Info

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TerminalOne

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TerminalOne

Terminal Emulation

TerminalOne
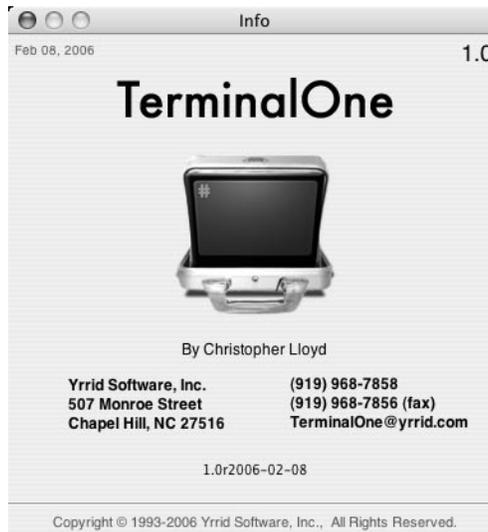
System Administrator's Guide

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Manual version 1.0, February 2006.

TerminalOne

by Christopher Lloyd

Thanks to:

Yrrid staff,

Our customers.

1   *Installation and Release Notes*

Installing TerminalOne

Click on the link to the TerminalOne **.dmg** file from the download page at the Yrrid website:

http://www.yrrid.com/Products/TerminalOne/Download/

An alert panel will appear:

Click on Continue if you wish to download TerminalOne.

After the file has downloaded, **TerminalOne.app** will appear in your *Downloads* panel. The *TerminalOne.app* icon will appear on your desktop. Double-click on the icon to launch the app. You can drag the TerminalOne icon to your *Applications* folder.

Registering TerminalOne

TerminalOne run in demo mode allowing 30 minute sessions allowing you to try out the application.

You can purchase a license for TerminalOne by clicking on:

TerminalOne -> License to bring up the License Activation window:

If you have already purchased a valid activation code you can enter it in the text field and click **Done**.

You can purchase a license for TerminalOne by clicking the _Purchase via Kagi_ button. This will bring up the _Purchase From Kagi_ panel.:
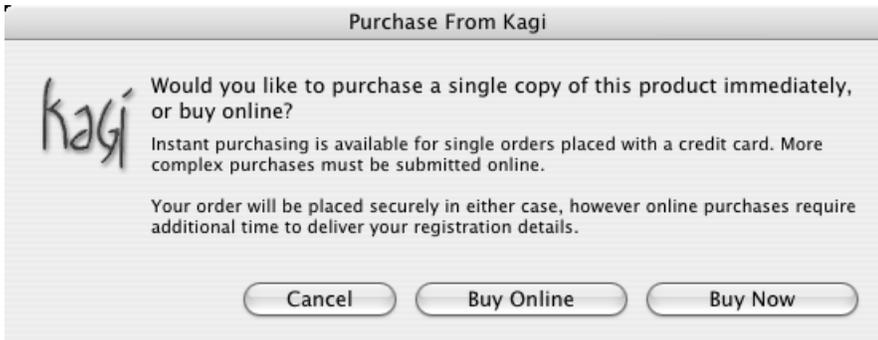
Click on the _Buy Now_ button. TerminalOne will connect securely to the Kagi website and bring up the Purchase From Kagi window with the relevant information filled in:

Enter your information and click **Purchase!**

2 About this Manual

The *TerminalOne System Administrator's Guide* can help readers configure and use TerminalOne terminal sessions. It presumes a reasonably good understanding of the *Mac OS X ®* user interface.

Although this guide does describe how TerminalOne supports attributes of specific terminal emulations, it deals mostly with the TerminalOne terminal and communications application itself. It does not detail the functional properties of the proprietary terminals; for that you must consult the appropriate terminal's reference manual.

This manual is organized as follows:

- The *Introduction* gives a brief overview of TerminalOne and its features.

- *Getting Started* walks through a simple example of how to configure and save a TerminalOne session.

- *Preferences* describes how to configure the TerminalOne user preferences.

- *Using TerminalOne* describes TerminalOne's commands to open, close, save, and control terminal sessions.

- *Configuration* details the configuration options TerminalOne supports for terminal sessions.

- *Advanced* TerminalOne *Configuration* describes advanced system administration topics.

- The appendices describe the configureable attributes supported on each of TerminalOne's emulations.

3   Introduction

TerminalOne is a VT100 (VT102) VT220 VT320 and IBM 3270 color terminal emulator for Mac OS X available as a Universal Binary.

TerminalOne supports these features:

- DEC VT320, VT220, VT102, and IBM 3270
- Fully native application written from the ground up in Cocoa
- Very fast startup and session creation times
- Proven emulations used in corporate production environments
- Accurate VT320 terminal emulator with color xterm extensions
- Accurate VT102 terminal emulator with Terminal behavior
- Supports text wrapping on resize, copy & paste
- Supports all graphics characters with any font, supports any font, fixed width or not
- Flexible scrollback, unlimited or limited by lines or memory size
- Tabbed Sessions of different sizes in one window

TerminalOne is highly configureable, easy to administer, and easy to use.

TerminalOne's additional features are:

Standard Interface

TerminalOne' object-oriented design lets you make use of many standard user interface features. You can:

- copy text and graphics to and from TerminalOne using Cut, Copy, and Paste
- use inspectors to customize attributes of the current terminal session,
- set printing parameters such as margins, black and white/color, page layout,
- print the output from the entire terminal session, a selected portion of the session, or the visible portion of the screen as Full Color, as Color or B&W on no background; or print to an attached printer (DEC VT320 only),
- configure window attributes -- titles, resizing and closing behaviors,
- resize the terminal window changing the number of rows and columns or rescaling the font,
- set the color of each terminal's foreground, background, and text attributes,
- configure scroll, drag and drop, cut and paste behavior,
- configure emulation specific parameters,
- load and store custom configurations as **.term1** files,

- autolaunch configurations on TerminalOne start-up.

Keyboard and function key support

TerminalOne provides extensive support for keyboard customization.
You can:

- map keys from the emulated terminal's keyboard onto your machine's keyboard using a graphical interface,

- remap keys to arbitrary string values or macros,

Communications

TerminalOne allows you to connect a terminal to:

- remote hosts through telnet,

- a specified shell or command,

Administration

- Users can share TerminalOne configurations. Anyone can create libraries of TerminalOne configurations which can be used at the owner's discretion.

4   Getting Started

If you've installed TerminalOne for the first time, this chapter will show you how to create a new session, change an important attribute like the emulation, set the command, and save the configuration so that it can be used later. You will also see how to map a key.

Launch TerminalOne by double-clicking on the TerminalOne icon. This should bring up a VT102 window connected to the bash shell...


```
DEC VT102 80x24

This is a demo copy of TerminalOne.
It will disconnect your session after 30 minutes.
myMacMini:~ yrrid$ ▊
```
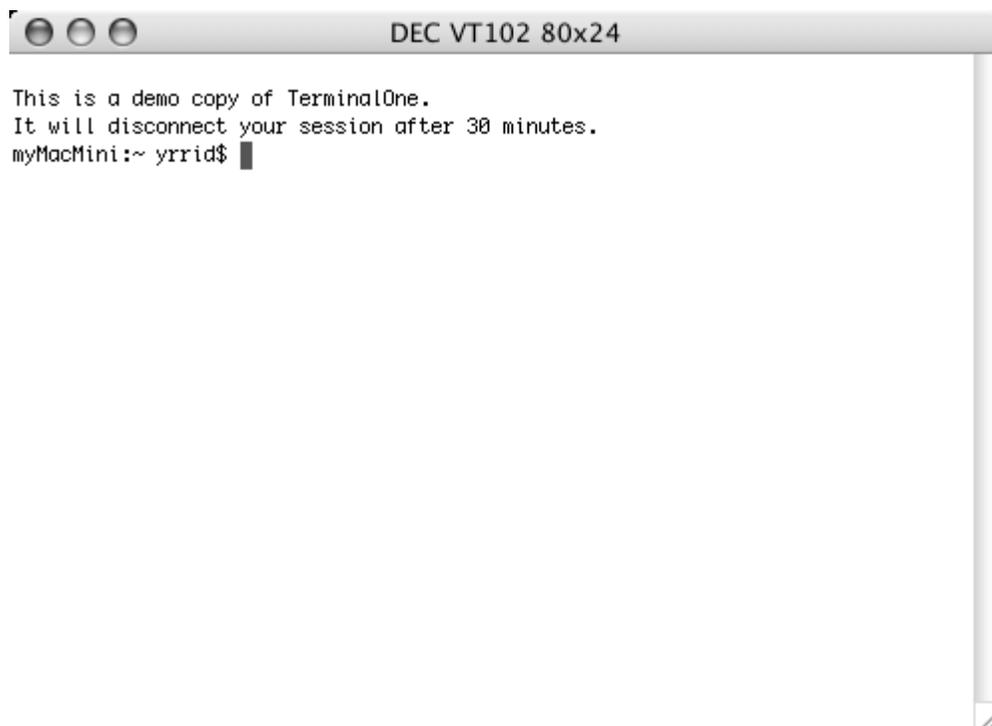
The terminal window will have the following default title:


```
DEC VT102 80x24
```

To create a new session, click on the *File -> New Session* item of the TerminalOne menu or hit *Cmd-N* on the key-board.

```
New Session          ⌘N
New Tab
Library                ▶
Open...               ⌘O

Close                 ⌘W
Save                  ⌘S
Save As...          ⇧⌘S
Save Text As...
Save Selected Text As...

Show Info             ⌘I

Send Break (Ctrl-c)
Send Reset
Send Hard Reset

Page Setup...       ⇧⌘P
Print...              ⌘P
```

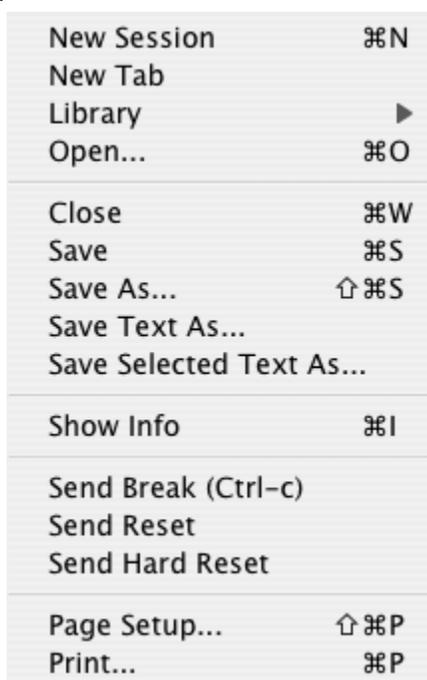A new terminal window will appear. The new terminal session is, by default, an 80 column, 24 line VT102 connected to the bash shell.

To select a different emulation or connection option, click on *File ▶ Show Info* or hit *Cmd-I* on the keyboard.

TerminalOne's *Inspector* will appear. Click on *Emulation* in the *Inspector* directory (on the left); the *Emulation Inspector* will appear with the current emulation selected:
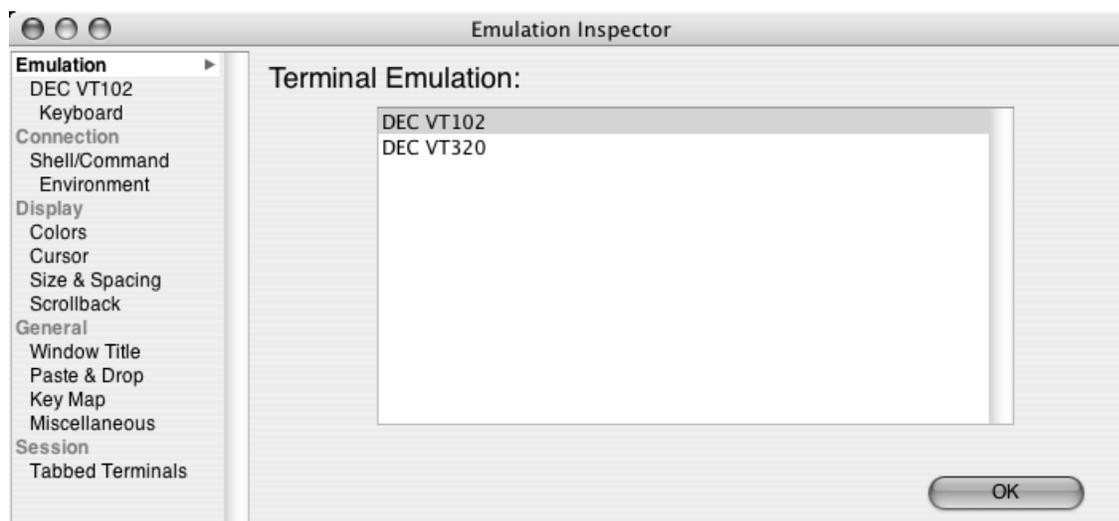
Note that these inspectors always focus on the current or key session. Right now the *Emulation Inspector* is inspecting your new VT102 session. Select the terminal emulation you want by clicking the cursor on the terminal in the right scrollview and pressing the *OK* button.

For this example, we've selected VT320. The *VT320 Inspector* should now be visible, and the current terminal session, which is also the key window, becomes the selected emulation:

```
  ⊙ ○ ⊙                    vt320 80x24

This is a demo copy of TerminalOne.
It will disconnect your session after 30 minutes.
myMacMini:~ yrrid$ █
```
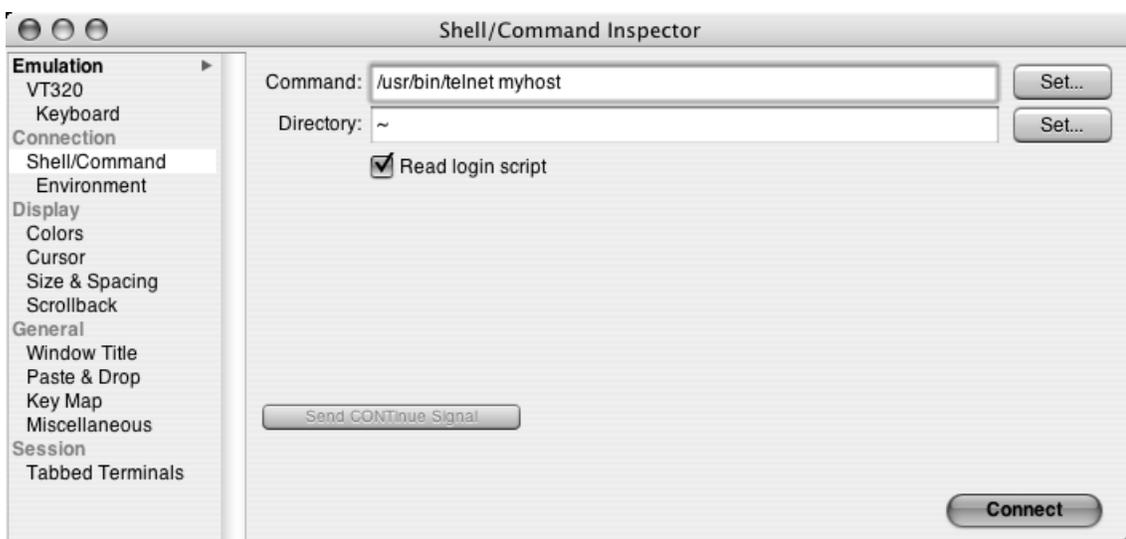
This VT320 terminal session is still connected to the default shell at the home directory. To change this, click on *Shell/Command* in the *Inspector* under *Connection* to display the *Shell/Command Inspector*.

```
  ⊖ ○ ⊖                    Shell/Command Inspector
┌──────────────────┬──────────────────────────────────────────────────┐
│ Emulation      ▶ │   Command:  /bin/bash                      Set... │
│   VT320          │                                                   │
│   Keyboard       │   Directory:  ~                            Set... │
│ Connection       │                                                   │
│   Shell/Command  │            ☑ Read login script                    │
│   Environment    │                                                   │
│ Display          │                                                   │
│   Colors         │                                                   │
│   Cursor         │                                                   │
│   Size & Spacing │                                                   │
│   Scrollback     │                                                   │
│ General          │                                                   │
│   Window Title   │                                                   │
│   Paste & Drop   │                                                   │
│   Key Map        │        ┌───────────────────────┐                  │
│   Miscellaneous  │        │  Send CONTinue Signal │                  │
│ Session          │        └───────────────────────┘                  │
│   Tabbed Terminals│                                 ┌──────────────┐ │
│                  │                                 │  Disconnect  │ │
└──────────────────┴─────────────────────────────────┴──────────────┘
```

Click *Disconnect* to make the *Command* and *Directory* fields editable. You can edit the fields directly or click on the *Set* buttons on the right to bring up a browser view. We will connect via telnet to the host: myHost. To do this enter **/usr/bin telnet myhost** in the **Command** textfield and click connect:

```
  ⊖ ○ ⊖                    Shell/Command Inspector
┌──────────────────┬──────────────────────────────────────────────────┐
│ Emulation      ▶ │   Command:  /usr/bin/telnet myhost         Set... │
│   VT320          │                                                   │
│   Keyboard       │   Directory:  ~                            Set... │
│ Connection       │            ☑ Read login script                    │
│   Shell/Command  │                                                   │
│   Environment    │                                                   │
│ Display          │                                                   │
│   Colors         │                                                   │
│   Cursor         │                                                   │
│   Size & Spacing │                                                   │
│   Scrollback     │                                                   │
│ General          │                                                   │
│   Window Title   │                                                   │
│   Paste & Drop   │                                                   │
│   Key Map        │        ┌───────────────────────┐                  │
│   Miscellaneous  │        │  Send CONTinue Signal │                  │
│ Session          │        └───────────────────────┘                  │
│   Tabbed Terminals│                                 ┌──────────────┐ │
│                  │                                 │   Connect    │ │
└──────────────────┴─────────────────────────────────┴──────────────┘
```

TerminalOne will try to connect via telnet to the host mentioned (a VT320 legacy system screen is shown):
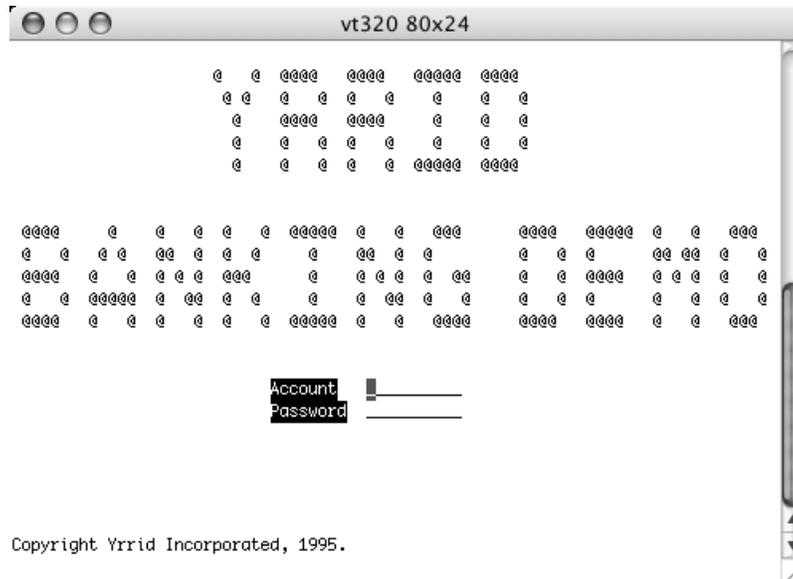

To set the Environment Variable, disconnect the session and select *Environment* to bring up the *Environment Inspector.* Select a variable in the *Environment Variables* textbox. The value is shown below in the *Selected variable value:* textbox. You can edit these directly. To add or remove a variable, click the *Add* or *Remove* buttons.:
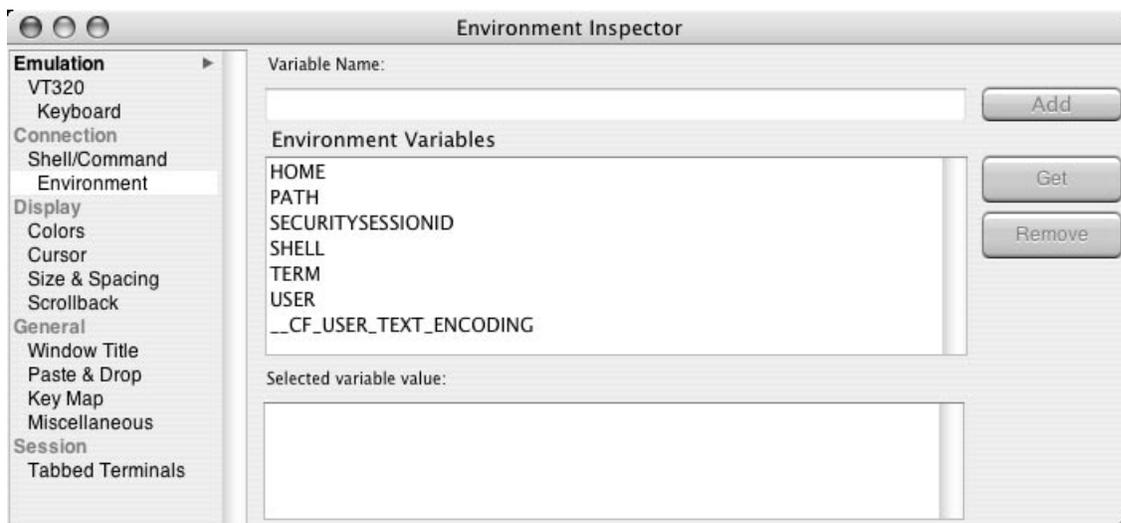
Go back to the *Shell/Command Inspector* and click the *Connect* button.

Before you save this terminal session you will probably want to add a name to the window title to identify it. To do this click on *Window Title* under *General* to display the *Window Title Inspector*. Click in the *Main* and *Mini* text fields and add the name to the window titles.

The *Window Title Inspector* will now look something like this:
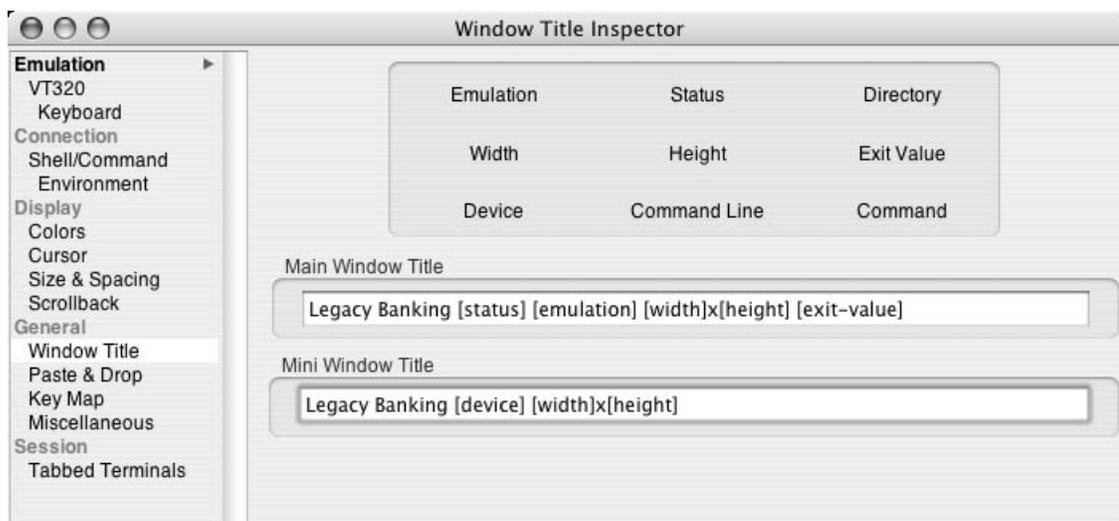
The main window will look something like this:

The miniaturized the window looks like this:

When you move your mouse over this miniaturized window, the Mini Window Title will be displayed.

To save this configuration for later use, click *File ▸ Save* to bring up the *Save* panel. Use this browser to find the directory to save the configuration. Unless you're grouping configurations in special directories, the default directory *~/Library/TerminalOne* is as good a place as any (~ indicates your home directory). Enter the configuration name in the *Save As* text field and press the *Save* button.
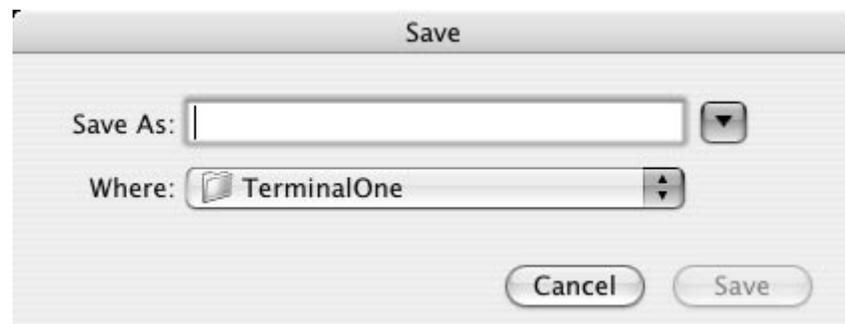
In order to open a saved configuration in the directory ~/Library/TerminalOne click on
File ▸ Library ▸ <configuration name>. The saved configurations will appear in the library menu:

```
New Session          ⌘N
New Tab
Library                ▶
Open...               ⌘O

Close                 ⌘W
Save                  ⌘S
Save As...          ⇧⌘S
Save Text As...
Save Selected Text As...

Show Info             ⌘I

Send Break (Ctrl-c)
Send Reset
Send Hard Reset

Page Setup...       ⇧⌘P
Print...              ⌘P
```

To open a terminal session with attributes of the saved configuration, click on the <configuration name>.

You can also open a configuration by clicking on *File ▸ Open...* and selecting a **.term1** file or by double-clicking on a **.term1** file in the Finder.

Mapping a Key

When using TerminalOne you may want to map certain keys. We will map the function key, PF1 to the 1 key on the numeric keypad. Select _Key Map_ on the left hand side under _General_ to bring up the **Key Map Inspector**. Select the **Keypress** field and press the 1 key on the numeric keypad on the right hand side of your keyboard. TerminalOne will display the displayed value and the default key mapping (\<key:kp1>). Enter **\<key:pf1>** in the **Maps To:** textfield.
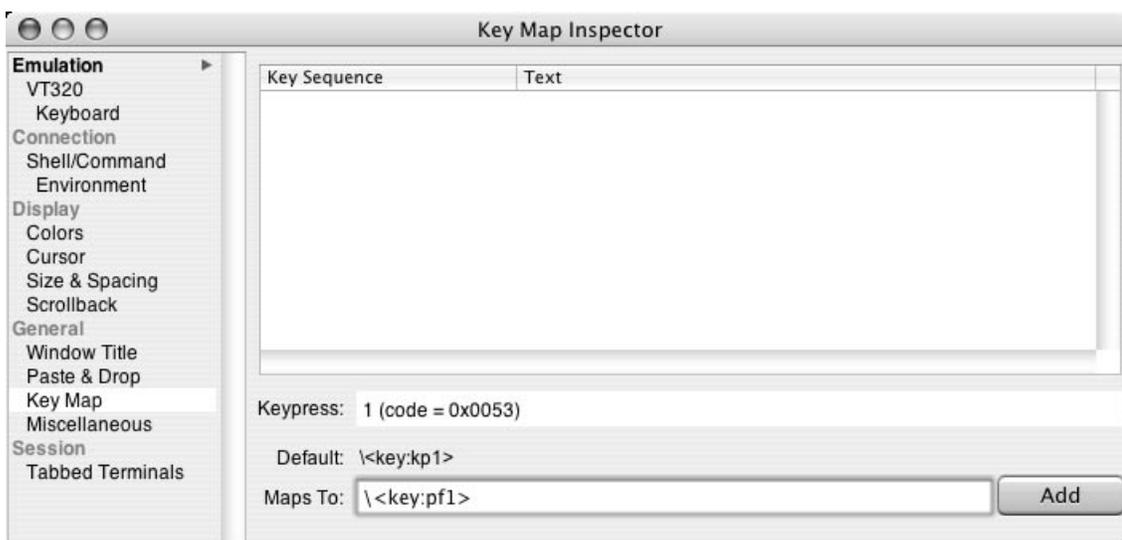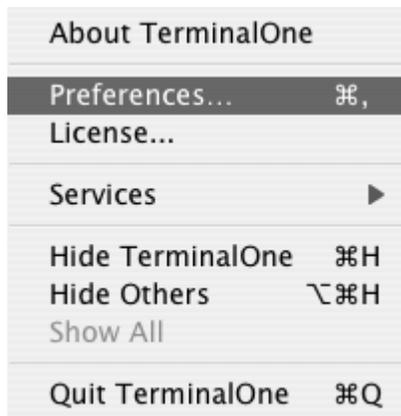

Click **Add** to map the key. The list of re-mapped keys will appear on the listbox above.
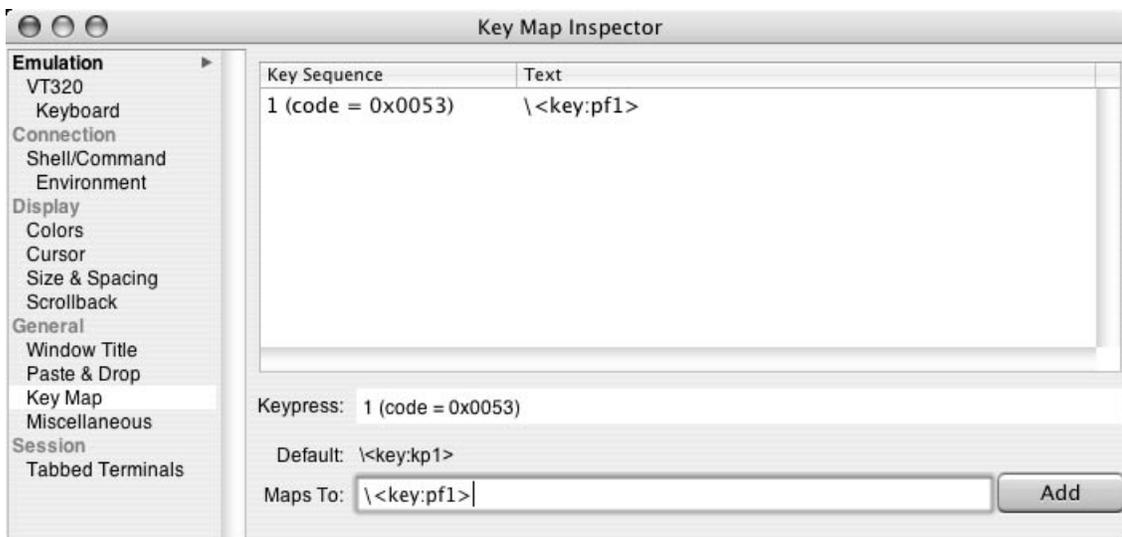
To reset to the key's default mapping, select it from the listbox, clear out the Maps To: textfield and hit return.

5   *Preferences*

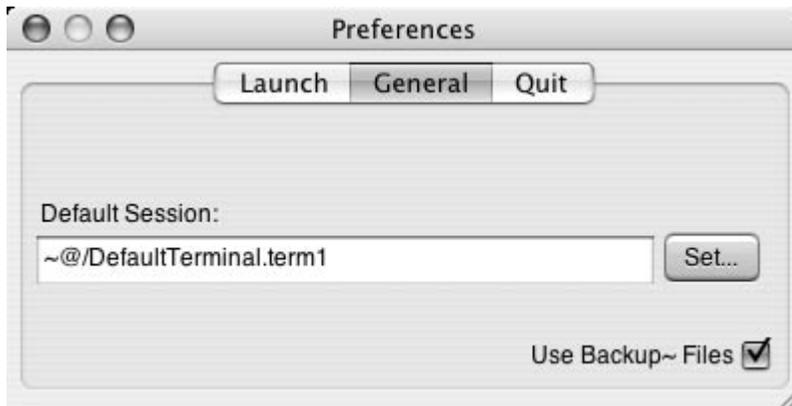| About TerminalOne	
Preferences...	⌘,
License...	
Services	▶
Hide TerminalOne	⌘H
Hide Others	⌥⌘H
Show All	
Quit TerminalOne	⌘Q

TerminalOne ▸ Preferences... allows you to change TerminalOne's general behavior for your account. TerminalOne stores these preferences in each user's defaults database. You can specify, for example, what sessions TerminalOne will open when you launch it, what session TerminalOne will open for the *File ▸ New Session* command, and how TerminalOne responds to the *Quit* command.

Launch Preferences
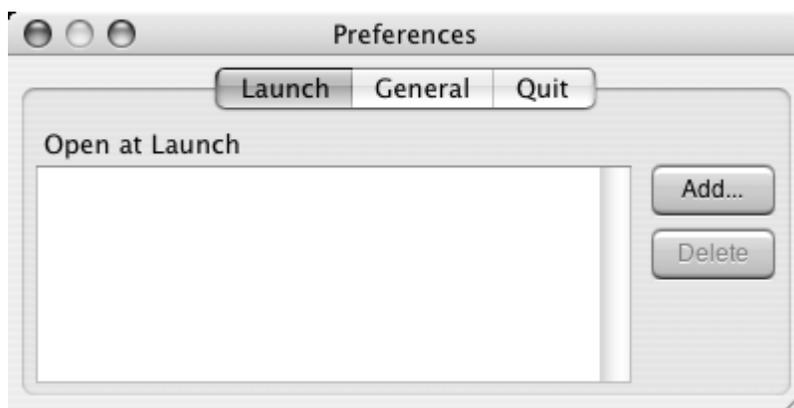
When you launch TerminalOne, it opens a VT102 session connected to the bash shell. If you click the *Add...* button, an *Open at Launch* panel will appear. Use this directory browser to select the **.term1** files that TerminalOne will open when you launch it. Note that if you've just installed TerminalOne for the first time, the only configuration you have is the default configuration, **~@/DefaultTerminal.term1** (**~@** indicates the TerminalOne.app directory of the currently executing TerminalOne application). The chapter *Getting Started* gives an introductory example of how to configure a session; the chapter *Configuration* details the non-emulation-specific configuration options.

General Preferences

General Preferences allows you to change the default session TerminalOne opens when you use the *File ▸ New Session* command. The default session, **~@\DefaultTerminal.term1**, is a VT102 (80 columns by 24 lines) terminal connected to the bash shell.
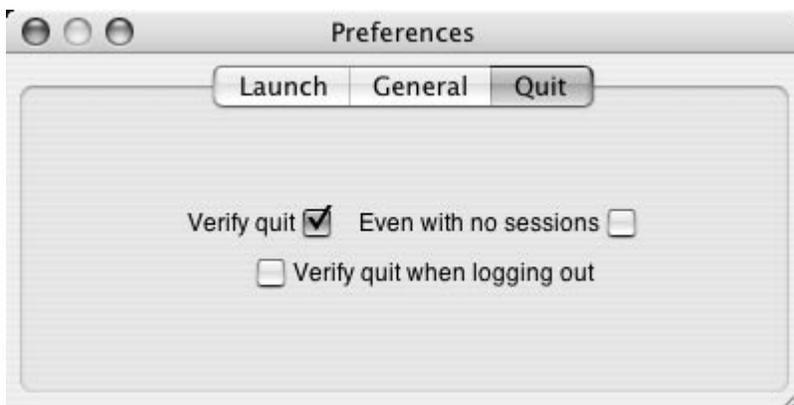
Default Session

Enter the pathname of the **.term1** file you want as the default session. Clicking on the *Set ...* button brings up an *Open* panel. You can use this directory browser to select a *Default Session* **.term1** file.

Use Backup~ Files

If you check the *Use Backup~ Files* box, then whenever you save a configuration, TerminalOne will back up the previous **.term1** configuration file. For example, if you open the **.term1** file **just-the-vax.term1**, change its attributes and save it, then TerminalOne saves the previous configuration in the file **just-the-vax.term1~**.

Quit Preferences

If you issue the quit command and still have sessions open, TerminalOne will, by default, prompt you with the following *Alert* panel:

If you want a similar *Alert* panel even when there are no open sessions, then check the *Even with no sessions* box. Now when click on *TerminalOne -> Quit TerminalOne* you will see the *Really Quit?* panel. If you press the *Cancel* button, TerminalOne will still remain running. To open a new session, you must click *File -> New* or hit **Cmd-N**. Note: You much first make sure that TerminalOne is the active application. You can do this by clicking on a TerminalOne inspector window, or by clicking on the TerminalOne icon on the dock.

If you want a similar *Alert* panel when logging out, then check the *Verify quit when logging out* box. If you do not want any *Alert* panels, then uncheck all boxes.

6 Using TerminalOne

This chapter describes TerminalOne's standard   commands, how to initiate and save sessions, how to control the state of a session, and describes the behavior of mini windows.

Standard commands

TerminalOne supports the following standard commands:

- <u>File</u>
- <u>Edit</u>
- <u>Scrollback</u>
- <u>Font</u>
- <u>Window</u>
- <u>Help</u>

File

```
New Session          ⌘N
New Tab
Library              ▶
Open...              ⌘O

Close                ⌘W
Save                 ⌘S
Save As...          ⇧⌘S
Save Text As...
Save Selected Text As...

Show Info            ⌘I

Send Break (Ctrl-c)
Send Reset
Send Hard Reset

Page Setup...       ⇧⌘P
Print...             ⌘P
```

Initiating sessions

New Session

New opens a new session using the *Default Session* configuration specified in the *Info ▸ Preferences ▸ General* panel.

NOTE: If you use *New* to create a new default session, alter the session's configuration and *Save*, then TerminalOne will bring up the *Save As* panel which you can use to specify the name of the new configuration.

New Tab

New Tab opens a new tabbed session using the *Default Session* configuration specified in the *Info ▸ Preferences ▸ General* panel.


Library

Selecting *Library* brings up a menu of configuration files. Click on a *Library* menu item to start a session. To access TerminalOne sessions through the *Library* menu item, the corresponding **.term1** files should be placed in **~/Library/TerminalOne**. You can change the directory location of the *TerminalLibrary* by editing the **TerminalOne.defaults** file.

NOTE: If you use _Library_ to open a session, alter its configuration and _Save_, then TerminalOne will not automatically overwrite the **.term1** file you opened. It will, instead, bring up the _Save As_ panel which you can use to specify the name of the new configuration.

Open

Open allows you to create a session using any TerminalOne configuration file you can read. Clicking on _Open_ brings up an _Open_ panel. Use the _Open_ panel's browser to locate the TerminalOne file you want to open:
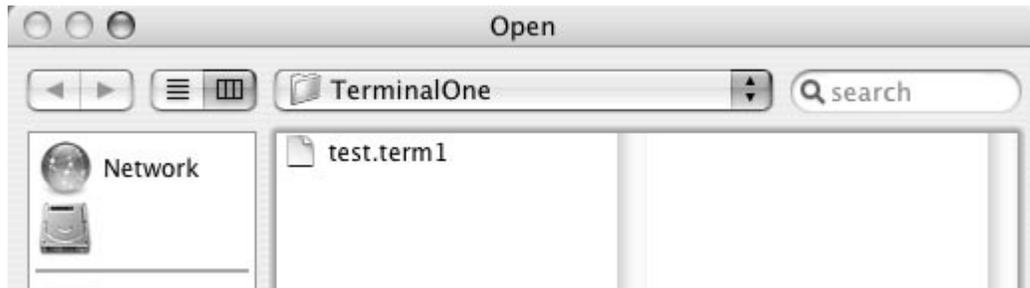
Saving session configurations

Close

Close terminates the current session. If you checked the _Confirm window close_ box in
File ▸ _Show Info_ ▸ _Inspector_ ▸ _General_ ▸ _Miscellaneous_ and close a session, then TerminalOne will bring up an _Alert_ panel to confirm that you really want to close the session. Clicking _Close_ is equivalent to clicking the session window's close button.

Save

Save saves the session configuration in the currently opened TerminalOne file. TerminalOne will automatically save the configuration if you already _Open_ed the session or if you used the _Save_ panel to save the configuration. If TerminalOne cannot automatically save the configuration, it will bring up the _Save_ panel so that you can specify the **.term1** file name.

Save As

Save Text As brings up the _Save_ panel so that you can save the session configuration under a different name. Once you have used the _Save_ panel to save the configuration as a **.term1** file, you can change the session configuration and _Save_, and TerminalOne will automatically overwrite the **.term1** file.

Save Text As

Save Text As brings up the _Save_ panel so that you can save the text of the session to a **TextEdit** file.

Save Selected Text As

Save Selected Text As brings up the _Save_ panel to save the selected text of the session to a **TextEdit** file.

Show Info

Show Info brings up the Terminal *Inspector* panel with the last viewed inspector selected and shown. You can select from the list on the left-hand side to bring up the appropriate inspector.

Send Break

Send Break sends the "break" command.

Send Reset

Send Reset sends the "reset" command.

Send Hard Reset

Send Hard Reset sends the "hard reset" command.

Page Setup

Page Setup brings up the *Page Setup* panel.

Print

Print brings up the *Print* panel. Click on the *Copies & Pages* dropdown box and select **TerminalOne** for the appropriate options.

Edit

```
Cut                    ⌘X
Copy                   ⌘C
Paste                  ⌘V
Paste Selection        ⇧⌘V
Paste Escaped Text     ^⌘V
Select All             ⌘A

Find                   ▶

Special Characters...  ⌥⌘T
```

The *Edit* menu contain the standard commands and some TerminalOne specific options.

Cut, Copy, Paste, Select All

TerminalOne supports the standard *Cut, Copy, Paste*, and *Select All* commands.

Paste Selection

Paste Selection pastes the selected text from the session at the current prompt.

Paste Escaped Text

Paste Escaped Text pastes the escaped selected text at the current prompt.

Find

Find brings up the *Find* panel.

Special Characters

Special Characters brings up the *Character Palette*.

Scrollback

Scroll To Top	⌘↖
Scroll To Bottom	⌘↘
Page Up	⌘⇞
Page Down	⌘⇟
Line Up	⌘↑
Line Down	⌘↓
Clear Scrollback	⌘K

Scroll to Top scrolls the terminal session back to the top.

Scroll to Bottom scrolls the terminal session to the bottom.

Page Up scrolls up one page.

Page Down scrolls down one page.

Line Up scrolls up one line.

Line Down scrolls down one line.

Font   6-7

Show Fonts	⌘T
Bigger	⌘+
Smaller	⌘−
Show Colors	⇧⌘C

Show Fonts brings up the _Font_ panel.

Bigger increases the font size.

Smaller decreases the font size.

Show Colors brings up the _Color_ panel.

Windows

```
Minimize          ⌘M
Zoom

Next Terminal     ⌘`
Previous Terminal ⌘~

Bring All to Front

  DEC VT102 80x24
✓ vt320 80x24
```

The *Windows* menu allows you to arrange TerminalOne windows that are open. The list of open TerminalOne windows is at the bottom of the menu with the key window checked. You can select a window from that list to make it the key window.

Minimize minimizes the key TerminalOne window.

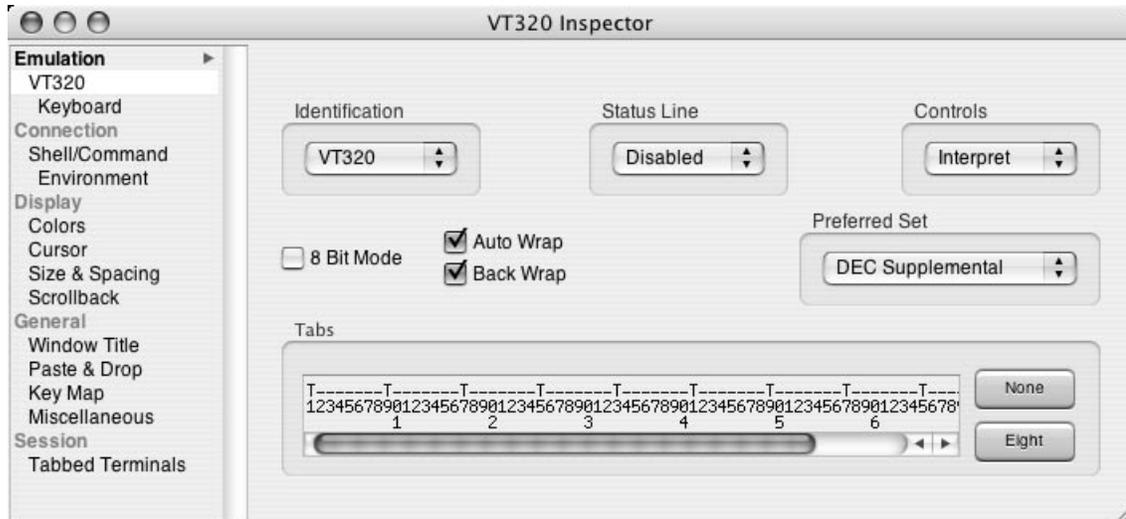*Zoom* expands the key TerminalOne window to fill the screen area.

Next Terminal make the next terminal the key window.

Previous Terminal make the previous terminal the key window.

Bring all to Front brings all the TerminalOne windows to the front.

Appendix A   DEC VT320

Emulation Attributes

Identification

Drag and release the *Identification* option list to select the terminal identification. The VT320 emulation can identify itself as either a VT320, VT220, VT102, VT101, or VT100.

Status Line

- *Disabled*   disables the status line. (Restores the original number of rows.)

- *Empty*   enables the bottom row of the screen as an empty status line. This reserves an unwritable status line.

- *Indicator*   enables the bottom row of the screen as a status line displaying the cursor position and printer status.

- *Writable*   enables the bottom row of the screen as a writable status line.

Enabling a status line causes the screen to become shorter by one row.

Controls

- *Interpret*   causes the terminal to interpret unprintable characters normally.

- *Display*   causes the terminal to display unprintable characters as printable strings, e.g. the CR character is displayed as **<CR>**.

Preferred Set

- *DEC Supplemental*   causes the terminal to map the keycodes in the range 128-255 to the *DEC Supplemental* character set.

- *ISO Latin 1*   causes the terminal to map the keycodes in the range 128-255 to the *ISO Latin 1* character set.

Auto Wrap

Selecting *Auto Wrap* causes text entered past the last column to wrap onto the next row.

If you don't check *Auto Wrap*, then, when text is displayed past the last column of the current row, the cursor will stop at the last column; each new character will overwrite the last one.

Back Wrap

If you check the *Back Wrap* option and use the Delete key to delete text that has wrapped over multiple lines, TerminalOne will backtrack the cursor over the wrapped line. If you do not check *Back Wrap*, then the Delete key will still delete text, but the cursor will stop at the first column of the current line.

Note that *Back Wrap* only affects the behavior of backspace (BS) keycode.

8 Bit Mode

Check the *8 Bit Mode* box to allow the session to display and transmit multinational characters in the upper 128 characters.

Tabs

- *None*   removes all tabs.
- *Eight*   puts a tab every eight columns.

You can also insert a tab by positioning the cursor in the tab ruler and clicking. To delete a tab, position the cursor over it and click.

Keyboard
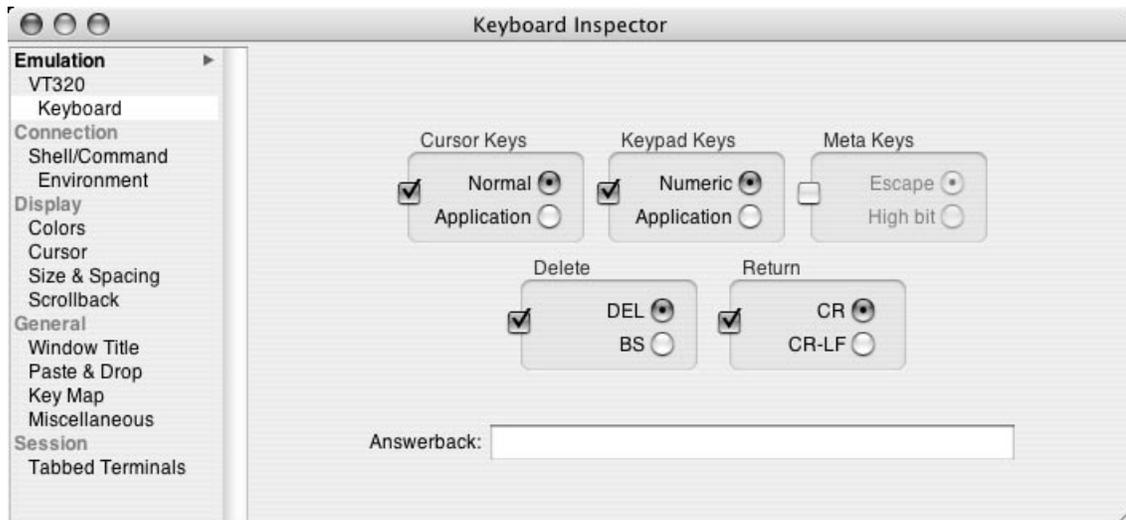
Select *Emulation ▶ Keyboard* in the Inspector directory to display the *Keyboard Inspector*. This inspector allows you to change the mapping of the Cursor keys, Keypad keys, the Delete, Return, and Meta Keys, and to edit the answerback string.

Cursor Keys

Unchecking the *Cursor Keys* box passes the cursor keycodes on to the application *without* translating to a VT series escape sequence.

Checking the *Cursor Keys* box enables one of the following options:

• *Normal*   converts the cursor keycodes to the VT series "normal" escape sequence.

• *Application*   converts the cursor keycodes to the VT series "application" escape sequence.

Keypad Keys

Unchecking the *Keypad Keys* box passes the keypad keycodes on to the application without translating to a VT series escape sequence.

Checking the *Keypad Keys* box enables one of the following options:

• *Numeric*   converts the keypad keycodes to the VT series "numeric" representation.

• *Application*   converts the keypad keycodes to the VT series "application" escape sequence.

Meta Keys

Unchecking the *Meta Keys* box makes the Alternate key function normally.

Checking the *Meta Keys* box enables one of the following options:

- *Escape*   causes the Alternate key to function as the EMACS meta key. If you hold down the Alternate key and press, for example, the **a** key, TerminalOne will send the ESC (escape) character (0x1B) and then the **a** character (0x61).

- *High Bit*   causes the Alternate key to set the high bit in the character code. If you hold down the Alternate key and press, for example, the **a** key, TerminalOne will send the code 0xE1.

Delete

Unchecking the *Delete* box maps the Delete key to its value in the Keyboard mapping.

Checking the *Delete* box maps the Delete key to:

- *DEL*   the DEL (delete) character (0x7F).

- *BS*   the BS (backspace) character (0x08).

Return

Unchecking the *Return* box maps the Return key to its value in the Keyboard mapping.

Checking the *Return* box maps the Return key to:

- *CR*   the CR (carriage return) character (0x0D).

- *CR-LF*   both the CR and the LF (line feed) characters (0x0D and 0x0A).

Answerback

The DEC VT series terminals send the answerback string back to the host in response to the host sending the ^E (control-E) command.

Click in the *Answerback* text field to add or edit the answerback string.

Key Macros

NOTE: You can also use macros defined on other VT series key palettes.

VT320 Function

The following key macros are defined in the *VT320 Function* key palette (*Tools* ▸ *Key Map*):

f6, f7, f8, f9, f10, f11, f12, f13, f14, f15, f16, f17, f18, f19, f20

**shift-f6, shift-f7, shift-f8, shift-f9, shift-f10, shift-f11, shift-f12,
shift-f13, shift-f14, shift-f15, shift-f16, shift-f17, shift-f18, shift-f19, shift-f20**

**find
insert
remove
select
prev
next**

Additionally the following key macros are defined:

f1, f2, f3, f4, f5

shift-f1, shift-f2, shift-f3, shift-f4, shift-f5

**left
up
right
down**

pf1, pf2, pf3, pf4

**kp0, kp1, kp2, kp3, kp4, kp5, kp6, kp7, kp8, kp9
kp-minus, kp-comma, kp-enter, kp-period, kp-plus**

**help
do
print-screen**

References

The following manuals on the VT series are available from DEC:

VT220 Owner's Manual

VT220 Programmer's Manual

VT320 Owner's Manual

VT320 Programmer's Manual