



Automation and Software
Integration Using BlueZone

www.bluezonesoftware.com

Introduction

BlueZone and BlueZone Web to Host have a variety of powerful tools for automating repetitive tasks, streamlining the user interface, and communicating with external applications. Each tool has its strengths and weaknesses and should be used appropriately. The following describes each tool and how to determine appropriate use.

BlueZone Macros

BlueZone Macros differ greatly from what other emulators call "Macros". BlueZone Macros are recorded and played back using a Windows API function that records key strokes and mouse movements. The recording of keystrokes and mouse movements is system wide and not limited to BlueZone functions.

The advantages of Macros are:

- Macros can play keystrokes and mouse movements outside of the BlueZone interface allowing it to execute other programs through a mouse click or type in other applications.
- Macros are easy for users to record and play back.

The disadvantages of Macros are:

- Typing within a host session is timing dependent and not keyboard lock state aware. Slow host response time could result in the Macro running during a locked keyboard state.
- Macros cannot be edited.

BlueZone Scripts

Scripts are recorded and played back using a proprietary method. Scripts only record keystrokes, but may be edited to change the playback. Scripts are edited using the BlueZone Script Editor (BZSE.EXE) application that is launched from the Script: Editor menu item on the BlueZone MenuBar (when installed in Desktop mode). The Script Editor is a GUI tool allowing users to drag Script Events into the script flow, change the order of events, and delete events previously recorded. BlueZone Scripts support a proprietary mechanism called Wait_Ready that ensures the host is ready to accept input, even when using TN3270 or TN3270E.

The advantages of BlueZone Scripts are:

- Scripts may be edited.
- Scripts are keyboard lock state aware.
- Scripts support advanced functions like wait for, watch for, text input, etc.
- Scripts will automatically convert the recording of a password field into a prompt when replayed.
- Scripts can be encrypted and password protected.
- Scripts can execute other programs using the Run command.
- Scripts can run BlueZone Menu commands, EX; Copy, Paste, Print Screen.
- Scripts can accept variables passed from a BlueZone Web to Host Object Tag. Ex: Login ID and Password generated dynamically by the web application and used to sign the user into the mainframe.

The disadvantages of BlueZone Scripts are:

- Scripts do not support text input variables.
- Scripts do not support file I/O
- No external application integration

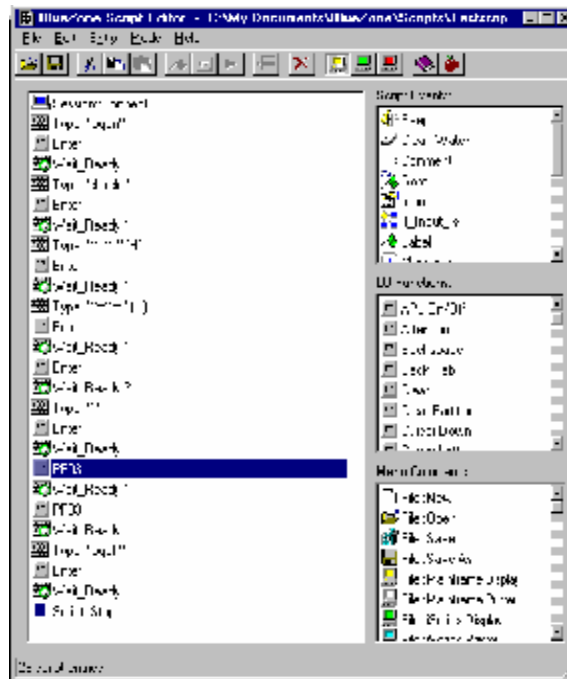


Figure 1. Script Editor

BlueZone Scripting Host using Visual Basic Scripting and Java Script

BlueZone Scripting Host (BSH.EXE) is a language-independent host for ActiveX® scripting engines on 32-bit Windows platforms. This tool will allow you to run Visual Basic® Scripting Edition (VBScript) and JScript™ natively within the base operating system, either on Windows 9x or Windows NT/2000/XP®, and will act as a host for other ActiveX-supported scripting languages such as Perl, Rexx, and Python. In addition, BlueZone Scripting Host allows scripts to communicate with BlueZone Display emulation software products. Using the scripting languages you already know, you can write scripts to execute common tasks on IBM mainframe and midrange systems, automate user input, obtain data from host systems, initiate file transfers, and more.

Using Scripting Host, BlueZone can record and playback scripts using Visual Basic Scripting or Java Script. Once recorded, these scripts may be played back as-is, or edited using the Scripting Host Editor/Debugger. The record and playback feature makes using VBScript and Jscript available to the non-technical users.

The Scripting Host Editor/Debugger is also a general purpose VB Script and JScript debugger that supports break points, stepping, and color-coding of scripts providing a powerful interface for script development.

Advantages of BlueZone Scripting Host are:

- Very powerful
- Can control multiple host sessions simultaneously
- Use of industry standard scripting languages
- Direct access to read from and write to the host screen.
- File I/O
- Variable Support
- COM compliance allows any other COM compliant component to be loaded by the script to extend its functionality.
- Powerful editing and debugging features
- Ability to view the value of script variables while executing/debugging the script
- Dialog support to create Windows dialogs for user interaction.
- Attachmate Ebasic and NetManage Chameleon macro compatibility to provide easy migration from those emulators to BlueZone.
- WRQ Rbasic compatibility

Disadvantages of BlueZone Scripting Host are:

- Complex, text based scripting language.

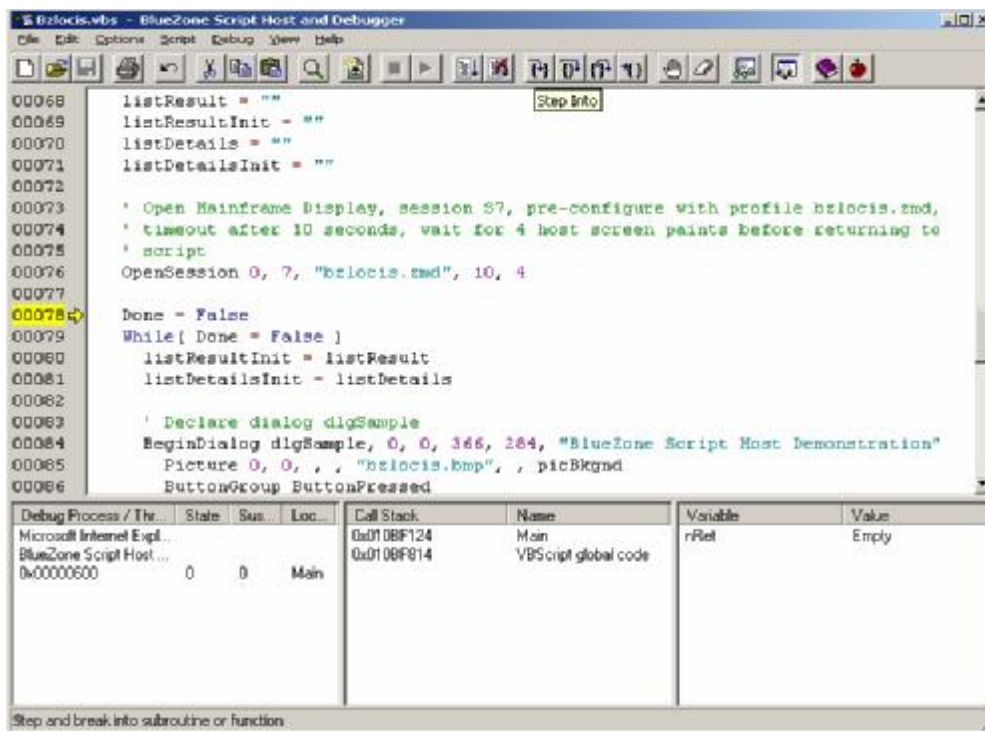


Figure 2. BlueZone Scripting Host Editor Debugger

Host Automation Object

The BlueZone Host Automation Object (BHAO) is a Component Object Model (COM) software component for 32-bit Windows platforms. The BHAO can be utilized by any COM container application like Visual Basic, Microsoft Excel, and Microsoft Word to enable communications between PCs running SEAGULL™ BlueZone Display emulation software products and IBM mainframe and midrange systems. With the BHAO, applications can execute common tasks on IBM host systems, automate user input, obtain data from host systems, initiate file transfers, and more.

The BHAO is a language-independent software component. Programs written in Visual Basic®, Pascal, C, C++, etc. can invoke the BHAO to communicate with the IBM host system. In addition, the BHAO can be incorporated into many popular word processing, database and spreadsheet macros, and run by any ActiveX® scripting engine, including BlueZone Scripting Host.

The BlueZone Host Automation Object utilizes capabilities of BlueZone's File Mapping (Shared Memory), DDE (Dynamic Data Exchange) and HLLAPI (High-Level Language API) interfaces. In addition to the container's properties and methods, the BHAO adds objects, properties and methods that enable interaction with the BlueZone session and the IBM host system.

The Advantages of using BlueZone Host Automation Object are:

- Easier to implement than HLLAPI or DDE and provides greater functionality
- Allows easy integration with any COM compliant application
- Language Independent
- Attachmate Extra! Object Interface compatible allowing easy migration to BlueZone
- Netmanage Automation Server compatible allowing easy migration to BlueZone
- It's compliant with the Attachmate Enterprise Access Library.
- WRQ OLE compatibility mode

The Disadvantages are:

- BZHAO is a development tool that requires familiarity with programming to implement.

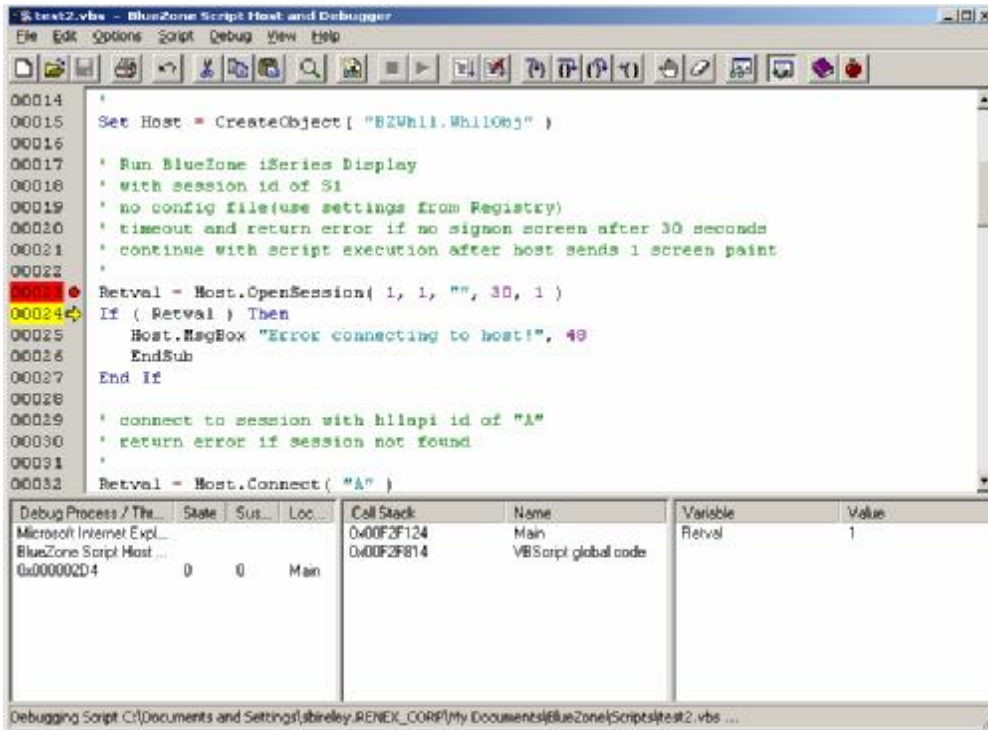


Figure 3. Visual Basic Script that loads BlueZone Host Automation Object.

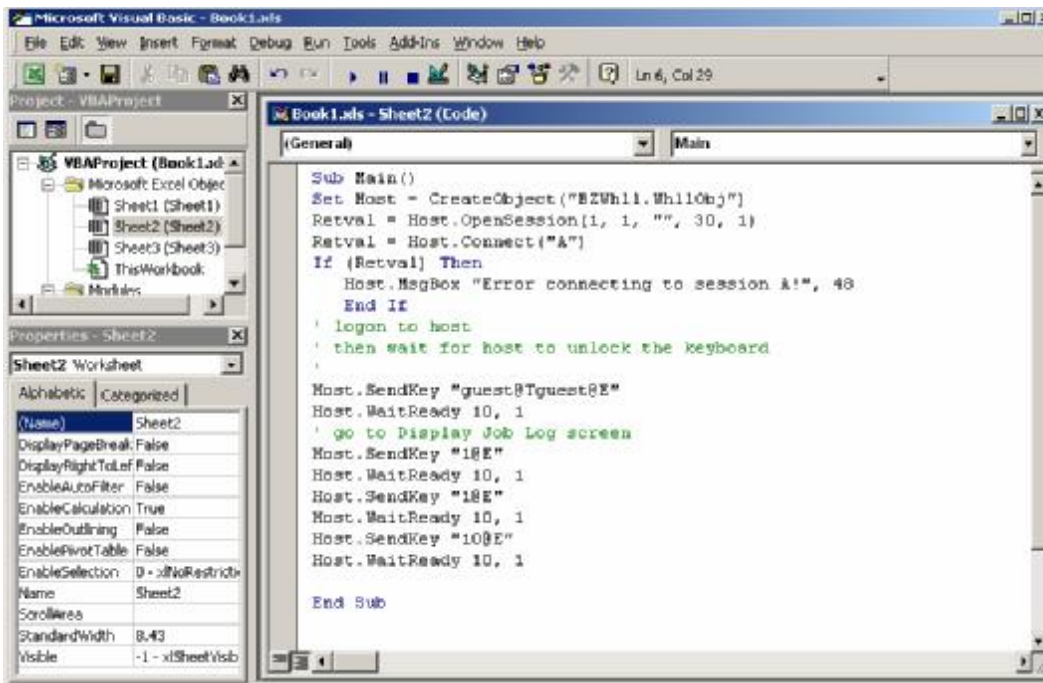


Figure 4. BlueZone Host Automation Object Loaded in a MS Excel VBA Macro

HLLAPI

BlueZone is fully 32-bit WHLLAPI, EHLLAPI 1.1, and IBM Enhanced HLLAPI or EEHLLAPI compatible allowing easy migration to BlueZone of many custom or third-party applications used with other emulators. BlueZone HLLAPI is compatible with third party HLLAPI applications including (but not limited to) those from Shared Medical (Siemens), Neasi-Webber, Real Vision, and Princeton Tech.

To support older HLLAPI applications on 32-bit systems, BlueZone also supports DOS HLLAPI and 16-bit HLLAPI conversations with 32-bit BlueZone.

The advantages of using HLLAPI are:

- HLLAPI is a standard API supported by many software vendors.

The disadvantages of using HLLAPI are:

- The specification may be interpreted differently from vendor to vendor causing some incompatibilities.
- HLLAPI requires a programmer to write the application.
- The interface must be constantly polled by the HLLAPI application to get the status of the host screen.
- For new development, the BZHAO is easier to implement in a wider range of development tools.

Sample C and Visual Basic HLLAPI applications are available with the product.

DDE

BlueZone is a DDE server and uses DDE to communicate with the HLLAPI interface. BlueZone also uses Network DDE to allow communication across a network between a DDE application running on one system and BlueZone running on another. DDE calls supported in BlueZone are detailed in the DDE.H file supplied on the BlueZone installation CD.

Conclusion

BlueZone and BlueZone Web-to-Host have many options to automate and integrate BlueZone with other applications. To guide your decision when choosing one or more of BlueZone's automation solutions, evaluate your requirements, the technical skill set of the end users, and whether developers will create scripts or applications used by others in the enterprise.