

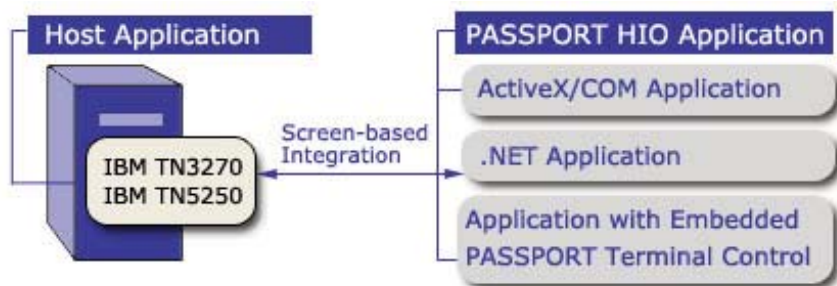
PASSPORT

Host Integration Objects



PASSPORT Host Integration Objects (HIO) is a Microsoft-based legacy application integration solution that offers a programmatic method of integrating IBM host based applications that use 3270 or 5250 protocols with other ActiveX or .NET applications using standard 3270 and 5250 screen information.

PASSPORT HIO is a non-intrusive host integration solution that offers a fast and low-risk approach by reusing valuable business processes that have been adapted and perfected over many years. Unlike other screen-scraping solutions, PASSPORT HIO eliminates the need for terminal emulation to be running on an end-user's PC.



PASSPORT HIO can be deployed on a server or client basis. With either method, you can use a Windows desktop as the development platform. Once ready, the developed application can be published to a Microsoft Windows 200X Server, or to Windows Vista, XP or 2000 desktops.

PASSPORT HOST INTEGRATION OBJECTS (SERVER BASED)

PASSPORT HIO offers a path to host information at the screen buffer level, allowing you to read and write data to the host presentation space and input fields, open and close sessions, get specific text strings from the screen, create string values, send function keys to the host, switch to other tasks and much more. In doing so, customers can reuse critical legacy applications and proven business logic without making any changes to host code.

PASSPORT HIO and your developed application can reside on a server minimizing the host connections required, easing deployment of the application and increasing flexibility for program output and display.

PASSPORT HOST INTEGRATION OBJECTS (CLIENT BASED)

PASSPORT HIO also includes a Terminal Control Object, which lets developers embed a fully functioning PASSPORT TN3270 or TN5250 client emulator inside another client based application. Through use of the PASSPORT HIO Terminal Control, 3270 or 5250 host "green" screens can be exposed to the end user, similar to an IBM terminal, and full use of the PC keyboard is

HIGHLIGHTS

- Non-intrusive host integration with existing 3270 and 5250 applications
- Direct access to host screen buffers (screen scraping)
- Object-oriented API based on Internet Engineering Task Force OHIO draft
- Does not require terminal emulation software
- Proven TN3270 and TN5250 communications module
- SSL Security
- Designed for a Microsoft Windows environment
- Offset addressing for host screen presentation space
- Simplified model for presentation space
- Automatic generation of presentation space field list and attributes
- Keyword-based function text strings
- Event notification for host communication status and screen updates
- International Support
- Diagnostic tracing capabilities

SYSTEM REQUIREMENTS

- Windows XP, Windows 2000 or Windows 2003 Server
- Minimum 128 MB memory
- TCP/IP connection to TN3270 or TN5250 server

Technical Specifications



available to interact with the 3270 or 5250 host application. PASSPORT HIO Terminal Control is ideal for advanced Windows client-based host integration projects.

HOW PASSPORT HIO WORKS

Using Microsoft's Visual Studio (VB, VC++, C# .NET, ASP .NET, etc.), you can create composite integration applications that require fast, reliable access to existing IBM 3270 or 5250 applications.

PASSPORT Host Integration Objects, based on the Internet Engineering Task Force OHIO draft, includes direct TN3270 and TN5250 connectivity to critical legacy applications using IP. Separate terminal emulation is not required for host access. Sample programs, documentation and a test program that demonstrates the use of each object Method, Property and Event are included in the Zephyr development solution.

HOW PASSPORT HIO IS LICENSED

Available via an annual subscription-based license that includes the cost of the software, access to technical support and all product upgrades, PASSPORT Host Integration Objects offers one of the most inexpensive approaches to dependable host integration.

PASSPORT HIO is licensed either via server volume and numbers of concurrent sessions or for the terminal control deployment on the number of client machines.

The Server version has a minimum of 1 Server with 10 Concurrent Sessions, while a minimum of 500 Client licenses is required for the PASSPORT HIO Terminal Control.

TERMINALS EMULATED

- IBM® 3278/79 Model 2 (24 x 80 full screen display)
- IBM® 3278/79 Model 3 (32 x 80 full screen display)
- IBM® 3278/79 Model 4 (43 x 80 full screen display)
- IBM® 3278/79 Model 5 (27 x 132 full screen display)
- Dynamic 3270 Model 2-5 Screen Display
- IBM® 5250 Model 2 (24 x 80 full screen display)
- IBM® 5250 Model 5 (27 x 132 full screen display)

PERFORMS THE FOLLOWING HOST FUNCTIONS

- Open a host session
- Hide host screens from the user
- Read and write information to the host presentation space
- Retrieve text strings from host input fields
- Retrieve text strings from screen
- Determine new string values
- Get associated attributes of text strings and fields
- Copy information into host input fields
- Simulate use of function keys with host application
- Read the operator information area (OIA) for status updates
- Receive notification of events (receipt of new screen, etc.)
- Close the host session

WHAT IS OHIO?

The Open Host Interface Objects (OHIO) address the need for a standardized advanced programming interface to the host data. OHIO does not modify the TN3270/TN5250 protocol or data stream but instead provides a common access method to that data once it arrives at the client. OHIO uses an object oriented approach to divide the data into logical objects and provides methods on those objects to allow standard access to the data. You do not have to be concerned with details of structure packing and parameter command codes, but can focus on the application functions.

The OHIO API was designed as a replacement for the older IBM HLLAPI (High Level Language Application Programming Interface). The reasons include:

- OHIO was designed as an object oriented API, and thus has all the well known benefits of the object oriented programming paradigm.
- Interacting with the host generally requires less code using the OHIO API than doing the same function through the HLLAPI interface.
- OHIO objects concentrate related functions into specific classes, an easier to understand model than the one HLLAPI entry point.
- No need to have a terminal emulation session running in order to run an OHIO application.



OHIO FEATURES

- No architectural limit to the number of sessions
- Event notification for host communications status and screen updates
- Comprehensive error trapping
- Generation of error message text
- Offset addressing for host presentation space
- Simplified model for presentation space
- Automatic generation of presentation space field list and attributes
- Keyword-based function key strings

OBJECTS

Sessions

Contains a collection of Session objects.

Session

A host session containing one Screen.

Screen

Screen encapsulates the host presentation space containing both OIA and Fields.

OIA

The operator information area of a host session.

Fields

Contains a collection of Field objects.

Field

A field in the presentation space. A field is the fundamental element of a virtual screen.

Terminal Control

Runs in conjunction with a session object. Provides a user interface for that session object.

Note: "1" based counting is used for indexing (the first item in a collection is item 1, not item 0) and "0" based counting is used for positioning (the first position on the screen is position 0, not position 1).

SESSIONS OBJECT

A collection object consisting of sessions.

Properties

Count

Returns the number of session objects in the collection. Read-only.

SessionLimit

Returns an integer representing the number of licenses. Read only.

Version

Returns a string representing the current version. Read only.

ExpireDate

Returns a string representing the date when the software will expire. Read only.

Item

Returns a session object in the collection.

LicenseCode

License code for PASSPORT Host Integration Objects.

Methods

AddSession

Adds a session to the Sessions collection.

OpenSession

Returns an existing session from the Sessions collection.

CloseSession

Closes a session in the collection.

UpdateLicense

Updates the PASSPORT Host Integration license code.



SESSION OBJECT

A host session. The session object contains a single screen object. The session object contains methods to connect and disconnect the host session, as well as to enable and disable diagnostic tracing. The session object is the only object that contains events.

Properties

ConfigurationResource

The configuration resource for the Session object.

SessionName

The session name for the Session object. The session name is unique among all instances of the Session object.

SessionType

The session type for the Session object, 3270 or 5250.

Screen

The Screen object for this session.

Methods

Connect

Starts the communications link to the host.

Disconnect

Stops the communications link to the host.

EnableTrace

Enables or disables data stream and/or low level trace for the session.

isConnected

Indicates whether the Session object is connected to a host. True means connected, false means not connected.

Events

OnSessionChanged

The event generated whenever the session state changes. The session state can be either connected or disconnected.

OnScreenChanged

This event is generated whenever the virtual screen is modified.

OnOIAChanged

This event will be generated when anything on the Operator Information Area (OIA) changes.

SCREEN OBJECT

Provides access to the contents of the host screen's presentation space.

Properties

Cursor

The location of the cursor in the presentation space.

OIA

The OIA object associated with this presentation space. This object can be used to query the status of the operator information area.

Fields

The Fields object associated with this presentation space. This provides another way to access the data in the virtual screen.

Rows

Returns the number of rows in the presentation space. Read-only.

Columns

Returns the number of columns in the presentation space. Read-only.

String

The entire text plane of the virtual screen as a string. All null characters and Field Attribute characters are returned as blank space characters.

Methods

FindString

Searches the text plane for the target string.

GetData

Returns a character array containing the data from the Text, Color, Field or Extended plane of the virtual screen.

PutString

Places a string at the specified location.

SendKeys

Sends a string of keys to the virtual screen.

SendAid

Sends an "AID" keystroke to the virtual screen.

WaitForStr

Waits for a string to appear at a specific virtual screen location.

WaitForNoX

Waits for the X () or X SYSTEM to be removed from the OIA line.



OIA OBJECT

The operator information area of a host session. This area is used to provide status information regarding the state of the host session and location of the cursor. An OIA object can be obtained using the OIA property on an instance of the Screen object.

Properties

Alphanumeric

Indicates whether the field which contains the cursor is an alphanumeric field (TRUE or FALSE).

InputInhibited

Indicates whether or not input is inhibited. If input is inhibited, SendKeys or SendAID calls to the Screen object are not allowed.

Numeric

Indicates whether the field which contains the cursor is a numeric-only field. (TRUE or FALSE).

Owner

Indicates the owner of the host connection.

String

Returns the OIA line as a string.

FIELDS OBJECT

Contains a collection of the fields in the virtual screen.

Properties

Count

Returns the number of Field objects contained in the collection.

Item

Returns Field object at the given index.

Methods

Refresh

Updates the collection of Field objects.

FindByString

Searches the collection for the target string and returns the Field object containing that string.

FindByPosition

Searches the collection for the target position and returns the Field object containing that position.

FIELD OBJECT

A Field is the fundamental element of a virtual screen. A field includes both data and attributes describing the field. The Field class encapsulates a virtual screen field and provides methods for accessing and manipulating field attributes and data. Field objects can be accessed only through the Fields object.

Properties

Start

The starting position of the field.

End

The ending position of the field.

Length

The length of the field.

Attribute

The attribute byte for the field.

Modified

Indicates whether or not the field has been modified (TRUE or FALSE).

Normal

Indicates whether or not the field is normal (TRUE/FALSE).

Protected

Indicates whether or not the field is protected (TRUE or FALSE).

Numeric

Indicates whether or not the field is numeric (TRUE or FALSE).

HighIntensity

Indicates whether or not the field is high-intensity (TRUE or FALSE).

PenSelectable

Indicates whether or not the field is pen-selectable (TRUE or FALSE).

Hidden

Indicates whether or not the field is hidden (TRUE or FALSE).

String

The text plane data for the field.

Methods

GetData

Returns data from the different planes (text, color, extended) associated with the field. The data is returned as a character array.



TERMINAL CONTROL

The PASSPORT terminal control provides terminal emulation screen and keyboard support. This object runs in conjunction with a session object. The session object maintains the host screen buffer and performs all communication with the host system. The terminal control object provides a user interface for that session object. The PASSPORT terminal control is used for developing client based host integration applications where a terminal emulator needs to be imbedded into another application.

Print Screen

- Print Screen
- Host screens can be printed to local or LAN attached printers
- Host screens can be printed to a disk file
- Page margins can be set
- Optional header line can be configured to print at top of each page
- Page printed after a specific number of print screens

Clipboard

- Cut, Copy, Copy Append, Copy Graph, Paste, Paste Continue
- Paragraph format copy mode for word processing
- Tabular format copy mode for spreadsheets
- Block, stream, field and spreadsheet modes for pasting text
- Text selection viewed as dotted rectangle or reverse video
- Cut text can be replaced with either nulls or spaces

Cursor

- Underline or block cursor
- Cursor blinking on or off
- Cursor ruler guide can be a full cross hair, vertical only or horizontal only
- Cursor toggle during Insert mode

Fonts and Screen Sizes

- PASSPORT terminal and thin bit-map raster fonts and PASSPORT true type fonts provided
- Any Windows fixed pitch raster or true type font can be selected
- Font size automatically adjusts to Window size
- Fixed font size can be selected with horizontal and vertical scrolling
- APL character set for display
- European Currency symbol support
- Screen sizes for TN3270 (24x80, 32x80, 43x80, 27x132)
- Screen sizes for TN5250 (24x80, 27x132)

Hotspots

- Ability to double-click specific text on the screen to perform a function
- Hotspot customization
- Assignment of any emulator function to any hotspot text
- Multiple hotspot schemes can be created and saved
- Default hotspots provided for PF keys and other common host keys
- Hotspots can be viewed as reverse video button or invisible

Keyboard Features

- Interactive keyboard customization
- Multiple keyboard maps can be created and saved
- Assignment of any emulator function
- Type ahead
- Select areas of text using keyboard shifted arrow keys
- Ability to view list of all host keys with current key mapping

Technical Specifications



Mouse

- Mouse button customization
- Left, right, single and double click mouse actions can be configured
- Any host key or special mouse function can be assigned
- Pop-up floating menu to access common menu commands

International Support (Available in International Version)

- International host code pages
- European currency symbol support
- Multi-national keyboard support
- International Dead Key

Properties

DocumentName

Associates a configuration file with the terminal control.

Session

Associates a session with the terminal control.

Methods

AboutBox

Displays the AboutBox dialog box that contains version number and copyright information.

EnableCommand

Enables or disables the pop-up menu command or property sheet page.



Zephyr excels at connecting Microsoft Windows desktops and servers to IBM mainframe, AS/400 and UNIX host applications. Whether using our Vista-certified PASSPORT terminal emulation or a PASSPORT host integration client or server, Zephyr helps organizations lower host access costs through secure, standard TN3270, TN5250, VT, SCO ANSI, Wyse 60 and FTP solutions.

Our impressive client list features many notable U.S. and international organizations, including Banco BPI, Blue Cross Blue Shield, Canon, Cessna, Daimler Bank AG, Hormel, Huntington Banks, LBBW, Nationwide Insurance, Otis Elevator, Progressive Insurance, Saks, State of California, Wachovia and many others.

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