WAVELINK INDUSTRIAL BROWSER DEMO APPLICATION

Demonstration application setup and overview.

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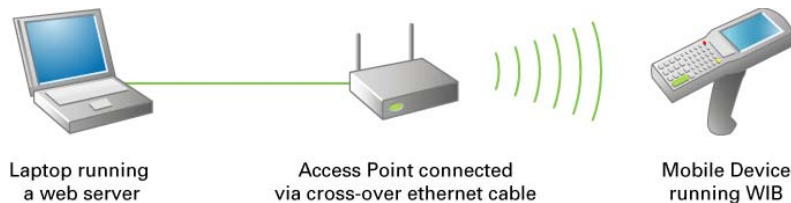- Industrial Browser Config

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The demonstration application has been created to help demonstrate the benefits of the Wavelink Industrial Browser (WIB). It simulates how the Industrial Browser can be used in real world environments by leveraging the core functions of the browser. This document gives directions on how to setup the system for on-site demonstrations. Additionally, each area of the demonstration will have overview information to help position the Industrial Browser functionality.

This paper is written for Wavelink Industrial Browser version 6.0.

DEMONSTRATION ENVIRONMENT

Since the system setup is targeted towards personnel demonstrating the Wavelink Industrial Browser to customers on-site or at an event, therefore a laptop environment is proposed.

Laptop running a web server   Access Point connected via cross-over ethernet cable   Mobile Device running WIB

WEB SERVER CONFIGURATION

Although the demonstration files are simple .htm files, it's best to setup a web server. This gives two main advantages; replicates real world deployment and allows for future updates that will have database integrated pages. Also, depending on preference, the directions below are for two types of web servers.

Setup for Windows XP Professional IIS:

NOTE: You will need the Windows XP CD to complete IIS installation.

1. Open "Add or Remove Programs" Control Panel
2. Click "Add/Remove Windows Components" from the left column. The "Windows Components Wizard" dialog appears.
3. Check "Internet Information Services (IIS)" from the list.
4. Click "Next", once completed the IIS Web Server is setup.

Setup for Apache HTTP Server:

1. Visit http://httpd.apache.org/ and download the latest Apache Server. If running a Windows OS, download the .msi install type.

2. Run the install file, once completed the Apache Server is setup.

NETWORK CONFIGURATION

Static IP Setup:

To maintain a consistent demonstration environment assign a static IP to your laptop.

1. Open "Network Connections" control panel.

2. Open "Local Area Connection". The Local Area Connection Properties dialog appears.

3. Within the "General" tab select "Internet Protocol (TCP/IP)" and click "Properties". The Internet Protocol (TCP/IP) Properties dialog appears.

4. Within the "General" tab click "Use the following IP address". Assign an IP Address, in this example use "192.168.0.1".

5. Assign "255.255.0.0" for the Subnet mask.

NOTE: The HTTP protocol utilizes port 80. Please ensure that any personal firewall accepts port 80 connections. If in doubt, run the demonstration with the firewall disabled.

ACCESS POINT CONFIGURATION

Use an access point to allow the mobile device, through the Wavelink Industrial Browser host profile, access to the demonstration application on the web server.

Setup:

1. Connect the access point via cross-over cable to the ethernet port on the laptop.

2. Follow the manufacturers instructions on configuring the selected access point.

3. For this example, setup:
   - SSID = WLdemo
   - Static IP = 192.168.0.100
   - Subnet mask = 255.255.0.0
   - Encryption = Open System

4. Save the configuration.

MOBILE DEVICE CONFIGURATION

The mobile device needs to find and be associated to the access point. Below is the manual setup, but configuring through Avalanche MC will also achieve the same results.

Setup:

1. Depending on which mobile device is being used access the WLAN utility.

2. Search and connect to "WLdemo", which is the SSID name previously setup for the access point.

3. The mobile device is now associated with the access point.

INDUSTRIAL BROWSER CONFIGURATION

The Wavelink Industrial Browser now needs to be setup to access the web server on the laptop. This can be accomplished on the device or via Avalanche MC through the "Host Profiles" configuration dialog.

NOTE: This document assumes that both Avalanche MC and the Industrial Browser have already been installed on the device. For directions regarding installation please refer to the appropriate user guide.

Host Profile Setup:

1. Open the "Host Profile" dialog window. This can be accessed through the Software Collection within Avalanche MC or through the TE host profile dialog on the mobile device.

2. Click "Add" to create a new host profile configuration.

3. Name the new configuration "wibDemoApp".

4. Select "Web" from the "Emulation" pull down.

5. Insert the static IP address of 192.168.0.1, that was previously created in the Network Setup section of this document.

6. Click "Save" to apply the new configuration.

DEMO APPLICATION

This area explains how to connect to the demonstration application and gives an overview of each section of the application.

CONNECTING TO THE DEMO APPLICATION

To start the demonstration application you'll first need to connect to the previously setup web server. It's here that the application will run.

Connecting:

1. Launch the Avalanche Enabler console on the mobile device

2. Launch the installed Wavelink Telnet application.

3. From the "Options" pull-down menu select "Connect Session".

4. Select "wibDemoApp" host profile, which was previously setup.

5. Click "OK" to connect. If you don't have a license setup for the Industrial Browser select "Start Demo" from the pop-up dialog. The Industrial Browser will load the demonstration application.

DEMO APPLICATION OVERVIEW

This section gives overview information for the specific features within the demonstration application. This includes which META tags and IDA commands were used, code examples and point of sale positioning.

The demonstration covers three majors sections; Scanning, Symbology and Keyboards. Each of the sections utilize specific Industrial Browser functionalities. For all available functionalities please refer to the Industrial Browser user guide.

Additionally, this demonstration is built to be an initial introduction to the functions of the Industrial Browser. For demonstration purposes it's logical to create individual sections for the core functionalities such as scanning, symbology and keyboards. However, in a real world environment these funtionalities can be used together to create a unified user experience.

META Tags and IDA Commands

META tags are HTML elements used to provide structured metadata for the web page. In which these are placed as tags in the head section of an HTML document, which are evaluated in order from top to bottom. This calls specific funtionality while the web page is loading. For example, the mobile device scanner can be disabled. Additionally the scanner can be enabled for the pages that require that capability. In the below example code the action_type can be an IDA command, URL or a JavaScript function.

- Example code: `<meta http-equiv="action_name" content="action_type">`

IDA commands are special values used to invoke a device action, program action, or emulator action within the Industrial Browser. So for example a button can be available on the web page tha enables or disables the scanner. This give the user flexibilty to access functions that are relavant to that specific web page.

- Example code: `<a href="ida:IDA_HOME">Home</a>`

Homepage Overview

Figure 1: Demo Homepage

The homepage is the first look into how the Industrial Browser can customize, control and simplify the user experince, and can be used to show how an end-user can create web-based applications specifically customized their needs.

Homepage (Figure 1): The homepage of the demonstration application acts as a portal to the main sections. However, it does introduce web page controls.

- Home Button:
  IDA Command: IDA_HOME
  Function: Proceed to the location specified by the current Host Profile.
  Example code: `<a href="ida:IDA_HOME">Home</a>`

- Page Buttons
  IDA Command: IDA_BACK, IDA_FORWARD
  Function: Display the screens previous/next to the current screen. If there are none available then no action will be taken.
  Example code:
  ```
  <a href="ida:IDA_BACK"><img src="images/icon_pageback.gif" /></a>
  <a href="ida:IDA_FROWARD><img src="images/icon_pageforward.gif" /></a>
  ```

- Text Buttons
  IDA Command: IDA_ZOOM_PLUS, IDA_ZOOM_MINUS
  Function: Changes the web page text size to the next larger/smaller available setting.
  Example code:
  ```
  <a href="ida:IDA_ZOOM_PLUS"><img src="images/textlarger.gif" /></a>
  <a href="ida:IDA_ZOOM_MINUS><img src="images/textsmaller.gif" /></a>
  ```

- Exit Button
  IDA Command: IDA_SESSION_DISCONNECT
  Function: Ends the current session.
  Example code: `<a href="ida:IDA_SESSION_DISCONNECT">Exit</a>`

Scanning Demo Overview

Figure 2a: Scanning Demo web page   Figure 2b: Scan complete web page

The Scanning demonstration section gives an example of how the Industrial Browser utilizes the scanning capabilities of a mobile device. This is a very important differentiator from a traditional mobile device browser, which has no knowledge of how to utilize the scanning and behavioural features of the device.

Scanning Demo web page (Figure 2a):

- On Page Load:
  META tag: Scanner Navigate
  Function: The ScannerNavigate META tag is used to handle raw scan data. The Javascript
  function then displays what was scanned an submits the data.
  Example code:

```
 <meta http-equiv="ScannerNavigate" content="Javascript:onscan('%s', '%s',
'%s');">
<script language="javascript">
function onscan(data, type, timestamp)
{
alert("The barcode scanned was " + data + "\n" +
"The symbology was " + type + "\n" +
"The time stamp was " + timestamp);
document.form1.submit();
}
```

- On Page Load:
  META tag: Scanner Enabled
  Function: Enables the scanner on the mobile device.
  Example code: `<meta http-equiv="Scanner" content="Enabled">`

- Scanner On Button:
  IDA Command: IDA_SCAN_ENABLE
  Function: This button gives the ability to enable the scanner for the mobile device.
  Example code:
  `<a href="ida:IDA_SCAN_ENABLE"><img src="images/btn_scanon.gif"></a>`

- Scanner Off Button:
  IDA Command: IDA_SCAN_DISABLE
  Function: This button gives the ability to disable the scanner for the mobile device.
  Example code:
  `<a href="ida:IDA_SCAN_DISABLE"><img src="images/btn_scanoff.gif"></a>`

Scan Complete web page (Figure 2b): This page displays how after the initial scan data can be submitted to pull up product details.
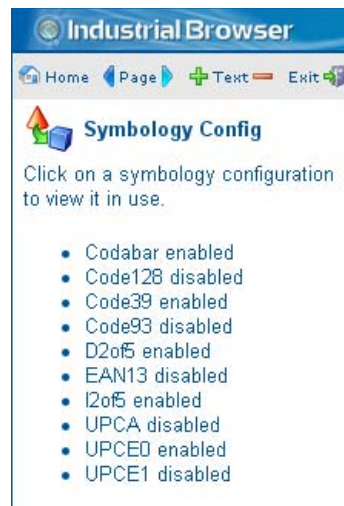
Symbology Configuration Overview

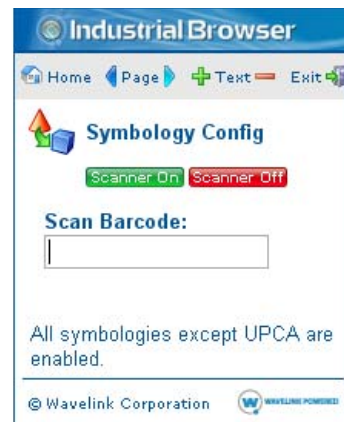Figure 3a: Symbology Configuration web page   Figure 3b: UPCA configuration web page

The Symbology Configuration section gives various example of how the Industrial Browser can control not only the scanner on the mobile device but also what it scans. You can control different symbologies by using the symbology as the action name, and Enabled or Disabled as the action type.

Symbology Config web page (Figure 3a): This page acts as a portal page to the different symbology configurations.

UPCA configuration web page (Figure 3ab):

- On Page Load:
  META tag: Enable All Decoders
  Function: This tag enables all available scan types.
  Example code: `<meta http-equiv="ALL_DECODERS" content="Enabled">`

- On Page Load:
  META tag: UPCA Disabled
  Function: This tag disables only the UPCA symbology. Since META tags are read in the order they appear all other symbology are allowed, per the first tag.
  Example code: `<meta http-equiv="UPCA" content="Disabled">`

Keyboards Overview

Figure 4a: Keyboard Demo web page   Figure 4b: SIP web page   Figure 4c: Mapped Keys web page

The Keyboard demonstration section displays not only the continuing ability of the Industrial Browser to control the mobile device with keyboard mapping, but also accessing software-based keyboards. This allows significant control over the user experience, giving access to specific funtionality through the Industrial Browser.

Keyboard Demo web page (Figure 4a): This page acts as a portal page to the different keyboard demonstrations.

SIP (Software-based Input Panel) web page (Figure 4b):

- SIP View button:
  IDA Command: IDA_SIP_SHOW
  Function: Display the software-based input panel
  Example code:
  `<a href="ida:IDA_SIP_SHOW"><img src="images/btn_sipview.gif"></a>`

- SIP Hide button:
  IDA Command: IDA_SIP_HIDE
  Function: Hides the software-based input panel
  Example code:
  `<a href="ida:IDA_SIP_HIDE"><img src="images/btn_siphide.gif"></a>`

Mapped Keys web page (Figure 4c):

- ON page load:
  META tags: ONKEY
  Function: The ability to map a specific function to a specific key located on the mobile device keyboard. The example code below maps the "M" key to bring the user to the homepage.
  Example code:
  ```
  <meta http-equiv="OnKey0x4D" content="default.htm"> <! 'M' >
  <meta http-equiv="OnKey0x6D" content="default.htm"> <! 'm' >
  ```

Final Points

This demonstration application displays many of the main features of the Industrial Browser:

- The end-user has the ability to control the overall user experience, from the graphical interface to page by page funtionality.

- The Industrial Browser has the ability to control many aspects of the mobile device it's running on, such as scanner control, symbology configuration and keyboard mapping.

- Further capabilities include access and control over software-based keyboards, such as the SIP, numeric and web keypads.