HostAccess

User Guide

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Introduction

Welcome to HostAccess. This book is a guide to using HostAccess for end users and systems administrators, and is divided into the following chapters:

Chapter	Title	Topics covered
Chapter 1	Introduction	An overview of HostAccess's features plus Quick Start instructions so you can get started immediately.
Chapter 2	Using HostAccess	*How to…* information in a step by step form.
Chapter 3	Networks and emulations	An in-depth guide to configuring HostAccess to connect your PC to a host.
Chapter 4	Advanced HostAccess	Tips for systems administrators on making the most of HostAccess.
Chapter 5	Troubleshooting	What to do if things go wrong - advice on solving some of the more common problems and where to go for further information.
Appendix A	Systems administrator reference	Reference material on traces, command line options, the Loopback facility and DDE.
Appendix B	Running HostAccess in a Web Browser	Embedding and running HostAccess emulation sessions within a Web Browser, issues and FAQs

Terminal Emulations

In the past, you could access information, programs, processing power and functions such as printing from a host using dumb terminals, which are so called because they have no processor; all the work being done by the host computer (the mainframe or mini computer). However, as technology has become more advanced, terminals have become increasingly intelligent, that is, more and more processing is done by the terminal rather than by the host.

In 1983, the personal computer was introduced, which has, by and large, replaced the terminal. The PC contains a Central Processing Unit (CPU) which enables it to process

information. It is designed to be used by one person and can work in standalone mode, which is not connected to a host, or it can be linked to a host via a network or serial connection to a modem.

In order for a terminal to communicate successfully with a host, the terminal must speak the same language as the host. Terminal emulation software such as HostAccess enables the PC to do this. It allows a PC to act like a particular brand of terminal, for example a VT100. The PC appears as a terminal to the host computer and accepts the same escape sequences for functions such as cursor positioning and clearing the screen.

A terminal emulator enables you to connect to one or more hosts across different networks using many different emulations. To enable your terminal emulator to connect to a host across a network, you need to have the correct protocol software loaded onto both your PC and the host. Protocol software, often called a stack, gives your PC the right information to be able to send data across a network. The host also needs to have protocol software to be able to interpret the data.

A protocol is a set of formal rules, rather like a language, which enables communications between hosts and PCs. TCP/IP is a common protocol used with HostAccess.

Note: Choosing the Windows Sockets network option in HostAccess allows your PC to talk to the TCP/IP, as long as your host has the correct software.

There are two basic classes of emulation supported by HostAccess. These are sometimes known as Block mode emulation, and Asynchronous, or character mode emulations. A block mode emulation is where data is edited within the terminal before it is transferred as a block to the host. These emulations tend to be those designed to work with large mainframes, for example IBM 3270 and IBM 5250. A character mode emulation, also known as asynchronous mode, is where each character is sent to the host as it is keyed into the keyboard. That is, it sends one character at a time to the host. These emulations tend to be those designed for smaller, mid-range systems such as the DEC VT100, VT220, VT320 and VT420 emulations.

When you make a connection to a host from your PC using HostAccess, you open what is called a session. In HostAccess, you can create a new session, save a session, open an existing session, have more than one session running at once and switch between open sessions. This is much like opening a new file.

When you create a new session, you have to tell HostAccess which software protocol you have installed on your PC and the host, and which emulation you are using. For example, you may want to connect to a UNIX host using TCP/IP protocol software and a VT 100 emulation.

Getting Started

The following sections of this chapter give you an overview of HostAccess's features, and the other chapters deal with HostAccess in more detail.

If you want to dive straight in, turn to the Quick Start Section on page 9.

HostAccess features

HostAccess brings data from host applications into your familiar Windows based spreadsheets, word processors and other programs. Using HostAccess as a terminal emulator, you can achieve connectivity immediately. However, HostAccess is not just a terminal emulator. It is easy to install and configure, disguising the sophistication of the solution. Once you're set up, it's simple and intuitive to use.

You can configure host session files and save them for re-use by all users across LANs. Sessions are network links between your computer and remote hosts.

You can create a Windows look and feel for you host applications using HostAccess's AutoGUI and Auto sculpture functions without any changes to the host applications.

AutoGUI

You can transform the look of legacy applications into Windows style applications with ease, without any code changes to the host application.

For example, you can give most traditional green on black emulations a modern, Windows-like feel by changing the colour attributes to black text on a pale gray background. If your application uses line drawing, you can also create a 3D sculpted line effect. The following picture shows how a green on black emulation can look using these features.
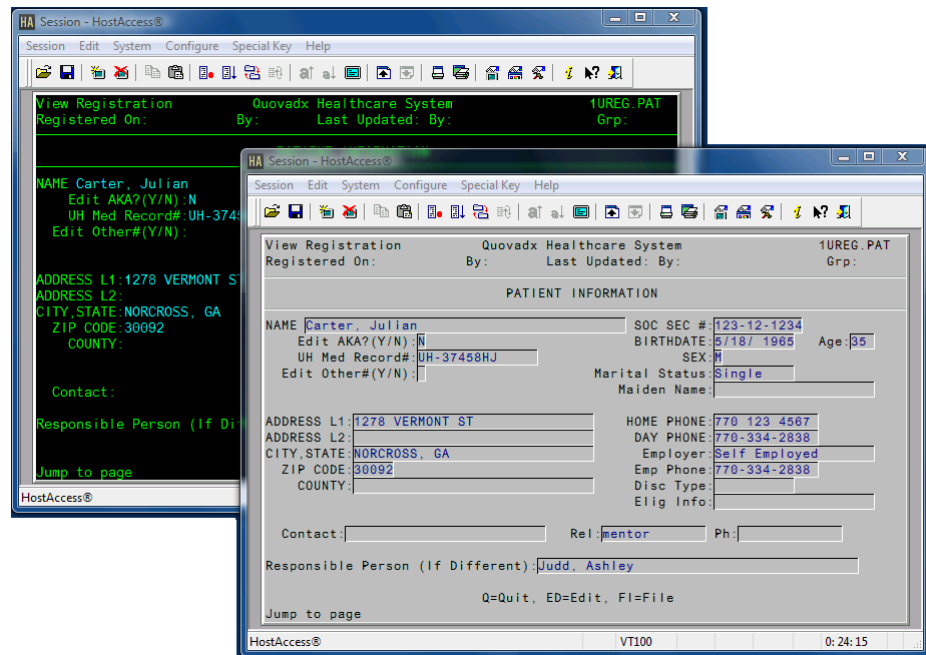
Hotspots

A hotspot in block mode emulations (IBM 3270 and IBM 5250) is text on the screen which has been programmed by the host application so that when you move the mouse pointer over the text and click the right button, a particular function is activated.

Hotspots in asynchronous mode emulations work differently to those in block-mode emulations. You can use them to add mouse pointer positioning with a full screen editor and you can add the ability to point and click and words and functions on the screen.

These features need to be configured on your PC and do not require any changes to the host program.

Customising your keyboard

You can customise your keyboard by using the Keyboard mapping option to define functions for PC keys pressed. You can also map keys to macros or specific character strings.

Connecting to Multiple Sessions

HostAccess allows any number of host sessions to be run concurrently. This is limited only by available PC memory, or by any other restrictions imposed by, say, network communication protocols.

Macros

HostAccess's powerful macro facility allows you to automate standard tasks. You can either use the macro recorder to automate simple tasks, or you can write a program in HostAccess's macro language to automate almost any host task.

File transfer

HostAccess supports all the standard file transfer protocols including Kermit, X Modem, Y Modem, Z Modem and IND$FILE and a proprietary option. HostAccess also supports file transfer between UNIX and DOS (the UNIX system must have a C compiler available) and between a PICK host and DOS. For this, you must have the host files installed, see your installation instructions. HostAccess lets you set up a file transfer process that moves all types of files with built-in error checking and data compression.

Quick Start

This Quick Start section is designed to take you, step by step, through a typical PC to host connection i.e. to a UNIX host using Windows Sockets. The basic steps are much the same for any connection, but the details differ. Chapter 3, Networks and Emulations, provides additional instructions on configuring your HostAccess session.

1. Start HostAccess

Click on the Start button at the bottom of your desktop, select Programs then select the HostAccess icon from the HostAccess program group.

2. Connect to a new session

Select <u>N</u>ew from the Session menu or click on the Configure session toolbar button shown opposite.

A configure session dialog box will appear.

3. Configure Autoconnect

Click on the Autoconnect tab and check the Start Session When Application Starts box (do **not** click OK).

This will connect you to your session logon screen whenever you open the session. You

can also set up a session to automatically log on using a macro.

4. Select the appropriate network and emulation

Click on the Session tab then highlight the appropriate network and emulation, in this case Windows Sockets and DEC VT100. Configure, either by double clicking on the selected network, or by clicking on the <u>P</u>roperties button.

5. Configure the network and emulation

In the Configure Windows Sockets dialog:

- Configure your network by typing in the Host Address.
- Configure your emulation by clicking on the DEC VT100 tab then setting the Display and Screen Size.
- Click on OK when finished.

Chapter 3 describes in how to configure networks and emulation settings.

Your session screen should now appear.

6. Save the session

a) To save your session you can either:
- Select Save <u>a</u>s from the <u>S</u>ession menu.
- Click the toolbar button shown on the left.

b) Then enter the name in the File <u>n</u>ame field. You can choose an image from the pull down list box which will be associated with the session name.

The session will be saved, with a .ses file ending, in your HostAccess directory.

You can create a shortcut in your Windows desktop as follows:

In Windows Explorer, find the .ses file you have just created and highlight it by clicking once. From the <u>F</u>ile menu, select Create <u>S</u>hortcut. Drag the shortcut icon you have created onto your desktop. This will create an icon on your desktop which will give you direct access to the session you created.

Using HostAccess

Overview

This chapter explains how to use and configure HostAccess. The earlier sections describe the basics needed to use HostAccess, the later sections describe how to use the more detailed aspects of HostAccess. The following features are described:
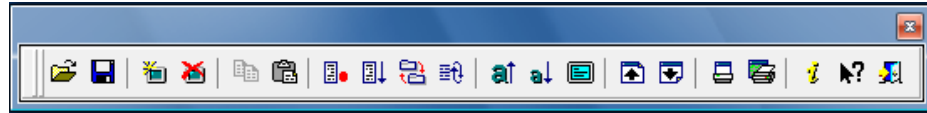
The Toolbar

HostAccess for Windows has a user-friendly toolbar, containing a wide range of functions accessed via push-buttons. These functions usually duplicate HostAccess commands.

To display HostAccess's toolbar, select the View toolbar option.

The toolbar is fully floatable and can be resized. It can be docked on the top, bottom or either side of the window. Facilities to customize this toolbar are provided.

Open a session file.		Save a session file.	
Connect to the current session.		Disconnect from the current session.	
Copy selected text to the Clipboard. This is only enabled when you select text.		Paste selected text from the clipboard.	
Record a macro.		Start a macro file.	
Start PC-host file transfer.		Open the command stack screen.	
Increase font size by one point. The screen is auto-re-sized.		Decrease font size by one point. The screen is auto-re-sized.	
Go to the previous terminal session backpage.		Go to the next terminal session backpage.	
Toggle hardcopy printing on or off.		Prints the screen.	
Configure a session.		Configure terminal setup.	
Configure system setup.		Find out release information about your version of HostAccess.	
Activate help on a topic. A "**?**" symbol appears by the cursor. For help, click the mouse, pointing at the relevant topic.		Exit HostAccess.	

A further toolbar is displayed when you select loopback or testfile network. When using loopback it is greyed out, but when using testfile this toolbar is used to navigate through the test file.

	Restarts the networks traffic replay.		Plays the networks traffic replay.
	Stops the networks traffic replay.		

Customizing the Toolbar

Toolbar buttons can be removed, added and moved around the main toolbar. A customization dialog is available to perform these functions (see below), but buttons can be removed and moved without using this.

Hold down the shift key and click on the toolbar button using the left mouse button. With the left mouse button held down, the selected toolbar button can be dragged to another position on the toolbar. To remove a button from the toolbar altogether, drag it off the toolbar. Release the left mouse button when the button is in the required position. To remove a separator from the toolbar, drag a button onto it.

1. The Customize Toolbar dialog is accessed by right clicking on the toolbar and selecting 'customize' on the context menu.
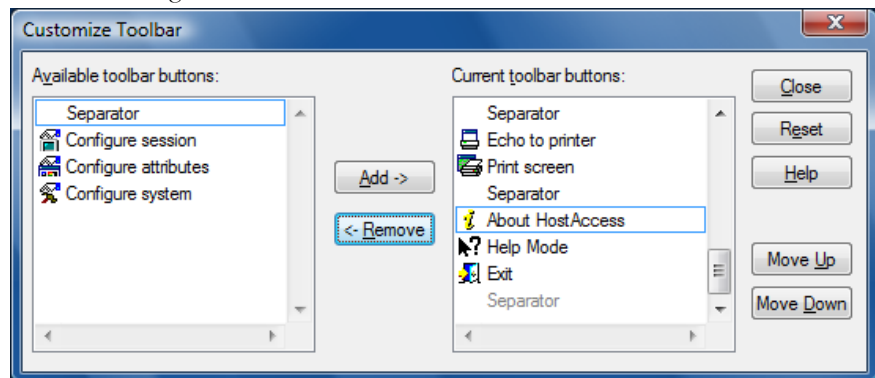
2. The dialog includes a list of buttons that are available to be added to the toolbar, which consists of buttons previously removed, and a list of buttons and separators currently on the toolbar.

3. To add a button to the toolbar, select the button name on the available buttons list and select the Add -> button. The button name moves to the top of the list of toolbar buttons. The button is added to the toolbar in that position.

4. To remove a button or separator from the toolbar, select the button name or separator on the toolbar buttons list and select the <- Remove button. The button name moves to the available buttons list. The button is removed from the toolbar. Separators are not moved to the available buttons list and must be reinstated using the Reset button (see below).

5. To change the position of a button or separator on toolbar, select the button name or separator in the toolbar buttons list and select the Move Up or Move Down button. The button/separator changes its position on the toolbar, moving up/left or down/right.

6. To restore the toolbar to its default setting, select the Reset button.

The Menu bar

The menu bar consists of the following menus:

Session menu	Lets you create, open and save sessions, print screens or text and exit the application.
Edit menu	Lets you copy and paste text. In HostAccess you can also insert or delete OLE objects.
System menu	Lets you resize the screen, record and use macros, transfer files, use network tracing and open the command stacker.
Configure menu	Lets you configure your sessions, terminal attributes, keyboard maps, file transfer settings and other options.
Special Key menu	Lets you insert special characters in a HostAccess session.
Help menu	Lets you open the HostAccess online help. This provides instructions for using and configuring the HostAccess application. You can also connect to our WWW site through our help.

Help

HostAccess for Windows provides you with a comprehensive help system on all menu options and dialog box items.

- Use the Help Topics option from the Help menu to obtain general help on HostAccess for Windows.
- Use the Using help option from the help menu to obtain help about Windows Help.
- Use the Support option to obtain extensive release and version information for your copy of HostAccess. This information is particularly useful if you need technical support. It is also possible to copy and paste this information into another document.
- This mouse button activates help for a toolbar button or menu item.

Tool tips

HostAccess′s tool tips feature gives you a quick summary of the functions of each push-button available on HostAccess′s toolbar.

To access tool tips:

Position the mouse pointer over the relevant push-button, and press the right mouse button. A summary of the button's function appears directly below the button.
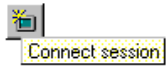
Tool tips help automatically appears for a button if you leave the mouse pointer over the button for a short time.

Starting HostAccess

To start HostAccess you can either

- Double-click on the HostAccess icon. This will open the last session closed by default.
- Double-click on the HOST32.EXE files depending on which version you are running. This will open the last session closed by default.
- Double click on a session file (.ses). This will open that session.
- Open HostAccess from the Start button using the Programs option. This will also open the last session closed by default.

Exiting HostAccess

To exit from HostAccess, you can either:

- Click on the Exit toolbar button.
- Click on the standard Windows Close button.
- Select the Exit option from the Session menu to exit from HostAccess.

Exit All

Select the Exit all option from the Session menu to close and exit from all currently running HostAccess sessions.

Sessions

A session is a network link between your computer and a remote host. Starting a session does not automatically connect you to or log you on to, your host system. You can configure HostAccess to automatically connect and logon however, sending your username and password to a system, and/or auto-starting a macro, and/or auto-dialing a modem-connection.

By default, HostAccess starts up with the session which was used the last time you ran HostAccess. If you have no previous valid session, HostAccess will not connect to any system, and you must set up a session using the New option.

You can open more than one session at a time, either by starting multiple copies of HostAccess (from Program Manager), or via the Open Another command on HostAccess's Session menu.

Session templates can be generated. New sessions can be based on the parameters established in these templates. A template is based on a previously created session file, and contains all the data saved in that file.

Creating a new session

The following section tells you how to create a session in HostAccess.

To set up a new session:

1. Select New from the Session menu. If more than one Session Template is available, a dialog appears. Select the required template from the dialog and select OK, or select Cancel if no template is required. If only one template is available, this will be used by default.

2. The Configure Session dialog is then displayed. This is also available from the Configure menu.

3. You can also use the Session option from the Configure menu or the tool bar button shown to define details of your session setup or click on the tool bar button shown. You can then define details for your network, emulation and Auto connect, using the relevant tabbed dialog boxes.

4. Highlight the network stack and the emulation, then click on Properties to configure.

5. To change the session icon, click on the Change Icon button. On the displayed dialog, select an icon from the list, or point to another application and use its icons.
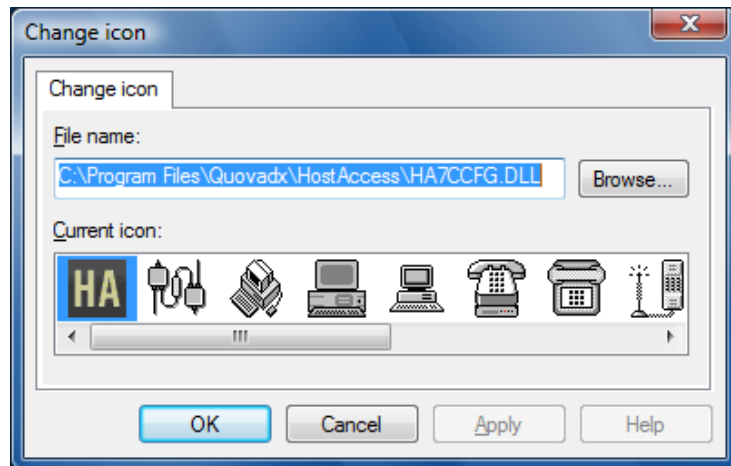
Note: The new icon appears wherever the session file can be seen, for example, in the Desktop, Explorer and HostAccess.

6. To set network details, fill in the details and click on OK. Specific information for each network can be found in the Emulations and Networks section.

7. To set emulation details, click on the emulation tab. As with the network details, most emulations have different parameters.

Creating a session without HostAccess running

To create a new session without HostAccess running:

1. Click the right mouse button either in the Desktop or Windows Explorer.

2. Highlight New in the menu, this will display a sub-menu.

3. Select the item Host Session.

This will create a new HostAccess Session icon on your desktop. If you double click on this icon, it will take you into the new session that you have created. You can now configure this session.

To change a session′s properties:

1. Highlight the session file you want to configure either in Windows Explorer or on the desktop.

2. Click your right mouse button and select Properties from the menu. You will get the Session set up dialog as though you had selected New from the Session menu from within HostAccess.
You might like to do this to associate a different icon with a particular host session.

To Auto connect
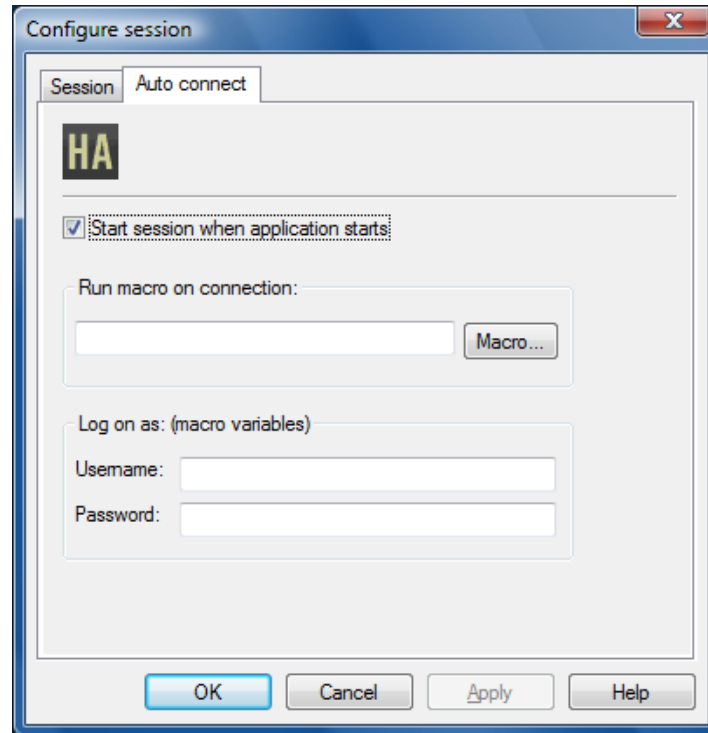
To automatically connect when starting a session:

Enable the Start session when application starts checkbox.

To automatically run a macro when starting a session:

Enter the macro file name in the Macro name box, or select a specific macro file to run, using the Macro button, then enter the relevant details in the dialog that appears. This is a "logging on" macro.

⇨See page 78.   If you are recording a logon macro, you may need to fill in the Username and Password fields.

Opening a session

To open a session:

Use the Open option in the Session menu or use the toolbar button shown. At the bottom of the Session menu will be a list of your previous sessions to choose from. If you open a new session, the current session is closed - you are prompted to confirm this.

If you have not previously saved session, you need to create a new session.

Saving a session

To save HostAccess's current session:

Use the Save option from the Session menu or the toolbar button shown.

To save your session parameters to a file with a different name.

Use the Save as option from the Session menu.

Any changes that you have made since the last save or the beginning of this HostAccess session will still be active.

You can select an image from the Image list box to associate with a particular session in the Save as dialog.

Connecting to a session

To connect up to a currently-opened session:

Select the Connect option from the Session menu or click the toolbar button shown.

Alternatively, to open and automatically connect to a session, when you are configuring your session, use the Start session when application starts option in the Autoconnect dialog.

Disconnecting from a session

To disconnect from your current session:

Select the Disconnect option from the Session menu or click on the toolbar button shown opposite, whilst keeping HostAccess open. This allows you to open and/or connect to another session without running multiple copies of HostAccess.

Connecting to Multiple Sessions

To open another session whilst keeping your current session open:

Select the Open another option from the Session menu. This starts another instance of HostAccess using your specified session at start-up.

You can have any number of host sessions running concurrently. This is limited only by available PC memory, or by any other restrictions imposed by, for example, network communication protocols.

Each concurrent terminal can run its own emulation with its own set of backpages under its own configuration and with its own printing facilities.

If a host system is outputting to one session whilst you are looking at another session, HostAccess will not suspend the host output. You can switch between each session using

the normal Windows ALT/TAB key to see the current status of the host applications running on each of the sessions.

Example

You could be using COM1 to a modem dial-up to a remote host. At the same time, you could have a session to a UNIX host over a TCP/IP network and a session to an IBM AS/400 via a TCP/IP network across the Internet to the corporate server. This, of course, depends on you having the correct network stacks and enough memory on your PC.

Creating Session Templates

To generate session templates:

Open a new session in the normal way and set up the session so that it matches the parameters of the template you wish to create, for example; the configuration of the session, the background and font colours, etc. Save the session and close HostAccess.

Change the filename extension of the session from .ses to .set. The session file is now a template file. If there is only one such template available, whenever a new session is created, this template will be used as the basis for the new session.

If more then one template has been created, the required template can be chosen from a dialog box which is displayed when New is selected from the Session menu. If no template is selected at this point, the default HostAccess settings are used.

Editing

The following sections describe:

- The Edit menu.
- OLE support.
- Using the command stack.
- Using the Special Key function.
- Configuring editing.

The Edit menu

The Edit menu allows you to copy and paste selected text. These functions will only be activated once you have selected text.

HostAccess users also have the following functions; Insert new object, Delete object and Delete all objects. These items are inserting and deleting OLE objects.

Copy

You can select and copy text from normal pages and from Backpages using the same methods.

To select text:

Hold down the CTRL key whilst dragging the mouse across the relevant area. This is configurable in the Configure Editing dialog.

To copy selected text from the current session into the Clipboard:

Select the Copy option from the Edit menu. If the Context menu's are enabled in the 32-bit version then you can copy text by using the right mouse button then select the Copy option from the menu that is displayed.

Paste

To paste text from the Clipboard into the current session:

From the Edit menu, select the Paste option, or click the toolbar button shown opposite.

OLE support

OLE automation (Object Linking and Embedding) allows you to export a programming interface from an application for use by another application. This allows one application to drive another. For example, most of Excel's macro language is available to other applications via OLE automation. You can insert OLE objects into a HostAccess session.

Because HostAccess is an automation enabled object, you can open HostAccess sessions and make use of the macro language from within applications that are OLE Automation Controllers, such as Visual Basic for Applications (VBA), the Excel Macro Language, Visual C++ and Delphi.

Inserting an OLE object

To insert an OLE object:

1. Select Insert new object from the Edit menu.

2. Select the Object type from the list.

Create New

If you select Create New, you will get a list of objects that you can insert into your document. For example, if you selected Bitmap Image, an object would be inserted into your document which would allow you to create an bitmap image.

Display as icon

Enabling Display As Icon inserts a shortcut into the document which represents the file.

Create from File

If you select Create from File, this will insert the contents of an existing file into the document and you will be able to edit it using the program that created it. Type the file name that you want to select, or use the browse button.

Link

Enabling the Link button inserts a picture of the file contents into the document. The picture will be linked to the file so that changes to the file will be reflected in your document.

Note: You cannot save or print an embedded object in a session.

Deleting an OLE object

You can delete a selected OLE object:

1. Select the object you want to delete.

2. Select <u>D</u>elete object from the <u>E</u>dit menu.

Deleting all OLE objects

You can delete all OLE objects in a session:

Select Delete <u>a</u>ll objects from the <u>E</u>dit menu.

Using the Command Stack

The Command stacker option stores the last 20 commands entered per session while using HostAccess, if set.

By default, the Command stacker is turned off, to enable the Command Stacker, see Configuring editing, page 26.

Warning:

If you use the Command Stacker it may also store any user-ids and passwords typed during connection to a host. To prevent this, you can write a special login macro which will stop your user id and password from being stored in the command stack while logging on.

You can also write an AutoConnect login macro that will automatically log you on to a system.

You can re-send previously entered commands to the host system. You may edit any command. If you send a previously used command, it automatically moves to the top of the command stack. The toolbar button on the left shows the contents of the Command Stack.

HostAccess will store commands which are:

- At least 4 characters long, although you can alter this setting, see Configuring editing on page 26.
- Do not contain any control characters.
- Terminated by a Carriage Return (for IBM emulations, the terminator is the emulation-specific ENTER key).
- Do not duplicate the most recently used command.

To disable the stack, deselect the relevant check box in the <u>E</u>diting option of the <u>C</u>onfigure menu.

Each HostAccess session will maintain its own command stack. So if you have multiple open sessions, you will have multiple command stacks open.

Using the Special Keys function

The Special <u>K</u>ey function allows you to enter characters that are not on your keyboard into a session, characters such as ç, Å,™,Æ, é.

You can select the special keys either from the menu, where the characters are grouped by accent or character type, or you can use short cut keys to insert certain characters, for example **Alt+k, apostrophe, e** will give you **é**.

Note: Not all emulations support the full range of characters so they may not always be available. Also, the host may not accept certain characters and could echo them back differently.

To use the Special <u>K</u>ey Menu

1. Pull down the Special <u>K</u>ey menu and select the character grouping that you need, for example, Acute, Grave.

2. Select the key you want, by either using the short cut key for lower case letters by selecting with your mouse or arrow keys and by pressing the return button.

'	Acute	▶
`	Grave	▶
:	Diaeresis	▶
~	Tilde	▶
^	Circumflex	▶
	Vowels	▶
	Consonants	▶
	Other symbols	▶
	Select...	
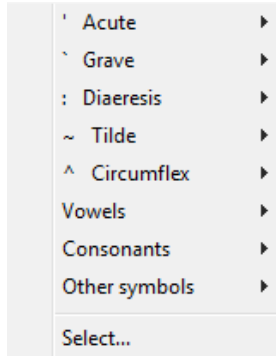
You can also select the keys from the Character Map. Selecting characters from the character map means that you can leave the Character Map open while you are doing other work in your session.

Special keys - select
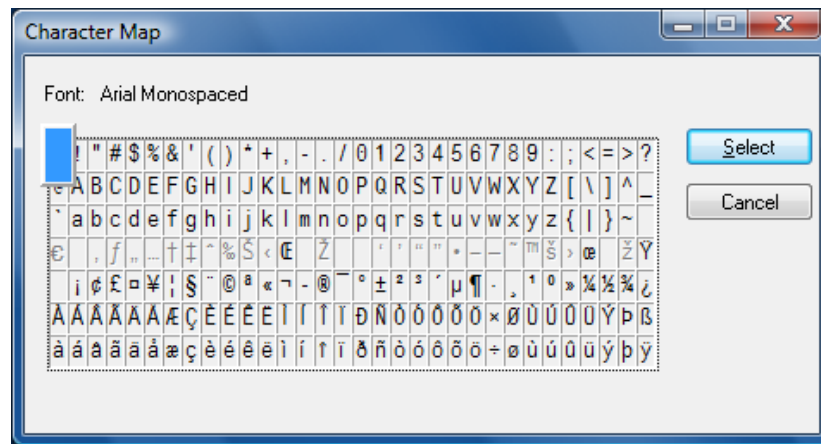
To use Character Map:

- Choose <u>S</u>elect from the Special <u>K</u>ey menu. Click on the key that you want, then click <u>S</u>elect, or double click on the key. Repeat this for as many keys as you need
- If you are using the keyboard to select keys, use the arrow keys to select the key, then press the return key.
- Click on the Cancel button to close the Character Map or press the Esc key.

Configuring Editing
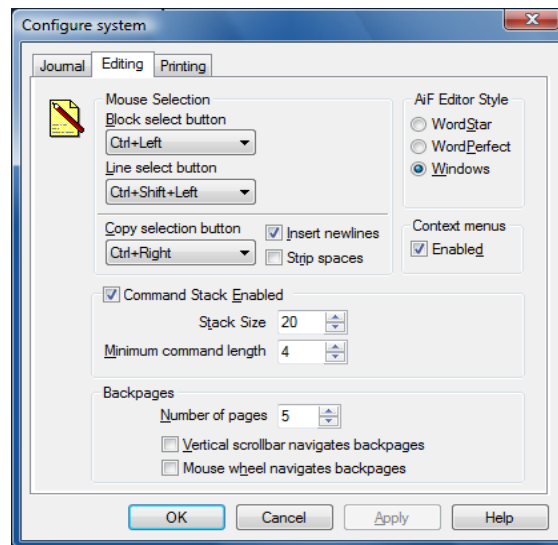
You can configure the following options using the Editing option from the Configure Menu.

Select a boxed area of the screen:

Use the Block select button pull down list box to choose which keys to use.

Choose the editing style:

Select WordStar, WordPerfect or Windows. See following pages for the editing styles available.

Select an area of the screen containing text lines:

Use the Line select button pull down list box to choose the keys to use.

Select copy keys:

Use Copy selection button to choose keys that select and copy text to the Clipboard.

Insert a carriage return for every new line of selected text:

Use Insert newlines to insert a carriage return for every new line of text that is pasted.

Remove trailing spaces:

Use Strip spaces to remove trailing space from pasted text.

Display Context menus:

Use Enabled checkbox.

Enable HostAccess′s command stack:

Select Command Stack Enabled. Use the Stack Size box to define the size of the command stack (default is 20) and use the Minimum command length to define the minimum number of keystrokes stored by the command stack.

Set number of backpages:

Set the number of backpages using the Number of pages selection box. See the below for a definition of backpages and use of Vertical scrollbar navigates backpages.

Using the mouse scroll wheel to navigate backpages:

To enable the mouse scroll wheel to navigate backpages, select Mouse wheel navigates backpages.

Backpages

There are several different ways you can move through backpages in HostAccess:

Toolbar buttons	The up and down arrow buttons on the toolbar allow you to move through backpages one page at a time and are available whenever you have backpages set (see Define number of backpages in the Configure, Editing dialog).
Page Up and Page Dn keys.	You need to have Page Keys set to Backpages (Configure, Terminal). They will move you through backpages one page at a time. Pressing Alt +Page Up or Page Dn will move you up or down one line at a time.

Vertical scrollbar	You need to have the following options set:
	Vertical scrollbar navigates backpages
	Use the Editing dialog from the Configure menu.
	Snap to Frame or Best Fit Font Automation
	Use the Font dialog from the Configure menu).

If you have Font Automation turned off, you can pan over the terminal screen using the vertical scrollbar.

The vertical scrollbar only moves in the terminal screen, not through backpages. You can, however, use the Page Up, Page Dn keys and the toolbar buttons to move through backpages.

This is useful when you have a low resolution monitor and you are trying to view terminal screens that are effectively larger than your monitor size or the size of the HostAccess application window. For example if you are looking at a 132 column report displayed on screen, you can increase the font size to improve readability and view the whole report by panning down and across the terminal screen.

Note: Each backpage uses about 10k of memory and too many may cause HostAccess to run slowly.

Editing Styles

To input or amend textual data in edit boxes or windows, HostAccess provides a set of local editing functions. You can control these functions using some of the keys shown below.

HostAccess supports three local editing styles:

- Windows compatible (for example, ALT/V to paste from the Clipboard)
- WordPerfect compatible
- WordStar compatible

To select one of these styles, use the Editing... option from the Configure Menu, as described above.

Below are a common subset of local editing keys, for general text processing.

Local Edit Key	Function
<INSert>	Toggles between insert (the default) and overwrite modes. A line cursor is used in insert mode, a block cursor in overwrite.
<DELete>	Deletes the character currently under the cursor.
<up arrow>	Up one line.
<down Arrow>	Down one line.
<left arrow>	Moves the cursor one position to the left.
<right arrow>	Moves the cursor one position to the right.
<backspace>	Deletes the character to the left of the cursor..
<home>	Moves to the first character of the input field.

<end>	Moves to the last character of the input field.
<Enter>	Successfully ends the input or amend operation and returns the result to HostAccess.
<Escape>	Aborts the input or amend and leaves the original contents unaltered.

Following is a complete list of other editing keys in WordPerfect and WordStar styles:

Local Edit Key		Function
WordPerfect	**WordStar**	
Ctrl,Left Arrow	Ctrl/A	Word left
Ctrl,Right Arrow	Ctrl/F	Word right
Home,Left Arrow	Home	Beginning of text line
Home,Right Arrow	End	End of text line
Home,Up Arrow	N/A	Top of screen (in an edit window only)
Home,Down Arrow	N/A	Bottom of screen (in an edit window)
Home,Down Arrow	N/A	Bottom of screen (in an edit window only)
Ctrl Backspace	Ctrl/T	Deletes word to right of the cursor
Ctrl/End	Ctrl/Q then Ctrl/Y	Deletes the remainder of the entire line
Ctrl/Del	Ctrl/Y	Deletes complete line.
Ctrl/Page Down	N/A	Deletes the remainder of the entire page (in an edit window only).
Ctrl/F1	Ctrl/R	Restores the text to its original content.

Printing

The following sections describe how to:

- Use print setup.
- Print the active screen.
- Echo to the printer.
- Configure printing.

Print setup

Use the Print setup option from the Session menu to specify the current printer, its orientation, paper size, and paper source, as configured and installed under the Windows Print Manager. See the Microsoft Windows User's Guide for further information on printer setup.

Printing the active screen

Use the Print screen option from the Session menu to print a copy of the currently active host session's screen to the current printer (as defined by the Print Setup option). This option can be useful to record error messages or contentious screen displays.

Echoing to the printer

Use the Echo to printer option from the Session menu or use the toolbar button shown opposite to toggle on or off HostAccess's hard copy printing to the default print device (for example, a local printer). A tick next to the Echo to Printer option in the Session menu indicates that it is selected.

The Echo to printer mode stays on and keeps printing until the user clicks the button again - at which point it stays off (until the user clicks it again).

This is a very useful means of capturing host session(s) output over a period of time. For example, when running an overnight batch job that displays its status at frequent intervals, this option would enable you to keep a record of the complete job run for later analysis.

Note: Cursor screen positioning may cause corruption to some print devices.

Configuring printing
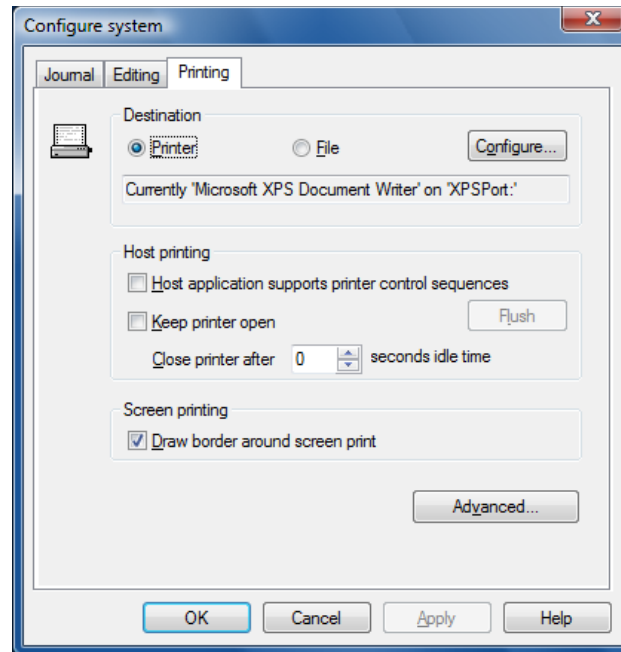
Use the Print setup option from the Session menu to configure printing as follows.

Send to the default print device:

The default print device is set in Windows. To send to the default printer, check the Printer radio button. If you want to alter the printer, or its setup, select the Configure button.

Print to a file:

Check the File radio button, then enter the name of the file you want to print to in the box below this button or use the Browse button to browse for your output file (the Browse button replaces the Configure button when the File radio button is selected).

Host application supports printer control sequences:

Select the Host application supports printer control sequences option. This should only be checked if the host application can and will control the printer. This box is normally unchecked, allowing Windows to control the printing.

Keep printer open:

Some host programs close the printer after every line sent to the printer resulting in a form feed after every line. To prevent this, i.e. to ensure that any printing in one session is done continuously without form feeds unless specifically requested, enable the Keep printer open option. This will send all the printing off to the printer once the session is closed.

To force printing part way through a session, select Flush. This will close the printer then reopen it.

If you set Close printer after idle time, this will close the printer after a set time. The printer will remain closed until the next time it is needed.

Draw border a round screen prints:

Select Draw border around screen print.

Advanced Printer Settings

To access advanced printer settings, select the Advanced button. The Advanced Printer Settings dialog is then displayed.
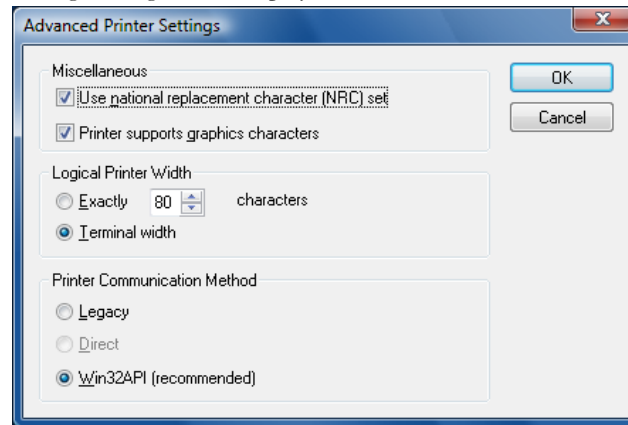
Enable translation of national character sets:

Select Use national replacement character (NRC) set to determine whether printed characters will be mapped by the Nationality setting in the Configure Terminal Setting dialog.

Enable printing of graphics characters:

Check the Printer supports graphics characters option if your printer supports characters 128 and above. This should be checked for all but the oldest printers. It allows you to print characters such as a £ symbol and accented characters.

Setting the logical width of the print job:

To force the printer to use a specific logical width of your choice, select Exactly, and then select the number of characters using adjacent field.

The default setting is Terminal Width. Ensure that this option is selected if the printer is to have the same logical width as the screen.

Changing the printer communication mode:

Select the Legacy radio button to communicate with the printer using the same method as previous versions of HostAccess; this is known to have issues with certain printer drivers, most notably those from Hewlett Packard.

Select the Direct radio button to communicate with the printer directly; this is known to have restrictions when using some printers connected over a LAN or via a USB port.

Select the Win32API (recommended) radio button to enable Win32API printing. Win32API printing should work with all printers, however they are connected

File transfer between PC and Host

The following sections describe how to use the file transfer option to transfer files between the PC and host and how to configure file transfer.

Before starting

Before this option is selected, you must have already prepared the host computer to be ready to either send or receive the file(s).

You need to find out which file transfer programs are available on the host and select one of those to run. For example, to send a file to a UNIX host which has a version of KERMIT, you should start "KERMIT" on the host and tell it to "RECEIVE" the file. KERMIT will usually display a message such as:

```
  KERMIT READY TO RECEIVE, PLEASE START THE UPLOAD PROCEDURE
```

At this time you should select HostAccess's Start file transfer option. It is important that you select the correct protocol in HostAccess to match the file transfer program which is running on the host.

Multiple file transfers

If you specified on the host multiple file transfers to be sent to HostAccess, the first file will be renamed to that specified in the Local File box. Subsequent files will use their own names. If you specified a full path to a local directory, then all the files received will be placed in that directory.

Starting file transfer

To send or receive files:

1. Start the file transfer program on the host; set it to send or receive a file or files.

2. Select HostAccess's Start <u>F</u>ile Transfer option from the S<u>y</u>stem menu or from the toolbar button shown.

   Note: When running an IBM3270 emulation, an IND$FILE transfer will be automatically initiated. Refer to Advanced HostAccess - IND$FILE transfer.
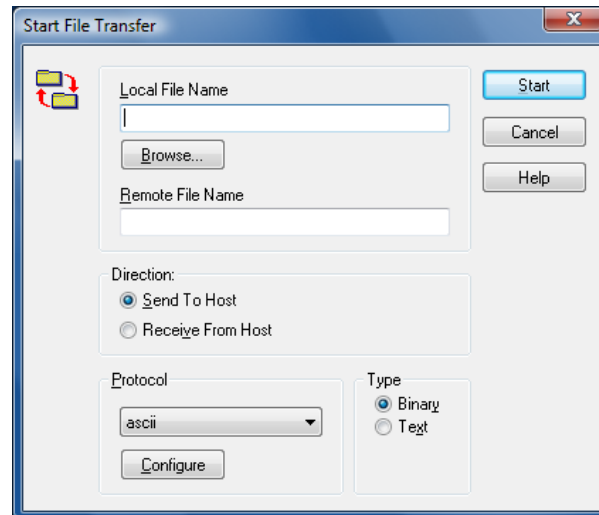
3. Highlight the file transfer <u>P</u>rotocol. This must match the host's protocol.

4. Enter the PC file to be sent or received in the <u>L</u>ocal File box; you can also use the <u>B</u>rowse button to select the file to be sent. You can also specify the name you wish it to have on the host in the <u>R</u>emote File box. If this box is left empty, the file will be transferred with its own name.

5. Select the <u>S</u>end To Host or <u>R</u>eceive from Host button under Direction.

6. Select the type of data to be transferred (binary or text), by selecting either Binar<u>y</u> or Te<u>x</u>t in the Type group. Binary files are files such as executables (i.e. .exe), programs and documents with formatting. Text files are usually plain text files.

7. Start the file transfer by selecting Send.

Wildcards may be used when selecting the file to be sent. This may result in multiple files being sent to the host. When multiple files are sent, only the first one will be renamed to the file name specified in the <u>R</u>emote File box. Subsequent files will be sent with their own names before sending multiple files, check that the host file transfer program can handle them. To check that the file transfer parameters for the selected protocol are configured correctly, select the <u>C</u>onfigure button.

Configuring File Transfer
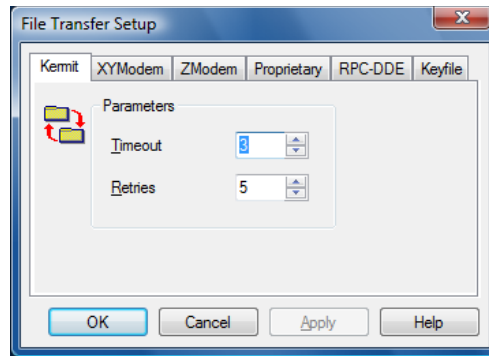
Use the File Transfer option from the Configure menu to configure the various parameters used when transferring files.

The following file transfer protocols are available: Kermit, Keyfile, ZModem, XYModem, RPC-DDE and Proprietary.

You should not usually need to alter these parameters; HostAccess's file transfer process is completely automatic. However, if you encounter file transfer errors, adjusting these parameters may help.

Note: Check with your system administrator before adjusting any of these parameters.

HostAccess also supports file transfer between UNIX and DOS (the UNIX system must have a C compiler available) and between a PICK host and DOS. For this, you must have the host files installed, see your installation instructions.

Kermit

Timeout: The time (seconds) HostAccess waits for a response from the host before assuming the last block has been lost and must be re-sent. This may need to be increased for slow machines.

Retries: The number of times HostAccess should attempt to recover from an error, re-sending a data block. Increase this setting for "noisy" lines, or modems without error checking.

XYModem

Timeout: The time (seconds) HostAccess waits for a response from the host, before assuming the last block has been lost and must be re-sent. This may need to be increased for slow machines.

Retries: The number of times HostAccess should attempt to recover from an error, re-sending a data block. Increase this setting for "noisy" lines, or modems without error checking.

ZModem

T̲imeout: The time (seconds) HostAccess waits for a response from the host, before assuming the last block has been lost and must be re-sent. This may need to be increased for slow machines.

R̲etries: The number of times HostAccess should attempt to recover from an error, re-sending a data block. Increase this setting for "noisy" lines, or modems without error checking.

Proprietary

T̲imeout: The time (seconds) HostAccess waits for a response from the host, before assuming the last block has been lost and must be re-sent. For slow machines, this may need to be increased.

R̲etries: The number of times HostAccess should attempt to recover from an error, re-sending a data block. Increase this setting for "noisy" lines, or modems without error checking.

Window S̲ize: The number of concurrent file transfer data blocks HostAccess will send to/receive from the host. If you are running over a Wide Area Network (WAN), you may notice some speed improvements by increasing this parameter.

RPC/DDE

RPC/DDE is for HostAccess's RPC (remote procedure call) mechanism. This sets up the way HostAccess will manage an RPC session to a PICK host.

T̲imeout: The time (seconds) HostAccess waits for a response from the host, before assuming the last block has been lost and must be re-sent. For slow machines, this may need to be increased.

R̲etries: The number of times HostAccess should attempt to recover from an error, re-sending a data block. Increase this setting for "noisy" lines, or modems without error checking.

Window S̲ize: The number of concurrent file transfer data blocks HostAccess will send to/receive from the host. If you are running over a Wide Area Network (WAN), you may notice some speed improvements by increasing this parameter.

C̲hecksum: Checksum is the number of checksum bytes to use. This must be set to the same number as on your host machine. 16-bit version only.

Keyfile

Keyfile is HostAccess's own file transfer protocol.

When the keyfile transfer is started, HostAccess will prompt for a Keyfile name. HostAccess will then simply pass the characters in this file to the host. The keyfile holds the bootstrap program and the editing commands to enter the program into a file on the host. It also has the commands needed to compile and run the bootstrap program.

C̲har Delay (ms) and **L̲ine Delay (ms):**The time to wait between each character and line. They are only valid if E̲cho Pacing is set off.

Echo Pacing: If set, HostAccess waits for an echo to be returned from the host before sending each character. This adds some reliability to Keyfile transfer.

Control Characters Used

HostAccess uses a few control characters during file transfer to or from DOS. These control characters must be allowed to pass through the network unchanged, and they are listed below if you need to load the host routines:

ASCII Value	Usage
002	Start of text
005	Compression delimiter (file transfer)
006	Record separator (file transfer)
013	Carriage return

Modem Connections

This section describes how to:

- Connect to a modem in HostAccess.

Connecting to a modem

To connect to a modem:

Create a new session by selecting either <u>N</u>ew from the <u>S</u>ession menu, or <u>S</u>ession from the <u>C</u>onfigure menu.

1. Highlight the Modem item in the Network list and the emulation you are using in the Emulation list and click on <u>P</u>roperties.

2. Configure the modem properties.

3. Click on the emulation tab and configure the properties.

Customising the system

The following sections describe how you can set your screen in different ways to suit the way you work.

Resizing the screen

The standard screen setting is for HostAccess to be set to maximum with a toolbar and status bar. If HostAccess is not maximised, you can click the Maximise button. This is a standard Windows button in the top right hand corner of any Windows program.

You can view the screen with or without the tool bar and the status bar.

You can expand HostAccess′s window to the full size of your screen, this is called Ultimising the screen. This is useful if you want to use the session as a traditional terminal, without Windows features. You can also select whether the Ultimised screen has a toolbar and status bar or not.

Ultimising the screen

To Ultimise the screen:

1. Press Alt+Enter to switch HostAccess′s window between full screen mode and normal window size. You can also select the Full screen option from the System menu to Ultimise the screen, but to reset the screen, you will need to press Alt+Enter.
Note: Ultimise "loses" the title bar and menu bar.

2. You can also resize the screen by dragging the thin borders at the top, bottom and sides of the screen. If you do this, it is recommended that you configure the font you use to Maintain Aspect Ratio, otherwise the text on your screen could look stretched.

Configuring the toolbar

To view the toolbar:

Enable the View toolbar option in the Configure menu.

Showing/Hiding HostAccess's Status Bar

To display HostAccess's status bar, use the View status bar option from the Configure menu.

HostAccess's status bar appears below the emulation screen.

Resetting the screen

Select the Reset screen option from the System menu. It is equivalent to switching a terminal off and on. This facility is useful if communications with the host have been interrupted and seem unable to continue.

Note: Host applications can also suspend communications by sending XOFF characters. Often a simple CTRL/Q will restart communications.

Resetting the network

To reset your network connection:

Select the Reset network option from the System menu. Use this option if your network connection is disrupted for some reason. If you have to reset the network, your connection will be terminated and you will have to log on again.

Configuring the keyboard

HostAccess supports many terminal emulations which means that many sets of function keys and special editing keys are available. Each emulation may have a different set of pre-defined emulation keys.

HostAccess has been programmed with the standard set of function keys normally relevant to the particular emulation. Applications can re-program these keys automatically (as any real terminal will do) and you can re-program them manually. This section describes how you can map a PC key to a specific emulation key, to a character string, or to a specific macro. It also describes how you can restore the default settings.
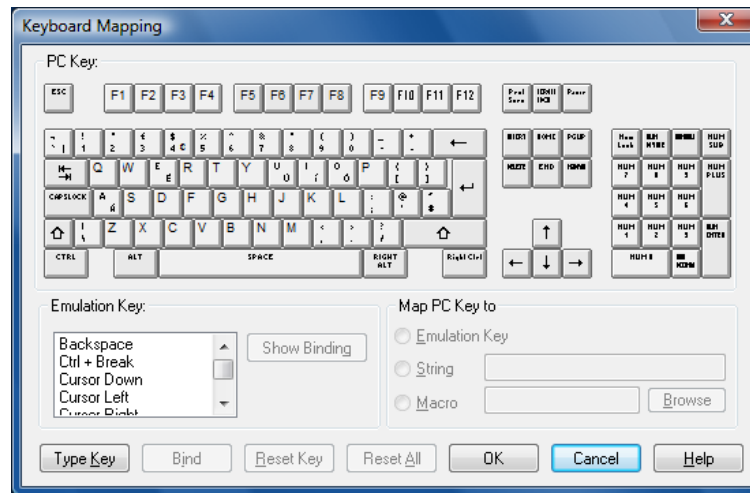
When HostAccess is installed on your PC, your systems administrator may have set up the keyboard mapping to a standard terminal mapping. You should consult your systems administrator before making any changes.

Note: If you are using the 16-bit version of HostAccess in a 32 bit environment, the keyboard language will appear as the default language (USA).

1. First, open up your HostAccess session in the normal way.

2. Log onto your application. Your application may re-program your keys automatically. Test out the keys you want to remap.

3. Select the Keyboard mapping option from the Configure menu. The keyboard mapping dialog will appear on the screen showing the PC keyboard layout.

4. The following three sections describe how to map emulation keys, strings and macros.

Note: If you wish to use only the keyboard for configuration entries, use the Type Key button as follows:

- Select ALT+K or select the Type Key button. A message box appears.
- Press and hold a key sequence (e.g. ALT+SHIFT+F1). Once the keys are released they appear selected in the dialog.
- Select either Emulation Key, String or Macro and bind the relevant data to the key sequence.

Emulation Keys

To see what function keys are mapped to.

1. Click on function key (e.g. F13) entry in the list box. The Show Binding button becomes active.

2. Click on the Show Binding button to highlight the CTRL+ F3. The Map PC Key to section shows it to be an Emulation Key.

Clicking on the six special editing keys: Ins, Home, Pg Up, Delete, End and Pg Dn, will cause the Emulation key section to display the relevant binding.

Example

To re-map the Find emulation key from its default setting of INS key:

1. Click on the Ins key. The Emulation key changes to the Find option.

2. Click on the keys you wish to re-map or bind it to.
For example, click on the CTRL key and the F12 key causing CTRL+F12 to be highlighted.

3. Click on the Find option in the emulation section and the radio button for Emulation key in the Map to PC Key section.

To re-map or Bind this you MUST click on the B<u>i</u>nd Button.

To test this mapping click on the Find option and then "Show binding", it should display CTRL+F12.

Note: If you re-map an emulation key to a previously defined emulation key, e.g. bind Find to the Del key, the Del key binding (i.e. Select) will be lost.

Strings

This option associates a string to a PC key. This allows you to set a key so that every time that key is pressed, a string will be sent to the host. For example, you can set a key so that you can log off from a host at the touch of a button by associating a command such as the word OFF with a key such as ESC. You cannot assign a string to a key that has been assigned as an emulation key. To do this you must first move the emulation binding.

To associate a string to a PC key

1. Click on the PC Key in the Keyboard mapping dialog that you want to associate to the string.

2. Under the Map PC Key to section, select String.

3. Enter the required text in the field to the right of String. If a carriage return is required as well, then enter a Control symbol (^) followed by a capital M.

To set the string to the PC key:

Click on the Bind button.

Clicking on the function keys (F1 through to F12) causes a characters string to appear in the "Map PC Key to" section next to the String radio button.

To find out if a PC key has a string associated with it:

In the Keyboard Mapping dialog, click on the PC key.

If a key has a string associated with it, the String field in the Map PC key to section will display the relevant string.

Macros

Macros are used to automate tasks. If there is a macro that you use frequently, it would be worth associating a macro with a PC key so that whenever you pressed that key, the macro would be run.

To map a macro:

1. Click on the Macro radio button and either enter the full path name of the macro in the field next to it, or select it using the Browse button.

2. Click on the Bind button at the bottom of the dialog then click on the OK button.

To reset keyboard mappings:

To restore the default setting of a specific key, highlight the key you want to restore and click on Reset Key.

To restore *all* the key settings to the default, click on the Reset All key.

Configuring screen attributes

The Attributes option from the Configure menu allows you to change the colour of your terminal display's attributes, that is, the normal setting, the bold setting and so on. You can also set the Auto Sculpture option where it is relevant.

Changing attribute colour settings

To change the colours for an attribute:

1. Highlight the attribute in the Attribute box. You may need to scroll down to find the attribute you want to change. The Sample box displays the current settings for the highlighted attribute.

2. Select the foreground and background colours for the attribute by clicking on the colour of your choice in the Foreground and Background sections. You can assign Auto Sculpture, Flash or Underline to any attribute, see the following sections for further information.

3. To change other attributes, repeat steps 1 and 2. When you have finished, click on OK.

You can return any colours to the original setting by clicking Default.
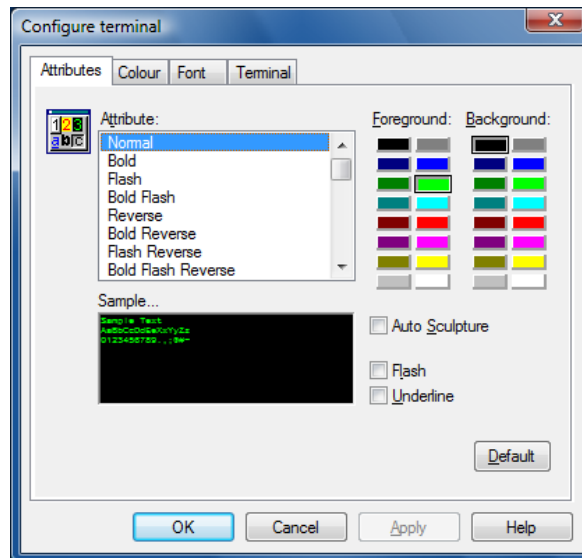
Using Auto Sculpture

The Auto Sculpture option puts a sculptured box around the field with the specified attribute when the option is checked. For best results, the colours for the sculptured attributes and for normal should be set to a black foreground on a light gray background.

You can transform most traditional green on black emulations into a modern, Windows-like application with ease.

In the Attributes dialog, change the Background colours of all the attributes for your terminal to light gray. If you are not sure which attributes your application uses, try the common ones first such as Normal and Bold.

You can also achieve a one step GUI look and feel by configuring your session emulation properties:

- Select Session from the Configure menu, double click on the Properties button and select the Sculpted option.

Flash

Some applications use flashing characters. This option enables you to turn flashing on and off where it is used in an application. When flashing is enabled, the Flash box will be checked.

To enable or disable flashing:

Highlight the attribute then check the Flash box for flashing. Click the box again to disable flashing.

Underline

You can apply an underline style to any attribute.

To give an attribute an underline :

Highlight the attribute then enable the <u>U</u>nderline check box.

Adjusting emulation colours

This option enables you to adjust the colours for you emulation.
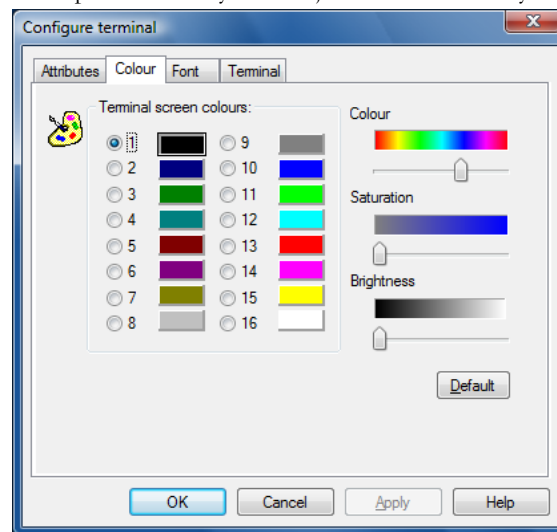
To alter a colour:

1. Select the colour you want to alter by clicking on the colour or the adjacent radio button under Terminal screen colours.

2. Adjust the Colour, Saturation and Brightness by dragging the bars under these sections from side to side. The colour you selected under Terminal screen colours will change as you drag the bars.

3. Repeat steps 1 and 2 for any other colours you want to alter.

4. Click OK.

You can return any colours to the original setting by clicking <u>D</u>efault.

Selecting fonts

With the <u>F</u>ont option from the <u>C</u>onfigure menu you can select font name and characteristics.
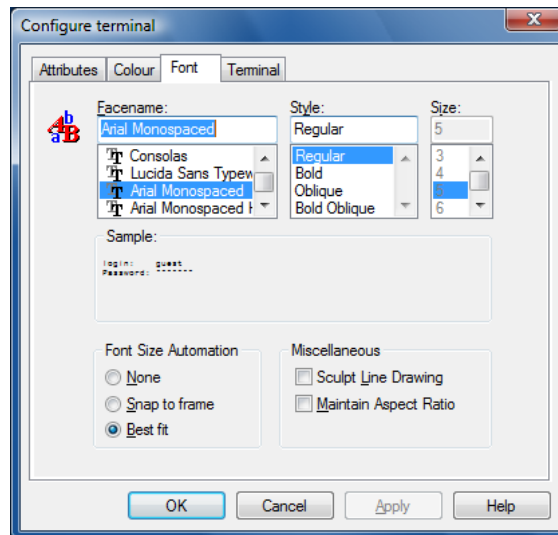
HostAccess supplies its own TrueType font: Arial Monospaced, which is licensed from the leading font house, MONOTYPE. You can also use the TERMiTE font - this is not fully scaleable, but can be faster if your application does large amounts of line drawing.

To select a font:

1. Choose Font from the Configure menu.

2. Highlight the font you want to use in the Facename list box. You may need to scroll up or down. The Sample box will display an example of the way the font selected will be displayed on the screen.

3. Highlight the style and the size of the font you want.

4. With Font size automation set to Best fit the terminal window is sized so that it is the best fit in the current HostAccess frame size.

5. If you want the screen to be in proportion with the HostAccess window size, select Snap to Frame. If you resize the window, the font size is changed accordingly.

6. With the Font size automation set to None there is no font automation.

7. If you want to keep the window size close to the original aspect ratio of the font selected, select Maintain Aspect Ratio with Snap to Frame.

If the application you are using has line drawing, you can give the screen a 3D look and feel. To do this:

Select Sculpt Line Drawing. For best effect, set the attributes to a black foreground on a light gray background.

Configuring the terminal
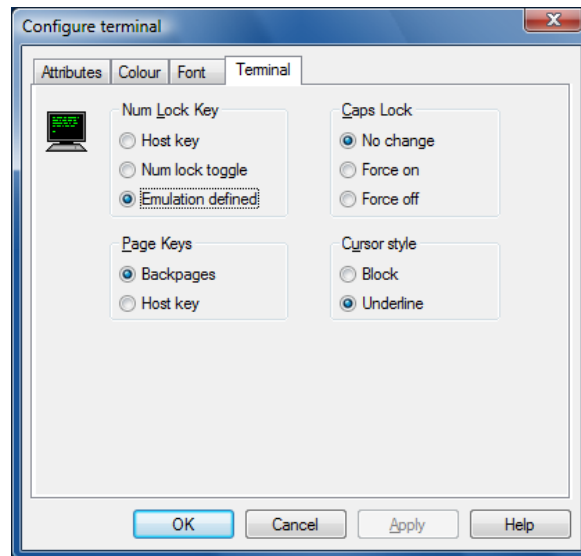
The <u>T</u>erminal option in the <u>C</u>onfigure menu allows you to change terminal-specific details for your session, for example, the settings for the Caps Lock key and Num Lock Key settings at the start of a session.

To set the initial state of the session's <CAPS LOCK> key:

1. Select <u>T</u>erminal from the <u>C</u>onfigure menu.

2. Num <u>L</u>ock sets the initial state of the <NUM LOCK> key.

If the Num Lock key is set to Host key, then HostAccess will send whatever the numlock key is mapped to, this may be an emulation-specific sequence i.e. the DEC's PF1 or it may be a user-defined sequence. It will not perform the Num lock toggle functionality, even though the numlock light on the keyboard will change when this key is used.

If the Num Lock key is set to Num Lock toggle, then HostAccess will perform the Numlock toggle regardless of what the numlock key is mapped to. HostAccess will also toggle the keyboard numlock light correctly.

If the Num lock keys is set to Emulation defined and there is a mapping to the Numlock key, then HostAccess will send this mapping when the num lock key is used. If there is not a default mapping to this key, then HostAccess will perform the Num lock toggle.

3. Use <u>C</u>aps Lock and select either no change, force on (upper case) or force off (lower case). For example, UNIX users might set this to off.

Note: This functionality has no effect when the 16-bit version of HostAccess is used on a 32-bit operating system i.e. Windows 95/98 and NT.

4. <u>P</u>age Keys is set to show Backpages by default. However, some host applications need to use page keys (say, for their own paging processes) by interrogating the

keystrokes returned from the user's terminal emulation. For HostAccess to send to the host the characters generated by the <PAGE UP> and <PAGE DOWN> keys, set Page Keys to Host.

5. The state of the Caps lock is forced only when connecting the sessions; the state of the Caps lock is not saved for multiple sessions. This applies to both the 16 and 32-bit versions regardless of operating system.

6. Use Cursor to define each session's cursor type. You can select either Block or Underlined cursor.

The journal

The Journal option configures journaling. This is a powerful feature which reports messages back to the user whilst running HostAccess. You should only use the journal to trace errors, debugging application code, or when encountering problems as enabling Journaling may slow HostAccess down noticeably. Journaling records general information about the processes occurring inside the product.
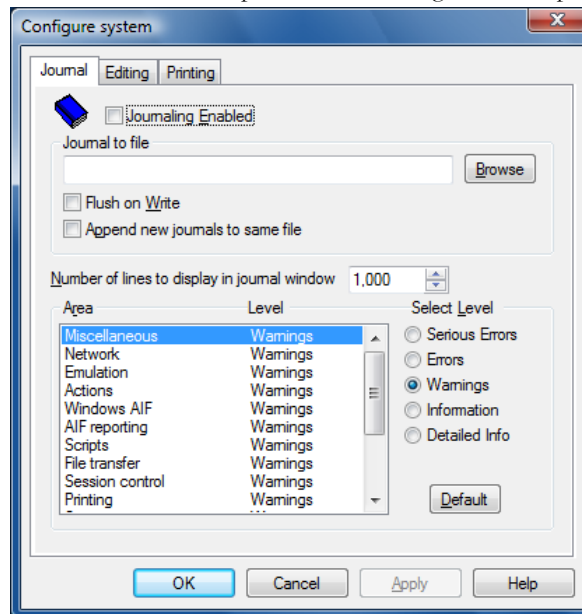
Viewing the journal

To display HostAccess's journal in a separate window:

Select Journal from the Configure menu. This displays the Journal dialog.

Check Journaling Enabled box and click on OK.

Configuring the journal

You set the journal options as follows:

1. Check Journaling Enabled box to enable the journaling option.

- Define your own output file to send journal information to, by typing a file name in the Journal to file field.
- Automatically save all journal entries when they are made by enabling Flush On Write. If the session crashes, the journal file is not then lost.
- To have new journals appended to the same file, enable the Append new journals to same file.

2. Highlight the item in Area that you wish to receive information on and select the level of information you wish to receive in Level as listed:

- Serious errors - failures.
- Errors - all errors.
- Warnings - non-fatal error messages.
- Information - status, i.e. mouse movements, Caps lock key pressed.
- Detailed info - all information exchanged between the host and the PC.

3. Alter the number of lines in the Journal window using the Number of lines to display in journal window option. The default is 1,000.

4. Click on OK.

5. Select the View journal option from the Configure menu. The journal must be enabled before you can view it (if the journal is not enabled, this menu item is grayed out).

To clear the journal from your screen:

De-select the View Journal option from HostAccess′s Configure menu, or close the journal window itself. The journal is still active if you do this, messages will continue to be written to the journal.

To close the journal:

De-select Journal Enabled.

Chapter

3

Networks and Emulations

Overview

The following sections tell you how to configure HostAccess to connect your PC to your host. The sections are specifically designed for systems administrators and people who are involved in setting up HostAccess for users, and are split into two parts covering:

- Network connections from page 50.
- Emulations from page 65.

The dialogs in this chapter are displayed when the Properties button on the Configure session dialog is pressed (see Page 18).

Network connections

Networks	Notes	Page
APPC Router	Using the APPC Router you can connect to your AS/400 or System 3x.	64
Loopback	This is a diagnostic facility for testing emulations.	63
Modem	This option enables you to connect to the host through a modem.	61
Serial port	You should use this option if your PC has a direct connection to the host you want to connect to via a serial port.	60
Test file	This option is used to replay a trace.	109
Windows Sockets and U2 Sockets	HostAccess supports Windows Sockets 1.1 which is an open TCP/IP API. It is supported by over 70 TCP/IP stacks. It may be used over a network, or by using a modem with PPP (Point to Point Protocol).	51
Secure Shell (SSH)	HostAccess supports SSH-2 for data encryption/authentication. It may be used over a network, or by using a modem with PPP (Point to Point Protocol).	52
Secure Sockets (SSL)	HostAccess supports Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1). It may be used over a network, or by using a modem with PPP (Point to Point Protocol).	54
U2 Sockets over SSL	HostAccess supports Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) and enables support for IBM UniVerse and UniData device licensable hosts over these protocols.	56
U2 Sockets over SSH	HostAccess supports SSH-2 for data encryption/authentication and enables support for IBM UniVerse and UniData device licensable hosts over these protocols.	58

Windows Sockets & U2 Sockets

HostAccess supports Windows Sockets API for TCP/IP Communications. You can use HostAccess with any product that supports this interface.
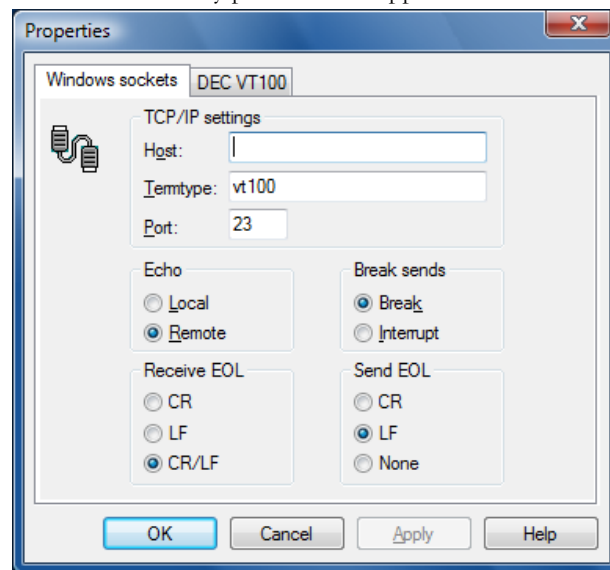
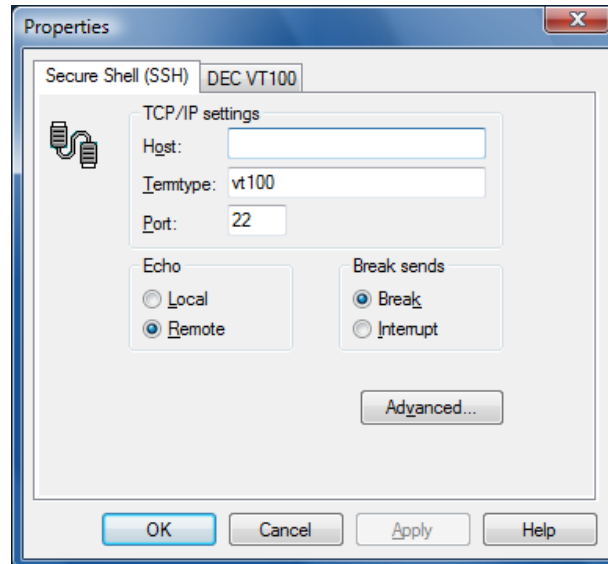
Set the options as follows:

1. Fill in your H<u>o</u>st Telnet address. This can be an IP address or a name if defined in the hosts database. This is usually found in your Windows directory.

2. <u>T</u>ermtype is a Telnet variable. This should normally not be changed.

3. Define your <u>P</u>ort number, for Telnet, this is usually 23.

4. Use Echo to specify whether data keyed in is echoed locally, (<u>L</u>ocal) or by the host (<u>R</u>emote). The default is <u>R</u>emote.

5. Break sends defines the effect of sending a break to the host. Select Brea<u>k</u> for a break or <u>I</u>nterrupt for a program interrupt.

6. Use Receive EOL to define the effect of the end of line character received from the host: Carriage Return (<u>C</u>R), Line Feed (<u>L</u>F) or Carriage Return and Line Feed (CR<u>/</u>LF).

7. Use Send EOL to define the end of line character sent to the host.

Secure Shell (SSH)

The Secure Shell (SSH) network stack supports SSH-2 encryption/authentication.

PuTTY is copyrighted 1997-2006 by Simon Tatham.

Portions are copyrighted by Robert de Bath, Joris van Rantwijk, Delian Delchev, Andreas Schultz, Jeroen Massar, Wez Furlong, Nicolas Barry, Justin Bradford, Ben Harris, Malcolm Smith, Ahmad Khalifa, Markus Kuhn, and CORE SDI S.A.

Set the options as follows:

1. Fill in your Host Telnet address. This can be an IP address or a name if defined in the hosts database. This is usually found in your Windows directory.

2. Termtype is a Telnet variable. This should normally not be changed.

3. Define your Port number, for Secure Shell, this is usually 22.

4. Use Echo to specify whether data keyed in is echoed locally, (Local) or by the host (Remote). The default is Remote.

5. Break sends defines the effect of sending a break to the host. Select Break for a break or Interrupt for a program interrupt.

Secure Shell (SSH) Advanced Settings

To configure the advanced settings for a Secure Shell (SSH) connection, select Advanced in the Secure Shell (SSH) Properties dialog box.
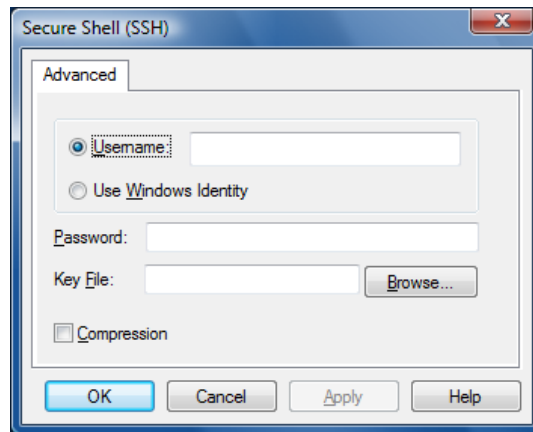
Set the options as follows:

1. Fill in your Username for the connection or select Use Windows Identity to use the identity of the currently logged on user.

   Note: If Username is selected, but no user name has been supplied you will be prompted to enter one when connecting.

2. Enter the corresponding Password.

   Note: If a password is required, but has not been supplied you will be prompted to enter one when connecting.

3. Browse for a PuTTY Private Key file if the Secure Shell (SSH) host requires key file authentication. See 'Creating PuTTY Key Files' for more information.

4. Select whether to use Compression for the connection.

Secure Sockets (SSL)

The Secure Sockets (SSL) network stack supports the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) protocols.

This product includes cryptographic software written by Eric A. Young (eay@cryptsoft.com), and software written by Tim J. Hudson (tjh@cryptsoft.com).

Note: Currently, server and client certificates are only used for encryption and identification. HostAccess does not perform trust chaining or validation checking of the supplied certificate.

Set the options as follows:

1. Fill in your Host Telnet address. This can be an IP address or a name if defined in the hosts database. This is usually found in your Windows directory.

2. Termtype is a Telnet variable. This should normally not be changed.

3. Define your Port number, for Secure Sockets, this is usually 992.

4. Use Echo to specify whether data keyed in is echoed locally, (Local) or by the host (Remote). The default is Remote.

5. Break sends defines the effect of sending a break to the host. Select Break for a break or Interrupt for a program interrupt.

Secure Sockets (SSL) Advanced Settings

To configure the advanced settings for a Secure Sockets (SSL) connection, select Advanced in the Secure Sockets (SSL) Properties dialog box.
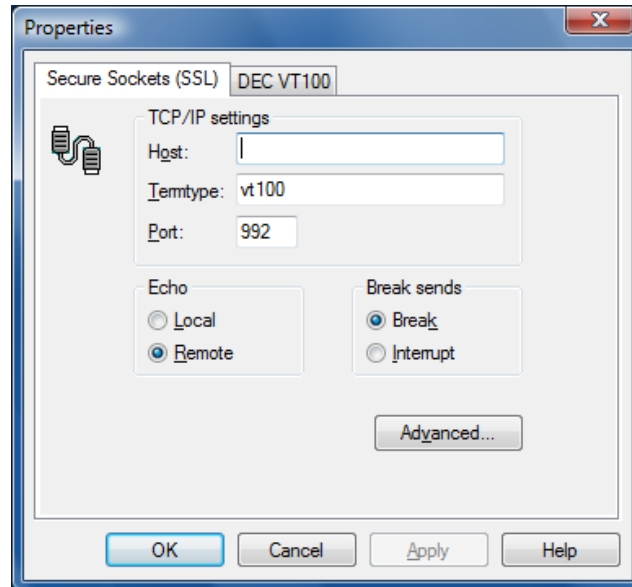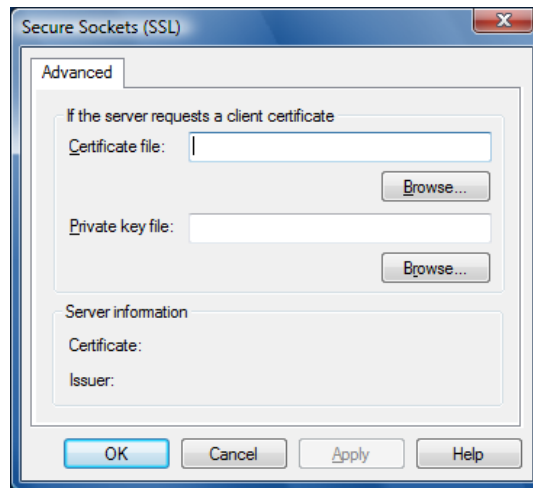
Set the options as follows:

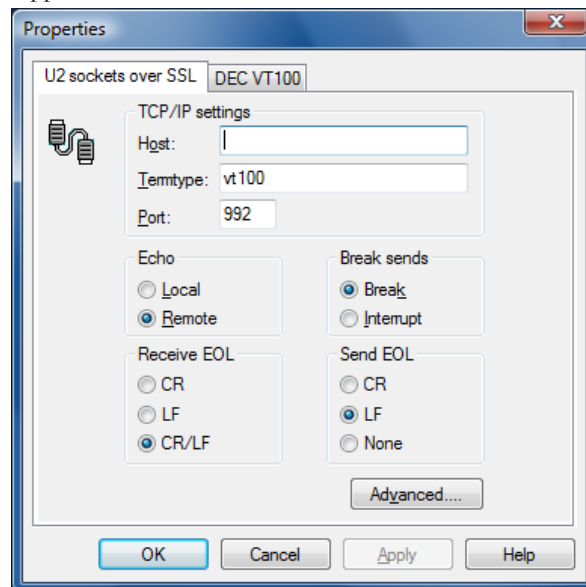**5.** Browse for a client certificate file. This certificate will be sent to the Secure Sockets (SSL) host if the host requires client certificates.

6. Browse for a client private key file. This must correspond to the client certificate file and will be used to decrypt data encrypted using the client certificate.

U2 Sockets over SSL

The U2 Sockets over SSL network stack supports the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) protocols and enables support for IBM UniVerse and UniData device licensable hosts over these protocols.

This product includes cryptographic software written by Eric A. Young (eay@cryptsoft.com), and software written by Tim J. Hudson (tjh@cryptsoft.com).

Note: Currently, server and client certificates are only used for encryption and identification. HostAccess does not perform trust chaining or validation checking of the supplied certificate.

Set the options as follows:

1. Fill in your Host Telnet address. This can be an IP address or a name if defined in the hosts database. This is usually found in your Windows directory.

2. Termtype is a Telnet variable. This should normally not be changed.

3. Define your Port number, for Secure Sockets, this is usually 992.

4. Use Echo to specify whether data keyed in is echoed locally, (Local) or by the host (Remote). The default is Remote.

5. Break sends defines the effect of sending a break to the host. Select Break for a break or Interrupt for a program interrupt.

6. Use Receive EOL to define the effect of the end of line character received from the host: Carriage Return (CR), Line Feed (LF) or Carriage Return and Line Feed (CR/LF).

7. Use Send EOL to define the end of line character sent to the host.

8. Break sends defines the effect of sending a break to the host. Select Brea<u>k</u> for a break or <u>I</u>nterrupt for a program interrupt.

U2 Sockets over SSL Advanced Settings

To configure the advanced settings for a U2 Sockets over SSL connection, select Ad<u>v</u>anced in the U2 Sockets over SSL Properties dialog box.
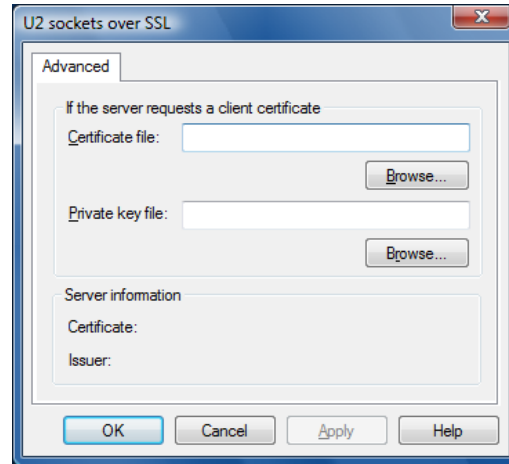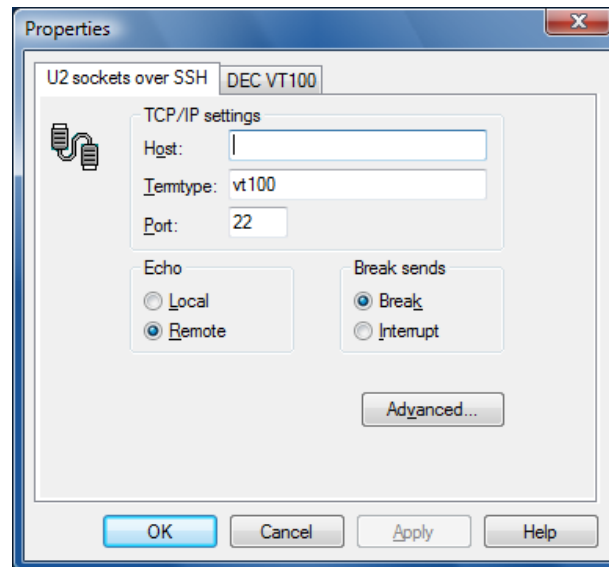

Set the options as follows:

1. Browse for a client certificate file. This certificate will be sent to the U2 host if the host requires client certificates.

2. Browse for a client private key file. This must correspond to the client certificate file and will be used to decrypt data encrypted using the client certificate.

U2 Sockets over SSH

The Secure Shell (SSH) network stack supports SSH-2 encryption/authentication and enables support for IBM UniVerse and UniData device licensable hosts over these protocols.

PuTTY is copyrighted 1997-2006 by Simon Tatham.

Portions are copyrighted by Robert de Bath, Joris van Rantwijk, Delian Delchev, Andreas Schultz, Jeroen Massar, Wez Furlong, Nicolas Barry, Justin Bradford, Ben Harris, Malcolm Smith, Ahmad Khalifa, Markus Kuhn, and CORE SDI S.A.

Set the options as follows:

6. Fill in your Host Telnet address. This can be an IP address or a name if defined in the hosts database. This is usually found in your Windows directory.

7. Termtype is a Telnet variable. This should normally not be changed.

8. Define your Port number, for Secure Shell, this is usually 22.

9. Use Echo to specify whether data keyed in is echoed locally, (Local) or by the host (Remote). The default is Remote.

10. Break sends defines the effect of sending a break to the host. Select Break for a break or Interrupt for a program interrupt.

U2 Sockets over SSH Advanced Settings

To configure the advanced settings for a Secure Shell (SSH) connection, select Advanced in the Secure Shell (SSH) Properties dialog box.
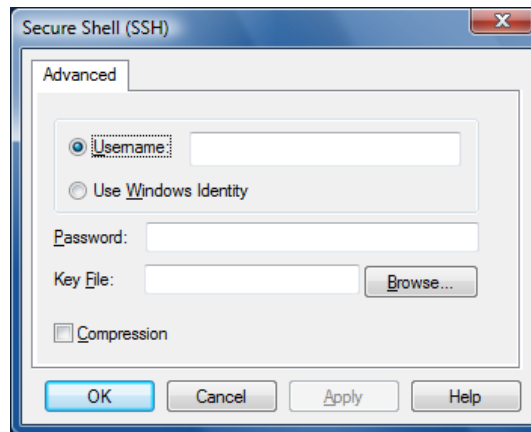
Set the options as follows:

3. Fill in your Username for the connection or select Use Windows Identity to use the identity of the currently logged on user.

   Note: If Username is selected, but no user name has been supplied you will be prompted to enter one when connecting.

4. Enter the corresponding Password.

   Note: If a password is required, but has not been supplied you will be prompted to enter one when connecting.

5. Browse for a PuTTY Private Key file if the Secure Shell (SSH) host requires key file authentication. See 'Creating PuTTY Key Files' for more information.

6. Select whether to use Compression for the connection.

Serial port (RS232)

You can connect HostAccess directly to the host via a serial cable, in almost the same way as a normal terminal. The connector on the back of the PC may be different from the one used on a standard terminal. To use a standard terminal cable, you may need a 9 pin to 25 pin adapter between the PC and the terminal cable. You may also need to cross over pins 2 and 3 on the connection.
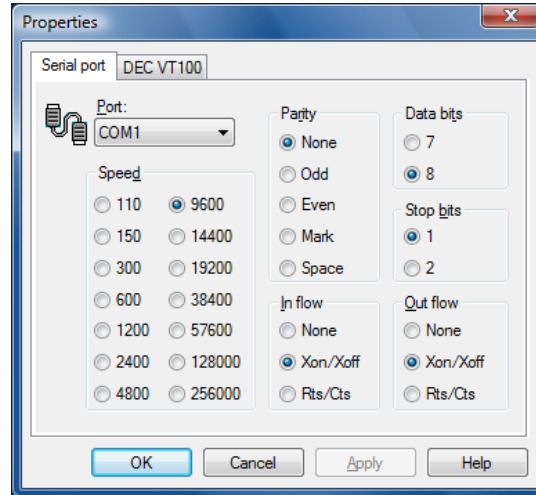
The options are described below:

Port	Use to select your communications port number (COM1 to COM4).
Speed	Select to set the correct data transfer speed (in baud).
Parity	Use to select parity type for your connection.
Data bits	Use to select the number of data bits in each byte.
Stop bits	Use to select the number of stop bits.

To define how HostAccess tells the host that its input buffer is full and how HostAccess is told by the host that it can receive no more characters, both HostAccess and the host system must use the same flow control protocol. Select the options in the Inflow and Outflow boxes as follows:

None	Select to do nothing (and risk losing characters).

Xon/Xoff   Select to use XON/XOFF software protocol (can only be used for serial ports).

RTS/CTS   Select to monitor RTS/CTS control signals. RTS/CTS will only work if you have an appropriate cable between the host and the PC.

Modem
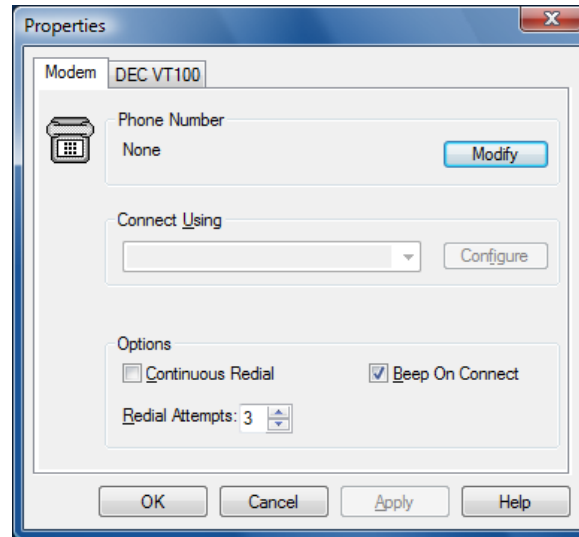
Configuring modem properties

You can dial up a host from a modem using the Modem connection option in the same way as you would select a network option in the Session Setup dialog i.e. by selecting the Session option from the Configure menu, the New option from the Session menu or the New toolbar button.

The following sections describe how to:

- Set the phone number.
- Set the dialling properties.
- Select the modem.
- Configure the modem.

Setting the phone number

To set the Phone Number:

1. Click on the Modify button next to Phone Number. The Phone Number dialog will appear.

2. Fill in the Country Code, the Area Code and the Local fields then click on OK.

Setting the dialing properties

To set the Dialing Properties:

Click the Modify button next the Dialing Properties.

I am dialing from	You can either type a location, select an existing location from the pull down box, or select New and type a location in the field. You can also remove a location by selecting that location from the list box, then click the Remove button.
The area code is	Type your area code.
I am in	Select your country code from the I am in list box.
How I dial from this location	Fill in the access codes if applicable.
Dial using Calling Card	Fill in the field if this is applicable to your location.
This location has call waiting	If the location you will be dialing from has call waiting facilities, enable the This location has call waiting field. You can also set a code which will disable this facility.
The phone system at this location uses	Select the type of phone system your location uses: Tone dialing or Pulse dialing.

Selecting the modem

To select the type of modem you will connect using:

Select the modem type from the Connect Using field. If you have no modems, you will need to load one. You can do this from the Windows Control Panel by selecting Modems.

Configuring the modem

To configure the modem:

Click the Configure button next to Connect Using.

General:

Set the Port, Speaker volume and Maximum speed.

Connection:

Click on the Connection tab to set the connection settings.

Connection preferences you can set are Data bits, Parity and Stop bits.

Call preferences you can set are:

- Wait for dial tone before dialing.
- Cancel the call if not connected within_secs.
- Disconnect a call if idle for more than_ mins.

You can click on the Port settings button to configure port settings.

You can click on the Advanced button to configure the following:

- Use <u>e</u>rror control.
- <u>F</u>low control.
- <u>M</u>odulation type.
- E<u>x</u>tra settings.
- Rec<u>o</u>rd a log file.

Click on the Options tab to set

Connection control:

- Bring up terminal window <u>be</u>fore dialing.
- Bring up terminal window <u>a</u>fter dialing.

Dial control:

- Operator assisted or <u>m</u>anual dial.
- <u>W</u>ait for credit card tone.

Status control:

- Display modem <u>s</u>tatus.

Click on OK.

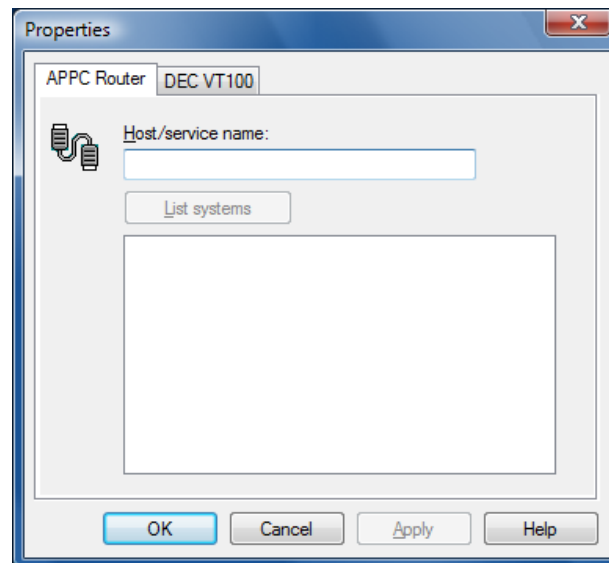**You can set the following basic options**

- Continuous redial.
- Redial attempts.
- Beep on connection.

Loopback

This option provides a diagnostic facility, for testing emulations.
This should only be used on instruction from Technical Support.

IBM APPC Router

HostAccess can connect to your AS/400 or System 3x using IBM's PC Support Router function. This means you can connect without having to load IBM's Workstation function module. Contact your IBM Support for information on configuring the PC Support Router function.

AS/400 notes

There are several ways you can connect to an AS/400 host over a network using HostAccess.

If you have TCP/IP on the AS/400 host, you will need a TCP/IP stack on your PC. You can connect by using the Windows Sockets interface and the IBM 5250 emulation in HostAccess's Configure Session option.

Note: TCP/IP is included with the OS/400 V3 product but not OS/400 V2.

If you have PC Support (for OS/400 V2) or Client ACCESS/400 (for OS/400 V3) on your AS/400, you will need to have either PC Support Router or NS Router on your PC. You can connect by using the NetSoft APPC Router option and the IBM 5250 emulation in HostAccess's Configure Session option.

To connect to the host system:

When the router software is loaded and connected to a number of systems, selecting the List systems button causes a list of the systems that the router is currently connected to, to be displayed in the list box.

Select the required system, which is then displayed in the Host/service name field.

Emulations

HostAccess supports the following emulations:

Asynchronous emulations	Page
ADDS Viewpoint.	75
ADM11 R, P, W, H.	75
AMPEX 320.	75
ANSI (+ Colour).	75
Data General DG216.	75
DEC VT52, VT100, VT220 (7 bit & 8 bit) VT320, VT420.	70
Galileo.	75
IBM PC Monitor.	75
ICL DRS - M10/M15.	72
IN2 SM9400 (J & G models).	75
MDIS Prism 8 and 9 ANSI.	75
Microfusion MF-30.	75
PRIME PT200	75
QUME QVT119.	75
SCO ANSI Console.	75
TELEVIDEO TVI920, 1955	75
UCL Cifer T205.	75
Videotex.	74
Wyse 50, 50+, 60.	75

Block mode emulations	Page
BULL VIP7800.	66
IBM 3270.	67
IBM 3287 Printer.	-
IBM 5250.	68
ICL 7561.	73

BULL VIP 7800
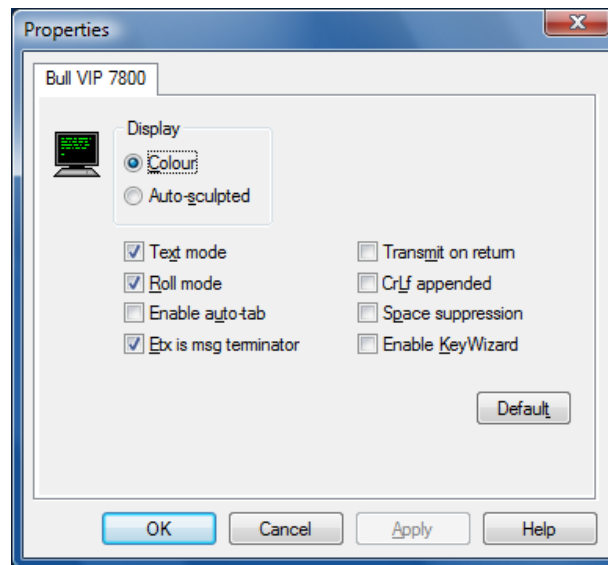
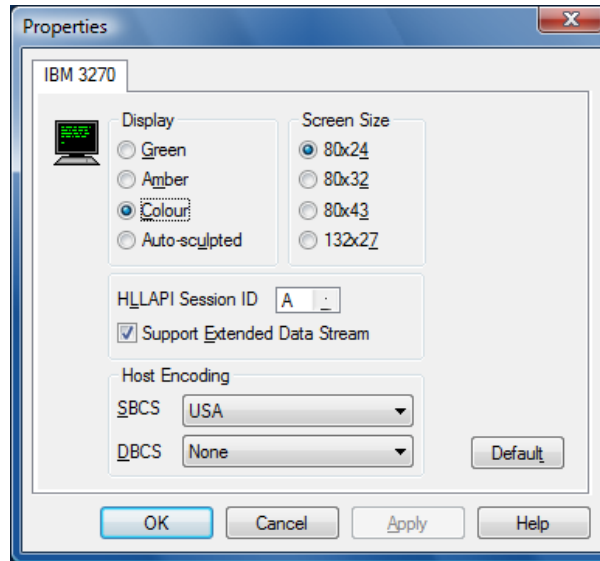The following options are available:

Colour	Select this option for a full colour display.
Auto-sculpted	This gives you a different default set of attributes and sculpts all input fields.

On a real VIP terminal, there is a set of switches that define the terminal settings. HostAccess implements the following settings:

Text mode	Sets the initial screen mode to Text (if not selected, character).
Roll mode	If set, the page will scroll upwards when data is added at the bottom of the screen.
Enable auto-tab	(Form mode only) When your cursor is at the end of an input field, it will automatically tab to the next field.
Etx msg terminator	When set, the message terminator is ETX. When not set, the terminator is EOT
Transmit on return	This setting only applies if Text mode is set. If this is set, the return key will initiate a data transmission.
CrLf appended	(Text mode only) A carriage return and line feed pair are send at the end of each line.
Space Suppression	(Text mode) If set, trailing spaces in each transmitted line are suppressed. (form mode) trailing spaces in each transmitted field are suppressed.
Enable Key Wizard	This setting gives you an extra function key toolbar.

IBM 3270

HostAccess supports IBM 3270 emulation, over all supported TCP/IP networks.

Select your screen and display options as follows:

Display	Green or Amber for a monochrome green/amber display, or Colour for a full-colour display. Select Auto-sculpted to automatically produce a sculpted display to give a GUI look to your applications.
Screen size	To define an alternate screen size for applications which support it, select the required option in the Screen size section. The normal screen size is always 80x24. The screen sizes correspond to the IBM 3278 terminal, models 2,3,4 and 5 respectively.
HLLAPI Session ID	This allows you to select the session ID for your HLLAPI application to communicate with HostAccess.

|	
Support <u>E</u>**xtended Data Stream**	If selected, this will enable extended character highlighting. A mainframe user would generally check this box, but an AS/400 user using 3270 will need to clear this box.
Host Encoding	Host encoding refers to the "nationality" of the terminal and changes the codepage to be used for displaying the data. It can be changed dynamically, which can be useful in a multi-national configuration where a user might log in to one mainframe in a particular country via another mainframe in a different country. Select the required <u>S</u>BCS (Single Byte Character Set) for European characters or <u>D</u>BCS (Double Byte Character Set) for Far Eastern characters.

You can use your mouse pointer to activate function keys at the bottom of the terminal screen. For example, if the text "F1=Help" appears on the screen, move your mouse pointer over it and click the right mouse button to activate that function.

You can also position your cursor anywhere on the screen by moving your mouse pointer to where you want the cursor to be then clicking the left mouse button.

Note: For IBM emulations, you should also set Page Keys to Host keys, via the <u>C</u>onfigure, Terminal option.

To use Pg Up & Pg Dn for PF7 & PF8 (Roll Down and Roll Up), select the <u>T</u>erminal option from the <u>C</u>onfigure menu, and select the Remote Page Keys option.

IBM 5250
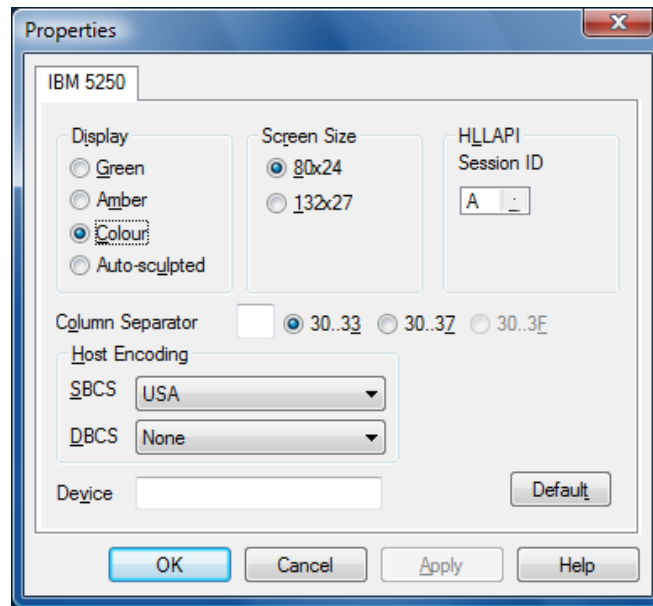
HostAccess supports IBM 5250 emulations over TCP/IP networks.

Select your screen and display options as follows:

|	
Display	Green or Amber for a monochrome green/amber display, or Colour for a full-colour display.
	Select Auto-sculpted to automatically produce a sculpted display to give a GUI look to your applications.
Screen size	This defines an alternate screen size for applications which support it, select the required option in the Screen Size section.
Column Separator	The Column Separator field – by default blank – specifies how to show column separator fields on the 5250 terminal. Select a vertical bar or underline character as preferred to suit the host application. The associated radio buttons allow you to choose which field types get the column separator attribute. Colour screens can be either attribute x'30' to x'33' or x'30' to x'37', depending on which version of terminal specification documentation you read. Monochrome terminals always get column separators in fields with attributes x'30' to x'3F'.
HLLAPI Session ID	This allows you to select the session ID for your HLLAPI application to communicate with HostAccess.
Host Encoding	Most encoding refers to the "nationality" of the terminal and changes the codepage to be used for displaying the data. It can be changed dynamically, which can be useful in a multi-national configuration where a user might log in to one mainframe in a particular country via another mainframe in a different country. Select the required SBCS (Single Byte Character Set) for European characters or DBCS (Double Byte Character Set) for Far Eastern characters.
Device	This allows you to provide the TN5250E Device Name.

You can use your mouse pointer to activate function keys at the bottom of the terminal screen. For example, if the text "F1=Help" appears on the screen, move your mouse pointer over it and click the right mouse button to activate that function.

You can also position your cursor anywhere on the screen by moving your mouse pointer to where you want the cursor to be then clicking the left mouse button.

Note: For IBM emulations, you should also set Page Keys to Host keys via the Configure, Terminal option.

To use Pg Up & Pg Dn for PF7 & PF8 (Roll Down and Roll Up), select the Terminal option from the Configure menu and select the Remote Page Keys option.

DEC Emulations
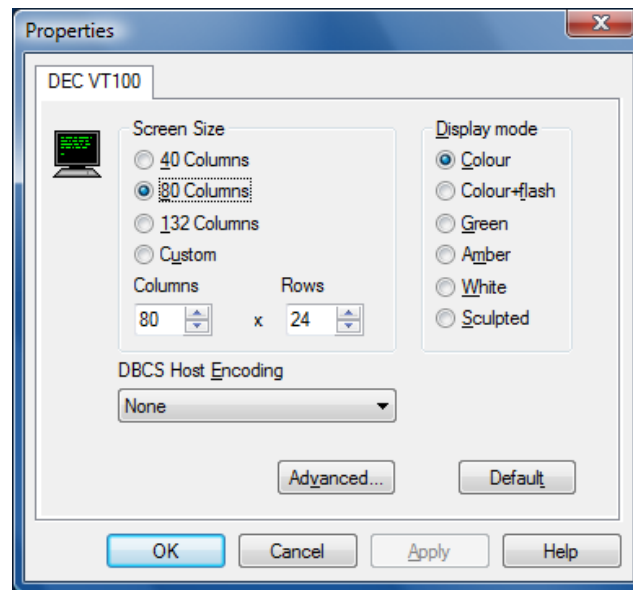
HostAccess supports the following DEC terminals: VT52, VT100, VT220, VT320 and VT420.

You can configure the DEC terminal in two stages, an initial stage and an advanced stage.

The initial configuration stage allows you to define the screen size and display mode, i.e. which colours will be displayed.

You can either select a predefined screen size or define your own.

To define your own screen size:

Enable Custom, then type or select the number of Columns and Rows you want:

To set the Display mode, choose one of the following options:

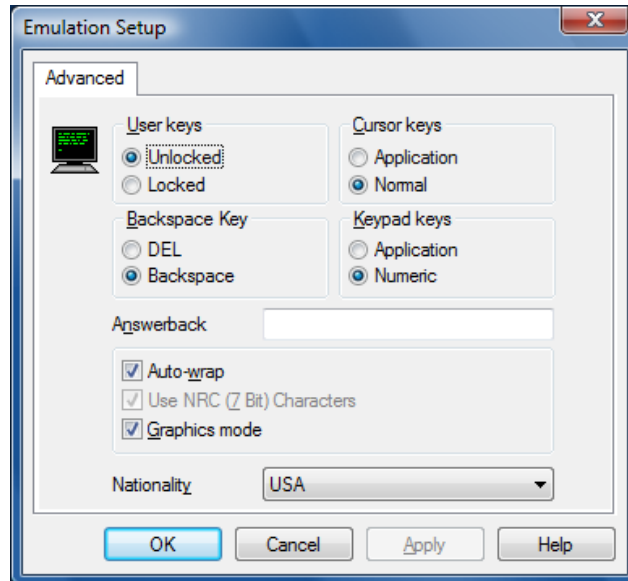|	
Colour	HostAccess's default colour settings.
Colour + flash	As Colour but with flash enabled. This is flashing text programmed by the host, usually for information or emphasis.
Green	Green on black, this is the standard dumb terminal setting.
Amber	Amber on black.
White	White on black.
Sculpted	This gives a Windows look and feel.

Note: You can modify these colours, see Configuring screen attributes on page 42.

Click on the Advanced button to configure the advanced options.

DBCS Host Encoding:

Host encoding refers to the "nationality" of the terminal and changes the codepage to be used for displaying the data. Select the DBCS (Double Byte Character Set) from the list of supported encoding tables.
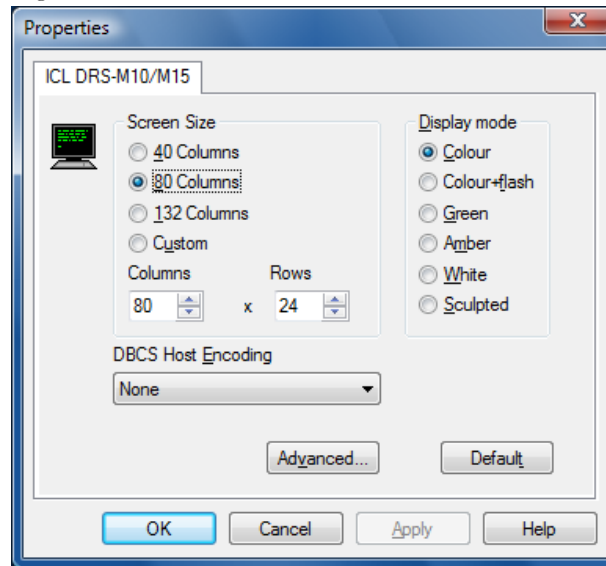
Advanced Options

Select the options as follows:

User Keys	Select Locked or Unlocked to lock or unlock function keys.
Cursor keys	Select Normal or Application to select the response the key should send to the host (this option should be set by the system administrator only).
Backspace key	Select **B**ackspace or D**E**L to define the character sent to the host when you press the backspace key.
Keypad keys	Select Numeric or Application to choose whether keypad keys have their normal numeric function, or are specific to an application (this option should be set by the system administrator only).
A**n**swerback	Use A**n**swerback to specify a message to be returned to the host from HostAccess when the host requests an answerback message.
Auto-**w**rap	Select Auto-**w**rap to wrap text around the screen.
Use NRC (7 Bit) characters	Select Use NRC (**7** Bit) characters to determine whether printed characters will be mapped by the Nationality setting (see below)
Graphics mode	Select **G**raphics mode to pre-load DEC′s graphics table, instead of a standard ASCII table.
Nationality	Select the nationality of the emulation.

ICL DRS - M10/M15

You can configure the ICL DRS terminals in two stages, an initial stage and an advanced stage.

The initial configuration stage allows you to define the screen size and display mode, i.e. which colours will be displayed.

You can either select a predefined screen size or define your own.

To define your own screen size:

Enable Custom, then type or select the number of Columns and Rows you want.

**To set the Display mode, choose one of the following options:**

Colour	HostAccess's default colour settings.
Colour + flash	As Colour but with flash enabled. This is flashing text programmed by the host, usually for information or emphasis.
Green	Green on black, this is the standard dumb terminal setting.
Amber	Amber on black.
White	White on black.
Sculpted	This gives a Windows look and feel.

Click on the Advanced button to configure the advanced options as follows:

User Keys	Select Locked or Unlocked to lock or unlock function keys. Selecting Unlocked has the effect of disabling host programming of user defined keys (UDK).

Cursor keys	Select Normal or Application to select the response the key should send to the host (this option should be set by the system administrator only).
Backspace	Select Backspace or DEL to define the character sent to the host when you press the Backspace key.
Keypad keys	Select N**u**meric or A**p**plication to choose whether keypad keys have their normal numeric function, or are specific to an application (this option should be set by the system administrator only).
A**n**swerback	Use A**n**swerback to specify a message to be returned to the host from HostAccess when the host requests an answerback message.
Auto-**w**rap	Select Auto-**w**rap to wrap text around the screen.
Graphics mode	Select **G**raphics mode to pre-load a graphics table, instead of a standard ASCII table.

ICL 7561
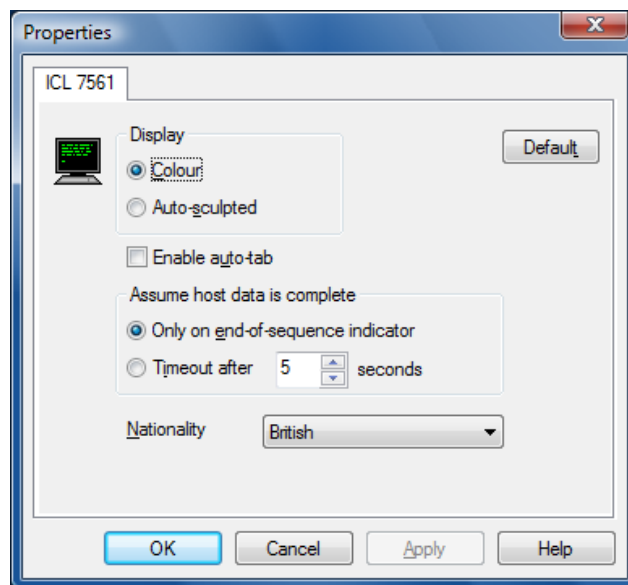
The specification of ICL 7561 supported is ICAB 02.

You can select the following options:

Colour	Select this item for a full-colour display.
Auto-**s**culpted	Select this item to automatically produce a sculpted display for a GUI look to your applications.
Enable a**u**to-tab	If checked, when your cursor comes to the end of a field, it will

automatically move onto the next field.

Assume host   Not all connectivity options or host applications always release the
data is complete   terminal keyboard when the drawing text is on the screen. This set of
                         options allows you to specify that the terminal should automatically
                         unlock after a preset timeout, if the host does not unlock it first.
                         Normally, timeout should only be set under guidance from Rogue
                         Wave.

<u>N</u>ationality   Set the nationality to that of the host.

Note: You can position your cursor anywhere on the screen in an ICL 7561 session by
moving your mouse cursor to where you want the cursor to be then clicking the left
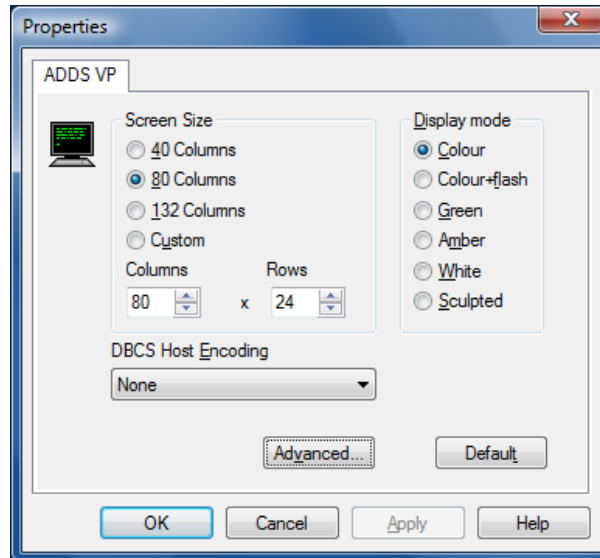mouse button.

Videotex
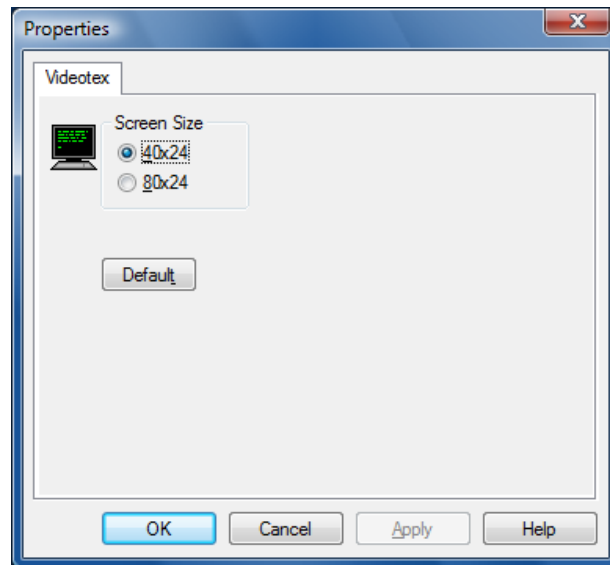
HostAccess supports the Videotex emulation, allowing you to use many major on-line services (for example, Prestel).

Use the Screen size section to define the size of your visible screen.

General emulations

The following emulations are supported with this dialog:

ADDS VP	Microfusion MF-30
Adm11	PCMonitor
Ampex 230	QUME QVT119
Ansi	SCO ANSI
DG216	TVI920
Galileo	UCL Cifer
IN2 SM9400	WYSE 50, 50+, 60
MDIS Prism9 ANSI	

You can define the following options:

Screen Size	Size can be pre-defined (40, 80 or 132 columns), or customized to fit your requirements.
Display mode	You can specify the display mode you want to run in.
Colour	HostAccess's default colour settings.

Colour + flash   As Colour but with flash enabled. This is flashing text
                        programmed by the host, usually for information or emphasis.

Green   Green on black, this is the standard dumb terminal setting.

Amber   Amber on black.

White   White on black.

Sculpted   This gives a Windows look and feel.

DBCS Host Encoding:

Host encoding refers to the "nationality" of the terminal and changes the codepage to be used for displaying the data. Select the DBCS (Double Byte Character Set) from the list of supported encoding tables.

Advanced HostAccess

The following sections describe the advanced features of HostAccess. These features are designed for systems administrators and for those interested in extending the functionality of HostAccess. The following features are described:

Topic	Description
HostAccess's macro language	How to record and write macros plus a list of macro commands.
OLE Automation.	Allows integration with OLE objects
UNIX and DOS file transfer.	How to transfer data between UNIX and DOS.
IND$FILE.	How to use the IND$FILE file transfer facilities using the IBM 3270 emulation.
Hotspots.	How to configure hotspots in HostAccess.

Using macros

HostAccess has a powerful macro facility which you can use to automate routine tasks. You can record a series of everyday task using HostAccess's macro recorder, or you can create and edit macros manually using HostAccess's Macro Language to automate almost any host task.

Macros can be automatically started to take the user seamlessly into the depth of the host application. You can setup automatic connections and much more.

The following sections summarise the macro language commands available to the user, and provides an example of how you can use the macro language to automatically logon to a session.

There are two ways of creating a macro in HostAccess. You can either write it from scratch, or you can use the macro recorder.

Recording a macro

The macro recorder records key strokes and left mouse button clicks. The following steps take you through the tasks typically needed to record a macro to automatically log on to a host.

1. Open or create a session.

2. Click the record macro button as shown opposite or select <u>M</u>acro, R<u>e</u>cord macro from the S<u>y</u>stem menu.
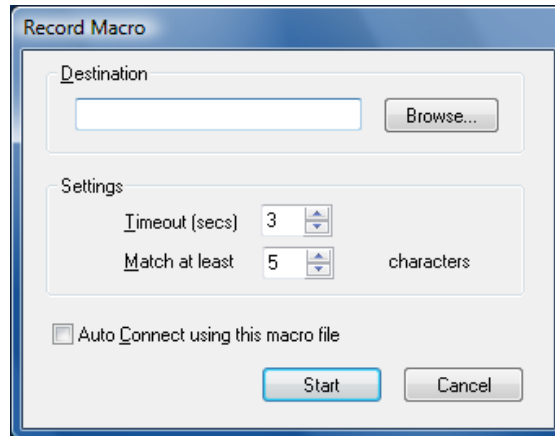
3. Type a file name in the <u>D</u>estination field, or select an existing file name using the <u>B</u>rowse button.
   The <u>T</u>imeout and the <u>M</u>atch options are set at a default setting. You may need to increase the Timeout setting if you have a slow host.

4. Check Auto <u>C</u>onnect using this macro file box to enable it. If you are not recording a default logon script do not check this box. If you check the box, the macro file name will appear in the Session Setup AutoConnect dialog.

5. Select the <u>S</u>tart button to begin recording. A toolbar is displayed:

   | Pauses the recording of the macro. | ■ Stops the recording of the macro. |

6. At the password prompt, you can either type in the password and press return, or you can choose to record the macro so that when the login and password prompt appears on the screen, the macro waits for you to type in the login and password and press the Return key. The advantage of choosing this second

option is that the password will not be stored in the macro file. This is much more secure.

To record the macro so that you have to type the password in manually:

1. From the System menu, select Macro, Passthrough, type the password at the prompt, then press Return. Pressing the Return key has the effect of turning the macro recorder back on.

2. Once you are logged into the host you can either stop the macro recorder here, or you can perform any tasks which you always perform at the start of the session and that you would like to automate before stopping the macro recorder.

3. Stop the macro recorder by clicking on the stop button from the toolbar or by selecting Macro, Stop recording from the System menu.

4. Save the session. Next time you open the session it will automatically log you on to the host.

Pause

The pause option allows you to stop recording a macro temporarily and then restart it. This is useful in a situation where, for example, you are recording an auto connect macro. You want to record the password in the macro, but you can't remember it. Clicking the Pause button or selecting Macro, Pause recording from the System menu at the password prompt will stop the macro from recording any time outs that may occur while you are finding out the password. Clicking or selecting Pause again will restart the macro.

Passthrough

Using the Passthrough option in a macro (System menu, Macro, Passthrough) will prevent a character string up to a carriage return from being stored in the macro. When the macro is played back at the point where Passthrough was used, the macro will wait for you to enter a character string then a carriage return. When you enter the carriage return, the macro will continue.

Writing a macro

You can write a macro to automatically log you onto a host, or indeed any other tasks. The following steps take you through the steps needed to write an autoconnect macro which will log you automatically on to a host. You can adapt this for any macro.

1. Create a new session or open an existing one. Click on the AutoConnect tab in the Configure Session dialog, fill in the Username and Password fields then click on OK.

2. Select Macro, Edit macro from the System menu and type a macro name such as test.mcr. A dialog box saying "Cannot find the test.mcr file. Do you want to create a new file?" will appear.

3. Click on yes then type the macro below:

```
REM This is a macro for logging
REM automatically to the host.

GLOBAL USER, PASSWORD AS STRING

REM Send User from AutoConnect

SENDTERM USER, CHR$(13)

REM Delays for 2 seconds

DELAY 2

REM Send password from AutoConnect.

SENDTERM PASSWORD, CHR$(13)

END
```

4. Select Save from the File menu, then Exit.

5. Reopen the AutoConnect dialog and in the Run Macro on Connection field, type or select using the Browse button the macro that you just created. Click on OK then save the session.

Note: When writing a macro it is a good idea to insert comments that describe the tasks that you are automating in the macro. To insert a comment that won't actually affect a macro, you need to type in something called a REM statement. Any text after the REM keyword is ignored by the macro processor.

Writing a macro - Example 2

This example takes you through the steps needed to create an AutoConnect macro which will prevent your login and password from being stored in the command stack.

1. Create a new session or open an existing one and enable the command stacker Select Macro, Edit macro from the System menu and type a macro name such as command.mcr. A dialog box saying "Cannot find the command.mcr file. Do you want to create a new file?" will appear.

2. Click on yes then type the macro below:

```
REM This is a macro for preventing
REM your login and password from being
REM stored in the command stack

REM Stop the login from being stored in
REM the command stack

PASSKEYS

REM Stop the password from being stored
REM in the command stack

PASSKEYS

END
```

3. Select Save from the File menu, then Exit.

4. Open the AutoConnect dialog and in the Run Macro on Connection field, select the macro that you just created. Click on OK then save the session.

Starting a macro

To run a specified macro:

Select Macro, Start macro from the System menu, or click on the start macro tool bar button shown here. Select the file you want to start, then click on OK.

Editing a macro

To edit a macro file:

Select Macro, Edit macro from the System menu. Find the file you want to edit, then click on OK. The macro will appear in a text editor.

Macro commands

The following macro language commands are available:

Command	Description	Example
CALL	Calls a (previously-defined) procedure.	CALL SubProcedure()
DELAY, DELAYTILL	Delays a set number of seconds, or until a specified time.	DELAY 5
DIM	Declares a variable as INTEGER or REAL.	DIM A AS INTEGER.

DO (WHILE) ... LOOP	Starts a program loop, continuing while the WHILE condition holds, exited when WHILE condition is fulfilled.	LET A=10
		DO WHILE A>=2
		  LET A=A-1
		  PRINT A
		LOOP

END	Stops a macro.	
EXIT	Exits from the current loop or IF statement. For example, to exit a FOR loop.	EXIT FOR
FOR ... NEXT	Creates a loop of a specific duration.	FOR i = 1 TO 10
GOTO	Transfers control to a part of a program with a pre-defined label.	L20: : PRINT A GOTO L20
IF ... THEN ... ELSEIF	Specifies one or more actions to take if a condition is fulfilled.	
LET	Assigns a value to a variable. Variables must be declared with DIM before being assigned.	DIM A AS INTEGER LET A = 5

Command	Description	Example
PASSKEYS	Suspends macro processing to allow the user to enter keystrokes to the host.	`PASSKEYS`
PASSKEYSNOCR	Suspends macro processing to allow the user to enter keystrokes to the host – does not send the final Enter to the host.	`PASSKEYSNOCR`
PRINT	Prints a text message to the Host, or the session screen, or to the status bar.	`PRINT "HELLO"`
REM	Used for code comments.	`REM This will automatically log you onto a host`
SELECT	Selects alternative actions based on specified conditions.	
SENDTERM	Sends text to the host.	`SENDTERM PASSWORD, CHR$(13)`
SEND, SENDWIN	Sends special characters to the host, or to the currently-active Windows application.	
WAIT (TIMEOUT)	Waits for a host response (optionally, for a maximum timeout period).	`WAIT TIMEOUT 20`

WHILE ... WEND	Specifies a loop containing one or more instructions to be carried out whilst a condition holds.	`DIM B AS INTEGER`
		`  WHILE B >=1`
		`  PRINT B`
		`  LET B = B-1`
		`WEND`

OLE automation

OLE Automation is an industry standard that enables application to expose their OLE objects to applications that support OLE, such as Visual Basic for Applications (VBA), the Excel Macro Language, Visual C++ and Delphi.

HostAccess is an automation enabled object. This means that you can open HostAccess sessions and make use of the macro language from within applications that are OLE Automation Controllers such as VBA. The commands listed below can be used in Visual Basic programs to start and close HostAccess sessions and run macro scripts.

Command	Description	Parameter	Parameter description
session.setting	The name given to HostAccess in the Windows registry.	-	-

LoadSession()	Loads a HostAccess session.	"String",	Session File name including path
		"String",	Unused
		bool	Unused
ScriptExec()	Executes the HostAccess script line.	"String"	A valid HostAccess macro command
StartScript()	Runs a macro file	"String"	A macro filename including the full path.
StartSession()	Starts or restarts a loaded session	bool	Unused
GetText()	Returns text on screen from the required location	Integer	X co-ordinate
		Integer	Y co-ordinate
		Integer	Length of text
SendEDKey()	Sends an emulation key to the host e.g. F1	"String"	Emulation key to send
SendKeys()	Sends keys to the host e.g. "Hello"	"String"	String of characters to send to the host
SendData()	Sends data as network data to the host	"String"	String of characters to send to the host
Unload()	Unloads HostAccess.	-	-
EndSession()	Ends HostAccess session	-	-
Hide()	Hides the HostAccess window	-	-
Restore()	Shows the HostAccess window	-	-
Minimise()	Minimises the HostAccess window	-	-
Maximise()	Maximises the HostAccess window	-	-
GetCursorPos()	Returns the cursor position in X/Y format e.g. 70/20	-	-
GetCursorPosX()	Returns the cursor X co-ordinate	-	-
GetCursorPosY()	Returns the cursor X co-ordinate	-	-

GetScreenSize()	Returns the screen size in X/Y format e.g. 80/24	-	-
GetScreenSizeX()	Returns the screen size in columns	-	-
GetScreenSizeY()	Returns the screen size in rows	-	-

VBA example

The following example shows how some of these commands can be used to load and start a HostAccess session using Visual Basic for Applications.

```
Rem Define the variable HostAccess as the data type object.
Rem This represents the HostAccess application when used for
Rem OLE automation

Dim HostAccess

Rem Create an OLE object that corresponds to HostAccess.
Rem We will use this object to invoke
Rem published automation methods.

Set HostAccess = GetObject("", "Session.Setting")

Rem Start a session with the given name
result = HostAccess.LoadSession("TEST.SES", "", True)

Rem Once HostAccess has loaded, tell it to print something
Rem on the terminal window.
result = HostAccess.ScriptExec("print ""hello world""")

Rem Close the HostAccess session
HostAccess.EndSession

Rem Unload/Exit HostAccess
HostAccess.Unload
```

File Transfer between UNIX and DOS

HostAccess supports file transfer between the DOS PC and any UNIX host system. Installation of the host programs for these file transfer routines is documented below. Please note that the UNIX system must have a C compiler available.

HostAccess also provides a suite of C programs that give access to the power of the Applications Interface. To obtain details of this program library, please contact Rogue Wave.

Two UNIX commands are provided to transfer data between UNIX and DOS

dosunix   transfers data from a DOS file to a UNIX file.

unixdos   transfers data from a UNIX file to a DOS file.

By default the data is assumed to be textual. DOS records are mapped into a UNIX file structure, with CR/LF being replaced with LF and vice versa. This mapping can be overridden by the **Binary** option which performs no translation on the data.

During the transfer of data a window is displayed on the user screen showing the current state of the transfer and information such as the size of the file, the number of bytes transferred and the estimated time for the transfer. At the end of the transfer, the user is requested to press a key before the window is closed to allow time to read the final display.

You can fully control the two transfer commands from an application using the exec/system commands and all command line parameters may be passed, so avoiding the need for any user input.

Uploading the File Transfer Programs

The files DOSUNIX.C and UNIXDOS.C are supplied for the host file transfer programs. To install these onto your UNIX system please carry out the following instructions:

1. Copy DOSUNIX.C and UNIXDOS.C from the directory **Unix** on the floppy disk labeled "HOST PROGRAMS" into the HostAccess directory on your DOS hard disk.

2. Run HostAccess and logon to your UNIX system.

3. Enter the following UNIX command:

   cat > dosunix.c

4.   Select the System menu and select 'Start File Transfer'
The settings should be as follows :-

local file	a:\unix\dosunix.c
protocol	key
direction	send
file type	text

Click OK

5.   The source code is then sent to the UNIX system. If you have problems you may have to slow down the upload process. Please refer to Chapters 2 and 4 of the User guide for further details of configuring file transfer parameters. You should also turn off any host system case conversion on input.

When the upload has completed, press <CTRL> **D** to close the file.

6.   Compile dosunix as follows:
cc dosunix.c -o dosunix

7.   Now use the command dosunix to transfer unixdos.c by entering the following:
dosunix a:\\unix\\unixdos.c unixdos.c

8.   Compile unixdos as follows:
cc unixdos.c -o unixdos

9.   We suggest you copy the 2 programs to a suitable directory, e.g. /usr/bin.
You may need to alter the owner and rights of the program.

UNIX users may use the routines documented in this section to provide fast error-free file transfers between DOS and UNIX environments. These UNIX file transfer routines are written in portable 'C' and will need to be compiled on the host UNIX system.

Transferring From DOS to UNIX

To transfer data from DOS to UNIX, use the **dosunix** command. The transfer stops when the DOS end of file marker is found.

dosunix [-h -b -a -z -l -r -m [listfile]] dosfile unixfile

where **dosfile** is the name of the DOS file to be transferred, and **unixfile** is the name of the UNIX file (defaults to the DOS file name). If you omit the **dosfile** name, you are prompted for it.

For details of the options available with the **dosunix** command, see page 87.

Examples of DOS-UNIX File Transfer

To transfer a DOS file C:\WP\MAILSHOT.DOC to the Host UNIX file 'mail1.doc' , enter:

dosunix C:\\WP\\MAILSHOT.DOC mail1.doc

To transfer a DOS file C:\DOCS\BINARY in binary mode to a UNIX file called BINARY, enter:

dosunix -b C:\\DOCS\\BINARY

Transferring From UNIX to DOS

To transfer data from a UNIX file to a DOS file, use the **unixdos** command. If the DOS file exists, it will be overwritten, otherwise it will be created. By default a DOS end of file character will be written to the end of the DOS file.

Use the unixdos command as follows:

unixdos [-h -b -a -z -l -r] unixfile dosfile

where **unixfile** is the UNIX file to be transferred, and **dosfile** is the name of the DOS file (defaults to the UNIX file name). If you omit the **unixfile** name, you are prompted for it.

Examples of UNIX-DOS File Transfer

To transfer a UNIX file 'mail1.doc' to the DOS file C:\WP\MAILSHOT.DOC use the following command:

unixdos mail1.doc C:\\WP\\MAILSHOT.DOC

To transfer a UNIX file called BINARY to DOS in binary mode into the DOS file BINARY, use the following command:

unixdos -b BINARY

File Transfer Options

The following options are available with both the **dosunix** and **unixdos** commands:

-a	Append to the existing destination file.
-b	BINARY file specified - override mapping.
	With the dosunix command, no conversion of CRLF to LF is made, and the transfer does not stop when an end of file mark char(26) found.
	With the unixdos command, no conversion of LF to CRLF is made, and no end of file character is added to the DOS file.
-h	Initiated by host so transfer status window will not wait for user acknowledgment before closing and no status message will be printed to the screen. This option is useful for automated transfers carried out under host program control. An exit code of 0-6 is returned:
	0: Successful Transfer
	1: Aborted by the user
	2: Unable to open DOS file
	3: DOS file read error
	4: Protocol Error
	5: Retry Limit Reached
	6: DOS file write error

-z	Suppress display of transfer status window.
-l	Local connection so use faster but less comprehensive error checking. LAN connections default to this mode.
-r	Remote connection so use full error checking. Asynchronous connections default to this mode.
-m [listfile]	Transfers the files listed in the host ASCII text file [listfile] to the host system.

Examples of Multiple File Transfers

The following examples show how to use text files to control multiple file transfers:

Example 1: dosunix -m listfile

listfile contains three lines:

Line	Line Contents	Result
1	d: file1	file1 is transferred from the current working directory on the D drive on DOS to file1 in the current working directory on UNIX.
2	d:\full path\file2	file2 is transferred from the specified DOS directory on the D drive on DOS to file2 in the current working directory on UNIX.
3	d:\full path\file3 file 4	file3 is transferred from the specified DOS directory to file4 in the current working directory on UNIX.

Example 2: unixdos -m listfile

listfile contains three lines as follows:

Line	Line Contents	Result
1	file1	file1 from the current working directory on UNIX is transferred to file1 in the TERMiTE directory.
2	file2 d:	file2 from the current working directory on UNIX is transferred to file2 in the current working directory on the D drive on DOS.
3	file3 d:\full path\file 4	file3 from the current working directory on UNIX is transferred to file4 in the specified DOS directory.

IND$FILE File Transfer

You can use IND$FILE file transfer facilities using the IBM 3270 emulation connected to an IBM mainframe host.

Note: The $ symbol depends on your Nationality setting. While most Nationalities will use $, the British nationality uses the £ symbol (IND£FILE) and the Scandinavian setting uses the Å (INDÅFILE).

IND$FILE – General Notes

IND$FILE is IBM's file transfer protocol for transferring files between an IBM mainframe system and a Personal Computer. It is implemented in the form of host programs for CICS, for TSO and for VM:

- 5789-DQH CICS/VS 3270-PC File Transfer Program
- 5665-311 IBM 3270-PC File Transfer Program for TSO System
- 5664-281 IBM 3270-PC File Transfer Program for VM System

IND$FILE is really two protocols:

- A Block Mode protocol, which employs the 3270 Structured Field data stream. This can transfer up to 32K of data per transaction, vastly reducing the number of times the host has to switch processes and the number of network packets. This is the protocol of choice and will be employed by the host if possible. The main requirement is that the terminal supports extended data stream (see 3270 emulation).

- An Async Mode protocol, which relies on screen images being sent. This can transfer less than 2K per transaction, causing a higher load on both the mainframe and the network. It also bears a number of additional overheads, which can reduce performance further, all of which increases the demands on the PC. CICS does not support this transfer mode.

IND$FILE can be started in one of two ways when using HostAccess:
- From the command line, whether in TSO, CMS or CICS
- From HostAccess's menus.

Starting IND$FILE from the command line

While running a TN3270 emulation session, a user may type the IND$FILE command, complete with all required parameters. HostAccess will recognise that this has occurred when the mainframe starts the transfer. At this point, the user is prompted to enter the name of the PC file being sent or received.
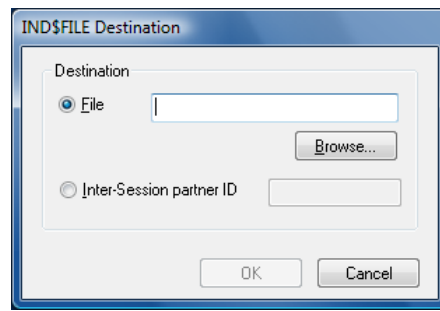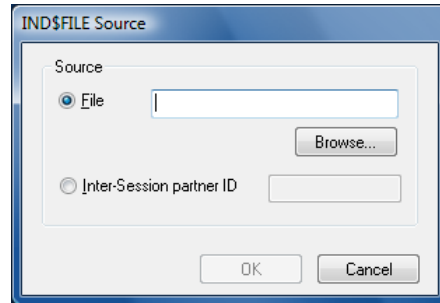
Starting IND$FILE from HostAccess' menus

While running a 3270 emulation, the System|Start file transfer… menu option will initiate an IND$FILE transfer. This must be done while the cursor is at a command line. The user is prompted to identify the direction of transfer, the host system to which you are connected as well as the file name on the PC and the file name or dataset name on the host.
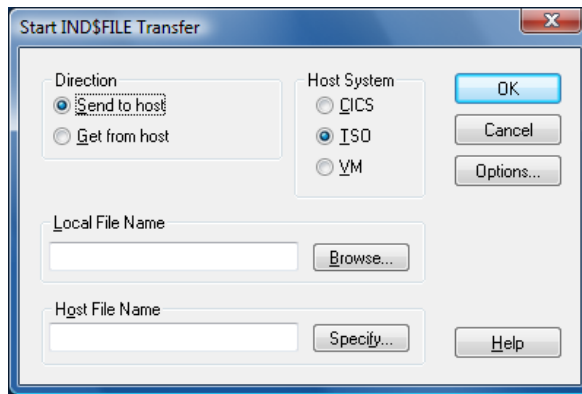
The Local File Name is the name of the file on your PC which you wish to send or receive. The Host File Name is the name of the file (CICS or VM) or dataset (TSO) on the mainframe.

Specifying the Host File Name

You can use the Specify… function to enter the Host File Name. For a CICS host, this can be up to eight letters or digits.
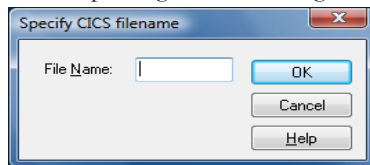
For a TSO host, the dataset name must be specified, either with or without quotes and the member name (for a partitioned dataset) and dataset password can be entered. If you enter a password, it will not be displayed at this point.
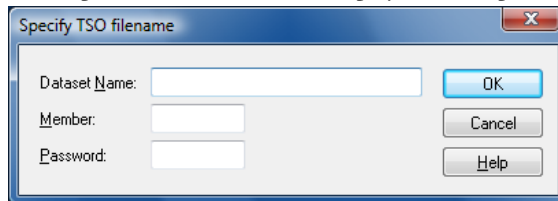
For a VM host, enter the name, type and mode of the file.
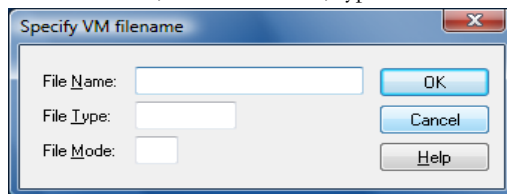
Advanced Options

When getting a file from the mainframe to your PC, whatever the system, you can specify:

- The number of times which HostAccess should attempt to re-send data if an error is detected
- A timeout period (in seconds) after which HostAccess may assume that the host program has failed
- Whether to truncate spaces at the end of each line and insert a Carriage Return/Line Feed (CR/LF) pair.
- Whether to convert the EBCDIC characters in the mainframe file to ASCII

These last two options are most typically used as a pair and are useful when transferring text files.
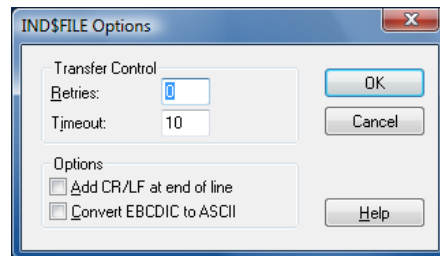
When sending a file to the mainframe, the options vary according to the host system. To a CICS system, the options above all apply (although CR/LF pairs are removed instead of added, and ASCII characters will be converted to EBCDIC instead of the other way around). In addition, the user can specify the block size to be used for the transfer. This only applies if the host agrees to use IBM's Block Mode of transfer.
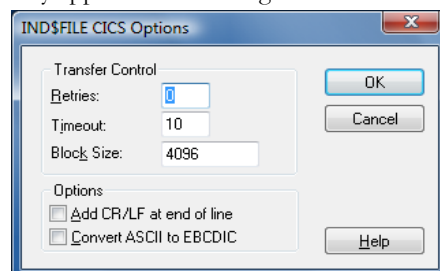
In addition to those options, a user connected to a VM system can specify:

- Whether the data being sent will be appended to the name file, or will overwrite the file
- The record format (RECFM) and record length (LRECL) of the file, if it has to be created.
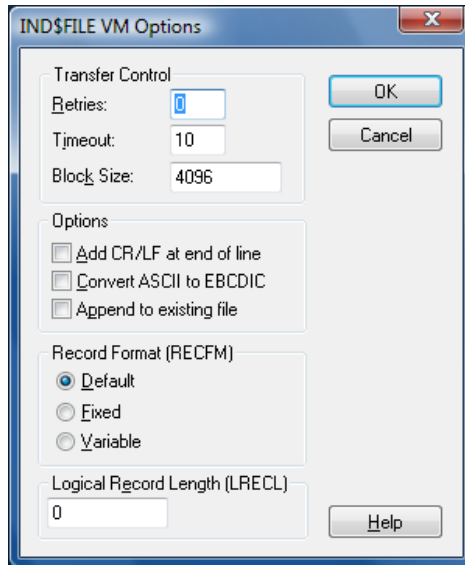
A user connected to TSO can specify any of the options available to a VM user, and can specify additional parameters when allocating a new dataset:

■ The physical block size to use on the mainframe

■ The space allocation quantities and units.
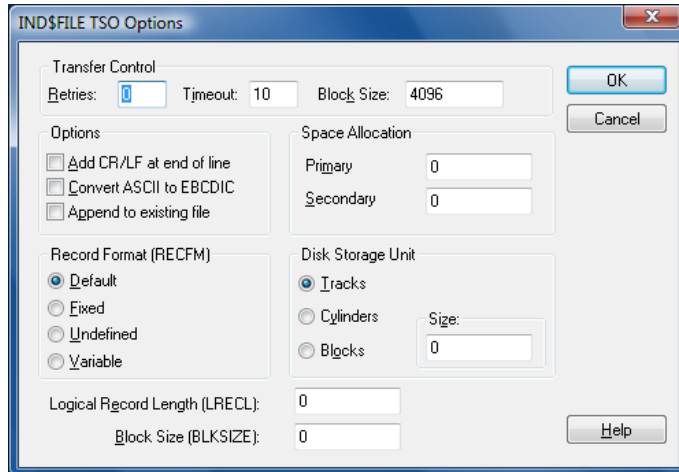
FTP File Transfer

The 32-bit version of HostAccess provides facilities enabling you to upload and download files to and from a remote FTP server. The presence of the file 'wininet.dll' is required. This is usually installed with Microsoft Internet Explorer. If Internet Explorer is not installed, the dll is installed using 'wintdist.exe' when HostAccess is installed.

FTP file transfers can be invoked from the System menu by selecting the Start FTP file transfer option. This option does not appear on 16-bit versions of HostAccess, and is greyed out if wininet.dll is not present for the 32-bit version.

FTP file transfer can also be carried out using the AiF 'Start file transfer' sequence. Refer to the Developer's Guide for details.

FTP file transfers may be carried out at any time during a session. When a transfer is invoked a connection is made to the FTP host by HostAccess, so it is not necessary for you to be connected to the host, or to be using a TCP/IP connection. Only one FTP transfer can be active at a time.

Starting FTP Transfers from the System menu

To transfer files:

1. Select the Start FTP file transfer option on the System menu. The Start FTP dialog is displayed.
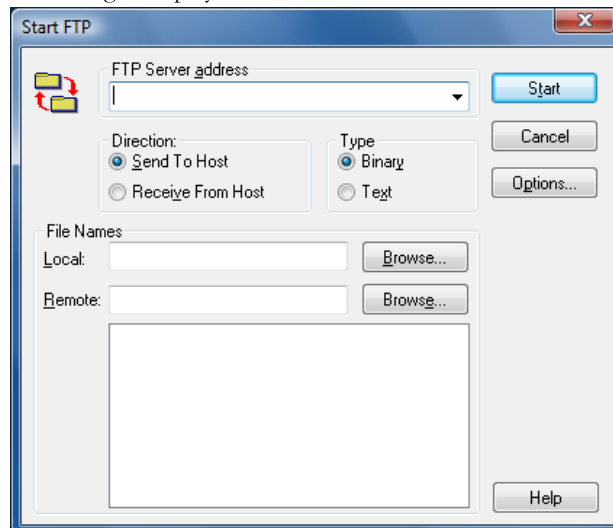
2. Specify the remote FTP server address in the FTP server address box. The entry defaults to the last used FTP address. If you are currently connected to a host via TCP/IP, then the address of that host can be selected as a secondary entry in the box.

   The server address may have a file path appended, for example:

ftp.microsoft.com/services/technet

Whenever the address is modified, you will be asked if the Username is to be changed as well. If yes, the FTP Options dialog is displayed in order to facilitate this (see 5).

3. In the Direction box, select the direction of the transfer, either Send to Host or Receive From Host.

4. In the Type box, specify the transfer type, either Binary or Text.

5. Further entries can be made on the FTP Options dialog, accessed by selecting the Options button. On this dialog, the Username and Password used to login to the FTP server may be specified, whether to use Passive or non-Passive (Active) FTP, plus the number of retries and the timeout setting.
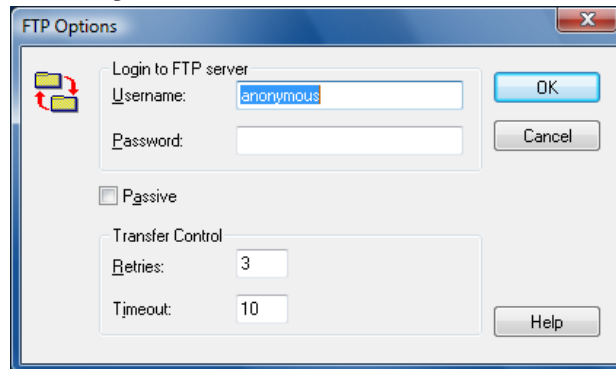
6. In the File Names box, specify the Local file name. To search for a file, select the Browse button. This activates a standard file selection dialog, in a which file can be searched for and selected.
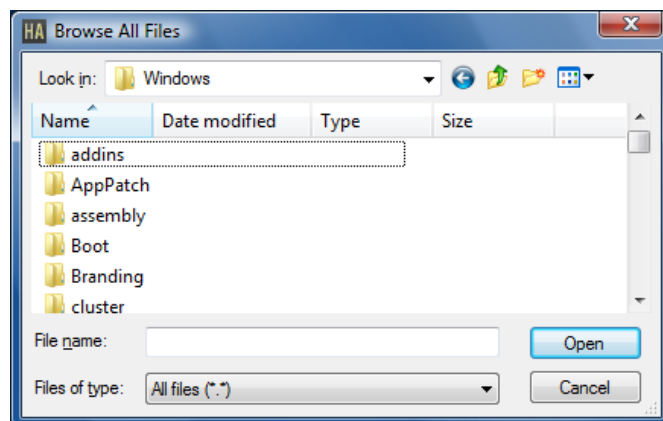
7. In the File Names box, specify the Remote file name. To search for a file, select the Browse button. When selected, a connection is made to the FTP server, and

the initial path on the server is set to the appended path on the server address (/services/technet on the example above).

If no appended path has been specified, the initial path will be whatever path the FTP defaults to for the Username/Password. If the connection is successfully made, the initial path appears in the remote file name field, and the directory tree is displayed in the area below it.

8. The directory tree can be browsed by expanding/contracting the nodes (representing directories on the FRP host). Directories to which is accessed is denied are marked with a '!', and the directory name appended with 'Access denied'.

9. The remote and local file names are updated as you browse the directory tree; this process is dependent of the direction of the transfer as follows:

When sending a file: The local file name remains static, but the remote file path (and name if applicable) changes to that selected on the directory tree. When uploading a file for the first time, select a directory. The entry for the remote file name field is populated with the selected directory name and the name of the selected local file. When uploading a file that has been transferred before, select the name of the file on the directory tree. The entry for the remote file name field is populated with the selected directory name and the name of the remote file.

When receiving a file: The remote file name is set to whatever you select in the directory tree, and the local file name field is populated with the selected directory name and the name of the remote file.

10. To initiate the transfer, selected the Start button, or double-click on the selected directory/file name in the directory tree. A dialog is activated which displays the progress of the transfer and notifies the user on completion. The dialog may also be used to cancel the transfer.
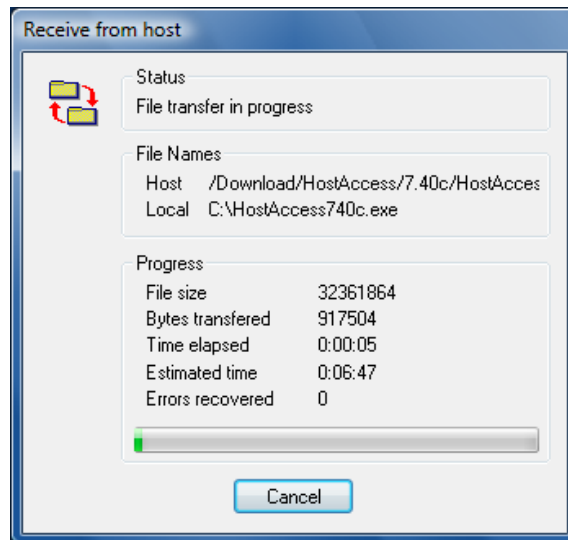
Note: The file size may not be available from some FTP servers and the progress of the transfer will not be displayed.

Hotspots

There are two basic classes of emulation supported by HostAccess. These are sometimes known as block mode emulations and asynchronous or character mode emulations. Block mode emulations work by sending blocks of text to the host. Asynchronous mode emulations will send one character at a time to the host.

Block mode emulations tend to be those designed to work with large mainframes, for example IBM 3270 and IBM 5250. Asynchronous emulations tend to be those designed for smaller, mid-range systems such as the DEC VT100, VT220, VT320 and VT420 emulations. Because these emulations work differently, hotspots also work differently.

Hotspots in block mode emulations

A Hotspot is text on the screen which has been programmed by the host application so that when you move the mouse pointer over the text and click the right button, a particular function is activated. Clicking anywhere on the character string ′F3=Exit′ will execute the exit function. However clicking on the ′Assistant′ part of a function called ′F13=Information Assistant′, will have no effect. This is because hotspots are delimited by spaces. You would need to click on ′F13=Information′ to execute that function. Hotspots can be used in the following emulations: IBM 3270 and IBM 5250.

Cursor control

You can control your cursor using the mouse in the following block mode emulations: IBM 3270, IBM 5250, ICL 7561. First position your cursor anywhere on the screen, then

click your left mouse button. Note that if left mouse clicks are required, then left mouse button events must be turned on via AiF.

Hotspots in asynchronous mode emulations

Hotspots in asynchronous mode emulations work differently to those in block-mode emulations. Changes to the ha7ehot.ini file should only be made by the systems administrator or an advanced user.

A hotspot is a word, or sequence of characters on the screen that is separated by whitespace. By default the whitespace character is simply a space, although this may be defined as another character by editing the ha7ehot.ini file. A mouse click on a hotspot will enable a defined function.

This section is a comprehensive guide to editing the ha7ehot.ini file. It includes:

- A hotspot overview table which lists and explains the functions that can be configured by editing the ha7ehot.ini file.
- How to edit the ha7ehot.ini files.
- How to activate cursor positioning.
- How to activate hotwords.
- How to activate and define alias user hotwords.
- How to activate function keys.
- A hotspot reference - this describes how you can customise the way a PC searches for hotspots.

Hotspot overview table

This table lists the functions that can be configured by editing the ha7ehot.ini file.

Name	Definition	Command
Cursor control	Cursor control allows the user to position the cursor on the screen using the mouse. This only works with host applications that recognise cursor key sequences such as full screen editors.	CURSORPOS
Hot function keys	You can use hot function keys with host applications that recognise the appropriate function key sequence. For example, in the System Administration Shell on UNIX, pressing the F1 function key on your keyboard brings up Help. In other systems, function key names (such as F1) may be displayed on the screen. In these circumstances, you can point and click the function name with your mouse to activate that function.	ALIAS_FNKEY
Hot alias user words	This allows you to define an alternative sequence for a word on the screen. So for example a user can set up an alternative sequence for the word EXIT such as ESC so clicking on the word EXIT will have the same effect as pressing the	ALIAS_USERWORDS

Name	Definition	Command
	ESC key. This is done by editing the ha7ehot.ini file supplied with HostAccess.	
Hot words	You can click on any alphanumeric sequence displayed on the screen. This sequence will then be sent to the host. For example, if you are using a full screen text editor and you want to search for a word, you can bring up a search prompt and click on a word displayed on the screen. This will start a search for that word.	HOTWORD

Editing the ha7ehot.ini files

To edit the ha7ehot.ini files:

You need to edit the part of the ha7ehot.ini file that defines which mouse key will perform the action, e.g.

    right_click = HOTWORD

    post_right_click = <CR>

The right mouse button is set so that when a hotword on the screen is clicked, it will be sent to the host.

You can set a right mouse key to send a combination of hotspots, for example:

    ALIAS_USERWORDS + ALIAS_FNKEY + CURSORPOS

HOTWORD and CURSORPOS are mutually exclusive, you can have one or the other but not both.

The order in which HostAccess searches for the sequences are as follows:

ALIAS_USERWORDS, FNKEY, HOTWORDS or CURSORPOS

Activating cursor positioning

To activate cursor positioning:

Edit the ha7ehot.ini file so that the right mouse key is set to CURSORPOS, for example:

    right_click = CURSORPOS

defines the right mouse key as the key which will position the cursor when clicked.

Activating hotwords

To activate hotwords:

Edit the ha7ehot.ini file so that the right mouse key is set to HOTWORD, for example:

    right_click = HOTWORD

Activating and defining alias user hotwords

A hotword is defined in the host application. If you want to define a hotword in the ha7ehot.ini file, you define an ALIAS_USERWORD in the [alias] section of the .ini file. So for example, you could define the word BREAK to send the sequence ^C to the host.

1. Insert the text:
BREAK = ^C
in the ha7ehot.ini file in the [alias] section.

2. Edit the ha7ehot.ini file so that it says:
right_click = ALIAS_USERWORD

Activating function keys

For hot function keys to work, the application screen must display function keys. The range is F1 through to F24. If ALIAS_FNKEY is activated, when a user clicks on a function key on the screen, the character string that represents that function key will be sent to the host. If the host recognises the character string it will perform the function.

Defining whitespace

You can define whitespace so that characters other than just space can separate words. This is defined using the whitespace command, e.g. whitespace = <SPACE>[]
so the following line:
| F1 HELP [EXIT] |
would contain three hotspots: F1, HELP and EXIT.

Defining eatchars

The eatchars command defines characters which will be removed from hot words. For example, if you clicked on the text string ′help-screen′ and you had defined the character ′-′ as an eatchar, the string ′helpscreen′ would be set to the host.

A NONE sequence

A NONE sequence means that no command will be performed unless a post click sequence has been defined. A post click sequence is a sequence that is sent to the host if none of the commands can be achieved.

Defining a post-click sequence

A post-click sequence is a sequence which is sent if none of the commands can be achieved, for example, if a user clicks on a word on the screen that is not a hotword. This is defined in:

    post_right_click =

You can define it to send a sequence of characters and/or keystrokes. If it is left blank, nothing will be sent at all.
For example:

    post_right_click = <cr>

will send a carriage return to the host.

Troubleshooting

The following sections list some common problems with their solutions, however the most up-to-date solutions to problems visit our World Wide Web technical support page:

http://www.roguewave.com/support

Technical support

The HostAccess installed product contains useful information about your version of HostAccess. You can copy or print out this information if you need to get in touch with our Technical Support team, you are advised to fax or email this information to us.

From the <u>H</u>elp menu, select <u>A</u>bout HostAccess.

You get information on the following:

About HostAccess	Copyright information.
Support	Your technical support details.
General	Your version of HostAccess, version, license number and other relevant information.
Environment	This provides information on your Windows environment.

Running HostAccess on a Network

The network administrator can run HostAccess, but other users cannot

If your network users cannot start up HostAccess:

- Check that you have given them the correct file access rights to use the HostAccess software.
- On Novell they will need to read, execute and scan access rights to the HostAccess files.
- On NTFS they will need to read and execute the HostAccess files.

General Use

Error Message "Not enough memory to run application"

HostAccess needs a small continuous part of the PC's memory to run.

Close down any unused applications, and try again. If the problem persists, restart Windows to flush memory, and try to load HostAccess again.

Connections: Asynchronous

No Response from Host on the PC Screen

If no output is displayed on the screen by HostAccess it is likely that this is because either the hardware link to the host is inoperable or there is some incompatibility between the line characteristics of the host system and the PC.

If you can:

- Check the host connection by replacing the PC with a terminal. If the terminal operates satisfactorily, use it to determine the Host Port parameters such as BAUD RATE using the appropriate Host command. Compare these settings with the HostAccess session parameters.
- Check the cable connections between the PC and the host system carefully. Ensure that the correct connector is being used on the rear of the PC and that the PC Port selected in the currently active session (COM1 to COM8 or network) is the Port being physically used. Check also that the connector is not plugged into the parallel port.
- You can use a **loopback connector** in the communications port to test that keys pressed appear correctly on the screen. A loopback connector is a simple tool that joins **pin2** to **pin3.**
- Check that the host is not hung on an Xoff character. To overcome this press CTRL and Q on your keyboard.
- Press Return, Break, or the space bar a couple of times to activate the host.

- Check that the host port is not in debug mode. Then enter "OFF" at the keyboard to close down the session.
- Check that you have not selected the serial mouse port as your communications port
- Check that your communications port is set up with the correct IRQ and port I/O address. Refer to your port reference guide or PC manual for further information.
- Check that if you have used other manufacturer's software, which uses the port, that it is not left in an anomalous state. Reboot the PC to reset the port.

Garbled or No Response from Host

This is usually caused by incompatibilities in port settings between the PC and the host system.

Check that the terminal type is defined correctly for your application and that it is identical to that defined on the host port.

Check the settings of the host port (from a working terminal) using the appropriate host command. Compare these with the settings in the PC in the HostAccess's menu. The most likely candidates for mismatch are the Baud Rate or parity settings for asynchronous communications.

Character Corruption Appears on Screen

If letters are missing from words on the screen or spurious characters (such as cursor positioning sequences which might look like "[23;1", etc.) appear on the screen, you should make the following checks.

If using asynchronous communications, check that flow control is **ON** for both HostAccess and the host port.

If the problem persists and you are running at a too high baud rate (say 19,200 bps), try resetting this to a lower baud rate, say 9600 bps. It is possible that your host system does not correctly support flow control at higher baud rates.

If this does not cure the problem, check the AUTOEXEC.BAT file on your PC for the KEYB command. If you are using the Microsoft version of KEYB, this is known to interfere with the COM port interrupts causing loss of data into the PC. Remove KEYB from the AUTOEXEC.BAT file and reboot your PC.

Connections: Network

If you are connecting through a network such as Novell, ensure that the correct network card has been installed and the network correctly configured. If necessary, use the emulator supplied with the network stack to verify the connection.

HostAccess cannot connect to the host

Check the following:

- Network protocol.
- HostAccess.
- Hardware.

Network Protocol

- Check the protocol stack software is loaded correctly.
- Review the config.sys and the autoexec.bat and check that the all the necessary modules are loaded.
- Check that the correct version of the stack is loaded for the Windows version running on the PC.
- Use the emulator that usually comes with the stack to connect to host. If it doesn't then reload the stack.
- Try another terminal emulator. For example, Windows "Terminal" To set up Terminal - change Settings > Communications. Set the com port to be used. Then change the other parameters to suit the host. On pressing return you should get the logon banner.
- Check that the host can be connected to over the network. Are other users able to connect.
- Ensure the router software is running on the server.
- Check that the packet type is being passed across any bridge/WANs in the network.
- Check you are using the correct packet type in the PC network stack setup.
- Check the host can be connected to. Use the Ping command to access the host.
- Check the host name is in the host table and that it has been set up correctly. Ping the target host's ethernet address.
- Check that the host has the correct TCP/IP software loaded and running.

HostAccess

- Check that HostAccess has the correct host-name or ethernet address.
- Check that HostAccess has the correct network interface set.

■ Check that you have the network version of HostAccess. Check in Help About.

■ Check that the correct line speed been chosen.

■ Check the emulation type is correct for the host.

Hardware

■ Will a terminal or another PC work on the cable? (Remember that some terminals require different pin-outs to PCs).

■ Check that the cable works. Swap with one from a working PC.

■ Cable normally has pins 2 & 3 crossed and 7 straight-through. If a terminal works on the cable then you probably need a crossover on pins 2 and 3.

■ Check that the cable is connected to the correct com port on the PC?

■ Check whether flow control is set. Press <CTRL>/S or Q.

■ Check that port isn't in debug mode. Try pressing <CTRL> break.

■ Try a different port on the host.

Protocol Setup Tips

Follow these steps:

1. PING yourself. If there is no "reply", ensure that you have declared the correct frame type in the network configuration and bind the TCP/IP protocol to the network card.

2. PING the host. If there is no "reply", check the connection from your PC by PINGing another PC on the same domain. Check the physical network connection. If you can PING another PC then check that host is correctly set up by PINGing the host from another PC. If this works then:

■ You have not set the masks correctly.

■ You have not declared a gateway, or the gateway is not working properly.

3. Set up host table. You need to have either a local host table, typically called HOSTS, with line entries for each host, containing its IP address followed by its name or a domain name server which holds this file, whose own IP address is declared in the setup. The domain name server may be the same device as the router.

4. Try HostAccess. If there is no connection through HostAccess but you can PING the host then ensure that you are using a network version of HostAccess. Check Help About from the Help menu on the installed copy, do not rely on the floppy disk label.

5. Try using the Terminal Emulator that comes with the stack.

6. Try using the Windows Terminal program.

7. Ensure that HostAccess is configured correctly. Are you using the correct network interface?

8. Ensure there is a Link Support Layer entry in net. cfg and that the Buffers and MemPool entries are set to a high enough level, e.g.

- Link Support.
- Max Boards 4.
- Buffers 8 1500.
- MemPool 4096.

9. If you cannot have a session on two PCs connected to the same host at the same time, check that you have enough host network licenses and check that the two PCs do not have the same IP address.

10. To access a host in another domain. Set up a router (gateway) and declare the address of this in the setup.

   Note: A Novell server can be set up to act in this way.

Error Message "TCP/IP Software Not Loaded"

Check that the TCP/IP software kernel is loaded. For example, when using PC/TCP, ethdrv.exe should be loaded. To do this at the MS-DOS level, run mem /c to check which modules have been loaded into memory.

Appendix

A

Systems administration reference

The following sections are designed for the use of Systems Administrators only:

- Traces.
- Command line options.
- DDE.

Traces

A trace is used as a debugging tool. It can also be used for session recording if you want to play back a session for a demonstration for example. A trace can be a recording of all communications to and from the host. You can replay this trace and view exactly what the originator saw on the session, as well as analysing all the information sent from the host. This type of file has a .LOG ending and is not human readable. They can only be played back using the Test file connection in HostAccess.

A test can also be written to check the behavior of commands etc. This type of file has a .TST ending and is written by entering emulation specific information into an ASCII text editor such as NOTEPAD. A .TST file can also be played back through the Test file playback session connection. This is useful for debugging behavior. Pauses in playback may be added by either entering a carriage return, or a $. If you wish to use a $, it must be expanded to a $24 as $ is a reserved character used to indicate a playback control command is present.

Example:

For VT100, to move the cursor to the 10 col, 10 row, then to the 20,20 position, pausing between you would write:

$1B[10;10H$ $1B[20;20Hwhere $1b is interpreted as the ESCAPE character, the $ is a pause command.

Making a trace

1. Turn on trace mode: (CTRL, ALT, Z).

2. Enter a log filename. A T will appear on the Status Bar.

3. Log onto your host system and perform some tasks. Turn off the trace (CTRL, ALT,Z).
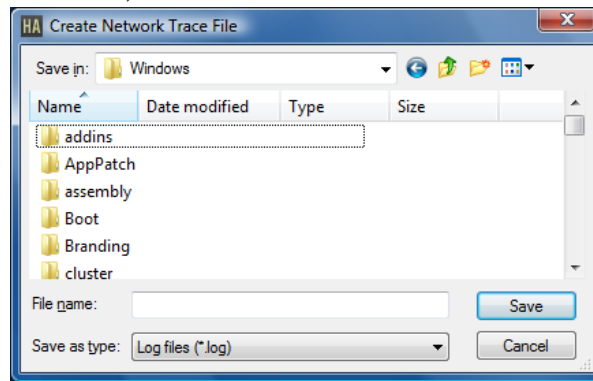
Replaying a trace

1. Create a new session in HostAccess. Select Test file as your connection, select the emulation that you created the Test file in, then configure the properties so that the logfile is played back.

2. Replay the trace using the spacebar or replay icons.

Test file options

Read buffer size: The amount of data read from the test file each time it is accessed. This should not normally be changed. However, using a smaller size will slow down playback due to increased number of reads required in order to access the test file.

Command line options

You can execute HostAccess startup command line options from any application that can execute a command, such as WordBasic, Visual Basic, Excel.

Some Web browsers such as Netscape support specific command lines for specific purposes.

The following command line switches are available:

7   Strip the top bit from the network traffic.

X   Exit program when the host disconnects.

Z   Start tracing immediately the session starts.

T   Define trace file to use.

em   Emulation.

ip   ip address.

Command line examples

Using command line options with WordBasic

You would use the Shell statement, e.g. Shell *application* $[, *Window Style*]

So you could have:

Shell "C:\host\host.exe /em vt100 /ip 194.127.1.5 "

DDE

Dynamic Data Exchange (DDE) is used to transfer data between Windows applications. With HostAccess, you can use DDE to exchange data between 2 windows applications. HostAccess provides server capability for any application that is able to act as a DDE client.

Note: You must have a resilient link from the PC to the host. DDE cannot work remotely unless full flow control and error checking are in place.

Two applications participate in DDE engage in what is known as a DDE conversation. The application that initiates the conversation is known as the **client** application, and the application that responds to the client is known as the **server** application.

Any Windows product that supports DDE as a server application must have a **server name**. In HostAccess's case this is:

Servername: HA7

Section: Session name

dderequest: Read text from screen (RxCxNx) where R=row, C=column, N=no. of characters to read

ddepoke Text send keystrokes to application "key stack commands' text"

Note: More information is provided in the HostAccess Developer's Guide.

DDE Example

The following WordBasic example provides a list of the available system items, sections and formats supported by the application:

```
Sub MAIN
  DDETerminateAll
  n = DDEInitiate("HA7", "system")
  a$ = DDERequest$(n, "SysItems")
  MsgBox(a$, "SysItems")
  b$ = DDERequest$(n , "Sections")
  MsgBox(b$, "Sections")
  c$ = DDERequest$(n , "Formats")
  MsgBox(c$, "Formats")
        DDETerminate n
End Sub
```

Running HostAccess in a Web Browser

Contents

Introduction

HostAccess emulation sessions may be run within a Web Browser.

HostAccess session files can be stored on any Web Server on the Internet. Connecting to the URL of a session file starts a pre-installed client copy of HostAccess, either

standalone, within a browser, or within a frame within a browser. Session files need not to be stored on the local PC or on a file server. This enables administrators to provide consistent and easily manageable session files centrally on an intranet, or globally on the Internet. Any changes to these centrally stored session files take effect for all users, the next time they connect, without having to redistribute files.

After installing HostAccess on any Windows machine with Microsoft Internet Explorer 5 or above installed, session files entered in the browsers address window run automatically within the browser window. HostAccess session files opened from within HostAccess or started directly from the desktop start a separate standalone instance of HostAccess.

HostAccess includes a Multi Session Manager (MSM) component. The MSM is evoked when a single session is started in the browser. The MSM keeps a track of the multiple sessions opened in the browser, even after the browser is closed.

Overview

Web to Host Connectivity

Web to Host Connectivity is the use of a browser from an Intranet or Internet point of access to connect to host systems, run legacy applications and retrieve data.

When connecting to sessions over the Internet, it is recommended that you do not have AutoConnect selected. This is because if your Internet connection is not available, then you will have to wait for the Telnet integration to time-out before you can change the session.

User benefits of Web to Host Connectivity

Web browsers enable the users to have a consistent and easy-to-use interface for all their information requirements thereby improving the information flow.

HostAccess integrates seamlessly into this environment and has the following advantages for organizations that need Web-to-Host connectivity:

Easy centralized configuration

Network and systems administrators can configure and manage web-to-host connectivity from one central point, without the need to configure individual workstations and without disrupting end users.

Increased user productivity

Access to legacy systems can be controlled by secure and automated logins, using the in-built macro language. The macro language can also assist users in navigating through host systems and automating tasks such as file transfers.

Version control

To ease end-user administration, a single version of HostAccess can be installed on a file server, which can be accessed by clients on the LAN, as and when required.

Reliable connectivity

HostAccess maintains persistent sessions to the host systems, enabling users to browse to other web pages, and then navigate back to the host sessions still held in the memory.

Multi Session Manager

HostAccess includes the Multi-Session-Manager (MSM) utility as an icon on the desktop taskbar that gives users instant access to host sessions they had started. If the browser is terminated for some reason, MSM still gives users the access to their active HostAccess sessions.

Tried and proven terminal emulation and legacy access

The web-enabled version of HostAccess has evolved from, and retains the full functionality of HostAccess. This means there is no loss of functionality for users accessing host systems through a web browser. A number of competitive web-to-host connectivity products are constrained by the limitations of the browser in terms of keyboard mapping and end user interaction through HTML. HostAccess also supports Rogue Wave's AiF and GUI AiF toolkits, so that host legacy applications can be rejuvenated and accessed through a web browser.

Web Server Setup

Registering the Mime type of the .ses file on an Windows NT server

If users are using their own web server, then they might want to make HostAccess available, either on the Internet or on the company's Intranet.

In order to do this, the user will need to register the HostAccess session files (.ses files) with their web server. Currently, Rogue Wave supports this for NT servers as shown in the instructions below:

1. Run Regedit

2. Locate the following key:

   KEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\InetInfo\Parameters\MimeMap\

3. Under this key, add a new value of the string value (REG_SZ) type:
   Value Name: "application/x-trishna,ses,,5"
   (**Note:** The 2 commas between ses and 5)

Reboot the server.

If the user's web server is not an NT server, contact Rogue Wave for more information on support for other web server platforms.

Multi Session Manager

A Multi Session Manager is a device used to manage multiple sessions at one time. The MSM has the capability to open multiple sessions within the browser and/or at the same time run through other applications.

All the sessions that were opened in the browser will be displayed in the MSM list.

All the sessions can either be opened in the browser or in the standalone mode, as the user requires.

Using MSM

Installing MSM

The MSM will be automatically loaded while the user runs HostAccess files within a browser.

The MSM icon is created within the System tray. The MSM can be started, by clicking on the MSM icon.

MSM in the Browser

When the HostAccess sessions are activated in the browser, a small icon appears in the system tray.

When the user clicks the icon, a window appears where the listed sessions are mentioned.
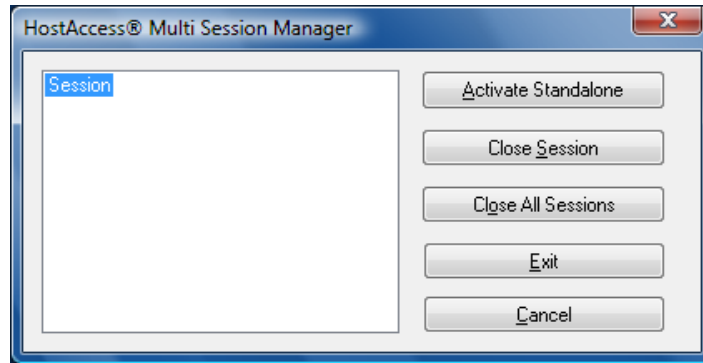
Whenever the user opens new sessions within the browser, the opened sessions are listed in the MSM.

For example, the above window shows that there are three sessions ses1, ses2 and ses3, open in the browser.

If users want to close a particular session and then return to it again, they can do so just by clicking that particular session from the MSM list.

MSM in the Standalone Mode

The sessions that are listed in the MSM can be opened in the Standalone mode.

The user can open the session in the browser and can still view its standalone mode just by selecting that session and then selecting Activate Standalone.

Close Current Session

Selecting that session and selecting Close Session can close the session that is listed in the MSM.

The session that was open will close.

Close All Sessions

All the sessions that are listed in the MSM, can be closed simply by selecting Close All Sessions.

All sessions that were open will close.

Exiting HostAccess

To Exit HostAccess click Exit.

Cancel

To cancel the MSM dialog box select Cancel.

Known Issues

The majority of issues concerning the Web enabled version of HostAccess involve the operational interface to the web browser. Product functionality, as far as connectivity and emulations are concerned, is the same as with HostAccess.

General Issues

1. When embedded, the Web enabled version of HostAccess defaults to the browser's run-time directory and not to HostAccess's run-time directory.

2. When embedded, context sensitive help does not work for menu items, only for toolbar buttons.

3. When embedded, OLE menu items have been removed, as it is not possible to delete an OLE object.

4. IBM 3270 and IBM 5250 auto-sculpted toolbars do not fit in a 640x480 display.

Browser-Specific Issues - Microsoft Internet Explorer

1. When embedded within an Internet Explorer frame and Internet Explorer context menus are displayed, the HostAccess toolbar disappears. We believe this to be a bug with Internet Explorer.

2. When closing a session from within Internet Explorer, another HostAccess start-up splash appears momentarily.

MSM Specific Issues - HostAccess's Multi-Session-Manager (MSM)

1. If sessions are active and the web browser is closed, then MSM will initiate the session within the normal HostAccess container. When sessions are controlled by MSM in this way (external to the browser) they can occasionally take up to 20 seconds to close, giving the appearance that HostAccess has hung - the hourglass pointer is the only indication.

Frequently Asked Questions

Is the Web enabled version of HostAccess the same as the earlier version of HostAccess?

This version of HostAccess is for use within Active Document containers, such as Microsoft's Internet Explorer or the Desktop Explorer. This version of HostAccess is built from the same source code as the previous HostAccess and therefore contains the full functionality of our tried and proven HostAccess product. HostAccess can be web-enabled by using a special license activation code.

Is the Web enabled version of HostAccess as secure as the earlier HostAccess?

Yes. When using this HostAccess, it does not change any security considerations for access to your host systems. All of the appropriate security for user logins and passwords are still maintained by the host system. If anything, this HostAccess enables system administrators to add an additional level of security by making the HostAccess session files only accessible from a secure web server and, optionally, password-protecting access from the browser to the appropriate HostAccess hypertext links page.

Can the Web enabled version of HostAccess be used for Internet access to host systems?

Yes. But remember that remote Internet clients will need a copy of the Web enabled version of HostAccess installed on their PC. HostAccess works on the basis that the requested session file is downloaded to the PC by the browser, which in turn invokes the HostAccess application. It is not always feasible to download this HostAccess across the Internet, even though it is one of the smallest executables available today.

What environment is the Web enabled version of HostAccess best suited for?

The Web enabled version of HostAccess has been designed primarily for use within Intranets for organizations that need to integrate Intranet information and systems with host legacy systems. It is designed to seamlessly integrate with web browsers so that these organizations need only support one common user interface to their varied and multiple information sources. The Web enabled version of HostAccess can be installed on a LAN file server for common access by multiple users or installed on each individual client PC.

Which web browser can I use with this HostAccess?

This HostAccess can be used with Microsoft's Internet Explorer - we recommend version 5 or later.

Creating PuTTY Key Files

Private and Public keys used with the Secure Shell (SSH) network stack must be generated using the PuTTY Key Generator.

To create Private and Public keys using PuTTY Key Generator:

1. From the Windows Start menu, select Programs->Quovadx->HostAccess->Tools->PuTTY Key Generator.

2. In the Parameters section, select the required key type.

3. In the Actions section, select the Generate button.

4. Move your mouse over the large blank area until the progress bar reaches the end.

5. Click Save Public Key to save the public key file. This key file should be installed onto the SSH host.

6. Click Save Private Key to save the private key file. This file should be kept securely on the client PC.

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