



- What's New in HostExplorer[®] Family



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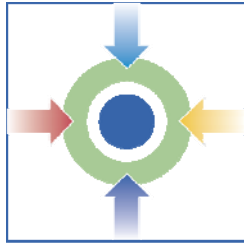
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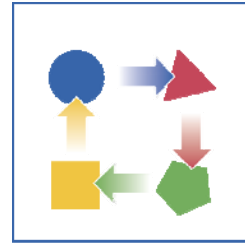
Hummingbird Connectivity™ 2008

Hummingbird Connectivity is a suite of technology solutions that help organizations meet the challenges of integrating heterogeneous systems while providing cost effectiveness. Our customers have been instrumental in our development efforts, over the years and together we have achieved success. Hummingbird Connectivity continues to deliver unparalleled product functionality and substantive return on investment.



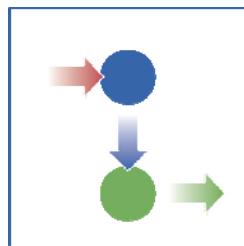
Consolidation

Many organizations with numerous connectivity software vendors have been able to consolidate their needs into one single solution with Hummingbird Connectivity, helping them realize significant savings on their overall IT budgets



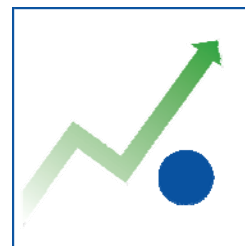
Migration

Regardless of your current connectivity solution, Hummingbird Connectivity offers you a smooth migration path with minimal business disruption and immediate return on investment.



Security

Hummingbird Connectivity features a robust and complete security set across all of its components, in order to help organizations meet their security and compliance objectives.



Productivity

Employees are companies' most important assets. Hummingbird Connectivity provides users with unique ways of increasing their productivity while reducing the complexity associated with implementation and delivery.

HostExplorer[®] 2008

The unique features of HostExplorer product family have been designed and developed with the objective to improve the product's leadership in the following domains.

Features of HostExplorer Product Family

Consolidation



HostExplorer is the most complete and exhaustive terminal emulation software in its category. It benefits from advanced deployment and profiles management technologies that put it in the forefront of the industry.

Companies can achieve significant cost savings by reducing the number of different solutions in use and replacing them with a single complete host access solution.

HostExplorer can be seamlessly deployed as traditional desktop-based host access software or as a web-based thin client solution.

HostExplorer offers central profile deployment and administration without the costs associated with other proprietary solutions.

It can also be used with any supported 32-bit or 64-bit Microsoft Operating System including as well as Citrix Presentation Server[®] and Windows[®] Terminal Server.

Migration



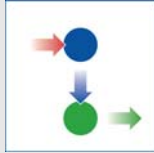
HostExplorer offers the best migration experience and the most successful track record on the terminal emulation market:

HostExplorer offers a full-fledged migration wizard that will take care of converting all settings and features from other terminal emulators (Attachmate[™] Extra, NetManage[®] Rumba and IBM[®] PCom).

HostExplorer themes technology allows users to adapt to the new software at their own pace. It provides them the closest possible look and feel experience to what they were accustomed to.

HostExplorer supports an extensive range of API and seamlessly integrates with existing HLLAPI, WINHLLAPI and EHLLAPI applications.

Security



HostExplorer offers best-of-breed security features. Security conscious customers will be able to choose from a variety of supported protocols such as SOCKS, SSL, Kerberos or Secure Shell v2 (available with Connectivity Secure Shell™ 2008).

Advanced security settings allow the manipulation of public/private key pairs, certificates and USB authentication tokens (Rainbow).

For external access, HostExplorer also comes with an integrated HTTPs/Telnet proxy.

Desktop administrators will also be able to heavily customize every aspect of the user terminal or lock down its functionalities to prevent users from modifying sensitive settings or using certain functions.

Productivity



HostExplorer productivity features allow companies to increase employee's efficiency, relieve users from repetitive tasks, diminish risks of errors and improve the use of mission-critical legacy applications.

Building on the tradition of previous versions, HostExplorer 2008 introduces a number of new productivity features such as:

- Improved terminal experience with additional cursor settings and field options
- Enhanced File transfer capabilities
- Screen History to allow users to quickly return to previously seen data
- Easy-to-use troubleshooting tools

Feature Summary

General Features	Summary
Windows Vista Certification	The Hummingbird Connectivity 2008 products have received the “Certified for Windows Vista” Logo and were vigorously and exhaustively tested by a Microsoft-authorized third-party laboratory under their finalization.
Terminal Features	Summary
Cursor Restrict	This 3270/5250 feature restricts normal cursor movement to and within unprotected input fields. Cursor keys will move the cursor to next/previous input field as needed.
Cursor Shape	Three new cursor shapes have been added to the cursor type list: Upper Half Block, Lower Half Block, and Box.
Insert Cursor	Users now have the ability to define a different cursor for normal operations and for insert operations.
Rule Cursor	Two new rule cursor types are now available to the user (horizontal and vertical), as well as the ability to use dotted or solid lines.
Fill Character	This 3270/5250 feature replaces blanks in unprotected input fields with a fill character.
Miscellaneous Features	Summary
Tab Replacement for Clipboard Data	Tabs can be replaced with user specified text when pasting data from the clipboard into the screen.
Hotspot Shapes	Two new hotspot styles have been added: Recessed button and Outline.
Function Highlighting	Function highlighting allows users to get a visual clue that a HostExplorer function has already been mapped to an item in one of the following dialogs: Keyboard Mapper, Toolbar Editor, Event Editor, Mouse, Track Menu, and Hotspots.
Customize Menu Shortcut	Users now have the ability to quickly and easily customize shortcut keys combination for menu entries.

Report Wizard Auto Detect	This feature is activated when the user initiates the “Print Report” function. Application Id strings from all print report schemes tested against the current screen. The report will be automatically printed out if a match is detected.
Additional Browser Support	In addition to Internet Explorer, HostExplorer and other products that use the Hummingbird Deployment Wizard™ can now be deployed on Firefox®, Opera® and 3rd party java-compatible browsers.
File Transfer Features	Summary
Enhanced FTP Synchronization	HostExplorer 2008 now offers users to graphically browse the destination host when setting up a synchronization task. Users will also get additional progress information when performing a synchronization task.
File Transfer Name Validation Rules	HostExplorer 2008 now offers the ability to validate file names and syntax when performing 3270 file transfer tasks against TSO hosts.
3270 Integrated FTP File Transfer	FTP file transfers can now be performed within HostExplorer. Existing FTP for Windows® Explorer profiles are automatically converted into new file transfer schemes that can be run without leaving HostExplorer.
Automation Features	Summary
Attachmate Interoperability	HostExplorer programmatic objects and functions have been updated to offer improved interoperability with Attachmate Extra! 7.1 object library.
Load and Unload Schemes Programmatically	HostExplorer developers now have the ability to load and unload any scheme programmatically.
Record Passwords In Macro Option	This feature recognizes when recorded keystrokes are keyed into a password field and offers the possibility to either suppress these keystrokes from the recorded macro/script or store them encrypted.

Screen History	The Screen History feature allows users to view and capture screen information while navigating. From the thumbnail screen UI, users can easily navigate, delete screen(s) as well as save and load the list of thumbnail screens to the history file. Users can always return to the live screen by clicking the Live Screen thumbnail, the Home (Live Screen) button on the toolbar, or from the menu (Live Screen).
Integrated Socks Support	SOCKS is a networking proxy protocol that enables hosts on one side of a SOCKS server to gain full access to hosts on the other side of the SOCKS server without requiring direct IP-reachability. SOCKS is often used as a network firewall. This new feature allows users to configure session security settings to use a Socks server.
Feature Access Management	The HostExplorer Feature Access Management console allows administrators to disable various features of HostExplorer. The Feature Access Management console settings can be password protected to prevent users from tampering with them. Lockdown can be initiated at a global level or on a per profile basis.
Event Monitoring Server	The Event Monitoring Server is an IIS-based service that monitors events generated by Hummingbird Connectivity client applications (e.g. HostExplorer, Connectivity Secure Shell, Hummingbird FTP™, Exceed® etc.). It logs client-specific actions like HostExplorer connecting to a host or CSS starting a tunnel into an event database and offer various administrative views to analyze that information.
HostExplorer Trace Wizard	The Trace Wizard is a diagnostic tool used to help customers gather a HostExplorer trace, profile, screenshots and related schemes into a single ZIP file for submission to Hummingbird Connectivity Customer Support or to their own helpdesk. Traces can be replayed in HostExplorer using HostTest, a free utility that can be downloaded on the Hummingbird web site.

Feature Details

Windows Vista Certification

The following Hummingbird Connectivity solutions have received the “Certified for Windows Vista” certification and are available on both 32-bit and 64-bit platforms:

- Exceed PowerSuite™ 2008
- Exceed 2008
- HostExplorer 2008
- NFS Maestro Solo™ 2008
- NFS Maestro Client™ 2008
- NFS Maestro Server™ 2008 Enterprise Edition
- Connectivity Secure Shell 2008
- Connectivity SecureTerm® 2008



Terminal

Cursor Restrict

This feature allows 3270 and 5250 users to restrict the cursor movement to and within protected fields. Enabling this setting helps users navigate around the terminal screen quickly and more efficiently.

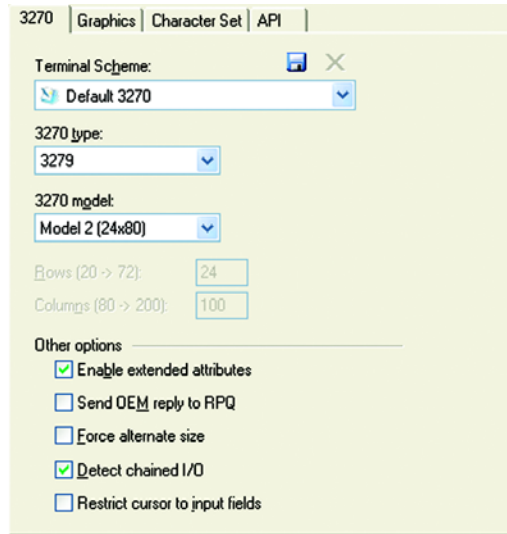


Figure 1 — Cursor restrict is located in the 3270 or 5250 Terminal settings.

Cursor Shapes

HostExplorer now supports six different cursor shapes:

Vertical Bar	Underscore	Block	Upper-Half Block	Lower-Half Block	Box
	_	█	▀	▁	□

Figure 2 — the various cursors shapes available in HostExplorer

Insert Cursor

HostExplorer allows users to define different cursor shapes whether the cursor is in "Insert" mode or not.

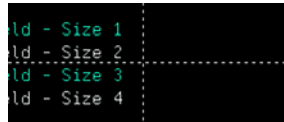
Rule Cursor

Two new rule cursors have been added to the existing cross-hair shape rule cursor:

- Horizontal
- Vertical

In addition, the user can now decide to display the rule as a solid line or as a dotted line.

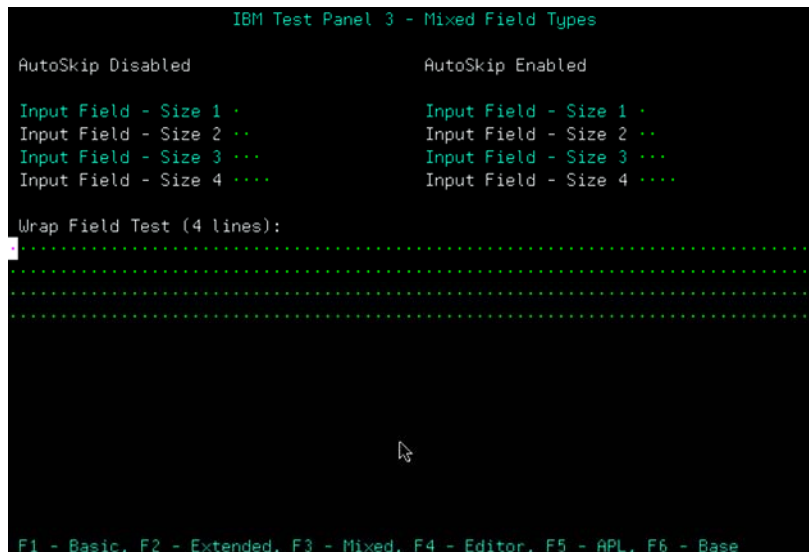
Figure 3 — example of a dotted cross-hair cursor



Fill Character

This new feature allows HostExplorer to fill up blank spaces in input field by a character chosen by the user. This feature allows users to quickly identify input area on the terminal screen and to estimate their size graphically.

Figure 4 — a terminal screen where blank input spaces have been replaced with "@"



Miscellaneous

Tab Replacement for Clipboard Data

The “Tab” character has a totally different role in the Windows world and in the Mainframe world. In the Windows world, Tab can be used as a special character which allows users to separate strings of text by a given distance. In the Mainframe world, Tab is a function which moves the user’s cursor to the next field.

Users who paste data from the Windows world onto a terminal might find themselves pasting text containing Tab characters. HostExplorer allows users to define one or more character that will be substituted to “Tab” when pasting data into the emulator, thus eliminating potential mishaps.

New Hotspots Shapes

Hotspots are clickable area(s) of the terminal screen that are being dynamically created by the emulator when successfully matching the host output with designated text strings or regions. Selected Hotspots can execute any predefined user functions, such as sending specific keys or running system commands such as macros, Quick-Keys, and Quick Scripts.

Hotspots can be in different shapes, and HostExplorer 2008 introduces two new shapes bringing the total to five:

Figure 5 — In this example Hotspots are not enabled



Figure 6 — Raised Button Hotspots

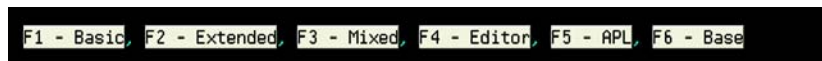


Figure 7 — Highlighted Text Hotspots

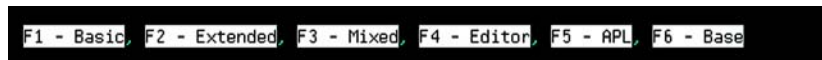


Figure 8 — Recessed Button Hotspots

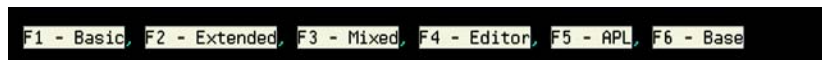
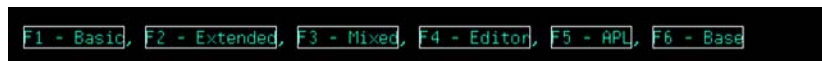


Figure 9 — Outline Hotspots.



Function Highlighting

HostExplorer offers the most flexible and customizable user interface on the terminal emulation market. The following functions are available for mapping purposes in HostExplorer:

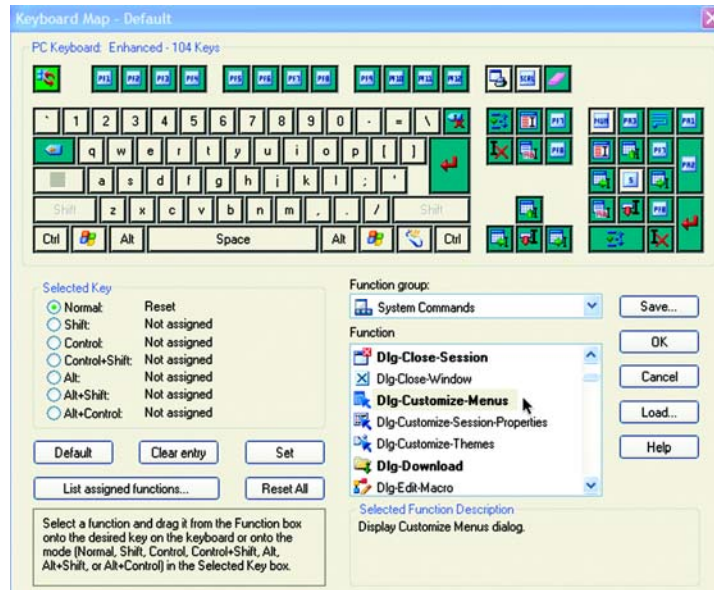
- System Commands, i.e., “Connect”
- Action Keys, i.e., “PF1”
- Editing Keys, i.e., “Backspace”
- Quick-Keys, i.e., a user-defined sequence of keys and commands
- Characters, i.e., “\$”
- Macros, i.e., a user-defined program
- APL Characters, i.e., “Alpha”
- Quick-Scripts, i.e., a user-defined sequence of actions

All of the elements mentioned above can be mapped to the following various places of the user environment:

- Keyboard
- Toolbar
- Menu
- Contextual menu
- Mouse action
- Events
- Hotspots

This versatility, however, can sometimes confuse users and lead them to lose track of what has been customized and what has not. The new function highlighting feature of HostExplorer 2008 gives users a visual indication of which function is already mapped to a specific user interface element.

Figure 10 — Function highlighting in HostExplorer keyboard mapper.

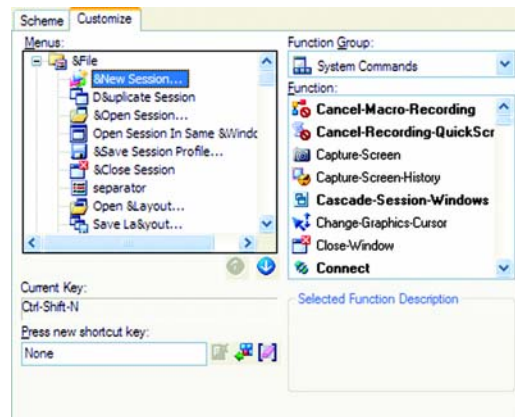


Customize Menu Shortcut

Previous versions of HostExplorer introduced the ability to customize the user interface menus. Menus can be linked to a variety of user interface elements, such as commands or macros.

HostExplorer 2008 now gives users the ability to associate menu entries with custom shortcut keys.

Figure 11 — Setting up a shortcut key in the HostExplorer menu editor



Report Wizard Auto-detect

HostExplorer 10 introduced the report wizard, a convenient tool for users to automatically collect data on several screens and send the aggregated information to a printer, Microsoft Excel[®], Word, a file, XML or an email.

With HostExplorer 2008, users can invoke the report wizard execution without having to select the recognition template that should be used by the software. All existing templates will be tested against the current application screen and a successful match will automatically trigger the correct report execution.

Additional Browser Support

For the past 6 versions, HostExplorer, Hummingbird FTP[™] for Windows Explorer, Connectivity Secure Shell and Connectivity SecureTerm have had the ability to be deployed to Internet Explorer using the Hummingbird Deployment Wizard technology. Hummingbird Connectivity 2008 expands browser support to Firefox, Opera and 3rd party java-compatible browsers.

File Transfer

Enhanced FTP Synchronization

The FTP synchronization tool allows users to define lists of local and remote items to be synchronized through FTP for Windows Explorer. Once defined, the synchronization task can be executed at will or be scheduled within Windows scheduler.

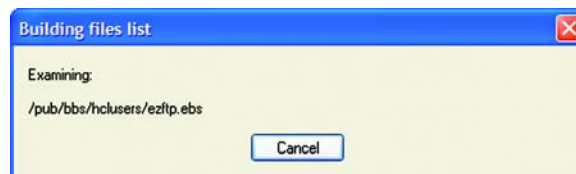
HostExplorer 2008 introduces several improvements to the synchronization wizard in order to simplify the process for the user. One of these improvements is the ability to graphically browse the remote host in order to select files or directories instead of typing their path in the synchronization dialog.

Figure 12 — Browsing for remote files from the FTP synchronization wizard



Users also receive additional information about the synchronization task. A new dialog displays the progress of files and directory scanning operations, a useful information when synchronizing large directories.

Figure 13 — The file and directory scanning progress dialog



File Transfer Name Validation Rules

The purpose of this feature is to prevent mistakes and assist users in properly formatting file names when transferring files to MVS with TSO. This optional feature of HostExplorer 2008 allows a number of rules to be enforced when users enter file names and datasets in the 3270 TSO file transfer dialog.

These rules can be applied to both datasets (sequential and partitioned) and tokens and members. They include:

- Formatting the file name
- String length check with or without quotes

- Replacement of characters
- Verification for forbidden characters

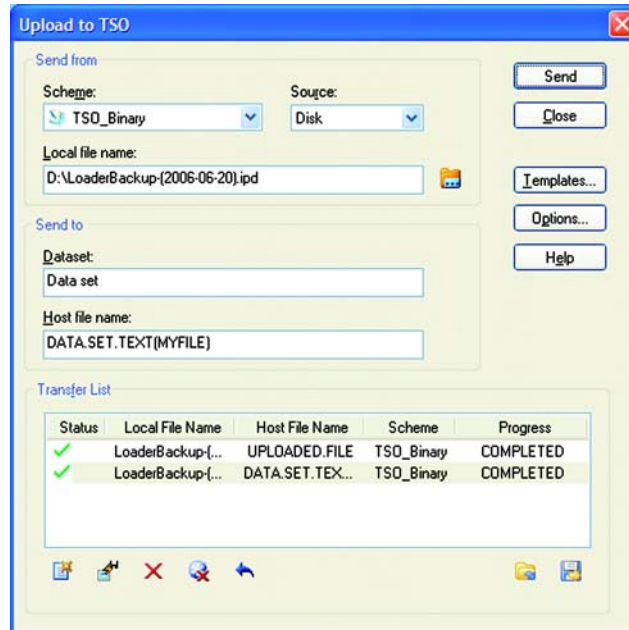


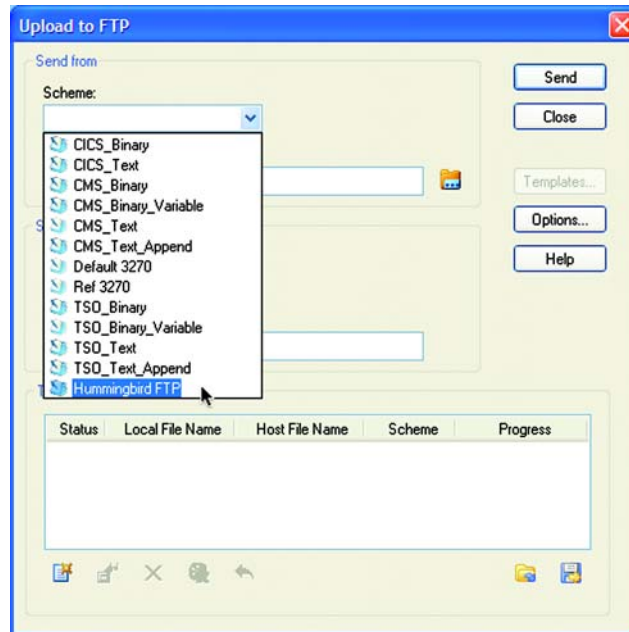
Figure 14 — File name validation in the file transfer dialog

3270 Integrated FTP File Transfer

HostExplorer has been supporting FTP file transfers since its inception through FTP for Windows Explorer — an FTP client fully integrated with Windows Explorer — and Classic FTP — a traditional double-pane style FTP client.

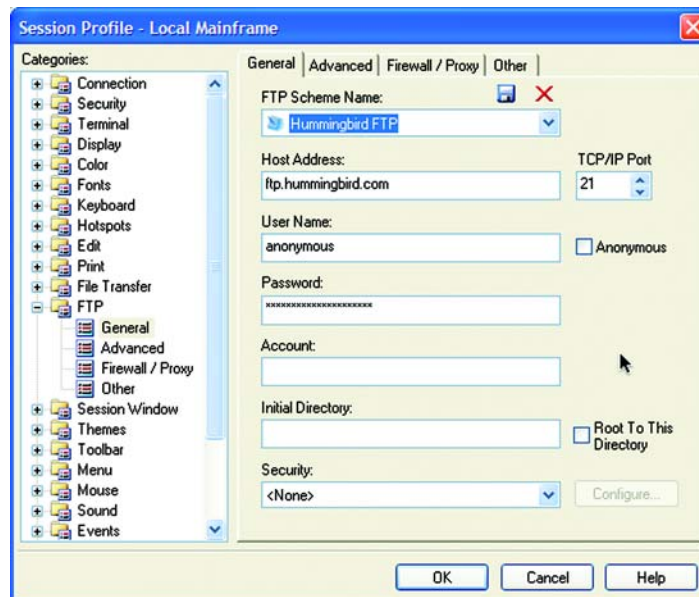
HostExplorer 2008 brings a new level of flexibility for FTP file transfers by allowing 3270 users to perform FTP operations directly inside HostExplorer file transfer user interface.

Figure 15 — FTP file transfer from within HostExplorer.



A tight integration between the various Hummingbird FTP clients allow HostExplorer to expose the FTP profiles created in FTP for Windows Explorer.

Figure 16 — FTP settings in HostExplorer session profile dialog



Automation

Attachmate™ Interoperability

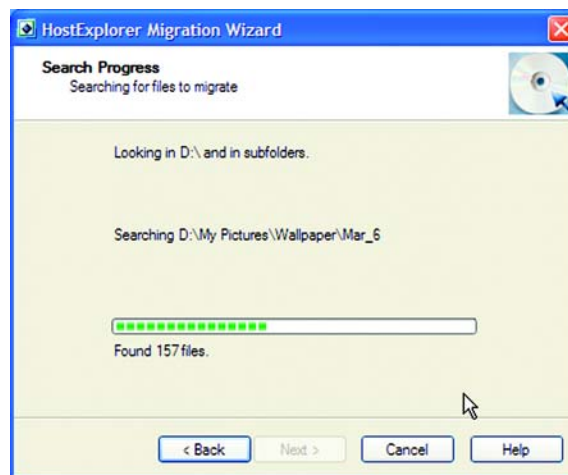
HostExplorer has offered a migration path from Attachmate Extra! for a number of years. A number of features have been developed that makes it easy and virtually effort-free to migrate from Attachmate Extra! to HostExplorer.

When user interface is concerned, HostExplorer closely matches Extra! UI by offering similar

- Colors,
- Keyboards,
- Toolbars,
- Menus,
- Right-Click options,
- Fonts,
- Hotspots, and
- Mouse mapping.

HostExplorer also includes a migration wizard that can automatically convert existing extra profiles into HostExplorer profiles without the user's intervention.

Figure 17 — The HostExplorer migration wizard in action



On the automation front, HostExplorer is capable of migrating Extra! macros to HostExplorer macros. It also offers the exact same integrated Basic Editor as Extra!.

Finally, HostExplorer provides interoperability with the Attachmate Extra! Object Library. HostExplorer 2008 brings improved compatibility with this library by including support for the additional methods and properties found in Extra!.

Load and Unload Schemes Programmatically

Schemes are a major feature of HostExplorer. Schemes consist in groups of property settings that can be saved and applied to specific profiles so that users do not have to customize individual session properties each time they connect to a host.

Schemes could be thought of like templates that apply to a logical group of settings. Every single setting of HostExplorer is part of a scheme. The major schemes groups are:

Connection	Identity	Security
Terminal	Display	Color
Fonts	Keyboards	Hotspots
Edit	Print	File Transfer
Session Window	Toolbar	Menu
Mouse	Sound	Events
Shortcuts	Track Menu	Capture
Session Properties	FTP	

HostExplorer 2008 now offers programmers the ability to programmatically load and unload schemes from their scripts or programs. The powers of schemes associated with the versatility offered by the various development languages that can be used with HostExplorer give programmers a truly efficient tool for customizing HostExplorer.

Record Passwords in Macro

Security is a primary concern these days. Security conscious companies are looking for software with robust security features in order to prevent security breaches. HostExplorer 2008 allows administrators to disable the recording of passwords in macro.

When the macro is recorded, HostExplorer automatically detects that a password is being entered and prompts the user to input it in a special dialog box. Once the password has been entered, it can

- Be stored in an encrypted format within the macro file.
- Be sent to the host without being stored so that users have to enter it whenever they decide to rerun the macro.

Screen History

Screen history is a user-oriented, very practical feature, the goal of which goal is to simplify the user's life when working on a Mainframe.

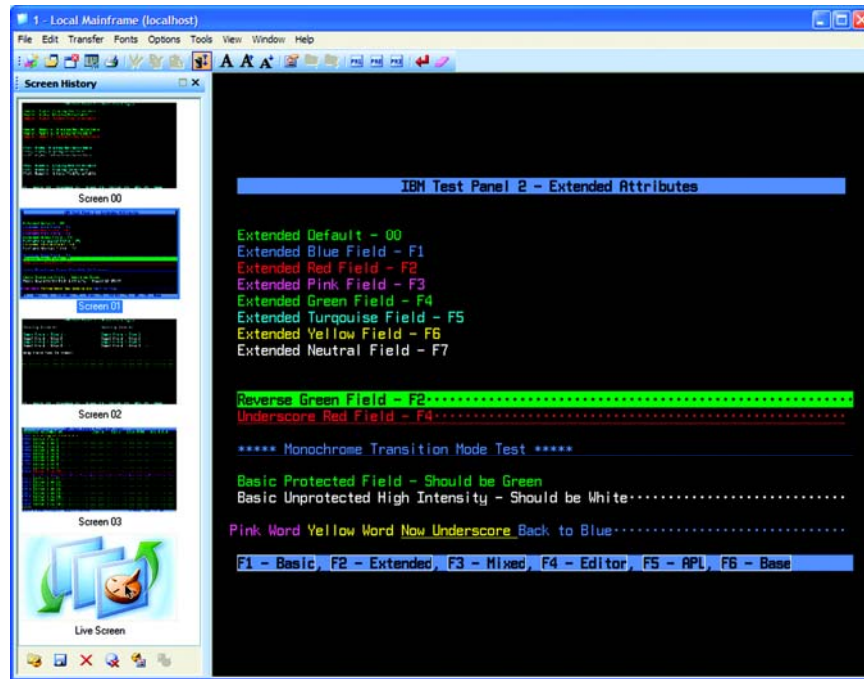
Screen history acts like a tape recorder that can automatically or manually store the screens through which users navigate.

At any given time, users have the ability to click on one of the previously recorded screens and see what was displayed on that screen. Then they can come back to the live screen and continue working.

There are two major benefits of screen history for users.

- It allows users to look back at some information they have already seen without having to quit their current task.
- It greatly simplifies navigating through a Mainframe application in order to display data that has already been seen.

Figure 18 — Screen History allow users to navigate between the live screen and previously recorded screens.



Integrated SOCKS Support

SOCKS is a networking proxy protocol that enables hosts on one side of a SOCKS server to gain full access to hosts on the other side of the SOCKS server without requiring direct IP-reachability.

SOCKS is often used as a network firewall, redirecting connection requests from hosts on opposite sides of a SOCKS server. The SOCKS server authenticates and authorizes requests, establishes a proxy connection, and relays data between hosts.

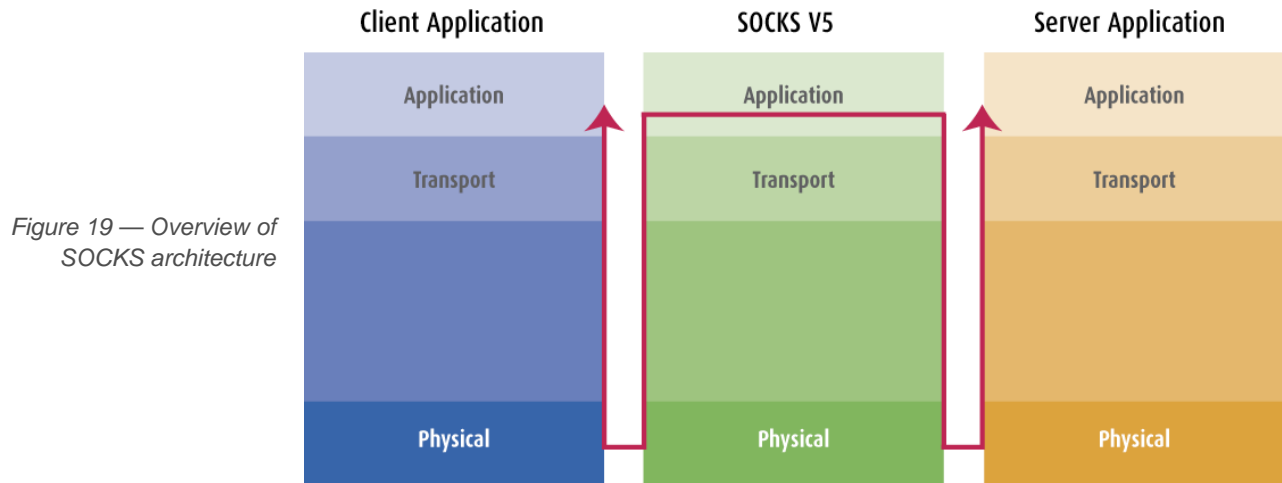


Figure 19 — Overview of SOCKS architecture

SOCKS is an intermediate layer between the application layer and the transport layer.

There are two versions of the SOCKS protocol — SOCKSv4 and SOCKSv5, respectively.

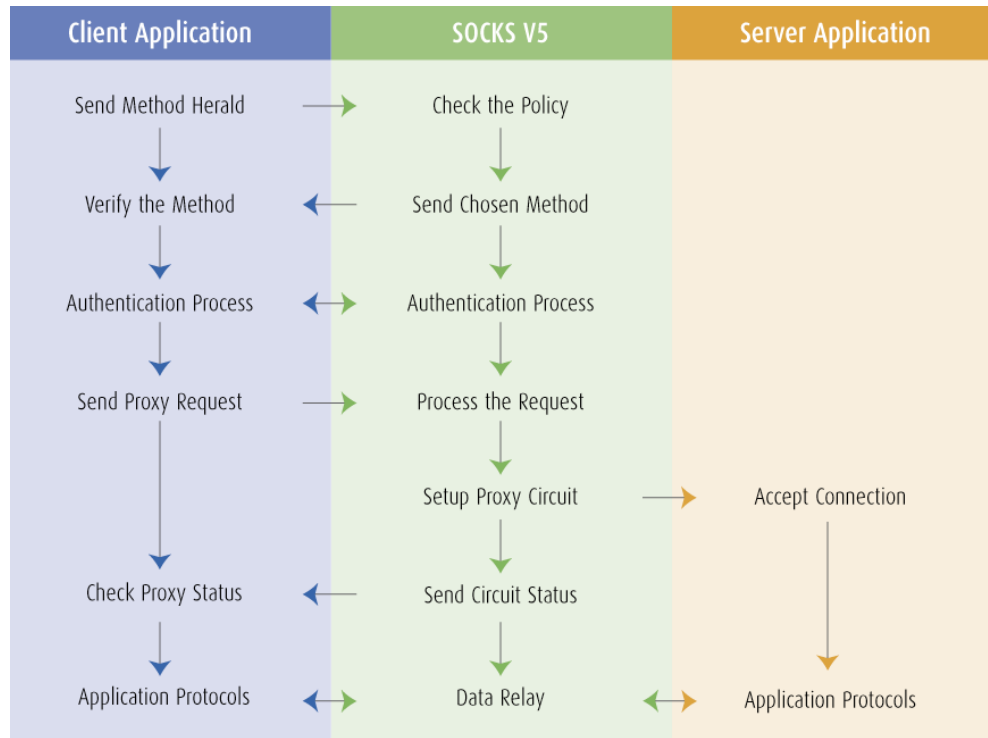
The SOCKSv4 protocol performs the following three functions:

- Makes connection requests
- Sets up proxy circuits
- Relays application data

The SOCKS version 5 protocol resolves several issues that SOCKS version 4 protocol did not fully address or omit:

- Strong authentication
- Authentication method negotiation
- Address resolution proxy
- Proxy for UDP-based applications

Figure 20 — The SOCKSv5 control flow diagram



Hummingbird has always been at the forefront of Windows SOCKS client. For more than 10 years, Hummingbird SOCKS Client has been available for free from the Web. It also was integrated into certain versions of Microsoft Internet Explorer.

HostExplorer 2008 builds on our experience with SOCKS by offering an integrated SOCKS client within the terminal.

HostExplorer SOCKS client offers complete SOCKS support.

- SOCKS version 4 and 5 support
- Configurable port
- Ability to force local DNS lookup
- Support for username/password authentication
- Support for Kerberos authentication and encryption
 - Hummingbird Kerberos client or MIT Kerberos client
 - Windows Kerberos ticket support

Figure 21 —
HostExplorer 2008 SOCKS
configuration dialog

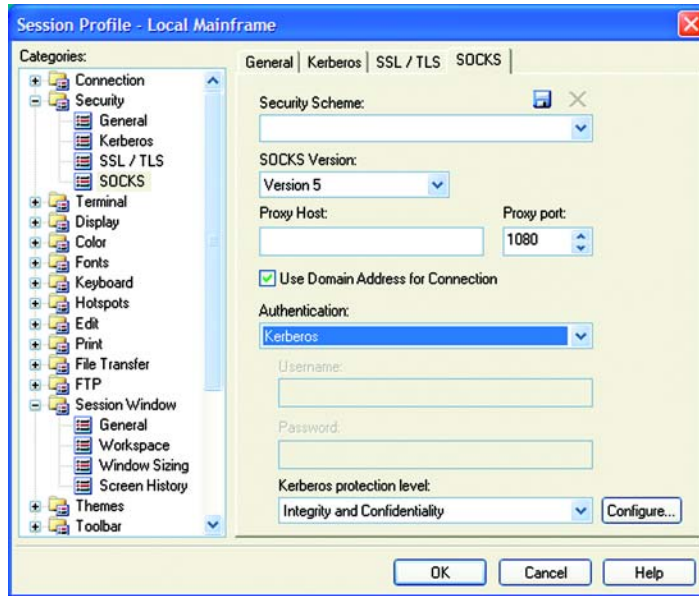
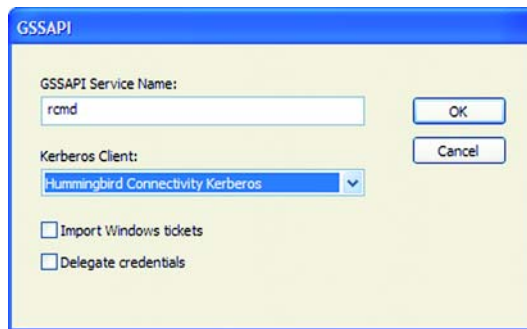


Figure 22 — SOCKS
Kerberos authentication
configuration dialog



Feature Access Management

Creating and enforcing desktop software usage policies is a critical task of desktop administrators. Ensuring that users have access to the all features they need but also only to the features they need is paramount. Lack of such policy will inevitably lead to a variety of problems including:

- User mistakes
- Loss of productivity
- Increased helpdesk activity
- Security breaches

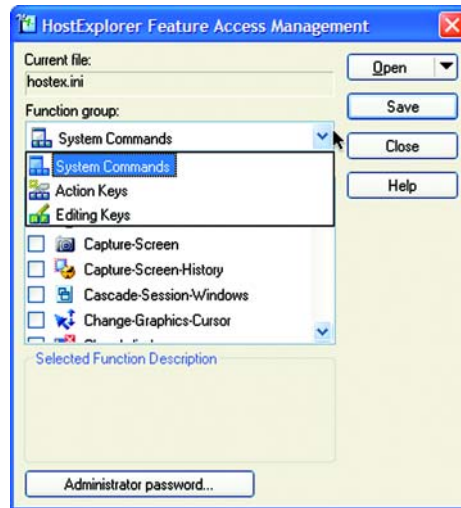
HostExplorer 2008 gives administrators the ability to prevent users from accessing certain features of the software. Feature access control offers high granularity, enabling the selection of more than 500 system entry points including:

- System Commands
- Settings categories
- Dialogs
- Action Keys
- Editing Keys

Feature access settings are password protected in order to prevent users to tamper with them. HostExplorer 2008 offers 2 levels of feature control:

- **Global** — apply to all profiles
- **Per Profile** — apply to a given profile and supersede the global settings

Figure 23 — HostExplorer Feature Access Management dialog



Event Monitoring Server

For the past three versions, Hummingbird Connectivity products have come with a built-in license metering functionality. With Hummingbird Connectivity 2008, we are taking metering one step further by introducing the Event Monitoring Server.

The Event Monitoring Server (EMS) is a robust and scalable facility designed to help administrators gather information about their Hummingbird Connectivity infrastructure. EMS comes as a client/server architecture:

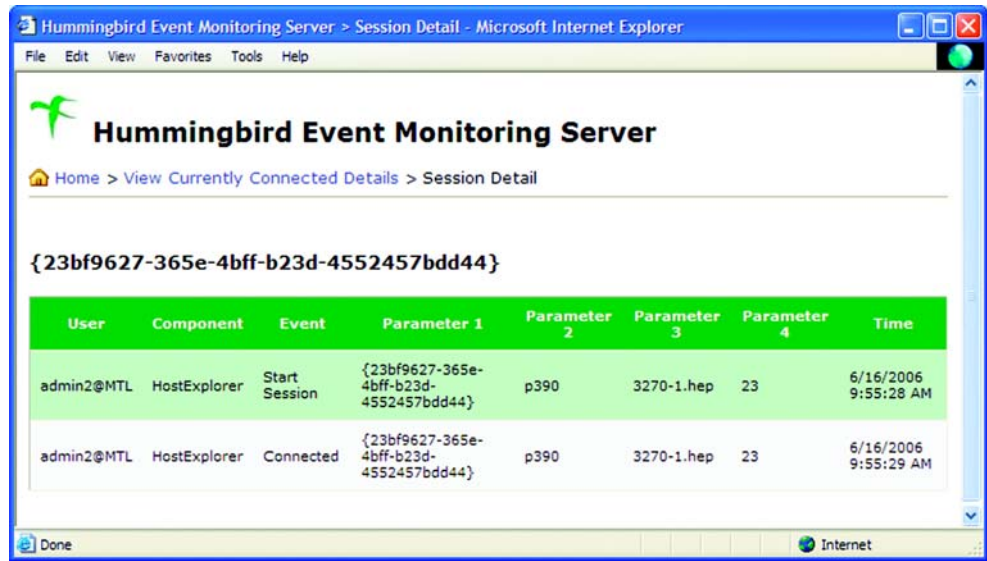
- The EMS Client is installed with each Hummingbird Connectivity 2008 software. Its role is to report installation and activity information to the EMS Server.
- The EMS Server comes as an ASP.NET application that runs on Microsoft Internet Information Server. Its role is to collect information from the EMS clients, store it in a relational database (SQL Server or MySQL), and to offer several administrative views to display that information.



Figure 24 — The EMS Server main page

The EMS Server main screen provides administrator with the total number of active users and active sessions running. Administrators have the ability to drill down and isolate a specific user or machine in order to determine its activity.

Figure 25 — The EMS Server Session Detail.



Administrators also have the ability to see how many product licenses are installed on their network. Here again, the EMS Server offers the ability to drill down and identify the machines on which the products have been installed.

Figure 26 — Administrators have the ability to see how many licenses of the Hummingbird Connectivity software have been installed.



The EMS server is also capable of reporting on the use of certain Hummingbird Connectivity components. Administrators can request graphs that will tell them many copies of a certain component were in use at certain times of the day.

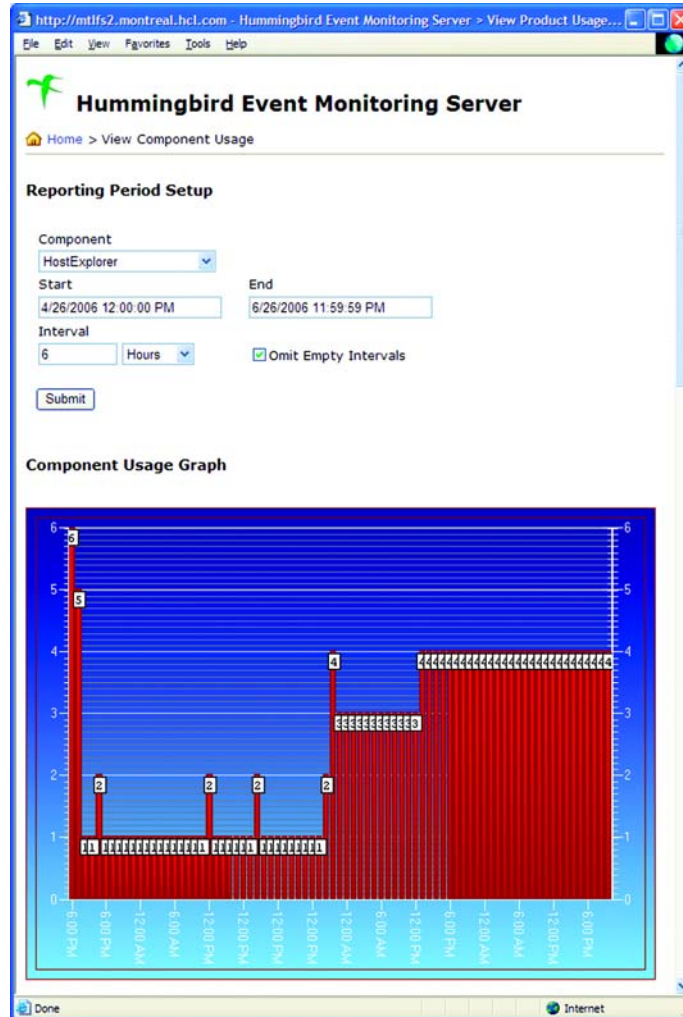


Figure 27 — The EMS Component Usage report window

HostExplorer Trace Wizard

There is nothing more frustrating for a user to encounter a problem with an application and to be asked to provide all kinds of troubleshooting information to a helpdesk. There is nothing more frustrating for a helpdesk employee or a desktop administrator to waste precious time trying to gather evidence of a problem in order to troubleshoot here.

HostExplorer 2008 introduces the HostExplorer Trace Wizard, a tool for users and administrators to semi-automatically collect troubleshooting information. The HostExplorer Trace Wizard is an easy-to-use troubleshooting facility which will drive users through a succession of simple steps to reproduce a problem and gather the related information.

After welcoming the user, the HostExplorer Trace Wizard will ask him to select a 3270, 5250 or VT profile from the list of existing profiles. HostExplorer 2008 will be automatically launched in trace mode with the selected profile. The user will then be asked to navigate through its environment and reproduce the error he's looking to get solved. In addition to capturing detailed trace information, the HostExplorer Trace Wizard gives the user the ability to take screenshots as he navigates through the host application.

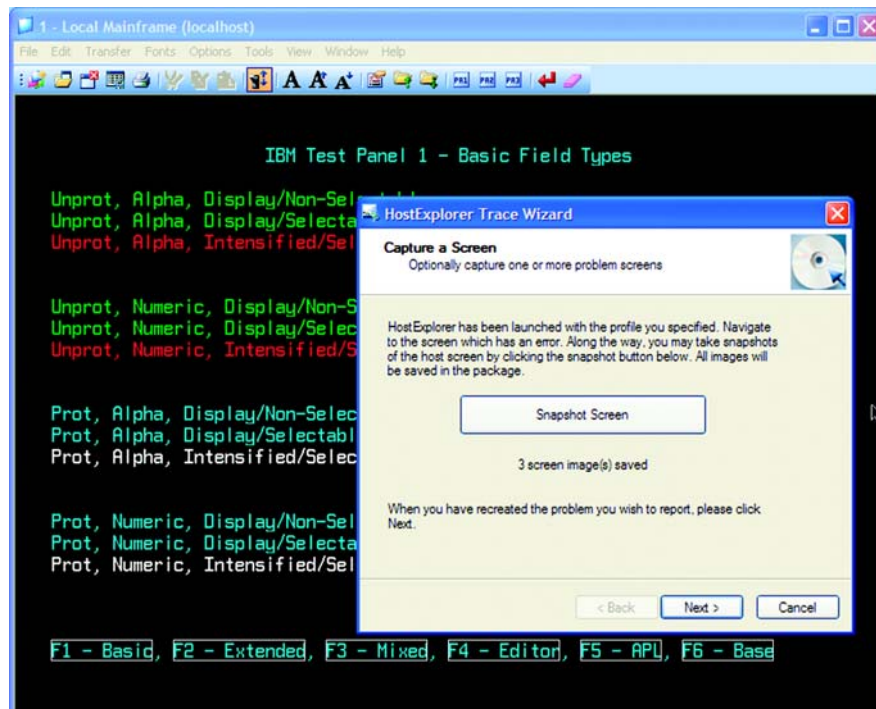


Figure 28 — The HostExplorer Trace Wizard in action

At the end of the process, the HostExplorer Trace Wizard will package the trace file, the screenshots as well as the profile (and related files) into a zip file that can be sent by email to the helpdesk.

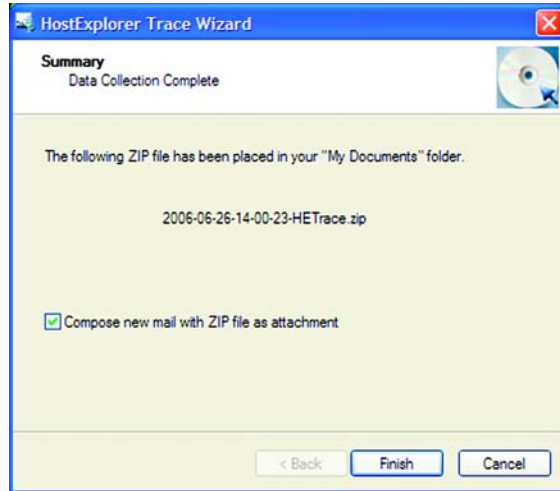


Figure 29 — Packaging and sending the trace information

Administrators can then use the collected information to help them troubleshoot the user's issue. Traces can also be replayed directly in HostExplorer 2008 using HostTest a host simulation tool that can be downloaded free of charge from the Hummingbird Connectivity web site at: www.hummingbird.com/download.

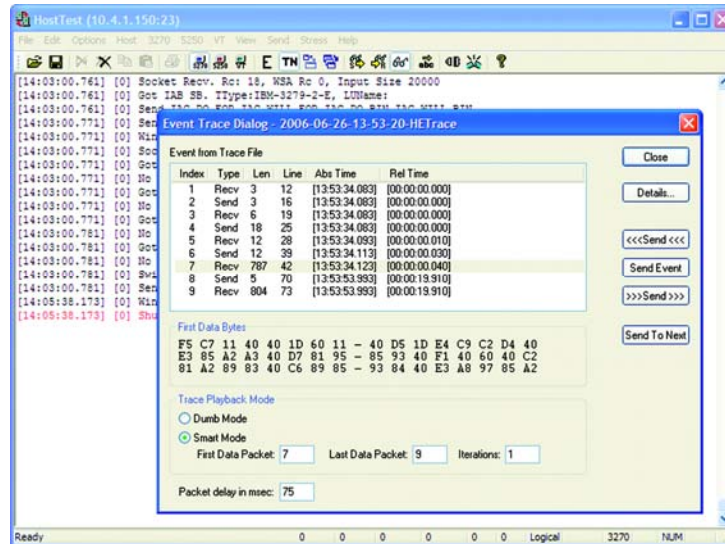


Figure 30 — Administrators can replay traces into HostExplorer using HostTest



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