be. Figure 6-9 shows a reply just after **`F21`** was pressed.

```
Reply to: Colour tags in posts - a cheat she Pos 2     Lines in file: 6
Command:  _                    SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down       *
Agreed - and one more rule:
keep the body of a post green.
keep the body of a post green.

--
bcooper - Endicott, NY - "green on black forever"
```

Figure 6-9. A signature appended with F21 (Model 2, 24 x 80; capture screens/21-editor-signature.txt)

Press it once, at the end, when the post is otherwise finished; pressing it twice appends the signature twice, and the editor does not notice.

Getting About: F7, F8, F9 and F14

F7 and **F8** scroll a screen at a time. **F9** jumps to the bottom of the text — the quickest way to the end of a long reply — and **F14** jumps back to the first line.

Colour Tags

You may colour the text of a post or a mail message with tags. A tag is a word between double angle brackets. It takes effect where it appears and stays in effect until another tag or the end of the text. The tags themselves are not displayed.

Tag	Effect
`<<white>>`	White text.
`<<red>>`	Red text.
`<<green>>`	Green text. This is the colour of ordinary text, so the tag is only needed to return to it after another colour.
`<<yellow>>`	Yellow text.
`<<blue>>`	Blue text.
`<<turquoise>>`	Turquoise text.
`<<pink>>`	Pink text.
`<<reverse>>`	Begin reverse video.
`<</reverse>>`	End reverse video. Setting any colour also ends reverse video.

Figure 6-10. Text colour tags

There is no closing form for the colour tags. A tag such as `<</yellow>>` may be typed, and it is removed from the displayed text like any other tag the system does not recognise, but it does **not** return the text to green: everything after it stays yellow until another colour tag appears. To go back to ordinary text, write `<<green>>`. The one true closing tag is `<</reverse>>`.

Advice from long practice:

- Put a tag on a line of its own where you can. It reads more clearly in the editor, and it cannot be broken by a line ending.
- Colour carries meaning elsewhere in the system: red is used for errors, pink for new material, turquoise for links. Use yellow for headings and leave the body of your post green.
- A tag name that the system does not recognise is removed from the text without being displayed, so a misspelled tag silently does nothing.
- Tags are interpreted when a **post** or a **mail message** is displayed. The note viewer shows a note exactly as you typed it, including any tags; see Chapter 8.

Signatures

Your signature is a note whose subject is exactly `SIGNATURE`, in capital letters. Create it once as described in Chapter 8. Thereafter, pressing **`F21`** anywhere in the content editor appends it to the end of what you are writing, after a blank line. It works in topics, in replies and in mail.

The signature is never added automatically: you decide, message by message, whether to press **F21**. If you have no SIGNATURE note, the key does nothing. Keep the signature short — three or four lines is generous on a 24-line screen.

Drawing Boxes

F11, **F13** and **F15** draw line-drawing boxes around your text: around the current line, around the block of lines up to the next blank line, and left-aligned rather than centred. They are convenient for headings and for setting off quoted material. The box is ordinary text once drawn, and you can edit inside it.

Chapter 7

Mail

Mail is private correspondence between users. Where the operator has configured it, mail also reaches the Internet: you may address messages to ordinary electronic mail addresses, and messages sent to your address at this system are delivered into your inbox.

The Inbox

Mail is for what does not belong in public: an answer meant for one person, an arrangement to meet, a word to a moderator, a reply to a marketplace advertisement. Nothing you send is visible to anybody but the people you address it to, and messages are never linked to from the conferences (Chapter 9). Each message has a subject, up to three recipients on this system, and a body written in the same editor as your posts, so colour tags and your signature work here as they do everywhere.

Two folders are kept for you: the mail you have received, and the mail you have sent. There are no folders of your own making; what you want to keep permanently is best saved into your notes with **F10**, where you can give it any subject you like. Mail you no longer want is deleted one message at a time with **F9**, or in bulk with the purge function.

Select option 4 from the main menu.

```
                                Inbox
Search:                     Total messages: 2               Page 1 of 1
S  From     Subject                                         Date      Status
*******************************************************************************
   mmartin  Emulator settings  I use c3270 with a Model...  09Sep26   Read
   jbrooks  Welcome to the Hardware conference  Thanks ...  08Sep26   Read



F1=Help F3=Rtrn F5=New Message F6=Spam List F7=Up F8=Dwn F9=Purge F11=Rcv/Sent
```

Figure 7-1. The mail inbox (Model 2, 24 x 80; capture screens/20-mail-inbox.txt)

The columns are the other party, a preview of the message, the date and the status (`Read` or `Unread`). Type any character against a message and press **`ENTER`** to read it. Type a word in the `Search:` field to search your mail.

Key	Function
F1	Help.
F3	Return to the main menu.
F5	Write a new message.
F6	The spam list: senders from outside the system whose mail you have blocked.
F7, F8	Page up and down.
F9	Purge messages you have read. A confirmation screen lets you choose what to remove.
F11	Switch between received mail and sent mail.

Figure 7-2. Function keys on the mail list

Reading a Message

```
                                View Message
From:     jbrooks
To:       bcooper
Message:  #1 - 08Sep2026 01:15
Welcome to the Hardware conference

Thanks for the 3179G post. If you have photographs, put them in a
PUBLIC note and I will link to it from the conference.

Press F4 to reply, or F10 to keep this message in your Notes.









F1=Help F3=Messages F4=Reply F5=About F9=Del F10=Save2Notes
```

Figure 7-3. Reading a message (Model 2, 24 x 80; capture screens/22-mail-view.txt)

Figure 7-4 shows the key panel displayed by **`F1`**.

```
                                View Message
From:     jbrooks
To:       bcooper   View Message - Function Keys
Message:  #1 - 08
Welcome to the Ha     F3  = Return to messages list
                      F4  = Reply to message
Thanks for the 31     F5  = View sender's About Me page      in a
PUBLIC note and I     F7  = Previous page (if multi-page)
                      F8  = Next page (if multi-page)
Press F4 to reply     F9  = Delete message
                      F10 = Save message to Notes
                      F12 = Opt-out (topic notifications)
                      F20 = Print message

                      F23 = Virtual Sessions list
                      F24 = Next Virtual Session

                      Press ENTER to close this help



F1=Help F3=Messages F4=Reply F5=About F9=Del F10=Save2Notes
```

Figure 7-4. The message view function key panel (Model 2, 24 x 80; capture screens/23-mail-view-help.txt)

Key	Function
F2	Forward the message to an electronic mail address outside the system.
F3	Return to the list.
F4	Reply. Replies to mail from outside the system quote the original automatically; replies to mail from another user of this system do not.
F5	Display the sender's PUBLIC note.
F6	Block the sender: mail from that outside address is discarded from now on. See the spam list, above.
F7, F8	Previous and next page of a long message.
F9	Delete the message.
F10	Save the message into your notes.
F12	Opt out of the topic notifications that produced this message.
F20	Print the message. See Chapter 13.

Figure 7-5. Function keys while reading a message

Messages from the system account `noreply` cannot be answered.

Writing a Message

Press **F5** on the mail list.

```
                            Message Recipients

 Please enter up to 3 message recipients (leave blank if not needed):

   Internal users:

   Subject:









  F1=Help  F3=Cancel  F9=Find Username      Enter=Continue
```

Figure 7-6. Choosing the recipients of a message (Model 2, 24 x 80; capture screens/21-mail-compose.txt)

Type up to three user identifiers of this system, and a subject. If you are unsure of a name, press **F9** for a list to choose from. Where the operator has enabled external mail, further fields are offered for Internet addresses in the To and CC positions. Press **ENTER**; the content editor opens for the body of the message. Save with `SAVE` or **F12** to send it, or leave with `CANCEL` to throw it away.

Colour tags (Chapter 6) work in mail, and **F21** adds your signature.

Mail To and From the Internet

Note
Internet mail is an *optional* feature, and it is two features rather than one. **Sending** outward requires the operator to have obtained a SendGrid API key and configured a mail domain. **Receiving** requires the operator to run the system's mail service on a fully qualified domain. A board may do both, one, or neither. Where sending is not configured the Internet address fields are simply not drawn on the compose screen, and **F2** and **F4** are not offered when you are reading a message from outside; nothing is hidden from you by mistake, and nothing will fail later. If you are not sure what your board does, ask the operator.

Your Address

Your address on a board that receives Internet mail is your user identifier, an `@`, and the board's mail domain — for example `jbrooks@example.org`. The banner on the main menu usually states it, but that banner is text the operator writes by hand, so on a board that has changed domains it can be out of date. The operator knows the true one.

Sending Outward

Internet addresses are not typed into the `Internal users` fields. The Message Recipients screen carries two further fields for them, `and/or Email to:` and `cc:`, each taking several addresses separated by commas. You may address internal users and Internet addresses in the same message; the copy that stays on the system then carries a short block at the foot naming the outside recipients, so the internal reader knows the message went further than the board.

At most ten Internet recipients are accepted for one message, counting the `cc:` field. **You cannot attach a file to an outbound message.** There is no attachment function anywhere in the compose screens; what you send is the text you wrote. (Mailing a document to yourself as a PDF, described in Chapter 13, is a different facility: it mails a rendering of something already on the system, not a file you choose.)

Receiving

A message from outside is shown in the inbox with `-EXT-` in place of a user name, and reading it shows the real address, the subject and any `CC` list in a heading above the text. Two function keys appear only on such a message: **`F2`** forwards it to another Internet address, and **`F6`** adds the sender to your spam list, after which mail from that address is discarded without reaching you. The spam list itself is reached with **`F6`** from the inbox.

Mail addressed to a user identifier that does not exist on the board is discarded, and the sending system is told the message was accepted. This is deliberate: it prevents a stranger from discovering which accounts exist by mailing guesses at them. It also means a correspondent who mistypes your identifier receives no warning and you receive nothing.

What Arrives, and What Does Not

A 3270 display station has a character set of its own, and an inbox message is plain text in a fixed width. An arriving message is therefore reduced to what the screen can show before it is filed. It is worth knowing exactly what that costs, because the reduction is not always obvious from the result.

In the message	What you see
An attachment of any kind	Removed. A line such as `[Note: 1 attachment was dropped from this message]` is added at the foot of the text. The file itself is not kept anywhere on the system, and its name is not shown.
A message in both plain text and HTML	The plain text part, used as written.
A message in HTML only	The tags are stripped and the text between them is kept. Styling and layout are lost, and any text belonging to a style sheet or a script remains as text.
A web address	Replaced by the literal `[URL]`. **The address itself is not shown**, so a correspondent who sends you a link is sending you nothing you can use. Ask for it as plain words.
Accented letters, Greek, Cyrillic, Chinese, Japanese, emoji	Each character becomes a single space. `café` arrives as `caf` followed by a space; a sentence in a non-Latin script arrives as a run of spaces. It is not marked in any way.
Dashes, curly quotes, an ellipsis, a bullet	Translated sensibly: dashes become `–`, curly quotes become `'` and `"`, an ellipsis becomes `...`, a bullet becomes `*`.
A quoted-printable or base64 body	Decoded normally. Other transfer encodings are left as they arrived, which may show as unreadable text.
A subject in a non-English character set	Shown as the encoded form the mail system used, such as `=?UTF-8?B?...?=`. Subjects are also cut at 79 characters.
Long lines	Wrapped to 79 columns at word boundaries. A single word longer than 79 characters is not broken and will run past the right hand edge.
A message larger than five megabytes	Refused by the mail service; it never reaches your inbox.

Figure 7-7. How an arriving Internet message is reduced for the screen

The practical consequence is worth stating once: **3270BBS is a good place to receive correspondence and a poor place to receive documents.** If somebody needs to send you a file, a link or a message in a language that is not written in the Latin alphabet, the board is not the route.

Keeping the Original: the .FORWARD Note

A note whose subject is `.FORWARD` causes every message arriving for you from outside to be sent on to the address written in the note, as well as being delivered to your inbox. What is forwarded is the *original* message, untouched — attachments, HTML, accents and all. This is the only way the content removed above survives, so a user who expects documents should keep a `.FORWARD` note pointing at an ordinary mailbox. See Chapter 8.

Outbound mail is limited; see "Limits on Outgoing Mail" in Chapter 13.

Chapter 8

Notes

Notes are your own filing cabinet. Nobody else can read a note unless its subject is one of the reserved subjects described below. Select option `N` from the main menu.

A note is a piece of text with a subject, kept for you and written in the same editor as everything else. Notes serve four purposes on this system, and it is worth knowing all four:

- **As a notebook** — a list, a draft of a long post, anything you want to keep between sessions.
- **As a place to file things you have read** — **`F10`** while reading a topic or a message saves it as a note, so a reference you may want again is one screen away rather than lost in a conference.
- **As the source of the four reserved notes** below, which is how you publish an "About Me" page, set your signature and answer a finger query.
- **As a way in and out of the system** — notes are the files you may fetch and store over FTP, so a document written on your own machine reaches 3270BBS as a note.

```
                              Personal Notes
Search:                                                   Page 1 of 1
Total notes: 4
S Subject                           Viewed  Size  Updated      Created
*******************************************************************************
  PUBLIC                            NO        150 10 Sep 2026  10 Sep 2026
  SIGNATURE                                    52 10 Sep 2026  10 Sep 2026
  FINGER                            NO         53 10 Sep 2026  10 Sep 2026
  3179G restoration                            56 10 Sep 2026  10 Sep 2026



F1=Help  F3=Main Menu  F5=New Note  F7=Prev  F8=Next
```

Figure 8-1. The notes list (Model 2, 24 x 80; capture screens/25-notes-list.txt)

The columns are the subject, whether the note has been viewed, its size in characters, and the dates it was updated and created. A `Search:` field at the top narrows the list to the notes whose subject matches what you type. Type any character against a note and press **`ENTER`** to read it; type `D` to delete it. If `Confirm Delete` is set in your profile, mark one note at a time and confirm on the next screen.

Key	Function
`F1`	Help, including the list of reserved subjects.
`F3`	Return to the main menu.
`F5`	Create a note: type the subject, then write the text in the content editor.
`F7, F8`	Page up and down.

Figure 8-2. Function keys on the notes list

```
                              View Note
Note #1           Created: 10 Sep 2026           Updated: 10 Sep 2026
Subject: PUBLIC
<<yellow>>Bob Cooper<</yellow>>
Endicott, New York.
Collects 3179G terminals and 3174 controllers.
Reachable in the Hardware conference most evenings.



 F3=Back F5=Edit F7=Prev F8=Next F9=Delete F10=Post as Topic F22=Link
```

Figure 8-3. Reading a note (Model 2, 24 x 80; capture screens/27-note-view.txt)

Key	Function
F3	Return to the notes list.
F5	Edit this note in the content editor.
F7, F8	Previous and next page of a long note.
F9	Delete the note.
F10	**Post the note as a topic.** The note becomes a public topic in a conference of your choosing. Use it when a draft you have been keeping privately is ready to be read by everybody — and think before you press it, because a post cannot be withdrawn by you afterwards (Chapter 5).
F20	Print the note. See Chapter 13.
F22	Follow a `bbs://` link written in the note. A note has no link of its own, so there is nothing to copy here. See Chapter 9.

Figure 8-4. Function keys while reading a note

Notice in Figure 8-3 that the note is displayed exactly as it was typed, colour tags and all. Tags are interpreted when the note is used as a `PUBLIC` profile or when its text reaches a post or a message; in the note viewer itself they are shown literally.

The Reserved Subjects

Four subjects have a meaning to the system. They must be typed in capital letters exactly as shown, and you may have only one note of each; if you try to create a second, the system says `You already have a PUBLIC note; edit it instead`. Figure 8-5 is the help panel of the notes list, which names the three you will use most often; the fourth, `.FORWARD`, is described in the table that follows.

```
                              Personal Notes
 Search:                                                          1 of 1
 Total notes: 4   Notes - Function Keys
 S Subject                                                       reated
 **************     F3  = Return to main menu                    **************
   PUBLIC           F5  = Create new note                        0 Sep 2026
   SIGNATURE        F7  = Previous page                          0 Sep 2026
   FINGER           F8  = Next page                              0 Sep 2026
   3179G restor                                                  0 Sep 2026
                    Enter on a note to view/edit it
                    Type 'D' in selector to delete

                  Special Note Names (MUST be UPPERCASE):
                    FINGER    = Displayed when someone
                                fingers your username
                    PUBLIC    = Your public 'About Me'
                                visible to all users
                    SIGNATURE = F21 during Post and Mail edit
                                appends this signature
                    F23 = Virtual Sessions list
                    F24 = Next Virtual Session
                    Press ENTER to close this help

 F1=Help  F3=Main Menu  F5=New Note  F7=Prev  F8=Next
```

Figure 8-5. The notes help panel, listing the reserved subjects (Model 2, 24 x 80; capture screens/26-notes-help.txt)

Subject	Meaning
`PUBLIC`	Your "About Me" page. It is shown to anyone who looks you up in the rolodex, who presses **`F13`** with the cursor on your name while reading a topic, or who follows a `bbs://user` link to you. Write one: it is how the community learns who you are.
`FINGER`	The text sent to anyone in the world who fingers your user name at this system. See Chapter 10.
`SIGNATURE`	The signature appended by **`F21`** in the content editor. See Chapter 6.
`.FORWARD`	An electronic mail address. Mail arriving for you from outside the system is forwarded there as well as being delivered here.

Figure 8-6. Reserved note subjects

Reaching Your Notes by FTP

Where the operator has started the FTP server, your notes are also available as files. Connect with any FTP client, using your ordinary user identifier and password. Each note appears as a file named after its subject, with spaces replaced by underscores and `.txt` appended: a note whose subject is `My Ideas` is the file `My_Ideas.txt`.

- `GET` retrieves a note; `PUT` stores one, creating or replacing it.
- `MGET` is not supported. Fetch files one at a time.
- Uploads are limited in size; twenty kilobytes is the usual limit, and your operator may set another.

This is the supported way to compose a long document elsewhere and bring it into the system, or to keep a copy of your notes on your own machine.

Chapter 9

Linking to Content: bbs:// Links

A `bbs:// ` link is a short reference to something inside this system — a topic, a post, a marketplace item, a conference, a user — that you can put into a post or a message so that a reader can go straight there. Links are shown in turquoise wherever they appear.

The Form of a Link

A link is the letters `bbs:// `, then a kind, then an optional name that is there only to make the link readable, then a number that identifies the item:

- `bbs:// topicMotorbikes41` — topic 41
- `bbs:// itemIbmKeyboard18` — marketplace item 18
- `bbs:// userMoshix7` — the `PUBLIC` note of user 7

The kinds are `topic`, `post`, `item`, `user`, `conf`, `chat`, and, where newsgroups are enabled, `group`, `subject` and `article`. There is deliberately no kind for private mail: mail cannot be linked to.

The number is what matters. The name in the middle is decorative and is ignored, so a link still works after a topic has been renamed.

The Link Clipboard

Links are moved about with a clipboard that belongs to your session. It holds **one** link: copying another replaces it. It is shared by all three virtual sessions, so you may copy a link in one session and paste it in another (Chapter 4), and it keeps its contents until you replace it, type `CLEAR` at a menu, or log off.

While the clipboard holds something, a white asterisk is displayed in the last column of the title line of both menus. `CLEAR` empties it and answers `Link clipboard cleared`.

Copying, Pasting and Following

One key does all three. **`F22`** decides which of them you meant from where the cursor is standing when you press it:

- on a `bbs:// ` link somebody has written — it **follows** the link;
- on an item that can be linked to — it **copies** a link to that item to the clipboard, and answers `Link copied:` and the link;
- on a field you are typing into — it **pastes** the clipboard at the cursor.

Not every screen accepts the key. Figure 9-1 lists the ones that do, and what each of them does with it.

Screen	What F22 does
Conference list (Chapter 5)	Copies a link to the conference the cursor is on (`bbs://conf...`).
Topic list (Chapter 5)	Copies a link to the topic the cursor is on (`bbs://topic...`). Any column of the line will do, including the selector field. Like the conference list it paints no text of anybody's writing, so there is never a link to follow here — only one to copy. This screen has little room for its messages, so the confirmation may show the link without its decorative name, as `bbs://topic412`. That is the same link: the number is what the system reads, and the name is ornament.
Reading a topic (Chapter 5)	Follows a link in a post. Otherwise it copies: with the cursor on a post, a link to *that post* (`bbs://post...`); with the cursor on the topic's heading line, a link to the whole topic (`bbs://topic...`). Both take their decorative name from the topic title, so the two look alike — read the kind, not the words.
Marketplace item (Chapter 19)	Follows a link in the description; otherwise copies a link to the item (`bbs://item...`).
Reading a note, and another user's About Me page (Chapters 8 and 10)	Follows a link written in the text. A note has no link of its own, so there is nothing to copy.
Chat (Chapter 11)	On the input line at the foot of the screen it **pastes** the clipboard into the message you are typing. On a line of the conversation it follows a link, or copies a link to that line (`bbs://chat...`).
Wall of one-liners (Chapter 10)	On the input line it **pastes**. On a one-liner it follows a link. There is nothing to copy: a one-liner has no screen of its own to point at.
The content editor (Chapter 6)	**Pastes** the clipboard at the cursor, in a post, a reply, a message or a note.

Figure 9-1. Where F22 works, and what it does there

Figure 9-2 shows a copy being made from the topic list: the cursor was on the first topic, and the system answers on the message line at the right of the search row. The cursor stays where it was, so you may copy from another row without navigating back.

```
Conference: 3270BBS - Sorted by Topic Creation Date         Page 1
S Topic Title                               Author   Posts Views Likes Created
*******************************************************************************
  Colour tags in posts - a cheat sheet      jbrooks  1     62    0     05Sep26
  How do virtual sessions work?             bcooper  1     73    0     02Sep26



















  Search:                                 Link copied: bbs://topic5
 F3=Conferences  F5=Add Topic   F7=Up F8=Dn F10=SortActive F11=Sort  F22=Link
```

Figure 9-2. A link copied from the topic list with F22 (Model 2, 24 x 80; capture screens/11b-topics-list-copy.txt)

A link to a single *post* can only be copied while you are reading the topic: the topic list knows nothing finer than the topic itself.

If the cursor is on a screen that accepts the key but on nothing in particular, the message line says `Nothing to copy here - put the cursor on an item`. If you press **`F22`** to paste and the clipboard is empty, the system says so rather than pasting nothing.

In chat and on the wall of one-liners the pasted link has to fit the input field, which is one line long. If the message and the link together are too long, the paste is refused rather than either of them being cut short.

Following a Link From the Command Line

The `GO` command of the TSO command line (Chapter 15) follows a link you type:

```
GO bbs://topicMotorbikes41
```

`GO` with nothing after it follows whatever is on the clipboard, which is the quickest way to open a link you copied on another screen.

A link that names something that does not exist, or something you are not allowed to see, always produces the same reply: `That link is not available`. The wording does not distinguish the two cases, so a link cannot be used to discover what exists.

Chapter 10

Finding and Reaching People

The User Rolodex

Select option `U` from the main menu.

The rolodex is the directory of the community. Use it to find out who somebody is before you write to them, to see whether the person you want is online now, to learn who the moderators are, and to find the exact spelling of a user name for a message or a summon.

```
Total users: 6                User Rolodex                 Page 1/1
Search:
  Username  Mod Adm Topics  Posts  Online  Last Login  Country     About Me
********************************************* *Desc***************************
  bcooper   No  No  2       3      Online     10Sep26  USA              Yes
  jbrooks   Yes No  2       2      Offline    10Sep26  USA
  mmartin   No  No  1       2      Offline    10Sep26  Germany
  admin     No  Yes 0       0      Offline    10Sep26  USA
  noreply   No  No  0       0      Offline      Never  N/A
  smtp      No  No  0       0      Offline      Never  N/A









 F1=Help F3=Rtrn F5=About F7=Up F8=Down F10=Point&Msg F11=Point&Sort
```

Figure 10-1. The user rolodex (Model 2, 24 x 80; capture screens/35-rolodex.txt)

The rolodex lists every account: the user name, whether the user is a moderator or an administrator, how many topics and posts they have written, whether they are online now, the date they last logged on, their country, and whether they have written an "About Me" page. Type a name or part of one in the `Search:` field to narrow the list.

The rolodex has no selector column. You *point* at a line with the cursor and press a key:

Key	With the cursor on	Function
F3	anywhere	Return.
F5	a user	Display that user's PUBLIC note, their About Me page.
F7, F8	anywhere	Previous and next page.
F10	a user	Send that user a message.
F11	a column heading	Sort the list by that column; press it again to reverse the order.

Figure 10-2. Keys on the user rolodex

If you press **F5** or **F10** without the cursor on a user, the system replies `Position cursor on a user and press F5 to view their PUBLIC note` or the corresponding message for **F10**.

```
bcooper      About Me                    Created: 10 Sep 2 Updated: 10 Sep 2026
******************************************************************************
Bob Cooper
Endicott, New York.
Collects 3179G terminals and 3174 controllers.
Reachable in the Hardware conference most evenings.



F3=Return to User Rolodex
```

Figure 10-3. A user's About Me page, displayed with F5 (Model 2, 24 x 80; capture screens/35b-aboutme.txt)

The About Me page is the PUBLIC note described in Chapter 8, and colour tags in it take effect here. A user who has written none has nothing to show; the system says so rather than displaying an empty page.

The Wall of One-Liners

Select option L from the main menu. A one-liner is a single line addressed to the whole community: a greeting, an announcement, a joke.

```
 Wall of One-Liners                                          3 msgs
*******************************************************************************
 bcooper 09Sep2026 Green screens forever.
 -------------------------------------------------------------------------------
 jbrooks 09Sep2026 New topic in Hardware: show us your 3179G
 -------------------------------------------------------------------------------
 mmartin 09Sep2026 Greetings from Boeblingen!
 -------------------------------------------------------------------------------









 bcooper:

F3=Menu F5=AboutUser F7=Up F8=Down F9=Revise F22=Cpy/Paste ENTER=Post
```

Figure 10-4. The wall of one-liners (Model 2, 24 x 80; capture screens/36-oneliners.txt)

Each entry shows the author, the date and the text. New one-liners since your last logon are among the things reported by **F2** (What's New) at the menu. The function key line on the wall itself tells you which key adds a line and which keys page through the wall.

F22 works here too, and splits on the cursor row: on the input line at the foot of the screen it pastes the link clipboard into the one-liner you are typing, and on a one-liner already on the wall it follows the `bbs://` link under the cursor. A one-liner has no screen of its own, so there is nothing to copy. See Chapter 9.

Summoning

To reach somebody who is logged on at this moment, use **F4** on the main menu, described in "F4 — Summoning Another User" in Chapter 3. Summons are for the here and now: they expire after fifteen minutes.

Being Fingered From Outside

The FINGER protocol lets anybody on the network ask a system about one of its users. Where your operator has started the finger daemon, someone may type, on their own machine:

```
finger yourname@thisbbs.example.com
```

What they receive is the text of your `FINGER` note (Chapter 8), followed by a line saying whether you are online and, if you are, what you are doing. If you have written no `FINGER` note — or if the name is not an account at all — the reply is a general description of the system. The two cases are deliberately indistinguishable, so that the finger service cannot be used to find out which accounts exist.

A query with no user name at all returns the system banner: the name of the system, the time, how long it has been running, and how many users are online.

Chapter 11

Live Chat

Chat is conversation in real time with whoever else is at their display station. Two chats are available to you:

- **Local chat** — option `R` on the main menu. The conversation of this system.
- **Private chat** — option `I` on the extended menu. A room protected by a password, for a conversation among people who know it.

A third, **federated chat** — a conversation shared with other 3270BBS systems around the world — appears as option `R` on the extended menu, but it is not available in this release: the option answers `Federated chat is disabled`. The federated count displayed on the menus (`In chat . :`) is therefore always zero.

```
real-time      Local Chat                                  10:22:17
Online: bcooper, jbrooks.......................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
09:40 jbrooks  Evening all. Anyone here running a real 3174?
09:41 mmartin  I have one in the garage. Coax to twinax is the hard part.
09:42 bcooper  Just finished a topic on the 3179G if anyone wants pictures.
09:43 jbrooks  Post the link with F22 and I will follow it from here.
10:22 jbrooks  Evening all. Anyone here running a real 3174?
10:22 bcooper  I have one in the garage - coax to twinax is the hard part.
10:22 jbrooks  Post the link with F22 and I will follow it from here.

bcooper  ====>

F1=Help F2=Spell F3=Out F4=Complete F5=About F7=Up F8=Dn F9=Recall F10=ScrnShot
```

Figure 11-1. Local chat (Model 2, 24 x 80; capture screens/40-chat.txt)

The heading shows the name of the chat and the time, and, at the left, the scroll state: `real-time` when you are watching the conversation as it happens, `history scroll` when you have scrolled back, and `top of chat history` when you have reached the beginning. Below it is the list of users present; two dots after a name mean that person is typing (see “Who Is Typing” below). Type your line at the bottom of the screen and press **`ENTER`** to say it.

```
real-time      Local Chat                                  10:22:17
Online: bcooper, jbrooks



    Function Key Help

    F1   - Display this help screen
    F2   - Spell check your message before sending
    F3   - Exit chat and return to main menu
    F4   - Complete username by typing first few unique characters
    F5   - Cursor on any username, press F5 for their About Me page
09  F7   - Scroll up through chat history
09  F8   - Scroll down through chat history
09  F9   - Recall your last sent message within 15 seconds to edit it
09  F10  - Take screenshot of current chat screen to your Notes
10  F22  - Chat line: follow or copy a bbs:// link. Input line: paste
10  F23  - Virtual Sessions list
10  F24  - Next Virtual Session

bc  Press Enter to close

F1=Help F2=Spell F3=Out F4=Complete F5=About F7=Up F8=Dn F9=Recall F10=ScrnShot
```

Figure 11-2. The chat function key panel (Model 2, 24 x 80; capture screens/41-chat-help.txt)

Key	Function
F1	Help.
F2	Check the spelling of what you have typed.
F3	Leave the chat.
F4	Complete the word you are typing.
F5	About this chat.
F7, F8	Scroll back and forward through the conversation.
F9	Recall what you typed before.
F10	Take a screen shot of the conversation, which is placed in your held output.
F22	On the input line, paste the link clipboard into the message you are typing. On a line of the conversation, follow the link under the cursor, or copy a link to that line. See Chapter 9.

Figure 11-3. Function keys in chat

Who Is Typing

When somebody has started typing a line but has not yet pressed **ENTER**, two dots appear after their name in the list of users present: `Online: bcooper, jbrooks..` means jbrooks is in the middle of saying something. You see the dots after your own name too, so you can tell that the others see you typing. Private chat rooms show them the same way, in their `Room users:` list; typing in one room never marks you in another.

The dots appear within about three seconds of the first character. They go away when the line is sent, when it is erased and the input line is empty again, or when the person has stopped typing for about ten seconds — someone who starts a line and is then called away does not look busy for ever. The next key they type brings the dots back. Nobody can read what you are typing; only the fact that you are typing is shown.

- A 3270 terminal sends nothing to the system until you press an attention key, so the system has to ask your terminal every two seconds what is on the input line. Terminals and emulators that do not answer that request are simply not shown with dots; everything else in chat works as before.
- For a user connected with SSH (shown as `name@`) the dots appear as `name@..`. If that user erases the line with the backspace key instead of sending it, the dots stay until the ten seconds have passed.
- Your system operator can switch the dots off for the whole system.

The Room Topic

A chat may have a topic, displayed in the heading. It is set with the command `/topic` followed by the text, typed on the chat input line, and cleared by typing `/topic` with nothing after it. Only the first twenty characters are kept, so make it short; the rest is discarded without a warning. Only moderators and administrators may set it; anybody else who tries is told `Only admins/moderators can set the chat topic`. This is the only command that chat recognises; everything else you type is said to the room.

Points to Remember

- Only one of your virtual sessions may be in chat at a time (Chapter 4).
- The count of people in chat, local and federated, is shown on both menus as `In chat . :`.
- If mail arrives while you are chatting, a `New Mail` notice appears in the corner of the chat screen.
- What is said in chat is not kept in the conferences. If it is worth keeping, post it as a topic.

Chapter 12

Your Profile and Preferences

Select option `0` from the main menu, or type `=0` on the extended menu. One screen holds both your account information and the preferences that govern how the system behaves for you. Change what you need and press **`ENTER`** to save; the message line replies `Profile updated`.

```
                              User Profile
*******************************************************************************

  Username:         bcooper
  Email:            bcooper@example.com
  City:             Endicott
  Country:          USA
  Units:            imperial    Confirm Delete: yes
                    metric/imperial             yes/no
  Time Zone:        America/Anchorage           (F4 to change)

-------------------------------------------------------------------------------
  Preferences
  Screensaver:      Y   Y/N     Timeout: 4    min(1-30) Stock ticker: N   Y/N
  Editor Scroll:    CSR    CSR/PAGE/HALF      LineNum: N
  Refresh rate for self-updating panels: 5    (3-10)
  Print to Held:    N   Y/N
  ASM/BASIC Log:    Y   Y/N  Send ASM/BASIC session log to Held Output
  Posts Sort Order: O   Oldest first or newest first O/N
  F5=Password  F9=CloseAccount  F10=AboutMe



F3=Return  F4=Set TimeZone  ENTER=Save
```

Figure 12-1. The user profile screen (Model 2, 24 x 80; capture screens/30-profile.txt)

Account Information

Field	Notes
`Username`	Displayed, not editable. Only the operator can change it.
`Email`	Where printed documents and password matters are sent. Changing it asks you to confirm, and, where the operator has enabled verification, sends a code to the new address that you must type before the change takes effect.
`City`	Your home city. It is the answer to the question asked when you recover a lost password, so keep it accurate.
`Country`	Your country.
`Units`	`metric` or `imperial`.
`Confirm Delete`	`yes` or `no`. When `yes`, deletions elsewhere in the system ask you to confirm and are taken one at a time.
`Time Zone`	Displayed, not typed. Press **F4** to change it.

Figure 12-2. Account information on the profile screen

Preferences

Preference	Values	Effect
`Screensaver`	`Y / N`	Whether the screen saver starts when you leave the display idle.
`Timeout`	`1 – 30`	Minutes of inactivity before the screen saver starts.
`Stock ticker`	`Y / N`	Whether a ticker of market prices is displayed.
`Editor Scroll`	`CSR / PAGE / HALF`	How far **F7** and **F8** scroll in the ISPF-style editor: to the cursor, a whole page, or half a page.
`LineNum`	`Y / N`	Whether the ISPF-style editor shows line numbers.
`Refresh rate`	`3 – 10`	Seconds between refreshes of the self-updating displays such as SDSF and DELTAMON.
`Print to Held`	`Y / N`	Whether printing places the document in your held output instead of mailing it to you as a PDF. See Chapter 13.
`ASM/BASIC Log`	`Y / N`	Whether the log of each BASIC or assembler run is written to your held output. See Chapter 13.
`Posts Sort Order`	`O / N`	Whether a topic opens with the oldest post first or the newest first.

Figure 12-3. Preferences on the profile screen

On a Model 4 display station the profile screen also shows a statistics block: your address, how long you have been connected, how many topics and posts you have written, and how many times you have logged on. See Figure 12-4.

```
                                User Profile
*******************************************************************************

   Username:          bcooper
   Email:             bcooper@example.com
   City:              Endicott
   Country:           USA
   Units:             imperial    Confirm Delete: yes
                      metric/imperial             yes/no
   Time Zone:         America/Anchorage           (F4 to change)

-------------------------------------------------------------------------------
   Preferences
   Screensaver:       Y   Y/N     Timeout: 4    min(1-30) Stock ticker: N   Y/N
   Editor Scroll:     CSR    CSR/PAGE/HALF      LineNum: N
   Refresh rate for self-updating panels:  5    (3-10)
   Print to Held:     N   Y/N
   ASM/BASIC Log:     Y   Y/N  Send ASM/BASIC session log to Held Output
   Posts Sort Order:  O   Oldest first or newest first O/N
   F5=Password  F9=CloseAccount  F10=AboutMe
   ------------------------------------------------------------
   Statistics:
   IP Address:     ::1                Topics: 2
   Connected For:  37 seconds         Posts:  3
   Login Count:    44
   ------------------------------------------------------------


          Terminal: 43x80 3278-4/3279-4 CPbracket

F3=Return  F4=Set TimeZone  ENTER=Save
```

Figure 12-4. The profile screen on a Model 4, showing statistics (Model 4, 43 x 80; capture screens/91-profile-model4.txt)

Function Keys on the Profile Screen

Key	Function
ENTER	Save every field on the screen.
F3	Return to the main menu.
F4	Set your time zone.
F5	Change your password.
F9	Close your account.
F10	Edit your PUBLIC note, the "About Me" page other users see.

Figure 12-5. Function keys on the profile screen

Changing Your Password

Press **F5** on the profile screen.

```
                            Change Password

 Enter your current password and a new password (6-22 characters):
   Current Password:


   New Password:


   Confirm Password:









            Terminal: 24x80 3278-2/3279-2 CPbracket (Standard Mode)


 F3=Cancel  F12=Save New Password
```

Figure 12-6. The change password screen (Model 2, 24 x 80; capture screens/31-password-change.txt)

Type your current password, then the new password twice. Nothing is displayed as you type. Press **ENTER** or **F12** to save, or **F3** to abandon the change.

- The new password must be six to twenty-two characters.
- The two copies must match, or the system says `New passwords do not match`.
- The current password must be right; if it is not, the change is refused.

On success you are returned to the profile screen with `Password changed` in reverse video. Change the temporary password from a password recovery at once.

Setting Your Time Zone

Press **F4** on the profile screen. Every time shown to you — on the menus, in topics, in mail, in chat — is displayed in this zone.

```
                           Time Zone Selection

 Select a region, then choose a time zone:
 Region:   Africa     America or Europe or Asia, then Enter to update the list
 ---------------------------------------------------------------------------
 Current Selection:  America/Anchorage
 A) Africa/Cairo
 B) Africa/Johannesburg
 C) Africa/Lagos
 D) Africa/Nairobi









 City code:

 1. Enter continent in Region: and press ENTER
 2. Then pick input the desired city into City Code: and press ENTER.
 3. Verify your selection, and press F10 to accept and go to Main Menu
 F3=Cancel  F7=Scroll Up  F8=Scroll Down  F10=Select
```

Figure 12-7. The time zone selection screen (Model 2, 24 x 80; capture screens/32-timezone.txt)

1. Type a region in the `Region:` field and press **ENTER**. The list of cities is replaced. The regions are `Africa`, `America`, `Antarctica`, `Asia`, `Atlantic`, `Australia`, `Europe`, `Indian`, `Pacific` and `UTC`.
2. **F7** and **F8** scroll the list.
3. Type the letter of the city you want in the `City code:` field and press **ENTER**. Your choice appears as `Current Selection`.
4. Press **F10** to accept it.

F3 leaves the zone unchanged.

Your About Me Page

F10 on the profile screen edits your `PUBLIC` note in the content editor. This is the page other users see when they look you up in the rolodex or follow a link to you. It is the same note you can edit from the notes list (Chapter 8); there are simply two ways in.

Closing Your Account

You may delete your own account. It is the one thing in this system that cannot be undone, and it removes a great deal more than your own contributions — read "What Is Removed" below before you begin.

The Procedure

From the profile screen, **F9**. Three deliberate steps follow, and any of them may be abandoned with **F3**:

1. A warning screen, Figure 12-8, lists what will happen and shows your user identifier. **Type your identifier exactly** into the field and press **F9** to go on. Anything else is refused.
2. A final screen, Figure 12-9, offers **F3**, labelled the safe choice, and **F12**, labelled `DELETE ACCOUNT PERMANENTLY`. Only **F12** proceeds.
3. The account is deleted, a farewell screen is shown, and your connection is closed after about three seconds. You are not returned to the logon screen, and there is nothing to log on to.

```
                         DELETE ACCOUNT - WARNING


      You are about to DELETE your account permanently!

      This action is IRREVERSIBLE and will:

         Delete all your messages and posts
         Remove your profile information
         Close your connection immediately
         Make this username unavailable forever


      Your username: bcooper


      Type your username to confirm:


      Are you absolutely sure you want to continue?


 F3=Cancel (Return to Profile)  F9=YES, I want to delete my account
```

Figure 12-8. The first account deletion warning (Model 2, 24 x 80; capture screens/33-account-delete-warning.txt)

```
                    FINAL CONFIRMATION - LAST CHANCE


          LAST CHANCE TO CANCEL!


     You have confirmed that you want to delete your account.

     This is your FINAL OPPORTUNITY to change your mind.


     Username: bcooper

     Pressing F12 will:
        IMMEDIATELY delete your account
        CLOSE your connection
        Make this action IRREVERSIBLE





  F3=Cancel (Safe Choice)  F12=DELETE ACCOUNT PERMANENTLY
```

Figure 12-9. The final confirmation screen (Model 2, 24 x 80; capture screens/34-account-delete-final.txt)

Administrators cannot delete their own accounts; the system refuses with `Admin accounts cannot be deleted for security reasons`. An administrator who wants to leave must have another administrator remove the account.

What Is Removed

Everything below is deleted in a single operation. It either all succeeds or none of it does, so a half-removed account is not possible. There is no archive, no tombstone and no record that the account ever existed.

What	Detail
Your posts	Every post you wrote, including replies you left in other people's topics. The discussions you replied to remain, with your replies gone from them.
Topics you started, and every reply in them	This is the consequence people do not expect. Deleting your account deletes the whole of any topic you began — **including the replies other users wrote in it**. A long discussion you opened is destroyed with it, and the people who contributed are neither asked nor told.
Mail	Every message you sent and every message you received — including the copies sitting in other people's inboxes. A letter you sent to another user disappears from that user's mail as well.
Notes	All of them, including the reserved notes: your `PUBLIC` page, your signature, your finger reply and any `.FORWARD`.
Likes	Both the likes you gave and the likes others gave your posts.
Marketplace entries	Everything you offered or sought.
One-liners	Every line you left on the wall.
Chat messages	Your side of the stored conversation.
Subscriptions and opt-outs	Conference subscriptions and topic notification settings.
Spam list	The senders you had blocked.
Profile and activity	Your account information and the activity the system had recorded against it.

Figure 12-10. What closing your account removes

Note

Held output is not in the list, and neither is anything you have printed or mailed to yourself. What has left the system has left it. If you want a copy of your own writing, take it *before* you begin: print the topics you care about to held output, or fetch your notes over FTP, as described in Chapters 13 and 8.

The warning screen states that your user identifier becomes unavailable forever. In practice the identifier is released along with the account and may be registered again afterwards, by you or by somebody else; only `admin` and `noreply` are permanently reserved. Do not rely on either behaviour — if the identifier matters to you, keep the account.

Chapter 13

Printing, Held Output and Mail Limits

3270BBS has no printer attached to your display station. What it has instead is the arrangement a mainframe has always had: you print a document to a **held output** queue, where it waits until you look at it, send it somewhere or purge it. You may also have a document mailed to yourself as a PDF file.

Note
Everything in this chapter that *mails* something — the PDF documents, the program listings, the daily allowance described at the end — is part of the optional electronic mail feature. It works only where the operator of the board has obtained a SendGrid API key and enabled mail in the system configuration. Where mail is not enabled, held output still works exactly as described; set `Print to Held` to `Y` in your profile and everything you print stays on the system, which is the arrangement those boards run with.

What You Can Print

From	Key or command	What is printed
Reading a topic	`F20`	The topic and its posts.
Reading a message	`F20`	The message.
Reading a note	`F20`	The note.
The ISPF-style editor	`PRINT`	The program source you are editing. Always to held output; it is never mailed.
BASIC or the assembler	`EMAIL file.list`	A compilation or assembly listing, as a wide green-bar listing.
Chat	`F10`	A screen shot of the conversation.
Running a program	automatic	The log of each BASIC or assembler run, when `ASM/BASIC Log` is `Y` in your profile.

Figure 13-1. What can be printed, and from where

Where It Goes: the Print to Held Preference

The preference `Print to Held` on the profile screen decides what **`F20`** and the `EMAIL` commands do:

- `Y` — the document is written straight into your held output as plain text. Nothing leaves the system, nothing is counted against your daily mail allowance, and you can read it at once. The message line says `Printed to HELD output`.
- `N` — the document is made into a PDF file and mailed to the address in your profile. Topics, messages and notes are set in portrait, with a title bar and your colour tags translated into real colours; program listings are set in landscape on simulated green-bar paper with sprocket holes, sixty lines to the page.

The Held Output Queue

Reach it either by selecting option `S` (SDSF) from the main menu and pressing **`F2`**, or by typing `HELD` (or `H`) on the SDSF command line.

```
  SDSF HELD OUTPUT DISPLAY FOR USER BCOOPER   2 LINES LINE 1-2 (2)
  COMMAND INPUT ===>                                  SCROLL ===> HALF
NP JOBNAME  TYPE JNUM  DN CRDATE  C FORM FCB  DEST    RC      TOT-REC RNUM
   BCOOPER  JOB     1  1 10Sep26  X STD  BAS  BCOOPER  0000       29
   BCOOPER  JOB     2  1 10Sep26  X STD  ASM  BCOOPER  0000       34 ...
```

Figure 13-2. The held output queue (Model 2, 24 x 80; capture screens/46-held-output.txt)

Each line is one print job. The columns follow the conventions of a mainframe spool display:

Column	Meaning
NP	The selector field. Type S, P or O here.
JOBNAME	The user the job belongs to.
TYPE	JOB for a print job.
JNUM	The job number, assigned once and kept.
DN	The data set number within the job. Every job this system writes has one, so the column always reads 1.
CRDATE	The date the job was created.
C	The output class. Held output is always class X.
FORM	SRC for program source printed from the editor, STD otherwise.
FCB	BAS or ASM for program output, otherwise stars.
DEST	The owner of the job.
RC	The return code of a program run.
TOT-REC	The number of lines in the job.
RNUM	Heading only; this system prints no value under it.

Figure 13-3. Columns of the held output queue

Action	Effect
S	Select: display the job.
P	Purge: delete the job. The system reports `Purged n job(s)`.
O	Send the job to yourself as a PDF file by mail. The system reports `Emailed n job(s) to` and your address.
F3	Return.
F7, F8	Scroll the queue.

Figure 13-4. Actions on the held output queue

You may mark several lines before pressing **ENTER**. You see only your own jobs; other users cannot see yours.

Reading a Held Job

```
SDSF OUTPUT DISPLAY BCOOPER  JOB     1 DSID   101 LINE       0 COLUMNS 02- 79
COMMAND INPUT ===>                                          SCROLL ===> HALF
******************************** TOP OF DATA ********************************
                          TIMESHARING BASIC/3270BBS V3.0.0
512135 bytes free
TYPE HELP FOR COMMANDS, BYE TO EXIT
LANGUAGE MANUAL: https://tinyurl.com/TIMESHARINGBASIC
READY
10 REM GREETING FOR THE MANUAL
READY
20 FOR I = 1 TO 3
READY
30 PRINT "HELLO FROM 3270BBS BASIC"; I
READY
40 NEXT I
READY
50 END
READY

10 REM GREETING FOR THE MANUAL
20 FOR I = 1 TO 3


 F3=Return  F7=Up  F8=Down  F10=Left  F11=Right
```

Figure 13-5. Reading a job from held output (Model 2, 24 x 80; capture screens/47-held-view.txt)

The viewer displays the job between `TOP OF DATA` and `BOTTOM OF DATA` markers, with a command line and a scroll field. **F7** and **F8** scroll up and down; **F10** and **F11** scroll left and right through lines wider than the screen, which listings often are. On the command line, `TOP` and `BOTTOM` go to the ends of the job and `DA` returns to the queue. **F3** returns.

Nothing Is Cleaned Up For You

Held output is kept until it is purged. There is no expiry and no automatic housekeeping, so a run of BASIC programs will fill your queue with logs if you let it. Purge what you no longer need with `P`, and turn off `ASM/BASIC Log` in your profile if you do not want a log of every run.

Limits on Outgoing Mail

Mail that leaves the system — a printed document sent to you as a PDF, a listing mailed from BASIC or the assembler, a reply addressed to an Internet address — is limited in two ways. Both are set by your operator.

Limit	What you see
A daily allowance of outgoing messages, four by default. It is counted **one for each recipient**, not one for each message, so a single message addressed to three Internet addresses spends three of the allowance.	`Max daily emails (n) reached`, or from the held output queue `Max daily emails (n) reached. Need n more.`, or in BASIC `?DAILY EMAIL LIMIT REACHED` followed by `TRY AGAIN TOMORROW`. The count resets at midnight.
A waiting period for new accounts, fourteen days by default, during which an account may not send mail out of the system.	`INFO14D GENERAL ERROR`. The wording is deliberately terse. It does not mean that anything is broken: it means the account is not old enough to send mail outside the system.

Figure 13-6. Limits on outgoing mail

Neither limit applies to anything that stays inside the system. Mail to another user of this system is never restricted, and neither is printing to held output. If you are a new user and want a copy of a topic, set `Print to Held` to `Y` and print it; the document waits for you in the queue.

Chapter 14

System Displays

3270BBS shows you what it is doing. The displays in this chapter are modelled on the operator's tools of a mainframe system and are open to every user, although the commands that change anything are reserved for the operator.

SDSF: System Activity

Select option `S` from the main menu, or type `SD` at either menu.

```
ACTIVITY    TCB 16  MEM 21.6MB  CPU 19.00%  TX/H 3.1K  MAX   1
COMMAND ===>                                        00:17:52  since IPL
S USER     ACTIVITY     CPU% LAST ACT    LOGON-ST   P-S  TO SC  LOG  TERM
  bcooper  SDSF          0.0 -0 sec      13:05:57     3   2  1   24 2-310
  mmartin  DISC          0.0 -12m:02s    12:54:51     2   1  1    0
  jbrooks  DISC          0.0 -12m:08s    12:54:45     2   2  1    0
  admin    DISC          0.0 -17m:15s    12:49:38     0   0  1    4
  FTPD     FTP SRV       0.0             STOPPED      0   0  0
  TN3270D  NET SRV       0.0 -5 sec      STARTED     14   0  1
  TN3270TS TLS SRV       0.0             STOPPED      0   0  1
  HTTPD    WEB SRV       0.0             STOPPED      0   0  0
  PROX3270 PRX SRV       0.0             STOPPED      0   0  0
  SSHD     SSH SRV       0.0             STOPPED      0   0  0
  FINGERD  FIN SRV       0.0             STOPPED      0   0  0
  SMTPD    MXE SRV       0.0             STOPPED      0   0  0
  WEB3270  W3E SRV       0.0             STOPPED      0
  *MASTER*               0.1 -1 sec      STARTED
  PCAUTH   PCAUTH        0.1 -1 sec      STARTED
  GRS      GRS           0.1 -1 sec      STARTED
  CONSOLE  CONSOLE       0.1 -1 sec      STARTED
  CATALOG  IEFPROC       0.1 -1 sec      STARTED


F1=Help  F2=Held  F3=Return  F6=Auto-Refresh
```

Figure 14-1. The SDSF system activity display (Model 2, 24 x 80; capture screens/45-sdsf.txt)

The heading counts tasks, memory, processor use, transactions an hour and the number of users, and gives the time since the system was started. Each line below is either a user or a system service:

Column	Meaning
USER	The user, or the name of a service such as TN3270D or FTPD.
ACTIVITY	What that user is doing now, or the kind of service.
CPU%	Processor use, as a percentage of one processor.
LAST ACT	How long ago that user last pressed a key.
LOGON-ST	The time the user logged on, or the state of the service.
P-S	Process status: ACT active, IDL idle, AWY away.
TO	Timeout: the minutes left before an idle session is logged off.
SC	Screen code: the screen the user is on.
LOG	How long the user has been logged on.
TERM	The display station model and character set.

Figure 14-2. Columns of the SDSF activity display

On the service rows these four columns carry counters belonging to the service instead.

F1 is help, **F2** is your held output (Chapter 13), **F3** returns and **F6** turns the automatic refresh on and off. The refresh interval is the one set in your profile.

DELTAMON: Performance Monitor

Option P on the extended menu. DELTAMON draws the load of the system as bars that fill and empty as you watch: processor, storage, tasks, interrupts, paging, garbage collection and network connections.

```
Auto Update: ON                System Performance                10:56:59
Refresh:     5s      All CPUs%                          Uptime:  00:30:56
                     0 . . 20 . . 40 . . 60 . . 80 . . 100

Metric        Current   Range (IPL)  Rel   Actual/Range         Status
CPU %          15.0    13.0-53.0      5%-                       Normal
MEM MB         18.5    17.1-22.4     26%-----                   Normal
TCB            15.0    13.0-15.0    100%------------------      Normal
IRQ/s           0.0    0.0            0%-                       No Data
GC ms           0.1    0.0-1.0        3%-                       Normal
PageIns/s       0.0    2-6845         0%-                       Normal
PageOuts/s      0.0    1-197          0%-                       Normal
Threads      5542.0    5442-5872     23%----                    Warning
Connections    68.0    22.0-84.0     74%-------------           Normal
HeapObjects   23962    23027-25013   47%--------                Normal
SQLite:     dbTx/h=686
TCP/IP:     Sessions=1   Online=1  MaxOnline=1
System:     Processes=1191




F3=Return  F9=Slower  F10=Faster  F11=DBmon  F12=UserCPU
```

Figure 14-3. The DELTAMON performance monitor (Model 2, 24 x 80; capture screens/88-deltamon.txt)

The colours are a four-step scale, and they mean the same thing wherever you meet them in 3270BBS: green up to a quarter of the resource, yellow to a half, pink to three quarters, red above that.

Key	Function
F3	Return.
F4	Model 4 only: switch the equalizer bars between colour and monochrome. The label changes to say what the key will do next.
F5	Model 4 only: switch the bars between the spot reading and a two-minute average.
F9, F10	Refresh more slowly, refresh more quickly.
F11	Go to the database transaction monitor, DBMON.
F12	Go to the per-user processor display, described next.
Auto Update	The field at the top left. Type over it to stop and start the automatic refresh.

Figure 14-4. Keys on the DELTAMON display

User Performance: Who Is Using the Machine

F12 from DELTAMON, or the shortcut `M;P;U` typed at a menu, displays the processor time each logged-on user is consuming.

```
                              User Performance                10:57:03
Refresh:     5.0s    All CPUs%                         Uptime:  00:31:01
                     0 . . 20 . . 40 . . 60 . . 80 . . 100


System: CPU%  17.0  TCB   16  RAM MB  20.3  IRQ/s       0  Users: 1

User      CPU%  Range     Rel CPU/Range           Status   Activity
bcooper    0.0  0.0-0.0    0% -                   Normal   DELTAMON









F3=Return  F9=Slower  F10=Faster  F12=SMTP  Enter=Refresh
```

Figure 14-5. The per-user processor display (Model 2, 24 x 80; capture screens/88b-usercpu.txt)

The heading repeats the system figures — processor, tasks, storage, interrupts — and a scale from 0 to 100. Each line below is one user: the name, the percentage, the range the user has been in, a bar drawn to that scale, the state of the session and what the user is doing. The percentage is of one processor, in the manner of the `top` command, so on a machine with several processors the figures for all users can add up to more than the machine-wide figure in the heading.

Service rows appear alongside the users, so you can see what the system itself is spending. **F9** and **F10** change the refresh rate, **ENTER** refreshes at once, **F12** shows the mail transfer statistics, and **F3** returns.

DBMON: the Database Transaction Monitor

F11 from DELTAMON, or the typed command `DBMON` at either menu. Everything you do on this system — reading a topic, saving a note, sending a message — is a database transaction, and DBMON shows them as they happen.

```
Auto Update: ON            DB Transaction Monitor               10:58:17
Refresh:     5s      All CPUs%                        Uptime:  00:32:14
                     0 . . 20 . . 40 . . 60 . . 80 . . 100
CPU:  15.0%
    TxRead/m      TxWrit/m     TotTx/min       DB ms       Online: 1
      7000          500           8000          5.0        Database: SQLite

                                                           Reads:    345
      5600          400           6400          4.0        Writes:   95

                                                           Avg ms:   0.13
      4200          300           4800          3.0        dbTx/h:   819

                                                           Read/m:   24.0
      2800          200           3200          2.0        Writ/m:   0.0
                                                           Total/m:  24.0

      1400          100           1600          1.0        Max Seen:
                                                           TxRead/m: 24
       50            33           533           0.3        TxWrit/m: 0
  TxRead/m      TxWrit/m      TotTx/min     DB ms          TotTx/m:  24
       24            0             24          000.13      DB msec:  0.13

F3=Return  F4=History  F9=Slower  F10=Faster
```

Figure 14-6. The database transaction monitor (Model 2, 24 x 80; capture screens/88c-dbmon.txt)

The right of the screen reports, for the database as a whole: reads and writes since the system started, the average time a transaction takes in milliseconds, transactions an hour, reads, writes and the total a minute, and, in yellow, the greatest rates seen so far. The bars at the left draw the same figures as they change. **F4** shows the history of the figures rather than the present moment, **F5** steps through the metrics one at a time, **F9** and **F10** change the refresh rate, the `Auto Update` field stops and starts it, and **F3** returns.

Nothing here is private to a user: DBMON reports the load of the system, not what anybody wrote.

The MVS Console

Option `O` on the extended menu, or the typed command `CONSOLE`. The console shows the system's own messages in the style of a mainframe operator console — users logging on and off, services starting and stopping, jobs beginning and ending — and it accepts operator commands typed on the line at the foot of the screen.

```
- TSUSRVI TSU  23270  IEF125I BCOOPER  - LOGGED ON - TIME=13.45.38
- TSUSRVI TSU  23270  $HASP395 BCOOPER  ENDED
- TSUSRVI TSU  23270  $HASP250 BCOOPER  IS PURGED
- TSUSRVI TSU  23270  $HASP100 BCOOPER  ON TSOINRDR
- TSUSRVI TSU  23270  $HASP373 BCOOPER  STARTED
- TSUSRVI TSU  23270  IEF125I BCOOPER  - LOGGED ON - TIME=13.56.55
- TSUSRVI TSU  23270  $HASP395 BCOOPER  ENDED
- TSUSRVI TSU  23270  $HASP250 BCOOPER  IS PURGED
- TSUSRVI TSU  23270  $HASP100 BCOOPER  ON TSOINRDR
- TSUSRVI TSU  23270  $HASP373 BCOOPER  STARTED
- TSUSRVI TSU  23270  IEF125I BCOOPER  - LOGGED ON - TIME=13.58.09
-           D A,L
IEE104I 13.58.22 26.253 ACTIVITY     FRAME LAST         F      E     1A
 JOBS      M/S      TS USERS      SYSAS      INITS      ACTIVE/MAX VTAM
00007     00002      00001        00006      00006       00001/00010
 JES2     JES2     IEFPROC  NSW  S   VTAM     VTAM     NET      NSW  S
 TSO      TSO      STEP1    OWT  S   FTPD     FTPD     STOP     STO  S
 TN3270   TN3270   RUN      STA  S   TLS      TLS      STOP     STO  S
 HTTPD    HTTPD    STOP     STO  S   PROXY    PROXY    RUN      STA  S

IEE152I     ENTER     CANCEL     D C,K


IEE163I MODE= RD
```

Figure 14-7. The MVS operator console, after a D A,L command (Model 2, 24 x 80; capture screens/89-mvs-console.txt)

Type a command and press **ENTER**. It is echoed into the log with a dash in front of it, in the manner of a real console, and its result appears in the command area — the **K A area** — in the lower part of the screen. Every command may be typed in the short or the long form shown below.

Command	Also	Displays
D A,L	D A, DISPLAY A	System activity: the address spaces and services and what they are doing.
D TS,L	D TS, DISPLAY TS	The timesharing users: who is logged on, their activity and their last logon.
D U,ALL	DISPLAY USERS	The users known to the system.
D T	D TIME, DISPLAY TIME	The time of day.
D M	DISPLAY M	Storage: how much the system is using.
D IPLINFO	DISPLAY IPLINFO	When the system was started, and with what.
D NETSTAT	DISPLAY NETSTAT	The network connections.
D C,K	DISPLAY CONSOLES	The consoles.
$DA		The active jobs, in the manner of the job entry subsystem.
HELP	?	A reminder of the commands.
K	CANCEL	Clear the command area.
K A,nn		Put the command area at row *nn* (0 through 39).
K A,NONE		Do away with the command area; the log then fills the screen.

Figure 14-8. Commands accepted by the MVS console

A command the console does not know is answered in the log with `IEE305I`, the command, and `COMMAND INVALID`. The line `IEE152I ENTER CANCEL D C,K` at the foot of the screen is the console's own prompt, and `IEE163I MODE= RD` below it says that the console is ready to read a command.

Commands that *change* anything — starting and stopping the services with `S` and `P`, and the shutdown command — are accepted only from an administrator. Typed by anyone else they are refused as invalid.

The Clock

Option `1` on the extended menu, or the typed command `CLOCK`.

```
                    Timezone: America/Anchorage (Your timezone)


           11     000000       11     333333       11     888888
          111    00    00     111    33    33     111    88    88
         1111    00    00 :  1111          33 :  1111    88    88
           11    00    00 :    11         33  :    11    88    88
           11    00    00      11      3333        11     888888
           11    00    00      11         33       11    88    88
           11    00    00 :    11          33 :    11    88    88
           11    00    00 :    11    33    33 :    11    88    88
         111111   000000     111111   333333     111111   888888


                            NY: 14:13  London: 19:13
                            Rome: 20:13  Tokyo: 03:13

                          Thursday, September 10, 2026



 F2=Eye  F3=Return  F10=Matrix  F11=CycleTimezone  F12=IBM
```

Figure 14-9. The wall clock (Model 2, 24 x 80; capture screens/86-clock.txt)

F11 steps through time zones, **F10** and **F12** and **F2** select other faces for the clock, and **F3** returns. It is a pleasant thing to leave on a spare virtual session.

Market Data

Option Q on the extended menu displays the Stock Quotron: the indices and the prices of the symbols in your watch list.

```
                                Quote Terminal
 NY Time: 14:57:20 EDT   Market: OPEN        Auto-refresh: OFF
 Dow Jones 0.00    +0.00 (+0.00%)       NASDAQ 0.00    +0.00 (+0.00%)
 Symbol  Price     Change          Div.  High   Low   Volume   52W H/L
 *****************************************************************************
 IBM          0.00 +0.00 (+0.00%)  -     0.00   0.00  0        0.0/0.0

















  UTC: 18:57  London: 19:57  Berlin: 20:57  Tel Aviv: 21:57  Tokyo: 03:57
Error fetching quotes - try again later
  F3=Cancel     F4=Add Stocks    F6=Toggle Auto-refresh F10=News
```

Figure 14-10. The Stock Quotron (Model 2, 24 x 80; capture screens/93-quotron.txt)

The heading gives the time in New York, whether the market is open, and whether automatic refresh is on. **`F4`** edits your watch list on a screen headed `Add or Edit Stock Symbols`, **`F6`** turns automatic refresh on and off, **`F10`** shows the news, and **`F3`** returns. Option `F` on the extended menu displays foreign exchange rates in the same manner, and returns with **`F3`** or **`ENTER`**.

Both displays fetch their prices from outside the system. If your operator has not configured that, the screens appear but the prices are zero, as they are in Figure 14-10.

DSLIST: the Data Set List

Type `DSLIST` at either menu, or select it from the search menu (option `3`). DSLIST presents the things you own as if they were data sets on volumes: `NOTES`, `BASIC`, `ASMBLR`, `MAILSM` and `TOPICS`. It is a convenient way to see everything you have written in one place, and to open any of it for editing.

Other Displays

Command	Display
`DBMON`	Database transactions as they happen.
`NEWS`	News headlines, where the operator has configured a news source.
`SD`	The SDSF activity display, above.
`M (extended menu)`	The screen saver, started at once rather than after the idle timeout.

Figure 14-11. Other displays

Chapter 15

The TSO Command Line

Option `X` on the main menu leaves the menus and puts you on a command line in the manner of TSO. The system displays `READY` and waits.

Everything else in this publication happens on a panel: a screen of fields with a function key line at the foot of it. This is the one place where 3270BBS works the other way round, as a line-mode terminal. You type a command, the system answers below it, and the conversation scrolls up the screen. It is where you go when you have left the panels — when you have finished in the editor and in ISPF, or simply want to ask the system a question without opening an application — and it is where you log off from.

Nothing is lost by coming here: `MENU` puts you back on the main menu exactly as you left it, and your virtual sessions (Chapter 4) are untouched.

```
READY
```

Figure 15-1. The TSO command line (Model 2, 24 x 80; capture screens/50-tso.txt)

Type `HELP` for the list of commands, which is reproduced in Figure 15-2. Type `MENU` (or `ISPF`) to return to the main menu, or `LOGOFF` to end the session.

```
BCAST     DISPLAY THE SYSTEM BROADCAST MESSAGE
CALC      INTERACTIVE CALCULATOR (LIKE BC). TYPE QUIT TO EXIT
CLEAR     CLEAR THE SCREEN
CLS       CLEAR THE SCREEN (ALIAS FOR CLEAR)
CPU       DISPLAY SYSTEM LOAD INFORMATION
GO        GO BBS://... - FOLLOW A LINK; BARE GO USES THE PF22 BUFFER
HELP      DISPLAY AVAILABLE COMMANDS
ISPF      RETURN TO THE MAIN MENU (ALIAS FOR MENU)
LOGOFF    LOG OFF THE SYSTEM
LOGON     LOG ON AS ANOTHER USER: LOGON  OR  LOGON <USERID>
MENU      RETURN TO THE MAIN MENU
METAR     SHOW AVIATION WEATHER (METAR) FOR AN ICAO AIRPORT CODE
MOTD      CHANGE THE MESSAGE OF THE DAY (ADMINISTRATORS ONLY)
RESET     ADMIN: RESET LOCKOUT <USER>  OR  RESET LOCKOUT IP <IP>
SEND      SEND A SHORT MESSAGE TO A USER IN COMMAND LINE MODE
TIME      DISPLAY CURRENT TIME IN MULTIPLE TIME ZONES
UPTIME    SHOW SYSTEM UPTIME AND START TIME
USER      SHOW STATISTICS FOR A SPECIFIC USER
WEATHER   SHOW WEATHER FOR A CITY OR ZIP CODE (E.G., WEATHER LONDON)
WHO       SHOW USERS LOGGED INTO THE SYSTEM
WIKI      DISPLAY WIKIPEDIA ARTICLE FOR A SUBJECT
READY
```

Figure 15-2. The commands available on the TSO command line (Model 2, 24 x 80; capture screens/51-tso-help.txt)

Command	Function
BCAST	Display the system broadcast message.
CALC	An interactive calculator. Type QUIT to leave it.
CLEAR, CLS	Clear the screen.
CPU	Display the load of the system.
GO	Follow a link: GO bbs://... GO by itself follows the link on the **F22** clipboard. See Chapter 9.
HELP	List the commands.
LOGOFF	Log off the system.
LOGON	Log on as another user: LOGON or LOGON userid.
MENU, ISPF	Return to the main menu.
METAR	Aviation weather for an ICAO airport code, for example METAR KPOU.
SEND	Send a short message to a user without leaving the command line.
TIME	The current time in several time zones.
UPTIME	How long the system has been running.
USER	Statistics for one user: USER bcooper.
WEATHER	The weather for a city or a postal code: WEATHER LONDON, WEATHER 10001. The answer is fetched in the background and appears a moment later.
WHO	Who is logged on.
WIKI	Display an encyclopaedia article on a subject.

Figure 15-3. Commands on the TSO command line

MOTD and RESET appear in the list as well; they are for administrators and are refused to other users.

Examples

The command line keeps what has gone before, so a session builds up on the screen; CLEAR wipes it and starts again. Type a command and press **ENTER**.

WHO answers with everybody logged on, when they were last active, and what they were doing:

```
WHO
USERS ACTIVE IN THE SYSTEM:
USERNAME     LAST ACTIVITY TIME    ACTIVITY TYPE
--------     -----------------     -------------
BCOOPER     2026-09-10 14:09:22    TSO
JBROOKS     2026-09-10 13:22:06    CHAT
USERS BY ACTIVITY PERIOD:
USERS ACTIVE IN LAST 5 MINUTES: 1
  BCOOPER
USERS ACTIVE IN LAST 30 MINUTES: 0
  NONE
USERS ACTIVE IN LAST 60 MINUTES: 1
  JBROOKS
SUMMARY:
TOTAL ACTIVE USERS: 2
READY
```

Figure 15-4. The WHO command (Model 2, 24 x 80; capture screens/52-tso-who.txt)

TIME, UPTIME and CPU report the state of the system. TIME gives the hour in three zones, UPTIME how long the system has been running, and CPU the load, the storage in use, and the number of processes:

```
TIME
UTC: 2026-09-10 19:09:24 UTC
NEW YORK: 2026-09-10 15:09:24 EDT
ROME: 2026-09-10 21:09:24 CEST
UPTIME
SYSTEM UPTIME INFORMATION:
SYSTEM UPTIME: 0 DAYS, 0 HOURS, 43 MINUTES, 22 SECONDS
CPU
SYSTEM LOAD INFORMATION:
CPU USAGE:      16.00%
MEMORY USAGE:   54.54%
PROCESS COUNT:  1190
READY
```

Figure 15-5. The TIME, UPTIME and CPU commands (Model 2, 24 x 80; capture screens/53-tso-time-cpu.txt)

`USER` followed by a user identifier reports on one person: the last logon, the last activity and what it was, whether they are logged on now, and how much they have written:

```
USER BCOOPER
USER INFORMATION FOR: BCOOPER
LAST LOGIN: 2026-09-10 14:09:16
LAST ACTIVITY: 2026-09-10 14:09:29
ACTIVITY TYPE: TSO
STATUS: CURRENTLY ACTIVE
POSTS: 3  TOPICS: 2
READY
```

Figure 15-6. The USER command (Model 2, 24 x 80; capture screens/54-tso-user.txt)

`CALC` is a calculator in the manner of `bc`. It takes over the command line until you type `QUIT`; the prompt changes to `CALC>` so that you can see where you are. It understands the four operations, `^` for powers, `%`, and the usual functions, and it will add and subtract percentages:

```
CALC
BC CALCULATOR - TYPE EXPRESSIONS, QUIT TO EXIT
SUPPORTS: + - * / ^ % SQRT SIN COS TAN LOG LN ABS EXP PI E
PERCENT: 28+1.5%=28.42  200-10%=180  200*15%=30
------------------------------------------------------------
2^10
1024
(255-15)/8
30
CALC>
```

Figure 15-7. The CALC calculator (Model 2, 24 x 80; capture screens/55-tso-calc.txt)

Other examples worth trying:

- `WEATHER LONDON` or `WEATHER 10001` — the answer is fetched in the background, so the command replies at once and the weather itself appears a moment later.
- `METAR KPOU` — the aviation weather report for an airport, by its four-letter ICAO code.
- `WIKI Poughkeepsie` — an encyclopaedia article.
- `SEND jbrooks are you there?` — a short message to another user without leaving the command line.
- `GO bbs://topicMotorbikes41` — follow a link. `GO` by itself follows whatever is on the **`F22`** clipboard.
- `LOGON jbrooks` — log on as somebody else without disconnecting; you are asked for that user's password.

Commands that need something outside this system — `WEATHER`, `METAR`, `WIKI` — work only if your operator has configured the connection.

Note
Choosing `X` from the menu does not disconnect you. Until you type `LOGOFF` you are still logged on, and your session still holds a slot on the system.

Chapter 16

Programming in BASIC

3270BBS includes Timesharing BASIC, an interpreter in the tradition of the timesharing systems of the nineteen-seventies, with a command line, a full-screen editor, a file store of your own, and access to some of the live data of the bulletin board. Select option `B` from the extended menu, or type `M;B` at the main menu.

This chapter is a guide to using the environment, not a description of the language. The complete language manual is at

`https://github.com/moshix/3270bbs/blob/main/basic_manual.md`

and the interpreter itself names a short form of it on its opening screen. Keep it beside you while you write; everything below assumes you can look a statement up there.

```
                        TIMESHARING BASIC/3270BBS V3.0.0
512135 bytes free
TYPE HELP FOR COMMANDS, BYE TO EXIT
LANGUAGE MANUAL: https://tinyurl.com/TIMESHARINGBASIC
READY
>
```

Figure 16-1. The BASIC command line (Model 2, 24 x 80; capture screens/60-basic-ready.txt)

The interpreter announces itself, says how much storage is free, and displays `READY` and a prompt. Type a line beginning with a number and it is stored as part of the program; type anything else and it is obeyed at once.

Writing and Running a Program

A program may be written in the traditional way, with line numbers:

```
10 REM GREETING FOR THE MANUAL
20 FOR I = 1 TO 3
30 PRINT "HELLO FROM 3270BBS BASIC"; I
40 NEXT I
50 END
```

or without line numbers, in which case the program must begin with the label `START:` and use labels rather than numbers as the targets of `GOTO` and `GOSUB`. `LIST` displays what you have written and `RUN` obeys it.

```
                        TIMESHARING BASIC/3270BBS V3.0.0
 512135 bytes free
 TYPE HELP FOR COMMANDS, BYE TO EXIT
 LANGUAGE MANUAL: https://tinyurl.com/TIMESHARINGBASIC
 READY
 10 REM GREETING FOR THE MANUAL
 READY
 20 FOR I = 1 TO 3
 READY
 30 PRINT "HELLO FROM 3270BBS BASIC"; I
 READY
 40 NEXT I
 READY
 50 END
 READY

10 REM GREETING FOR THE MANUAL
20 FOR I = 1 TO 3
30 PRINT "HELLO FROM 3270BBS BASIC"; I
40 NEXT I
50 END

 >
```

Figure 16-2. A program listed with the LIST command (Model 2, 24 x 80; capture screens/61-basic-list.txt)

```
 READY
 20 FOR I = 1 TO 3
 READY
 30 PRINT "HELLO FROM 3270BBS BASIC"; I
 READY
 40 NEXT I
 READY
 50 END
 READY

10 REM GREETING FOR THE MANUAL
20 FOR I = 1 TO 3
30 PRINT "HELLO FROM 3270BBS BASIC"; I
40 NEXT I
50 END

 SAVED hello.bas (5 LINES)

 RUNNING...

 HELLO FROM 3270BBS BASIC1
 HELLO FROM 3270BBS BASIC2
 HELLO FROM 3270BBS BASIC3
 >
```

Figure 16-3. The same program saved and run (Model 2, 24 x 80; capture screens/62-basic-run.txt)

Commands

Command	Function
RUN	Obey the program in storage.
LIST	List it. LIST 10–50 lists a range.
NEW	Clear the program from storage.
RENUM	Renumber the lines 10, 20, 30 and so on.
DELETE 10–50	Delete a range of lines.
SAVE "name"	Save the program as a file.
LOAD "name"	Load a file. LOAD "user/%file" loads a file another user has shared.
RENAME old.bas new.bas	Rename a file. Both names must carry the .bas suffix.
ERASE "name"	Delete a file. The name may contain * and ?.
FILES	List files. /W lists them in two columns, /U user lists another user's shared files, /C lists the community files.
FLIST	List your own files only.
EDIT	Edit the program in the full-screen editor. EDIT "name" edits a named file.
BROWSE	Choose a file from the file browser.
CHECK	Check the program without running it, and produce a listing file.
VIEW name.list	Read a listing file without disturbing the program in storage.
EMAIL name.list	Send a listing to yourself. See Chapter 13.
VARS	Display the variables and their values.
CLEAR	Clear the screen.
HELP	Display the command summary.
BYE	Leave BASIC. EXIT and QUIT do the same.

Figure 16-4. Commands of the BASIC interpreter

Keys at the BASIC Command Line

Key	Function
ENTER	Obey the line, or answer an INPUT.
PA1, PA2	Stop a running program.
CLEAR	Clear the screen and display a new READY.
F12	Step back through the commands you have typed.
F11	Step forward again.

Figure 16-5. Keys at the BASIC command line

Your Files

Each user has a file store of their own. The first character of a name says who may use the file:

Name	Meaning
name.bas	Private. Only you can see it.
%name.bas	Shared. Other users may read it with LOAD "you/%name.bas" and list it with FILES /U you; only you may change it.
_name.bas	A community file: readable by everybody, maintained by the operator, and not erasable by you.

Figure 16-6. What the first character of a file name means

```
 50 END
 READY

10 REM GREETING FOR THE MANUAL
20 FOR I = 1 TO 3
30 PRINT "HELLO FROM 3270BBS BASIC"; I
40 NEXT I
50 END

 SAVED hello.bas (5 LINES)

 RUNNING...

 HELLO FROM 3270BBS BASIC1
 HELLO FROM 3270BBS BASIC2
 HELLO FROM 3270BBS BASIC3

 YOUR FILES:
   hello.bas              105 bytes  10 Sep 2026 10:08

 COMMUNITY FILES (read-only):
   (none)

 >
```

Figure 16-7. Listing your files with FILES (Model 2, 24 x 80; capture screens/63-basic-files.txt)

Worked Examples

`VARS` after a run shows every variable and the value it was left with — the quickest way to find out why a program did the wrong thing. Here the loop counter `I` has been left at 4, one past the end of a loop that ran three times:

```
 LOADED hello.bas (5 LINES)

 RUNNING...

 HELLO FROM 3270BBS BASIC1
 HELLO FROM 3270BBS BASIC2
 HELLO FROM 3270BBS BASIC3
 VARIABLES:
   I = 4
 >
```

Figure 16-8. LOAD, RUN and VARS (Model 2, 24 x 80; capture screens/67-basic-vars.txt)

`CHECK` compiles the program without running it. It reports what it found and writes a listing file with the same name and the suffix `.list`:

```
 CHECKING PROGRAM...
 NO ERRORS OR WARNINGS FOUND
LISTING SAVED TO hello.list
USE VIEW hello.list TO SEE FULL LISTING
 >
```

Figure 16-9. The CHECK command (Model 2, 24 x 80; capture screens/68-basic-check.txt)

VIEW displays that listing without disturbing the program in storage. The listing is what a mainframe compiler produces: a heading with the compiler options, the source with statement numbers and nesting levels, then the diagnostics, the cross-reference and the statistics. **F7** and **F8** page through it and CANCEL leaves it:

```
 VIEW: hello.list (READ-ONLY)                 Pos 1     Lines in file: 68
 Command:  _                    SAVE/CANCEL/FIND  F1=HELP!  F7=Up F8=Down
BASIC/3270BBS OPTIMIZING COMPILER v3.0.0 DATE: 10 SEP 2026 11:10:32
 SOURCE: HELLO.bas
NOOBJECT,NODECK,A(FULL),AG,LIST,OPTIMIZE(TIME),NEST,XREF,ESD,MAP;

                  SOURCE  LISTING
  LINE  STMT  NT  SOURCE TEXT
    10     1   0  REM GREETING FOR THE MANUAL
    20     2   0  FOR I = 1 TO 3
    30     3   1  PRINT "HELLO FROM 3270BBS BASIC"; I
    40     4   0  NEXT I
    50     5   0  END

COMPILER DIAGNOSTIC MESSAGES

  ERRORS:
  LINE   MESSAGE
  ----   -------
  (NO ERRORS)

  WARNINGS:
  LINE   MESSAGE
  ----   -------
```

Figure 16-10. VIEW of the listing produced by CHECK (Model 2, 24 x 80; capture screens/69-basic-view.txt)

EMAIL sends a listing to the address in your profile as a PDF document, set in landscape on green-bar paper. If your preference Print to Held is Y, the listing goes to your held output instead and the interpreter answers PRINTING TO HELD OUTPUT... and LISTING SENT TO HELD OUTPUT. On a system where the operator has not configured outgoing mail at all, the command answers as in Figure 16-11; use PRINT in the editor, or read the listing with VIEW, instead.

```
LOADED hello.bas (5 LINES)
VIEWING: hello.list
?EMAIL FUNCTIONALITY NOT CONFIGURED
>
```

Figure 16-11. EMAIL on a system with no outgoing mail configured (Model 2, 24 x 80; capture screens/69b-basic-email.txt)

The File Browser

`BROWSE` at the BASIC command line, or **`F2`** in the editor, displays the file browser. It is shared by BASIC and the assembler.

```
FILE BROWSER - USER FILES - Sort: NAME - Page 1/1
Command ===>                          Sort: U=User C=Community N=Name D=Date
S Filename           Size Date          S Filename           Size Date
  hello.bas            105 10Sep

F3=Return  F7=Up  F8=Down  Any char=Select  D=Delete
```

Figure 16-12. The file browser (Model 2, 24 x 80; capture screens/64-basic-browse.txt)

Key or letter	Function
`F7, F8`	Previous and next page.
`U`	Show your own files.
`C`	Show the community files.
`N`	Sort by name.
`D`	Sort by date.
`any character in the selector`	Open that file.
`D in the selector`	Delete that file.
`F3`	Leave the browser.

Figure 16-13. The file browser

The Full-Screen Editor

`EDIT` opens the ISPF-style editor. It is the editor used for BASIC and assembler source, for the listings produced by `CHECK`, and for files opened from DSLIST. It is not the content editor of Chapter 6; the two have different commands and different keys, and this one has the line commands that an ISPF user will recognise.

```
EDIT  hello.bas                                   Columns 00001 00071        1
Command ===>                                           Scroll ===> CSR
****** *************************** Top of Data ******************************
'''''' 10 REM GREETING FOR THE MANUAL
'''''' 20 FOR I = 1 TO 3
'''''' 30 PRINT "HELLO FROM 3270BBS BASIC"; I
'''''' 40 NEXT I
'''''' 50 END
****** ************************** Bottom of Data ****************************
```

Figure 16-14. The ISPF-style editor (Model 2, 24 x 80; capture screens/65-ispf-editor.txt)

The heading names the file and the columns displayed. The `Command ===>` field takes primary commands and the `Scroll ===>` field says how far **F7** and **F8** move. Down the left of the screen is the prefix area, six characters wide, where line commands are typed. Figure 16-15 is the panel displayed by **F1**.

```
EDIT  hello.bas                                   Columns 00001 00071        1
Command ===>                                           Scroll ===> CSR
****** *  ┌──────────────────────────────────────────────────────────┐********
'''''' 1  │ Function Keys:                                           │
'''''' 2  │   F1 = Help overlay     F7/F8 = Scroll up/down           │
'''''' 3  │   F2 = File browser     F9 = Cycle open files (1-9)      │
'''''' 4  │   F3 = Exit             F10/F11 = Scroll left/right      │
'''''' 5  │   F4 = Help buffer      F12 = Save and exit              │
****** *  │   F5 = ReFind                                            │********
          │ Commands:                                                │
          │   COLS = Column ruler   FIND txt      = Search for text  │
          │   RFIND = Repeat find   CHANGE old new (ALL)             │
          │   TOP/BOTTOM            LOCATE n      = Go to line n     │
          │   SAVE/CANCEL           RESET         = Clear all        │
          │   EDIT = File browser   CHECK         = Run BASIC check  │
          │   PRINT = Print to HELD output (SDSF)                    │
          │   HI BASIC/ASM/OFF      NUMBER ON/OFF = Line numbers     │
          │   UNDO = Undo last line command                          │
          │ Line Commands:                                           │
          │   D n = Delete n lines      C     = Copy (CC block)      │
          │   I n = Insert n lines      M     = Move (MM block)      │
          │   X   = Exclude (XX block)  Press any key to close.      │
          └──────────────────────────────────────────────────────────┘
```

Figure 16-15. The editor function key and command panel (Model 2, 24 x 80; capture screens/66-ispf-help.txt)

Function Keys

Key	Function
F1	Display the panel of keys and commands.
F2	Open the file browser.
F3	Leave. If the file has been changed, a panel asks you to confirm; **F9** abandons the changes.
F4	Open the help text in an edit buffer of its own.
F5	Repeat the last FIND.
F7, F8	Scroll up and down.
F9	Cycle through the open files. Up to nine may be open at once.
F10, F11	Scroll left and right eight columns.
F12	Save and leave.
F23, F24	Ignored. Leave the editor to use the virtual session keys.

Figure 16-16. Function keys in the ISPF-style editor

Primary Commands

Command	Function
`SAVE [name]`	Save, optionally under another name. The suffix `.bas` or `.asm` is supplied for you.
`CANCEL`	Discard the changes.
`FIND text`	Find text.
`RFIND`	Find the next occurrence.
`CHANGE old new [ALL]`	Change text, once or everywhere. The reply is `Changed n` or `Not found`.
`LOCATE n`	Go to line *n*. `L` is an abbreviation.
`TOP, BOTTOM`	Go to the top or the bottom.
`COLS`	Display a column ruler.
`NUMBER ON | OFF`	Display or hide line numbers.
`HI BASIC | ASM | OFF`	Colour the syntax of the language, or stop doing so.
`CHECK`	Check the BASIC program and open the listing.
`PRINT`	Write the file to your held output. See Chapter 13.
`RESET`	Clear highlighting, exclusions and the column ruler.
`UNDO`	Undo the last line command.
`EDIT`	Open the file browser.

Figure 16-17. Primary commands in the ISPF-style editor

Line Commands

Type these in the prefix area at the left of a line and press **`ENTER`**. A number after the letter repeats the command: `D3` deletes three lines, `I5` inserts five. Doubling the letter on two lines marks a block, and the command applies to everything between them.

Command	Block form	Function
D	DD	Delete.
I		Insert blank lines below.
R		Repeat the line.
C	CC	Copy; then mark the destination with A, B or O.
M	MM	Move, in the same way.
A		Put the copied or moved lines after this line.
B		Put them before this line.
O		Overlay this line with them.
U	UU	Change to upper case.
L	LL	Change to lower case.
X	XX	Exclude from the display.
)	))	Shift right.
(	((	Shift left.

Figure 16-18. Line commands in the ISPF-style editor

The Language

A summary is given here; the complete description is in the language manual at `https://github.com/moshix/3270bbs/blob/main/basic_manual.md`, which the `HELP` command also names.

- **Statements**: `PRINT` (with `COLOR`, `BLINK` and `REVERSEVIDEO`), `LET`, `INPUT`, `IF ... THEN ... ELSE` in single-line and block forms, `GOTO`, `GOSUB` and `RETURN`, `ON ... GOTO`, `FOR ... NEXT` with `STEP`, `WHILE ... WEND`, `SELECT CASE`, `DIM`, `OPTION BASE`, `DEF FN`, `REM`, `END`, `STOP`, `CLS`, and `COMMON` with `CHAIN` to pass control from one program to another.
- **Files**: `OPEN` for `INPUT`, `OUTPUT`, `APPEND` or `INDEXED`, `PRINT #`, `INPUT #`, `CLOSE`, `EOF`, and for indexed files `PUT`, `GET`, `DELETE`, `RESET`, `FOUND` and `DELETED`. Eight files may be open at once, `#1` through `#8`.
- **Functions**: the usual arithmetic and trigonometric functions; the string functions `LEN`, `LEFT$`, `RIGHT$`, `MID$`, `CHR$`, `ASC`, `STR$`, `VAL`, `UCASE$`, `LCASE$`, `TRIM$`, `INSTR`, `REPLACE$`; the box and graphic characters `BOXCHAR$` and `CP310$`; and the time functions `TIME$`, `DATE$`, `TIMER` and `SLEEP`.
- **Live data from the bulletin board**, read-only: `$ChatMessage(n)`, `$Mail(n)`, `$UserInfo`, `$TermInfo`, `$Topic(n)` and `$Post(topic,n)`. A program can read what is going on; it cannot post, send mail or chat.

Limits

Item	Limit
Length of a source line	`255 characters`
Size of a program	`256 KB`
Size of a data file	`256 KB`
Files open at once	`8`
Running time	`15 seconds, not counting SLEEP`
Loop iterations	`55,000,000`
Active GOSUB calls	`1024`
Lines of screen output kept	`1,000`

Figure 16-19. Limits of the BASIC interpreter

The limits are there so that one user's program cannot spoil the system for everybody else. A program that exceeds them is stopped with a message saying which limit it met.

Chapter 17

Programming in Assembler

The assembler environment is a System/360 in miniature: sixteen general registers, a program status word, one megabyte of storage, a useful subset of the instruction set, the ASSIST input and output macros that generations of students learned on, and enough of the MVS linkage macros to write a program that looks like the real thing. Select option `A` from the extended menu.

As with BASIC, this chapter describes the environment and not the language. The complete assembler manual — the instruction set, the directives, the macros and worked examples — is at

`https://github.com/moshix/3270bbs/blob/main/assembler_manual.md`

and the assembler names a short form of it on its opening screen.

```
                    TIMESHARING ASSEMBLER V1.7.0
64396 BYTES MEMORY
TYPE HELP FOR COMMANDS, BYE TO EXIT
MANUAL: https://tinyurl.com/timesharingassembler
READY
>
```

Figure 17-1. The assembler command line (Model 2, 24 x 80; capture screens/70-asm-ready.txt)

Commands

Command	Function
`NEW`	Clear the program, the registers and storage.
`LOAD name`	Load a program.
`SAVE name`	Save the program.
`EDIT [name]`	Edit in the full-screen editor described in Chapter 16.
`LIST`	List the source.
`RUN`	Assemble and execute.
`CHECK`	Assemble only, and produce a listing file.
`RESET`	Reset the registers, the program status word and storage, keeping the source.
`REGS`	Display the registers.
`DUMP addr len`	Display storage in hexadecimal and character. The address is in hexadecimal, the length in decimal.
`SYMBOLS`	Display the symbol table.
`FILES, FLIST, BROWSE, ERASE, VIEW, EMAIL`	As in BASIC; see Chapter 16.
`BYE`	Leave the assembler.

Figure 17-2. Commands of the assembler

```
                    TIMESHARING ASSEMBLER V1.7.0
64396 BYTES MEMORY
TYPE HELP FOR COMMANDS, BYE TO EXIT
MANUAL: https://tinyurl.com/timesharingassembler
READY
FILES /C


COMMUNITY PROGRAMS (read-only):
  _gameoflife.asm      21083 bytes
  _helloworld.asm       3856 bytes
  _nqueens.asm          8734 bytes
  _test.asm             1825 bytes
  _time.asm             5315 bytes
  _wto.asm               812 bytes

READY
>
```

Figure 17-3. The community programs, listed with FILES /C (Model 2, 24 x 80; capture screens/71-asm-files.txt)

The community programs are worth reading before you write your own: `_helloworld.asm`, `_wto.asm`, `_time.asm`, `_nqueens.asm` and `_gameoflife.asm`. Load one with `LOAD _wto.asm` and list it.

```
                    TIMESHARING ASSEMBLER V1.7.0
64396 BYTES MEMORY
TYPE HELP FOR COMMANDS, BYE TO EXIT
MANUAL: https://tinyurl.com/timesharingassembler
READY
LOAD _wto.asm
LOADED: _wto.asm (36 LINES)
ASSEMBLED: 156 BYTES, 21 SYMBOLS
READY
LIST
   1           PRINT GEN
   2  TESTWTO  CSECT
   3           SAVE   (14,12)
   4           BASR   R12,0
   5           USING  *,R12
   6           ST     R13,SAVEA+4
   7           LA     R13,SAVEA
   8           LA     R5,23               ARBITRARY VALUE FOR R5 OF 10
   9           CVD    R5,NUMDEC
  10           UNPK   UNDEC,NUMDEC+1
  11           MVC    WTOLIST+20(8),UNDEC  WTO MACRO EXPANDS TO 24 BYTES
ENTER=more PF3=stop
>
```

Figure 17-4. A community program loaded and listed (Model 2, 24 x 80; capture screens/72-asm-list.txt)

Assembling and Running

`RUN` assembles the program and executes it. The assembly reports its size and the number of symbols; execution then produces whatever the program writes, and ends with a count of the instructions and macros obeyed. `REGS` afterwards shows how the registers were left.

```
RUN
ASSEMBLING...
ASSEMBLY COMPLETE
PROGRAM SIZE: 156 BYTES
SYMBOLS: 21

EXECUTING...

WTO: REG R5 VLUE 23

EXECUTION COMPLETE - 8 INSTRUCTIONS, 3 MACROS
READY
REGS
CPU REGISTERS:

R00=00000000  R01=00000000  R02=00000000  R03=00000000
R04=00000000  R05=00000000  R06=00000000  R07=00000000
R08=00000000  R09=00000000  R10=00000000  R11=00000000
R12=00000006  R13=000FFF00  R14=000000A0  R15=00000000

PSW: 00000000 00000042
     CC=0  MASK=0  ADDR=000042
READY
>
```

Figure 17-5. A program run, and the registers displayed afterwards (Model 2, 24 x 80; capture screens/74-asm-regs.txt)

Long output is displayed a page at a time: press **`ENTER`** for the next page or **`F3`** to stop. **`PA1`** and **`PA2`** interrupt a running program and produce a register dump; **`CLEAR`** clears the screen and stops the program.

Checking and Listing a Program

`CHECK` assembles the program without executing it and writes the assembly listing to a file with the suffix `.list`:

```
                    TIMESHARING ASSEMBLER V1.7.0
64396 BYTES MEMORY
TYPE HELP FOR COMMANDS, BYE TO EXIT
MANUAL: https://tinyurl.com/timesharingassembler
READY
LOAD _wto.asm
LOADED: _wto.asm (36 LINES)
ASSEMBLED: 156 BYTES, 21 SYMBOLS
READY
CHECK
CHECKING...
ASSEMBLY SUCCESSFUL

LISTING SAVED: wto.list
READY
>
```

Figure 17-6. The CHECK command (Model 2, 24 x 80; capture screens/75-asm-check.txt)

Read the listing afterwards with `VIEW _wto.list`. It contains the location counter, the object code, the operand addresses, the statement numbers and the source, followed by the diagnostics, the symbol table and the cross-reference — the listing an assembler has produced since the nineteen-sixties.

`EMAIL _wto.list` sends that listing to the address in your profile as a green-bar PDF document, and obeys the `Print to Held` preference in the same way as BASIC. Where the operator has not configured outgoing mail, the command answers:

```
                    TIMESHARING ASSEMBLER V1.7.0
64396 BYTES MEMORY
TYPE HELP FOR COMMANDS, BYE TO EXIT
MANUAL: https://tinyurl.com/timesharingassembler
READY
LOAD _wto.asm
LOADED: _wto.asm (36 LINES)
ASSEMBLED: 156 BYTES, 21 SYMBOLS
READY
CHECK
CHECKING...
ASSEMBLY SUCCESSFUL

LISTING SAVED: wto.list
READY
EMAIL _wto.list
?EMAIL FUNCTIONALITY NOT CONFIGURED
READY
>
```

Figure 17-7. EMAIL on a system with no outgoing mail configured (Model 2, 24 x 80; capture screens/76-asm-email.txt)

The Machine

Element	Provided
General registers	`R0 – R15`
Storage	`1 MB`
Program status word	Condition code, program mask, instruction address
Instructions	RR, RX, RS, SI and SS formats, including the packed decimal instructions and `ED`, plus the extended branch mnemonics
Not provided	Floating point, input/output instructions, and the privileged instructions

Figure 17-8. The simulated machine

Macros

The ASSIST macros do the input and output: `XREAD`, `XPRNT`, `XDECI`, `XDECO`, `XHEXI`, `XHEXO`, `XDUMP`, and the aliases `XGET`, `XPUT` and `XPNCH`. `WTO` writes a line as a system message, in the inline form `WTO 'text'` or the execute form. `SAVE` and `RETURN` provide the standard linkage, and `YREGS` defines the names `R0` to `R15`.

Source is written on the card image of the period: columns 1 through 71 are the statement, column 72 is the continuation column, and columns 73 through 80 are sequence numbers and are ignored.

Limits

Item	Limit
Instructions executed	`40,000,000`
Running time	`40 seconds`
Storage	`1 MB`

Figure 17-9. Limits of the assembler

A program that waits for input or produces output is given a little more of both, because the pause belongs to the terminal and not to the program.

Chapter 18

Games

The games are on the extended menu, except for checkers, which is reached by typing `CHECKERS` at either menu. All of them accept **`F23`** and **`F24`**, so you may leave a game in one virtual session and come back to it later.

Balloon

Option 2. Fly a hot air balloon down a shaft, steering around the barriers and collecting the items that drift past. Every third level grants another life.

```
                           Hot Air Balloon Challenge
------------------------------------------------------------
                                          /===/
           OO              OO            /====/               HIGH SCORES
                                            /======/
                          O                /===/



                     Game starts in: 4
                                 0
                        Get ready!

                           (O)
                            |
                           XXX



------------------------------------------------------------
  Score: 0        Lives: 3    Level: 1
  F1=Left  F2=Fix  F12=Right  F3=Exit  F4=Pause  F5=AI  F9=Restart
```

Figure 18-1. The Hot Air Balloon Challenge (Model 2, 24 x 80; capture screens/80-balloon.txt)

Key	Function
F1	Move left.
F2	Hold the balloon still.
F3	Leave.
F4	Pause.
F5	Let the machine play.
F9	Start again.
F12	Move right.

Figure 18-2. Balloon controls

Blackjack

Option 3. You begin with a stake of 100. Adjust your bet with **F4**, **F5**, **F6** and **F7** and press **F2** to deal; then **F2** draws another card and **F4** stands. **F10** shows the high scores and **F3** leaves. If you lose everything, the house will stake you once more, and once only.

```
                            BLACKJACK                      Money: 100

   Dealer:
   +-----+ +-----+
   | XX  | | 7   |
   | XX  | |  H  |
   | XX  | |     |
   +-----+ +-----+
              7

   Player:           Score: 16
   +-----+ +-----+
   | 6   | | K   |
   |  H  | |  D  |
   |     | |     |
   +-----+ +-----+
      6      K

   SUITS LEGEND: S=Spades  H=Hearts  D=Diamonds  C=Clubs
   Games: 1 | Won: 0 | Tied: 0 | Lost: 0

   Current bet: 10

  F3=Exit  F2=Hit  F4=Stand F10=High Scores
```

Figure 18-3. Blackjack (Model 2, 24 x 80; capture screens/81-blackjack.txt)

Space Invaders

Option 5. Shoot down the descending ranks before they reach you. **F1** moves left, **F3** moves right, **F2** fires, **F10** pauses, **F5** lets the machine play and **F12** leaves.

```
                                SPACE INVADERS

        <M> <M> <M> <M> <M> <M> <M> <M> <M> <M> <M>
                                                                HIGH SCORES
        (A) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)

        (A) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A)

        /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\

        /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\ /X\
                   WAVE 1 - GET READY: 2




       #####        #####        #####        #####
       #####        #####        #####        #####
                             |
                            /#\
------------------------------------------------------------
  Score: 0       Lives: 3   Wave: 1
  F1=Left F3=Right F2=Fire F5=AI ON/OFF F10=Pause F12=Exit
```

Figure 18-4. Space Invaders (Model 2, 24 x 80; capture screens/82-space-invaders.txt)

Flappy Bird

Option 6. Press **ENTER** to flap and keep the bird between the obstacles. **F10** pauses, **F5** lets the machine play and **F12** leaves.

```
CPU  17 FPS 20 FLAPPY 3270 SCORE    0  BEST     0  LVL 1  LIVES 3




                                GET READY
                       Press ENTER to flap and start
                     F5 = AI autopilot (score not saved)
    \o>                                                         -.-

                                                                          -.-


-----                                                            ---
:::::-----------        ---                 ----                 :::
:::::::::::::::        :::  ----           ::::            ----:::
:::::::::::::::     ---:::  ::::--         ::::---  --     :::::::   -.-----
::::::::::::::::-----::::::--::::::---------::::::--::-----::::::-----:::::
::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::

====+====+====+====+====+====+====+====+====+====+====+====+====+====+====+==
TOP5 (no scores yet - be the first)
ENTER=Flap  F5=AI  F10=Pause  F12=Exit  F23/F24=Session
```

Figure 18-5. Flappy Bird (Model 2, 24 x 80; capture screens/83-flappy.txt)

Wordle

Option `W`. Guess the five-letter word in six attempts; the colours tell you which letters are right and which are in the wrong place. **`F10`** shows your statistics, **`F5`** asks for help from the machine, **`F12`** changes the language between English, German and Italian, and **`F3`** leaves.

```
                        WORDLE in English!
                   Guess the 5-letter word!

     Enter your guess:

                        Your Guesses:





     Remaining attempts: 6

                          Q W E R T Y U I O P
                           A S D F G H J K L
                             Z X C V B N M

  Color Legend:
  Green=Correct  Yellow=Wrong Position  Red=Not in Word  White=Unused



  F3=Extended Menu  F5=AI  F10=Statistics  F12=German  Enter=Submit Guess
```

Figure 18-6. Wordle, ready for the first guess (Model 2, 24 x 80; capture screens/84-wordle.txt)

```
                        WORDLE in English!
                    Guess the 5-letter word!

    Enter your guess:

                        Your Guesses:
                        C R A N E




    Remaining attempts: 5

                          Q W E R T Y U I O P
                           A S D F G H J K L
                             Z X C V B N M

Color Legend:
Green=Correct  Yellow=Wrong Position  Red=Not in Word  White=Unused


F3=Extended Menu  F5=AI  F10=Statistics  F12=German  Enter=Submit Guess
```

Figure 18-7. Wordle, after a guess has been entered (Model 2, 24 x 80; capture screens/84b-wordle-guess.txt)

Checkers

Type `CHECKERS` at either menu. Move by putting the cursor on a piece and pressing **`ENTER`**, or by typing coordinates such as `A3` and `B4`. **`F10`** suggests a move, **`F5`** starts a new game and **`F3`** leaves.

Note
A score made with the machine playing for you is displayed but never entered in the high score table.

Chapter 19

The Marketplace

The marketplace is the classified advertisements of the community. Option 7 on the extended menu.

```
                                Marketplace
Showing All items                                          Page 1 of 1
Type D to delete or E to edit your own items

S  Type     Title                                 Price     User     Posted
*******************************************************************************
   Wanting  Wanted: 3174 keyboard cable           offers    jbrooks  06Sep26
   Selling  IBM 3179G colour terminal             250 EUR   mmartin  04Sep26









 Filter by: A=All  S=Selling  W=Wanted  B=Buying       Total items: 2
 Command:

 F3=Main Menu  F5=Post Item  F7=Prev Page  F8=Next Page
```

Figure 19-1. The marketplace (Model 2, 24 x 80; capture screens/85-marketplace.txt)

Each line gives the kind of advertisement, the title, the price, who posted it and when. Type any character against a line and press **ENTER** to read it in full.

```
                              Marketplace Item View

                  Selling Item #1

   Title:         IBM 3179G colour terminal
   Posted by:     mmartin
   Price:         250 EUR
   Posted:        09-04-26

   Description:
   Working, minor screen burn. Collection only.









  F3=Back  F4=Contact Poster  F7=Up  F8=Down
```

Figure 19-2. One marketplace item (Model 2, 24 x 80; capture screens/85b-marketplace-item.txt)

Key	Where	Function
F3	Either	Return.
F4	An item	Send a message to the person who posted it.
F5	The list	Post an item.
F7, F8	The list	Page up and down.
F7, F8	An item	Scroll the description.
F22	An item	Follow a `bbs://` link in the description, or copy a link to this item. See Chapter 9.
D	Selector	Delete your own item; **F9** confirms.
E	Selector	Edit your own item.

Figure 19-3. The marketplace

Posting an Item

1. Press **F5**.
2. Say whether you are selling, buying or wanting; give the item a title and a price.
3. Press **ENTER**. The content editor opens for the description; write it as described in Chapter 6 and save it.

The system replies `Item posted successfully`. Others reach you with **`F4`**, which sends you an ordinary message, so no one need publish an address. Delete your advertisement when the matter is settled.

Chapter 20

Doors to Other Systems

A door is a connection from this system to another one: a community mainframe running MVS or VM, another 3270BBS, or any host that speaks the 3270 protocol. Option `4` on the extended menu.

```
                        Remote Host Selection
Option ===>

Select a remote host to connect to:

 1  MVS3.8          MVS 3.8 TK5 community mainframe
 2  PUBVM           VM/SP rel5 with PROFS at PUBVM









   Press PA3 key from remote host to return here. Wait about 6 seconds.


 F3=Return
```

Figure 20-1. The remote host selection screen (Model 2, 24 x 80; capture screens/87-doors.txt)

Choose a system by its number and press **`ENTER`**. From that moment your display station is talking to the other system, and what you see and the keys you press belong to it, not to 3270BBS: log on there as that system requires.

Coming Back: the PA3 Key

One key is *not* passed to the remote system. **`PA3`** cuts the connection and brings you back to 3270BBS, from wherever you happen to be on the other machine. The remote host selection screen says so in the line `Press PA3 key from remote host to return here. Wait about 6 seconds.`

- Allow about six seconds. The connection has to be torn down and the local screen repainted; nothing is wrong if the display sits still for a moment.
- **`PA3`** ends the session abruptly, in the way that pulling the plug on a terminal would. Where you can, log off from the other system first — and use **`PA3`** when the other system will not let you, when it has stopped answering, or when you simply want out.
- On most emulators **`PA3`** is **`Alt`**+**`3`**; in x3270 and c3270 it is the `PA(3)` action. Look it up before you need it, because on the other machine no function key line will tell you.

You are also returned here when you log off the other system, or when the connection ends of its own accord.

The list is the one your operator has configured; if none is configured, or if the proxy is not running, the extended menu says so and nothing happens. Bear in mind that the other system is a different community, with its own rules and its own operator.

Chapter 21

Guide for Moderators

A moderator is a user with two extra options on the main menu and the responsibility that goes with them. Everything in the rest of this publication applies to you as it does to anyone else; this chapter describes what is added.

The Moderator's Options

Option	Name	Function
7	Mod Topics	Topic management: delete, edit, view and colour topics.
8	Mod Posts	Post management: delete, edit and view any post.
F10	on the conference list	Conference administration, including the list of users banned from a conference.

Figure 21-1. What a moderator has that a user does not

An administrator sees the same two options under the names `Admin Topics` and `Admin Posts`, and sees others besides. A moderator's authority is limited to the conferences they may themselves use; an administrator's is not.

Managing Topics

Option 7 lists the topics with a selector field. The instruction line reads `D=delete, E=edit, V=view topic. Topic Colors= G, R, Y, B, W`.

Letter	Effect
`D`	Delete the topic. A confirmation screen follows. Everything in the topic goes with it.
`E`	Edit the topic: its title, the conference it belongs to — this is how a topic is *moved* — and, through the editor, the text of its first post.
`V`	View the topic as a reader sees it.
`G R Y B W`	Colour the title green, red, yellow, blue or white in the topic list. Use it sparingly, for announcements and for topics that must be found quickly.

Figure 21-2. Actions on the topic management screen

Function keys on this screen: **`F1`** help, **`F3`** menu, **`F5`** refresh, **`F7`** and **`F8`** to page, and **`ENTER`** to carry out what you have marked.

Managing Posts

Option `8` lists posts with the instruction line `D=delete E=edit V=view post T=view topic`. You may delete or edit any user's post. Editing another person's words is a serious act: prefer to delete a post and say why, or to ask the author to change it.

Conferences

`F10` on the conference list opens conference administration. There you may create a conference — **`F5`** also creates one from within the topic-creation flow — edit its name and description, and maintain its list of banned users. A banned user cannot see or post in that conference. The ban is per conference: there is no general silencing of a user, and only an administrator can remove an account.

Chat

You may set the topic of a chat room with `/topic`, and clear it by typing `/topic` alone. Ordinary users cannot. It is the only moderator power inside chat: there is no facility to remove somebody from a room, so use mail or a summon if a word is needed.

Practice

- Say what you did. A topic that vanishes without explanation costs more goodwill than the post that caused it.
- Prefer the smallest action that works: a word to the author, then moving a topic to the right conference, then deleting a post, then a ban.
- Moderate the conferences you use, and leave the others to their own moderators.
- Remember that the community sees your name in the rolodex with the moderator flag against it. Write a `PUBLIC` note that says who you are and which conferences you look after.

Appendix A

Summary of Function Keys

This appendix collects the function keys of every screen described in this publication. Where a key is not listed for a screen, that screen does not use it. The function key line at the foot of each screen is always the final authority.

Everywhere

Key	Function
F1	Help for this screen.
F3	Cancel, or return to the previous screen.
F7, F8	Scroll up, scroll down.
F23	Virtual Sessions screen: list the sessions and go to one by number.
F24	Go to the next virtual session, starting it if it is not in use yet.

Figure A-1. Keys that work on nearly every screen

The Menus

The extended menu accepts fewer keys than the main menu: **F2**, **F3**, **F5**, **F6**, **F10**, **F11** and the virtual session keys, and no others.

Key	Function
F1	Help. Main menu only.
F2	What's new since your last logon.
F4	Summon a user who is online. Main menu only.
F5	Virtual session overlay.
F6	System information overlay.
F10, F11	Calendar back, calendar forward.
F13	Next colour scheme (main menu).

Figure A-2. Keys on the main and extended menus

Conferences, Topics and Posts

Key	Conference list	Topic list	Reading a topic
F2			Oldest post first
F4			Reply
F5	Subscriptions	Add a topic	I like this topic
F6	Preview topics		
F9			Last post / first post
F10	Administration	Sort by created or by activity	Save to notes
F11	Point and sort	Point and sort	
F12			Newest post first
F13			PUBLIC note of the user at the cursor
F14, F15			Half-page scroll up, down
F20			Print the topic
F22	Copy link	Copy link	Copy or follow link

Figure A-3. Keys in the conferences

The Content Editor

Key	Function
F1	Key panel
F2	Spell check
F3	Abandon (F9 confirms)
F4	Delete line
F5	Insert line below
F6	Insert line above
F7, F8	Scroll up, scroll down
F9	Bottom of text
F10	Centre line
F11	Centred box
F12	Save and exit
F13	Centred box to next blank line
F14	First line of text
F15	Left-aligned box
F16	Copy line
F17	Paste above the cursor
F18	Paste below the cursor
F19	Find next
F21	Insert signature
F22	Paste bbs:// link

Figure A-4. Keys in the content editor

The ISPF-Style Editor

Key	Function
F2	File browser.
F4	Help text in an edit buffer.
F5	Repeat the last find.
F9	Cycle through the open files.
F10, F11	Scroll left, scroll right.
F12	Save and exit.
F23, F24	Ignored.

Figure A-5. Keys in the ISPF-style editor

Mail, Notes and the Rest

Key	Mail list	Reading mail	Notes list	Profile
F4		Reply		Set time zone
F5	New message	Sender's About Me	New note	Change password
F6	Spam list			
F9	Purge read mail	Delete		Close account
F10		Save to notes		Edit About Me
F11	Received or sent			
F12		Opt out of notifications		
F20		Print		

Figure A-6. Keys in mail, notes and the profile

Games and Displays

Screen	Keys
Balloon	F1 left, F12 right, F2 hold, F4 pause, F5 machine plays, F9 restart, F3 leave
Blackjack	F2 deal or draw, F4 stand, F4/F5/F6/F7 adjust bet, F10 high scores, F3 leave
Space Invaders	F1 left, F3 right, F2 fire, F10 pause, F5 machine plays, F12 leave
Flappy Bird	ENTER flap, F10 pause, F5 machine plays, F12 leave
Wordle	ENTER guess, F5 help, F10 statistics, F12 language, F3 leave
Checkers	ENTER move, F5 new game, F10 hint, F3 leave
SDSF	F2 held output, F6 automatic refresh, F3 return
Held output	S select, P purge, O mail as PDF, F7/F8 scroll, F3 return
Held output viewer	F7/F8 scroll, F10/F11 scroll sideways, F3 return
DELTAMON	F4 colour, F5 average, F9/F10 refresh rate, F11 DBMON, F12 user CPU, F3 return
Chat	F2 spell, F4 complete word, F5 about, F7/F8 scroll, F9 recall, F10 screen shot, F3 leave

Figure A-7. Keys in the games and the system displays

Appendix B

Summary of Colour Tags

Colour tags may be typed anywhere in the text of a post, a reply or a mail message. They are described in "Colour Tags" in Chapter 6.

Tag	Effect	Suggested use
`<<green>>`	Green	Ordinary text. This is the default, so the tag is needed only to return to it.
`<<yellow>>`	Yellow	Headings within a post.
`<<white>>`	White	Emphasis.
`<<turquoise>>`	Turquoise	Quoted text. It is also the colour the system gives to `bbs://` links.
`<<blue>>`	Blue	Labels and notes in passing.
`<<pink>>`	Pink	Warnings. The system itself uses pink for material that is new to you.
`<<red>>`	Red	Errors and matters of importance. Use it rarely.
`<<reverse>>`	Reverse video on	A line that must not be missed.
`<</reverse>>`	Reverse video off	Setting any colour also ends reverse video.

Figure B-1. Colour tags

Rules to remember:

- A tag takes effect where it stands and lasts until the next tag or the end of the text.
- A tag the system does not know is removed and does nothing. Nothing warns you of a misspelled tag.
- Tags do not carry from one post to the next.
- The note viewer shows tags as you typed them; posts and mail interpret them.
- A printed PDF reproduces the colours; text printed to held output has the tags removed.

Appendix C

Messages

These are the messages you are most likely to meet, and what to do about them. Messages appear on the message line near the foot of the screen, often in reverse video.

Logging On

Message	Meaning and action
`Invalid username or password. Please try again.`	One of the two was wrong; the system does not say which. After repeated failures the address is locked out for a few minutes.
`WARNING! Your terminal size is too small!`	Set your emulator to a Model 2, 3 or 4 screen and connect again.
`Please complete your profile information for password recovery`	Fill in the city and country on the profile screen; they are what recovers your password later.

Figure C-1. Messages when logging on

Writing and Posting

Message	Meaning and action
`Unknown command`	The editor's command field takes only `SAVE`, `CANCEL`, `FIND` and `RFIND`.
`FIND requires text`	Type the text to find after the command.
`No previous find`	There is nothing for `RFIND` to repeat.
`Found n misspelled words`	The result of **F2**. The words are shown in yellow.
`You already have a PUBLIC note; edit it instead`	The reserved subjects allow one note each. Edit the one you have.
`Please select only one note at a time`	Mark one line and press **ENTER** again.

Figure C-2. Messages while writing

Links

Message	Meaning and action
`Link copied:`	The link named is on the clipboard. Paste it in the editor with **F22**.
`Nothing to copy here – put the cursor on an item`	Move the cursor onto a topic, post, conference or item and press **F22** again.
`That link is not available`	The link points at something that does not exist, or at something you may not see. The two cases are deliberately not distinguished.
`Link clipboard cleared`	The result of the `CLEAR` command.

Figure C-3. Messages about links

Printing and Mail

Message	Meaning and action
`Printed to HELD output`	The document is in your held output. Read it from SDSF with **F2**.
`Max daily emails (n) reached`	You have used your allowance of outgoing mail for today. Set `Print to Held` to `Y` and print locally, or wait until tomorrow.
`INFO14D GENERAL ERROR`	Your account is younger than the waiting period the operator has set for sending mail out of the system. Nothing is broken. Print to held output instead.
`No email address in your profile`	Put an address on the profile screen.
`Email functionality not configured`	The operator has not configured outgoing mail. Print to held output.
`Purged n job(s)`	The result of `P` in held output.

Figure C-4. Messages about printing and mail

Programming

Message	Meaning and action
?FILE NOT FOUND	Check the name with FILES.
?INVALID FILE NAME	The name is not one the file store will accept. Underscores are removed from a name you type, because that prefix belongs to community files.
?CANNOT ERASE COMMUNITY FILES	Community files (names beginning with an underscore) belong to the operator.
?ONLY SHARED FILES (%) CAN BE LOADED FROM OTHER USERS	You may read another user's file only if its name begins with a percent sign.
SUBSCRIPT OUT OF RANGE	An array index is outside the bounds given in DIM.
TYPE MISMATCH	A string was compared with a number, or assigned to a numeric variable.
OUT OF STACK	More than 1024 active GOSUB calls: a subroutine is calling itself without end.
?LOOP IN CODE?	A BASIC program passed the iteration limit of Chapter 16. Almost always a loop with no way out.
?EXECUTION TIME LIMIT REACHED	A BASIC program ran longer than the time limit of Chapter 16.
maximum iterations exceeded	The assembler's equivalent, with the limit of Chapter 17 in brackets; maximum runtime exceeded is the time limit.
?BREAK - PROGRAM INTERRUPTED	You pressed **PA1** or **PA2**.
Unsaved changes in name	Another file open in the editor has changes. Press **F9** to go to it, then save or cancel there.

Figure C-5. Messages from BASIC and the assembler

The Console

Message	Meaning and action
`IEE305I command COMMAND INVALID`	The console does not know that command, or it is reserved for an administrator. See Chapter 14.
`IEE163I MODE= RD`	The console is ready for a command. Nothing is wrong.

Figure C-6. Messages from the console

Appendix D

Glossary

This glossary defines the terms used in this publication and on the screens of 3270BBS. A term in *italics* within a definition is itself defined here. Chapter references point to the fuller description.

A

administrator. The user who runs the system: creates and removes accounts, appoints *moderators*, configures the services and stops and starts them. Called the SysOp on some screens, and the *operator* in this publication. Administrative functions are not described here.

AID key. Attention identifier: a key that sends the screen to the system. **`ENTER`**, the function keys, **`CLEAR`** and **`PA1`** and **`PA2`** are AID keys; the cursor keys and **`TAB`** are not, and move about the screen without the system knowing.

ASSIST macros. The input and output macros of the assembler environment — `XREAD`, `XPRNT`, `XDECI`, `XDECO` and the rest — named after the teaching assembler on which they were modelled. Chapter 17.

auto-refresh. The setting on the system displays that redraws the screen every few seconds. The interval comes from your *profile*; **`F9`** and **`F10`** change it, and **`F6`** or the `Auto Update` field turns it off. Chapter 14.

B

ban. The exclusion of a user from one *conference*, set by a *moderator*. A banned user cannot see or post in that conference. There is no general silencing of a user. Chapter 21.

BASIC. Timesharing BASIC/3270BBS, the interpreter reached with option `B` on the *extended menu*. Chapter 16.

bbs:// link. A short reference to a *topic*, *post*, *conference*, marketplace item or user inside this system, which a reader follows with **`F22`**. Written `bbs://topicMotorbikes41`. Chapter 9.

block command. A *line command* whose letter is doubled and typed on two lines, so that the command applies to everything between them: `CC`, `MM`, `DD`. Chapter 16.

broadcast message. A line from the *operator* displayed to everybody as they log on, and again by the `BCAST` command. Chapter 15.

C

chat. Conversation in real time. Two are available: *local chat* and *private chat*. A third, *federated chat*, is on the extended menu but is disabled in this release. Chapter 11.

clipboard. See *link clipboard*.

colour tag. A word between double angle brackets, such as `<<yellow>>`, that colours the text after it in a *post* or a message. Appendix B.

community file. A BASIC or assembler file whose name begins with an underscore: readable by everybody, maintained by the *operator*, and not erasable by you. Chapter 16.

conference. A subject area holding *topics*. Every topic belongs to exactly one conference. Chapter 5.

content editor. The editor used for *posts*, mail, notes and marketplace descriptions, driven by function keys and the commands `SAVE`, `CANCEL`, `FIND` and `RFIND`. Chapter 6. It is not the *ISPF-style editor*.

D

DBMON. The database transaction monitor: reads, writes, rates and response times. **`F11`** from *DELTAMON*, or the command `DBMON`. Chapter 14.

DELTAMON. The performance monitor, option `P` on the *extended menu*. Chapter 14.

display station. The terminal, or the emulator standing in for one. 3270BBS supports Model 2 (24 x 80), Model 3 (32 x 80) and Model 4 (43 x 80). Chapter 1.

door. A connection from this system to another mainframe, chosen from the remote host list. Chapter 20.

DSLIST. The data set list utility, which presents your notes, programs, mail and topics as if they were data sets on volumes. Chapter 14.

E

extended menu. The second menu, reached with option `M`, holding the games, the programming environments, the monitors and the other applications. Chapter 3.

F

federated chat. Chat shared with other 3270BBS systems, where the *operator* has joined the federation. Option `R` on the *extended menu*. Chapter 11.

FINGER note. The *note* whose subject is `FINGER`, sent in answer to a finger query from outside the system. Chapters 8 and 10.

.FORWARD note. The *note* whose subject is `.FORWARD`, holding an electronic mail address to which mail arriving from outside is forwarded. Chapter 8.

function key line. The last line of a screen, listing the keys that screen accepts. It is always the final authority on what works there.

H

held output. The queue where printed documents, program logs and chat screen shots wait until you read, mail or purge them. Reached from *SDSF* with **`F2`**. Chapter 13.

I

ISPF-style editor. The full-screen editor used for BASIC and assembler source and for listing files, with a `Command ===>` line, a `Scroll ===>` field and a *prefix area* for *line commands*. Chapter 16.

J

job. One entry in *held output*, with a job name, a job number and a line count, in the manner of a mainframe spool. Chapter 13.

L

like. A mark of approval recorded against a *topic* with **`F5`** while reading it. One per user per topic. Chapter 5.

line command. A letter typed in the *prefix area* of the *ISPF-style editor* to act on that line: `D` delete, `I` insert, `C` copy, `M` move, and the rest. Chapter 16.

link clipboard. The one-entry store holding the *bbs:// link* you last copied with **`F22`**. A white asterisk in the last column of the menu title line says it is not empty; the command `CLEAR` empties it. Chapter 9.

listing file. The file with the suffix `.list` produced by `CHECK` in BASIC or the assembler: the compilation listing, the diagnostics, the cross-reference and the statistics. Chapters 16 and 17.

local chat. The chat of this system, option `R` on the main menu. Chapter 11.

M

main menu. The first menu after logon, from which everything else is reached. Chapter 3.

marketplace. The classified advertisements of the community, option `7` on the *extended menu*. Chapter 19.

message line. The line near the foot of a screen where errors and confirmations appear, often in reverse video. Appendix C lists the messages you are most likely to see there.

moderator. A user who may delete, edit, move and colour the *topics* and *posts* of the conferences they can use, ban a user from a conference, and set a chat topic. Chapter 21.

MVS console. The operator console display, option `0` on the *extended menu*, which shows the system's messages and accepts display commands. Chapter 14.

N

note. A piece of text of your own, kept by the system under a subject. Four subjects are *reserved subjects* and have meanings to the system. Chapter 8.

O

one-liner. A single line addressed to the whole community, posted on the wall of one-liners. Chapter 10.

operator. See *administrator*.

option prompt. The `Option ===>` field at the top of a menu, where you type a menu option, a shortcut or a typed command. Chapter 3.

P

PA key. Program attention key. **`PA1`** and **`PA2`** stop a running BASIC or assembler program. Chapters 16 and 17.

post. One contribution to a *topic*. The first post of a topic is written by the person who started it. Chapter 5.

prefix area. The six columns at the left of the *ISPF-style editor* where *line commands* are typed. Chapter 16.

print to held. The preference that decides whether printing places a document in your *held output* or mails it to you as a PDF document. Chapters 12 and 13.

private chat. A chat room protected by a password, option `I` on the *extended menu*. Chapter 11.

profile. The screen holding your account information and your preferences, option `0` on either menu. Chapter 12.

PUBLIC note. The *note* whose subject is `PUBLIC`, which serves as your About Me page and is shown to anyone who looks you up. Chapter 8.

purge. To delete a *job* from *held output* (`P`), or to delete read mail in bulk (**`F9`** on the mail list). Chapters 7 and 13.

R

reserved subject. One of `PUBLIC`, `FINGER`, `SIGNATURE` and `.FORWARD`: a note subject to which the system attaches a meaning. Each user may have one note of each. Chapter 8.

rolodex. The directory of users, option `U` on the main menu. Chapter 10.

S

screen saver. The moving display that replaces an idle menu after the number of minutes set in your *profile*. Any key returns. Chapter 12.

scroll field. The `Scroll ===>` field of the *ISPF-style editor* and the *held output* viewer, holding `CSR`, `PAGE` or `HALF`, which says how far **`F7`** and **`F8`** move. Chapters 12 and 16.

SDSF. The system activity display, option `S` on the main menu or the command `SD`; also the way to your *held output*. Chapters 13 and 14.

selector field. The one-character field at the left of each line of a list, where you mark the line you want. Marking it and pressing **`ENTER`** is how lists are worked throughout the system.

shared file. A BASIC or assembler file whose name begins with a percent sign: other users may read it, only you may change it. Chapter 16.

shortcut. A menu selection typed in full: `=0` from the *extended menu* for the profile, `M;7` from the main menu for the marketplace. Chapter 3.

SIGNATURE note. The *note* whose subject is `SIGNATURE`, appended to what you are writing by **`F21`**. Chapters 6 and 8.

spam list. The list of addresses outside the system whose mail you have blocked, reached with **`F6`** on the mail list. Chapter 7.

subscription. A conference you follow, so that **`F2`** reports its new topics to you at the menu. It does not affect what you may read. Chapter 5.

summon. A short page to a user who is logged on now, valid for fifteen minutes. **`F4`** on the main menu. Chapter 3.

T

TN3270. The protocol by which a *display station* or an emulator talks to this system, in the clear or under TLS. Chapter 1.

topic. One conversation within a *conference*: a title, an author and the *posts* that make it up. Chapter 5.

TSO command line. The line-mode command line reached with option `X`, where you type `WHO`, `TIME`, `CALC`, `LOGOFF` and the rest. Chapter 15.

typed command. A function with no line on the menu, typed at the *option prompt*: `SD`, `DSLIST`, `CHECKERS`, `COMMANDS` and the others. Chapter 3.

V

virtual session. One of the three independent sessions inside your connection. **`F24`** both starts and switches them: it moves to the next one, starting it at the main menu if it is not in use yet, or restoring it as you left it. **`F23`** lists all three and goes to one by number. Chapter 4.

W

web3270. The browser-based 3270 emulator supplied with 3270BBS: a complete *display station* in a web browser, needing no software of your own. Chapter 1.

What's New. The report given by **`F2`** at either menu, of activity in your *subscriptions* and on the wall of *one-liners* since your last logon. Chapter 3.

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