



*System
Administrator Kit*

*Introducing
RUMBA 8.0*



Contents

- Chapter 1 RUMBA Features 1**
 - RUMBA features 1
 - Enhanced Security through SSL/SSH 2
 - Host sessions 2
 - RUMBA Printer. 3
 - Copy and Paste 3
 - File transfers 3
 - User Interfaces 4
 - Screen displays 5
 - International keyboards 5
 - Supported VT features 5
 - Supported HP features 6
 - Automating Your Work. 6
 - Configuration files 8
 - RUMBA folders 8
- Chapter 2 Using RUMBA Menus, Toolbars, and Status Bar 9**
 - Customizing menus and toolbars 9
 - Toolbar command summary 10
 - RUMBA: All Editions 11
 - RUMBA AS/400 and Mainframe Edition 11
 - RUMBA HP/UNIX Edition - HP 14
 - RUMBA HP/UNIX Edition - UNIX 15
 - Status bar 16
 - AS/400 status bar 16
 - HP status bar 17
 - Mainframe status bar 18
 - UNIX status bar 18
- Chapter 3 RUMBA Session Profiles 21**
 - About Session Profiles 22
 - Supplemental and interface configuration files 23
 - Migrating Session Profiles from previous Rumba versions 23
- Chapter 4 RUMBA Desktop Profiles 25**
 - About Desktop Profiles 25
 - Session Profile locations 25

Appendix A	HP Keyboard Key Codes	27
	Keys mapped to default settings	27
	Keys used to send 7-bit control characters	28
	Codes sent by editing keys	29
	Codes sent by arrow keys	30
	Codes sent by numeric keypad keys	31
Appendix B	VT Keyboard Key Codes	33
	Codes sent by top-row function keys	34
	Keys used to send 7-bit control characters	35
	Codes sent by editing keys	36
	Codes sent by arrow keys	37
	Codes sent by numeric keypad keys	37
Index	39

1 RUMBA Features

RUMBA software, the PC-to-host connectivity system, gives you easy, complete, and transparent access to host applications. PC users working in the Microsoft Windows environment and using RUMBA software can communicate with a number of hosts and host applications.

► Note

Which hosts you can connect to depends on which edition of RUMBA you have installed. For example, RUMBA AS/400 Edition enables you to connect to AS/400 hosts.

RUMBA software combines the convenience, ease of use, and versatility of PCs with the power of your existing hosts and host applications.

This guide provides an overview of the core capabilities of RUMBA. You can find more specific information in other related guides (a complete list of guides can be found in the *Using this Kit* guide).

RUMBA features

RUMBA software takes full advantage of the Windows graphical user interface and tabbed browsing capabilities. Together, these features help improve user efficiency and simplify the sharing and manipulation of data among multiple PC and host platforms.

Using RUMBA software, you can:

- Access multiple host sessions simultaneously from the same window
- Switch system keyboards as you do in Windows (ALT+SHIFT)
- Copy and paste data between tabs or windows
- Capture screen data to a file
- Copy information to the Windows Clipboard (including, in RUMBA Mainframe Edition, the ability to copy only unprotected fields)
- RUMBA AS/400 Edition: Use long passwords to provide an additional authentication mechanism with stricter encryption and tighter security
- RUMBA UNIX Edition: Use the History feature to maintain a larger list of recently performed operations and scroll back to them easily

Enhanced Security through SSL/SSH

With the inclusion of both SSL 3.0 (Secure Sockets Layer) and SSH (Secure Shell) support users can securely access applications and transfer data between their desktops and host systems, encrypting the session data stream to a host capable of supporting these protocols.

For more information

Help topic: Connecting to a host > Connecting to an HP or UNIX host > Configuring the Telnet interface

Host sessions

RUMBA software runs on a single-user PC connected to a host, or on a local area network (LAN) with a gateway connection to a host. RUMBA Mainframe Edition software can also connect to a host using multiple Physical Unit IDs (PUIDs) with a Token Ring or Ethernet[®] connection. From a single window, you can run multiple host sessions using different connection types.

You can also retrieve data from one or more hosts and transfer it to PC applications or print the data.

RUMBA Printer

RUMBA AS/400 and Mainframe Editions support a wide range of printer features, including the ability to:

- Save and print host screens
- Print to a disk
- Route screen output to a LAN print server for shared printing
- Use international character sets

Copy and Paste

RUMBA software provides full interoperability between your host applications and other Windows applications. As well as normal copy and paste operations, you can use the Paste Link facility to automatically update the data in a Windows application whenever both it and a RUMBA session to the host are open.

File transfers

The file transfer feature copies files between your PC and the host. RUMBA software allows you to navigate through the host file system, listing host and PC directories to simplify file selection and transfer. When you select the RUMBA Initiated File Transfer feature, RUMBA software automatically starts the file transfer program on the host and sends or receives the file.

For more information

Help section: Transferring files

AS/400 File Transfer

There are two ways to run file transfers from an AS/400 Display session:

- **AS/400 File Transfer.** This method sends data between the host and your PC. If the AS/400 host is not in passthrough mode, the Send and

Receive commands on the Transfer menu will open the AS/400 File Transfer window.

- **Mainframe Passthrough.** This method uses the AS/400 as an emulator to transfer files to and from a mainframe host. You must first connect RUMBA to the AS/400, then run the emulator program on the AS/400 to connect to the mainframe. RUMBA software detects the passthrough state of the AS/400, so you can use the Send and Receive commands on the Transfer menu to transfer files between the mainframe host and your PC.

Mainframe File Transfer

The file transfer feature copies files between your PC and the mainframe. The Send and Receive commands on the Home menu (the Transfer menu if using Rumba's Classic interface) open a setup window where you specify the file type, transfer protocol, and host environment for the file transfer. You can also choose to have RUMBA software initiate the file transfer protocol. The mainframe file transfer feature works transparently with SimXfer and most IBM host operating systems, including CICS, TSO, and VM/CMS.

The mainframe file transfer also provides abundant functionality such as support for ASCII or binary transfers, Write Structured Field or Buffered data streams, EBCDIC-to-ASCII translation, and data compression. RUMBA software also supports DOS-based, batch, and drag-and-drop file transfer features.

User Interfaces

This version of RUMBA provides two different versions of the user interface. You can switch between these at any time according to your personal preferences.

- **Ribbon.** Originally introduced by Microsoft Office 2007, this interface organizes commands into a 'ribbon' across the top of the application window. The commands shown change according to the tab that has been selected. This makes application features easier to find and quicker to use.
- **Classic.** An interface similar to that used in previous versions of RUMBA, for users experienced with older versions of RUMBA.

Screen displays

RUMBA software takes full advantage of the GUI capabilities of Windows to offer these features:

- Support of alternate screen sizes, adjusting the host application to fit within the window
- Simultaneous display of applications in a variety of screen sizes without reconfiguring your PC software or modifying the host application
- Customization of screen color schemes for existing host applications

► Note

RUMBA Mainframe Edition supports alternate screen sizes for IBM models 2, 3, 4, and 5

International keyboards

RUMBA software supports international PC and host keyboards, such as French, German, Norwegian, Swedish, Danish, Spanish, and Italian.

RUMBA software supports most types of PC keyboards (for example, the PC, AT, and Enhanced 101- and 102-Key). If you do not find your keyboard on the supported list, contact Micro Focus technical support.

You must install the appropriate keyboard driver (usually supplied with the keyboard or an international version of Windows) using the Windows Setup option.

Supported VT features

RUMBA software supports configuration of VT features and options through the keyboard, tool bar, and menus. Features available to you when using a VT terminal and keyboard are available from your PC using RUMBA software. See [Appendix B: VT Keyboard Key Codes](#) for a complete listing.

Supported terminals

RUMBA software emulates the following VT types:

- VT52
- VT100
- VT101
- VT125
- VT220
- VT240
- VT241
- VT320
- VT330
- VT340
- VT420 (paging available; default if VT340 not installed)
- 401x (Tektronix graphics, includes 4010/44014; automatic font adjustments occur when entering this mode)
- BBS ANSI
- SCO ANSI
- WYSE 50/60
-

You can select and configure the terminal you want to emulate.

Supported HP features

RUMBA software supports configuration of HP features and options through the keyboard, tool bar, and menus. Features available to you when using an HP terminal and keyboard are available from your PC using RUMBA software.

Supported terminals

RUMBA software emulates the following terminal types:

- HP70092
- HP70094
- HP70096
- HP70098
- HP2392A
- HP2394A

You can select and configure the terminal you want to emulate.

Automating Your Work

RUMBA software provides several powerful tools for automating host communications tasks.

Macros

RUMBA Macros are used to automate simple tasks such as logging on, copying and pasting text between RUMBA Display windows and applications such as Microsoft Excel, or sending a sequence of commands to the host. You can configure and use RUMBA software macros in a variety of ways, including:

- Hotspots
- Auto macros

Hotspots

A hotspot is special on-screen text associated with a macro, which lets you perform host functions and run macros using point-and-click mouse selections, simplifying the use of typical cumbersome key sequences. You can use the RUMBA software default Hotspots or define your own.

Auto macros

You can save a macro as a connect or disconnect macro: a macro that automatically performs a task such as logging on or off each time you open or close the session profile in which it was created.

Scripts

The separate RUMBA Script Editor application provides more complex and powerful automation options than the Macro Editor. You can use scripts to automatically reconfigure the user interface, perform random access file operations, automate tasks, modify functionality, and handle incoming events.

Where provided, the RUMBA Script Editor can be installed from your RUMBA CD.

For more information

Help section: Simplifying your work.

Configuration files

User configuration files (profiles) are stored in the My Documents folder (or the Personal folder in Windows Vista), while configuration interfaces are stored in the Application Data folder.

For more information

Chapter 3: RUMBA Session Profiles

Installation Guide: Appendices on RUMBA file locations

RUMBA folders

From Start > Programs > RUMBA you can access your RUMBA programs, including RUMBA Administrative Tools folder. Exactly what programs are available depends on which components you installed.

The RUMBA Administrative Tools folder contains tools for system administrators, such as:

- APPC Configuration
- HSP Client Configuration
- RUMBA AS400 Communications
- RUMBA Communication Monitor
- RUMBA Engine
- RUMBA Trace
- Submit Remote Command

2 Using RUMBA Menus, Toolbars, and Status Bar

You can use RUMBA software's commands, either from the Classic or the Ribbon interface, to perform most of your host tasks. The status bar provides you with information about RUMBA software and the state of the host.

You can streamline your work environment by customizing your RUMBA menus and toolbar. For example, you can add icons to launch external applications, or remove menu commands and toolbar buttons that you do not use. Currently, this facility is only available for the Classic interface.

For more information

Help section: Introduction > Working with toolbars and menus.

Customizing menus and toolbars

To customize the commands available within a profile:

1. Open the RUMBA display or printer session containing the menus that you want to change.
2. Choose the Toolbars option from the View menu.

The Customize dialog box opens.

3. Use the Toolbars tab to create and rearrange custom toolbars with the commands you use most often. Use the Commands tab to add commands to the standard toolbar or to change the availability of commands within the interface.

Note

If you make the View > Toolbars command unavailable, you will not be able to make further changes.

Toolbar command summary

The standard RUMBA toolbar shows icons that provide quick access to frequently used functions. You can add commands to this toolbar, or create new toolbars to meet the needs of specific tasks.

The following tables list the default toolbar buttons for RUMBA.

RUMBA: All Editions













	Description	Action
	New	Opens a new, untitled RUMBA session with default settings.
	Open	Opens an existing Session Profile.
	Save	Saves a new or changed Session Profile.
	Connect / Disconnect	Establishes or breaks a link between the current RUMBA window and the host.
	Show/Hide Hotspots	Shows/hides all enabled Hotspots.
	Help	Displays the online help.

Table 2-1 RUMBA standard toolbar icons

RUMBA AS/400 and Mainframe Edition

Button	Description	Action
	Print Screen	Prints the active RUMBA screen.
	Cut	Removes the selected text and places it on the Clipboard.
	Copy	Copies the selected text to the Clipboard.
	Paste	Places the Clipboard contents in the current RUMBA window at the cursor location.
	Undo	Cancels the last edit function in the current RUMBA window.
	Send	Opens a dialog box where you can specify options for transferring files from the PC to the host.















Button	Description	Action
	Receive	Opens a dialog box where you can specify options for transferring files from the host to the PC.
	Batch File Transfer	Opens a dialog box where you can specify options for sending or receiving a group of files to or from the host.
	Keyboard Settings	Opens a dialog box where you can view or change the keyboard configuration.
	Color Selection	Paints window text and background with selected colors.
	Macro Record	Records keystrokes to save as a macro file.
	Macro Run	Runs a prerecorded macro.
	Script Play	Plays a script that has previously been created in the separate Script Editor application.
	Script Record	Records a script (available only if the Script Editor has been installed).
	Script Pause	Pauses the running of a script.

Table 2-2 RUMBA toolbar icons for AS/400 and Mainframe Display

Button	Description	Action
	Print Preview	Toggles whether or not a preview of the printed file is displayed before printing.
	Page Setup	Sets print properties such as layout and destination printer or file.
	Character Translation	Sets how characters are mapped between host and printer.
	Font Mapping	Sets how host character formatting appears in the printed file.
	Paste	Places the Clipboard contents in the current RUMBA window at the cursor location.








Button	Description	Action
	Hold Printing / Enable Printing	Lets you pause or restart the current host print job.
	Cancel	Stops processing the current host print job and deletes the print data.
	Configure Watermark	Sets a background image or pattern for your Rumba tab.
	Deactivate Watermark	Removes the background image from the tab.
	AS/400 Printer Queue (AS/400 only)	Displays or hides the AS/400 printer queue.
	PC Printer Queue	Displays or hides the PC printer queue.
	Printer Log	Displays or hides the printer log.

Table 2-3 RUMBA toolbar icons for AS/400 and Mainframe Printer

RUMBA HP/UNIX Edition - HP














	Description	Action
	Print Screen	Prints the active RUMBA screen.
	Copy	Copies the selected text to the Clipboard.
	Paste	Places the Clipboard contents in the current RUMBA window at the cursor location.
	Soft Reset	Sends a soft reset to the Host. This will, for example, clear error conditions, halt device operations, and stop any data transfers.
	Hold	Puts the current job on hold.
	Change Host Directory	Changes your working directory on the host.
	Send	Opens a dialog box where you can specify options for transferring files from the PC to the host.
	Receive	Opens a dialog box where you can specify options for transferring files from the host to the PC.
	Keyboard Settings	Opens a dialog box where you can view or change the keyboard configuration.
	Host Keyboard	Displays an on-screen version of the host keyboard, which you can use to enter data or commands.
	Color Selection	Paints window text and background with selected colors.
	Macro Record	Records keystrokes to save as a macro file.
	Macro Run	Runs a prerecorded macro.

Table 2-4 RUMBA toolbar icons for HP

RUMBA HP/UNIX Edition - UNIX

















	Description	Action
	Print Screen	Prints the active RUMBA screen.
	Copy	Copies the selected text to the Clipboard.
	Paste	Places the Clipboard contents in the current RUMBA window at the cursor location.
	Show History	Displays the history window in the session tab.
	Show Terminal	Displays the terminal window in the session tab.
	Split Display	Displays the history window above the terminal window in the session tab.
	Reset	Sends a Reset to the host. This will, for example, unlock the keyboard, set the active display to the main display, and set character attributes to normal.
	Hold	Puts the current job on hold.
	Change Host Directory	Changes your working directory on the host.
	Send	Opens a dialog box where you can specify options for transferring files from the PC to the host.
	Receive	Opens a dialog box where you can specify options for transferring files from the host to the PC.
	Keyboard Settings	Opens a dialog box where you can view or change the keyboard configuration.
	Host Keyboard	Displays an on-screen version of the host keyboard, which you can use to enter data or commands.
	Color Selection	Paints window text and background with selected colors.
	Macro Record	Records keystrokes to save as a macro file.
	Macro Run	Runs a prerecorded macro.

Table 2-5 RUMBA toolbar icons for UNIX

Status bar

The RUMBA status bar is located at the bottom of the RUMBA window and displays important information about your host connection. The information displayed depends on the type of the host connection.

AS/400 status bar

Status bar area	Function
Description area	<ul style="list-style-type: none">• Connected: The status of the host connection. If the host is not connected, the description area is blank.• Toolbar button function: If the mouse cursor points to a toolbar button, the description area displays a description of the function performed by the toolbar button.• Menu command function: If the context-sensitive help cursor points to a menu command, the description area displays a description of the function performed by the menu command.
SA	System available. When lit, this indicates that the host is operating and available to the PC.
MW	Message waiting. When lit, the host has one or more messages waiting for you.
KS	Keyboard shift. When lit, the keyboard is in shift mode.
IM	Insert mode. When lit, insert is on. Characters can be inserted into a field without typing over the existing data.

Table 2-6 AS/400 status bar information

Status bar area	Function
II	Input inhibited. When lit, keyboard input is not being accepted by the AS/400. Try pressing the Error Reset key. If it is still highlighted, the system is processing your request.
KB	Keyboard buffer. This indicator is only displayed when you are waiting for the Input Inhibited indicator to go off so that keystrokes that are buffered can be processed. To clear keystroke buffering, press the Error Rest key.
Session Name	Displays the name of the server to which the RUMBA session is connected.
Cursor coordinates	Lists the row and column position of the cursor.
Clock	Displays the time.

Table 2-6 AS/400 status bar information

HP status bar

	Function
Communications interface	Displays the communications interface you have selected, the server name (if applicable), and whether or not the session is connected to the host.
Terminal type	Shows the type of terminal this session is emulating, and other kinds of status information applicable to the terminal. Information appears if the terminal is in hold or wait conditions or if it is off-line.
Cursor coordinates	Lists the row and column position of the cursor.
Clock	Displays the current time.

Table 2-7 HP status bar information

Mainframe status bar

Function	
Status field	Displays general RUMBA software status information.
Operator	Indicates the operator's application session owns the screen.
SSL	Indicates whether your session uses an SSL (Secure Sockets Layer) connection. This field applies only to TCP/IP connections.
APL	Indicates whether or not the host is in APL mode.
NUMFLD	Indicates whether or not the cursor is currently in a numeric field.
LU #	Shows the Logical Unit (LU) number.
OVR	Indicates whether Overstrike or Insert mode is chosen.
CAP	Indicates whether Caps Lock is on or off.
NUM	Indicates whether the Number Lock is on or off.
W	Indicates whether Word Wrap is on or off.
Cursor coordinates	Lists the row and column position of the cursor.
Clock	Displays the time.

UNIX status bar

Status bar area	Function
Communications interface	Displays the communications interface you have selected and the server name (if applicable), and indicates whether or not the session is connected to the host.

Status bar area	Function
Terminal type	Shows the type of VT this session is emulating, and other kinds of status information applicable to the terminal. Information appears if the terminal is in hold or wait conditions, is off-line, or if you are composing a character sequence.
Cursor coordinates	Lists the row and column position of the cursor. If you are using VT420 emulation, it also indicates the page number.
Numeric/Application mode	Toggles the state of the terminal's numeric keypad between numeric mode and application mode (which is not the same as the PC NUMLOCK feature).
Clock	Displays the time.

3 RUMBA Session Profiles

A Session Profile is a special configuration file used to store your settings for a specific session. You can customize the settings for a particular host connection to meet your particular needs and preferences, then save your settings in a Session Profile. When you open the profile, the RUMBA session is configured with settings you designate.

Session Profiles also provide a method for easily deploying standardized RUMBA sessions to users. You can create Session Profiles for customized host display and printer sessions.

All Session Profiles are stored in a subfolder of the Application Data folder. For example, an AS/400 profile would be stored at:

Windows 7: C:\Users\<user>\AppData\Local\Micro
 Focus\Rumba\AS400

Windows Vista: C:\Users\<user>\AppData\Local\Micro
 Focus\Rumba\AS400

Windows XP: C:\Documents and Settings\<user>\Local
 Settings\Application Data\Micro Focus\Rumba\as400

The subfolders are named as400, HP, Mframe and VT (for UNIX host session profiles).

► Note

Each Session Profile will open as a separate tab in the RUMBA Display. This gives you the flexibility of being able to open several different profiles in one window. You can save multiple sessions in one configuration file as a Desktop Profile.

About Session Profiles

Session Profiles contain specific information about the RUMBA session including:

- Interface selection and configuration
- Display settings including color, font and status bar options
- Keyboard maps and alternate character set selection
- Macros and script information (if the Script Editor is installed)

When you change your RUMBA environment, you can save those changes in a new or existing profile. RUMBA software stores Session Profile data in a binary format.

Session Profiles are host-specific. The file extension for the different hosts are as follows:

Host	File extension
AS/400: Display	.rsda
AS/400: Printer	.rspa
HP	.rsdh
Mainframe: Display	.rsdm
Mainframe: Printer	.rspm
UNIX	.rsdu

► Note

*You can use the Profile Editor to create and edit RUMBA profiles. The Profile Editor is an OLE control that you can load into your Visual Basic application. To install this utility, you must run a complete installation, or run a Custom installation and select **System Options/Administrator Options/Profile Editor Control**.*

Supplemental and interface configuration files

There are also supplemental files that work together with the session profiles. These supplemental files contain configuration or other important data unique to a feature. For example, the **hotspot.hsp** file is a supplemental file. It is also a Hotspot file, and it contains all the data required to run a series of predefined keystrokes.

Interface configuration files are a special class of supplemental files. They are saved in separate files with the **.cfg** extension. You may have more than one of these interface files if you use multiple host connections.

For details on the locations of these files, see the Installation Guide.

The supplemental files and their default extensions are:

	Extension
Interface configuration	.cfg
Keyboard Map	.map
Macro Script	.rmc
Hotspot	.hsp
Menu configuration	.mnc
Script	.csf and .vba

Table 3-1 Supplemental files and extensions

Migrating Session Profiles from previous Rumba versions

Session Profiles that were created using earlier versions of Rumba can be migrated to Rumba 8.0. To ensure that a Session Profile is compatible with Rumba 8.0:

1. Open the profile in Rumba.
2. Click Tools > Menu, and select the Preview tab.
3. Ensure that the Gray disabled items option is selected.
4. Save the profile.

4 RUMBA Desktop Profiles

A set of multiple Session Profiles can be saved as a single RUMBA Desktop Profile. This allows you to provide a standard set of tabbed sessions to your users, minimizing the amount of configuration needed for each individual user.

By default, RUMBA Desktops are stored in the folder C:\\Documents and Settings\\<user>\\Local Settings\\Application Data\\Micro Focus\\Rumba with the extension .rdps.

About Desktop Profiles

Desktop Profiles contain specific information about a RUMBA instance, including:

- The set of Session Profiles used
- Any customized tab names

A Desktop Profile does not contain any information about which RUMBA interface is used. All Desktop Profiles may be opened in either the Classic or the Ribbon interface.

Session Profile locations

A Rumba Desktop Profile contains references to the locations of all the Session Profiles that it includes. The locations of any Session Profiles that are in a different folder to the Desktop Profile are stored as absolute paths. If a Desktop Profile is to be deployed on machines other than the one on which it was saved, all of the relevant Session

Profiles should be contained within the same folder as the Desktop Profile.

Appendix A HP Keyboard Key Codes

The HP keyboard sends a predefined escape sequence for each of its special keys (for example, editing keys and numeric keys). Most applications written for use with HP terminals are expecting to use these escape sequences. If your application is looking for a different escape sequence, you can program this sequence to a keyboard string and map that keyboard string to a key sequence on your PC.

The tables in this appendix list the codes sent for each of the defined keyboard keys.

Keys mapped to default settings

Legend	Key number*
Line modify	F1
Modify all	F2
Block mode	F3
Remote mode	F4
Type ahead	F5
Memory lock	F6
Display function	F7

Table A-1 Keys mapped to activate default softkeys

Legend	Key number*
Auto line feed	F8
*F1 through F8 are local function keys that do not send codes, except when configured to do so. These keys are mapped to activate default softkeys. To see the key mappings, select SoftKeys from the Options menu in the HP Display. In the SoftKeys Settings dialog box, click User Defined.	

Table A-1 *Keys mapped to activate default softkeys, (continued)*

Keys used to send 7-bit control characters

Control character mnemonic	ASCII value	Key pressed with Ctrl (all modes)
SOH	1	A
STX	2	B
ETX	3	C
EOT	4	D
ENQ	5	E
ACK	6	F
BEL	7	G
BS	8	H
HT	9	I
LF	10	J
VT	11	K
FF	12	L
CR	13	M

Table A-2 *Keys used to send 7-bit control characters*

Control character mnemonic	ASCII value	Key pressed with Ctrl (all modes)
SO	14	N
SI	15	O
DLE	16	P
DC1	17	Q*
DC2	18	R
DC3	19	S*
DC4	20	T
NAK	21	U
SYN	22	V
ETB	23	W
CAN	24	X
EM	25	Y
SUB	26	Z
*7-bit control codes sent only when XON/OFF support is off.		

Table A-2 Keys used to send 7-bit control characters, (continued)

Codes sent by editing keys

Key	Code sent
Delete char	ESC P
Insert line	ESC L
Delete line	ESC M
Insert char	ESC Q

Table A-3 Codes sent by editing keys

Key	Code sent
Prev	ESC V
Next	ESC U
Clear line*	ESC K
Clear display*	ESC J
To view these codes, select Show Host Keyboard from the Tools menu in the HP Display.	
Note: These codes are only sent when Transmit Escape Sequences to Host is enabled. To enable this, select Terminal from the Options menu in the HP Display. On the Advanced tab, click Transmit Escape Sequences to Host.	

Table A-3 Codes sent by editing keys

Codes sent by arrow keys

	Cursor mode	Application mode
Up	ESC A	ESCA
Down	ESC B	ESCB
Right	ESC C	ESCC
Left	ESC D	ESCD
Note: These codes are only sent when Transmit Escape Sequences to Host is enabled. To enable this, select Terminal from the Options menu in the HP Display. On the Advanced tab, click Transmit Escape Sequences to Host.		

Table A-4 Codes sent by arrow keys

Codes sent by numeric keypad keys

	Numeric	Application	
0	0	ESC Q	Ins
1	1	ESC F	End
2	2	ESC B	Down
3	3	ESC U	PgDn
4	4	ESC D	Left
5	5		
6	6	ESC C	Right
7	7	ESC h	Home
8	8	ESC A	Up
9	9	ESC V	PgUp
-	(minus)		
,	(comma)		
.	(period)	ESC P	Del
Enter	CR LF		
Note: Character mode: code goes directly to host			
Format/Block mode: code goes to host only when user presses ENTER			

Table A-5 Codes sent by numeric keypad keys

Appendix B VT Keyboard Key Codes

The VT keyboard sends a predefined escape sequence for each of its special keys (for example, function keys, editing keys, and numeric keys). Most applications written for use with VT terminals expect to see these escape sequences. If your application is looking for a different escape sequence, you can program this sequence to a keyboard string and map that keyboard string to a key sequence on your PC.

The tables in this appendix list the codes sent for each of the defined keyboard keys.

Codes sent by top-row function keys

	Key number	Code sent
Hold	F1*	CSI 11~
Print	F2*	CSI 12~
Set-Up	F3*	CSI 13~
Session	F4*	CSI 14~
Break	F5*	CSI 15~
F6	F6	CSI 17~
F7	F7	CSI 18~
F8	F8	CSI 19~
F9	F9	CSI 20~
F10	F10	CSI 21~
F11 (ESC)	F11	CSI 23~
F12 (BS)	F12	CSI 24~
F13 (LF)	F13	CSI 25~
F14	F14	CSI 26~
Help	F15	CSI 28~
Do	F16	CSI 29~
F17	F17	CSI 31~
F18	F18	CSI 32~
F19	F19	CSI 33~
F20	F20	CSI 34~
<p>*F1 through F5 are local function keys that do not send codes, except when configured to send codes. To see the assigned local keys in the UNIX Display, select Terminal from the Options menu and click the Key Assignments tab.</p>		

Table A-6 Codes sent by top-row function keys

Keys used to send 7-bit control characters

Control character mnemonic	ASCII value	Key pressed with Ctrl (all modes)
SOH	1	A
STX	2	B
ETX	3	C
EOT	4	D
ENQ	5	E
ACK	6	F
BEL	7	G
BS	8	H
HT	9	I
LF	10	J
VT	11	K
FF	12	L
CR	13	M
SO	14	N
SI	15	O
DLE	16	P
DC1	17	Q*
DC2	18	R
DC3	19	S*
DC4	20	T
NAK	21	U
SYN	22	V

Table A-7 Keys used to send 7-bit control characters

Control character mnemonic	ASCII value	Key pressed with Ctrl (all modes)
ETB	23	W
CAN	24	X
EM	25	Y
SUB	26	Z
*7-bit control codes sent only when XON/OFF support is off.		

Table A-7 Keys used to send 7-bit control characters, (continued)

Codes sent by editing keys

	Code sent
Find	CSI 1~
Insert here	CSI 2~
Remove	CSI 3~
Select	CSI 4~
Prev	CSI 5~
Next	CSI 6~

Table A-8 Codes sent by editing keys

Codes sent by arrow keys

	Cursor mode	Application mode
Up	CSI A	SS3A
Down	CSI B	SS3B
Right	CSI C	SS3C
Left	CSI D	SS3D

Table A-9 Codes sent by arrow keys

Codes sent by numeric keypad keys

Numeric keypad mode setting (DECNKM), ANSI mode		
Key	Numeric	Application
0	0	SS3 p
1	1	SS3 q
2	2	SS3 r
3	3	SS3 s
4	4	SS3 t
5	5	SS3 u
6	6	SS3 v
7	7	SS3 w
8	8	SS3 x
9	9	SS3 y
-	(minus)	SS3 m
,	(comma)	SS3 l

Table A-10 Codes sent by numeric keypad keys

Numeric keypad mode setting (DECNKM), ANSI mode		
Key	Numeric	Application
.	(period)	SS3 n
ENTER	CR or CR LF*	SS3 M
PF1	SS3 P	SS3 P
PF 2	SS3 Q	SS3 Q
PF 3	SS3 R	SS3 R
PF 4	SS3 S	SS3 S
<p>*Keypad numeric mode. ENTER sends the same codes as RETURN. You can use line feed/new line mode (LNM) to change the code sent by RETURN. When LNM is reset, pressing RETURN sends one control character (CR). When LNM is set, pressing RETURN sends two control characters (CR, LF).</p>		

Table A-10 Codes sent by numeric keypad keys, (continued)

Index

7-bit control character keys 28, 35

A

- administrative tools 8
- Application Data folder 8
- arrow key codes 30, 37
- AS/400 File Transfer 3

C

- character sets, *see* international character sets
- Clipboard 3
- commands
 - Toolbar 10
- configuration files 8, 23
- connect macros 7
- copy and paste features 3
- customizing
 - menus 9
 - screen colors 5

D

- DEC terminals 5
- defaults
 - supplemental files 23
- display features 5
- drag-and-drop file transfers 4

E

- EBCDIC to ASCII translating 4

- editing key codes 29, 36
- emulated terminals 5, 6
- Ethernet connections 2

F

- features ??–6
 - administrative tools 8
 - AS/400 general 1
- file transfers 3, 4
- folders
 - RUMBA Administrative Tools 8
- function key codes 34

H

- host sessions 2
- Hotspots 7
- HP
 - features supported 6
 - keyboard codes *see* keyboard codes

I

- IBM hosts 4
- icons
 - Administrative Tools folder 8
- interface configuration files 23
- international character sets 3
- international keyboards 5

K

- keyboard codes

- 7-bit control character keys 28, 35
- arrow key codes 30, 37
- default setting keys 27
- editing key codes 29, 36
- function key codes 34
- numeric keypad codes 37
- numeric keypad key codes 31
- overview 27, 33

keyboards supported 5

M

macros 6

Mainframe Passthrough 4

My Documents folder 8

N

numeric keypad codes 31, 37

P

Physical Unit IDs (PUIDs) 2

printer features 3

printing

- host screens 3

- to disk 3

- with international character sets 3

profiles

- definition 22, 25

- overview 21, 25

- supplemental and interface configuration files 23

R

RUMBA AS/400 Edition features

- administrative tools folder 8

- Copy and Paste 3

- file transfer methods 3

- host sessions 2

- macros 6

- toolbars 4, 10

RUMBA Initiated feature 3

S

screen options 5

scripts 7

Secure Shell (SSH) 2

Secure Sockets Layer (SSL) 2

status bar 16

T

terminals supported 5, 6

Token Ring connections 2

Toolbar menu commands 10

toolbars 4

tools, administrative 8

transfers, file 4

troubleshooting

- keyboards 5

V

VT keyboard codes *see* keyboard codes